Appendix A. Agency Coordination

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Agency Coordination

This appendix contains a record of communications to and from representatives of federal, state, tribal, and local agencies and stakeholders. It includes copies of agency letters and responses (when appropriate) received during the preparation of the DEIS and prior to the issuance of the DEIS. Letters and responses are grouped by federal, state, tribal, and local agency/stakeholder and then are organized in chronological order.

Additional input was received from jurisdictions since preparation of the administrative DEIS that underwent review by FHWA and cooperating agencies. While this more recent input was not included in the DEIS, it will be considered in the FEIS.

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service
U.S. Courthouse – Federal Building
230 N. First Avenue, Suite 509
Phoenix, Arizona 85003-1733
(602) 280-8801

SEP 20 2010

Rebecca Swiecki
ADOT Environmental Planning Group
Arizona Department of Transportation
Intermodal Transportation Division
206 South 17th Avenue
Phoenix, Arizona 85007-3213

Re: Agency Scoping Meeting Invitation
Federal Aid Number: STP-999-A (BBM)
ADOT Project Number: 999 PN 000 H7454 01L
North-South Corridor Study

Dear Rebecca:

Thank you for the notice and invitation to the Agency Scoping Meeting regarding the North-South Corridor in Pinal County. Unfortunately, we are unable to send a representative to your meeting. However, we do appreciate the opportunity to respond to your scoping request.

As you know, the USDA, Natural Resources Conservation Service has the responsibility of administering the Farmland Protection Policy Act, whereby projects with Federal nexus are required to evaluate the project's effects on prime, unique and other important farmland. Your project study area does include prime and/or unique farmland. Where prime and/or unique farmlands may be affected, the Act requires that alternatives be developed and analyzed to minimize impacts to prime/unique farmland. For all practical purposes, the Act is primarily concerned with permanent conversion of prime/unique farmland.

Therefore, we request that each of the alternatives developed and analyzed in your EIS include an analysis of permanent conversion of prime and unique farmland. Our agency can assist you in making these determinations. Please contact Steve Smarik at 602-280-8785, or steve.smarik@az.usda.gov if you need any assistance in this regard.

Sincerely,

DAVID L. MCKAY
State Conservationist

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

November 2, 2010

Mary Frye
Environmental Coordinator
Federal Highway Administration
Arizona Division Office
4000 North Central Avenue, Suite 1500
Phoenix, Arizona 85012

Subject: Scoping Comments and Response to Cooperating Agency Invitation for the Proposed North-South Corridor Project, Pinal County, Arizona

Dear Ms. Frye:

The United States Environmental Protection Agency (EPA) has reviewed the Federal Register Notice of Intent (NOI) published on September 20, 2010 requesting comments on the Federal Highway Administration's (FHWA) decision to prepare an Environmental Impact Statement (EIS) for the proposed North-South Corridor project in Pinal County, Arizona. Additionally, EPA participated in an Agency Scoping Meeting for the project on October 5, 2010. As described in the NOI, the proposed action consists of selecting the most appropriate location for a future 40 mile facility, extending from US 60 in the vicinity of Apache Junction to I-10 in the vicinity of Eloy and Marana. Our comments at this stage are provided to assist in preparation of the Draft EIS (DEIS) and are pursuant to National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508) and Section 309 of the Clean Air Act.

Additionally, FHWA has requested that EPA become a Cooperating Agency for the North-South Corridor project in an October 18, 2010 letter. EPA accepts FHWA's invitation to become a Cooperating Agency (as defined in NEPA). As a Cooperating Agency, EPA will provide comments on the Purpose and Need, Range of Alternatives, Draft EIS, and at other milestones where we believe we can contribute to avoidance and minimization of potential impacts to resources during the development of the EIS. We look forward to working with FHWA to ensure that our early coordination assists both of our agencies in meeting our statutory missions. EPA's participation as a Cooperating Agency does not constitute formal or informal approval of any part of this project under any statute administered by EPA, nor does it limit in any way EPA's independent review of the Draft and Final EISs pursuant to Section 309 of the Clean Air Act.

Purpose and Need

The DEIS for the proposed project should clearly identify the underlying purpose and need that is the basis for proposing the range of alternatives (40 CFR 1502.13). The purpose and need statement should concisely identify why the project is being proposed and should focus on the desired outcomes of the project (e.g. improve regional mobility) rather than prescribing a predetermined solution (e.g. provide new fully access-controlled facility). Specifically, the need for the proposed improvements must be articulated and justified with consideration of the existing and planned facilities in the area.

The projections of future growth and travel increases used to identify the need for the proposed project should be presented along with the assumptions that were used for land use and travel demand forecasting. The DEIS should also incorporate estimates of the magnitude of induced travel into any travel demand modeling and impact analysis (www.fhwa.dot.gov/steam/doc.htm).

Range of Alternatives

The DEIS for this project should explore and objectively evaluate a full range of alternatives, including, but not limited to, the No Build alternative, improvements to existing facilities, and alternatives that incorporate transit options. The No Build alternative must be evaluated as a bench mark against which to compare both the performance and environmental consequences of the other project alternatives. EPA recommends that alternatives be evaluated that incorporate improvements to existing facilities such as Ironwood Road, Hunt Highway, and State Route 87. Additionally, EPA recommends that Alternatives be focused in areas to the west of the CAP canal, where feasible, in order to minimize impacts from further growth-inducement and habitat fragmentation that may result from the proposed project.

EPA recommends coordination with the Federal Transit Administration (FTA) and Valley Metro Rail (METRO) in the design and analysis of potential transit options for inclusion in the range of alternatives, including the proposed Phoenix-Tucson Intercity Rail. In exploring the option to enhance transit access, that DEIS should clearly identify what forms of transit facilities are currently in operation and the plans for future expansion. Furthermore, the DEIS should identify activities that can be undertaken by FHWA, Arizona Department of Transportation (ADOT), and/or other responsible agencies, such as FTA and METRO, to enhance transit ridership and effectively increase overall mobility throughout the region.

Finally, as further described below, there may be a need for a Clean Water Act Section 404 Individual Permit for fill of waters of the U.S. during NEPA analyses for the project. Compliance with the CWA Section 404(b)(1) Guidelines will require that a reasonable range of alternatives be evaluated before determining the Least Environmentally Damaging Practicable Alternative (LEDPA), which is the only alternative that can be permitted pursuant to the Guidelines.

Impacts to Aquatic Resources

Given the proximity to important aquatic resources, including the Gila River, CAP Canal, and McClellan Wash, this project may involve the discharge of dredged or fill material into jurisdictional waters. Discharges of dredged or fill material into waters of the U.S. require

authorization by the U.S. Army Corps of Engineers (Corps) under CWA Section 404. The Federal Guidelines at 40 CFR Part 230 promulgated under CWA Section 404 (b)(1) provide substantive environmental criteria that must be met to permit such discharges into waters of the U.S.

The purpose of the Guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the U. S. These goals are achieved, in part, by controlling discharges of dredged or fill material (40 CFR 230.1(a)). Fundamental to the Guidelines is the principle that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that there is no less environmentally damaging practicable alternative that achieves an applicant's project purpose. In addition, no discharge can be permitted if it will cause or contribute to significant degradation of the waters of the U.S., cause or contribute to a violation of a State water quality standard, or jeopardize a federally listed species. FHWA will have to demonstrate that potential impacts to waters of the U. S have been avoided and minimized to the maximum extent practicable prior to obtaining a CWA Section 404 permit (40 CFR 230.10(a) and 230.10(d)).

Recommendations:

- A Clean Water Act jurisdictional delineation should be completed and submitted to the Corps for verification prior to release of the DEIS. This data should then be incorporated into the DEIS so that an adequate assessment of existing conditions and the environmental consequences of each proposed alternative can be made.

- Demonstrate that all potential impacts to waters and wetlands of the U.S. have been avoided and minimized to the greatest extent possible. Typically, transportation projects can accomplish this by using spanned crossings, arched crossings, or oversized buried box culverts over drainages to encourage continuity of sediment transport and hydrological processes and wildlife passage. If these resources cannot be avoided, the analyses should clearly demonstrate how cost, logistical, or technological constraints preclude avoidance and minimization of impacts.

- Include a systematic analysis for drainage crossings which identifies and prioritizes the potential for improvements to the aquatic system and for wildlife use at each crossing, as applicable. All drainage crossings should be designed so that wildlife movement is possible. We recommend that FHWA and ADOT coordinate with Arizona Department of Game and Fish regarding appropriate crossing features.

- Incorporate a buffer zone for the Gila River in the design of alternatives to adequately protect the river from indirect impacts.

- Temporary and permanent impacts to waters of the U.S. for each alternative studied should be estimated, including acres of waters impacted. For each alternative, the DEIS should report these numbers in table form for each impacted water and wetland feature.

- Quantify the benefits from measures and modifications designed to avoid and minimize impacts to wetland and water resources for each alternative studied and include this in the DEIS; for example, number of stream crossings avoided, acres of waters of the U.S. avoided, etc.

Additionally, FHWA bears the burden for clearly demonstrating that the preferred alternative for the final route is the LEDPA that achieves the overall project purpose while not causing or contributing to significant degradation of the aquatic ecosystem. Identification of the LEDPA is achieved by performing an alternatives analysis that estimates the direct, secondary, and cumulative impacts to jurisdictional waters resulting from each alternative considered. To ensure the alternatives analysis serves its intended purpose as a planning and screening tool, EPA encourages FHWA to discuss project alternatives with the Corps and EPA early in the planning process.

Waters Assessment

The waters assessment for each alternative should be of an appropriate scope and detail to identify sensitive areas or aquatic systems with functions highly susceptible to change. EPA recommends that FHWA present adequate data in the DEIS to provide decision-makers with enough information to compare impacts and make a determination of which alternative will have fewer impacts to aquatic resources.

Recommendations:

- Include the classification of waters and the geographic extent of waters and adjacent riparian areas.
- Characterize and assess the functional condition of waters and adjacent riparian areas. This assessment should take into account characteristics such as vegetation density, evidence of ponding, buffer width, soil structure, gradient, etc.
- Describe the extent and nature of stream channel alteration, riverine corridor continuity, and buffered tributaries.
- Include wildlife species affected that could reasonably be expected to use waters or associated riparian habitat and sensitive plant taxa that are associated with waters or associated riparian habitat.
- Analyze the potential flood flow alteration.
- Characterize the hydrologic linkage to any impaired water body.
- Analyze the potential water quality impact and potential effects to designated uses.
- Address techniques proposed for minimizing surface water contamination due to increased runoff from additional impervious surfaces.

Air Quality

The project is located in an area that is designated as non-attainment for 8-hour Ozone and proposed non-attainment for particulate matter less than 10 microns in diameter (PM_{10}). Because of the area's non-attainment status, it is important to reduce emissions of ozone precursors and particulate matter from this project to the maximum extent.

Recommendations:

- Ambient Conditions: The DEIS should include a detailed discussion of ambient air conditions (i.e., baseline or existing conditions), the area's attainment or nonattainment status for all NAAQS, and potential air quality impacts (including cumulative and indirect impacts) from the construction and operation of the project for each fully evaluated alternative. The DEIS should include estimates of all criteria pollutant

emissions and diesel particulate matter (DPM). EPA also recommends that the DEIS disclose the available information about the health risks associated with vehicle emissions and how the proposed project will affect current emission levels.

- Relevant Requirements: The DEIS should describe any applicable local, state, or federal requirements. The DEIS should describe applicable requirements for Federal Actions that require FHWA funding or approval and are subject to the Transportation Conformity requirements in 40 CFR part 93, subpart A and for Federal Actions that are subject to the General Conformity requirements in 40 CFR part 93, subpart B.
- Conformity: The DEIS should ensure that the emissions from both the construction and the operational phases of the project conform to the approved State Implementation Plan and do not cause or contribute to violations of the NAAQS. To meet the transportation conformity requirements, the DEIS should demonstrate that the project is included in a conforming transportation plan and transportation improvement program.
- Traffic: The DEIS should describe how any traffic estimates were developed and how these traffic estimates relate to regional transportation estimates included in the regional transportation plan. Any supporting documents on which the conclusions of the project's impacts to air quality are based, such as traffic data and other air analyses, should be included in the DEIS.

Construction

FHWA should include a Construction Emissions Mitigation Plan in the DEIS and adopt this plan in the Record of Decision (ROD). In addition to all applicable local, state, or federal requirements, EPA recommends that the following mitigation measures be included in the Construction Emissions Mitigation Plan in order to reduce impacts associated with emissions of particulate matter (PM) and other toxics from construction-related activities:

Recommendations:

Due to the rising PM_{10} concentrations in Pinal County, EPA recommends that the best available control measures (BACM) for this pollutant be implemented at all times. We further recommend that the following additional measures be incorporated into a Construction Emissions Mitigation Plan:

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph

Mobile and Stationary Source Controls:

- Reduce use, trips, and unnecessary idling from heavy equipment.
- Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.

- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels and to perform at verified standards applicable to retrofit technologies.
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards. Tier 4 engines should be used for project construction equipment to the maximum extent feasible[1]. Lacking availability of non-road construction equipment that meets Tier 4 engine standards, FHWA should commit to using the best available emissions control technologies on all equipment.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Administrative controls:

- Identify all commitments to reduce construction emissions and update the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.) Where appropriate, use alternative fuels such as natural gas and electric.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

Greenhouse Gas Emissions

Arizona has one of the highest greenhouse gas (GHG) emissions growth-rates of any state, with transportation being the greatest contributor to these emissions. As such, EPA recommends that the DEIS include a quantitative analysis of the GHG emissions that will result from implementation of the project and discuss the full implication of those emissions on the greater Phoenix metropolitan area. In addition, we recommend that the DEIS identify all measures that will be taken to minimize GHG emissions and promote initiatives to reduce the

[1] Diesel engines < 25 hp rated power started phasing in Tier 4 Model Years in 2008. Larger Tier 4 diesel engines will be phased in depending on the rated power (e.g., 25 hp - <75 hp: 2013; 75 hp - < 175 hp: 2012-2013; 175 hp - < 750 hp: 2011 - 2013; and ≥ 750 hp 2011- 2015).

Project's overall carbon footprint. Examples of such initiatives can be found in Arizona's Climate Change Action Plan (http://www.azclimatechange.gov/download/O40F9298.pdf) and include, (1) implementing transportation policies to promote smart growth planning, (2) promoting multi-modal transit, and (3) providing incentives for accelerated replacement of high-emitting diesel vehicles, among others.

Growth-related Indirect Impact Analysis

EPA is concerned about the potential indirect impacts (40 CFR Part 1508.8(b)) of this project related to growth-inducement. Improved access to undeveloped areas may affect the location and timing of growth on surrounding lands, leading to indirect impacts to air quality, waters, biological resources, etc. Growth-inducement may also lead to an increased loss of farmlands which have already been heavily impacted by extensive development in the area. The project would benefit from analysis of growth-related impacts early in project development. A growth-related impact analysis assists with compliance requirements of NEPA by considering environmental consequences as early as possible and providing a well-documented and sound basis for government decision making.

Recommendations:

- Use the Guidance for Preparers of Growth-related, Indirect Impact Analyses (http://www.dot.ca.gov/ser/Growth-related_IndirectImpactAnalysis/gri_guidance.htm) which was coauthored by FHWA, Caltrans, and EPA and is applicable to impact analyses for projects outside of California.

- Identify if the project will affect the location and/or timing of planned growth in the area. Specifically, the analysis should identify the potential resources that may be affected by the increased "zone of influence" associated with interchanges and impacting resources outside of the right-of-way.

- Identify the types of resources that are likely to occur in geographic areas that may be affected by growth. If it is determined that there will be no, or insignificant, impacts to resources of concern, then document the analysis process and report the results. EPA recommends following the Step-by-Step Approach for Conducting the Analysis in Chapter 6 of the above-referenced Guidance.

- Include a discussion of mitigation strategies to reduce impacts if adverse impacts cannot be avoided or minimized. Section 6.3 of the Guidance provides an approach to address mitigation for growth-related impacts.

- Include a discussion of how the project could be integrated with smart growth and sustainability principles, such as those recommended in the International City/County Management Association's report regarding smart growth in rural communities (http://icma.org/en/icma/knowledge_network/documents/kn/Document/301483/Putting_Smart_Growth_to_Work_in_Rural_ Communities) and in the HUD/DOT/EPA Partnership for Sustainable Communities (http://www.epa.gov/smartgrowth/partnership/). In particular, the DEIS should include discussion of actions that can be taken during project development to foster the implementation of smart growth strategies in the project area, including limiting the number of exits in rural areas, increasing distance between

exits, and working with transit providers to ensure multi-modal opportunities are available between small communities and job centers. Additionally, we urge FHWA to coordinate with local municipalities in the pursuit of zoning ordinances that encourage smart growth, thus reducing the project's potential for impacts related to growth-inducement.

Cumulative Impact Analysis

Cumulative impacts are defined in CEQ's NEPA regulations as the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7). These actions include both transportation and non-transportation activities. The cumulative impact analysis should consider non-transportation projects such as large-scale developments and approved urban planning projects that are reasonably foreseeable and are identified within city and county planning documents.

The cumulative impact analysis should describe the "identifiable present effects" to various resources attributed to past actions. The purpose of considering past actions is to determine the current health of resources. This information forms the baseline for assessing potential cumulative impacts and can be used to develop cooperative strategies for resource protection (CEQ's Forty Most Frequently Asked Questions #19).

Recommendations:

- Conduct a thorough cumulative impact assessment that includes a complete list of reasonably foreseeable actions, including non-transportation projects.

- EPA recommends the use of the June 2005 *Guidance for Preparers of Cumulative Impacts Analysis* developed jointly by Caltrans, FHWA, and EPA [http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm]. The guidance will assist in identifying cumulative impacts and preparing an analysis that is sound, well documented, and compliant with CWA Section 404(b)(1) Guidelines. As included in the above-referenced Guidance, the DEIS should include the following eight steps for identifying and assessing cumulative impacts:

  1) Identify the resources to consider in the cumulative impact analysis by gathering input from knowledgeable individuals and reliable information sources. This process is initiated during project scoping and continues throughout the NEPA analysis.
  2) Define the geographic boundary or Resource Study Area (RSA) for each resource to be addressed in the cumulative impact analysis.
  3) Describe the current health and the historical context of each resource.
  4) Identify the direct and indirect impacts of the proposed project that might contribute to a cumulative impact on the identified resources.
  5) Identify the set of other current and reasonably foreseeable future actions or projects and their associated environmental impacts to include in the cumulative impact analysis
  6) Assess the potential cumulative impacts.

7) Report the results of the cumulative impact analysis.
8) Assess the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact.

- Identify potential large, landscape-level regional impacts, as well as potential large-scale mitigation measures.

Environmental Justice and Community Outreach

The DEIS should identify whether the proposed alternatives may disproportionately and adversely affect low income or minority populations in the surrounding area and should provide appropriate mitigation measures for any adverse impacts. Executive Order 12898 addresses Environmental Justice in minority and low income populations, and the Council on Environmental Quality has developed guidance concerning how to address Environmental Justice in the environmental review process (http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf). Community involvement activities supporting the project should include opportunities for incorporating public input, especially in Environmental Justice communities, into the facility design process to promote context sensitive design.

Recommendations:

- Identify whether the proposed alternatives may disproportionately and adversely affect low-income or minority populations and provide appropriate mitigation measures for any adverse impacts. Assessment of the project's impacts should reflect consultation with affected populations and mitigation measures should be considered where feasible to avoid, mitigate, minimize, rectify, reduce, or eliminate impacts associated with a proposed project (See 40 C.F.R. § 1508.20). Mitigation measures identified in the DEIS should reflect the needs and preferences of the affected low-income and minority populations to the extent practicable.

- Document the process used for community involvement and communication, including all measures to specifically outreach to potential environmental justice communities. Include an analysis of results achieved by reaching out to these populations. EPA has developed a model plan for public participation that may assist FHWA in this effort. *The Model Plan for Public Participation*, EPA OECA, February 2000, is available at: http://www.epa.gov/compliance/ej/resources/publications/nejac/model-public-part-plan.pdf

Protection of Historic and Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 requires federal agencies to consider the effects of their actions on historic properties, which include buildings, structures, objects, sites, districts, and archaeological resources.

Recommendations:

- Assess potential impacts to historical, archaeological, and cultural resources and coordinate with affected Tribes and other interested parties.
- Clearly document the methodology used for determining the potential impacts to cultural and historic resources.

- Address what mitigation techniques will be used should sensitive resources be discovered, including recording or removal of materials, and/or changes in project design.
- Identify the status of any Memorandum of Understanding with the State Historic Preservation Officer regarding the project.

Biological Resources

Several special-status wildlife species have the potential to occur within the project area including the Desert Tortoise *(Gopherus agassizii)* and Tucson Shovelnose Snake *(Chionactis occipitalis klauberi)*, among others. EPA recommends early coordination with the Arizona Department of Game and Fish and U.S. Fish and Wildlife Service in order to avoid and minimize project impacts to biological resources to the greatest extent possible.

Recommendations:

- Identify all petitioned and listed threatened and endangered species and critical habitat within the project area and assess which species and critical habitats might be directly or indirectly affected by each alternative.
- Include the status of the Endangered Species Act Section 7 consultation process.
- Describe efforts to avoid and/or minimize impacts to species and their associated habitats.
- In accordance with Executive Order 13112 on Invasive Species, identify proposed methods to minimize the spread of invasive species and use native plant and tree species where revegetation is planned. Commit to saving removed native soils for use in revegetation projects.
- Clearly demonstrate compliance with Section 4(f) (49 U.S.C. 303).

EPA appreciates the opportunity to provide comments on the preparation of the DEIS, and looks forward to coordinating as a Cooperating Agency in the development of the DEIS. Once the DEIS is released for public review, please send one hard copy and one electronic copy to the address above (mail code: CED-2). Please feel free to direct any questions you may have concerning our comments to me at (415) 972-3370 or meek.clifton@epa.gov.

Sincerely,

Clifton Meek, Life Scientist
Environmental Review Office

Cc: Rebecca Swiecki, ADOT
Kathleen Tucker, U.S. Army Corps of Engineers
Greg Beatty, U.S. Fish and Wildlife Service
Dana Warnecke, Arizona Department of Game and Fish

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November 8, 2010

Ms. Angie Brown
ADOT Consultant for Community Relations
Gordley Design Group
2540 N. Tucson Blvd.
Tucson, Arizona 85716

RE: North-South Corridor Study
US 60 to Interstate 10 Location / Design Concept Report and Environmental Impact Statement
Public Scoping Comments

Dear Ms. Brown:

The Arizona Game and Fish Department (Department) appreciates the opportunity to provide preliminary comments on the North-South Corridor Study. The Department understands the North-South Corridor Study was initiated to identify and evaluate possible transportation routes for a connection between US 60 and Interstate 10 in Pinal County. The following comments iterate and supplement verbal comments provided in a meeting with an Arizona Department of Transportation (ADOT) consultant from HDR, Inc. on August 16th, 2010, and at two public scoping meetings held October 26, 2010, and October 28, 2010. The Department believes the future design concept report and environmental impact statement should thoroughly evaluate our comments and recommendations described below. As the study and environmental impact statement progress, the Department will have additional comments and recommendations on the proposed North-South Corridor.

General Comments

The Department's primary concerns with most new roadway projects, such as the proposed North-South Corridor, include:

- Fragmentation, degradation, and complete loss of wildlife habitat,
- Future degradation of wildlife populations and habitats along the transportation route from indirect and direct effects,
- Collisions between vehicles and wildlife that result in property damage, human injuries, and loss of life (human and wildlife),
- Diversion or impediment of important and historical wildlife movement corridors/linkages,
- Introduction and spread of invasive plant species,
- Facilitation of unauthorized off-road access to previously undisturbed areas,
- Loss of access to public or State Trust Lands for hunting or recreational activities, and
- Negative impacts to special status (i.e. federal and state) and common native wildlife species.

The Department recognizes that in the development and implementation of a project such as the North-South Corridor, some loss of wildlife and habitat is inevitable. The first step in addressing the potential loss of wildlife and wildlife habitat is to avoid the impact(s). If avoidance is not feasible, then minimizing and mitigating potential negative impacts should be evaluated. The general recommendations described below begin to address avoidance and minimization strategies. For wildlife and habitat losses that cannot be avoided, it is the policy of the Arizona Game and Fish Commission that the Department shall seek compensation at a 100% level, where feasible, for actual or potential habitat losses resulting from land and water projects.

General Recommendations

Corridor Orientation

The Department recommends focusing placement of the proposed transportation corridor on the west side of the Picacho Mountains, and in general, west of the Central Arizona Project Canal. This route would substantively reduce the negative impacts on wildlife and habitat by taking advantage of lands that are already disturbed. Much of the potential route could be positioned to pass through previously disturbed lands (e.g., agricultural fields), small or isolated parcels, and along existing roadways. Any transportation route on the east side of the Picacho Mountains would negatively impact wildlife and habitat by bisecting a large, relatively undisturbed natural area.

Use of Existing Roadways

As feasible, the proposed transportation corridor should parallel as close as possible, or perhaps in some cases replace, existing roadways (e.g., State Route 87) and railroad lines (e.g., Union Pacific). Existing roadways and railroad lines can impede wildlife movement or act as a barrier to some species, and therefore are usually already avoided by wildlife.

Wildlife Corridors / Wildlife Linkage Research

Maintaining wildlife connectivity between the Mineral Mountains, San Tan Mountains, Picacho Mountains, and Gila River corridor is important to the Department. As currently proposed, the North-South transportation corridor will pass through several areas identified as potential wildlife linkage zones and corridors in both the 2004 Arizona Wildlife Linkages Workshop and 2010 Pinal County Wildlife Linkages Workshop. Another important wildlife corridor that would be impacted by the proposed transportation corridor is the Ironwood - Picacho Linkage Design located at I-10 and Picacho Peak. This wildlife corridor was modeled by Dr. Paul Beier at Northern Arizona University (results available online at: http://corridordesign.org/linkages/arizona). All these corridors are utilized by wildlife for daily or seasonal movement between habitats. Disrupting these wildlife movement corridors without first incorporating appropriate mitigation measures could have serious negative consequences for some wildlife species and populations. The Arizona Wildlife Linkages Workgroup, of which ADOT is a member, has supported and provided oversight for both aforementioned workshops.

Data and Research Needed

A few of the Department's concerns may be adequately addressed with common roadway mitigation measures; however, others can only be addressed with scientifically-based research. The Department strongly recommends that funding be secured by ADOT or the Federal Highway Administration to support research to identify new and/or refine suspected wildlife corridors in the study area. Funding should be provided very early in the planning process to make the best use of the data. Ideally this research would support the development of mitigation measures (e.g., culvert size and location, under

or overpasses, barrier fencing, etc.) that could minimize the potential impact of the proposed transportation corridor.

Special Status Species and Native Wildlife

A search of the Department's Heritage Data Management System database indicates the documented occurrence of many special status species within the corridor study area (with a 5-mile buffer). Examples of these species include: Tucson Shovel-nosed Snake, Sonoran Desert Tortoise, Western Burrowing Owl, Lesser Long-nosed Bat, etc. The Department has provided this list of special status species to the project consultant (i.e. HDR, Inc.). A copy of this special status species list is enclosed with this letter for your reference. Please note that early and consistent coordination with the Department and the U.S. Fish and Wildlife Service will be needed to minimize the impact of the proposed transportation infrastructure on special status and common wildlife species, and their habitats. Saguaro cacti for example, provide habitat or food resources for special status species like lesser long-nosed bats, pygmy owls, and others. Natural desert areas within the transportation study corridor with saguaros should be avoided to the greatest extent possible. Any negative impacts or damage to saguaros within the study area should be mitigated. The Department also recommends funding be secured to support efforts to survey the study area for special status species and their habitats, and to identify measures to help minimize impacts resulting from the proposed transportation corridor.

In addition to special status species, there are many more common wildlife species associated with the Sonoran desert scrub vegetative community within the study area. Once the transportation corridor is complete, and as future development occurs in and around the proposed study area, many of the desert washes that bisect the transportation corridor will become increasingly important to wildlife. The Department recommends designing a transportation route that avoids and minimizes impacts to the desert washes, their floodplains, and especially the Gila River.

Conservation and Open Space

The study corridor bisects a large portion of currently undeveloped land in Pinal County. As a stakeholder committed to the development and implementation of the Pinal County Open Space and Trails Master Plan (Plan), the Department recommends development of a transportation corridor that does not negatively impact future implementation of the Plan. Early and consistent communication and collaboration with the Pinal County Planning Department and impacted local governments, is essential.

The Department appreciates the opportunity to provide comments during the Public Scoping period, and does request the opportunity to provide additional comments as the North-South Corridor study progresses. For future correspondence and coordination please direct all information to the two Department contacts listed below:

Mr. Mike Demlong
Habitat Specialist – Region V
Arizona Game and Fish Department
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Sincerely,

Josh Avey
Habitat Branch Chief

Attachment

cc: Laura Canaca, Project Evaluation Program Supervisor
Mike Demlong, Habitat Specialist, Region V
Dana Warnecke, Habitat Specialist, Region VI
Steve Spangle, Field Supervisor, Phoenix Ecological Services Field Office
Kent Taylor, Director, Pinal County Planning Department
Margaret Cook, Director of Environmental Quality, Gila River Indian Community
Stephen Williams, Arizona State Land Department
Rebecca Swiecki, ADOT Environmental Planning Group

AGFD #M10-10072459

Special Status Species within 5 Miles of the North-South Corridor

NAME	COMMON NAME	FWS	USFS	BLM	STATE	QUAD	TOWNRANGE
Abutilon parishii	Pima Indian Mallow	SC	S	S	SR	33111-D4	010N090E
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S	WSC	33111-D4	010N090E
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S	S	WSC	33111-D4	010N090E
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		33111-B6	020S070E
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		33111-C6	020S070E
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C		S		33111-B4	020S080E
Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S			33111-C5	020S080E
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C		S		33111-B3	030S100E
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S	S	WSC	33111-B3	030S100E
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S	S	WSC	33111-A4	040S090E
Phyllorhynchus browni	Saddled Leaf-nosed Snake		PS			33111-A3	040S100E
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		32111-H5	050S070E
Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S	S		33111-A4	050S090E
Catostomus insignis	Sonora Sucker	SC	S	S		33111-A4	050S090E
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C		S		33111-A4	050S090E
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C		S		32111-H3	050S100E
Ardea alba	Great Egret			S	WSC	32111-G4	060S080E
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		32111-G5	060S080E
Ixobrychus exilis	Least Bittern			S	WSC	32111-G4	060S080E
Rallus longirostris yumanensis	Yuma Clapper Rail	LE			WSC	32111-G4	060S080E
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C		S		32111-G4	070S080E
Coccyzus americanus	Yellow-billed Cuckoo (Western U.S. DPS)	C	S		WSC	32111-G4	070S080E

NAME	COMMON NAME	FWS	USFS	BLM	STATE	QUAD	TOWNRANGE
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S	S	WSC	32111-G3	070S100E
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C		S		32111-F4	080S080E
Abutilon parishii	Pima Indian Mallow	SC	S	S	SR	32111-F4	080S090E
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C		S		32111-F4	080S090E
Ferocactus cylindraceus	Desert Barrel Cactus				SR	32111-F4	080S090E
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S	S	WSC	32111-F4	080S090E
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC	S	S	WSC	32111-F2	080S110E
Bat Colony						32111-F4	090S090E
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S	S	WSC	32111-F4	090S090E
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE			WSC	32111-F4	090S090E
Macrotus californicus	California Leaf-nosed Bat	SC	S	S	WSC	32111-F4	090S090E
Myotis velifer	Cave Myotis	SC				32111-F4	090S090E
Opuntia versicolor	Stag-horn Cholla				SR	32111-E3	090S100E
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC	S	S	WSC	32111-E2	090S110E
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S	S	WSC	32111-E2	090S110E
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C		S		32111-E3	100S100E
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S	S	WSC	32111-E2	100S110E
Stenocereus thurberi	Organ Pipe Cactus				SR	32111-E2	100S110E

Gila River Indian Reservation
Ironwood - Picacho Linkage Design

Gila River Indian Reservation
Wildlife Corridor

within project area

Douglas A. Ducey
Governor

Lisa A. Atkins
Commissioner

Arizona State Land Department

1616 West Adams, Phoenix, Arizona 85007
(602) 542-4631

January 19, 2016

Victor Yang P.E.
Arizona Department of Transportation
Major Projects Group Manager
Multimodal Planning Division
205 S.17th Ave, MD605E
Phoenix, AZ 85007

Re: Proposed Idaho Rd. Alignment for the North/South Freeway Corridor, Pinal County

Dear Mr. Yang,

Thank you for meeting with the Arizona State Land Department to inform us of ADOT's plan to reconsider Idaho Road as a potential alignment for the proposed North South Freeway. As we explained in that meeting, and at the subsequent Stakeholder meeting held May 14, 2015, the Department position regarding a preferred alignment remains unchanged. The Department's preferred alternative is the alignment that starts at the curve of US 60 in the vicinity of the Mountain View Road alignment and continues through Lost Dutchman Heights and Superstition Vistas. This is referred to as the "I" and "J" alignments in the Alternatives Selection Report.

We understand that there may be some confusion related to a 12 square mile project called Lost Dutchman Heights (also known as Portalis). The Department has been working a Master Plan for Lost Dutchman Heights since 2003. In 2006 we sold a 1,000 acre parcel from that area contingent on the purchaser placing 6.25 million dollars in an escrow account to fund the planning for the entire 12 square mile project area. (See attached Map) During the recession, the purchaser of the 1,000 acres defaulted on the sale, and the land was returned to the Department.

There are funds remaining in the escrow account and the Department is currently considering how it should continue the planning process and where the remaining funds could be best spent to obtain maximum value. The Project is not "defunct" as stated in the presentation at the July 14 Stakeholder meeting.

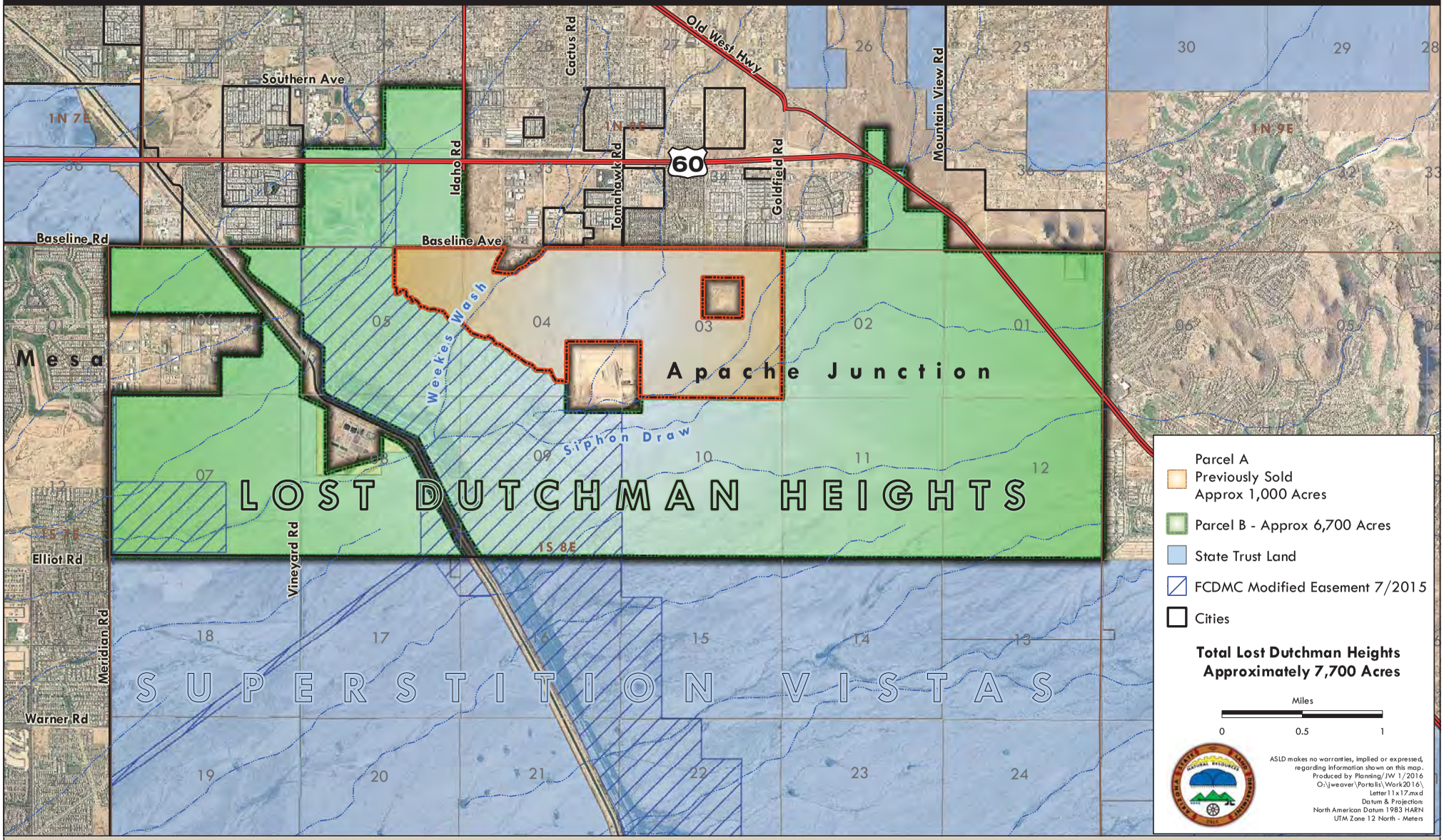
I hope this letter clarifies the Department's position on the proposed Idaho Road alignment. Should you have any questions or require additional information please do not hesitate to contact Michelle Green at 602-364-2502 or via e-mail at mgreen@azland.gov.

