City of Coolidge, Arizona

McCartney Road & Eleven Mile Corner Road

Planning & Environmental Linkages Transportation Study

January 2014

CITY OF COOLIDGE · ARIZONA

ADOT

WILSON & COMPANY

City of Coolidge

McCartney Road
Planning and Environmental Linkages Study

and

Eleven Mile Corner Road
Planning and Environmental Linkages Study

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Planning and Environmental Linkages Questionnaire and Checklist

The Planning and Environmental Linkage (PEL) process, a specific product of implementing SAFETEA-LU,[1] seeks to develop subarea and corridor studies that can be used more directly to inform the NEPA[2] process. Effective, conceptual-level transportation planning studies that follow the PEL process provide opportunities both to identify important issues of concern early and to build the agency, stakeholder, and public understanding necessary to successfully address them. Such early, integrated planning is not driven solely by regulatory requirements and the quest for more efficient and effective processes, although those are desirable results. Transportation and environmental professionals—as well as those in metropolitan planning organizations, state and federal resource agencies, and nongovernmental organizations—are finding that early collaboration helps achieve broader transportation and environmental stewardship goals through better decisions regarding programs, planning, and projects.

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

This questionnaire and checklist will be used to effectively influence the scope, content, and process employed for ADOT transportation planning studies that focus on specific transportation corridors or on transportation network subareas (versus statewide transportation studies). Completion of this questionnaire and checklist will support the PEL process and serve dual objectives:[3]

- provide guidance to transportation planners on the level of detail needed to ensure that information collected and decisions made during the transportation planning study can be used during the NEPA process for a proposed transportation project
- provide the future NEPA study team with documentation on the outcomes of the transportation planning process, including the history of decisions made and the level of detailed analysis undertaken

When conducting a transportation planning study that links to the future NEPA process, major issues include:[4]

- identifying the appropriate level of environmental analysis for the study
- identifying the appropriate level of agency, stakeholder, and public involvement
- defining unique study concurrence points for seeking agreement from relevant resource agencies, stakeholders, and members of the public

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[1] Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (Public Law 109-59)

[2] National Environmental Policy Act of 1969

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

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

- developing a process to ensure that the study will be recognized as valid within the NEPA process
- identifying when to involve resource agencies in the study, and to what extent they influence decision making
- identifying how to persuade U.S. Department of Transportation (USDOT) reviewers to accept the use of these studies in the NEPA process

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

Upon completion of the transportation planning study, this document should be included as an appendix to the study's final report to document how the study meets the requirements of 23 Code of Federal Regulations § 450.212 or § 450.318 (Subpart B: Statewide Transportation Planning and Programming or Subpart C: Metropolitan Transportation Planning and Programming, respectively).

The flowchart on the following page outlines the major inputs, decision points, and outcomes that occur during implementation of a transportation planning study using the PEL process.

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

Beginning of NEPA Process

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

Questionnaire for Transportation Planners – Part 1

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

Project identification
What is the name of the study? What cities and region does it cover? What major streets are covered? For corridor studies, what are the intended termini?
City of Coolidge McCartney Road Corridor Study The study area is located in Pinal County, Arizona, primarily within the planning boundary of the City of Coolidge. The City of Coolidge is the only municipality within the study area. The McCartney Road Corridor Study is a "centerline" study that will establish the planning level centerline of McCartney Road between the eastern edge of the Interstate 10/McCartney Road interchange to the west and State Route 79 to the east. McCartney Road currently exists between Interstate 10 and Signal Peak Road where it terminates.
Who is the study sponsor?
Arizona Department of Transportation
Briefly describe the study and its purpose.
This study presents existing conditions in the study area including socio-economic and transportation-related characteristics, as well as physical and environmental features. The intent is to evaluate the needs for roadway infrastructure improvements along the existing corridor, identify potential alternatives for portions that have not been constructed yet, and recommend potential solutions for corridor alignment and intersections with major cross streets.
Who are the primary study team members (include name, title, organization name, and contact information)?
Charla Glendening: Project Manager, ADOT/Multimodal Planning Division, 602-712-7376/cglendening@azdot.gov Susanna Struble: Public Works Director/City Engineer, City of Coolidge, 520-723-4882/sstruble@coolidgeaz.com Rick Miller: Growth Management Director, City of Coolidge, 520-723-6075/rmiller@coolidgeaz.com Bob Flatley: City Manager, City of Coolidge, 520-723-6075/bobf@coolidgeaz.com Jim Townsend: Project Manager, Wilson & Company, Engineers & Architects, 602-283-2720/jim.townsend@wilsonco.com
Does the team include advisory groups such as a technical advisory committee, steering committee, or other? If so, include roster(s) as attachment(s).
Yes; there is a Technical Advisory Committee (TAC) in place. For roster, see Attachment A.
Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites.
2008 Coolidge-Florence Regional Transportation Plan http://www.coolidgeaz.com/index.asp?Type=B_BASIC&SEC={1D9AE967-EF6C-4077-A83D-6CB9383A819A} 2012 Coolidge Comprehensive Transportation Feasibility Study http://www.coolidgeaz.com/index.asp?Type=B_BASIC&SEC={BBB8D087-BE8D-4FBE-91C7-7B854D432DE6} City of Coolidge General Plan – 2025 http://www.coolidgeaz.com/index.asp?Type=B_BASIC&SEC={A4150283-2B5C-4513-BFF3-9042A59CF572} ADOT North-South Corridor Study http://www.azdot.gov/projects/south-central/north-south-corridor-study Pinal County Regionally Significant Routes for Safety and Mobility, January 2013 http://pinalcountyaz.gov/Departments/PublicWorks/projects/Pages/PlansandStudies.aspx 2009 Pinal County Transit Feasibility Study http://pinalcountyaz.gov/Departments/PublicWorks/projects/Pages/PlansandStudies.aspx

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

None were identified.

Study objectives

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

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

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

No. A fiscally constrained regional transportation plan does not exist in this region. An initial regional transportation plan for the newly defined Sun Corridor MPO is currently being developed.

Will a purpose and need statement[5] be prepared as part of this effort? If so, what steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

Yes. Future conditions should be reevaluated based on developments that occur as entitled and development entitlement plans that expire. All the data supporting a purpose and need would need to be updated during the NEPA process.

Establishment of organizational relationships

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

No.

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

The TAC Advisory Committee is in place with recurring meetings.

Planning assumptions and analytical methods

Is the time horizon of the study sufficiently long to consider long-term (20 years or more from completion of the study) effects of potential scenarios?

Yes.

What method will be used for forecasting traffic volumes (for example, traffic modeling or growth projections)? What are the sources of data being used? Has USDOT validated their use?

Growth projections and model output used to complete the Coolidge Comprehensive Transportation Feasibility Study were used for this effort. The model and growth projections were taken from the North-South Feasibility Study model conducted by ADOT without changes to socioeconomic data.