Sincerely,

Lisa A. Atkins
Commissioner

cc: Mark Edelman, Manager, Planning and Engineering Section
Michelle Green, Project Manager, ASLD

LOST DUTCHMAN HEIGHTS



ARIZONA STATE LAND DEPARTMENT

THE STATE OF ARIZONA
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February 3, 2016

Mr. Victor Yang
Arizona Department of Transportation
205 South 17th Avenue
MD 605E
Phoenix, AZ 85007

Re: Preliminary Evaluation for the Arizona Department of Transportation's North-South Corridor Study Analysis

Dear Mr. Yang:

The North-South Corridor Study area is a new new transportation route designed to provide a continuous north-south route through central Pinal County. The Arizona Department of Transportation (ADOT) and Federal Highway Administration (FHWA) are studying the area between U.S. Route 60 in Apache Junction and Interstate 10 near Eloy and Picacho. The purpose of the study is to identify and evaluate a possible route to provide a connection between these two areas. The North–South Corridor Study will result in the preparation of a Location/Design Concept Report (L/DCR) and an Environmental Impact Statement (EIS) for the proposed 45-mile-long transportation corridor.

The Arizona Game and Fish Department (Department) appreciates this opportunity to submit the results of our preliminary evaluation of the potential impacts to wildlife and wildlife habitat along the North-South Corridor Study area (North-South Corridor). In addition to identifying potential impacts to sensitive resources along the corridor alternatives, this evaluation has also allowed us to identify data needs and mitigation opportunities along these alternative routes.

METHODOLOGY

The Department recognizes that use of Geographic Information Systems (GIS) and geospatial data can be powerful tools for wildlife conservation and planning. In addition to web-based tools such as HabiMap Arizona (www.habimap.org) and the Online Environmental Review Tool (www.azgfd.gov/hgis), site-specific project evaluation and analysis may require additional data. The Department has been developing a repeatable and standardized approach that facilitates the incorporation of relevant geospatial datasets in order to identify potential impacts of projects on wildlife and habitat resources and wildlife-related recreation. Our goal is to provide a general assessment of the potential effects of the various alternatives identified by the ADOT. We will enhance this initial assessment as additional data and information become available throughout the project planning timeline.

Initially, the Department examined each segment for the potential impact of the infrastructure on the following wildlife/habitat/recreation resources in the area, and determined or identified:

1.) Vegetation/land cover
   - Potential impacts on the natural versus built environment
   - Amount of riparian resources that could be affected
2.) Hydrologic function
   - Amount of waterways that are potentially affected
   - Perennial water that could be affected
   - Amount of floodplain that might be affected
3.) Landscape connectivity
   - Known permeability concerns already in the area
   - Areas that are important for wildlife connectivity
4.) Landscape integrity
   - Level of disturbance in the area
   - Potential for a road corridor to fragment or isolate blocks of currently in-tact land
5.) Wildlife and wildlife habitat
   - Department concerns for the wildlife in the area, including: Species of Economic and Recreational Importance, Species of Greatest Conservation Need, Federal listed species and associated critical habitat, and key species habitat within the area
6.) Conservation and wildlife management lands
   - Any lands that have been acquired or are managed for conservation or wildlife considerations in the area
7.) Outdoor and wildlife-related recreation
   - Potential impacts of the road segments on hunting/fishing/wildlife viewing in the area, including access to surrounding lands

To adequately answer these questions, each segment of the North-South Corridor was attributed in GIS with the best available data. The results of these analyses are summarized in Table 1, and detailed in Attachments 2a and 2b. The method to populate the segments depends on the type and spatial resolution of the input data. For example, segments were assigned the maximum value among all the intersected 30 meter pixel raster data values from the HabiMap layers, and the landscape integrity data had both a maximum score and majority score attributed to give a clearer picture of the values within each segment (Figure 1). For other datasets, a length, area, or occurrence of overlapping features was attributed to the segments.

One aspect of the analysis worth noting is that the segments are not uniform in size, which may result in unintended disparity in output numbers. For example, the transition segments, and segments V and X, are of different widths than the standard 1,500-foot width of the other segments. Segments Q and O3 are particularly long, which could result in an under- or over-representation of underlying data when compared to other segments. These factors were considered in the summarized analysis results.

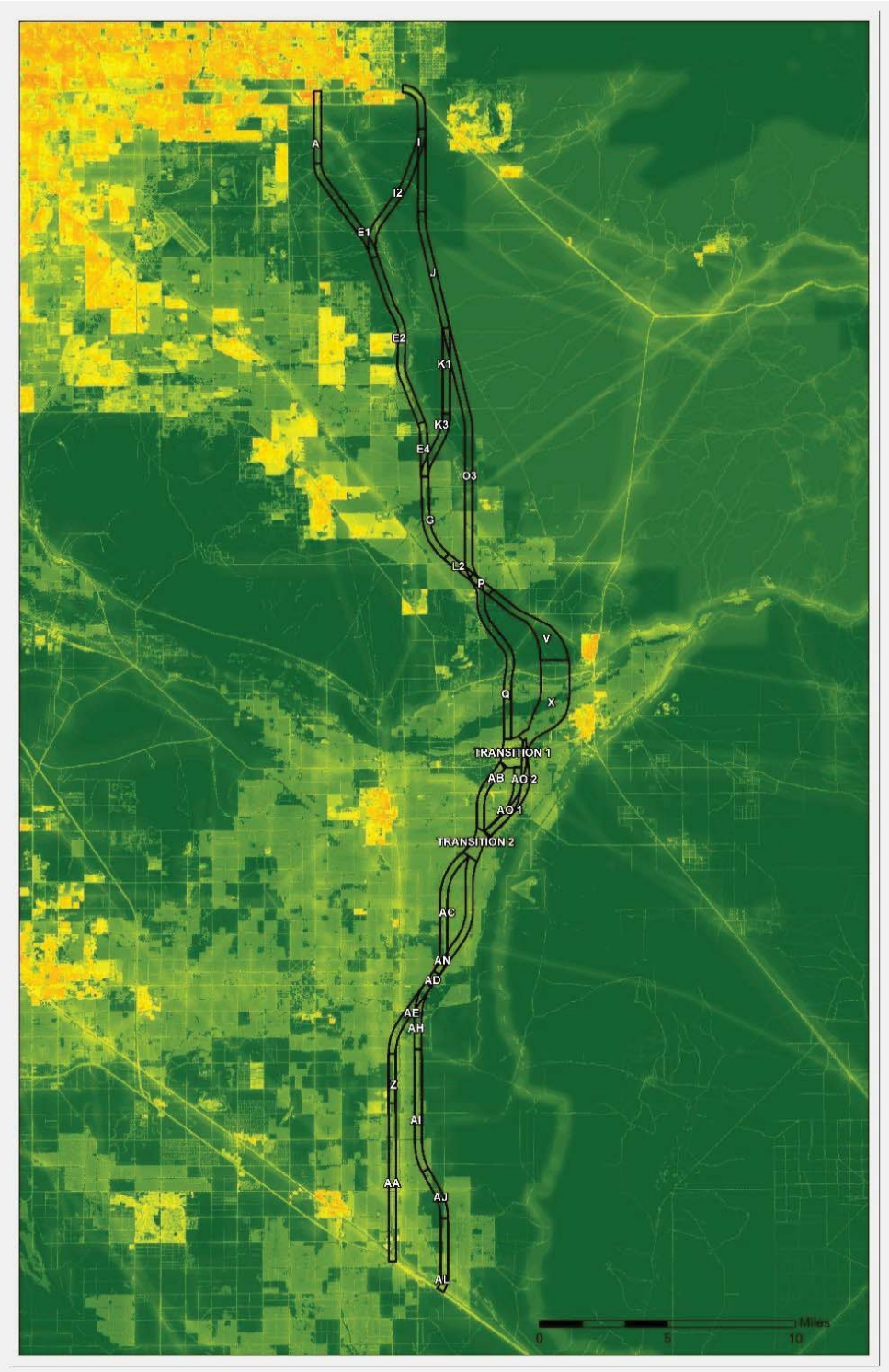

Figure 1: North-South Corridor Segments and Landscape Integrity dataset
Alignments in this figure are overlaid on top of the AGFD Landscape Integrity dataset.

The Department evaluated each segment separately and categorized the potential impacts per segment as low, moderate, or high (Figure 2). Expert opinion of Department staff was relied upon for the ranking, based on the quantitative values in relation to other segments; i.e. if the number of linear feet of waterways per acre ranged between 0 and 16 among the segments, segments with 0-5 linear feet per acre were ranked low, segments with 6-10 linear feet per acre were ranked moderate, and segments with greater than 10 feet per acre were ranked high. While it is understood that a transportation corridor would require ground disturbance at any given location, the expected level of impact to sensitive resources would differ depending on its placement within the landscape (i.e. within dense urban development, adjacent to existing transportation facilities, within an agricultural area, or within native habitat currently un-bisected by a roadway or rail line). "New" transportation facilities would result in the highest amount of actual disturbance and fragmentation to habitat, while "expansion" segments, which fall adjacent to existing facilities, would result in less habitat fragmentation). Evaluation criteria values were weighted according to the potential degree of impact given current land use. Data sets, types, and sources used in analysis, and the analytical methods used, are described in Attachment 1.

ANALYSIS RESULTS

In general, the western-most segments would result in fewer impacts to wildlife, habitat, and wildlife resources, than the segments to the east. Table 1 summarizes the results of the Department's evaluation, including a segment by segment ranking, with discussion comments to provide context for the ranking. Each segment was given an overall ranking; a high rating indicates potential significant impacts to resources; a moderate rating indicates moderate to significant impacts to resources, with the potential to minimize or mitigate impacts; and a low rating indicates limited impacts to resources if appropriate mitigation measures are implemented. Datasets, types, and sources used in analysis, and the analytical methods used, are described in Attachment 1. The evaluation criteria results, showing the data associated with each segment and resource category, are detailed in Attachments 2a and 2b.

- Segments A, E1, and E2, are situated west of the CAP canal, which is an existing constraint to east-west wildlife movement in the area. When compared to segments I, I2, and J, which are situated east of the CAP canal, the segments to the west would result in fewer impacts to terrestrial wildlife movement through the area, and less overall habitat fragmentation. The same is true for western segments E4, G, and L2, when compared to eastern segments K1, K3, and O3. Additionally, the eastern segments (K1, K3, and O3) contain a greater amount of native desert habitat for key species of concern such as kit fox (*Vulpes macrotis*), Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*), and the Sonoran desert tortoise (*Gopherus morafkai*).

- A data-driven comparison between Segment Q (western segment), and Segments P, V, and X (eastern segments), is difficult due to the significant size differences of the segments. Segment Q is a very long segment that is consistent with the typical 1,500-foot corridor width, while resources within P, V, and X would collectively be compared to resources within Segment Q, but the width of V and X are much greater than Q. Despite the quantitative comparison challenges, Segment Q would likely result in fewer impacts to

wildlife, habitat, and wildlife resources. A large portion of Q parallels an existing railway, thereby minimizing additional fragmentation of the native vegetation that acts as a linkage between the San Tan Mountains and open space and mountain ranges to the east.

- Transitions 1 and 1-2 are similar in length and would have similar overall impacts to wildlife and wildlife habitat when looking at a direct comparison; however, Transition 1-2 would only be employed to connect eastern Segments P/V/X and AO2. Given the previously-stated concerns about the eastern segments, the Transition 1 would contribute to fewer overall corridor impacts to wildlife and wildlife resources.

- As the corridor progresses south to Interstate 10, the western segments, including AC, AE, Z, and AA, are expected to have fewer overall impacts to wildlife and wildlife resources. Segments AE, Z, and AA would expand the existing State Route 87, whereas agricultural lands with small dirt farm roads comprise the eastern routes. The eastern segments are closer to the native habitats and open spaces to the east of the corridor, including the Picacho Reservoir; there is a higher likelihood that the eastern routes would indirectly affect the adjacent open space through noise, lighting, and air quality, etc., as well as limiting opportunities for recreationists to access the open space.

CONSIDERATIONS

Agricultural Lands

Almost all of the vegetation/land cover types found within the North-South Corridor segments provide valuable habitat to different wildlife species. As seen in Attachment 3, a very small percentage of the segments contain developed land (residential or industrial development); agricultural cropland and native desert scrub vegetation comprise the majority of the land cover within the North-South Corridor. The ranking of segments as “Low”, “Moderate”, or “High” is relative to other segments within the project area; the agricultural lands may be ranked as moderate or low, but the value of agricultural lands should not be discounted as there are many species utilizing these areas. Agricultural croplands often provide habitat for migratory birds and species that may occur year-round, such as the western burrowing owl (*Athene cunicularia hypugaea*) and other foraging raptors.

Picacho Reservoir

The Department owns and manages a portion of the Picacho Reservoir lands along with the Bureau of Land Management (BLM), and the Arizona State Land Department (ASLD). Historically, this reservoir has provided excellent habitat for wildlife, including waterfowl. It has been a popular destination for birding, fishing, and hunting. Currently, the Picacho Reservoir is dry, as water flow to the reservoir has been diverted to provide irrigation to nearby croplands since 2010. Although the reservoir does not currently contain water, the Department’s evaluation treats the reservoir as if it is still holding water. This is necessary to adequately represent the reservoir’s high habitat value, should it be filled in the future.

Passenger Rail Comparison

When reviewing the Arizona Passenger Rail Corridor Study- Tucson to Phoenix (Passenger Rail) project, the Department identified the Orange alternative as having the most potential impacts to wildlife resources. Although the Orange Passenger Rail alternative overlaps much of the North-South Corridor, the Department's ranking of segments within the Passenger Rail Corridor (AGFD 2014) cannot be directly applied to the areas of overlap. The Passenger Rail evaluation, similar to the North-South evaluation, ranked segments in relation to other segments within the project area, i.e. the Green, Yellow, and Orange routes were compared, and of those routes, the Department determined that the Orange could result in the most impacts to wildlife movement and fragmentation of habitat. Similarly, when comparing the western segments to the eastern segments of the North-South Corridor, the eastern segments could result in the greatest impacts.

CUMULATIVE IMPACTS

In 2011, Pinal County amended the Comprehensive Plan to include the vision for Superstition Vistas, a large development in an undisturbed landscape. This amendment includes the conversion and loss of lands designated for conservation and recreation to moderate low density residential (1-1.3 du/ac) and residential (1du/ac) north of Highway 60 and east of Highway 79, south to Florence.

Maricopa County Flood Control District's flood-control structures are also found in the vicinity of the North-South Corridor. The mesquite bosque vegetation associated with these flood-control structures provides high quality habitat and year round water sources for wildlife. These structures are adjacent to the CAP, which also presents a barrier to wildlife movement. The proposed regional CAP trail would also traverse the flood control structures, further fragmenting habitat along the CAP. The North-South Corridor encompasses the CAP and flood control structures, and transverses the CAP in some locations. Cumulatively, the loss of habitat, fragmentation, new barriers to movement, and loss of movement corridors, open space and recreation in this area could have significant impacts to wildlife resources.

- It is important that ADOT consider cumulative impacts to wildlife habitat and recreation opportunities in the vicinity of the North-South Corridor.

Should the Passenger Rail be constructed in the vicinity of the North-South Corridor, the potential cumulative impacts of the these two barriers to wildlife movement should be examined. According to Forman et al., "Road density appears to affect many species of large animal…and many other ecological patterns can be related to road density" (2003). Additionally, the Handbook of Road Ecology identifies that "The density and configuration of the road network across the landscape are important drivers of the scale and intensity of road impacts on wildlife" (van der Ree et al. 2015).

- It is especially imperative that ADOT consider cumulative impacts to wildlife movement. If additional information/data/studies are needed from the Department for ADOT to perform this analysis, we request further coordination with ADOT to coordinate on the analysis.

DATA NEEDS

Tucson shovel-nosed snake, kit fox, and Sonoran Desert tortoise have been recorded within the native desert lands east of the North-South Corridor (Attachment 4; Grandmaison et al 2010; Jones 2016; Grimsley et al. 2015; Hoffman and Leavitt 2015). In order to fully evaluate project effects to the local populations of these species, as well as movement issues and needs, more information is needed about their current distribution and movement patterns across the proposed routes. These data are critical to establishing meaningful and effective mitigation and minimization approaches and designs for Tucson shovel-nosed snake and Sonoran Desert tortoise along the chosen route.

A greater understanding is needed of the current movement of larger mammals, such as mule deer, across Segments A, E1, E2, I, I2, J, K1, K3, O3, and especially through Q, V, and X, which connect the San Tan Mountains to the mountain ranges and open space east of the North-South Corridor. These areas have been identified as potentially important habitat for key species (Attachment 5); however, more detailed information about movement patterns and species' use, is necessary to identify appropriate mitigation for the additional barrier effects that the North-South Corridor would cause in the region.

- The Department recommends collection of movement data for target species prior to, during, and for at least four years following construction, and considers this an essential component of any mitigation strategy regardless of which route is selected. An evaluation with accompanying pre- and post-construction data is also imperative for the application of any and all mitigation components.

MITIGATION OPPORTUNITIES

Wildlife Movement

Transportation infrastructure compromises the natural movement of mammals, reptiles, and some birds. The barrier effect on wildlife results from a combination of disturbance and avoidance effects, physical hindrances, and traffic mortality that all reduce the number of movements across the barrier. The North-South Corridor is part of a larger transportation network contributing to overall statewide fragmentation, degradation, isolation, mortality and barrier effects on wildlife and habitats. Therefore, individual infrastructure projects should be evaluated at a landscape scale, considering their contributions to the cumulative impacts of a larger infrastructure network. Additionally, ensuring the safe and effective movement of wildlife through the North-South Corridor also improves the safety of the roadway itself, by reducing the likelihood of wildlife-vehicle interactions and accidents.

- There are opportunities to improve connectivity over the CAP canal, which presents an existing barrier to wildlife movement.
- Opportunities also exist to improve and maintain connectivity between the Picacho Mountains and San Tan Mountains. The Gila River is a prime corridor in this area, but other connectivity opportunities, such as along washes, ridges, and other landscape features, may be present.

- A network of crossing structures including overpasses, underpass, culverts, funnel fencing, and other components should be included from the initial design stages. Specific locations and extents can be refined by execution of the surveys and movement studies indicated in the data needs section above.
- Mitigation features along the North-South Corridor need to align with corresponding mitigation features in adjacent barriers (such as the CAP wildlife crossings). Additionally, while mitigation features in existing barriers should be considered in the location of mitigation features in the North-South Corridor N-S, an absence of existing wildlife movement features is not a valid reason for omitting movement features in new barriers. In fact, they could be for upgrades in the existing barriers, as opportunities are presented to do so.

Impacts to Wildlife

Arizona's State Wildlife Action Plan (SWAP) provides a comprehensive vision for managing Arizona's fish, wildlife and wildlife habitats. The SWAP identifies the Species of Greatest Conservation Need (SGCN) and Species of Economic and Recreation Importance (SERI) for the State of Arizona.

- The Department recommends that potential impacts to, as well as appropriate avoidance and minimization measure for, all state trust species be addressed in the upcoming NEPA analysis. Attachment 4 details known occurrences of special status species in the project vicinity. Attachment 5 identifies SGCN and SERI predicted within the project vicinity based on predicted range models.

Impacts to Habitat

It is the Department's policy to seek compensation at a 100% level, when feasible, for actual or potential habitat losses resulting from land and water projects (Department Policy I2.3).

- The Department recommends that all impacts to habitat be mitigated in-kind (i.e. impacts to Sonoran Desert scrub habitat should be mitigated with Sonoran Desert habitat), through a combination of on-site impact avoidance and/or minimization when feasible, and off-site preservation, creation, or compensation.

Recreation/Open Space Access

The Department recommends examining the potential effects of the Corridor to economically important recreation opportunities. Many of the Segments cross roadways that currently provide access to recreation opportunities within, or east of, the North-South Corridor; some of these access concerns are identified below:

- Recreationists access the open space east and west of Segment A for small game hunting. A parking or pullout area for hunters would be a great addition, as no parking is currently present.
- Segments AE and AH cross Selma Highway access point into Picacho Reservoir. Regardless of which route is chosen, this access to the Picacho Reservoir should be maintained.

- Recreationists access the Desert Wells Multiuse Area and hunting opportunities to the east of Segment E2, K1, and O3 using Ocotillo Rd. Maintaining recreation access is important.
- Recreationists access the Desert Wells Multiuse Area and hunting opportunities are located throughout the area. Maintaining recreation access through Segments I and I2 is critical.
- Recreationists access open space east and west of Segment J for small game hunting and OHV activities. Installation of a parking area or pullout is recommended for recreationists accessing open space.
- Recreationists access the Desert Wells Multiuse Area, and hunting opportunities to the east, using E. Skyline Drive. Maintaining recreation access through Segment E4, K3, and O3 are important.
- A gas-line dirt road through Segments Q and V provides very popular walking access for recreationists. Maintaining access is recommended.
- Houser Road, which runs east-west through Segments AA and AI, provides critical access from Highway 87 to the northern end of the Picacho Mountains. Regardless of which route is chosen, access to the adjacent open space should be maintained via Houser Road.

Indirect Effects

In addition to the typical effects to wildlife movement discussed above, pollution by toxins, nutrients, and noise from the transportation corridor can create edge effects on adjacent hydrology and microclimate, reducing the suitability of the remaining habitats. These indirect effects spread into the surrounding landscape and may contribute far more to the overall loss and degradation of natural habitat than the road body itself. The indirect effects are influenced by road and traffic characteristics, landscape topography and hydrology, wind, and vegetation. In addition, the consequent impacts on wildlife and ecosystems also depend on the sensitivity of the species in the vicinity.

- Opportunities to minimize new edge effects include: constructing the road corridor along existing infrastructure, such as the segments in the “Expanded” categories, instead of creating new infrastructure corridors; develop and implement adequate weed abatement and habitat restoration programs that monitor adjacent habitats; and adaptively address effects such as toxins, invasive species, and habitat conversion.

The Department hopes this preliminary evaluation of the North-South Corridor Study will aid ADOT in upcoming alternative selection and evaluation, and provide information on future data needs and mitigation opportunities as the study progresses. 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 Cheri Bouchér, the Department's Project Evaluation Program transportation coordinator, at cboucher@azgfd.gov (623-236-7615).

Sincerely,

Joyce Francis

Joyce Francis, PhD
Habitat, Evaluation, and Lands Branch Chief

cc: Joshua Fife, ADOT
Kurt Watzek, HDR

M16-02013521

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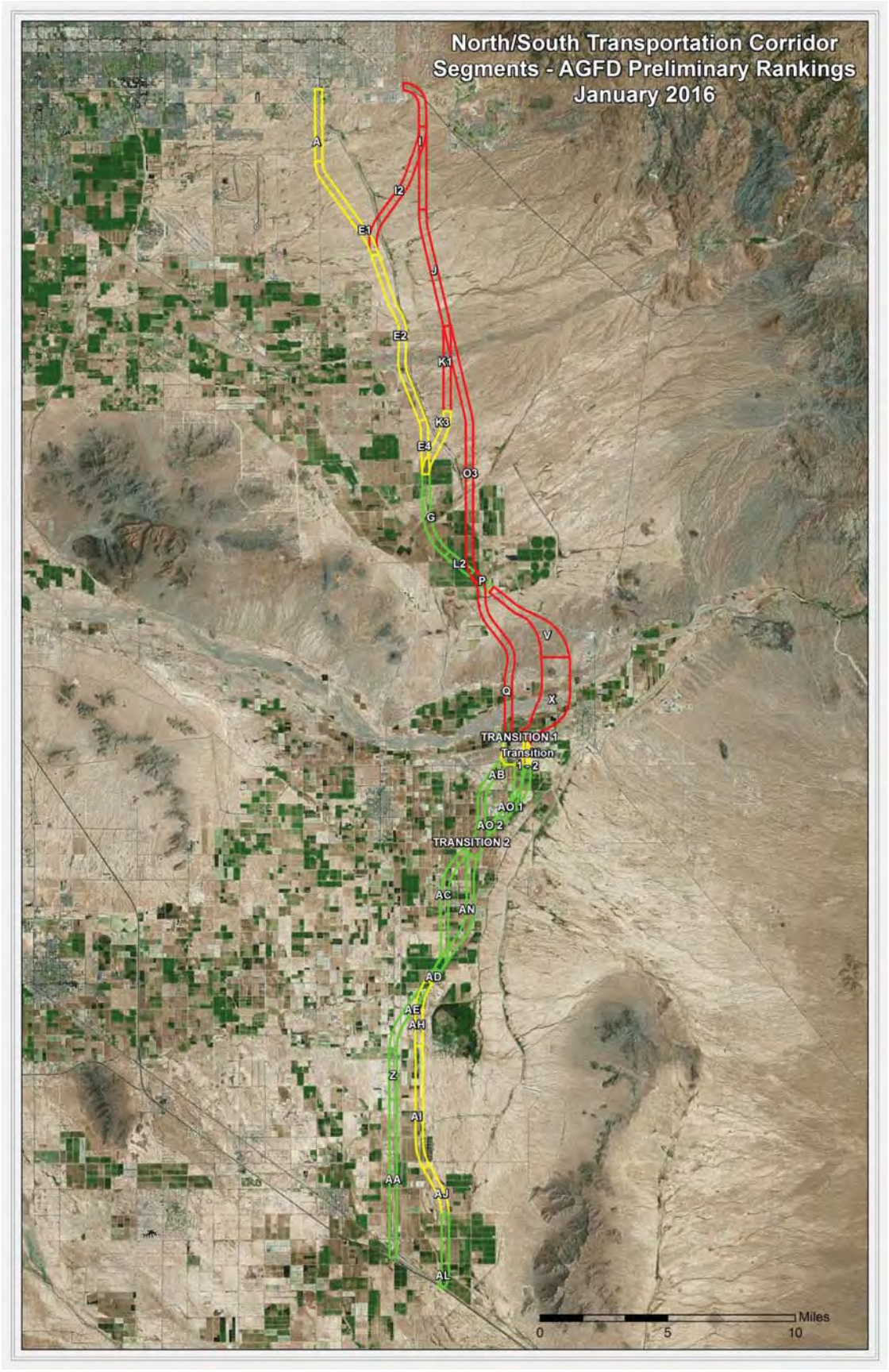

Figure 2: North-South Corridor Segments, as Ranked in Table 1

Note: This is a preliminary Level 1 evaluation based on broad alternatives. As ADOT's planning progresses, and/or as additional relevant data along the corridor alternatives is made available, the Department will adjust its evaluation to incorporate new information and/or more specific route locations.

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Table 1: Summary of Initial Segment Analysis for the North-South Corridor Study

Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
A	Expansion	High	Moderate-High	Low-Moderate	Low	High	Moderate	Moderate				1. Although the segment is dominated by native vegetation, the project would expand an existing roadway, N. Ironwood Drive. 2. High number of floodplains and waterways present, but disrupted by existing roadway and CAP canal. 3. The CAP canal and Ironwood Drive limit east-west wildlife movement through native habitat. 4. Roadway expansion not expected to increase isolation of intact blocks. 5. High percentage of segment provides suitable habitat for key species. 6. Proximity to existing and proposed open space. 7. Recreationists access the open space east and west of the segment for small game hunting. A parking or pullout area for hunters would be a good addition, as no parking is currently present.
AA	Existing	Moderate	Low	Low	Low	Moderate	Low	Low				1. Segment would be expansion of existing SR87, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High diversity of species in the vicinity and high percentage of segment provides suitable habitat for BUOW and kit fox. 6. Limited proximity to existing and proposed open space. 7. Recreationists may hunt for small game within the agricultural fields.
AB	Expansion-new	Low	Moderate	Low	Low	Moderate	Low	Low				1. Segment would be new roadway, and expansion of existing roads, primarily through agricultural fields. 2. Floodplain and waterways present along Bogart Wash. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW.

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												6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
AC	Expansion	Low	Low	Low	Low	Moderate	Low	Low				1. Segment would be new expansion of existing roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
AD	New	Low	Low	Low	Low	High	High	Low				1. Segment would be new roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. Potential indirect impacts to wildlife in adjacent native habitat. 6. Proximity to existing and proposed open space. Potential indirect impacts to wildlife in adjacent native habitat, including Picacho Reservoir. 7. Recreation opportunities for sportsmen and wildlife viewing at Picacho Reservoir.
AE	New-existing	Low	Low	Low	Low	Moderate	Moderate	Moderate				1. Segment would be new expansion of existing roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks.

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												5. High diversity of species in the vicinity and high percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. The segment crosses Selma Highway access point into Picacho Reservoir; this access should be maintained.
AH	New-expansion	Low	Low	Low	Low	High	High	High				1. Segment would be new roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. Potential indirect impacts to wildlife in adjacent native habitats, including Picacho Reservoir. 6. Proximity to Picacho Reservoir, including AGFD managed area. Potential indirect impacts to wildlife in adjacent native habitat, including Picacho Reservoir. 7. Recreation opportunities for sportsmen and wildlife viewing at Picacho Reservoir.
AI	New-expansion	Low	Low	Low	Low	High	High	Moderate				1. Segment would be new roads, through agricultural fields and some desert scrub. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. Potential indirect impacts to wildlife in adjacent native habitats, including Picacho Reservoir. 6. Proximity to Picacho Reservoir, including AGFD managed area. Potential indirect impacts to wildlife in adjacent native habitat, including Picacho Reservoir. 7. Recreation opportunities for sportsmen and wildlife viewing at Picacho Reservoir and in adjacent desert scrub.

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		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
AJ	New	Moderate	Low	Moderate	Low	High	Moderate	Moderate				1. Segment would be new roads, through desert scrub and agricultural fields. 2. No floodplain or waterways present. 3. Desert scrub vegetation connects to open space to the east through a large crossing over the CAP canal at Brady Pump Road. 4. Roadway not expected to increase isolation of large intact blocks. 5. High species diversity and high percentage of segment provides suitable habitat for key species. Potential indirect impacts to wildlife in adjacent native habitats. 6. Proximity to existing and proposed open space. 7. Recreationists may hunt for small game within the desert scrub agricultural fields.
AL	New	Low	Moderate	Low	Low	Moderate	Low	Moderate				1. Segment would be expanding existing dirt roads through agricultural fields. 2. Runoff from agricultural fields forms a floodplain or waterways present. 3. Desert scrub vegetation connects to open space to the east through a large crossing over the CAP canal at Brady Pump Road. 4. Roadway not expected to increase isolation of large intact blocks. 5. High species diversity and high percentage of segment provides suitable habitat for key species. Potential indirect impacts to wildlife in adjacent native habitats. 6. Proximity to existing and proposed open space. 7. Recreationists may hunt for small game within the desert scrub agricultural fields.
AN	New-expansion	Low	Low	Low	Low	High	Moderate	Low				1. Segment would be new expansion of existing roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. Potential indirect impacts to wildlife in adjacent

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												native habitat. 6. Limited proximity to existing and proposed open space. Potential indirect impacts to wildlife in adjacent native habitat, including Picacho Reservoir. 7. Recreation opportunities for sportsmen and wildlife viewing at nearby Picacho Reservoir and in adjacent desert scrub.
AO1	New	Low	Moderate	Low	Low	Moderate	Low	Low				1. Segment would be new roadway, and expansion of existing roads, through agricultural fields. 2. Floodplain and waterways present along Bogart Wash. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
AO2	New	Low	Moderate	Low	Low	Moderate	Low	Low				1. Segment would be new roadway, and expansion of existing roads, through agricultural fields. 2. Floodplain and waterways present along Bogart Wash. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
E1	New	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate				1. Segment would be a new roadway through native vegetation. 2. Moderate number of floodplains and waterways present, but disrupted by CAP canal. 3. The CAP canal limits east-west wildlife movement through native habitat. 4. Roadway not expected to increase isolation of large intact

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		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
												blocks, but small amount of habitat present is largely undisturbed. 5. High percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Proximity to existing and proposed open space. 7. Recreationists access hunting opportunities to the southeast, using a dirt road east of Ironwood Drive.
E2	New	High	High	Moderate	Low	Moderate	Low	Moderate				1. Segment would be a new roadway through native vegetation, including riparian vegetation. 2. High amount of floodplain and waterways present, including Queen Creek, but disrupted by CAP canal. 3. The CAP canal limits east-west wildlife movement through native habitat. 4. Roadway not expected to increase isolation of large intact blocks, but small amount of habitat present is largely undisturbed. 5. High percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Proximity to existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities to the east, using Ocotillo Rd. Maintaining recreation access is important.
E4	Expansion	High	Low	Low	Low	High	Low	Moderate				1. Segment would be an expansion of N. Quail Run Lane, through primarily native vegetation. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through native habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Proximity to existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities to the east, using Skyline Dr. Maintaining recreation access is important.

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G	New-Expansion	Low	Low	Low	Low	Moderate	Low	Low				1. Segment would be new roadway, and expansion of existing roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
I	New-existing	High	High	High	High	High	High	High				1. Segment would be a primarily new roadway through native vegetation. 2. High amount of floodplain and waterways present. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway would bisect a large intact block of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, BUOW, and SDT. 6. Segment would bisect existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities are located throughout the area. Maintaining recreation access is critical.
I2	New	High	High	High	High	High	High	High				1. Segment would be a new roadway through native vegetation. 2. High amount of floodplain and waterways present. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway would bisect a large intact block of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Segment would bisect existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities through the area. Maintaining recreation access is critical.

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J	New	High	High	High	High	High	High	High				1. Segment would be a new roadway through native vegetation. 2. High amount of floodplain and waterways present. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway would bisect a large intact block of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Segment would bisect existing and proposed open space. 7. Recreationists access open space east and west of the segment for small game hunting. Installation of a parking area or pullout would be advised for recreationists accessing open space.
K1	New	High	High	High	Moderate	High	Moderate	High				1. Segment would be a new roadway through native vegetation, including riparian vegetation. 2. High amount of floodplain and waterways present, including Queen Creek. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway could to increase isolation of nearby intact blocks of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for key species. 6. Proximity to existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities are throughout the area. Maintaining recreation access is critical.
K3	New	High	Low	Moderate	Low	High	Low	Moderate				1. Segment would be primarily a new roadway through native vegetation; a portion is bisected by the CAP canal. 2. Limited amount of floodplains and waterways present. 3. The CAP canal limits east-west wildlife movement through native habitat on the western portion of segment. 4. Roadway expansion not expected to increase isolation of intact blocks. 5. High percentage of segment provides suitable habitat for key species. 6. Proximity to existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and

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												hunting opportunities to the east, using E. Skyline Drive.
L2	New	Low	Low	Low	Low	Moderate	Low	Low				1. Segment would be new roadway through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
O3	New	High	Moderate	High	High	High	Moderate	High				1. Segment would be a new roadway, primarily through native vegetation, including riparian vegetation. 2. High amount of floodplain and waterways present, including Queen Creek. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway could to increase isolation of nearby intact blocks of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for key species. 6. Proximity to existing and proposed open space. 7. Recreationists access the area for hunting opportunities in the vicinity. Maintaining recreation access is critical.

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P	New	Low	Low	Low	Low	Moderate	Moderate	Low				1. Segment would be new roadway primarily through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
Q	New-Expansion	High	High	High	High	Moderate - High	High	Moderate				1. Segment would be a primarily new roadway through native vegetation, although a portion would parallel a railway. 2. High amount of floodplain and waterways present, including the Gila River. 3. West of CAP canal and adjacent to or bisected by railway, but the Gila River and a bridge over the CAP canal (along a gas-line road) provide critical wildlife movement connectivity between the San Tan Mountains and the open space and mountain ranges to the northeast, east, and southeast. 4. Roadway could reduce connectivity between large intact blocks of land, and further isolate the San Tan Mountains. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, BUOW, and SDT. 6. Segment would bisect existing open space along the Gila River. 7. Gas-line dirt road provides very popular walking access for hunting and hiking. Maintaining access is recommended.

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T1	New-Expansion	Low	Moderate	Moderate	Moderate	Moderate	Low	Moderate				1. Segment would be an expansion of existing dirt roads through agricultural fields, disturbed native vegetation, and a landfill. 2. Although disrupted by the landfill, floodplain and erosional ponding is present. 3. The landfill and disturbed native vegetation between Adamsville Road and the SR287 allows for east-west wildlife movement through the segment. 4. Potential to increase isolation of nearby intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists could hunt for small game within the agricultural fields.
T1-2	New	Moderate	High	Moderate	Moderate	Moderate	Low	Moderate				1. Segment would be an expansion of existing dirt roads through agricultural fields, disturbed native vegetation, and a retention basin. 2. A large retention basin that catches runoff from adjacent agricultural lands is present within the segment. 3. The retention basin and disturbed native vegetation between Adamsville Road and the SR287 allows for east-west wildlife movement through the segment. 4. Potential to increase isolation of nearby intact blocks. 5. High percentage of segment provides suitable habitat for BUOW and kit fox. 6. Limited proximity to existing and proposed open space. 7. Recreationists could hunt for small game within the agricultural fields.
T2	New	Low	Low	Low	Low	Moderate	Low	Low				8. Segment would be new roadway, and expansion of existing roads, through agricultural fields. 9. No floodplain or waterways present. 10. The CAP canal limits east-west wildlife movement through agricultural habitat. 11. Roadway not expected to increase isolation of large intact blocks. 12. High percentage of segment provides suitable habitat for BUOW. 13. Limited proximity to existing and proposed open space.

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												14. Recreationists hunt for small game within the agricultural fields.
V	New	High	High	High	High	Moderate - High	Moderate	High				1. Segment would be a new roadway through native vegetation. 2. High amount of waterways present. 3. West of CAP canal, but the bridge over the CAP canal (along a gas-line road) provides critical wildlife movement connectivity between the San Tan Mountains and the open space and mountain ranges to the northeast, east, and southeast. 4. Roadway could reduce connectivity between large intact blocks of land, and further isolate the San Tan Mountains. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Segment would bisect existing undeveloped land. 7. Gas-line dirt road provides very popular walking access for hunting and hiking
X	New	Moderate	High	High	High	Moderate - High	High	High				1. Segment would be a new roadway through native vegetation, agricultural lands, and the Gila River. 2. High amount of floodplain and waterways present, including the Gila River. 3. West of CAP canal, but the Gila River provides critical wildlife movement connectivity between the San Tan Mountains and the open space and mountain ranges to the northeast, east, and southeast. 4. Roadway could reduce connectivity between large intact blocks of land, and further isolate the San Tan Mountains. 5. Area of moderate-high wildlife diversity and a high percentage of segment provides suitable habitat for KF, BUOW, and SDT. 6. Segment would bisect existing open space along the Gila River. 7. This segment would impact small and big game hunting in GMU 26 M, especially north of Hunt Hwy

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Z	Existing	Moderate	Low	Low	Low	High	Low	Low				1. Segment would be expansion of existing SR87, through agricultural fields and desert scrub. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High diversity of species in the vicinity and high percentage of segment provides suitable habitat for BUOW and kit fox. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.

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Attachment 1. Data Sources

Data Sets, Types, and Sources Used in Analysis

Data Set	Data Type	Source	Analytical Method	Ranking Thresholds
Vegetation Type	30 m pixel	AGFD modified version of Southwest ReGAP (Southwest ReGAP can be found at http://swregap.nmsu.edu/default.htm)	Percent of each summary habitat type per segment	Low- Dominated by non-native vegetation cover such as agricultural fields or developed land. Moderate- 40-60% native vegetation. High- Over 60% of segment contains native vegetation.
Linear Waterways	Polylines	National Hydrography Database (NHD) ftp://rockyftp.cr.usgs.gov/vdelivery/Datasets/Staged/Hydro/FileGDB101/NHD_M_04_Arizona_ST.zip	Feet of rivers and streams intersecting each segment, represented as feet/acre	Low- 0-4.9 linear feet of waterways per acre. Moderate- 5.0-9.9 linear feet of waterways per acre. High- 10.0-16.0 linear feet of waterways per acre.
Floodplain	Polygons	Federal Emergency Management Agency (FEMA) National Flood Hazard Layer https://catalog.data.gov/dataset/national-flood-hazard-layer-nfhl/resource/ef47d769-564b-4dbb-a130-30e212b6e308	Acres of segment that intersect with NFH layer, using 100 year floodplain attributes	Low- No floodplain present. Moderate- 0.1-9.9 acres. High- 10.0 acres or greater
Connectivity – County Linkages	Polygons	AGFD County Linkages/NAU-AGFD Missing Linkages http://www.azgfd.gov/w_c/conn_whatGFDoing.shtml	Identify overlap within segment	Low- Multiple barriers to larger habitat blocks are present. Barriers may include the CAP canal as well as roads and human disturbance. Moderate- Barriers to larger habitat blocks are present, but a crossing is present and habitat is conducive to wildlife movement. High- Few barriers present and/or multiple crossing opportunities available.

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Landscape Integrity – Undisturbed	30 m pixel	AGFD Landscape Integrity model1	Mean and majority values of landscape integrity within segment. This is an AGFD GIS dataset representing cumulative impacts of various human infrastructure on Arizona's landscape. A high score indicates very little human modification on the landscape, or a very high landscape integrity.	Low- Mean or Majority score of 0-79. Moderate- Mean or Majority score of 80-90. High- Mean or Majority score of 90-100.
Connectivity – Statewide Connectivity	Polygons	AGFD Statewide Connectivity Dataset[1]	Mean score taken from intersection of statewide index. ICZ (important connectivity zone) indicates if a segment overlaps with an ICZ which are areas important for statewide connectivity. This is and AGFD GIS dataset representing statewide connectivity based on the landscape integrity dataset used as a cost surface.	Low- A connectivity index score of 0-79.9. Moderate- A connectivity index score of 80-89.9. High- A connectivity index score of 90-100.
Landscape Integrity – Fragmentation	Polygons	AGFD Large Intact Blocks[1]	Identify overlap or change in isolation of the blocks given the build of a segment. This is an AGFD GIS dataset representing the most intact areas based on the AGFD Landscape Integrity model.	Low- No increased isolation or fragmentation of large intact blocks. Moderate- Potential to increase isolation of nearby intact block(s). High- Bisects intact block or reduces connectivity between intact blocks.

[1] Perkl, Ryan M. 2013. Arizona landscape integrity and wildlife connectivity assessment. The University of Arizona and the Arizona Game and Fish Department. Tucson, AZ. Available at http://capla.arizona.edu/sites/default/files/file_uploads/Perkl,%20Ryan%20M.%202013.%20Arizona%20landscape%20integrity%20and%20wildlife%20connectivity%20assessment.%20The%20University%20of%20Arizona%20and%20the%20Arizona%20Department%20of%20Game%20and%20Fish.%20Tucson,%20AZ..pdf

Species of Economic and Recreational Importance (SERI)	30 m pixel	AGFD model as depicted in HabiMap and described in the Arizona SWAP http://habimap.org/ http://www.azgfd.gov/w_c/swap.shtml	Maximum score of the SERI model	Low- Maximum score of 0-3. Moderate- Maximum score of 4-6. High- Maximum score of 7-10
Species of Greatest Conservation Need (SGCN)	30 m pixel	AGFD model as depicted in HabiMap and described in the Arizona State Wildlife Action Plan (SWAP) http://habimap.org/ http://www.azgfd.gov/w_c/swap.shtml	Maximum score of the SGCN model	Low- Maximum score of 0-3. Moderate- Maximum score of 4-6. High- Maximum score of 7-10
Special Status Species	Polygons	Heritage Data Management System (HDMS) http://www.azgfd.gov/hgis/	Count of species within 3 mile buffer of each segment	Low- 0-3 HDMS species within a 3 mile radius of the segment. Moderate- 4-6 HDMS species within a 3 mile radius of the segment. High- HDMS species have been recorded within the segment, in addition to records within a 3 mile radius of the segment.
Species Distribution Models	30 m pixel	Potential distributions of species from AGFD/GAP models as depicted in HabiMap and described in the Arizona SWAP[2] http://habimap.org/ http://www.azgfd.gov/w_c/swap.shtml	Percent of each segment that is potential habitat by species.	Low- 0 -19% of the segment is potential habitat for a key species. Moderate- 20-39% of the segment is potential habitat for a key species. High- 40% or more of the segment is potential habitat for a key species.

[2] The burrowing owl model has been modified to more accurately reflect potential burrowing owl distribution. This revised model is not shown within HabiMap.

Attachment 2A: Evaluation Criterial for the North-South Corridor- Vegetation, Hydrologic Function, Landscape Connectivity, and Landscape Integrity

SEGMENT DATA			VEGETATION		HYDROLOGIC FUNCTION			LANDSCAPE CONNECTIVITY				LANDSCAPE INTEGRITY		
Segment ID	Proposed Change in Infra-structure	Acres	Primary Vegetation or Land Cover Type[3]	Riparian/ Wetland (%)	Waterways (Linear Feet per Acre)	Flood-plain (Acres)	Flood-plain (%)	Permeability/Known Concerns	County Linkages/Movement Zones	Statewide Connectivity		Fragmentation	Undisturbed	
										Index	ICZs	Blocks	Mean Score	Majority Score
A	Expansion	513	Desert scrub	-	15	4	0.8%	Moderate/ CAP Canal and Ironwood Drive bisect the segment	Valley north and east of the San Tan Mountains, Weekes Wash	84.80		Low- No increased isolation of intact blocks.	80	97
AA	Existing	1123	Agriculture/ Desert scrub	-	0	1	0.1%	Low/ West of CAP canal and bisected by SR87, farm roads and agricultural crops	Southeastern-most corner is ~4.8 miles from modeled corridor Ironwood to Picacho	77.30		Low- No increased isolation of intact blocks.	78	76
AB	Expansion-new	513	Agriculture	-	6	2	0.5%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	81.22		Low- No increased isolation of intact blocks.	82	80
AC	Expansion	902	Agriculture	-	1	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	83.31		Low- No increased isolation of intact blocks.	83	82
AD	New	102	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	88.09		Low- No increased isolation of intact blocks.	84	86
AE	New-existing	563	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	83.12		Low- No increased isolation of intact blocks.	84	86
AH	New-expansion	475	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	89.00		Low- No increased isolation of intact blocks.	85	80
AI	New-expansion	865	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	86.97		Low- No increased isolation of intact blocks.	84	80
AJ	New	369	Desert scrub	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	87.55		Low- No increased isolation of intact blocks.	91	94
AL	New	519	Agriculture	-	0	46	9.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	Southeastern-most corner is ~2.5 miles from modeled corridor Ironwood to Picacho	83.71		Low- No increased isolation of intact blocks.	82	86
AN	New-expansion	901	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	83.20		Low- No increased isolation of intact blocks.	81	82
AO1	New	547	Agriculture	-	4	2	0.3%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	80.49		Low- No increased isolation of intact blocks.	80	81
AO2	New	549	Agriculture	-	4	1	0.2%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	81.14		Low- No increased isolation of intact blocks.	81	81
E1	New	786	Desert scrub	-	9	10	1.3%	Moderate/ West of CAP Canal	Valley north and east of the San Tan Mountains	96.38	Yes	Low- No increased isolation of intact blocks.	97	100

[3] Refer to Attachment C for detailed breakdown of vegetation/land cover types within each Segment.

Attachment 2A: Evaluation Criterial for the North-South Corridor- Vegetation, Hydrologic Function, Landscape Connectivity, and Landscape Integrity

SEGMENT DATA			VEGETATION		HYDROLOGIC FUNCTION			LANDSCAPE CONNECTIVITY				LANDSCAPE INTEGRITY		
Segment ID	Proposed Change in Infra-structure	Acres	Primary Vegetation or Land Cover Type[3]	Riparian/ Wetland (%)	Waterways (Linear Feet per Acre)	Flood-plain (Acres)	Flood-plain (%)	Permeability/Known Concerns	County Linkages/Movement Zones	Statewide Connectivity		Fragmentation	Undisturbed	
										Index	ICZs	Blocks	Mean Score	Majority Score
E2	New	1237	Desert scrub	-	16	11	0.9%	Moderate/ West of CAP Canal, Queen Creek	Valley north and east of the San Tan Mountains, Queen Creek - Gila River Indian Community	89.83		Low- No increased isolation of intact blocks.	91	92
E4	Expansion	387	Desert scrub	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	Valley north and east of the San Tan Mountains	89.53		Low- No increased isolation of intact blocks.	88	83
G	New	613	Agriculture	-	0	0	0.0%	Moderate/ West of CAP canal and bisected by farm roads and agricultural crops	-	84.23		Low- No increased isolation of intact blocks.	86	83
I	New-existing	949	Desert scrub	-	13	5	0.5%	High	Valley north and east of the San Tan Mountains, Superstition Mountains to Goldfield Mountains and Weekes Wash	95.46	Yes	High- Bisects intact block	95	100
I2	New	1002	Desert scrub	0.3%	10	4	0.4%	High	Valley north and east of the San Tan Mountains, Superstition Mountains to Goldfield Mountains and Weekes Wash	96.93	Yes	High- Bisects intact block	97	100
J	New	845	Desert scrub	-	16	9	1.1%	High	Valley north and east of the San Tan Mountains	95.18		High- Bisects intact block	95	94
K1	New	607	Desert scrub	2.6%	8	7	1.1%	High	Valley north and east of the San Tan Mountains, Queen Creek - Gila River Indian Community	94.46		Moderate- Potential to increase isolation of nearby intact block.	94	94
K3	New	481	Desert scrub	-	3	0	0.0%	Moderate, bisected by CAP	Valley north and east of the San Tan Mountains	90.83		Low- No increased isolation of intact blocks.	94	92
L2	New	222	Agriculture	-	0	0	0.0%	Moderate/ West of CAP canal and bisected by farm roads and agricultural crops	-	83.37		Low- No increased isolation of intact blocks.	83	83
O3	New	1847	Desert scrub	-	4	2	0.1%	High/ Majority of segment is east of the CAP canal	Valley north and east of the San Tan Mountains, Queen Creek - Gila River Indian Community	89.23		High- Reduces connectivity between intact blocks	91	94
P	New	184	Agriculture	-	0	0	0.0%	Moderate/ West of CAP canal and bisected by farm roads and agricultural crops	-	84.68		Low- No increased isolation of intact blocks.	86	86
Q	New	1241	Desert scrub	-	14	20	1.6%	High/ West of CAP canal and adjacent to or bisected by railway, but Gila River provides movement corridor	Florence Military Reservation, Gila River	88.42	Yes	High- Reduces connectivity between intact blocks	91	100
T1	New	564	Developed	-	1	5	0.9%	Moderate/ Disturbed land	-	81.51		Moderate- Potential	79	87

Attachment 2A: Evaluation Criterial for the North-South Corridor- Vegetation, Hydrologic Function, Landscape Connectivity, and Landscape Integrity

SEGMENT DATA			VEGETATION		HYDROLOGIC FUNCTION			LANDSCAPE CONNECTIVITY				LANDSCAPE INTEGRITY		
Segment ID	Proposed Change in Infra-structure	Acres	Primary Vegetation or Land Cover Type[3]	Riparian/ Wetland (%)	Waterways (Linear Feet per Acre)	Flood-plain (Acres)	Flood-plain (%)	Permeability/Known Concerns	County Linkages/Movement Zones	Statewide Connectivity		Fragmentation	Undisturbed	
										Index	ICZs	Blocks	Mean Score	Majority Score
								could provide east-west movement				to increase isolation of nearby intact block.		
T1-2	New	41	Desert scrub	-	14	29	70.3%	Moderate/ Disturbed land could provide east-west movement	-	83.51		Moderate- Potential to increase isolation of nearby intact block.	85	79
T2	New	383	Agriculture	-	0	0	0.0%	Moderate/ West of CAP canal and bisected by farm roads and agricultural crops	-	81.23		Low- No increased isolation of intact blocks.	81	82
V	New	1282	Desert scrub	-	13	0	0.0%	High/ West of CAP canal but land undeveloped	Florence Military Reservation	95.44		High- Reduces connectivity between intact blocks	97	100
X	New	2206	Desert scrub/ Agriculture	-	14	34	1.5%	High/ West of CAP canal, but Gila River provides movement corridor through agricultural lands, and connects San Tan Mountains to the Tortolita and Tortilla Mtns	Florence Military Reservation, Gila River	89.05	Yes	High- Reduces connectivity between intact blocks	89	86
Z	Existing	352	Desert scrub	-	0	0	0.0%	Low/ West of CAP canal and bisected by SR87, farm roads and agricultural crops	-	79.78		Low- No increased isolation of intact blocks.	82	91

Attachment 2B: Evaluation Criteria for the North-South Corridor- Wildlife and Wildlife Habitat, Conservation and Wildlife Management Lands, and Outdoor and Wildlife Related Recreation

SEGMENT DATA			WILDLIFE AND WILDLIFE HABITAT							CONSERVATION AND WILDLIFE MANAGEMENT LANDS	OUTDOOR AND WILDLIFE RELATED RECREATION
						Key Species Habitat (%)					
Segment ID	Proposed Change in Infra-structure	Acres	SERI Rank (1-10)	SGCN Rank (1-10)	HDMS Species Diversity	Burrowing Owl	Kit Fox	Tucson Shovel-nosed Snake	Sonoran Desert Tortoise	Areas Identified, Acquired, or Managed with Conservation or Wildlife Considerations	Access and Outdoor Recreation
A	Expansion	513	5	7	0	0%	82%	47%	82%	Proximity to existing and proposed open space and crosses Siphon Draw wash, a potential corridor.	Recreationists access the open space east and west of the segment for small game hunting. A parking or pullout area for hunters would be a good addition, as no parking is currently present.
AA	Existing	1123	9	9	4	46%	45%	29%	44%	-	
AB	Expansion-new	513	9	9	2	69%	20%	3%	6%	-	
AC	Expansion	902	9	6	4	83%	17%	9%	9%	Near Picacho Reservior, including AGFD managed area	
AD	New	102	9	5	3	99%	1%	0%	1%	Adjacent to Picacho Reservior, including AGFD managed area	
AE	New-existing	563	9	10	3	62%	38%	4%	9%	Adjacent to Picacho Reservior, including AGFD managed area	Segment crosses Selma Highway access point into Picacho Reservoir
AH	New-expansion	475	9	8	3	52%	20%	5%	8%	Adjacent to Picacho Reservior, including AGFD managed area	Picacho Reservoir
AI	New-expansion	865	9	8	5	72%	27%	7%	12%	Near and adjacent to Picacho Reservior, including AGFD managed area	
AJ	New	369	9	6	0	34%	66%	66%	66%	-	
AL	New	519	9	6	1	79%	23%	21%	23%	-	
AN	New-expansion	901	9	7	4	79%	3%	2%	2%	Near Picacho Reservior, including AGFD managed area	Picacho Reservoir
AO1	New	547	9	7	5	100%	0%	0%	0%	-	
AO2	New	549	9	6	6	45%	0%	0%	0%	-	
E1	New	786	5	9	0	0%	86%	83%	86%	-	Popular dove hunting area near tanks.
E2	New	1237	5	10	0	15%	85%	64%	84%	-	
E4	Expansion	387	5	8	0	26%	73%	54%	73%	-	
G	New	613	5	9	0	76%	24%	18%	24%	-	
I	New-existing	949	7	10	0	0%	100%	35%	100%	Proximity to existing and proposed open space	
I2	New	1002	5	9	0	0%	85%	50%	85%	Proximity to existing and proposed open space	Potential impacts popular hunting and OHV areas.
J	New	845	5	7	0	0%	100%	61%	100%	-	Hunters access open space east and west of the segment for small game hunting. Also impacts popular hunting and OHV areas. Installation of a parking area or pullout is recommended for hunters accessing open space.
K1	New	607	5	9	0	0%	100%	55%	100%	-	
K3	New	481	5	8	1	5%	75%	63%	75%	-	
L2	New	222	5	5	2	100%	0%	0%	0%	-	
O3	New	1847	5	9	2	21%	67%	40%	67%	-	Impacts popular hunting areas.
P	New	184	5	8	2	83%	16%	17%	17%	-	

Attachment 2B: Evaluation Criteria for the North-South Corridor- Wildlife and Wildlife Habitat, Conservation and Wildlife Management Lands, and Outdoor and Wildlife Related Recreation

SEGMENT DATA			WILDLIFE AND WILDLIFE HABITAT							CONSERVATION AND WILDLIFE MANAGEMENT LANDS	OUTDOOR AND WILDLIFE RELATED RECREATION
						Key Species Habitat (%)					
Segment ID	Proposed Change in Infra-structure	Acres	SERI Rank (1-10)	SGCN Rank (1-10)	HDMS Species Diversity	Burrowing Owl	Kit Fox	Tucson Shovel-nosed Snake	Sonoran Desert Tortoise	Areas Identified, Acquired, or Managed with Conservation or Wildlife Considerations	Access and Outdoor Recreation
Q	New	1241	5	9	3	23%	69%	24%	63%	Existing Open Space designation along Gila River	
T1	New	564	1	9	5	82%	17%	7%	14%	-	
T1-2	New	41	1	7	5	30%	74%	2%	36%	-	
T2	New	383	9	5	2	100%	0%	0%	0%	-	
V	New	1282	5	7	2	0%	100%	21%	100%	-	Gas-line road provides walking access for hunting and hiking- very popular. Impacts small and big game hunting in GMU 26 M.
X	New	2206	5	10	4	50%	49%	6%	47%	Existing Open Space designation along Gila River and Florence Mountain.	Impacts to small and big game hunting in GMU 26 M, especially north of Hunt Hwy
Z	Existing	352	9	8	3	37%	62%	13%	37%	-	

Attachment 3. Vegetation Communities/Land Cover

Segment	Acres	Riparian/ Wash	Native scrub	Agriculture	Developed
A	1123	0.0%	80.8%	0.0%	19.2%
AA	513	0.1%	44.0%	46.0%	9.8%
AB	902	0.0%	19.5%	69.3%	11.2%
AC	102	0.0%	16.9%	82.8%	0.2%
AD	563	0.0%	0.9%	99.1%	0.0%
AE	475	0.4%	37.4%	62.0%	0.2%
AH	865	0.0%	27.8%	72.2%	0.0%
AI	369	0.0%	26.3%	72.4%	1.3%
AJ	519	0.0%	66.4%	33.6%	0.0%
AL	901	0.0%	22.8%	76.9%	0.3%
AN	547	0.0%	3.3%	90.8%	6.0%
AO1	549	0.0%	0.0%	99.9%	0.1%
AO2	786	0.0%	0.0%	100.0%	0.0%
E1	1237	0.0%	99.4%	0.0%	0.4%
E2	387	1.5%	83.0%	14.7%	0.2%
E4	613	0.0%	73.7%	26.3%	0.0%
G	949	0.0%	23.6%	76.4%	0.0%
I	1002	0.0%	99.9%	0.0%	0.0%
I2	845	0.3%	99.7%	0.0%	0.0%
J	607	0.0%	100.0%	0.0%	0.0%
K1	481	2.6%	97.4%	0.0%	0.0%
K3	222	0.0%	93.9%	6.1%	0.0%
L2	1847	0.0%	0.0%	100.0%	0.0%
O3	184	1.3%	74.9%	23.7%	0.0%
P	1241	0.0%	17.0%	82.4%	0.0%
Q	564	0.0%	74.9%	25.1%	0.0%
T1	41	0.0%	17.2%	42.3%	40.5%
T1-2	383	0.0%	70.5%	29.5%	0.0%
T2	1282	0.0%	0.0%	100.0%	0.0%
V	2206	0.0%	99.7%	0.0%	0.3%
X	352	0.7%	49.1%	49.7%	0.5%
Z	1123	0.0%	62.9%	37.1%	0.0%

Attachment 4. HDMS Special Status Species Documented within 3 Miles of the North-South Corridor

Scientific Name	Common Name	FWS	USFS	BLM	SGCN	AA	AB	AC	AD	AE	AH	AI	AJ	AL	AN	AO1	AO2	E2	E4	G	J	K1	K3	L2	O3	P	Q	T1	T1-2	T2	V	X	Z
Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC		S	1B		X									X	X										X	X	X			X	
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S	1B	X	X	X	X	X	X	X			X	X	X										X	X	X	X	X	X	X
Catostomus clarkii	Desert Sucker	SC	S	S	1B		X	X							X	X	X											X	X	X			
Catostomus insignis	Sonora Sucker	SC	S	S	1B												X											X	X				
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC			1A	X						X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S		1A	X		X	X	X	X	X			X																		X
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S		1A											X	X							X	X	X	X	X	X		X	X	
Rallus longirostris yumanensis	Yuma Clapper Rail	LE			1A	X		X	X	X	X	X			X																		X

HDMS = Heritage Data Management System

FWS = United States Fish and Wildlife Service
CCA = Candidate Conservation Agreement in place
LE = Federally listed Endangered
LT = Federally listed Threatened
SC = Species of Concern

SGCN = State of Arizona Species of Greatest Conservation Need (2012)
Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan: 2012-2022. Arizona Game and Fish Department, Phoenix, Arizona. Available at http://www.azgfd.gov/w_c/swap.shtml.
Each species in the SGCN list was scored for each of the following vulnerability criteria. If a species ranked as "vulnerable" (i.e., score = "1") under one or more of the vulnerability criteria it was included in the SGCN. Ranks were not additive. The rank was based on the following criteria:

- Extirpated from Arizona
- Federal or State status
- Declining status
- Disjunct status
- Demographic status
- Concentration status
- Fragmentation status
- Distribution status

The list of SGCN was further categorized into three tiers reflecting the Department's management commitments and priorities; tiers were ranked as follows:

Tier 1A: Scored "1" for Vulnerability in at least one of the eight categories and matches at least one of the following:
- Federally listed as endangered or threatened under the Endangered Species Act (ESA).
- Candidate species under ESA.
- Is specifically covered under a signed conservation agreement (CCA) or a signed conservation agreement with assurances (CCAA).
- Recently removed from ESA and currently requires post-delisting monitoring
- Closed season species (i.e., no take permitted) as identified in Arizona Game and Fish Commission Orders 40, 41, 42 or 43.

Tier 1B: Scored "1" for Vulnerability in at least one of the eight categories, but match none of the above criteria.

USFS= United States Forest Service
S = Sensitive

BLM= Bureau of Land Management
S = Sensitive

Attachment 5
Arizona Environmental Online Review Tool Report

Arizona Environmental Online Review Tool Report

Arizona Game and Fish Department Mission
To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:
North South Corridor

Project Description:
AGFD Hexagon Analysis

Project Type:
Transportation & Infrastructure, Road construction (including staging areas), Realignment/new roads

Contact Person:
Cheri Boucher

Organization:
Arizona Game and Fish Department

On Behalf Of:
AZGFD

Project ID:
HGIS-02567

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

Disclaimer:

1. This Environmental Review is based on the project study area that was entered. The report must be updated if the project study area, location, or the type of project changes.
2. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area. This review is also not intended to replace environmental consultation (including federal consultation under the Endangered Species Act), land use permitting, or the Departments review of site-specific projects.
3. The Departments Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. HDMS data contains information about species occurrences that have actually been reported to the Department. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HabiMap Arizona data, specifically Species of Greatest Conservation Need (SGCN) under our State Wildlife Action Plan (SWAP) and Species of Economic and Recreational Importance (SERI), represent potential species distribution models for the State of Arizona which are subject to ongoing change, modification and refinement. The status of a wildlife resource can change quickly, and the availability of new data will necessitate a refined assessment.

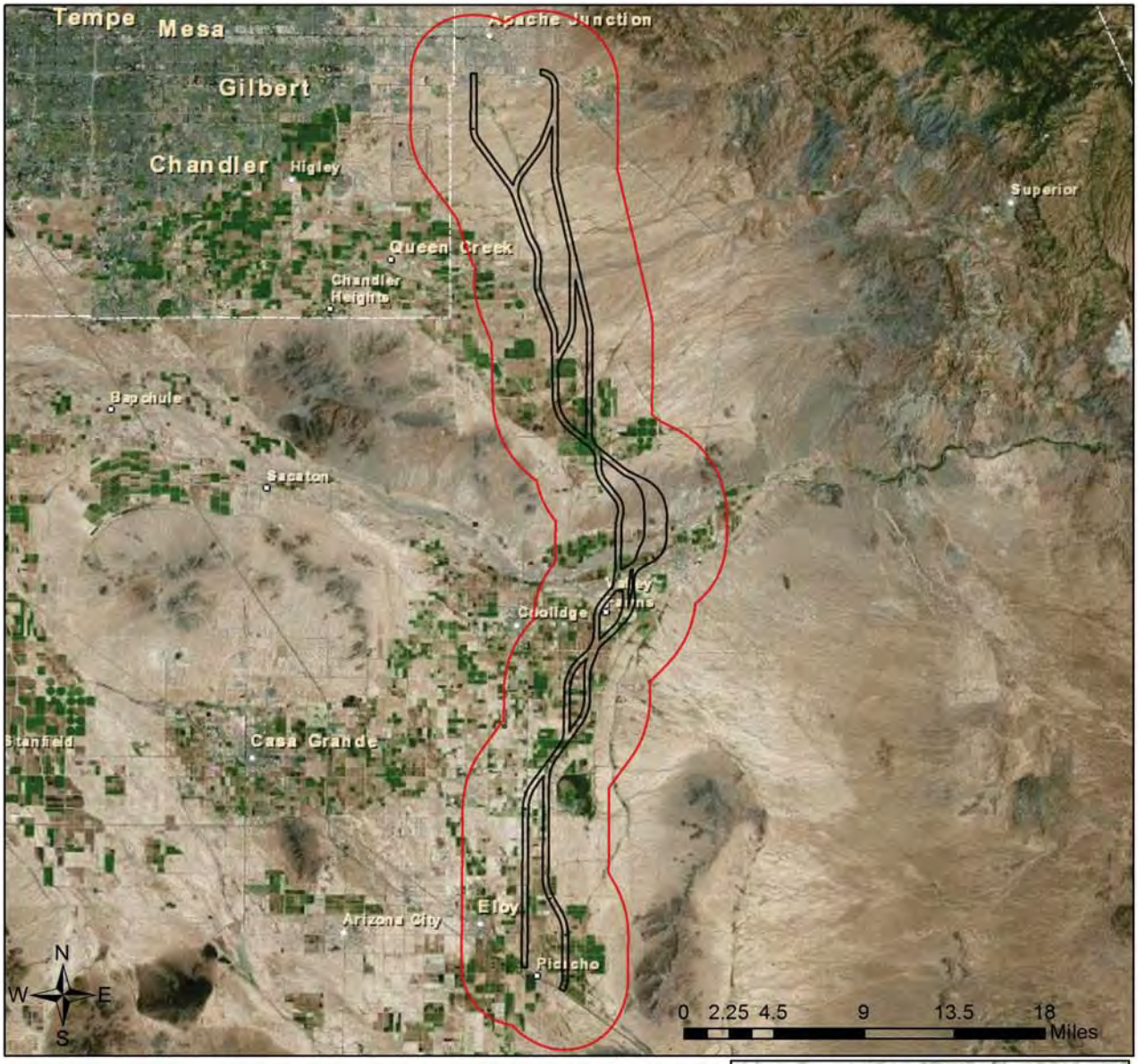
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

Recommendations Disclaimer:

1. The Department is interested in the conservation of all fish and wildlife resources, including those species listed in this report and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
2. Recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation).
3. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project. These recommendations are preliminary in scope, designed to provide early considerations on all species of wildlife.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. Further coordination with the Department requires the submittal of this Environmental Review Report with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map). Once AGFD had received the information, please allow 30 days for completion of project reviews. Send requests to:
   Project Evaluation Program, Habitat Branch
   Arizona Game and Fish Department
   5000 West Carefree Highway
   Phoenix, Arizona 85086-5000
   Phone Number: (623) 236-7600
   Fax Number: (623) 236-7366
   Or
   PEP@azgfd.gov
6. Coordination may also be necessary under the National Environmental Policy Act (NEPA) and/or Endangered Species Act (ESA). Site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies

North South Corridor

Aerial Image Basemap With Locator Map



Project Boundary

Buffered Project Boundary

Project Size (acres): 21,957.98

Lat/Long (DD): 32.9763 / -111.4380

County(s): Pinal

AGFD Region(s): Mesa; Tucson

Township/Range(s): T1N, R8E; T1S, R8E; T2S, R8E +

USGS Quad(s): APACHE JUNCTION; GOLDFIELD +

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong),

North South Corridor

Web Map As Submitted By User

Project Boundary

Buffered Project Boundary

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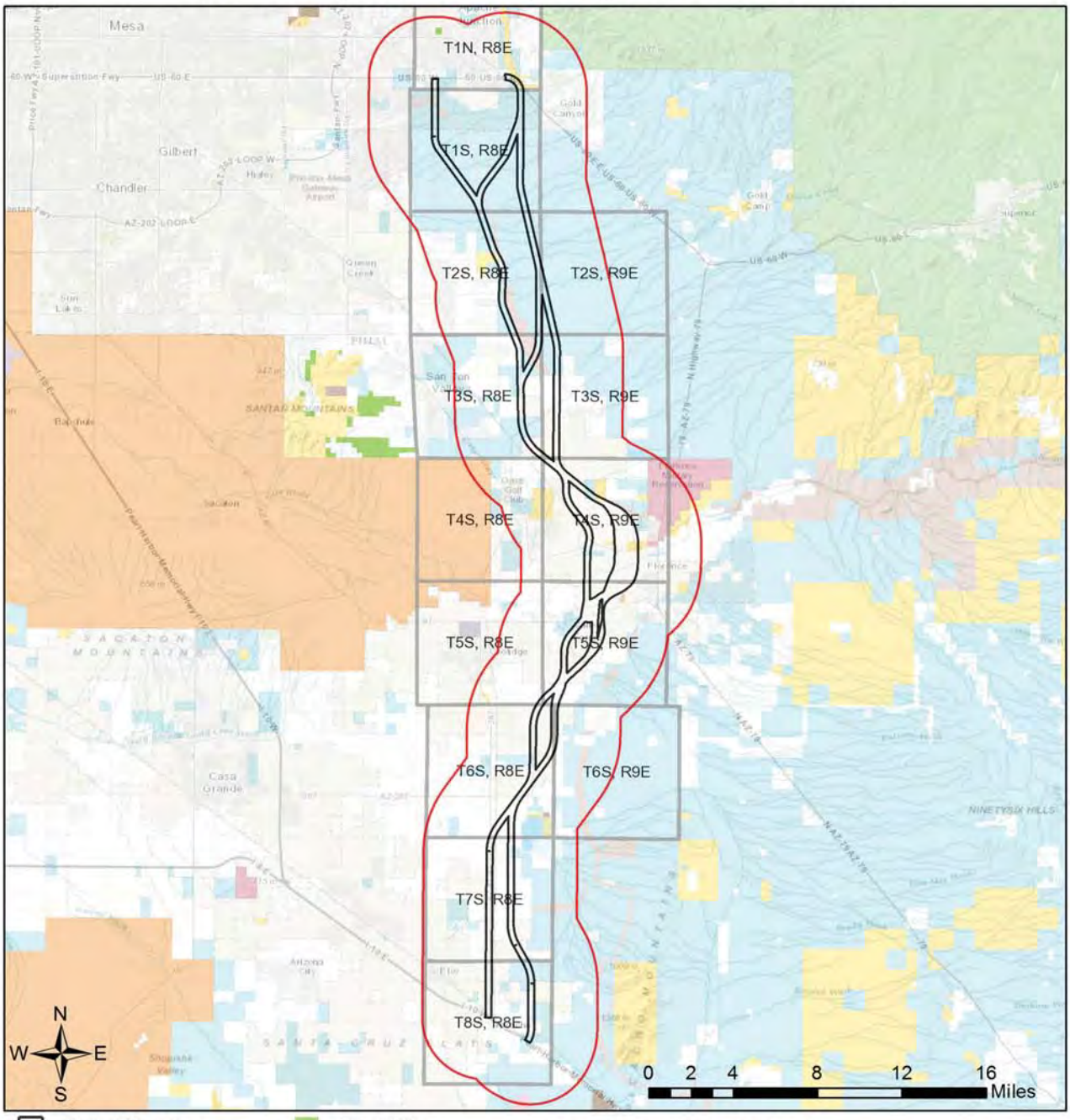
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

North South Corridor

Topo Basemap With Township/Ranges and Land Ownership



- Project Boundary
- Buffered Project Boundary
- Township/Ranges
- AZ Game and Fish Dept.
- BLM
- BOR
- Indian Res.
- Military
- Mixed/Other
- National Park/Mon.
- Private
- State and Regional Parks
- State Trust
- US Forest Service
- Wildlife Area/Refuge

Project Size (acres): 21,957.98

Lat/Long (DD): 32.9763 / -111.4380

County(s): Pinal

AGFD Region(s): Mesa; Tucson

Township/Range(s): T1N, R8E; T1S, R8E; T2S, R8E +

USGS Quad(s): APACHE JUNCTION; GOLDFIELD +

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Special Status Species and Special Areas Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC		S		1B
Antilocapra americana sonoriensis	10J area for Sonoran Pronghorn	LE,XN				
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Canis lupus baileyi	10J area Zone 2 for Mexican gray wolf	LE,XN				
Catostomus clarkii	Desert Sucker	SC	S	S		1B
Catostomus insignis	Sonora Sucker	SC	S	S		1B
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC				1A
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S			1A
Gila River Indian Reservation	Gila River Indian Reservation					
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S			1A
Ironwood - Picacho Linkage Design	Wildlife Corridor					
Leopardus pardalis	Ocelot Area of Capture Concern					
PCH for Coccyzus americanus	Yellow-billed Cuckoo Proposed Critical Habitat					
Panthera onca	Jaguar Area of Capture Concern					
Rallus longirostris yumanensis	Yuma Clapper Rail	LE				1A

Note: Status code definitions can be found at http://www.azgfd.gov/w_c/edits/hdms_status_definitions.shtml.