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

Will the study use FHWA's Guide on the Consistent Application of Traffic Analysis Tools and Methods[6]*? If not, why not? How will traffic volumes from the travel demand model be incorporated, if necessary, into finer-scale applications such as a corridor study?*
Since this project is at the early stage of the project development cycle (alternative selection), the traffic analysis is limited to the planning-level roadway segment LOS analysis which was defined in the Coolidge Comprehensive Transportation Feasibility Study, which makes references to daily traffic volumes. Highway Capacity Manual (HCM) method and criteria was be applied. The future daily traffic volumes were obtained using the approved ADOT North-South Feasibility Study TransCAD travel demand model.
Do the travel demand models base their projections on differentiations between vehicles?
No, this model only reported total daily vehicles.
Data, information, and tools
Is there a centralized database or website that all State resource agencies may use to share resource data during the study?
No. A centralized database does not exist at this time. Resource agencies were contacted to provide the necessary resource data.

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

Questionnaire for Transportation Planners – Part 2

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

Purpose and need for this study
How did the study process define and clarify corridor-level or subarea-level goals (if applicable) that influenced modal infrastructure improvements and/or the range of reasonable alternatives?
The study process defined the corridor-level goals that influenced the range of reasonable alternatives by examining the existing conditions (i.e. Socioeconomic, Topographic, Transportation Infrastructure and Environmental) and future conditions (i.e. Land Use Plans, Future Socioeconomic, and Planned Transportation Infrastructure) of the study area and surrounding communities. The information was then presented to the public for comment and opinion. Using the comments from the public and the project Transportation Advisory Committee (TAC), various alternatives were generated and evaluated against reasonable criteria.
What were the key steps and coordination points in the decision-making process? Who were the decision-makers and who else participated in those key steps?
The key steps and coordination points for the decision-making process included an outreach process to obtain input from the project TAC, various stakeholders for the project including adjacent land owners, and the public. The study included recurring TAC meetings in which the information gathered by the consultant was discussed and evaluated. Small group stakeholder/landowner meetings were held to discuss specific issues and alternatives. A public open house and City Council Study Session were held to provide additional opportunity for input and participation. See Appendix A to the PEL checklist for a complete list of the decision makers.
How should this study information be presented in future NEPA document(s), if applicable? Are relevant findings documented in a format and at a level of detail that will facilitate reference to and/or inclusion in subsequent NEPA document(s)?[7]
The information included in this study should be presented in future NEPA documents by referencing the public involvement and the interagency coordination that took place. The study team conducted one public open house meeting that consisted of presentations and Q&A sessions. The public meeting addressed the need for improvements to the existing facilities, the identification and preliminary evaluation of alternatives, and the potential timing of those improvements. Only one public meeting was held due to the timing of the recently adopted Coolidge Comprehensive Transportation Feasibility Study outreach efforts and the General Plan update efforts.
Were the study's findings and recommendations documented in such a way as to facilitate an FHWA or Federal Transit Administration decision regarding acceptability for application in the NEPA process? Does the study have logical points where decisions were made and where concurrence from resource or regulatory agencies, stakeholders, and the public was sought? If so, provide a list of those points.
Yes; the study's findings were documented in such a way as to facilitate an FHWA decision regarding acceptability for application in the NEPA process. The study has logical points where decisions were made and where concurrence from regulatory agencies, stakeholders, and public was sought. 1. TAC Meeting No. 1: Project Kickoff Meeting 2. TAC Meeting No. 2: Discussion and concurrence regarding the initial set of alternatives to be evaluated. 3. Stakeholder Meeting No. 1: Overview and discussion at General Plan Update meeting – Circulation Element. 4. Stakeholder Meeting No. 2: Discussion regarding the initial set of alternatives with stakeholders and property owners. 5. TAC Meeting No. 3: Discussion and concurrence regarding new alternatives, criteria, and the evaluation of alternatives. 6. Stakeholder Meeting No. 3: Discussion regarding evaluation of alternatives with stakeholders and property owners. 7. TAC Meeting No. 4: Discussion regarding final alternatives and preparation for Public Meeting / Open House. 8. Public Meeting No. 1 Presentation and public comment on alternatives. 9. Stakeholder Meeting No. 4: Landowner discussion regarding property and alignment options.

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

Establishment of organizational relationships – tribes and agencies[8]			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[9]
Tribal			
None			
Federal			
None			
State			
Arizona State Land Department	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Did not participate in meetings.	None. Continued outreach during future studies and NEPA scoping.
Arizona Game and Fish Department	Scoping letter, April 2013.	Letter.	Provided Habimap output. Continued outreach during future studies and NEPA scoping.
Arizona Department of Transportation	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Attended meetings on a regular basis. Had comments on documents.	None. Continued outreach during future studies and NEPA scoping.
County			
Pinal County	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Attended meetings on a regular basis. Provided comments on documents.	None. Continued outreach during future studies and NEPA scoping.
Local			
City of Coolidge	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Attended meetings on a regular basis. Had comments on documents.	Primary concern is need for the facility. Continued outreach to City of Coolidge during future studies and NEPA scoping.
Transportation agencies			
Central Arizona Association of Governments (CAG)	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Attended meetings on a regular basis. Had comments on documents.	Primary concern is the overall transportation planning for the region. CAG is in the process of developing a regional transportation plan for the area that will be used by the Sun Corridor MPO. Continued outreach to CAG during future studies and NEPA scoping.
Sun Corridor MPO	Newly formed.	Discussion with Casa Grande during development of Sun Corridor MPO.	None. Continued outreach to SCMPO during future studies and NEPA scoping.

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

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

Establishment of organizational relationships – stakeholders and members of the public[10]			
Public and stakeholders	Date(s) contacted	Describe level of participation	Describe the primary concerns expressed by members of the public and stakeholders.
Public			
Members of the public	August 2013	Public meeting attendance	What is the need for the facility? The negative impacts to existing residential and commercial development. Potential negative impacts to existing entitlements for Planned Area Developments.
Stakeholders			
City of Coolidge Airport	Throughout the study. Included on all TAC distributions January 2013 – October 2013	Attendance and participation in process. Commented on alignment alternatives.	None. Continued outreach during future studies and NEPA scoping.
Hohokam Irrigation District	April 2013, phone. September 2013, phone.	Provided comments on study and map of Irrigation District facilities.	Any impacts to the Irrigation District facilities must follow the Bureau of Reclamation process. Continued outreach during future studies and NEPA scoping.
Central Arizona Project	September 2013 public meeting announcement.	No comments received	None. Continued outreach during future studies and NEPA scoping.

Planning assumptions and analytical methods
Did the study provide regional development and growth assumptions and analyses? If so, what were the sources of the demographic and employment trends and forecasts?
No new regional development and growth assumptions were developed as part of this effort. This effort used the approved socioeconomic data developed by CAG for the North-South Corridor Study.
What were the future-year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?
The assumptions used in the planning process were established in the Coolidge Comprehensive Transportation Feasibility Study that used the General Plan assumptions showing slow changes in land use, that economic development will continue to occur in the region, the cost of transportation will increase, and the City of Coolidge existing planning documents show expansion to the roadway network, transit system and bicycle and pedestrian system.
Were the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?
Yes; the planning assumptions and the corridor purpose need statement are consistent with each other and the long-range transportation plan. However, the study anticipates a change in land use over many years which will cause the need for additional study in the future.
Data, information, and tools
Are the relevant data used in the study available in a compatible format that is readily usable? Are they available through a centralized web portal?
No; the data was gathered from many sources and inserted into the report. The data is not available through a centralized web portal.