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Agosia chrysogaster	Longfin Dace	SC		S		1B
Aix sponsa	Wood Duck					1B
Ammodramus savannarum perpallidus	Western Grasshopper Sparrow					1B
Ammospermophilus harrisii	Harris' Antelope Squirrel					1B
Anthus spragueii	Sprague's Pipit	C*				1A
Aquila chrysaetos	Golden Eagle	BGA		S		1B
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Botaurus lentiginosus	American Bittern					1B
Buteo regalis	Ferruginous Hawk	SC		S		1B
Catostomus clarkii	Desert Sucker	SC	S	S		1B
Catostomus insignis	Sonora Sucker	SC	S	S		1B
Chilomeniscus stramineus	Variable Sandsnake					1B
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC				1A
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S			1A
Colaptes chrysoides	Gilded Flicker			S		1B
Coluber bilineatus	Sonoran Whipsnake					1B
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1B

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Crotalus tigris	Tiger Rattlesnake					1B
Cynanthus latirostris	Broad-billed Hummingbird		S			1B
Cyprinodon macularius	Desert Pupfish	LE				1A
Dipodomys spectabilis	Banner-tailed Kangaroo Rat			S		1B
Euderma maculatum	Spotted Bat	SC	S	S		1B
Eumops perotis californicus	Greater Western Bonneted Bat	SC		S		1B
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1A
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S			1A
Haliaeetus leucocephalus	Bald Eagle	SC, BGA	S	S		1A
Heloderma suspectum	Gila Monster					1A
Incilius alvarius	Sonoran Desert Toad					1B
Kinosternon sonoriense sonoriense	Desert Mud Turtle			S		1B
Lasiurus blossevillii	Western Red Bat		S			1B
Lasiurus xanthinus	Western Yellow Bat		S			1B
Leopardus pardalis	Ocelot	LE				1A
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE				1A
Lepus alleni	Antelope Jackrabbit					1B
Macrotus californicus	California Leaf-nosed Bat	SC		S		1B
Melanerpes uropygialis	Gila Woodpecker					1B
Melospiza lincolnii	Lincoln's Sparrow					1B
Melozone aberti	Abert's Towhee		S			1B
Micruroides euryxanthus	Sonoran Coralsnake					1B
Myotis occultus	Arizona Myotis	SC		S		1B
Myotis velifer	Cave Myotis	SC		S		1B
Myotis yumanensis	Yuma Myotis	SC				1B
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					1B
Odocoileus virginianus	White-tailed Deer					1B
Ovis canadensis nelsoni	Desert Bighorn Sheep					1B
Panthera onca	Jaguar	LE				1A
Passerculus sandwichensis	Savannah Sparrow					1B
Perognathus amplus	Arizona Pocket Mouse					1B
Perognathus longimembris	Little Pocket Mouse					1B
Phrynosoma goodei	Goode's Horned Lizard					1B
Phrynosoma solare	Regal Horned Lizard					1B
Phyllorhynchus browni	Saddled Leaf-nosed Snake					1B
Progne subis hesperia	Desert Purple Martin			S		1B
Rallus longirostris yumanensis	Yuma Clapper Rail	LE				1A

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Setophaga petechia	Yellow Warbler					1B
Tadarida brasiliensis	Brazilian Free-tailed Bat					1B
Toxostoma lecontei	Le Conte's Thrasher					1B
Troglodytes pacificus	Pacific Wren					1B
Vireo bellii arizonae	Arizona Bell's Vireo					1B
Vulpes macrotis	Kit Fox					1B
Xantusia bezyi	Bezy's Night Lizard		S			1B

Species of Economic and Recreation Importance Predicted within Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla gambelii	Gambel's Quail					
Odocoileus hemionus	Mule Deer					
Ovis canadensis mexicana	Mexican Desert Bighorn Sheep					1B
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					

Project Type: Transportation & Infrastructure, Road construction (including staging areas), Realignment/new roads

Project Type Recommendations:

Bridge Maintenance/ConstructionIdentify whether wildlife species use the structure for roosting or nesting during anticipated maintenance/construction period. Plan the timing of maintenance/construction to minimize impacts to wildlife species. In addition to the species list generated by the Arizona's On-line Environmental Review Tool, the Department recommends that surveys be conducted at the bridge and in the vicinity of the bridge to identify additional or currently undocumented bat, bird, or aquatic species in the project area. To minimize impacts to birds and bats, as well as aquatic species, consider conducting maintenance and construction activities outside the breeding/maternity season (breeding seasons for birds and bats usually occur spring - summer). Examining the crevices for the presence of bats prior to pouring new paving materials or that the top of those crevices be sealed to prevent material from dripping or falling through the cracks and potentially onto bats. If bats are present, maintenance and construction (including paving and milling) activities should be conducted during nighttime hours, if possible, when the fewest number of bats will be roosting. Minimize impacts to the vegetation community. Unavoidable impacts to vegetation should be mitigated on-site whenever possible. A revegetation plan should be developed to replace impacted communities.Consider design structures and construction plans that minimize impacts to channel geometry (i.e., width/depth ratio, sinuosity, allow overflow channels), to avoid alteration of hydrological function. Consider incorporating roosting sites for bats into bridge designs. During construction, erosion control structures and drainage features should be used to prevent introduction of sediment laden runoff into the waterway. Minimize instream construction activity. If culverts are planned, use wildlife friendly designs to mitigate impacts to wildlife and fish movement. Guidelines for bridge designs to facilitate wildlife passage can be found on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

Fence recommendations will be dependant upon the goals of the fence project and the wildlife species expected to be impacted by the project. General guidelines for ensuring wildlife-friendly fences include: barbless wire on the top and bottom with the maximum fence height 42", minimum height for bottom 16". Modifications to this design may be considered for fencing anticipated to be routinely encountered by elk, bighorn sheep or pronghorn (e.g., Pronghorn fencing would require 18" minimum height on the bottom). Please refer to the Department's Fencing Guidelines located on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Consider impacts of outdoor lighting on wildlife and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use. Use only the minimum amount of light needed for safety. Narrow spectrum bulbs should be used as often as possible to lower the range of species affected by lighting. All lighting should be shielded, cantered, or cut to ensure that light reaches only areas needing illumination.

Minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g., microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g., livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before leaving the site. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants, https://agriculture.az.gov/. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control, http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (include spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

Based on the project type entered, coordination with State Historic Preservation Office may be required (http://azstateparks.com/SHPO/index.html).

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches.

Design culverts to minimize impacts to channel geometry, or design channel geometry (low flow, overbank, floodplains) and substrates to carry expected discharge using local drainages of appropriate size as templates. Reduce/minimize barriers to allow movement of amphibians or fish (e.g., eliminate falls). Also for terrestrial wildlife, washes and stream corridors often provide important corridors for movement. Overall culvert width, height, and length should be optimized for movement of the greatest number and diversity of species expected to utilize the passage. Culvert designs should consider moisture, light, and noise, while providing clear views at both ends to maximize utilization. For many species, fencing is an important design feature that can be utilized with culverts to funnel wildlife into these areas and minimize the potential for roadway collisions. Guidelines for culvert designs to facilitate wildlife passage can be found on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

Based on the project type entered, coordination with Arizona Department of Environmental Quality may be required (http://www.azdeq.gov/).

Based on the project type entered, coordination with U.S. Army Corps of Engineers may be required (http://www.usace.army.mil/)

Based on the project type entered, coordination with County Flood Control district(s) may be required.

Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly. PEP@azgfd.gov

Project Location and/or Species Recommendations:

HDMS records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project. The Endangered Species Act (ESA) gives the US Fish and Wildlife Service (USFWS) regulatory authority over all federally listed species. Please contact USFWS Ecological Services Offices at http://www.fws.gov/southwest/es/arizona/ or:

Phoenix Main Office
2321 W. Royal Palm Rd, Suite 103
Phoenix, AZ 85021
Phone: 602-242-0210
Fax: 602-242-2513

Tucson Sub-Office
201 N. Bonita Suite 141
Tucson, AZ 85745
Phone: 520-670-6144
Fax: 520-670-6155

Flagstaff Sub-Office
SW Forest Science Complex
2500 S. Pine Knoll Dr.
Flagstaff, AZ 86001
Phone: 928-556-2157
Fax: 928-556-2121

HDMS records indicate that Western Burrowing Owls have been documented within the vicinity of your project area. Please review the western burrowing owl resource page at: http://www.azgfd.gov/w_c/BurrowingOwlResources.shtml.

HDMS records indicate that Sonoran Desert Tortoise have been documented within the vicinity of your project area. Please review the Tortoise Handling Guidelines found at: http://www.azgfd.gov/hgis/pdfs/Tortoisehandlingguidelines.pdf

Your project site is within one or more defined Areas of Capture Concern. Please follow Department protocols while working within an Area of Capture Concern at U:\Agency Directives\JaguarOcelot Directives 17AUG10.pdf.

Analysis indicates that your project is located in the vicinity of an identified wildlife habitat linkage corridor. Project planning and implementation efforts should focus on maintaining adequate opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer to: http://www.corridordesign.org/arizona. Please contact your local Arizona Game and Fish Department Regional Office for specific project recommendations: http://www.azgfd.gov/inside_azgfd/agency_directory.shtml.

Tribal Lands are within the vicinity of your project area and may require further coordination. Please contact:
Gila River Indian Community
PO Box 97
Sacaton, AZ 85247
(520) 562-6000
(520) 562-6010 (fax)

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

November 7, 2016

Aryan Lirange
FHWA Environmental Coordinator
Federal Highway Administration
4000 N. Central Ave., Suite 1500
Phoenix, AZ 85012

Re: Request for Cooperating Agency Status - North South Corridor Project

Dear Mr. Lirange:

The Arizona Game and Fish Department (Department) reviewed the Federal Highway Administration (FHWA) letter, dated October 28, 2016, inviting the Department to be a Participating Agency in the Tier I Environmental Impact Statement (EIS) process for the North South Corridor Study. The Tier 1 EIS will build upon the prior North South Corridor Study information collected during the Alternative Selection Report (ASR), Design Concept Report (DCR), and project-level Environmental Impact Statement (EIS) initiated in 2010.

The Department, having jurisdictional authority and state trust responsibility under Title 17 of the Arizona Revised Statutes for the management of Arizona's wildlife resources, respectfully requests Cooperating Agency status during the North South Corridor Study Tier I and subsequent NEPA processes. As a Cooperating Agency, the Department will provide expertise in identifying potentially affected resources, evaluating impacts, and developing alternatives and mitigation strategies for the Project. Specifically, due to the Department's expertise and best available data and information on Arizona's wildlife and wildlife related issues such as habitat connectivity, the Department is in a unique position to coordinate with the FHWA and the Arizona Department of Transportation (ADOT) regarding potential effects, as well as avoidance and minimization opportunities, for wildlife and habitat connectivity. In accordance with Title 40 Code of Federal Regulation (CFR) 1501.6 and 23 CFR 771.111(d), this unique expertise, coupled with the Department's regulatory authority over Arizona's wildlife and wildlife resources, meets the criteria for Cooperating Agency status.

The Department has concerns that the natural resource values within the study corridor are being under-represented by the study team. Department staff attended the Agency Stakeholder meeting for the North South Corridor Study on November 1, 2016. At this meeting, the study team stated that "natural resource values within the corridor were low, along both the western and eastern alternatives". Previously, during the project level EIS preparation, the Department

provided extensive information about the natural resources in the vicinity; this information identified portions of the eastern routes, especially the northern portion east of the CAP canal, to be of higher value to wildlife and wildlife related recreation. The Department offers its support and assistance to ensure the best available natural resource data and analyses identified above are appropriately incorporated into the impact analysis as required by the NEPA, thus improving efficiency, defensibility, and conservation effectiveness.

The Department has requested, and is in the process of scheduling, a meeting with the study team to have further discussion regarding wildlife resources and wildlife related recreation within the study area. The Department has confidence that, while working collaboratively, our agencies will be able to clearly describe the natural resources concerns within the study area, assist in the development of the evaluation criteria and identify reasonable and prudent measures to avoid, minimize, or mitigation these concerns.

The Department looks forward to your response, and our continued collaboration on this project. If you have any questions regarding this letter, please contact the Department's transportation coordinator, Cheri Bouchér, at (623) 236-7615 or cboucher@azgfd.gov.

Sincerely,

Joyce Francis

Joyce Francis, PhD
Habitat, Evaluation, and Lands Branch Chief
Arizona Game and Fish Department

cc:

Victor Yang, ADOT Project Manager
Joanie Cady, ADOT NEPA Planner

AGFD# M16-11035546

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

December 12, 2016

Ms. Joanie Cady
Arizona Department of Transportation
Environmental Planning Group
1611 W. Jackson St., MD EM02
Phoenix, AZ 85007

Re: Comment Response for the North-South Corridor Study

Dear Ms. Cady:

The Arizona Game and Fish Department (Department) reviewed the Federal Highway Administration (FHWA) letter, dated October 28, 2016, inviting the Department to be a Participating Agency in the Tier I Environmental Impact Statement (EIS) process for the North South Corridor Study. The Tier 1 EIS will build upon the prior North South Corridor Study information collected during the Alternative Selection Report (ASR), Design Concept Report (DCR), and project-level Environmental Impact Statement (EIS) initiated in 2010.

The Department has concerns that the natural resource values within the study corridor are being under-represented by the study team. Department staff attended the Agency Stakeholder meeting for the North South Corridor Study on November 1, 2016. At this meeting, the study team stated that "natural resource values within the corridor were low, along both the western and eastern alternatives". Previously, during the project level EIS preparation, the Department provided extensive information about the natural resources in the vicinity; this information identified portions of the eastern routes, especially the northern portion east of the CAP canal, to be of higher value to wildlife and wildlife related recreation. The Department offers its support and assistance to ensure the best available natural resource data and analyses identified above are appropriately incorporated into the impact analysis as required by the NEPA, thus improving efficiency, defensibility, and conservation effectiveness.

The Department scheduled a meeting with the study team tomorrow, December 12, 2016, to have further discussion regarding wildlife resources and wildlife related recreation within the study area. While we understand that the scope of the North South Corridor has changed to a Tier I level review instead of a project-level review, we wanted to provide this information for the project record, as it may be used for both the upcoming Tier I and subsequent Tier II analyses. The Department has confidence that, while working collaboratively, our agencies will be able to clearly describe the natural resources concerns within the study area, assist in the development of the evaluation criteria and identify reasonable and prudent measures to avoid, minimize, or mitigation these concerns.

The Department looks forward to our continued collaboration on this project. If you have any questions regarding this letter, please contact me at (623) 236-7615 or cboucher@azgfd.gov.

Sincerely,

Cheri A. Bouchér
Project Evaluation Program Specialist

cc: Joshua Fife, ADOT
Kurt Watzek, HDR
Victor Yang, ADOT

attachment

M16-12125515

ATTACHMENT 1: AGFD RESPONSE TO COMMENTS MATRIX FOR THE NORTH-SOUTH CORRIDOR STUDY

Comment #	Pg #/ ¶#	AGFD Comment Letter (February 3, 2016)	Pg #/ ¶#	ADOT Response Letter (June 3, 2016)	AGFD Response
1	1/ 3	The Department recognizes that use of Geographic Information Systems (GIS) and geospatial data can be powerful tools for wildlife conservation and planning. In addition to web-based tools such as HabiMap Arizona (www.habimap.org) and the Online Environmental Review Tool (www.azgfd.gov/hgis), site-specific project evaluation and analysis may require additional data. The Department has been developing a repeatable and standardized approach that facilitates the incorporation of relevant geospatial datasets in order to identify potential impacts of projects on wildlife and habitat resources and wildlife-related recreation. Our goal is to provide a general assessment of the potential effects of the various alternatives identified by the ADOT. We will enhance this initial assessment as additional data and information become available throughout the project planning timeline.	1/ 3	… In most cases, special status species and important biological events or circumstances will be known for an area, or readily obtained, prior to initiating the NEPA document, especially near an urban environment. Unless the NEPA document is being prepared specifically as a result of potential significant impacts to a known biological resource, reasonable level of resource investigation is applied under NEPA to understand the impacts on those biological resources and at a level where there is confidence that significant impacts are reasonably believed to not occur. In the case of the North South Corridor Study, there are no important biological resource concerns at this point, on which to focus concerted NEPA investigations based on the study area's past and current land use impacts, condition of the existing habitat, and lack of species documentation from people that work in or have experience with the study area.	A "lack of species documentation" is not a valid indicator of species absence, particularly in circumstances where habitat is appropriate and occurrence is documented in adjacent patches. Active surveys are required to determine presence or a reliable estimate of absence for cryptic and/or reclusive species. Under NEPA, it is the responsibility of ADOT to conduct adequate biological surveys prior to project impact analysis in order to ensure all species and habitats are sufficiently analyzed. As discussed on page 4 (3rd paragraph) and page 7 (1st paragraph) of the Department's February 2016 letter, suitable Sonoran desert scrub habitat for desert tortoise, Tucson shovel-nosed snake, and kit fox occur in the segments east of the CAP canal. Additionally, the Department cited studies conducted in the Sonoran desert habitat east of the CAP (and east of Segments I, J, K1, and O3) where these species have been recorded. Furthermore, to state that "there are no important biological resource concerns at this point, on which to focus concerted NEPA investigations" is directly contrary to the species and wildlife movement concerns clearly identified by the Department.

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					As discussed in the Data Needs section of our previous letter, the Department requests that, in addition to the general floral and faunal biological surveys within the corridor, surveys for Sonoran desert tortoise, Tucson shovel-nosed snake, and kit fox should be conducted to identify current distribution and movement patterns. Additionally, movement studies for larger mammals should be conducted to inform project design, which must address permeability of the roadway for wildlife movement.
2	4/ 2	In general, the western-most segments would result in fewer impacts to wildlife, habitat, and wildlife resources, than the segments to the east. Table 1 summarizes the results of the Department's evaluation, including a segment by segment ranking, with discussion comments to provide context for the ranking. Each segment was given an overall ranking; a high rating indicates potential significant impacts to resources; a moderate rating indicates moderate to significant impacts to resources, with the potential to minimize or mitigate impacts; and a low rating indicates limited impacts to resources if appropriate mitigation measures are implemented.	2/ 2	In the case of the study area, the agricultural lands may have more value for wildlife than the native habitat because of the degraded condition of the native habitat. It is the project team's belief that this is the case for much of the study area. While it seems obvious that any "new" transportation facility would cause the highest amount of disturbance and habitat fragmentation, we need to be careful that this is not automatically translated into the analysis as an actual "high" impact as this too should not be based solely on its own merits since there are many other elements fragmenting the entire study area (i.e., canals, flood structures, security fences, development, railroad, high voltage powerlines, roads, and trails).	While it is accurate that some of the native habitat has been disturbed by recreation activities, this level of disturbance does not negate the value of the habitat for wildlife that it presents; although this area may not support the highest quality Sonoran desert scrub and mesquite bosque vegetation in the state, it is certainly the highest quality habitat in the study area. This area in particular is extremely valuable for small game hunting due to the close proximity to the metropolitan area. The level of impact from a multi-modal transportation corridor is significantly different than that of the existing recreation pressure (i.e. OHVs); this irreversible impact (including all associated cumulative impacts) should not be discounted High, Moderate, and Low rankings were in

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				The project team believes that using a "high" impact rating that relates to "potential significant" impacts to resources is misleading for the North·South Corridor Study Area due to habitat that is not intact and has been greatly degraded from historic land use practices. We also believe that the moderate rating that has been assigned that indicates "moderate to significant" impacts is not appropriate for this area.	relation to other segments within the study, however, we do agree that our definitions of High, Moderate, and Low does not clearly reflect the intrinsic value of the resource. The Department's evaluation tool and ranking system is under development; we appreciate this constructive feedback and will work to correct any unintended mischaracterization.
3	4/ 3	Segments A, E1, and E2, are situated west of the CAP canal, which is an existing constraint to east-west wildlife movement in the area. When compared to segments I, I2, and J, which are situated east of the CAP canal, the segments to the west would result in fewer impacts to terrestrial wildlife movement through the area, and less overall habitat fragmentation. The same is true for western segments E4, G, and L2, when compared to eastern segments K1, K3, and O3. Additionally, the eastern segments (K1, K3, and O3) contain a greater amount of native desert habitat for key species of concern such as kit fox (*Vulpes macrotis*), Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*), and the Sonoran desert tortoise (*Gopherus morafkai*).	3/ 1	As indicated above, we generally agree that the alternatives west of the Central Arizona Project (CAP) would result in fewer impacts than the alternatives on the east. However, due to the condition and use of the habitat in most of the undeveloped areas, it is believed that the presence of populations of kit fox and possibly Tucson shovel-nosed snake are unlikely. Moreover, we believe suitable habitat for the Sonoran desert tortoise does not occur north of East Arizona Farms Road in the study area.	A study carried out by the Department captured approximately 50 individual kit foxes in the area east of the CAP. Captured male kit foxes were fitted with GPS radio collars for this study and data shows that kit foxes reside in the area east of the CAP, including within, or immediately adjacent to, Segments I, J, K1, and O3 (Jones 2016). Additionally, field activities carried out in the course of the research showed that there were numerous breeding pairs, suggesting a self-sustaining population in the area to the east of the CAP. Finally, Department biologist Andrew Jones incidentally found a Tucson shovel-nosed snake while conducting field work for the kit fox research project. The condition of the habitat in the undeveloped area is good and typical of the Sonoran desert. Tucson shovel-nosed snake are expected to occur in undisturbed creosote flats which would be impacted by I, I2, J,

Comment #	Pg #/ ¶#	AGFD Comment Letter (February 3, 2016)	Pg #/ ¶#	ADOT Response Letter (June 3, 2016)	AGFD Response
					K1, K3, and O3. Protocol surveys for Sonoran desert tortoises have not been conducted within I, I2, J, K1, K3, and O3, but the desert washes that bisect the alignments provide suitable habitat for this species. East of O3, along SR 79 where protocol surveys have been conducted, numerous Sonoran desert tortoise have been recorded.
4	5/ 3	…the agricultural lands may be ranked as moderate or low, but the value of agricultural lands should not be discounted as there are many species utilizing these areas. Agricultural croplands often provide habitat for migratory birds and species that may occur year-round, such as the western burrowing owl (*Athene cunicularia hypugaea*) and other foraging raptors.	3/ 2	It is true that all of the study area provides valuable habitat for some species but there is little habitat in the study area where vegetation species diversity could be considered high and would provide valuable habitat in the broader sense for a wider range of wildlife species. It appears likely that the class of wildlife benefitting most and afforded the greatest resources by the habitat in the study area is birds and the habitat likely providing the greatest resources are the irrigated agricultural lands.	While agricultural lands occur within much of the corridor, the undeveloped Sonoran desert scrub cannot be discounted. Drainage features and additional water sources occur within the Sonoran desert scrub habitat in the area, including mesquite bosque vegetation occurring adjacent to the CAP. Additionally, the Sonoran desert scrub is valuable for wildlife movement and small game hunting. In addition to birds (quail, mourning dove), javelina, mule deer, kit fox, antelope jack rabbits, and Gila Monster are known to inhabit the area. It should also be noted that the Picacho Reservoir currently has water in it and the Department has been getting calls from waterfowl hunters about access issues to the reservoir. This reservoir cannot be discounted as valuable habitat within the Tier I EIS.

5	6/ 3	Maricopa County Flood Control District's flood-control structures are also found in the vicinity of the North-South Corridor. The mesquite bosque vegetation associated with these floodcontrol structures provides high quality habitat and year round water sources for wildlife. These structures are adjacent to the CAP, which also presents a barrier to wildlife movement. The proposed regional CAP trail would also traverse the flood control structures, further fragmenting habitat along the CAP. The North-South Corridor encompasses the CAP and flood control structures, and transverses the CAP in some locations. Cumulatively, the loss of habitat, fragmentation, new barriers to movement, and loss of movement corridors, open space and recreation in this area could have significant impacts to wildlife resources.	3/ 5	The CAP creates an almost complete barrier to terrestrial wildlife movement because of security fences.… According to CAP personnel, the only mammals that appears to cross the CAP regularly are coyotes that get through the security fence and swim across the canal. Significant cumulative impacts from loss of habitat, fragmentation, new barriers to movement, and loss of movement corridors, are addressed based on context and intensity and are not likely to occur based on current biological and land use conditions.	The CAP is indeed a substantial barrier to wildlife movement. It has fragmented habitats leaving patches with reduced connectivity to surrounding habitat. It is likely that it has effectively isolated some terrestrial species populations. However, there are 19 locations along the CAP between I-10 and U.S. Hwy 60 that various species of wildlife are likely to utilize. There are also 25 culverts and 8 road bridges that may provide limited passage opportunities for select species. While these crossings are far from ideal, they do provide some potential for highly mobile species to utilize habitat on both sides of the CAP. They may also facilitate gene flow in populations of high and low mobility species. Anecdotal documentation of coyotes crossing the canal is not adequate justification for an assumption that other mammalian species do not cross. Movement and/or genetics studies on target species would need to be conducted in order to arrive at a useable metric of permeability. At a minimum comprehensive surveillance of the available crossing locations would be needed to suggest that most species do not cross the CAP. With the addition of another movement barrier, the species that were functionally isolated by the CAP will have their

					remaining habitat further fragmented. As fragmented patches of habitat become smaller, species will be lost to extirpation as they are unable to persist within the confines of the reduced area. Where small populations of species are able to persist, the added barrier of a highway will substantially reduce (possibly eliminate) gene flow with neighboring populations. The implications of the resulting inbreeding effects can be devastating to the long-term viability of these isolated populations. Consideration of existing barriers in alignment selection of the new highway and inclusion of appropriate passage features can minimize its overall barrier effect. Given current biological conditions, significant cumulative effects from the reduction in habitat patch sizes and the reduction in gene flow are almost certain to occur for a variety of species. However, if the project were to include select improvements (crossings) to the existing barriers (CAP) and incorporate appropriate paired crossings on the new highway, the local connectivity could be improved which would substantially reduce the overall barrier effect of the new highway.
6	6/ 6	It is especially imperative that ADOT consider cumulative impacts to wildlife movement. If additional information/data/studies are needed from the Department for ADOT to perform this analysis, we request further	3/ 6	Cumulative impacts will be addressed in the NEPA document; however, undertaking extensive research projects for common species is not the intent of NEPA unless existing evidence indicates it may be warranted. For example, if deer	Numerous Sonoran desert tortoise, Tucson shovel-nosed snake, other reptiles and amphibians, and kit fox have been recorded along the SR79 and Florence area where surveys (live and roadkill) have been conducted (AGFD 2016; iNaturalist 2016a

		coordination with ADOT to coordinate on the analysis.		or other wildlife collisions occur regularly in certain areas along SR 79, or regular sightings of uncommon species by ranchers, CAP personnel, or recreational users are reported, this could be evidence that more investigation is needed.	and 2016b; Jones 2016; Hoffman and Leavitt 2015; Grimsley et. al. 2015). It is likely that many of these species occur within, or adjacent to, the proposed segments east of the CAP. A "lack of species documentation" is not a valid indicator of species absence, particularly in circumstances where habitat is appropriate and occurrence is documented in adjacent patches. Active surveys are required to determine presence or a reliable estimate of absence for cryptic and/or reclusive species. Under NEPA, it is the responsibility of ADOT to conduct adequate biological surveys prior to project impact analysis in order to ensure all species and habitats are sufficiently analyzed. The Arizona Game & Fish Department manages wildlife resources in accordance with our State Wildlife Action Plan (SWAP), which is mandated nationwide by Congress to be proactive and help conserve wildlife and natural areas (i.e. keeping common species common) before they become rare and more costly to protect.
7	7/ 1	Tucson shovel-nosed snake, kit fox, and Sonoran Desert tortoise have been recorded within the native desert lands east of the North-South Corridor (Attachment 4; Grandmaison et al 2010; Jones 2016; Grimsley et al. 2015; Hoffman and Leavitt 2015). In order to fully evaluate project effects to the local populations of these species, as well as movement issues and needs, more	4/ 1	Regarding data needs, habitat conditions suitable for the kit fox and desert tortoise are not likely found in the study area north of East Judd Road due to impacts on habitat from grazing and recreational vehicles. Tucson shovel-nosed snakes may also be problematic in this area due to cattle and recreational vehicle use. The areas including Segments Q, V, and X have the greatest potential for any of these	A study carried out by the Department captured approximately 50 kit fox individuals in the area North of East Judd Road from 2010-2012. Captured male kit foxes were fitted with GPS radio collars for this study and data shows that kit foxes reside in the areas between East Judd Road and Baseline Ave, including within, or immediately adjacent to, Segments I, J, K1, and O3 (Jones 2016).

		information is needed about their current distribution and movement patterns across the proposed routes… A greater understanding is needed of the current movement of larger mammals, such as mule deer, across Segments A, E1, E2, I, I2, J, K1, K3, O3, and especially through Q, V, and X, which connect the San Tan Mountains to the mountain ranges and open space east of the North-South Corridor.		species to occur as isolated populations/individuals resulting from the CAP, SR 79, Hunt Highway, agricultural land, and development isolating this habitat.	Additionally, field activities carried out in the course of the research showed that there were numerous breeding pairs, suggesting a self-sustaining population in the areas north of East Judd Road; this population did not appear to be negatively impacted by grazing. It is also important to note that previous studies (Cypher et al. 2000. Population Dynamics of San Joaquin kit foxes at the naval petroleum reserves in California. Journal of Wildlife Management Monograph) found no negative impacts of cattle grazing to kit foxes. Tucson shovel-nosed snake should be expected to occur in undisturbed creosote flats (those that have not been turned over for agriculture or heavily tilled) where there is no evidence of impacts from livestock or recreational vehicles. Sonoran Desert Tortoises and their habitat most likely occur in the desert washes north of East Judd Road no matter the grazing or recreational vehicle conditions.
8	7-8	See Wildlife Movement paragraph and associated bullets	4/ 2	Movement of any mammals, especially large mammals, across Segments A, El, E2, I, 12, J, Kl, K3, and 03 to access mountains on either side is highly unlikely due to the CAP canal and its security fencing. While it is possible that any mammals could cross the CAP at one location while crossing Segments Q and V along a bridge constructed for a private trail, this would require negotiating numerous other barriers and development	See Comment #5 response.

				and would likely only be used opportunistically rather than as an intended connection for movement between areas. With the proximity of the Gila River to Segments Q and V, it is most likely the Gila River would be used for large mammal movement and is the only wildlife movement corridor that provides unobstructed access across the CAP near the study area. Unobstructed movement of mammals between the San Tan Mountains and the mountain ranges to the east is only provided by the Gila River. The Gila River would be bridged at any alternative crossing, providing the best scenario for wildlife movement and habitat connectivity.	
9	7-8	See Wildlife Movement paragraph and associated bullets	4/ 3	It is unlikely that target species surveys for non-federally listed special status species or species that are not shown to be of great concern, would be considered unless evidence shows this is warranted. NEPA does not require exhaustive studies to determine impacts but after considering the context and intensity of potential impacts, additional investigations could be shown to be justified.	See Comment #6 response.
10	7-8	See Wildlife Movement paragraph and associated bullets	4/ 4	It is understood that transportation projects have an effect on wildlife movement and cumulative effects will be analyzed in the NEPA document. However, the study team believes that the project's effects on the natural movement of wildlife in this highly fragmented and degraded habitat would not have a singularly important role in affecting	See Comment #5 response.

				wildlife or movement other than direct impacts by displacing habitat and road mortality for limited populations of resident wildlife that would have territories in the area. Opportunities to provide permeability for wildlife along the proposed roadway facility will be addressed as the project progresses and would consider many factors including biology, drainage, land use, and barriers. We agree the Gila River is the prime corridor for these purposes in the study area.	
11	7-8	See Wildlife Movement paragraph and associated bullets	4/ 5	Although there are potential features such as drainage crossovers and road bridges that wildlife could use to cross the CAP, there are currently no CAP-designated wildlife crossings in the project area. Any crossings that may occur across the CAP outside the project area and that would be conducive to wildlife use would be evaluated to address continuity for movement under the North South Corridor project. Efforts to engage owners of existing barriers to allow or provide crossing structures on their facilities is not anticipated as part of the efforts for this project.	See Comment #5 response.
12	8	Impacts to Habitat: The Department recommends that all impacts to habitat be mitigated in-kind (i.e. impacts to Sonoran Desert scrub habitat should be mitigated with Sonoran Desert habitat), through a combination of on-site impact avoidance and/or minimization when feasible, and off-site preservation,	5/ 2	Regarding habitat compensation, ADOT believes the habitat in the study area would fall primarily within Resource Category IV for a majority of the undeveloped land in the study area with the exception of the relatively intact private lands between East Heritage Road and West Hunt Highway, located just	It is the Commission Policy that the Department shall seek compensation at 100% level, when feasible for actual or potential habitat loss resulting from land and water projects. Among factors deemed important by the Commission are potential impacts to special category species and/or economically important wildlife species as

		creation, or compensation.		north of the Gila River. The goal for Resource Category IV habitat is to minimize loss of habitat value.	well as issues which reflect the value, quantity and quality of habitats which may be impacted by proposed projects. While agricultural lands fall into the resource category IV, the Sonoran desert scrub falls into the resource category III. The Department will recommend ways to minimize or avoid category III habitat losses, with anticipated losses compensated by replacement of habitat values in-kind, by substitution of high value habitat types, or by increased management of replacement habitats, so that no net loss occurs. The Department continues to work with the MCFCD and the NRCS for the replacement of 80% of the mesquite bosque habitat along the flood control structures. In addition, the Department continues to work with BOR and Pinal County on the CAP trail planning to ensure connectivity and movement of wildlife.

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January 10, 2017

In Reply Refer To:

999-A(365)S
TRACS No. 999 PN 000 H7454 01L
North South Corridor Study Tier 1 EIS
Cooperating Agency Acceptance Letter

Ms. Joyce Francis, Habitat, Evaluation, and Lands Branch Chief
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086

Dear Ms. Francis:

The Federal Highway Administration (FHWA) and Arizona Department of Transportation (ADOT) are in receipt of two letters from Arizona Game and Fish Department (AGFD), dated November 7, 2016 and December 30 2016. The letters requested and reiterated AGFD desire to be granted Cooperating Agency status for this Tier 1 EIS process due to jurisdictional authority and state trust responsibility under Title 17 of the Arizona Revised Statutes for the management of Arizona's wildlife resources.

The FHWA considers the elevation of a given agency to Cooperating or Participating Agency status on a project by project basis. Ultimately, the decision to elevate an agency's status depends on the appropriateness of including the petitioning agency into the process, the role and responsibilities of the agency, and finally the project type, size and location. After evaluating the potential AGFD role for this project, FHWA accepts the request and concurs with AGFD's role as a Cooperating Agency in the Tier 1 EIS process for the North South Corridor Study due to special expertise regarding wildlife resources within the project study area. As a Cooperating Agency, you will be requested to provide the following during the development of the Tier 1 EIS:

- Meaningful and early input on the purpose and need, range of alternatives, methodologies and level of detail required by your agency to evaluate impacts to your resource(s);
- Participation in periodic coordination meetings, and/or field visits, as appropriate;
- Timely reviews and comments on the NEPA documents that explain the views and concerns of your agency on the adequacy of the document, anticipated impacts and mitigation; and
- Identification of the impacts and important issues to be addressed in the EIS pertaining to the intersection of the alternatives with the resource(s) in your jurisdiction.

If you have any questions or would like additional information regarding your role as a Cooperating Agency, please contact Rebecca Yedlin, FHWA Environmental Coordinator, at 602-382-8979 or rebecca.yedlin@dot.gov. We look forward to your continued involvement in the North South Corridor Study Tier 1 EIS.

Sincerely,

for Karla S. Petty
Arizona Division Administrator

ecc:
Cheri Boucher, AGFD Project Evaluation Program Specialist
Rebecca Yedlin, FHWA Environmental Coordinator
Aryan Lirange, FHWA Senior Urban Engineer
Victor Yang, ADOT Project Manager
Joanie Cady, ADOT Environmental Planning

LaBianca, Michael

From: Victor Yang <VYang@azdot.gov>
Sent: Thursday, February 4, 2016 11:34 AM
To: LaBianca, Michael; Joanie Cady
Subject: FW: AGFD Preliminary review of the North-South Corridor Study
Attachments: M16-02013521 North-South_AGFD-PreliminaryAnalysis.pdf

Categories: REVIEWED

Attached AGFD review of NS study.
Thanks,
Victor

From: Cheri Boucher [mailto:CBoucher@azgfd.gov]
Sent: Tuesday, February 02, 2016 4:21 PM
To: Victor Yang
Cc: Joshua Fife; 'Watzek, Kurt'
Subject: AGFD Preliminary review of the North-South Corridor Study

Hi Victor,
The Department's preliminary evaluation of the North-South Corridor Study is attached. I know it took us some time to get this to you, but please know that we appreciate your coordination on this project, and look forward to hearing more about the project as it progresses.

If you have any questions, need clarification, or if we can provide any additional information, please don't hesitate to contact me.

Thank you,

Cheri A. Bouchér
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February 3, 2016

Mr. Victor Yang
Arizona Department of Transportation
205 South 17th Avenue
MD 605E
Phoenix, AZ 85007

Re: Preliminary Evaluation for the Arizona Department of Transportation's North-South Corridor Study Analysis

Dear Mr. Yang:

The North-South Corridor Study area is a new new transportation route designed to provide a continuous north-south route through central Pinal County. The Arizona Department of Transportation (ADOT) and Federal Highway Administration (FHWA) are studying the area between U.S. Route 60 in Apache Junction and Interstate 10 near Eloy and Picacho. The purpose of the study is to identify and evaluate a possible route to provide a connection between these two areas. The North–South Corridor Study will result in the preparation of a Location/Design Concept Report (L/DCR) and an Environmental Impact Statement (EIS) for the proposed 45-mile-long transportation corridor.

The Arizona Game and Fish Department (Department) appreciates this opportunity to submit the results of our preliminary evaluation of the potential impacts to wildlife and wildlife habitat along the North-South Corridor Study area (North-South Corridor). In addition to identifying potential impacts to sensitive resources along the corridor alternatives, this evaluation has also allowed us to identify data needs and mitigation opportunities along these alternative routes.

METHODOLOGY

The Department recognizes that use of Geographic Information Systems (GIS) and geospatial data can be powerful tools for wildlife conservation and planning. In addition to web-based tools such as HabiMap Arizona (www.habimap.org) and the Online Environmental Review Tool (www.azgfd.gov/hgis), site-specific project evaluation and analysis may require additional data. The Department has been developing a repeatable and standardized approach that facilitates the incorporation of relevant geospatial datasets in order to identify potential impacts of projects on wildlife and habitat resources and wildlife-related recreation. Our goal is to provide a general assessment of the potential effects of the various alternatives identified by the ADOT. We will enhance this initial assessment as additional data and information become available throughout the project planning timeline.

Initially, the Department examined each segment for the potential impact of the infrastructure on the following wildlife/habitat/recreation resources in the area, and determined or identified:

1.) Vegetation/land cover
   - Potential impacts on the natural versus built environment
   - Amount of riparian resources that could be affected
2.) Hydrologic function
   - Amount of waterways that are potentially affected
   - Perennial water that could be affected
   - Amount of floodplain that might be affected
3.) Landscape connectivity
   - Known permeability concerns already in the area
   - Areas that are important for wildlife connectivity
4.) Landscape integrity
   - Level of disturbance in the area
   - Potential for a road corridor to fragment or isolate blocks of currently in-tact land
5.) Wildlife and wildlife habitat
   - Department concerns for the wildlife in the area, including: Species of Economic and Recreational Importance, Species of Greatest Conservation Need, Federal listed species and associated critical habitat, and key species habitat within the area
6.) Conservation and wildlife management lands
   - Any lands that have been acquired or are managed for conservation or wildlife considerations in the area
7.) Outdoor and wildlife-related recreation
   - Potential impacts of the road segments on hunting/fishing/wildlife viewing in the area, including access to surrounding lands

To adequately answer these questions, each segment of the North-South Corridor was attributed in GIS with the best available data. The results of these analyses are summarized in Table 1, and detailed in Attachments 2a and 2b. The method to populate the segments depends on the type and spatial resolution of the input data. For example, segments were assigned the maximum value among all the intersected 30 meter pixel raster data values from the HabiMap layers, and the landscape integrity data had both a maximum score and majority score attributed to give a clearer picture of the values within each segment (Figure 1). For other datasets, a length, area, or occurrence of overlapping features was attributed to the segments.

One aspect of the analysis worth noting is that the segments are not uniform in size, which may result in unintended disparity in output numbers. For example, the transition segments, and segments V and X, are of different widths than the standard 1,500-foot width of the other segments. Segments Q and O3 are particularly long, which could result in an under- or over-representation of underlying data when compared to other segments. These factors were considered in the summarized analysis results.

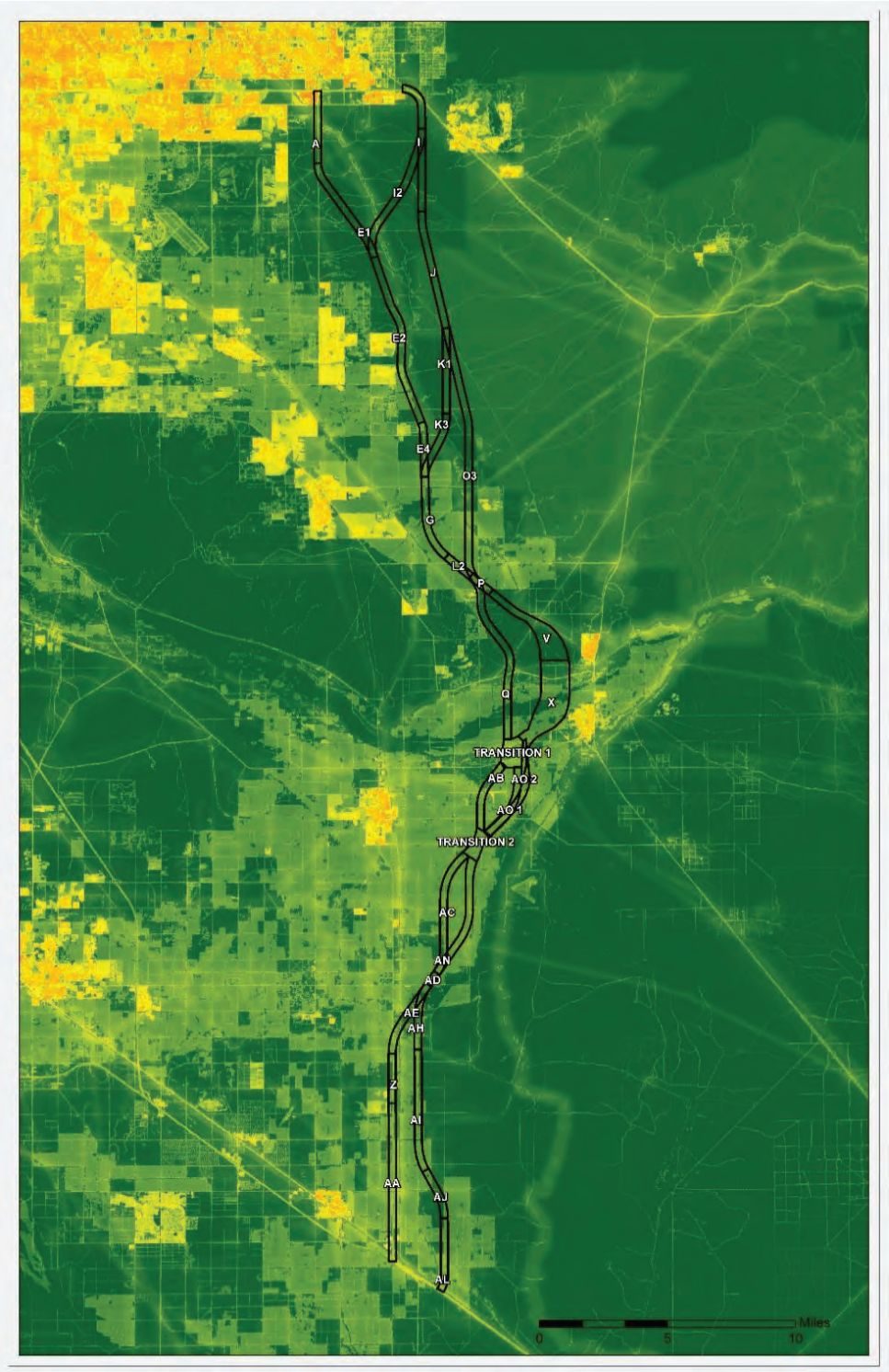

Figure 1: North-South Corridor Segments and Landscape Integrity dataset
Alignments in this figure are overlaid on top of the AGFD Landscape Integrity dataset.

The Department evaluated each segment separately and categorized the potential impacts per segment as low, moderate, or high (Figure 2). Expert opinion of Department staff was relied upon for the ranking, based on the quantitative values in relation to other segments; i.e. if the number of linear feet of waterways per acre ranged between 0 and 16 among the segments, segments with 0-5 linear feet per acre were ranked low, segments with 6-10 linear feet per acre were ranked moderate, and segments with greater than 10 feet per acre were ranked high. While it is understood that a transportation corridor would require ground disturbance at any given location, the expected level of impact to sensitive resources would differ depending on its placement within the landscape (i.e. within dense urban development, adjacent to existing transportation facilities, within an agricultural area, or within native habitat currently un-bisected by a roadway or rail line). "New" transportation facilities would result in the highest amount of actual disturbance and fragmentation to habitat, while "expansion" segments, which fall adjacent to existing facilities, would result in less habitat fragmentation). Evaluation criteria values were weighted according to the potential degree of impact given current land use. Data sets, types, and sources used in analysis, and the analytical methods used, are described in Attachment 1.

ANALYSIS RESULTS

In general, the western-most segments would result in fewer impacts to wildlife, habitat, and wildlife resources, than the segments to the east. Table 1 summarizes the results of the Department's evaluation, including a segment by segment ranking, with discussion comments to provide context for the ranking. Each segment was given an overall ranking; a high rating indicates potential significant impacts to resources; a moderate rating indicates moderate to significant impacts to resources, with the potential to minimize or mitigate impacts; and a low rating indicates limited impacts to resources if appropriate mitigation measures are implemented. Datasets, types, and sources used in analysis, and the analytical methods used, are described in Attachment 1. The evaluation criteria results, showing the data associated with each segment and resource category, are detailed in Attachments 2a and 2b.

- Segments A, E1, and E2, are situated west of the CAP canal, which is an existing constraint to east-west wildlife movement in the area. When compared to segments I, I2, and J, which are situated east of the CAP canal, the segments to the west would result in fewer impacts to terrestrial wildlife movement through the area, and less overall habitat fragmentation. The same is true for western segments E4, G, and L2, when compared to eastern segments K1, K3, and O3. Additionally, the eastern segments (K1, K3, and O3) contain a greater amount of native desert habitat for key species of concern such as kit fox (*Vulpes macrotis*), Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*), and the Sonoran desert tortoise (*Gopherus morafkai*).

- A data-driven comparison between Segment Q (western segment), and Segments P, V, and X (eastern segments), is difficult due to the significant size differences of the segments. Segment Q is a very long segment that is consistent with the typical 1,500-foot corridor width, while resources within P, V, and X would collectively be compared to resources within Segment Q, but the width of V and X are much greater than Q. Despite the quantitative comparison challenges, Segment Q would likely result in fewer impacts to

wildlife, habitat, and wildlife resources. A large portion of Q parallels an existing railway, thereby minimizing additional fragmentation of the native vegetation that acts as a linkage between the San Tan Mountains and open space and mountain ranges to the east.

- Transitions 1 and 1-2 are similar in length and would have similar overall impacts to wildlife and wildlife habitat when looking at a direct comparison; however, Transition 1-2 would only be employed to connect eastern Segments P/V/X and AO2. Given the previously-stated concerns about the eastern segments, the Transition 1 would contribute to fewer overall corridor impacts to wildlife and wildlife resources.

- As the corridor progresses south to Interstate 10, the western segments, including AC, AE, Z, and AA, are expected to have fewer overall impacts to wildlife and wildlife resources. Segments AE, Z, and AA would expand the existing State Route 87, whereas agricultural lands with small dirt farm roads comprise the eastern routes. The eastern segments are closer to the native habitats and open spaces to the east of the corridor, including the Picacho Reservoir; there is a higher likelihood that the eastern routes would indirectly affect the adjacent open space through noise, lighting, and air quality, etc., as well as limiting opportunities for recreationists to access the open space.

CONSIDERATIONS

Agricultural Lands

Almost all of the vegetation/land cover types found within the North-South Corridor segments provide valuable habitat to different wildlife species. As seen in Attachment 3, a very small percentage of the segments contain developed land (residential or industrial development); agricultural cropland and native desert scrub vegetation comprise the majority of the land cover within the North-South Corridor. The ranking of segments as "Low", "Moderate", or "High" is relative to other segments within the project area; the agricultural lands may be ranked as moderate or low, but the value of agricultural lands should not be discounted as there are many species utilizing these areas. Agricultural croplands often provide habitat for migratory birds and species that may occur year-round, such as the western burrowing owl (*Athene cunicularia hypugaea*) and other foraging raptors.

Picacho Reservoir

The Department owns and manages a portion of the Picacho Reservoir lands along with the Bureau of Land Management (BLM), and the Arizona State Land Department (ASLD). Historically, this reservoir has provided excellent habitat for wildlife, including waterfowl. It has been a popular destination for birding, fishing, and hunting. Currently, the Picacho Reservoir is dry, as water flow to the reservoir has been diverted to provide irrigation to nearby croplands since 2010. Although the reservoir does not currently contain water, the Department's evaluation treats the reservoir as if it is still holding water. This is necessary to adequately represent the reservoir's high habitat value, should it be filled in the future.

Passenger Rail Comparison

When reviewing the Arizona Passenger Rail Corridor Study- Tucson to Phoenix (Passenger Rail) project, the Department identified the Orange alternative as having the most potential impacts to wildlife resources. Although the Orange Passenger Rail alternative overlaps much of the North-South Corridor, the Department's ranking of segments within the Passenger Rail Corridor (AGFD 2014) cannot be directly applied to the areas of overlap. The Passenger Rail evaluation, similar to the North-South evaluation, ranked segments in relation to other segments within the project area, i.e. the Green, Yellow, and Orange routes were compared, and of those routes, the Department determined that the Orange could result in the most impacts to wildlife movement and fragmentation of habitat. Similarly, when comparing the western segments to the eastern segments of the North-South Corridor, the eastern segments could result in the greatest impacts.

CUMULATIVE IMPACTS

In 2011, Pinal County amended the Comprehensive Plan to include the vision for Superstition Vistas, a large development in an undisturbed landscape. This amendment includes the conversion and loss of lands designated for conservation and recreation to moderate low density residential (1-1.3 du/ac) and residential (1du/ac) north of Highway 60 and east of Highway 79, south to Florence.

Maricopa County Flood Control District's flood-control structures are also found in the vicinity of the North-South Corridor. The mesquite bosque vegetation associated with these flood-control structures provides high quality habitat and year round water sources for wildlife. These structures are adjacent to the CAP, which also presents a barrier to wildlife movement. The proposed regional CAP trail would also traverse the flood control structures, further fragmenting habitat along the CAP. The North-South Corridor encompasses the CAP and flood control structures, and transverses the CAP in some locations. Cumulatively, the loss of habitat, fragmentation, new barriers to movement, and loss of movement corridors, open space and recreation in this area could have significant impacts to wildlife resources.

- It is important that ADOT consider cumulative impacts to wildlife habitat and recreation opportunities in the vicinity of the North-South Corridor.

Should the Passenger Rail be constructed in the vicinity of the North-South Corridor, the potential cumulative impacts of the these two barriers to wildlife movement should be examined. According to Forman et al., "Road density appears to affect many species of large animal…and many other ecological patterns can be related to road density" (2003). Additionally, the Handbook of Road Ecology identifies that "The density and configuration of the road network across the landscape are important drivers of the scale and intensity of road impacts on wildlife" (van der Ree et al. 2015).

- It is especially imperative that ADOT consider cumulative impacts to wildlife movement. If additional information/data/studies are needed from the Department for ADOT to perform this analysis, we request further coordination with ADOT to coordinate on the analysis.

DATA NEEDS

Tucson shovel-nosed snake, kit fox, and Sonoran Desert tortoise have been recorded within the native desert lands east of the North-South Corridor (Attachment 4; Grandmaison et al 2010; Jones 2016; Grimsley et al. 2015; Hoffman and Leavitt 2015). In order to fully evaluate project effects to the local populations of these species, as well as movement issues and needs, more information is needed about their current distribution and movement patterns across the proposed routes. These data are critical to establishing meaningful and effective mitigation and minimization approaches and designs for Tucson shovel-nosed snake and Sonoran Desert tortoise along the chosen route.

A greater understanding is needed of the current movement of larger mammals, such as mule deer, across Segments A, E1, E2, I, I2, J, K1, K3, O3, and especially through Q, V, and X, which connect the San Tan Mountains to the mountain ranges and open space east of the North-South Corridor. These areas have been identified as potentially important habitat for key species (Attachment 5); however, more detailed information about movement patterns and species' use, is necessary to identify appropriate mitigation for the additional barrier effects that the North-South Corridor would cause in the region.

- The Department recommends collection of movement data for target species prior to, during, and for at least four years following construction, and considers this an essential component of any mitigation strategy regardless of which route is selected. An evaluation with accompanying pre- and post-construction data is also imperative for the application of any and all mitigation components.

MITIGATION OPPORTUNITIES

Wildlife Movement

Transportation infrastructure compromises the natural movement of mammals, reptiles, and some birds. The barrier effect on wildlife results from a combination of disturbance and avoidance effects, physical hindrances, and traffic mortality that all reduce the number of movements across the barrier. The North-South Corridor is part of a larger transportation network contributing to overall statewide fragmentation, degradation, isolation, mortality and barrier effects on wildlife and habitats. Therefore, individual infrastructure projects should be evaluated at a landscape scale, considering their contributions to the cumulative impacts of a larger infrastructure network. Additionally, ensuring the safe and effective movement of wildlife through the North-South Corridor also improves the safety of the roadway itself, by reducing the likelihood of wildlife-vehicle interactions and accidents.

- There are opportunities to improve connectivity over the CAP canal, which presents an existing barrier to wildlife movement.
- Opportunities also exist to improve and maintain connectivity between the Picacho Mountains and San Tan Mountains. The Gila River is a prime corridor in this area, but other connectivity opportunities, such as along washes, ridges, and other landscape features, may be present.

- A network of crossing structures including overpasses, underpass, culverts, funnel fencing, and other components should be included from the initial design stages. Specific locations and extents can be refined by execution of the surveys and movement studies indicated in the data needs section above.
- Mitigation features along the North-South Corridor need to align with corresponding mitigation features in adjacent barriers (such as the CAP wildlife crossings). Additionally, while mitigation features in existing barriers should be considered in the location of mitigation features in the North-South Corridor N-S, an absence of existing wildlife movement features is not a valid reason for omitting movement features in new barriers. In fact, they could be for upgrades in the existing barriers, as opportunities are presented to do so.

Impacts to Wildlife

Arizona's State Wildlife Action Plan (SWAP) provides a comprehensive vision for managing Arizona's fish, wildlife and wildlife habitats. The SWAP identifies the Species of Greatest Conservation Need (SGCN) and Species of Economic and Recreation Importance (SERI) for the State of Arizona.

- The Department recommends that potential impacts to, as well as appropriate avoidance and minimization measure for, all state trust species be addressed in the upcoming NEPA analysis. Attachment 4 details known occurrences of special status species in the project vicinity. Attachment 5 identifies SGCN and SERI predicted within the project vicinity based on predicted range models.

Impacts to Habitat

It is the Department's policy to seek compensation at a 100% level, when feasible, for actual or potential habitat losses resulting from land and water projects (Department Policy I2.3).

- The Department recommends that all impacts to habitat be mitigated in-kind (i.e. impacts to Sonoran Desert scrub habitat should be mitigated with Sonoran Desert habitat), through a combination of on-site impact avoidance and/or minimization when feasible, and off-site preservation, creation, or compensation.

Recreation/Open Space Access

The Department recommends examining the potential effects of the Corridor to economically important recreation opportunities. Many of the Segments cross roadways that currently provide access to recreation opportunities within, or east of, the North-South Corridor; some of these access concerns are identified below:

- Recreationists access the open space east and west of Segment A for small game hunting. A parking or pullout area for hunters would be a great addition, as no parking is currently present.
- Segments AE and AH cross Selma Highway access point into Picacho Reservoir. Regardless of which route is chosen, this access to the Picacho Reservoir should be maintained.

- Recreationists access the Desert Wells Multiuse Area and hunting opportunities to the east of Segment E2, K1, and O3 using Ocotillo Rd. Maintaining recreation access is important.
- Recreationists access the Desert Wells Multiuse Area and hunting opportunities are located throughout the area. Maintaining recreation access through Segments I and I2 is critical.
- Recreationists access open space east and west of Segment J for small game hunting and OHV activities. Installation of a parking area or pullout is recommended for recreationists accessing open space.
- Recreationists access the Desert Wells Multiuse Area, and hunting opportunities to the east, using E. Skyline Drive. Maintaining recreation access through Segment E4, K3, and O3 are important.
- A gas-line dirt road through Segments Q and V provides very popular walking access for recreationists. Maintaining access is recommended.
- Houser Road, which runs east-west through Segments AA and AI, provides critical access from Highway 87 to the northern end of the Picacho Mountains. Regardless of which route is chosen, access to the adjacent open space should be maintained via Houser Road.

Indirect Effects

In addition to the typical effects to wildlife movement discussed above, pollution by toxins, nutrients, and noise from the transportation corridor can create edge effects on adjacent hydrology and microclimate, reducing the suitability of the remaining habitats. These indirect effects spread into the surrounding landscape and may contribute far more to the overall loss and degradation of natural habitat than the road body itself. The indirect effects are influenced by road and traffic characteristics, landscape topography and hydrology, wind, and vegetation. In addition, the consequent impacts on wildlife and ecosystems also depend on the sensitivity of the species in the vicinity.

- Opportunities to minimize new edge effects include: constructing the road corridor along existing infrastructure, such as the segments in the “Expanded” categories, instead of creating new infrastructure corridors; develop and implement adequate weed abatement and habitat restoration programs that monitor adjacent habitats; and adaptively address effects such as toxins, invasive species, and habitat conversion.

The Department hopes this preliminary evaluation of the North-South Corridor Study will aid ADOT in upcoming alternative selection and evaluation, and provide information on future data needs and mitigation opportunities as the study progresses. 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 Cheri Bouchér, the Department's Project Evaluation Program transportation coordinator, at cboucher@azgfd.gov (623-236-7615).

Sincerely,

Joyce Francis

Joyce Francis, PhD
Habitat, Evaluation, and Lands Branch Chief

cc: Joshua Fife, ADOT
Kurt Watzek, HDR

M16-02013521

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Figure 2: North-South Corridor Segments, as Ranked in Table 1

Note: This is a preliminary Level 1 evaluation based on broad alternatives. As ADOT's planning progresses, and/or as additional relevant data along the corridor alternatives is made available, the Department will adjust its evaluation to incorporate new information and/or more specific route locations.

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Table 1: Summary of Initial Segment Analysis for the North-South Corridor Study

Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
A	Expansion	High	Moderate-High	Low-Moderate	Low	High	Moderate	Moderate				1. Although the segment is dominated by native vegetation, the project would expand an existing roadway, N. Ironwood Drive. 2. High number of floodplains and waterways present, but disrupted by existing roadway and CAP canal. 3. The CAP canal and Ironwood Drive limit east-west wildlife movement through native habitat. 4. Roadway expansion not expected to increase isolation of intact blocks. 5. High percentage of segment provides suitable habitat for key species. 6. Proximity to existing and proposed open space. 7. Recreationists access the open space east and west of the segment for small game hunting. A parking or pullout area for hunters would be a good addition, as no parking is currently present.
AA	Existing	Moderate	Low	Low	Low	Moderate	Low	Low				1. Segment would be expansion of existing SR87, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High diversity of species in the vicinity and high percentage of segment provides suitable habitat for BUOW and kit fox. 6. Limited proximity to existing and proposed open space. 7. Recreationists may hunt for small game within the agricultural fields.
AB	Expansion-new	Low	Moderate	Low	Low	Moderate	Low	Low				1. Segment would be new roadway, and expansion of existing roads, primarily through agricultural fields. 2. Floodplain and waterways present along Bogart Wash. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW.

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												6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
AC	Expansion	Low	Low	Low	Low	Moderate	Low	Low				1. Segment would be new expansion of existing roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
AD	New	Low	Low	Low	Low	High	High	Low				1. Segment would be new roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. Potential indirect impacts to wildlife in adjacent native habitat. 6. Proximity to existing and proposed open space. Potential indirect impacts to wildlife in adjacent native habitat, including Picacho Reservoir. 7. Recreation opportunities for sportsmen and wildlife viewing at Picacho Reservoir.
AE	New-existing	Low	Low	Low	Low	Moderate	Moderate	Moderate				1. Segment would be new expansion of existing roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks.

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												5. High diversity of species in the vicinity and high percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. The segment crosses Selma Highway access point into Picacho Reservoir; this access should be maintained.
AH	New-expansion	Low	Low	Low	Low	High	High	High				1. Segment would be new roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. Potential indirect impacts to wildlife in adjacent native habitats, including Picacho Reservoir. 6. Proximity to Picacho Reservoir, including AGFD managed area. Potential indirect impacts to wildlife in adjacent native habitat, including Picacho Reservoir. 7. Recreation opportunities for sportsmen and wildlife viewing at Picacho Reservoir.
AI	New-expansion	Low	Low	Low	Low	High	High	Moderate				1. Segment would be new roads, through agricultural fields and some desert scrub. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. Potential indirect impacts to wildlife in adjacent native habitats, including Picacho Reservoir. 6. Proximity to Picacho Reservoir, including AGFD managed area. Potential indirect impacts to wildlife in adjacent native habitat, including Picacho Reservoir. 7. Recreation opportunities for sportsmen and wildlife viewing at Picacho Reservoir and in adjacent desert scrub.

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AJ	New	Moderate	Low	Moderate	Low	High	Moderate	Moderate				1. Segment would be new roads, through desert scrub and agricultural fields. 2. No floodplain or waterways present. 3. Desert scrub vegetation connects to open space to the east through a large crossing over the CAP canal at Brady Pump Road. 4. Roadway not expected to increase isolation of large intact blocks. 5. High species diversity and high percentage of segment provides suitable habitat for key species. Potential indirect impacts to wildlife in adjacent native habitats. 6. Proximity to existing and proposed open space. 7. Recreationists may hunt for small game within the desert scrub agricultural fields.
AL	New	Low	Moderate	Low	Low	Moderate	Low	Moderate				1. Segment would be expanding existing dirt roads through agricultural fields. 2. Runoff from agricultural fields forms a floodplain or waterways present. 3. Desert scrub vegetation connects to open space to the east through a large crossing over the CAP canal at Brady Pump Road. 4. Roadway not expected to increase isolation of large intact blocks. 5. High species diversity and high percentage of segment provides suitable habitat for key species. Potential indirect impacts to wildlife in adjacent native habitats. 6. Proximity to existing and proposed open space. 7. Recreationists may hunt for small game within the desert scrub agricultural fields.
AN	New-expansion	Low	Low	Low	Low	High	Moderate	Low				1. Segment would be new expansion of existing roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. Potential indirect impacts to wildlife in adjacent

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												native habitat. 6. Limited proximity to existing and proposed open space. Potential indirect impacts to wildlife in adjacent native habitat, including Picacho Reservoir. 7. Recreation opportunities for sportsmen and wildlife viewing at nearby Picacho Reservoir and in adjacent desert scrub.
AO1	New	Low	Moderate	Low	Low	Moderate	Low	Low				1. Segment would be new roadway, and expansion of existing roads, through agricultural fields. 2. Floodplain and waterways present along Bogart Wash. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
AO2	New	Low	Moderate	Low	Low	Moderate	Low	Low				1. Segment would be new roadway, and expansion of existing roads, through agricultural fields. 2. Floodplain and waterways present along Bogart Wash. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
E1	New	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate				1. Segment would be a new roadway through native vegetation. 2. Moderate number of floodplains and waterways present, but disrupted by CAP canal. 3. The CAP canal limits east-west wildlife movement through native habitat. 4. Roadway not expected to increase isolation of large intact

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												blocks, but small amount of habitat present is largely undisturbed. 5. High percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Proximity to existing and proposed open space. 7. Recreationists access hunting opportunities to the southeast, using a dirt road east of Ironwood Drive.
E2	New	High	High	Moderate	Low	Moderate	Low	Moderate				1. Segment would be a new roadway through native vegetation, including riparian vegetation. 2. High amount of floodplain and waterways present, including Queen Creek, but disrupted by CAP canal. 3. The CAP canal limits east-west wildlife movement through native habitat. 4. Roadway not expected to increase isolation of large intact blocks, but small amount of habitat present is largely undisturbed. 5. High percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Proximity to existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities to the east, using Ocotillo Rd. Maintaining recreation access is important.
E4	Expansion	High	Low	Low	Low	High	Low	Moderate				1. Segment would be an expansion of N. Quail Run Lane, through primarily native vegetation. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through native habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Proximity to existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities to the east, using Skyline Dr. Maintaining recreation access is important.

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Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
G	New-Expansion	Low	Low	Low	Low	Moderate	Low	Low				1. Segment would be new roadway, and expansion of existing roads, through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
I	New-existing	High	High	High	High	High	High	High				1. Segment would be a primarily new roadway through native vegetation. 2. High amount of floodplain and waterways present. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway would bisect a large intact block of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, BUOW, and SDT. 6. Segment would bisect existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities are located throughout the area. Maintaining recreation access is critical.
I2	New	High	High	High	High	High	High	High				1. Segment would be a new roadway through native vegetation. 2. High amount of floodplain and waterways present. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway would bisect a large intact block of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Segment would bisect existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities through the area. Maintaining recreation access is critical.

Note: This is a preliminary Level 1 evaluation based on broad alternatives. As ADOT's planning progresses, and/or as additional relevant data along the corridor alternatives is made available, the Department will adjust its evaluation to incorporate new information and/or more specific route locations.

Table 1: Summary of Initial Segment Analysis for the North-South Corridor Study

Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
J	New	High	High	High	High	High	High	High				1. Segment would be a new roadway through native vegetation. 2. High amount of floodplain and waterways present. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway would bisect a large intact block of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Segment would bisect existing and proposed open space. 7. Recreationists access open space east and west of the segment for small game hunting. Installation of a parking area or pullout would be advised for recreationists accessing open space.
K1	New	High	High	High	Moderate	High	Moderate	High				1. Segment would be a new roadway through native vegetation, including riparian vegetation. 2. High amount of floodplain and waterways present, including Queen Creek. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway could to increase isolation of nearby intact blocks of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for key species. 6. Proximity to existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and hunting opportunities are throughout the area. Maintaining recreation access is critical.
K3	New	High	Low	Moderate	Low	High	Low	Moderate				1. Segment would be primarily a new roadway through native vegetation; a portion is bisected by the CAP canal. 2. Limited amount of floodplains and waterways present. 3. The CAP canal limits east-west wildlife movement through native habitat on the western portion of segment. 4. Roadway expansion not expected to increase isolation of intact blocks. 5. High percentage of segment provides suitable habitat for key species. 6. Proximity to existing and proposed open space. 7. Recreationists access the Desert Wells Multiuse Area and

Note: This is a preliminary Level 1 evaluation based on broad alternatives. As ADOT's planning progresses, and/or as additional relevant data along the corridor alternatives is made available, the Department will adjust its evaluation to incorporate new information and/or more specific route locations.

Table 1: Summary of Initial Segment Analysis for the North-South Corridor Study

Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
												hunting opportunities to the east, using E. Skyline Drive.
L2	New	Low	Low	Low	Low	Moderate	Low	Low				1. Segment would be new roadway through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
O3	New	High	Moderate	High	High	High	Moderate	High				1. Segment would be a new roadway, primarily through native vegetation, including riparian vegetation. 2. High amount of floodplain and waterways present, including Queen Creek. 3. Area offers high permeability and falls within linkages and connectivity zones. 4. Roadway could to increase isolation of nearby intact blocks of land. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for key species. 6. Proximity to existing and proposed open space. 7. Recreationists access the area for hunting opportunities in the vicinity. Maintaining recreation access is critical.

Note: This is a preliminary Level 1 evaluation based on broad alternatives. As ADOT's planning progresses, and/or as additional relevant data along the corridor alternatives is made available, the Department will adjust its evaluation to incorporate new information and/or more specific route locations.