[10] Users may add rows to this table to accommodate additional stakeholders.

Are the completeness and quality of the data consistent with the quality (not scale or detail) of inputs needed for a NEPA project-level analysis[11]?
Yes
Are the data used in the study regularly updated and augmented? If regularly updated, provide schedule and accessibility information.
No; the data will only be updated as each responsible agency conducts new studies or updates its planning documents.
Have the environmental data been mapped at scales that facilitate comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition? If not, what data collection and/or manipulation would likely be needed for application to the NEPA scoping process?
Yes, the environmental data has been mapped at a scale that would facilitate a comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition.

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

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

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

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Section 4(f)[12] wildlife and/or waterfowl refuge, historic site, recreational site, park	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Section 6(f)[13] resource	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Title VI/ Environmental Justice populations[14]	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Hazardous materials	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Sensitive noise receivers[15]	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Air quality	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Other (list) _____	☐ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☐ Not applicable

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

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

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

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

Did the study incorporate models of, for example, species/habitat locations (predictive range maps), future land use, population dynamics, stormwater runoff, or travel demand? What models were used? Did the study adequately document what models were used, who was responsible for their use, and how they were used (with respect to, for example, calibration, replicability, contingencies, and exogenous factors)?
No models were created within the study. The existing North-South Corridor Study travel demand model was used as the basis for predicting the future traffic within the study area. No other models were used during the study.
In scoping, conducting, and documenting the planning study, participants have come across documents and leads from agency staff and other sources that the environmental planners may be able to use in conducting their studies. List any applicable memoranda of understanding, cost-share arrangements, programmatic agreements, or technical studies that are underway but whose findings are not yet published, etc.
None
Development of alternatives
Were resource agencies, stakeholders, and members of the public engaged in the process of identifying, evaluating, and screening out modes, corridors, a range of alternatives,[16] or a preferred alternative (if one was identified—the latter two refer to corridor plans)? If so, how? Did these groups review the recommendation of a preferred mode(s), corridor(s), range of alternatives (including the no-build alternative), or an alternative? Were the participation and inputs of these groups at a level acceptable for use in purpose and need statements or alternatives development sections in NEPA documents? If not, why not?
Yes; resource agencies, stakeholders, and members of the public were engaged in the process of identifying a preferred alternative. The resource agencies and stakeholders discussed possible alternatives and criteria that could be used to evaluate the alternatives. These groups did review the proposed alternatives, and identified additional alternatives to evaluate. Using the criteria and the public input from two public meetings, a set of alternatives were recommended. The participation and input from these groups is at a level acceptable for use in a alternative development section in a NEPA document.
Describe the process of outreach to resource agencies, the public, and other stakeholders. Describe the documentation of this process and of the responses to their comments. Is this documentation adequate in breadth and detail for use in NEPA documents?
The process of outreach for the resource agencies was in the form of reviewing project documents and issuing comments. The comments were included in the TAC meeting minutes. The public comments were collected and combined in the public meeting summary report. The stakeholder comments were included as formal letters. This documentation is acceptable for use in NEPA documents. Responses to stakeholder comments were not created.
If the study was a corridor study, describe the range of alternatives considered (if any), screening process, and screening criteria. Include what types of alternatives were considered (including the no-build alternative) and how the screening criteria were selected. Was a preferred alternative selected as best addressing the identified transportation issue? Are alternatives' locations and design features specified?
The corridor study included and identified multiple alternatives, which ranged from a No Build Alternative to several alignments of a Build Alternative. The build alternatives were located either on top of the existing roadways or along a new corridor. In the location of improving an existing roadway, criteria included impacts to existing properties and utilities. In the portion of the corridor that has not been developed yet, criteria included improvement length, impacts to existing property owners, impacts to existing buildings, utilities, ability to cross the railroad using a grade separation, impacts to environmental features, stakeholder input, consistency with existing plans, right-of-way impacts, and ability to cross existing canals. The screening criteria were drafted/selected by the transportation planner based upon TAC discussions and reviews. A set of preferred alternatives were recommended based upon the criteria established and input from the TAC, other stakeholders, and the public. The alternative location and design features are documented in the study report. Appendix C of the study report includes the final recommended alternatives to be carried forward.
Also regarding whether the study was a corridor study, for alternatives that were screened out, summarize the reasons for their rejection. Are defensible, credible rationale articulated for their being screened out? Did the study team take into account legal standards[17] needed in the NEPA process for such decisions? Did the study team have adequate information for screening out the alternatives?
The alternatives that were screened out were due to significant impacts to existing residential development, existing farming operations, existing utilities, implementation issues, cost, environmental impacts, and agriculture impacts. The reasons are defensible and the rationale is explained in the study report. Yes; the team had adequate information for the screening out process.

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

[17] 23 Code of Federal Regulations (CFR) § 771.123(c), 23 CFR § 771.111(d), 40 CFR § 1502.14(a), 40 CFR § 1502.14(b) and (d), 23 CFR § 771.125(a)(1); see FHWA Technical Advisory T 6640.8A, October 30, 1987, <FHWA Technical Advisory T 6640.8A>.

What issues, if any, remain unresolved with the public, stakeholders, and/or resource agencies?

The main issues that remain are when will the project be needed and when will funding be available for additional studies and potential implementation. The study recommends further evaluation as the region grows and traffic increases.

Formally joining PEL with the NEPA process

Lead federal agencies proposing a project that will undergo the NEPA process will want to most effectively leverage the transportation planning study's efforts and results. How could a Notice of Intent (for an environmental impact statement[18]) refer to the study's findings with respect to preliminary purpose and need and/or the range of alternatives to be studied?

The NOI can summarize the findings of the City of Coolidge McCartney Road Corridor Study relative to the preliminary purpose and need, as well as the alternatives development process.

Could a Notice of Intent in the NEPA process clearly state that the lead federal agency or agencies will use analyses from prior, specific planning studies that are referenced in the transportation planning study final report? Does the report provide the name and source of the planning studies and explain where the studies are publicly available? If not, how could such relevant information come to the environmental planners' attention and be made available to them in a timely way?

Yes; a NOI could clearly state that the lead federal agency will use analysis from prior, specific planning studies that are referenced in the City of Coolidge McCartney Road Corridor Study. The report provides the name and sources of the planning studies; however, it does not indicate where the studies are publically available. The relevant information can be gathered from the agencies and sources identified.

List how the study's proposed transportation system would support adopted land use plans and growth objectives.

At this time the existing land use plans do support the proposed transportation system. McCartney Road is the northernmost interchange on Interstate 10 that services the Coolidge area. The McCartney Road corridor, at least to the west of the Coolidge Airport, would provide a direct link to Interstate 10.

What modifications are needed in the goals and objectives as defined in the transportation study process to increase their efficient and timely application in the NEPA process?

No modifications are needed.

Jurisdictional delineations of waters of the United States frequently change. Housing and commercial developments can alter landscapes dramatically and can be constructed quickly. Noise and air quality regulations can change relatively rapidly. Resource agencies frequently alter habitat delineations to protect sensitive species. Will the study data's currency, relevance, and quality still be acceptable to agencies, stakeholders, and members of the public for use in the NEPA process? If not, what will be done to rectify this problem? Who will be responsible for any needed updating?

The study showed that the possible implementation of the McCartney Road corridor is within a 20-year timeline and dependent on when development occurs for entitled properties. The study data's currency, relevance, and quality will be acceptable as preliminary information for the NEPA process. However, additional study will be needed using updated information as land use changes occur. The sponsoring agency will be responsible for updating.

Other issues

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

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

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

Concurrence

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

☒ Public involvement (outreach and level of participation)

☒ Stakeholder involvement (outreach and level of participation)

☒ Resource agencies' involvement and participation

☒ Documentation of the above efforts

☒ Applicability of the general findings and conclusions for use, by reference, in NEPA documents

Approved by: _____ Date: 04/24/2014

JENNIFER TOTH

State Engineer

Arizona Department of Transportation

Approved by: _____ Date: 4/23/14

SCOTT OMER

Director

Multimodal Planning Division, Arizona Department of Transportation

Approved by: _____ Date: 4/28/14

for KARLA PETTY

Division Administrator

Federal Highway Administration

Checklist for Environmental Planners – Part 3

By completing this checklist, environmental planners will be able to systematically evaluate the transportation planning study with regard to environmental resources and issues. It provides a framework for future NEPA studies by identifying those resources and issues that have already been evaluated, and those that have not. The role of environmental planners during the study's various stages is laid out in the flowchart on page 3. This role includes timely advocacy for resources and issues that will later be integral to NEPA processes.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural environment				
Sensitive biological resources	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Literature review of USFWS and AGF Databases. A biological review will need to be performed during the NEPA evaluation.
Wildlife corridors	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Corridor crosses CAP canal, identified as an Arizona Wildlife Linkage.
Invasive species	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Invasive species should be evaluated and mitigations identified in the NEPA document.
Wetland areas	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No wetlands identified in NWI mapping inventory.
Riparian areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Small riparian area south of Coolidge Airport.
100-year floodplain	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Will require evaluation during NEPA.
Clean Water Act Sections 404/401 waters of the United States	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Several washes will be crossed with new corridor. Existing USGS waters of the U.S. crossing in existing roadway corridor.
Prime or unique farmland	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	A majority of the soils in the study corridor meet the requirements for prime farmland when irrigated.
Farmland of statewide or local importance	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Sole-source aquifers	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA.
Wild and scenic rivers	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No wild and scenic rivers are present in the study area.
Visual resources	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	Will require evaluation during NEPA.
Designated scenic road/byway	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No designated scenic roads or byways in the study area.
Cultural resources				
Archaeological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Class I cultural resources inventory was conducted.
Historical resources	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA.
Section 4(f) and Section 6(f) resources				
Section 4(f) wildlife and/or waterfowl refuge	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No waterfowl refuge areas identified in study area. Will require evaluation during NEPA.
Section 4(f) historic site	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA.
Section 4(f) recreational site	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Future recreational trails are located in the study area. Will require evaluation during NEPA.
Section 4(f) park	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	No existing parks identified. Will require evaluation during NEPA.
Section 6(f) resource	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No 6(f) properties in study area.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Human environment				
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	The area is growing. Development impacts will need to be re-evaluated during NEPA.
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	The area is growing. This document will assist with right-of-way dedication. Development impacts will need to be re-evaluated during NEPA.
Displacements	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Some displacements are likely but will be dependent on future development.
Access restriction	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	The level of access restriction was determined in the Coolidge Comprehensive Transportation Feasibility Study. Existing accesses will need to be evaluated during NEPA.
Neighborhood continuity	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	The preferred alternative impacts agricultural lands. The affects to neighborhood continuity will depend on future development and will need to be evaluated during NEPA.
Community cohesion	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	The community will be affected. Good planning practices that include identification of the proposed corridor can minimize impacts to the community.
Title VI/Environmental justice populations	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Environmental justice populations not in the corridor. Will require re-evaluation during NEPA.
Physical environment				
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Hohokam Irrigation District canal crossings must follow Bureau of Reclamation procedures.
Hazardous materials	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Hazardous materials will need to be evaluated during NEPA.
Sensitive noise receivers	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Noise impacts will need to be evaluated during NEPA.
Air quality	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Air quality impacts would similar for all the alternatives. This issue will need to be evaluated during NEPA.
Other (list)	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	

Identification of potential environmental mitigation activities
Could the transportation planning process be integrated with other planning activities, such as land use or resource management plans? If so, could this integrated planning effort be used to develop a more strategic approach to environmental mitigation measures?
This study will inform regional planning activities with the Sun Corridor MPO. Locally, this study will establish right-of-way needs and a planned centerline alignment for future right-of-way dedication and roadway improvement. There is more than one preferred alternative that will require the City to choose one preferred alternative when development occurs.
With respect to potential environmental mitigation opportunities at the PEL level, who should ADOT consult with among federal, State, and local agencies and tribes and how formally and frequently should such consultation be undertaken?
Given the long time horizon of this project, it is premature to identify mitigation. The need for this project should be updated in the future. If the need moves up the Arizona Game & Fish Department should be contacted to discuss the potential understanding regarding the CAP canal as a potential wildlife corridor. The Arizona State Land Department currently controls the land in the eastern portion of the corridor, so plans will need to be coordinated if that property develops. The corridor crosses several canals requiring coordination with multiple irrigation districts and the Bureau of Reclamation.
Off-site and compensatory mitigation areas are often creatively negotiated to advance multiagency objectives or multiple objectives within one agency. Who determined what specific geographic areas or types of areas were appropriate for environmental mitigation activities? How were these determinations made?
It is premature to discuss compensatory mitigation for this project.
To address potential impacts on the human environment, what mitigation measures or activities were considered and how were they developed and documented?
Given the potential for development in this area and the long time horizon of this project it is premature to discuss mitigation measures related to the human environment.