Table 1: Summary of Initial Segment Analysis for the North-South Corridor Study

Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
P	New	Low	Low	Low	Low	Moderate	Moderate	Low				1. Segment would be new roadway primarily through agricultural fields. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.
Q	New-Expansion	High	High	High	High	Moderate - High	High	Moderate				1. Segment would be a primarily new roadway through native vegetation, although a portion would parallel a railway. 2. High amount of floodplain and waterways present, including the Gila River. 3. West of CAP canal and adjacent to or bisected by railway, but the Gila River and a bridge over the CAP canal (along a gas-line road) provide critical wildlife movement connectivity between the San Tan Mountains and the open space and mountain ranges to the northeast, east, and southeast. 4. Roadway could reduce connectivity between large intact blocks of land, and further isolate the San Tan Mountains. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, BUOW, and SDT. 6. Segment would bisect existing open space along the Gila River. 7. Gas-line dirt road provides very popular walking access for hunting and hiking. Maintaining access is recommended.

Note: This is a preliminary Level 1 evaluation based on broad alternatives. As ADOT's planning progresses, and/or as additional relevant data along the corridor alternatives is made available, the Department will adjust its evaluation to incorporate new information and/or more specific route locations.

Table 1: Summary of Initial Segment Analysis for the North-South Corridor Study

Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
T1	New-Expansion	Low	Moderate	Moderate	Moderate	Moderate	Low	Moderate				1. Segment would be an expansion of existing dirt roads through agricultural fields, disturbed native vegetation, and a landfill. 2. Although disrupted by the landfill, floodplain and erosional ponding is present. 3. The landfill and disturbed native vegetation between Adamsville Road and the SR287 allows for east-west wildlife movement through the segment. 4. Potential to increase isolation of nearby intact blocks. 5. High percentage of segment provides suitable habitat for BUOW. 6. Limited proximity to existing and proposed open space. 7. Recreationists could hunt for small game within the agricultural fields.
T1-2	New	Moderate	High	Moderate	Moderate	Moderate	Low	Moderate				1. Segment would be an expansion of existing dirt roads through agricultural fields, disturbed native vegetation, and a retention basin. 2. A large retention basin that catches runoff from adjacent agricultural lands is present within the segment. 3. The retention basin and disturbed native vegetation between Adamsville Road and the SR287 allows for east-west wildlife movement through the segment. 4. Potential to increase isolation of nearby intact blocks. 5. High percentage of segment provides suitable habitat for BUOW and kit fox. 6. Limited proximity to existing and proposed open space. 7. Recreationists could hunt for small game within the agricultural fields.
T2	New	Low	Low	Low	Low	Moderate	Low	Low				8. Segment would be new roadway, and expansion of existing roads, through agricultural fields. 9. No floodplain or waterways present. 10. The CAP canal limits east-west wildlife movement through agricultural habitat. 11. Roadway not expected to increase isolation of large intact blocks. 12. High percentage of segment provides suitable habitat for BUOW. 13. Limited proximity to existing and proposed open space.

Note: This is a preliminary Level 1 evaluation based on broad alternatives. As ADOT's planning progresses, and/or as additional relevant data along the corridor alternatives is made available, the Department will adjust its evaluation to incorporate new information and/or more specific route locations.

Table 1: Summary of Initial Segment Analysis for the North-South Corridor Study

Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
												14. Recreationists hunt for small game within the agricultural fields.
V	New	High	High	High	High	Moderate - High	Moderate	High				1. Segment would be a new roadway through native vegetation. 2. High amount of waterways present. 3. West of CAP canal, but the bridge over the CAP canal (along a gas-line road) provides critical wildlife movement connectivity between the San Tan Mountains and the open space and mountain ranges to the northeast, east, and southeast. 4. Roadway could reduce connectivity between large intact blocks of land, and further isolate the San Tan Mountains. 5. Area of high wildlife diversity and a high percentage of segment provides suitable habitat for KF, TSNS, and SDT. 6. Segment would bisect existing undeveloped land. 7. Gas-line dirt road provides very popular walking access for hunting and hiking
X	New	Moderate	High	High	High	Moderate - High	High	High				1. Segment would be a new roadway through native vegetation, agricultural lands, and the Gila River. 2. High amount of floodplain and waterways present, including the Gila River. 3. West of CAP canal, but the Gila River provides critical wildlife movement connectivity between the San Tan Mountains and the open space and mountain ranges to the northeast, east, and southeast. 4. Roadway could reduce connectivity between large intact blocks of land, and further isolate the San Tan Mountains. 5. Area of moderate-high wildlife diversity and a high percentage of segment provides suitable habitat for KF, BUOW, and SDT. 6. Segment would bisect existing open space along the Gila River. 7. This segment would impact small and big game hunting in GMU 26 M, especially north of Hunt Hwy

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Table 1: Summary of Initial Segment Analysis for the North-South Corridor Study

Segment	Proposed Change in Infrastructure (New/ Expanded)	Sensitivity Score (Low/Moderate/High)							OVERALL ASSESSMENT			Comments
		(1) Vegetation	(2) Hydrologic Function	(3) Landscape Connectivity	(4) Landscape Integrity	(5) Wildlife and Wildlife Habitat	(6) Conservation And Wildlife Management Lands	(7) Effects to Recreation	HIGH: Significant Impacts to Sensitive Areas	MODERATE: Impacts to Wildlife are Likely, but Potential Strategies to Offset Impacts	LOW: Limited Impacts to Wildlife and Opportunities to Offset and Enhance	
Z	Existing	Moderate	Low	Low	Low	High	Low	Low				1. Segment would be expansion of existing SR87, through agricultural fields and desert scrub. 2. No floodplain or waterways present. 3. The CAP canal limits east-west wildlife movement through agricultural habitat. 4. Roadway not expected to increase isolation of large intact blocks. 5. High diversity of species in the vicinity and high percentage of segment provides suitable habitat for BUOW and kit fox. 6. Limited proximity to existing and proposed open space. 7. Recreationists hunt for small game within the agricultural fields.

Note: This is a preliminary Level 1 evaluation based on broad alternatives. As ADOT's planning progresses, and/or as additional relevant data along the corridor alternatives is made available, the Department will adjust its evaluation to incorporate new information and/or more specific route locations.

Attachment 1. Data Sources

Data Sets, Types, and Sources Used in Analysis

Data Set	Data Type	Source	Analytical Method	Ranking Thresholds
Vegetation Type	30 m pixel	AGFD modified version of Southwest ReGAP (Southwest ReGAP can be found at http://swregap.nmsu.edu/default.htm)	Percent of each summary habitat type per segment	Low- Dominated by non-native vegetation cover such as agricultural fields or developed land. Moderate- 40-60% native vegetation. High- Over 60% of segment contains native vegetation.
Linear Waterways	Polylines	National Hydrography Database (NHD) ftp://rockyftp.cr.usgs.gov/vdelivery/Datasets/Staged/Hydro/FileGDB101/NHD_M_04_Arizona_ST.zip	Feet of rivers and streams intersecting each segment, represented as feet/acre	Low- 0-4.9 linear feet of waterways per acre. Moderate- 5.0-9.9 linear feet of waterways per acre. High- 10.0-16.0 linear feet of waterways per acre.
Floodplain	Polygons	Federal Emergency Management Agency (FEMA) National Flood Hazard Layer https://catalog.data.gov/dataset/national-flood-hazard-layer-nfhl/resource/ef47d769-564b-4dbb-a130-30e212b6e308	Acres of segment that intersect with NFH layer, using 100 year floodplain attributes	Low- No floodplain present. Moderate- 0.1-9.9 acres. High- 10.0 acres or greater
Connectivity – County Linkages	Polygons	AGFD County Linkages/NAU-AGFD Missing Linkages http://www.azgfd.gov/w_c/conn_whatGFDoing.shtml	Identify overlap within segment	Low- Multiple barriers to larger habitat blocks are present. Barriers may include the CAP canal as well as roads and human disturbance. Moderate- Barriers to larger habitat blocks are present, but a crossing is present and habitat is conducive to wildlife movement. High- Few barriers present and/or multiple crossing opportunities available.

AGFD Preliminary Level 1 Evaluation for the North-South Corridor Study

Landscape Integrity – Undisturbed	30 m pixel	AGFD Landscape Integrity model1	Mean and majority values of landscape integrity within segment. This is an AGFD GIS dataset representing cumulative impacts of various human infrastructure on Arizona's landscape. A high score indicates very little human modification on the landscape, or a very high landscape integrity.	Low- Mean or Majority score of 0-79. Moderate- Mean or Majority score of 80-90. High- Mean or Majority score of 90-100.
Connectivity – Statewide Connectivity	Polygons	AGFD Statewide Connectivity Dataset[1]	Mean score taken from intersection of statewide index. ICZ (important connectivity zone) indicates if a segment overlaps with an ICZ which are areas important for statewide connectivity. This is and AGFD GIS dataset representing statewide connectivity based on the landscape integrity dataset used as a cost surface.	Low- A connectivity index score of 0-79.9. Moderate- A connectivity index score of 80-89.9. High- A connectivity index score of 90-100.
Landscape Integrity – Fragmentation	Polygons	AGFD Large Intact Blocks[1]	Identify overlap or change in isolation of the blocks given the build of a segment. This is an AGFD GIS dataset representing the most intact areas based on the AGFD Landscape Integrity model.	Low- No increased isolation or fragmentation of large intact blocks. Moderate- Potential to increase isolation of nearby intact block(s). High- Bisects intact block or reduces connectivity between intact blocks.

[1] Perkl, Ryan M. 2013. Arizona landscape integrity and wildlife connectivity assessment. The University of Arizona and the Arizona Game and Fish Department. Tucson, AZ. Available at http://capla.arizona.edu/sites/default/files/file_uploads/Perkl,%20Ryan%20M.%202013.%20Arizona%20landscape%20integrity%20and%20wildlife%20connectivity%20assessment.%20The%20University%20of%20Arizona%20and%20the%20Arizona%20Department%20of%20Game%20and%20Fish.%20Tucson,%20AZ..pdf

AGFD Preliminary Level 1 Evaluation for the North-South Corridor Study

Species of Economic and Recreational Importance (SERI)	30 m pixel	AGFD model as depicted in HabiMap and described in the Arizona SWAP http://habimap.org/ http://www.azgfd.gov/w_c/swap.shtml	Maximum score of the SERI model	Low- Maximum score of 0-3. Moderate- Maximum score of 4-6. High- Maximum score of 7-10
Species of Greatest Conservation Need (SGCN)	30 m pixel	AGFD model as depicted in HabiMap and described in the Arizona State Wildlife Action Plan (SWAP) http://habimap.org/ http://www.azgfd.gov/w_c/swap.shtml	Maximum score of the SGCN model	Low- Maximum score of 0-3. Moderate- Maximum score of 4-6. High- Maximum score of 7-10
Special Status Species	Polygons	Heritage Data Management System (HDMS) http://www.azgfd.gov/hgis/	Count of species within 3 mile buffer of each segment	Low- 0-3 HDMS species within a 3 mile radius of the segment. Moderate- 4-6 HDMS species within a 3 mile radius of the segment. High- HDMS species have been recorded within the segment, in addition to records within a 3 mile radius of the segment.
Species Distribution Models	30 m pixel	Potential distributions of species from AGFD/GAP models as depicted in HabiMap and described in the Arizona SWAP[2] http://habimap.org/ http://www.azgfd.gov/w_c/swap.shtml	Percent of each segment that is potential habitat by species.	Low- 0 -19% of the segment is potential habitat for a key species. Moderate- 20-39% of the segment is potential habitat for a key species. High- 40% or more of the segment is potential habitat for a key species.

[2] The burrowing owl model has been modified to more accurately reflect potential burrowing owl distribution. This revised model is not shown within HabiMap.

Attachment 2A: Evaluation Criterial for the North-South Corridor- Vegetation, Hydrologic Function, Landscape Connectivity, and Landscape Integrity

SEGMENT DATA			VEGETATION		HYDROLOGIC FUNCTION			LANDSCAPE CONNECTIVITY				LANDSCAPE INTEGRITY		
Segment ID	Proposed Change in Infra-structure	Acres	Primary Vegetation or Land Cover Type[3]	Riparian/ Wetland (%)	Waterways (Linear Feet per Acre)	Flood-plain (Acres)	Flood-plain (%)	Permeability/Known Concerns	County Linkages/Movement Zones	Statewide Connectivity		Fragmentation	Undisturbed	
										Index	ICZs	Blocks	Mean Score	Majority Score
A	Expansion	513	Desert scrub	-	15	4	0.8%	Moderate/ CAP Canal and Ironwood Drive bisect the segment	Valley north and east of the San Tan Mountains, Weekes Wash	84.80		Low- No increased isolation of intact blocks.	80	97
AA	Existing	1123	Agriculture/ Desert scrub	-	0	1	0.1%	Low/ West of CAP canal and bisected by SR87, farm roads and agricultural crops	Southeastern-most corner is ~4.8 miles from modeled corridor Ironwood to Picacho	77.30		Low- No increased isolation of intact blocks.	78	76
AB	Expansion-new	513	Agriculture	-	6	2	0.5%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	81.22		Low- No increased isolation of intact blocks.	82	80
AC	Expansion	902	Agriculture	-	1	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	83.31		Low- No increased isolation of intact blocks.	83	82
AD	New	102	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	88.09		Low- No increased isolation of intact blocks.	84	86
AE	New-existing	563	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	83.12		Low- No increased isolation of intact blocks.	84	86
AH	New-expansion	475	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	89.00		Low- No increased isolation of intact blocks.	85	80
AI	New-expansion	865	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	86.97		Low- No increased isolation of intact blocks.	84	80
AJ	New	369	Desert scrub	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	87.55		Low- No increased isolation of intact blocks.	91	94
AL	New	519	Agriculture	-	0	46	9.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	Southeastern-most corner is ~2.5 miles from modeled corridor Ironwood to Picacho	83.71		Low- No increased isolation of intact blocks.	82	86
AN	New-expansion	901	Agriculture	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	83.20		Low- No increased isolation of intact blocks.	81	82
AO1	New	547	Agriculture	-	4	2	0.3%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	80.49		Low- No increased isolation of intact blocks.	80	81
AO2	New	549	Agriculture	-	4	1	0.2%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	-	81.14		Low- No increased isolation of intact blocks.	81	81
E1	New	786	Desert scrub	-	9	10	1.3%	Moderate/ West of CAP Canal	Valley north and east of the San Tan Mountains	96.38	Yes	Low- No increased isolation of intact blocks.	97	100

[3] Refer to Attachment C for detailed breakdown of vegetation/land cover types within each Segment.

Attachment 2A: Evaluation Criterial for the North-South Corridor- Vegetation, Hydrologic Function, Landscape Connectivity, and Landscape Integrity

SEGMENT DATA			VEGETATION		HYDROLOGIC FUNCTION			LANDSCAPE CONNECTIVITY				LANDSCAPE INTEGRITY		
Segment ID	Proposed Change in Infra-structure	Acres	Primary Vegetation or Land Cover Type[3]	Riparian/ Wetland (%)	Waterways (Linear Feet per Acre)	Flood-plain (Acres)	Flood-plain (%)	Permeability/Known Concerns	County Linkages/Movement Zones	Statewide Connectivity		Fragmentation	Undisturbed	
										Index	ICZs	Blocks	Mean Score	Majority Score
E2	New	1237	Desert scrub	-	16	11	0.9%	Moderate/ West of CAP Canal, Queen Creek	Valley north and east of the San Tan Mountains, Queen Creek - Gila River Indian Community	89.83		Low- No increased isolation of intact blocks.	91	92
E4	Expansion	387	Desert scrub	-	0	0	0.0%	Low/ West of CAP canal and bisected by farm roads and agricultural crops	Valley north and east of the San Tan Mountains	89.53		Low- No increased isolation of intact blocks.	88	83
G	New	613	Agriculture	-	0	0	0.0%	Moderate/ West of CAP canal and bisected by farm roads and agricultural crops	-	84.23		Low- No increased isolation of intact blocks.	86	83
I	New-existing	949	Desert scrub	-	13	5	0.5%	High	Valley north and east of the San Tan Mountains, Superstition Mountains to Goldfield Mountains and Weekes Wash	95.46	Yes	High- Bisects intact block	95	100
I2	New	1002	Desert scrub	0.3%	10	4	0.4%	High	Valley north and east of the San Tan Mountains, Superstition Mountains to Goldfield Mountains and Weekes Wash	96.93	Yes	High- Bisects intact block	97	100
J	New	845	Desert scrub	-	16	9	1.1%	High	Valley north and east of the San Tan Mountains	95.18		High- Bisects intact block	95	94
K1	New	607	Desert scrub	2.6%	8	7	1.1%	High	Valley north and east of the San Tan Mountains, Queen Creek - Gila River Indian Community	94.46		Moderate- Potential to increase isolation of nearby intact block.	94	94
K3	New	481	Desert scrub	-	3	0	0.0%	Moderate, bisected by CAP	Valley north and east of the San Tan Mountains	90.83		Low- No increased isolation of intact blocks.	94	92
L2	New	222	Agriculture	-	0	0	0.0%	Moderate/ West of CAP canal and bisected by farm roads and agricultural crops	-	83.37		Low- No increased isolation of intact blocks.	83	83
O3	New	1847	Desert scrub	-	4	2	0.1%	High/ Majority of segment is east of the CAP canal	Valley north and east of the San Tan Mountains, Queen Creek - Gila River Indian Community	89.23		High- Reduces connectivity between intact blocks	91	94
P	New	184	Agriculture	-	0	0	0.0%	Moderate/ West of CAP canal and bisected by farm roads and agricultural crops	-	84.68		Low- No increased isolation of intact blocks.	86	86
Q	New	1241	Desert scrub	-	14	20	1.6%	High/ West of CAP canal and adjacent to or bisected by railway, but Gila River provides movement corridor	Florence Military Reservation, Gila River	88.42	Yes	High- Reduces connectivity between intact blocks	91	100
T1	New	564	Developed	-	1	5	0.9%	Moderate/ Disturbed land	-	81.51		Moderate- Potential	79	87

Attachment 2A: Evaluation Criterial for the North-South Corridor- Vegetation, Hydrologic Function, Landscape Connectivity, and Landscape Integrity

SEGMENT DATA			VEGETATION		HYDROLOGIC FUNCTION			LANDSCAPE CONNECTIVITY				LANDSCAPE INTEGRITY		
Segment ID	Proposed Change in Infra-structure	Acres	Primary Vegetation or Land Cover Type[3]	Riparian/ Wetland (%)	Waterways (Linear Feet per Acre)	Flood-plain (Acres)	Flood-plain (%)	Permeability/Known Concerns	County Linkages/Movement Zones	Statewide Connectivity		Fragmentation	Undisturbed	
										Index	ICZs	Blocks	Mean Score	Majority Score
								could provide east-west movement				to increase isolation of nearby intact block.		
T1-2	New	41	Desert scrub	-	14	29	70.3%	Moderate/ Disturbed land could provide east-west movement	-	83.51		Moderate- Potential to increase isolation of nearby intact block.	85	79
T2	New	383	Agriculture	-	0	0	0.0%	Moderate/ West of CAP canal and bisected by farm roads and agricultural crops	-	81.23		Low- No increased isolation of intact blocks.	81	82
V	New	1282	Desert scrub	-	13	0	0.0%	High/ West of CAP canal but land undeveloped	Florence Military Reservation	95.44		High- Reduces connectivity between intact blocks	97	100
X	New	2206	Desert scrub/ Agriculture	-	14	34	1.5%	High/ West of CAP canal, but Gila River provides movement corridor through agricultural lands, and connects San Tan Mountains to the Tortolita and Tortilla Mtns	Florence Military Reservation, Gila River	89.05	Yes	High- Reduces connectivity between intact blocks	89	86
Z	Existing	352	Desert scrub	-	0	0	0.0%	Low/ West of CAP canal and bisected by SR87, farm roads and agricultural crops	-	79.78		Low- No increased isolation of intact blocks.	82	91

Attachment 2B: Evaluation Criteria for the North-South Corridor- Wildlife and Wildlife Habitat, Conservation and Wildlife Management Lands, and Outdoor and Wildlife Related Recreation

SEGMENT DATA			WILDLIFE AND WILDLIFE HABITAT							CONSERVATION AND WILDLIFE MANAGEMENT LANDS	OUTDOOR AND WILDLIFE RELATED RECREATION
						Key Species Habitat (%)					
Segment ID	Proposed Change in Infra-structure	Acres	SERI Rank (1-10)	SGCN Rank (1-10)	HDMS Species Diversity	Burrowing Owl	Kit Fox	Tucson Shovel-nosed Snake	Sonoran Desert Tortoise	Areas Identified, Acquired, or Managed with Conservation or Wildlife Considerations	Access and Outdoor Recreation
A	Expansion	513	5	7	0	0%	82%	47%	82%	Proximity to existing and proposed open space and crosses Siphon Draw wash, a potential corridor.	Recreationists access the open space east and west of the segment for small game hunting. A parking or pullout area for hunters would be a good addition, as no parking is currently present.
AA	Existing	1123	9	9	4	46%	45%	29%	44%	-	
AB	Expansion-new	513	9	9	2	69%	20%	3%	6%	-	
AC	Expansion	902	9	6	4	83%	17%	9%	9%	Near Picacho Reservior, including AGFD managed area	
AD	New	102	9	5	3	99%	1%	0%	1%	Adjacent to Picacho Reservior, including AGFD managed area	
AE	New-existing	563	9	10	3	62%	38%	4%	9%	Adjacent to Picacho Reservior, including AGFD managed area	Segment crosses Selma Highway access point into Picacho Reservoir
AH	New-expansion	475	9	8	3	52%	20%	5%	8%	Adjacent to Picacho Reservior, including AGFD managed area	Picacho Reservoir
AI	New-expansion	865	9	8	5	72%	27%	7%	12%	Near and adjacent to Picacho Reservior, including AGFD managed area	
AJ	New	369	9	6	0	34%	66%	66%	66%	-	
AL	New	519	9	6	1	79%	23%	21%	23%	-	
AN	New-expansion	901	9	7	4	79%	3%	2%	2%	Near Picacho Reservior, including AGFD managed area	Picacho Reservoir
AO1	New	547	9	7	5	100%	0%	0%	0%	-	
AO2	New	549	9	6	6	45%	0%	0%	0%	-	
E1	New	786	5	9	0	0%	86%	83%	86%	-	Popular dove hunting area near tanks.
E2	New	1237	5	10	0	15%	85%	64%	84%	-	
E4	Expansion	387	5	8	0	26%	73%	54%	73%	-	
G	New	613	5	9	0	76%	24%	18%	24%	-	
I	New-existing	949	7	10	0	0%	100%	35%	100%	Proximity to existing and proposed open space	
I2	New	1002	5	9	0	0%	85%	50%	85%	Proximity to existing and proposed open space	Potential impacts popular hunting and OHV areas.
J	New	845	5	7	0	0%	100%	61%	100%	-	Hunters access open space east and west of the segment for small game hunting. Also impacts popular hunting and OHV areas. Installation of a parking area or pullout is recommended for hunters accessing open space.
K1	New	607	5	9	0	0%	100%	55%	100%	-	
K3	New	481	5	8	1	5%	75%	63%	75%	-	
L2	New	222	5	5	2	100%	0%	0%	0%	-	
O3	New	1847	5	9	2	21%	67%	40%	67%	-	Impacts popular hunting areas.
P	New	184	5	8	2	83%	16%	17%	17%	-	

Attachment 2B: Evaluation Criteria for the North-South Corridor- Wildlife and Wildlife Habitat, Conservation and Wildlife Management Lands, and Outdoor and Wildlife Related Recreation

SEGMENT DATA			WILDLIFE AND WILDLIFE HABITAT							CONSERVATION AND WILDLIFE MANAGEMENT LANDS	OUTDOOR AND WILDLIFE RELATED RECREATION
						Key Species Habitat (%)					
Segment ID	Proposed Change in Infra-structure	Acres	SERI Rank (1-10)	SGCN Rank (1-10)	HDMS Species Diversity	Burrowing Owl	Kit Fox	Tucson Shovel-nosed Snake	Sonoran Desert Tortoise	Areas Identified, Acquired, or Managed with Conservation or Wildlife Considerations	Access and Outdoor Recreation
Q	New	1241	5	9	3	23%	69%	24%	63%	Existing Open Space designation along Gila River	
T1	New	564	1	9	5	82%	17%	7%	14%	-	
T1-2	New	41	1	7	5	30%	74%	2%	36%	-	
T2	New	383	9	5	2	100%	0%	0%	0%	-	
V	New	1282	5	7	2	0%	100%	21%	100%	-	Gas-line road provides walking access for hunting and hiking-very popular. Impacts small and big game hunting in GMU 26 M.
X	New	2206	5	10	4	50%	49%	6%	47%	Existing Open Space designation along Gila River and Florence Mountain.	Impacts to small and big game hunting in GMU 26 M, especially north of Hunt Hwy
Z	Existing	352	9	8	3	37%	62%	13%	37%	-	

Attachment 3. Vegetation Communities/Land Cover

Segment	Acres	Riparian/ Wash	Native scrub	Agriculture	Developed
A	1123	0.0%	80.8%	0.0%	19.2%
AA	513	0.1%	44.0%	46.0%	9.8%
AB	902	0.0%	19.5%	69.3%	11.2%
AC	102	0.0%	16.9%	82.8%	0.2%
AD	563	0.0%	0.9%	99.1%	0.0%
AE	475	0.4%	37.4%	62.0%	0.2%
AH	865	0.0%	27.8%	72.2%	0.0%
AI	369	0.0%	26.3%	72.4%	1.3%
AJ	519	0.0%	66.4%	33.6%	0.0%
AL	901	0.0%	22.8%	76.9%	0.3%
AN	547	0.0%	3.3%	90.8%	6.0%
AO1	549	0.0%	0.0%	99.9%	0.1%
AO2	786	0.0%	0.0%	100.0%	0.0%
E1	1237	0.0%	99.4%	0.0%	0.4%
E2	387	1.5%	83.0%	14.7%	0.2%
E4	613	0.0%	73.7%	26.3%	0.0%
G	949	0.0%	23.6%	76.4%	0.0%
I	1002	0.0%	99.9%	0.0%	0.0%
I2	845	0.3%	99.7%	0.0%	0.0%
J	607	0.0%	100.0%	0.0%	0.0%
K1	481	2.6%	97.4%	0.0%	0.0%
K3	222	0.0%	93.9%	6.1%	0.0%
L2	1847	0.0%	0.0%	100.0%	0.0%
O3	184	1.3%	74.9%	23.7%	0.0%
P	1241	0.0%	17.0%	82.4%	0.0%
Q	564	0.0%	74.9%	25.1%	0.0%
T1	41	0.0%	17.2%	42.3%	40.5%
T1-2	383	0.0%	70.5%	29.5%	0.0%
T2	1282	0.0%	0.0%	100.0%	0.0%
V	2206	0.0%	99.7%	0.0%	0.3%
X	352	0.7%	49.1%	49.7%	0.5%
Z	1123	0.0%	62.9%	37.1%	0.0%

Attachment 4. HDMS Special Status Species Documented within 3 Miles of the North-South Corridor

Scientific Name	Common Name	FWS	USFS	BLM	SGCN	AA	AB	AC	AD	AE	AH	AI	AJ	AL	AN	AO1	AO2	E2	E4	G	J	K1	K3	L2	O3	P	Q	T1	T1-2	T2	V	X	Z
Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC		S	1B		X									X	X										X	X	X			X	
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S	1B	X	X	X	X	X	X	X			X	X	X										X	X	X	X	X	X	X
Catostomus clarkii	Desert Sucker	SC	S	S	1B		X	X							X	X	X											X	X	X			
Catostomus insignis	Sonora Sucker	SC	S	S	1B												X											X	X				
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC			1A	X						X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S		1A	X		X	X	X	X	X			X																		X
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S		1A											X	X							X	X	X	X	X	X		X	X	
Rallus longirostris yumanensis	Yuma Clapper Rail	LE			1A	X		X	X	X	X	X			X																		X

HDMS = Heritage Data Management System

FWS = United States Fish and Wildlife Service
CCA = Candidate Conservation Agreement in place
LE = Federally listed Endangered
LT = Federally listed Threatened
SC = Species of Concern

SGCN = State of Arizona Species of Greatest Conservation Need (2012)
Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan: 2012-2022. Arizona Game and Fish Department, Phoenix, Arizona. Available at http://www.azgfd.gov/w_c/swap.shtml.
Each species in the SGCN list was scored for each of the following vulnerability criteria. If a species ranked as "vulnerable" (i.e., score = "1") under one or more of the vulnerability criteria it was included in the SGCN. Ranks were not additive. The rank was based on the following criteria:

- Extirpated from Arizona
- Federal or State status
- Declining status
- Disjunct status
- Demographic status
- Concentration status
- Fragmentation status
- Distribution status

The list of SGCN was further categorized into three tiers reflecting the Department's management commitments and priorities; tiers were ranked as follows:

Tier 1A: Scored "1" for Vulnerability in at least one of the eight categories and matches at least one of the following:
- Federally listed as endangered or threatened under the Endangered Species Act (ESA).
- Candidate species under ESA.
- Is specifically covered under a signed conservation agreement (CCA) or a signed conservation agreement with assurances (CCAA).
- Recently removed from ESA and currently requires post-delisting monitoring
- Closed season species (i.e., no take permitted) as identified in Arizona Game and Fish Commission Orders 40, 41, 42 or 43.

Tier 1B: Scored "1" for Vulnerability in at least one of the eight categories, but match none of the above criteria.

USFS= United States Forest Service
S = Sensitive

BLM= Bureau of Land Management
S = Sensitive

Attachment 5
Arizona Environmental Online Review Tool Report

Arizona Environmental Online Review Tool Report

Arizona Game and Fish Department Mission
To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:
North South Corridor

Project Description:
AGFD Hexagon Analysis

Project Type:
Transportation & Infrastructure, Road construction (including staging areas), Realignment/new roads

Contact Person:
Cheri Boucher

Organization:
Arizona Game and Fish Department

On Behalf Of:
AZGFD

Project ID:
HGIS-02567

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

Disclaimer:

1. This Environmental Review is based on the project study area that was entered. The report must be updated if the project study area, location, or the type of project changes.
2. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area. This review is also not intended to replace environmental consultation (including federal consultation under the Endangered Species Act), land use permitting, or the Departments review of site-specific projects.
3. The Departments Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. HDMS data contains information about species occurrences that have actually been reported to the Department. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HabiMap Arizona data, specifically Species of Greatest Conservation Need (SGCN) under our State Wildlife Action Plan (SWAP) and Species of Economic and Recreational Importance (SERI), represent potential species distribution models for the State of Arizona which are subject to ongoing change, modification and refinement. The status of a wildlife resource can change quickly, and the availability of new data will necessitate a refined assessment.