Prepared by: _____Thor Anderson_____ Date: ____1-24-13_____

__PEL Program Manager_____

Environmental Planning Group, Arizona Department of Transportation

Attachment A: Technical Advisory Committee: McCartney Road Corridor Study (PARA)

Name	Organization	Title	Address	City/State/Zip	Phone	email
Study Area Representatives						
Susanna Struble	City of Coolidge	Public Works Director	355 S. 1st Street	Coolidge, AZ 85128	520-723-4882	sstruble@coolidgeaz.com
Rick Miller	City of Coolidge	Growth Management Director	131 W. Pinkley Avenue	Coolidge, AZ 85128	520-723-6075	rmiller@coolidgeaz.com
Tim Hansen	City of Coolidge	Planner	131 W. Pinkley Avenue	Coolidge, AZ 85128	520-723-6075	thansen@coolidgeaz.com
Ricky Lapaglia	City of Coolidge	Parks and Recreation Director	660 South Main Street	Coolidge, AZ 85228	520-723-4551	rlapaglia@coolidgeaz.com
Bob Flatley	City of Coolidge	City Manager	130 W. Central Avenue	Coolidge, AZ 85228	520-723-5361	bobf@coolidgeaz.com
Jill Dusenberry	City of Coolidge	Assistant City Manager	130 W. Central Avenue	Coolidge, AZ 85228	520-723-5361	jdusenberry@coolidgeaz.com
Mark Griffin	CAAG	Transportation Director	1075 S. Idaho Road, Suite 300	Apache Junction, AZ 85219	480-474-9300	mgriffin@caagcentral.org
Doug Hansen	Pinal County	Transportation Planner	31 N. Pinal Street, Bldg. F	Florence, AZ, 85132	520-509-3555	doug.hansen@pinalcountyaz.gov
Michelle Green	Arizona State Land Department	Planning Director	1616 W. Adams Street	Phoenix, AZ 85007	602-542-3000	mgreen@land.az.gov
John Mitchell	City of Eloy	Public Works Director	1137 W. Houser Rd.	Eloy, AZ 85131	520-466-2578	jmitchell@ci.eloy.az.us
Wayne Costa	City of Florence	Public Works Director	775 N. Main Street	Florence, AZ 85132	520-868-7617	Wayne.costa@florenceaz.gov
ADOT						
Charla Glendening	ADOT/MPD	Project Manager	206 S. 17th Ave MD310B	Phoenix, AZ 85007	602-712-7376	cglendening@azdot.gov
Tony Staffaroni	ADOT/CCP	Public Information Officer	1655 W. Jackson St. MD 126F	Phoenix, AZ 85007	602-245-4051	astaffaroni@azdot.gov
Thor Anderson	ADOT/MPD	PEL Manager	206 S. 17th Ave MD310B	Phoenix, AZ 85007		tanderson@azdot.gov
Wilson & Company						
Jim Townsend	Wilson & Company	Project Manager	410 N. 44th Street, Suite 460	Phoenix, AZ 85008	602-283-2720	jim.townsend@wilsonco.com
Alan Ferreira, PE	Wilson & Company	Engineer	410 N. 44th Street, Suite 460	Phoenix, AZ 85008	602-283-2718	alan.ferreira@wilsonco.com
Dan Marum	Wilson & Company	Principal	410 N. 44th Street, Suite 460	Phoenix, AZ 85008	602-283-2722	dan.marum@wilsonco.com

Planning and Environmental Linkages Questionnaire and Checklist

The Planning and Environmental Linkage (PEL) process, a specific product of implementing SAFETEA-LU,[1] seeks to develop subarea and corridor studies that can be used more directly to inform the NEPA[2] process. Effective, conceptual-level transportation planning studies that follow the PEL process provide opportunities both to identify important issues of concern early and to build the agency, stakeholder, and public understanding necessary to successfully address them. Such early, integrated planning is not driven solely by regulatory requirements and the quest for more efficient and effective processes, although those are desirable results. Transportation and environmental professionals—as well as those in metropolitan planning organizations, state and federal resource agencies, and nongovernmental organizations—are finding that early collaboration helps achieve broader transportation and environmental stewardship goals through better decisions regarding programs, planning, and projects.

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

This questionnaire and checklist will be used to effectively influence the scope, content, and process employed for ADOT transportation planning studies that focus on specific transportation corridors or on transportation network subareas (versus statewide transportation studies). Completion of this questionnaire and checklist will support the PEL process and serve dual objectives:[3]

- provide guidance to transportation planners on the level of detail needed to ensure that information collected and decisions made during the transportation planning study can be used during the NEPA process for a proposed transportation project
- provide the future NEPA study team with documentation on the outcomes of the transportation planning process, including the history of decisions made and the level of detailed analysis undertaken

When conducting a transportation planning study that links to the future NEPA process, major issues include:[4]

- identifying the appropriate level of environmental analysis for the study
- identifying the appropriate level of agency, stakeholder, and public involvement
- defining unique study concurrence points for seeking agreement from relevant resource agencies, stakeholders, and members of the public

[1] Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (Public Law 109-59)

[2] National Environmental Policy Act of 1969

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

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

- developing a process to ensure that the study will be recognized as valid within the NEPA process
- identifying when to involve resource agencies in the study, and to what extent they influence decision making
- identifying how to persuade U.S. Department of Transportation (USDOT) reviewers to accept the use of these studies in the NEPA process

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

Upon completion of the transportation planning study, this document should be included as an appendix to the study's final report to document how the study meets the requirements of 23 Code of Federal Regulations § 450.212 or § 450.318 (Subpart B: Statewide Transportation Planning and Programming or Subpart C: Metropolitan Transportation Planning and Programming, respectively).

The flowchart on the following page outlines the major inputs, decision points, and outcomes that occur during implementation of a transportation planning study using the PEL process.

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

Beginning of NEPA Process

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

Questionnaire for Transportation Planners – Part 1

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

Project identification
What is the name of the study? What cities and region does it cover? What major streets are covered? For corridor studies, what are the intended termini?
City of Coolidge Eleven Mile Corner Road Corridor Study The study area is located in Pinal County, Arizona, primarily within the planning boundary of the City of Coolidge. The City of Coolidge is the only municipality within the study area. The Eleven Mile Corner Road Corridor Study is a "centerline" study that will establish the planning level centerline of Eleven Mile Corner Road between McCartney Road to the south, to State Route 87 to the north.
Who is the study sponsor?
Arizona Department of Transportation
Briefly describe the study and its purpose.
This study presents existing conditions in the study area including socio-economic and transportation-related characteristics, as well as physical and environmental features. The intent is to evaluate the needs for roadway infrastructure improvements along the existing corridor, identify potential alternatives for portions that have not been constructed yet, and recommend potential solutions for corridor alignment and intersections with major cross streets.
Who are the primary study team members (include name, title, organization name, and contact information)?
Charla Glendening: Project Manager, ADOT/Multimodal Planning Division, 602-712-7376/cglendening@azdot.gov Susanna Struble: Public Works Director/City Engineer, City of Coolidge, 520-723-4882/sstruble@coolidgeaz.com Rick Miller: Growth Management Director, City of Coolidge, 520-723-6075/rmiller@coolidgeaz.com Bob Flatley: City Manager, City of Coolidge, 520-723-6075/bobf@coolidgeaz.com Jim Townsend: Project Manager, Wilson & Company, Engineers & Architects, 602-283-2720/jim.townsend@wilsonco.com
Does the team include advisory groups such as a technical advisory committee, steering committee, or other? If so, include roster(s) as attachment(s).
Yes; there is a Technical Advisory Committee (TAC) in place. For roster, see Attachment A.
Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites.
2008 Coolidge-Florence Regional Transportation Plan http://www.coolidgeaz.com/index.asp?Type=B_BASIC&SEC={1D9AE967-EF6C-4077-A83D-6CB9383A819A} 2012 Coolidge Comprehensive Transportation Feasibility Study http://www.coolidgeaz.com/index.asp?Type=B_BASIC&SEC={BBB8D087-BE8D-4FBE-91C7-7B854D432DE6} City of Coolidge General Plan – 2025 http://www.coolidgeaz.com/index.asp?Type=B_BASIC&SEC={A4150283-2B5C-4513-BFF3-9042A59CF572} ADOT North-South Corridor Study http://www.azdot.gov/projects/south-central/north-south-corridor-study Pinal County Regionally Significant Routes for Safety and Mobility, January 2013 http://pinalcountyaz.gov/Departments/PublicWorks/projects/Pages/PlansandStudies.aspx 2009 Pinal County Transit Feasibility Study http://pinalcountyaz.gov/Departments/PublicWorks/projects/Pages/PlansandStudies.aspx

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

None were identified.