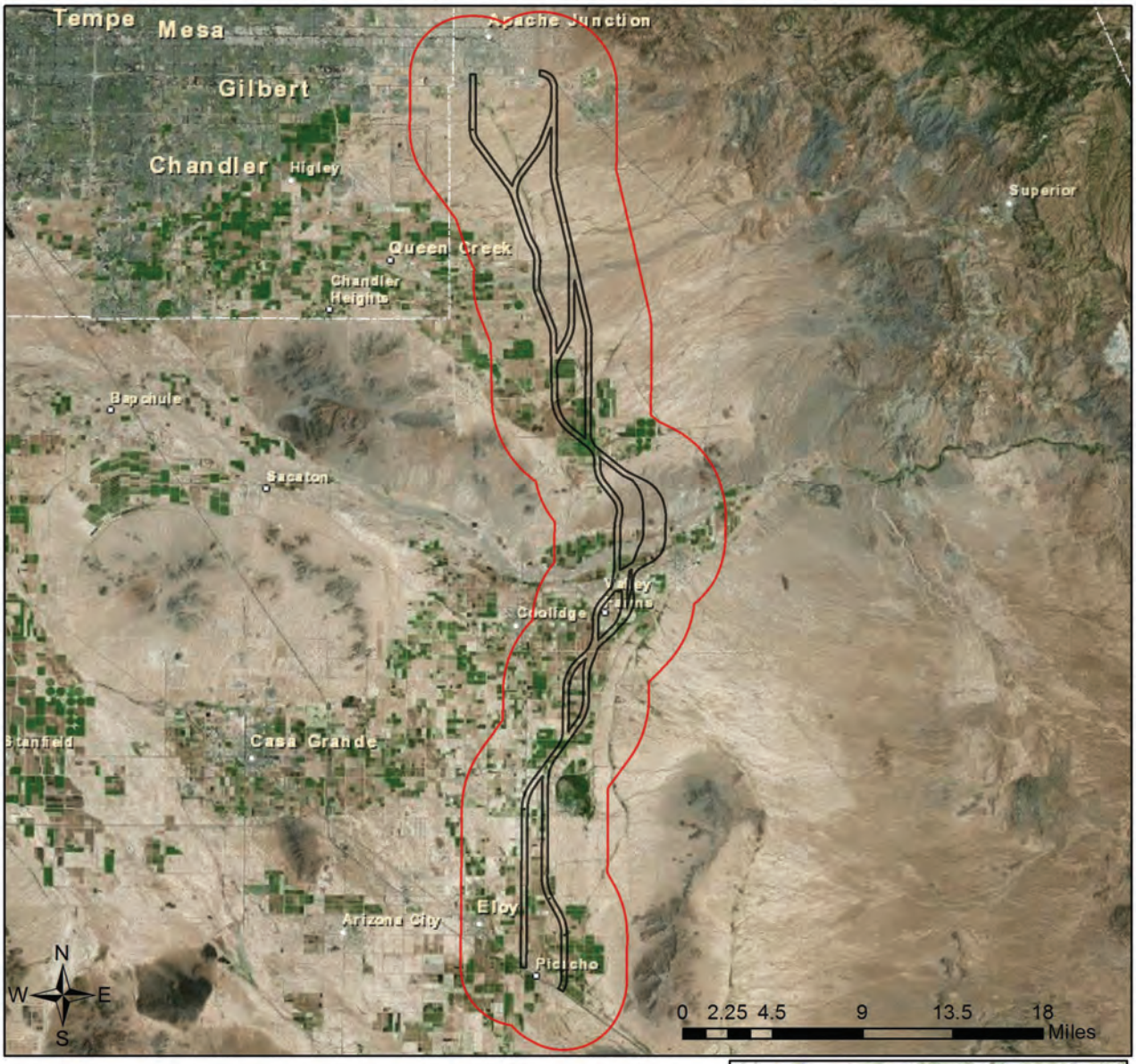
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

Recommendations Disclaimer:

1. The Department is interested in the conservation of all fish and wildlife resources, including those species listed in this report and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
2. Recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation).
3. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project. These recommendations are preliminary in scope, designed to provide early considerations on all species of wildlife.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. Further coordination with the Department requires the submittal of this Environmental Review Report with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map). Once AGFD had received the information, please allow 30 days for completion of project reviews. Send requests to:
   Project Evaluation Program, Habitat Branch
   Arizona Game and Fish Department
   5000 West Carefree Highway
   Phoenix, Arizona 85086-5000
   Phone Number: (623) 236-7600
   Fax Number: (623) 236-7366
   Or
   PEP@azgfd.gov
6. Coordination may also be necessary under the National Environmental Policy Act (NEPA) and/or Endangered Species Act (ESA). Site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies

North South Corridor

Aerial Image Basemap With Locator Map



Project Boundary

Buffered Project Boundary

Project Size (acres): 21,957.98

Lat/Long (DD): 32.9763 / -111.4380

County(s): Pinal

AGFD Region(s): Mesa; Tucson

Township/Range(s): T1N, R8E; T1S, R8E; T2S, R8E +

USGS Quad(s): APACHE JUNCTION; GOLDFIELD +

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong),

North South Corridor

Web Map As Submitted By User

Project Boundary

Buffered Project Boundary

Project Size (acres): 21,957.98

Lat/Long (DD): 32.9763 / -111.4380

County(s): Pinal

AGFD Region(s): Mesa; Tucson

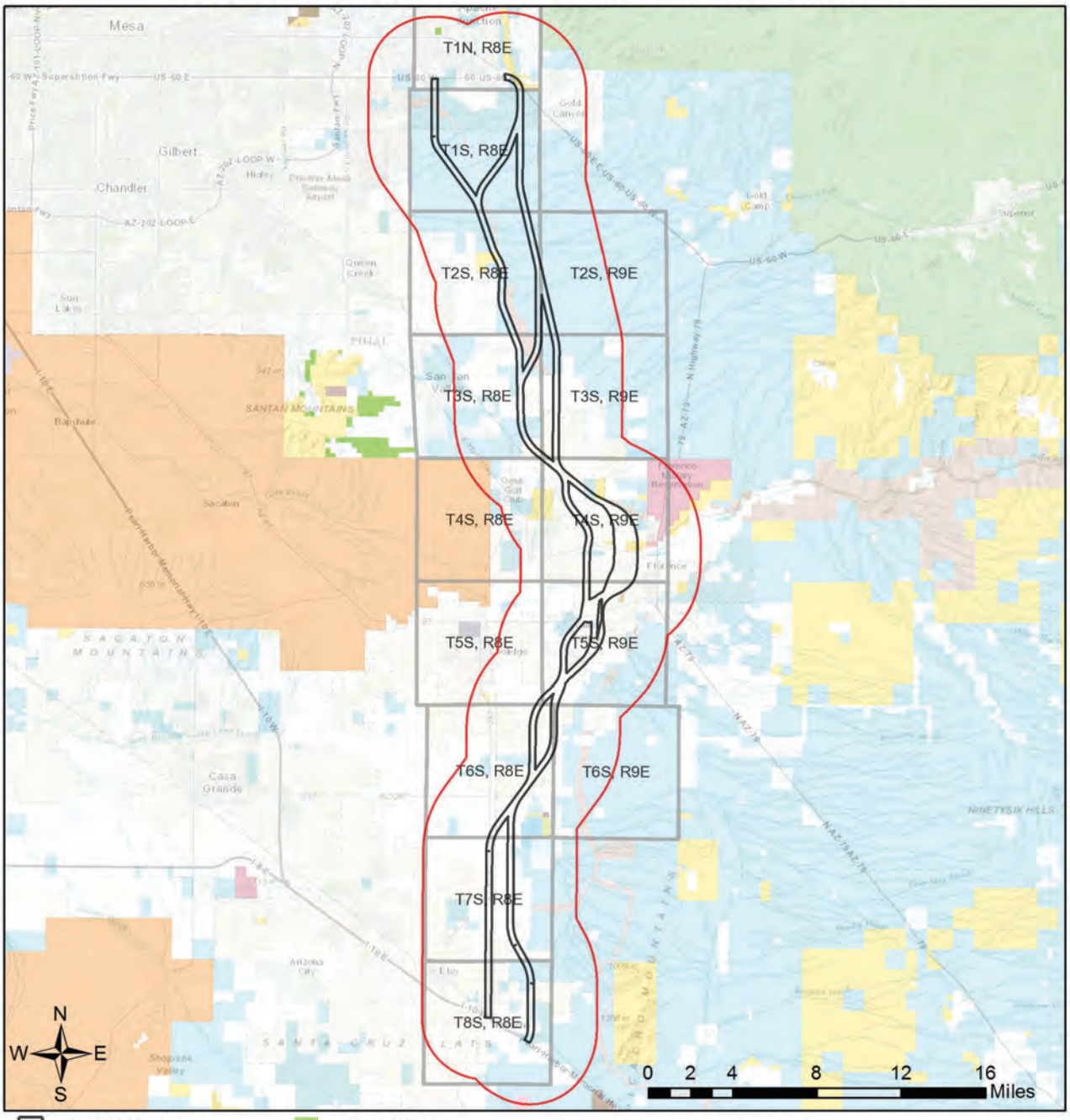
Township/Range(s): T1N, R8E; T1S, R8E; T2S, R8E +

USGS Quad(s): APACHE JUNCTION; GOLDFIELD +

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

North South Corridor

Topo Basemap With Township/Ranges and Land Ownership



- Project Boundary
- Buffered Project Boundary
- Township/Ranges
- AZ Game and Fish Dept.
- BLM
- BOR
- Indian Res.
- Military
- Mixed/Other
- National Park/Mon.
- Private
- State and Regional Parks
- State Trust
- US Forest Service
- Wildlife Area/Refuge

Project Size (acres): 21,957.98

Lat/Long (DD): 32.9763 / -111.4380

County(s): Pinal

AGFD Region(s): Mesa; Tucson

Township/Range(s): T1N, R8E; T1S, R8E; T2S, R8E +

USGS Quad(s): APACHE JUNCTION; GOLDFIELD +

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Special Status Species and Special Areas Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC		S		1B
Antilocapra americana sonoriensis	10J area for Sonoran Pronghorn	LE,XN				
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Canis lupus baileyi	10J area Zone 2 for Mexican gray wolf	LE,XN				
Catostomus clarkii	Desert Sucker	SC	S	S		1B
Catostomus insignis	Sonora Sucker	SC	S	S		1B
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC				1A
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S			1A
Gila River Indian Reservation	Gila River Indian Reservation					
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S			1A
Ironwood - Picacho Linkage Design	Wildlife Corridor					
Leopardus pardalis	Ocelot Area of Capture Concern					
PCH for Coccyzus americanus	Yellow-billed Cuckoo Proposed Critical Habitat					
Panthera onca	Jaguar Area of Capture Concern					
Rallus longirostris yumanensis	Yuma Clapper Rail	LE				1A

Note: Status code definitions can be found at http://www.azgfd.gov/w_c/edits/hdms_status_definitions.shtml.

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Agosia chrysogaster	Longfin Dace	SC		S		1B
Aix sponsa	Wood Duck					1B
Ammodramus savannarum perpallidus	Western Grasshopper Sparrow					1B
Ammospermophilus harrisii	Harris' Antelope Squirrel					1B
Anthus spragueii	Sprague's Pipit	C*				1A
Aquila chrysaetos	Golden Eagle	BGA		S		1B
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Botaurus lentiginosus	American Bittern					1B
Buteo regalis	Ferruginous Hawk	SC		S		1B
Catostomus clarkii	Desert Sucker	SC	S	S		1B
Catostomus insignis	Sonora Sucker	SC	S	S		1B
Chilomeniscus stramineus	Variable Sandsnake					1B
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC				1A
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S			1A
Colaptes chrysoides	Gilded Flicker			S		1B
Coluber bilineatus	Sonoran Whipsnake					1B
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1B

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Crotalus tigris	Tiger Rattlesnake					1B
Cynanthus latirostris	Broad-billed Hummingbird		S			1B
Cyprinodon macularius	Desert Pupfish	LE				1A
Dipodomys spectabilis	Banner-tailed Kangaroo Rat			S		1B
Euderma maculatum	Spotted Bat	SC	S	S		1B
Eumops perotis californicus	Greater Western Bonneted Bat	SC		S		1B
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1A
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S			1A
Haliaeetus leucocephalus	Bald Eagle	SC, BGA	S	S		1A
Heloderma suspectum	Gila Monster					1A
Incilius alvarius	Sonoran Desert Toad					1B
Kinosternon sonoriense sonoriense	Desert Mud Turtle			S		1B
Lasiurus blossevillii	Western Red Bat		S			1B
Lasiurus xanthinus	Western Yellow Bat		S			1B
Leopardus pardalis	Ocelot	LE				1A
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE				1A
Lepus alleni	Antelope Jackrabbit					1B
Macrotus californicus	California Leaf-nosed Bat	SC		S		1B
Melanerpes uropygialis	Gila Woodpecker					1B
Melospiza lincolnii	Lincoln's Sparrow					1B
Melozone aberti	Abert's Towhee		S			1B
Micruroides euryxanthus	Sonoran Coralsnake					1B
Myotis occultus	Arizona Myotis	SC		S		1B
Myotis velifer	Cave Myotis	SC		S		1B
Myotis yumanensis	Yuma Myotis	SC				1B
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					1B
Odocoileus virginianus	White-tailed Deer					1B
Ovis canadensis nelsoni	Desert Bighorn Sheep					1B
Panthera onca	Jaguar	LE				1A
Passerculus sandwichensis	Savannah Sparrow					1B
Perognathus amplus	Arizona Pocket Mouse					1B
Perognathus longimembris	Little Pocket Mouse					1B
Phrynosoma goodei	Goode's Horned Lizard					1B
Phrynosoma solare	Regal Horned Lizard					1B
Phyllorhynchus browni	Saddled Leaf-nosed Snake					1B
Progne subis hesperia	Desert Purple Martin			S		1B
Rallus longirostris yumanensis	Yuma Clapper Rail	LE				1A

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Setophaga petechia	Yellow Warbler					1B
Tadarida brasiliensis	Brazilian Free-tailed Bat					1B
Toxostoma lecontei	Le Conte's Thrasher					1B
Troglodytes pacificus	Pacific Wren					1B
Vireo bellii arizonae	Arizona Bell's Vireo					1B
Vulpes macrotis	Kit Fox					1B
Xantusia bezyi	Bezy's Night Lizard		S			1B

Species of Economic and Recreation Importance Predicted within Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla gambelii	Gambel's Quail					
Odocoileus hemionus	Mule Deer					
Ovis canadensis mexicana	Mexican Desert Bighorn Sheep					1B
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					

Project Type: Transportation & Infrastructure, Road construction (including staging areas), Realignment/new roads

Project Type Recommendations:

Bridge Maintenance/ConstructionIdentify whether wildlife species use the structure for roosting or nesting during anticipated maintenance/construction period. Plan the timing of maintenance/construction to minimize impacts to wildlife species. In addition to the species list generated by the Arizona's On-line Environmental Review Tool, the Department recommends that surveys be conducted at the bridge and in the vicinity of the bridge to identify additional or currently undocumented bat, bird, or aquatic species in the project area. To minimize impacts to birds and bats, as well as aquatic species, consider conducting maintenance and construction activities outside the breeding/maternity season (breeding seasons for birds and bats usually occur spring - summer). Examining the crevices for the presence of bats prior to pouring new paving materials or that the top of those crevices be sealed to prevent material from dripping or falling through the cracks and potentially onto bats. If bats are present, maintenance and construction (including paving and milling) activities should be conducted during nighttime hours, if possible, when the fewest number of bats will be roosting. Minimize impacts to the vegetation community. Unavoidable impacts to vegetation should be mitigated on-site whenever possible. A revegetation plan should be developed to replace impacted communities.Consider design structures and construction plans that minimize impacts to channel geometry (i.e., width/depth ratio, sinuosity, allow overflow channels), to avoid alteration of hydrological function. Consider incorporating roosting sites for bats into bridge designs. During construction, erosion control structures and drainage features should be used to prevent introduction of sediment laden runoff into the waterway. Minimize instream construction activity. If culverts are planned, use wildlife friendly designs to mitigate impacts to wildlife and fish movement. Guidelines for bridge designs to facilitate wildlife passage can be found on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

Fence recommendations will be dependant upon the goals of the fence project and the wildlife species expected to be impacted by the project. General guidelines for ensuring wildlife-friendly fences include: barbless wire on the top and bottom with the maximum fence height 42", minimum height for bottom 16". Modifications to this design may be considered for fencing anticipated to be routinely encountered by elk, bighorn sheep or pronghorn (e.g., Pronghorn fencing would require 18" minimum height on the bottom). Please refer to the Department's Fencing Guidelines located on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Consider impacts of outdoor lighting on wildlife and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use. Use only the minimum amount of light needed for safety. Narrow spectrum bulbs should be used as often as possible to lower the range of species affected by lighting. All lighting should be shielded, cantered, or cut to ensure that light reaches only areas needing illumination.

Minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g., microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g., livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before leaving the site. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants, https://agriculture.az.gov/. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control, http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (include spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

Based on the project type entered, coordination with State Historic Preservation Office may be required (http://azstateparks.com/SHPO/index.html).

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches.

Design culverts to minimize impacts to channel geometry, or design channel geometry (low flow, overbank, floodplains) and substrates to carry expected discharge using local drainages of appropriate size as templates. Reduce/minimize barriers to allow movement of amphibians or fish (e.g., eliminate falls). Also for terrestrial wildlife, washes and stream corridors often provide important corridors for movement. Overall culvert width, height, and length should be optimized for movement of the greatest number and diversity of species expected to utilize the passage. Culvert designs should consider moisture, light, and noise, while providing clear views at both ends to maximize utilization. For many species, fencing is an important design feature that can be utilized with culverts to funnel wildlife into these areas and minimize the potential for roadway collisions. Guidelines for culvert designs to facilitate wildlife passage can be found on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

Based on the project type entered, coordination with Arizona Department of Environmental Quality may be required (http://www.azdeq.gov/).

Based on the project type entered, coordination with U.S. Army Corps of Engineers may be required (http://www.usace.army.mil/)

Based on the project type entered, coordination with County Flood Control district(s) may be required.

Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly. PEP@azgfd.gov

Project Location and/or Species Recommendations:

HDMS records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project. The Endangered Species Act (ESA) gives the US Fish and Wildlife Service (USFWS) regulatory authority over all federally listed species. Please contact USFWS Ecological Services Offices at http://www.fws.gov/southwest/es/arizona/ or:

Phoenix Main Office
2321 W. Royal Palm Rd, Suite 103
Phoenix, AZ 85021
Phone: 602-242-0210
Fax: 602-242-2513

Tucson Sub-Office
201 N. Bonita Suite 141
Tucson, AZ 85745
Phone: 520-670-6144
Fax: 520-670-6155

Flagstaff Sub-Office
SW Forest Science Complex
2500 S. Pine Knoll Dr.
Flagstaff, AZ 86001
Phone: 928-556-2157
Fax: 928-556-2121

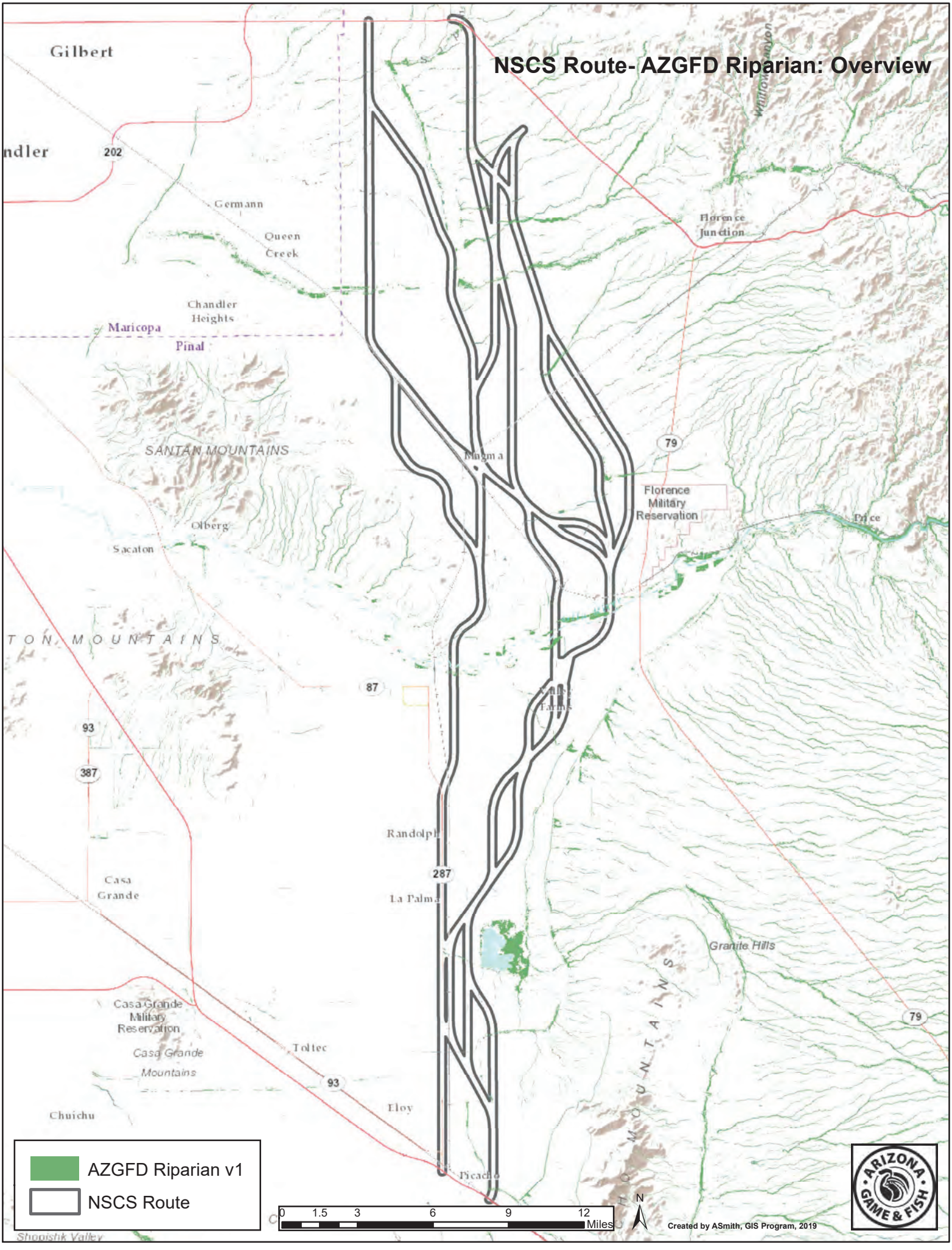
HDMS records indicate that Western Burrowing Owls have been documented within the vicinity of your project area. Please review the western burrowing owl resource page at: http://www.azgfd.gov/w_c/BurrowingOwlResources.shtml.

HDMS records indicate that Sonoran Desert Tortoise have been documented within the vicinity of your project area. Please review the Tortoise Handling Guidelines found at: http://www.azgfd.gov/hgis/pdfs/Tortoisehandlingguidelines.pdf

Your project site is within one or more defined Areas of Capture Concern. Please follow Department protocols while working within an Area of Capture Concern at U:\Agency Directives\JaguarOcelot Directives 17AUG10.pdf.

Analysis indicates that your project is located in the vicinity of an identified wildlife habitat linkage corridor. Project planning and implementation efforts should focus on maintaining adequate opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer to: http://www.corridordesign.org/arizona. Please contact your local Arizona Game and Fish Department Regional Office for specific project recommendations: http://www.azgfd.gov/inside_azgfd/agency_directory.shtml.

Tribal Lands are within the vicinity of your project area and may require further coordination. Please contact:
Gila River Indian Community
PO Box 97
Sacaton, AZ 85247
(520) 562-6000
(520) 562-6010 (fax)


NSCS Route- AZGFD Riparian: Overview
Gilbert
ndler
202
Germann
Queen Creek
Chandler Heights
Maricopa
Pinal
SANTAN MOUNTAINS
Olberg
Sacaton
TON MOUNTAINS
93
387
87
Casa Grande
Casa Grande Military Reservation
Casa Grande Mountains
Toltec
93
Chuichu
Eloy
Picacho
Randolph
287
La Palma
Magma
Florence Junction
79
Florence Military Reservation
Price
Willow Canyon
Granite Hills
79
AZGFD Riparian v1
NSCS Route
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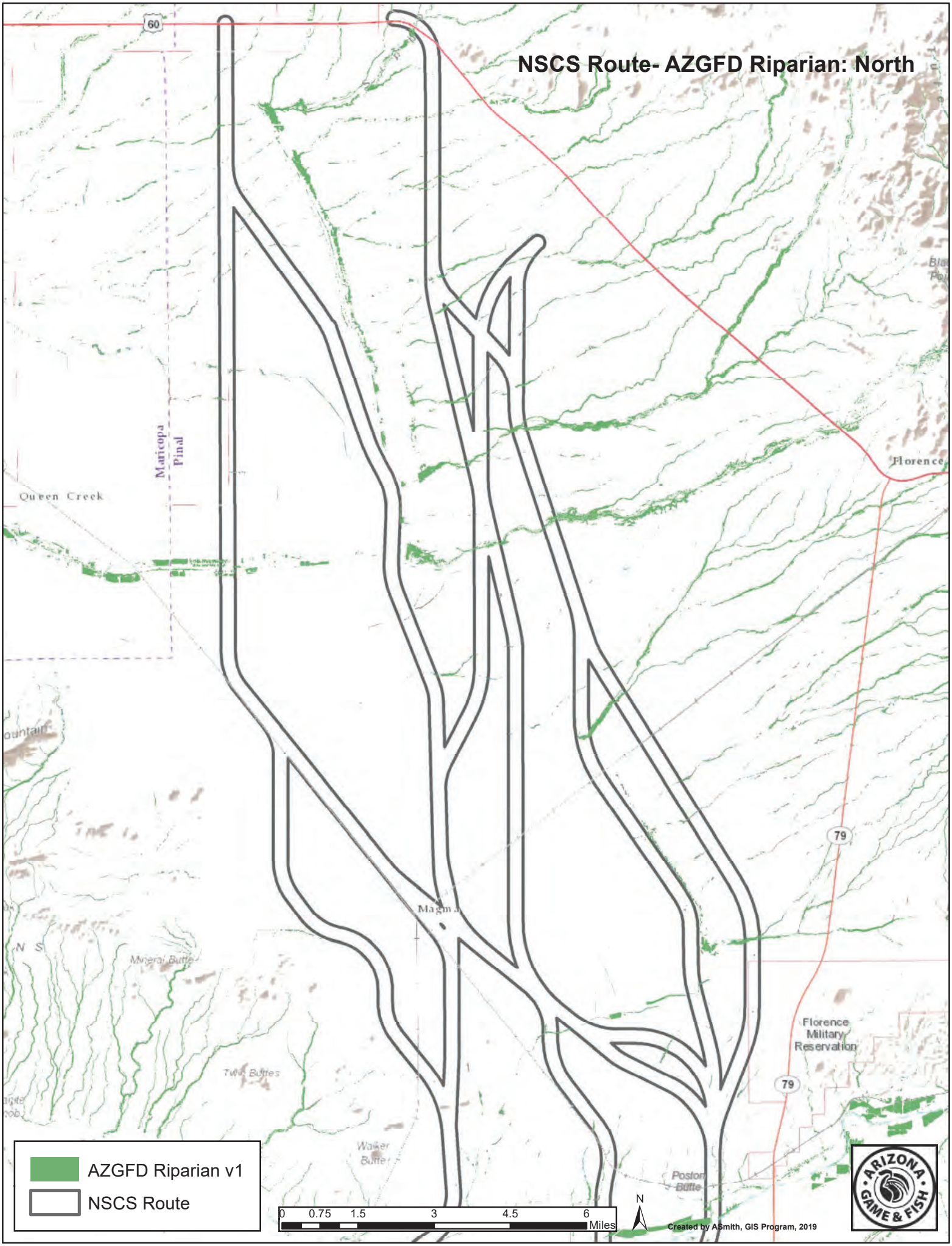
Miles
N
Created by ASmith, GIS Program, 2019
ARIZONA GAME & FISH


NSCS Route- AZGFD Riparian: North
60
Maricopa
Pinal
Queen Creek
Florence
79
Florence
Military
Reservation
Mineral Butte
Twin Buttes
Walker
Butte
Poston
Butte
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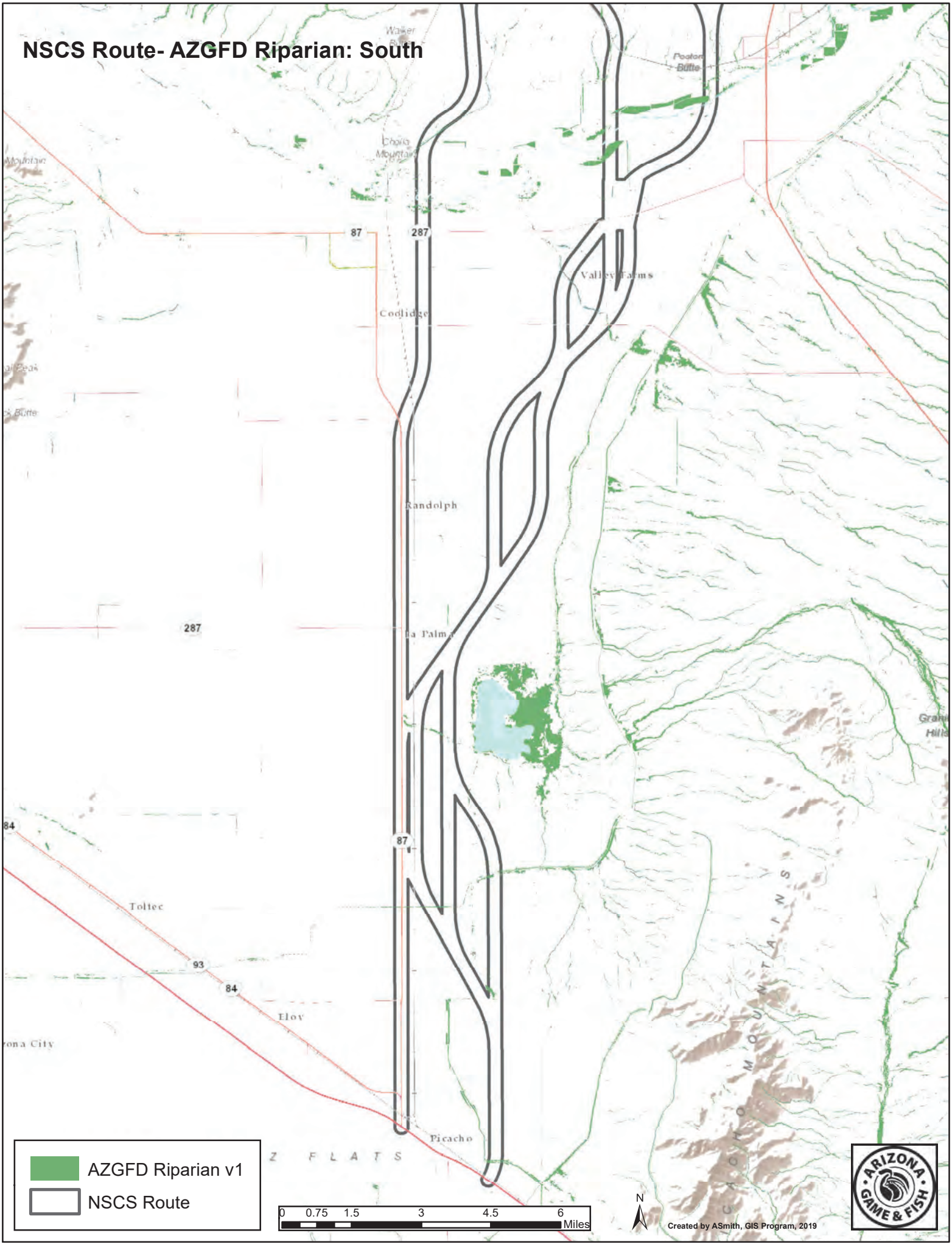
ARIZONA
GAME & FISH


NSCS Route- AZGFD Riparian: South
87
287
Coolidge
Valley Farms
Randolph
La Palma
287
87
84
Toltec
93
84
Eloy
Picacho
AZGFD Riparian v1
NSCS Route
0 0.75 1.5 3 4.5 6
Miles
N
Created by ASmith, GIS Program, 2019
ARIZONA GAME & FISH

RESOLUTION OF THE TOHONO O'ODHAM LEGISLATIVE COUNCIL
(Opposing Any Proposed Alignment of the Federal Highway Administration and Arizona Department of Transportation's Proposed North-South Corridor and State Route 24 Projects that Disturb or Negatively Affect O'odham Traditional Cultural Places)

RESOLUTION NO. 16-513

WHEREAS, the Tohono O'odham Nation ("Nation") and their ancestors, the Archaic and Hohokam peoples have inhabited Southern Arizona since time immemorial; and

WHEREAS, it is the policy of the Tohono O'odham Nation to promote "enjoyable harmony between members of the [N]ation and their environment," and to preserve "its historic and cultural artifacts and archeological sites" as well as "preserve and cultivate native arts, crafts and traditions" (Constitution, Article VI, Section 1(c)(8) and Article XVIII, Section 1); and

WHEREAS, it is also the Nation's policy "to seek the return to the Tohono O'odham Nation of lands and natural resources, including minerals and water rights, within or adjacent to the Tohono O'odham Nation, or which originally were a part of the historic Papaqueria." (Constitution, Article XVI, Section 9); and

WHEREAS, the Tohono O'odham Legislative Council enacted an Archaeological Resources Protection Ordinance (Ordinance No. 06-84) for the protection and preservation of cultural resources associated with traditional and sacred values and beliefs important to the Tohono O'odham and of the physical site, location, or context in which cultural resources are found; and

WHEREAS, the Arizona Department of Transportation ("ADOT") and Federal Highway Administration ("FHWA") are conducting a study, known as the North-South Corridor Study ("NSCS"), in the area between U.S. Route 60 in Apache Junction and Interstate 10 near Eloy and Picacho; and

WHEREAS, the purpose of the NSCS is to identify and evaluate possible routes to provide a connection between the U.S. Route 60 in Apache Junction and Interstate 10 and that will result in the preparation of a Location/Design Concept Report ("L/DCR") and an Environmental Impact Statement ("EIS") for a proposed 45-mile-long transportation corridor in Pinal County; and

WHEREAS, in 2014, ADOT and FHWA conducted Alternatives Selection Report Public Information Meetings and received comments on proposed alignments for the NSCS; and

WHEREAS, traditional cultural property studies have identified Frogtown (Ancestral Homeland for the Village of Anegam), the Escalante Site Group, Tankai (Poston Butte) and the Adamsville Ruin as traditional cultural properties significant to

the Tohono O'odham Nation, which would be adversely affected by the current proposed alignments; and

WHEREAS, **the Tohono O'odham community of Florence Village and its traditional cemetery may be affected by the proposed North-South Corridor; and**

WHEREAS, **elders have visited all of the above-listed traditional cultural properties; and**

WHEREAS, **the Sif Oidak District Council, by Resolution No. SODC 16-116, opposed the current proposed alignment through Frog Town and requests the Legislative Council exercise authority to protect all O'odham ancestral homelands; and**

WHEREAS, **the Legislative Cultural Preservation and Agricultural and Natural Resources Committees strongly recommend opposing any proposed alignments for the North-South Corridor and State Route 24 projects that disturb or negatively affect O'odham traditional cultural places, specifically Frogtown, Escalante Site Group, Tankai (Poston Butte), the Adamsville Ruin and Florence Village traditional cultural places, and requests that the FHWA and ADOT change the proposed alignments of the North-South Corridor and State Route 24 projects to avoid O'odham traditional cultural places.**

NOW, THEREFORE, BE IT RESOLVED that the Tohono O'odham Legislative Council strongly opposes any proposed alignments for the North-South Corridor and State Route 24 projects that disturb or negatively affect O'odham traditional cultural places, specifically Frogtown, Escalante Site Group, Tankai (Poston Butte), the Adamsville Ruin and Florence Village traditional cultural places, and requests that the FHWA and ADOT change the proposed alignments of the North-South Corridor and State Route 24 projects to avoid O'odham traditional cultural places.

The foregoing Resolution was passed by the Tohono O'odham Legislative Council on the 19TH day of OCTOBER, 2016 at a meeting at which a quorum was present with a vote of 3,021.4 FOR; -0- AGAINST; -0- NOT VOTING; and [03] ABSENT, pursuant to the powers vested in the Council by Article VI, Section 1(c)(8), Article XVIII, Section 1, and Article XVI, Section 9 of the Constitution of the Tohono O'odham Nation, adopted by the Tohono O'odham Nation on January 18, 1986; and approved by the Acting Deputy Assistant Secretary - Indian Affairs (Operations) on March 6, 1986, pursuant to Section 16 of the Act of June 18, 1934 (48 Stat.984).

TOHONO O'ODHAM LEGISLATIVE COUNCIL

Timothy Joaquin, Legislative Chairman

20 day of October, 2016

RESOLUTION NO. 16-513
(Opposing Any Proposed Alignment of the Federal Highway Administration and Arizona Department of Transportation's Proposed North-South Corridor and State Route 24 Projects that Disturb or Negatively Affect O'odham Traditional Cultural Places)

ATTEST:

Evonne Wilson, Legislative Secretary

20 **day of** October **, 2016**

Said Resolution was submitted for approval to the office of the Chairman of the Tohono O'odham Nation on the 20 **day of** October **, 2016 at** 4:40 **o'clock,** P **.m., pursuant to the provisions of Section 5 of Article VII of the Constitution and will become effective upon his approval or upon his failure to either approve or disapprove it within 48 hours of submittal.**

TOHONO O'ODHAM LEGISLATIVE COUNCIL

Timothy Joaquin, Legislative Chairman

[X] **APPROVED** **on the** 20 **day of** October **, 2016**

[ ] **DISAPPROVED** **at** 6:15 **o'clock,** P **.m.**

EDWARD D. MANUEL, CHAIRMAN
TOHONO O'ODHAM NATION

Returned to the Legislative Secretary on the 21 **day of** October **, 2016, at** 8:16 **o'clock,** A **.m.**

Evonne Wilson, Legislative Secretary

RESOLUTION NO. 16-513

ACTION: **OPPOSING ANY PROPOSED ALIGNMENT OF THE FEDERAL HIGHWAY ADMINISTRATION AND ARIZONA DEPARTMENT OF TRANSPORTATION'S PROPOSED NORTH-SOUTH CORRIDOR AND STATE ROUTE 24 PROJECTS THAT DISTURB OR NEGATIVELY AFFECT O'ODHAM TRADITIONAL CULTURAL PLACES**

MOVED: **COUNCILWOMAN MARY LOPEZ** **SECOND: COUNCILWOMAN LUCINDA ALLEN**

DATE: **OCTOBER 19, 2016**

DISTRICT	LEGISLATIVE REPRESENTATIVES	# OF VOTES	FOR	AGAINST	NOT VOTING	ABSENT
BABOQUIVARI 367.2	1. FRANCES MIGUEL *(Absent)* (Roberta E. Harvey) *(Present)*	183.60	X			
	2. VERNON J. SMITH (Gloria Zazueta)	183.60	X			
CHUKUT KUK 332.1	1. ETHEL GARCIA *(Absent)* (Marlakay K. Henry) *(Present)*	166.05	X			X
	2. BILLMAN LOPEZ (Patricia Vicenti)	166.05	X			
GU ACHI 265.0	1. TIMOTHY L. JOAQUIN *(Absent)* (Louis L. Johnson) *(Present)*	132.50	X			
	2. LORETTA LEWIS ( )	132.50	X			
GU VO 250.6	1. GRACE MANUEL (Dallas Lewis)	125.30	X			
	2. PAMELA ANGHILL (Jeffery Antone, Sr.)	125.30	X			
HICKIWAN 205.8	1. LOUIS R. LOPEZ (Shirley Molina)	102.90	X			
	2. SANDRA ORTEGA ( )	102.90	X			
PISINEMO 219.9	1. CHESTER ANTONE ( )	109.95	X			X
	2. MONICA K. MORGAN ( )	109.95	X			
SAN LUCY 226.5	1. DIANA MANUEL ( )	113.25	X			
	2. JANA MONTANA (Gloria Ramirez)	113.25	X			
SAN XAVIER 228.6	1. DANIEL L.A. PRESTON III ( )	114.30	X			X
	2. RACHEAL VILSON-STONER (Olivia Villegas-Liston	114.30	X			
SCHUK TOAK 180.6	1. ANTHONY J. FRANCISCO JR. ( )	90.30	X			
	2. QUINTIN C. LOPEZ (John Fendenheim)	90.30	X			
SELLS 513.5	1. ARTHUR WILSON (Beverly Rivas)	256.75	X			
	2. BARBARA HAVIER ( )	256.75	X			
SIF OIDAK 231.6	1. LUCINDA ALLEN (Nicholas Jose)	115.80	X			
	2. MARY LOPEZ ( )	115.80	X			
TOTAL		3,021.4	3,021.4	-0-	-0-	[03]

Town of Queen Creek

November 10, 2010

Mr. Javier Gurrola, Predesign Project Manager
ADOT
206 S 17th Ave.
Phoenix, AZ 85007

Subject: Comments to North-South Corridor Study – Agency Scoping Meeting

Dear Mr. Gurrola:

Thank you for allowing the Town to provide input into ADOT's North-South Corridor Study. We commend you and the entire ADOT team for the participatory approach you are taking with the project. On November 4, the Town's Transportation Advisory Committee met to review the progress made on this project to-date. Please consider these comments for incorporation into the North-South Corridor Study:

1. In the northern-most part of the study area, roughly between Apache Junction and Queen Creek, the Town's Transportation Advisory Committee recommends the alignment stay to the west of the CAP canal for as long as feasible. Should the new freeway be sited east of the CAP, the existing constraints of the three flood retention structures (and their associated floodplains) would require the N-S Freeway to be built very close to the future US-60 bypass, thus minimizing the regional benefits for this significant new transportation corridor. While we recognize the presence of a small earth fissure area near the intersection of the US60 and the CAP canal, we anticipate a detailed geotechnical investigation would allow the western alignment to be constructed while at the same time minimizing mitigation requirements for those earth fissures.