Study objectives

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

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

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

No. A fiscally constrained regional transportation plan does not exist in this region. An initial regional transportation plan for the newly defined Sun Corridor MPO is currently being developed.

Will a purpose and need statement[5] be prepared as part of this effort? If so, what steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

Yes. Future conditions should be reevaluated based on developments that occur as entitled and development entitlement plans that expire. All the data supporting a purpose and need would need to be updated during the NEPA process.

Establishment of organizational relationships

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

No.

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

The TAC Advisory Committee is in place with recurring meetings.

Planning assumptions and analytical methods

Is the time horizon of the study sufficiently long to consider long-term (20 years or more from completion of the study) effects of potential scenarios?

Yes.

What method will be used for forecasting traffic volumes (for example, traffic modeling or growth projections)? What are the sources of data being used? Has USDOT validated their use?

Growth projections and model output used to complete the Coolidge Comprehensive Transportation Feasibility Study were used for this effort. The model and growth projections were taken from the North-South Feasibility Study model conducted by ADOT without changes to socioeconomic data.

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

Will the study use FHWA's Guide on the Consistent Application of Traffic Analysis Tools and Methods[6]*? If not, why not? How will traffic volumes from the travel demand model be incorporated, if necessary, into finer-scale applications such as a corridor study?*
Since this project is at the early stage of the project development cycle (alternative selection), the traffic analysis is limited to the planning-level roadway segment LOS analysis which was defined in the Coolidge Comprehensive Transportation Feasibility Study, which makes references to daily traffic volumes. Highway Capacity Manual (HCM) method and criteria was be applied. The future daily traffic volumes were obtained using the approved ADOT North-South Feasibility Study TransCAD travel demand model.
Do the travel demand models base their projections on differentiations between vehicles?
No, this model only reported total daily vehicles.
Data, information, and tools
Is there a centralized database or website that all State resource agencies may use to share resource data during the study?
No. A centralized database does not exist at this time. Resource agencies were contacted to provide the necessary resource data.

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

Questionnaire for Transportation Planners – Part 2

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

Purpose and need for this study
How did the study process define and clarify corridor-level or subarea-level goals (if applicable) that influenced modal infrastructure improvements and/or the range of reasonable alternatives?
The study process defined the corridor-level goals that influenced the range of reasonable alternatives by examining the existing conditions (i.e. Socioeconomic, Topographic, Transportation Infrastructure and Environmental) and future conditions (i.e. Land Use Plans, Future Socioeconomic, and Planned Transportation Infrastructure) of the study area and surrounding communities. The information was then presented to the public for comment and opinion. Using the comments from the public and the project Transportation Advisory Committee (TAC), various alternatives were generated and evaluated against reasonable criteria.
What were the key steps and coordination points in the decision-making process? Who were the decision-makers and who else participated in those key steps?
The key steps and coordination points for the decision-making process included an outreach process to obtain input from the project TAC, various stakeholders for the project including adjacent land owners, and the public. The study included recurring TAC meetings in which the information gathered by the consultant was discussed and evaluated. Small group stakeholder/landowner meetings were held to discuss specific issues and alternatives. A public open house and City Council Study Session were held to provide additional opportunity for input and participation. See Appendix A to the PEL checklist for a complete list of the decision makers.
How should this study information be presented in future NEPA document(s), if applicable? Are relevant findings documented in a format and at a level of detail that will facilitate reference to and/or inclusion in subsequent NEPA document(s)?[7]
The information included in this study should be presented in future NEPA documents by referencing the public involvement and the interagency coordination that took place. The study team conducted one public open house meeting that consisted of presentations and Q&A sessions. The public meeting addressed the need for improvements to the existing facilities, the identification and preliminary evaluation of alternatives, and the potential timing of those improvements. Only one public meeting was held due to the timing of the recently adopted Coolidge Comprehensive Transportation Feasibility Study outreach efforts and the General Plan update efforts.
Were the study's findings and recommendations documented in such a way as to facilitate an FHWA or Federal Transit Administration decision regarding acceptability for application in the NEPA process? Does the study have logical points where decisions were made and where concurrence from resource or regulatory agencies, stakeholders, and the public was sought? If so, provide a list of those points.
Yes; the study's findings were documented in such a way as to facilitate an FHWA decision regarding acceptability for application in the NEPA process. The study has logical points where decisions were made and where concurrence from regulatory agencies, stakeholders, and public was sought. 1. TAC Meeting No. 1: Project Kickoff Meeting 2. TAC Meeting No. 2: Discussion and concurrence regarding the initial set of alternatives to be evaluated. 3. Stakeholder Meeting No. 1: Overview and discussion at General Plan Update meeting – Circulation Element. 4. Stakeholder Meeting No. 2: Discussion regarding the initial set of alternatives with stakeholders and property owners. 5. TAC Meeting No. 3: Discussion and concurrence regarding new alternatives, criteria, and the evaluation of alternatives. 6. Stakeholder Meeting No. 3: Discussion regarding evaluation of alternatives with stakeholders and property owners. 7. TAC Meeting No. 4: Discussion regarding final alternatives and preparation for Public Meeting / Open House. 8. Public Meeting No. 1 Presentation and public comment on alternatives. 9. Stakeholder Meeting No. 4: Landowner discussion regarding property and alignment options.

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

Establishment of organizational relationships – tribes and agencies[8]			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[9]
Tribal			
Gila River Indian Community	January 2013 – October 2013	Phone contact and Pima-Maricopa Irrigation District participation.	Discussions to avoid Pima-Maricopa Irrigation District canal impacts. Continued outreach during future studies and NEPA scoping.
Federal			
None			
State			
Arizona State Land Department	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Did not participate in meetings.	None. Continued outreach during future studies and NEPA scoping.
Arizona Game and Fish Department	Scoping letter, April 2013.	Letter.	Provided Habimap output. Continued outreach during future studies and NEPA scoping.
Arizona Department of Transportation	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Attended meetings on a regular basis. Had comments on documents.	None. Continued outreach during future studies and NEPA scoping.
County			
Pinal County	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Attended meetings on a regular basis. Provided comments on documents.	None. Continued outreach during future studies and NEPA scoping.
Local			
City of Coolidge	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Attended meetings on a regular basis. Had comments on documents.	Primary concern is critical need for the facility. Continued outreach to City of Coolidge during future studies and NEPA scoping.
Transportation agencies			
Central Arizona Association of Governments (CAG)	Throughout the study. Included on all TAC distributions January 2013 – October 2013	TAC member. Attended meetings on a regular basis. Had comments on documents.	Primary concern is the overall transportation planning for the region. CAG is in the process of developing a regional transportation plan for the area that will also be used by the new Sun Corridor MPO (SCMPO). Continued outreach to SCMPO CAG during future studies and NEPA scoping.
Sun Corridor MPO	Newly formed.	Discussion with Casa Grande during development of Sun Corridor MPO.	None. Continued outreach to SCMPO during future studies and NEPA scoping.

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

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

Establishment of organizational relationships – stakeholders and members of the public[10]			
Public and stakeholders	Date(s) contacted	Describe level of participation	Describe the primary concerns expressed by members of the public and stakeholders.
Public			
Members of the public	August 2013	Public meeting attendance	What is the need for the facility? The potential negative impacts to existing residential and commercial development. Potential negative impacts to existing entitlements for Planned Area Developments.
Stakeholders			
City of Coolidge Airport	Throughout the study. Included on all TAC distributions January 2013 – October 2013	Attendance and participation in process. Commented on alignment alternatives.	None. Continued outreach during future studies and NEPA scoping.
Hohokam Irrigation District	April 2013, phone. September 2013, phone.	Provided comments on study and map of Irrigation District facilities.	Any impacts to the Irrigation District facilities must follow the Bureau of Reclamation process. Continued outreach during future studies and NEPA scoping.
Western Area Power Administration	April 2013	Stakeholder meeting.	Stay outside of power easement. Continued outreach during future studies and NEPA scoping.
Central Arizona Project	September 2013 public meeting announcement.	No comments received	None. Continued outreach during future studies and NEPA scoping.

Planning assumptions and analytical methods
Did the study provide regional development and growth assumptions and analyses? If so, what were the sources of the demographic and employment trends and forecasts?
No new regional development and growth assumptions were developed as part of this effort. This effort used the approved socioeconomic data developed by CAG for the North-South Corridor Study.
What were the future-year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?
The assumptions used in the planning process were established in the Coolidge Comprehensive Transportation Feasibility Study that used the General Plan assumptions showing slow changes in land use, that economic development will continue to occur in the region, the cost of transportation will increase, and the City of Coolidge existing planning documents show expansion to the roadway network, transit system and bicycle and pedestrian system.
Were the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?
Yes; the planning assumptions and the corridor purpose need statement are consistent with each other and the long-range transportation plan. However, the study anticipates a change in land use over many years which will cause the need for additional study in the future.
Data, information, and tools
Are the relevant data used in the study available in a compatible format that is readily usable? Are they available through a centralized web portal?
No; the data was gathered from many sources and inserted into the report. The data is not available through a centralized web portal.

[10] Users may add rows to this table to accommodate additional stakeholders.

Are the completeness and quality of the data consistent with the quality (not scale or detail) of inputs needed for a NEPA project-level analysis[11]?
Yes
Are the data used in the study regularly updated and augmented? If regularly updated, provide schedule and accessibility information.
No; the data will only be updated as each responsible agency conducts new studies or updates its planning documents.
Have the environmental data been mapped at scales that facilitate comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition? If not, what data collection and/or manipulation would likely be needed for application to the NEPA scoping process?
Yes, the environmental data has been mapped at a scale that would facilitate a comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition.

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

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

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

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Section 4(f)[12] wildlife and/or waterfowl refuge, historic site, recreational site, park	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable
Section 6(f)[13] resource	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Title VI/ Environmental Justice populations[14]	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Hazardous materials	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Sensitive noise receivers[15]	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Air quality	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Other (list) _____	☐ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☐ Not applicable

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

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

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

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

Did the study incorporate models of, for example, species/habitat locations (predictive range maps), future land use, population dynamics, stormwater runoff, or travel demand? What models were used? Did the study adequately document what models were used, who was responsible for their use, and how they were used (with respect to, for example, calibration, replicability, contingencies, and exogenous factors)?
No models were created within the study. The existing North-South Corridor Study travel demand model was used as the basis for predicting the future traffic within the study area. No other models were used during the study.
In scoping, conducting, and documenting the planning study, participants have come across documents and leads from agency staff and other sources that the environmental planners may be able to use in conducting their studies. List any applicable memoranda of understanding, cost-share arrangements, programmatic agreements, or technical studies that are underway but whose findings are not yet published, etc.
None.
Development of alternatives
Were resource agencies, stakeholders, and members of the public engaged in the process of identifying, evaluating, and screening out modes, corridors, a range of alternatives,[16] or a preferred alternative (if one was identified—the latter two refer to corridor plans)? If so, how? Did these groups review the recommendation of a preferred mode(s), corridor(s), range of alternatives (including the no-build alternative), or an alternative? Were the participation and inputs of these groups at a level acceptable for use in purpose and need statements or alternatives development sections in NEPA documents? If not, why not?
Yes; resource agencies, stakeholders, and members of the public were engaged in the process of identifying a preferred alternative. The resource agencies and stakeholders discussed possible alternatives and criteria that could be used to evaluate the alternatives. These groups did review the proposed alternatives, and identified additional alternatives to evaluate. Using the criteria and the public input from two public meetings, a set of alternatives were recommended. The participation and input from these groups is at a level acceptable for use in a alternative development section in a NEPA document.
Describe the process of outreach to resource agencies, the public, and other stakeholders. Describe the documentation of this process and of the responses to their comments. Is this documentation adequate in breadth and detail for use in NEPA documents?
The process of outreach for the resource agencies was in the form of reviewing project documents and issuing comments. The comments were included in the TAC meeting minutes. The public comments were collected and combined in the public meeting summary report. The stakeholder comments were included as formal letters. This documentation is acceptable for use in NEPA documents. Responses to stakeholder comments were not created.
If the study was a corridor study, describe the range of alternatives considered (if any), screening process, and screening criteria. Include what types of alternatives were considered (including the no-build alternative) and how the screening criteria were selected. Was a preferred alternative selected as best addressing the identified transportation issue? Are alternatives' locations and design features specified?
The corridor study included and identified multiple alternatives, which ranged from a No Build Alternative to several alignments of a Build Alternative. The build alternatives were located either on top of the existing roadways or along a new corridor. In the location of improving an existing roadway, criteria included impacts to existing properties and utilities. In the portion of the corridor that has not been developed yet, criteria included improvement length, impacts to existing property owners, impacts to existing buildings, utilities, ability to cross the railroad using a grade separation, impacts to environmental features, stakeholder input, consistency with existing plans, right-of-way impacts, and ability to cross existing canals. The screening criteria were drafted/selected by the transportation planner based upon TAC discussions and reviews. A set of preferred alternatives were recommended based upon the criteria established and input from the TAC, other stakeholders, and the public. The alternative location and design features are documented in the study report. Final alternatives are included as Appendix D of the report.
Also regarding whether the study was a corridor study, for alternatives that were screened out, summarize the reasons for their rejection. Are defensible, credible rationale articulated for their being screened out? Did the study team take into account legal standards[17] needed in the NEPA process for such decisions? Did the study team have adequate information for screening out the alternatives?
The alternatives that were screened out were due to significant impacts to existing residential development, existing farming operations, existing utilities, implementation issues, cost, environmental impacts, and agriculture impacts. The reasons are defensible and the rationale is explained in the study report. Yes; the team had adequate information for the screening out process.