2. In the north-central part of the study area, roughly bounded by Queen Creek to the north, Florence to the south, the San Tan Mountains to the west and Highway 79 to the east, there are two distinct "corridor opportunity areas". The western corridor brings the N-S freeway to the vicinity of the intersection of two railroads (Union Pacific and Magma Arizona RR). The eastern corridor brings the N-S freeway to within a few miles of State Highway 79 for a distance of at least 10 miles. The Town's Transportation Advisory Committee recommends the western alignment be considered as preferred, at least to the point where the Union Pacific and Magma Arizona railroads meet. Should the new freeway be cited along the "eastern corridor" in this area, existing (and near-term future) development constraints would require the new freeway to be very close to existing Highway 79 for many miles, thus minimizing the regional benefits for this significant new transportation corridor.

Should you have any questions, please feel free to contact me at 480-358-3901.

Sincerely Yours,

Tom Condit, PE
Development Services Director

Town of Florence
P.O. Box 2670
775 North Main Street
Florence, Arizona 85132

Phone (520) 868-7500
Fax (520) 868-7501
TDD (520) 868-7502

www.florenceaz.gov

TOWN SERVICES

Building Safety
868-7573

Community Development
868-7575

Finance
868-7624

Fire
868-7609

Grants
868-7513

Human Resources
868-7545

Library
868-8311

Municipal Court
868-7514

Parks & Recreation
868-7589

Police
868-7681

Public Works
868-7620

Senior Center
868-7622

Town Attorney
868-7557

Utility Billing
868-7680

Water/Wastewater
868-7677

April 5, 2013

Mayor Tom J. Rankin
Town of Florence
775 N Main Street
Florence, AZ 85132

SENT VIA EMAIL:

John Halikowski, ADOT Director
JHalikowski@azdot.gov

Cc:

Javier F Gurrola
JGurrola@azdot.gov

Brent Cain
BCain@azdot.gov

Steve Boschen
SBoschen@azdot.gov

Michael Kies
MKies@azdot.gov

Mary Currie
MCurrie@azdot.gov

Re: ADOT North-South Corridor

Dear Mr. Halikowski:

I want to take the opportunity to respond to the March 27th letter prepared by Mr. Gurrola to the Rose Law Group regarding the status and timing of the ADOT North-South Corridor study. First I would like to thank you and the project team for all of your hard work on this project and for working so closely with our internal project team on this very critical project. The Corridor team has been very receptive to the Town's comments and they have developed a keen understanding and knowledge of the issues that impact this region, namely the lack of a robust and diversified transportation network.

As you are aware, this project is essential for the continued growth of the Florence area and the Sun Corridor region and the proper location and timing of the Corridor is vital to the long term vitality and sustainability of Florence and the surrounding areas. That said, I must share my concerns about the delays we have experienced with this project and the possibility that the establishment of a final North-South alignment might be delayed beyond our expectations. While important to complete the companion toll feasibility study and understand how this future freeway will be funded and developed, it is also important that we work diligently to set the final North-South Freeway alignment as soon as practically possible. Certainly, the establishment of the final Corridor will be highly beneficial and it looks like we are getting closer and closer to that point, however, the vast difference between the establishment of the Corridor as opposed to an alignment will have a significant impact on local governments, builders and developers to be able to plan around and for this alignment. With development pressure heating up again and property values increasing, there will be increased reluctance for many to plan around the large study area we have today or even the 1,500 foot wide Corridor. The alignment provides us with much greater certainty and is defined in a manner that allows for logical land use planning and land acquisitions to occur with significantly minimized risks.

I understand the procedures you have to follow and the limitations related to the funding aspects of this project, but an expectation was understood on this project that we were working towards a final alignment in the very near future and I know that the many residents, stakeholders and elected and appointed officials I work with share this expectation. We sincerely ask that you give prioritization to the project moving to the alignment stage regardless of the outcome of the toll feasibility study.

Thank you again for your work on this project and your willingness to address the concerns stated herein.

Sincerely,

Tom J. Rankin

Mayor Tom J. Rankin
Town of Florence

RESOLUTION NO. 1490-14

A RESOLUTION OF THE TOWN OF FLORENCE, PINAL COUNTY, ARIZONA, AFFIRMING THE TOWN OF FLORENCE'S PREFERENCES REGARDING THE PROPOSED ADOT NORTH-SOUTH FREEWAY CORRIDOR.

WHEREAS, the Town of Florence has proactively worked to identify and support the short, mid and long-term transportation needs and goals for the Town; and

WHEREAS, the Town of Florence has been actively engaged with the ADOT North-South Freeway and Passenger Rail Corridor Studies to protect the long term transportation needs of the Town; and

WHEREAS, the proper alignment and future development of the proposed ADOT Freeway is critical to the long-term prosperity and sustainability of the Town of Florence; and

WHEREAS, the Town of Florence 2020 General Plan Future Land Use Map contained within the Land Use Element indicates the Town's conceptual alignment of the proposed North-South ADOT Freeway Corridor, as well as the proposed conceptual alignment of the ADOT Passenger Rail Corridor; and

WHEREAS, an ongoing public participation process, including the holding of a public hearings of the Town of Florence Planning and Zoning Commission, public hearings of the Council of the Town of Florence, and public outreach to impacted stakeholders has occurred to establish the Town's preferences for the future ADOT North-south Freeway Corridor on the Town's Future Land Use Map; and

WHEREAS, the current ADOT North-South Freeway Study alternatives do not precisely match the preferences of the Town via the approved Future Land Use Map, the Town affirms its support of the Future Land Use Map, but expresses its corridor segment preferences within the Town's Planning Area to be: O3, V, X and AO; and

WHEREAS, the Town must take a stance against alternatives that vary substantially from the Town's preferences and that would be damaging to the Town's future prosperity and sustainability, particularly referring to objectionable segments G, Q and AB; and

WHEREAS, the Town must support alternatives that are in support of the Town's position as the County Seat of Pinal County and a major employer for the Town of Florence; and

WHEREAS, the positions stated via this Resolution have been found to: be

appropriate; be consistent with the goals, objectives and strategies of the Florence 2020 General Plan; Specifically, the Amendment is consistent with Goals One and Two of the Circulation Element that support a safe, efficient, balanced and comprehensive transportation system and Goal One of the Economic Development Element that states "Develop a sustainable economy in order to maintain a vibrant and healthy community". Thus, a determination has been made that this Resolution should be approved.

THEREFORE, BE IT RESOLVED by the Mayor and Council of the Town of Florence, Arizona, as follows:

The Mayor and Council of the Town of Florence hereby adopt this resolution affirming the Town's preferences regarding the ADOT North-South Freeway Corridor.

PASSED AND ADOPTED by the Mayor and Council of the Town of Florence, Arizona, this 8th day of December, 2014.

Tom J. Rankin, Mayor

ATTEST:

Lisa Garcia, Town Clerk

APPROVED AS TO FORM:

James E. Mannato, Town Attorney

RESOLUTION NO. 15-1343

A RESOLUTION OF THE MAYOR AND CITY COUNCIL OF THE CITY OF ELOY SUPPORTING AND ENDORSING SEGMENT "Z/AA" AS IDENTIFIED IN THE NORTH-SOUTH CORRIDOR STUDY AS THE CITY OF ELOY PREFERRED ROUTE ALTERNATIVE IN THE ENVIRONMENTAL IMPACT STUDY BEING PREPARED BY THE ARIZONA DEPARTMENT OF TRANSPORTATION.

WHEREAS, the Arizona Department of Transportation ("ADOT") has completed initial engineering and environmental studies analyzing potential alignment segments, for a proposed freeway connecting Interstate 10 with US Highway 60 ("North-South Freeway") within the central portion of Pinal County; and,

WHEREAS, ADOT has conducted extensive public outreach to provide information to, and receive feedback from, the City of Eloy (the "City"), its residents, and the surrounding communities that will integrate the North-South Freeway into its transportation network and land use pattern, benefitting both city-wide and regional mobility; and,

WHEREAS, changes in the boundaries of adjacent communities and their respective planning areas have caused the City of Eloy to reevaluate and change its support to the Z/AA Segment rather than the Fast Track Road alignment to preserve economic development efforts of the City as well as increase mobility opportunities for its residents; and,

WHEREAS, the alignment of the Z/AA Segment will provide opportunities for the enhancement of the economy of the City; and,

WHEREAS, ADOT is preparing the Draft Environmental Impact Statement to assess Segment Z/AA and the other remaining segment of the North-South Freeway; and,

WHEREAS, Segment Z/AA utilizes the existing right-of-way of State Route 87, requiring only a portion of new right-of-way, making it more cost effective than the other segment; and,

WHEREAS, the utilization of Segment Z/AA significantly diminishes the presence of environmental (i.e. fissures, drainage, etc.) impediments that exist with the other alternative, allowing for a more cost effective North-South Freeway; and,

WHEREAS, the location of Segment Z/AA allows for the future freeway to capture vehicle trips to the east and west of SR 87 within the City, rather than the alignment to the east; and,

WHEREAS, the utilization of Segment Z/AA places the freeway closer to downtown Eloy, providing opportunities to capture economic development opportunities and patronage, as well as transit access-rather than the alternative segment, which will function as a by-pass; and,

WHEREAS, the utilization of Segment Z/AA allows for the potential southerly extension of the freeway to serve the southern portion of the City's planning area in the future.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF ELOY, ARIZONA AS FOLLOWS:

That the City of Eloy supports and endorses Segment Z/AA as the preferred route alternative for the North-South Corridor Freeway in the Environmental Impact Study being prepared by the Arizona Department of Transportation.

APPROVED this 23rd day of March, 2015.

Joel G. Belloc, Mayor

ATTEST:

Mary Myers, City Clerk

APPROVED AS TO FORM:

Stephen R. Cooper, City Attorney

RESOLUTION NO. 15-1343

A RESOLUTION OF THE MAYOR AND CITY COUNCIL OF THE CITY OF ELOY SUPPORTING AND ENDORSING SEGMENT "Z/AA" AS IDENTIFIED IN THE NORTH-SOUTH CORRIDOR STUDY AS THE CITY OF ELOY PREFERRED ROUTE ALTERNATIVE IN THE ENVIRONMENTAL IMPACT STUDY BEING PREPARED BY THE ARIZONA DEPARTMENT OF TRANSPORTATION.

WHEREAS, the Arizona Department of Transportation ("ADOT") has completed initial engineering and environmental studies analyzing potential alignment segments, for a proposed freeway connecting Interstate 10 with US Highway 60 ("North-South Freeway") within the central portion of Pinal County; and,

WHEREAS, ADOT has conducted extensive public outreach to provide information to, and receive feedback from, the City of Eloy (the "City"), its residents, and the surrounding communities that will integrate the North-South Freeway into its transportation network and land use pattern, benefitting both city-wide and regional mobility; and,

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APPROVED this 23rd day of March, 2015.

Joel G. Belloc, Mayor

ATTEST:

Mary Myers, City Clerk

APPROVED AS TO FORM:

Stephen R. Cooper, City Attorney

Property Reserve, Inc.

August 27, 2015

SENT VIA EMAIL ONLY

Mr. Victor Yang
Senior Project Manager
ADOT Urban Project Management Group
1611 West Jackson, EM01
Phœnix, Arizona 85007
vyang@azdot.gov

RE: North-South Freeway Corridor Study – 400' Wide Alignment Preference through Northern Coolidge Area

Dear Mr. Yang,

Property Reserve, Inc. ("PRI"), a subsidiary of the Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-day Saints ("CPB"), is the owner of approximately 3,860 total acres within the North-South Freeway Corridor Study area, located between Vah Ki Inn Road and Bartlett Road, just northeast of Coolidge.

PRI, Pinal Land Holdings, and Langley Properties/WDP Partners, all major land owners and stakeholders in the North-South Freeway Corridor Study area, have been working together to arrive at a mutually agreeable 400' wide alignment through the northern Coolidge portion of the Corridor Study area. Our intent has been to remain as consistent as possible with the remaining ADOT corridor segments in the area, as well as the routes historically supported by the land owner/stakeholder group and the City of Coolidge.

Exhibit "A" attached hereto shows three possible 400' alignments in this area for ADOT's consideration. Options A and B are supported by all three land owners/stakeholders (PRI, Pinal Land Holdings, and Langley Properties/WDP Partners). Option C is supported by Pinal Land Holdings only.

We encourage you to evaluate these alignment alternatives as you work to identify the recommended 400' wide alignment for the North-South Freeway. Once you have had time to evaluate, we request the opportunity to have further discussion with you about them.

Sincerely,

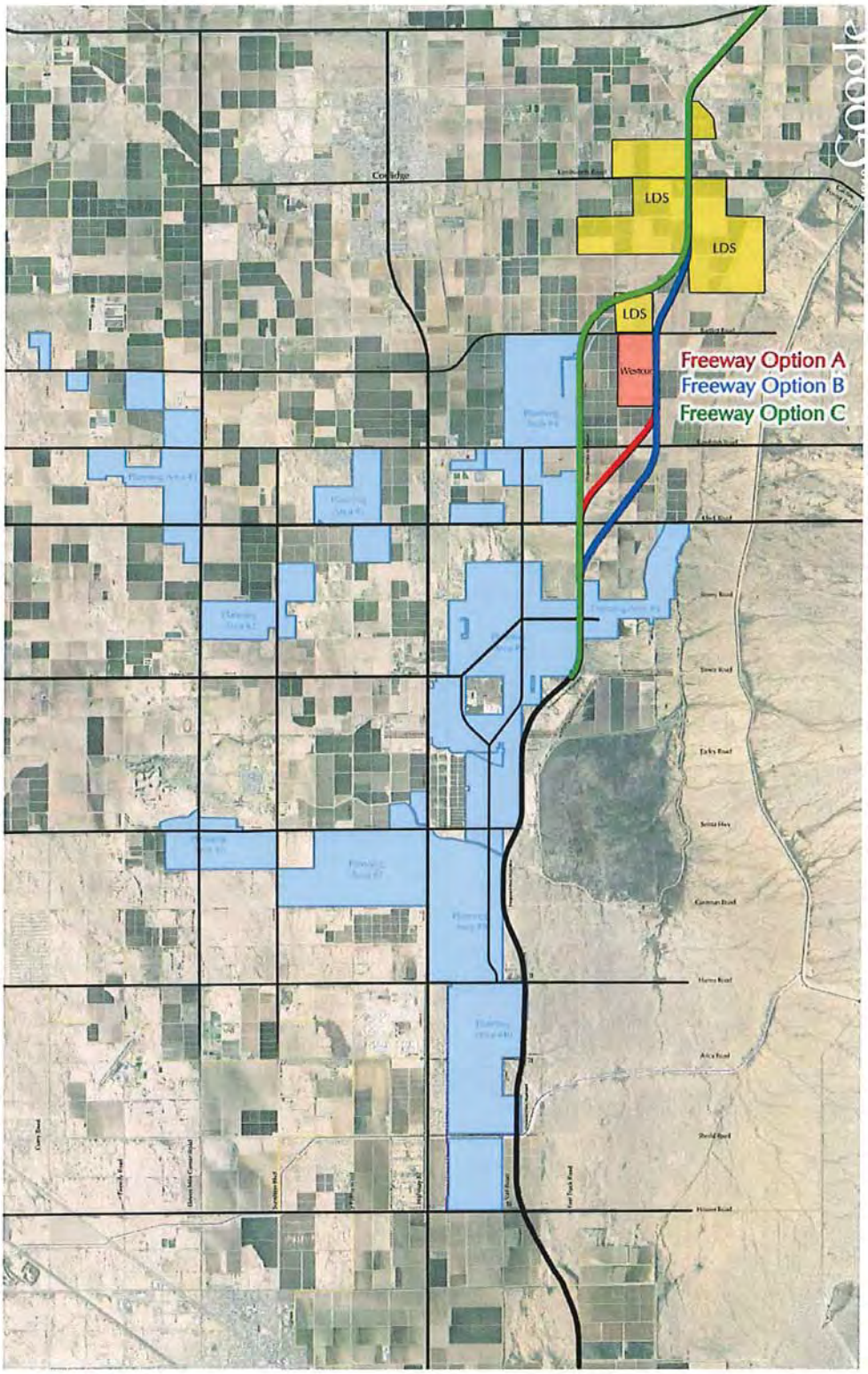
Danny Owen

51 South Main Street, Suite 301
Salt Lake City, Utah 84111-7502
Phone: 1-801-321-8700

Attachment: Exhibit "A"

cc: Bob Flatley, City of Coolidge
Rick Miller, City of Coolidge

Exhibit "A"



Pinal Land Group 11,447
Planning Areas

Salt River Project
P.O. Box 52025
Mail Stop: PAB221
Phoenix, AZ 85072-2025
Phone: (602) 236-2679
Fax: (602) 629-8374
Janeen.Rohovit@srpnet.com

Janeen C. Rohovit
SR Government Relations Representative

January 5, 2016

Victor Yang
Arizona Department of Transportation
Multimodal Planning Division
205 S. 17th Avenue, MD605E
Phoenix, AZ 85007

Dear Mr. Yang,

As you know, representatives of SRP have served on the North-South Corridor Study (NSCS) Agency Group throughout the extensive process of alternative route development and selection. SRP appreciates the opportunity to have provided input and technical expertise from an engineering and design perspective. We believe generally that the development and outcomes of the process were comprehensive, collaborative and well-conducted. These comments are in response to the Federal Highway Authority request of the study team to evaluate an Idaho Road interchange option, connecting the NSCS to US 60 through the Portalis development.

The Portalis development, now referred to as Lost Dutchman Heights, is a 7,700-acre development proposed on State Trust land between Meridian and Mountain View Roads. SRP shares the concerns of the Arizona State Land Department (ASLD) and the City of Apache Junction (City) regarding placing an alternative through the future development of Lost Dutchman Heights for the following reasons:

First, as indicated in the meeting summary from July 14, 2015, an Idaho Road alternative may, within a short distance, cross both the CAP Canal and Maricopa County Flood Control District's flood retarding structure(s). We are concerned this change would add unnecessary costs to the project. Second, it is our opinion that only one-mile spacing between the Ironwood interchange and an Idaho Road interchange, both located on US60, is inconsistent with the overall planning for this area and in fact creates significant planning congestion.

For over a decade, the Lost Dutchman Heights property, located on both sides of Idaho Road, has been a key focus for regional comprehensive planning conducted by the ASLD, the City, and by Pinal County. The primary planning for the region, some of which is currently moving forward, stems from the

anticipated development of Lost Dutchman Heights. Adoption of an Idaho Road alternative will divide a pivotal property and significantly alter future development opportunities as well as the economic growth opportunities predicted to occur locally and for the region as a whole.

SRP appreciates the opportunity to provide comments on this critical component of the North-South Corridor Study. SRP supports the ASLD and the City in their request to reject the Idaho Road option and keep the Lost Dutchman Heights development unimpaired.

Sincerely,

Janeen Rohovit

Cc: Lisa Atkins; ASLD
Michelle Green; ASLD
Bryant Powell; City of Apache Junction
Molly Greene; SRP

Salt River Project
P.O. Box 52025
Mail Stop: PAB221
Phoenix, AZ 85072-2025
Phone: (602) 236-2679
Fax: (602) 629-8374
Janeen.Rohovit@srpnet.com

Janeen C. Rohovit
SR Government Relations Representative

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Arizona Department of Transportation
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205 S. 17th Avenue, MD605E
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Sincerely,

Janeen Rohovit

Cc: Lisa Atkins; ASLD
Michelle Green; ASLD
Bryant Powell; City of Apache Junction
Molly Greene; SRP

PHOENIX-MESA GATEWAY AIRPORT AUTHORITY
5835 SOUTH SOSSAMAN ROAD
MESA, ARIZONA 85212-6014

PHONE (480) 988 7600
FAX (480) 988 2315

January 24, 2017

Victor Yang, P.E.
Project Manager
Arizona Department of Transportation
205 South 17th Avenue MD605E
Phoenix, AZ 85007

Re: 999-A(365)X
TRACS No. 999 PN 000 H7454
North-South, US 0 to I-10
North-South Corridor Tier 1 EIS
Coordination Plan for Agency and Public Involvement

Dear Victor,

Thank you for providing the North-South Corridor Tier 1 EIS Coordination Plan for review and solicitation for comments. Since no portions of the airport are within the proposed project area, Phoenix-Mesa Gateway Airport Authority (PMGAA) does not have any jurisdiction or authority with respect to the project. PMGAA would request to remain a stakeholder in this coordination plan, as well as through the duration of the EIS. PMGAA believes that the planned North-South Corridor, combined with the extension of, and connection to State Route 24, plays a significant role in the continued development of the Phoenix-Mesa Gateway Airport area. Planned transportation connections are a key component for that success.

While PMGAA does not have a preference as to where the roadway will start south from US 60, to help ensure the growth and development of the Gateway region PMGAA respectfully requests ADOT's considerations for:

- The interchange/connection between the North-South Corridor Roadway and State Route 24
- State Route 24 extension design and construction to the North-South Corridor Roadway interchange
- Construct the North-South Corridor Roadway, State Route 24 extension and connecting interchange in a coordinated timeline
- Ellsworth Road & Williams Field Road connectivity from westbound State Route 24 to provide access to planned airport facilities for North-South Corridor traffic

Thank you for the opportunity to provide comment on the North-South Corridor's next phase. PMGAA welcomes the opportunity to further discuss and work with ADOT, and associated agencies, on these important regional projects.

Sincerely,

Tony Bianchi, C.M.
Airport Planner

Cc: Rebecca Yedlin

City of Coolidge

130 West Central Avenue
Coolidge, Arizona 85128
Phone: (520) 723-5361
TDD: (520) 723-4653 / Fax: (520) 723-7910

July 19, 2017

North South Corridor Study Team

City of Coolidge Comments

Using the current Highway 87 Right-of-Way South of Coolidge to Interstate 10 is not an appropriate route for the North South Freeway Corridor for the following reasons:

The highway parallels the Union Pacific Railroad approximately 1,350 feet apart. The cost of establishing future grade separated interchanges and non-interchange crossings over both of these facilities would be cost prohibitive. On and off ramp design with the railroad conflict would be difficult and costly.

The current 1,350 depth from Highway 87 to the Union Pacific Railroad is an excellent location for light and heavy industrial uses that will have a positive economic benefit to the region. Placing a freeway on this highway will virtually eliminate that potential.

Placing a freeway over the current two lane highway will only net two lanes of traffic. Placing the freeway east of the Union Pacific Railroad in the vicinity of the Vail Road alignment will provide greater capacity for traffic by maintaining the existing Highway 87 for local traffic. Highway 87 could also be used as a detour route if there is a serious accident on the freeway. Highway 87 will likely be widened in the future to four or six lanes serving as a local major arterial street.

The proposed Arizona Inland Port and Pinal Logistics Park lying east of the Union Pacific Railroad will be one of the major economic development hubs of the South West Region. Placing a future freeway along the East side of this development, as designed in the preliminary development plan, provides excellent transportation access to the development for the thousands of employees that will be working in this area as well as the freight access out of the inland port to markets.

There are fewer utility conflicts on the route East of the Union Pacific Railroad near the Vail Road alignment.

The City of Coolidge General Plan Transportation Map identifies the freeway corridor to the East of the Union Pacific railroad consistent with the Arizona Inland Port and Pinal Logistics Park. The Coolidge Mayor and City Council negotiated and approved a development agreement with the City of Mesa and Pinal Land Holdings giving support for the North South Freeway as shown in the City General Plan.

The Highway 87 route supported by the City of Eloy may be contrary to pre-annexation development agreements they negotiated with developers of the proposed Orchards at Picacho and Orchard Hills Planned Area Developments. These documents should be evaluated and the owners of these projects should be consulted.

The City of Eloy previously supported a project called "Arizona TransPort" which is shown on a map of proposed developments on the Eloy Website under *Departments>Community Development>Documents,Forms and Maps>Proposed developments.* This unsuccessful project was proposed by Colorado Springs based Schuck Corporation and is in the exact same location that the City of Coolidge successfully annexed for the Arizona Inland Port and Pinal Logistics Park. Attached is an article from the Arizona Daily Star which references this project and the City of Eloy's support for it.

The City of Coolidge appreciates the efforts by ADOT and its consultants to gain public input in this corridor study effort. The Mayor and City Council have gone on record supporting a preferred alignment through the Coolidge Planning Area by passing a Resolution which has previously been provided to ADOT.

Please give me a call if you have any questions about the points of consideration outlined in this letter.

Sincerely,

Rick Miller

Rick Miller
City Manager

Cc: Mayor and City Council members

City of Apache Junction

300 East Superstition Boulevard • Apache Junction, Arizona 85119 • www.ajcity.net

January 11, 2018

Arizona Department of Transportation
Attn: Victor Yang
205 S. 17th Ave, MD605E
Phoenix, AZ 85007

Dear Mr. Yang:

The City of Apache Junction's Silly Mountain master plan proposed funding for implementation is not identified and there is no time table for funding of this project.

If there ever is funding identified, the City of Apache Junction will contact and coordinate any joint planning with the Arizona Department of Transportation.

Thank you for the opportunity to provide you with the City of Apache Junction's perspective.

Sincerely,

Bryant Powell
City Manager

City of Apache Junction

300 East Superstition Boulevard • Apache Junction, Arizona 85119 • www.ajcity.net

January 11, 2018

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Attn: Victor Yang
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Phoenix, AZ 85007

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Sincerely,

Bryant Powell
City Manager

Pinal Land Holdings

August 21, 2015

SENT VIA EMAIL ONLY

Mr. Victor Yang
Senior Project Manager
ADOT Urban Project Management Group
1611 West Jackson, EM01
Phœnix, AZ 85007
vyang@azdot.gov

Re: North-South Freeway Corridor Study – 400' Wide Alignment Preference through Northern Coolidge Area

Dear Mr. Yang,

Pinal Land Holdings, LLC ("PLH"), is the owner of approximately 11,400 total acres within the North-South Freeway Corridor Study area, located between Bartlett and Houser Roads.

PRI, Pinal Land Holdings, and Langley Properties/WDP Partners, all major land owners and stakeholders in the North-South Freeway Corridor Study area, have been working together to arrive at a mutually agreeable 400' wide alignment through the northern Coolidge portion of the Corridor Study area. Our intent has been to remain as consistent as possible with the remaining ADOT corridor segments in the area, as well as the routes historically supported by the land owner/stakeholder group and the City of Coolidge.

Exhibit "A" attached hereto shows three possible 400' alignments in this area for ADOT's consideration. Options A and B are supported by all three land owners/stakeholders (PRI, Pinal Land Holdings, and Langley Properties/WDP Partners). Option C is supported by Pinal Land Holdings only.

We encourage you to evaluate these alignment alternatives as you work to identify the recommended 400' wide alignment for the North-South Freeway. Once you have had time to evaluate, we request the opportunity to have further discussion with you about them.

Sincerely,

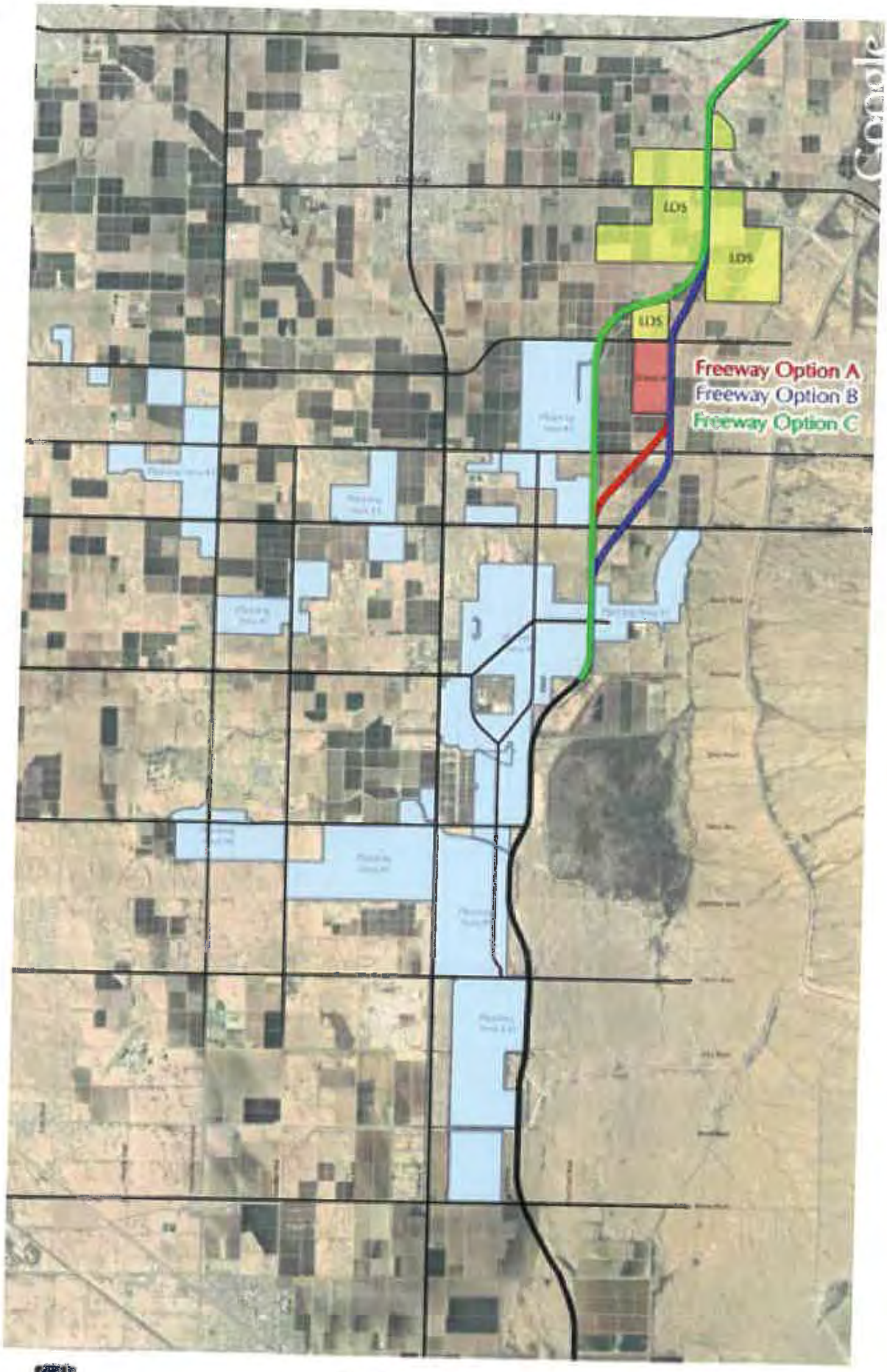
Jackob H. Andersen
Managing Member

Attachment: Exhibit "A"

cc: Bob Flatley, City of Coolidge
Rick Miller, City of Coolidge

RECEIVED
AUG 27 2015
URBAN PROJECT MANAGEMENT GROUP

Exhibit "A"



Pinal Land Group 11,447
Planning Areas

Property Reserve, Inc.

August 27, 2015

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Senior Project Manager
ADOT Urban Project Management Group
1611 West Jackson, EM01
Phœnix, Arizona 85007
vyang@azdot.gov

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51 South Main Street, Suite 301
Salt Lake City, Utah 84111-7502
Phone: 1-801-321-8700

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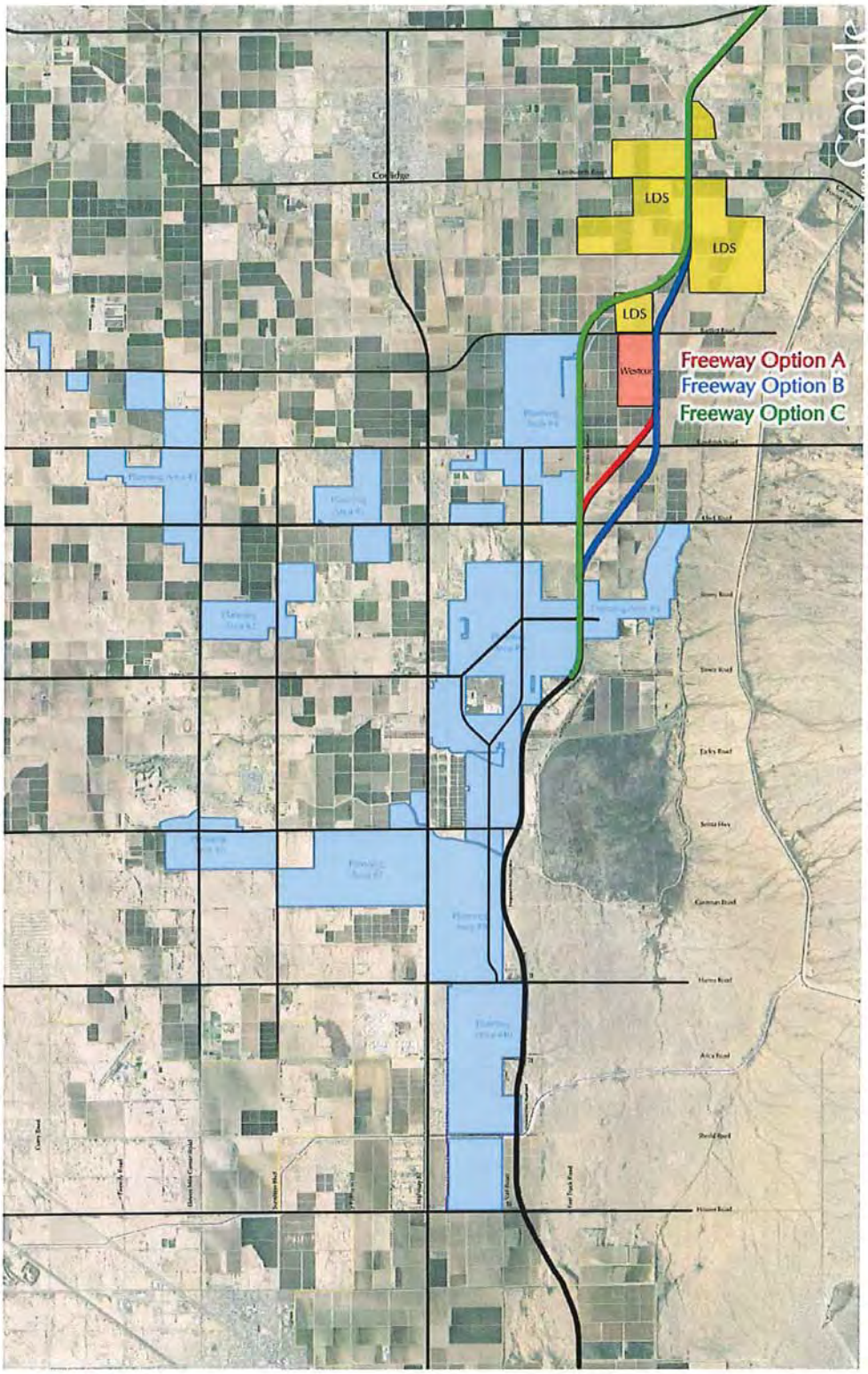
cc: Bob Flatley, City of Coolidge
Rick Miller, City of Coolidge

Exhibit "A"



Pinal Land Group 11,447
Planning Areas

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