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

[17] 23 Code of Federal Regulations (CFR) § 771.123(c), 23 CFR § 771.111(d), 40 CFR § 1502.14(a), 40 CFR § 1502.14(b) and (d), 23 CFR § 771.125(a)(1); see FHWA Technical Advisory T 6640.8A, October 30, 1987, <FHWA Technical Advisory T 6640.8A>.

What issues, if any, remain unresolved with the public, stakeholders, and/or resource agencies?
The main issues that remain are when will the project be needed and when will funding be available for additional studies and potential implementation. The study recommends further evaluation as the region grows and traffic increases.
Formally joining PEL with the NEPA process
Lead federal agencies proposing a project that will undergo the NEPA process will want to most effectively leverage the transportation planning study's efforts and results. How could a Notice of Intent (for an environmental impact statement[18]) refer to the study's findings with respect to preliminary purpose and need and/or the range of alternatives to be studied?
The NOI can summarize the findings of the City of Coolidge Eleven Mile Corner Road Corridor Study relative to the preliminary purpose and need, as well as the alternatives development process.
Could a Notice of Intent in the NEPA process clearly state that the lead federal agency or agencies will use analyses from prior, specific planning studies that are referenced in the transportation planning study final report? Does the report provide the name and source of the planning studies and explain where the studies are publicly available? If not, how could such relevant information come to the environmental planners' attention and be made available to them in a timely way?
Yes; a NOI could clearly state that the lead federal agency will use analysis from prior, specific planning studies that are referenced in the City of Coolidge Eleven Mile Corner Road Corridor Study. The report provides the name and sources of the planning studies; however, it does not indicate where the studies are publically available. The relevant information can be gathered from the agencies and sources identified.
List how the study's proposed transportation system would support adopted land use plans and growth objectives.
At this time the existing land use plans do support the proposed transportation system. Skousen Road is the first north/south roadway west of SR-87/SR-287 (Arizona Boulevard) and west of the Casa Grande Ruins that connects with SR-87 north of the Pima-Maricopa Irrigation District canal. The canal crossing is limited to the existing four-lane bridge, severely limiting mobility and growth of the region, requiring additional higher capacity options for connectivity to SR-87. Extending Eleven Mile Corner Road to the north of the existing termini at Bartlett Road would allow this area to develop as planned in adopted land use plans.
What modifications are needed in the goals and objectives as defined in the transportation study process to increase their efficient and timely application in the NEPA process?
No modifications are needed.
Jurisdictional delineations of waters of the United States frequently change. Housing and commercial developments can alter landscapes dramatically and can be constructed quickly. Noise and air quality regulations can change relatively rapidly. Resource agencies frequently alter habitat delineations to protect sensitive species. Will the study data's currency, relevance, and quality still be acceptable to agencies, stakeholders, and members of the public for use in the NEPA process? If not, what will be done to rectify this problem? Who will be responsible for any needed updating?
The study showed that the possible implementation of the Eleven Mile Corner Road corridor is within a 20-year timeline and dependent on when development occurs for entitled properties. The study data's currency, relevance, and quality will be acceptable as preliminary information for the NEPA process. However, additional study will be needed using updated information as land use changes occur. The sponsoring agency will be responsible for updating.

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

Other issues

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

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

Concurrence

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

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

Approved by: _____ Date: 04/24/2014

JENNIFER TOTH

State Engineer

Arizona Department of Transportation

Approved by: _____ Date: 4/23/14

SCOTT OMER

Director

Multimodal Planning Division, Arizona Department of Transportation

Approved by: _____ Date: 4/28/14

for KARLA PETTY

Division Administrator

Federal Highway Administration

Checklist for Environmental Planners – Part 3

By completing this checklist, environmental planners will be able to systematically evaluate the transportation planning study with regard to environmental resources and issues. It provides a framework for future NEPA studies by identifying those resources and issues that have already been evaluated, and those that have not. The role of environmental planners during the study's various stages is laid out in the flowchart on page 3. This role includes timely advocacy for resources and issues that will later be integral to NEPA processes.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural environment				
Sensitive biological resources	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Literature review of USFWS and AGF Databases. A biological review will need to be performed during the NEPA evaluation.
Wildlife corridors	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No wildlife corridors identified.
Invasive species	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Invasive species should be evaluated and mitigations identified in the NEPA document.
Wetland areas	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No wetlands identified in NWI mapping inventory.
Riparian areas	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No riparian areas identified in NWI mapping inventory.
100-year floodplain	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	No floodplains in study corridor final alternative alignments. Will require evaluation during NEPA.
Clean Water Act Sections 404/401 waters of the United States	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No waters of the United States identified. Will require evaluation during NEPA.
Prime or unique farmland	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	A majority of the soils in the study corridor meet the requirements for prime farmland when irrigated.
Farmland of statewide or local importance	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Sole-source aquifers	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA.
Wild and scenic rivers	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No wild and scenic rivers are present in the study area.
Visual resources	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Will require evaluation during NEPA.
Designated scenic road/byway	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No designated scenic roads or byways in the study area.
Cultural resources				
Archaeological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Class I cultural resources inventory was conducted.
Historical resources	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA.
Section 4(f) and Section 6(f) resources				
Section 4(f) wildlife and/or waterfowl refuge	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No waterfowl refuge areas identified in study area. Will require evaluation during NEPA.
Section 4(f) historic site	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA.
Section 4(f) recreational site	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Will require evaluation during NEPA as development occurs.
Section 4(f) park	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	No existing parks identified. Will require evaluation during NEPA.
Section 6(f) resource	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No 6(f) properties in study area.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Human environment				
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	The area is growing. Development impacts will need to be re-evaluated during NEPA.
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	The area is growing. This document will assist with right-of-way dedication. Development impacts will need to be re-evaluated during NEPA.
Displacements	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	No displacements identified. Will need to be re-evaluated during NEPA.
Access restriction	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	The level of access restriction was determined in the Coolidge Comprehensive Transportation Feasibility Study. Existing accesses will need to be evaluated during NEPA.
Neighborhood continuity	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	The preferred alternative impacts agricultural lands. The affects to neighborhood continuity will depend on future development and will need to be evaluated during NEPA.
Community cohesion	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	The community will be affected. Good planning practices that include identification of the proposed corridor can minimize impacts to the community.
Title VI/Environmental justice populations	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Environmental justice populations not in the corridor. Will require re-evaluation during NEPA.
Physical environment				
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Pima-Maricopa Irrigation District canal crossings must follow Bureau of Reclamation procedures. WAPA powerline easements must be avoided.
Hazardous materials	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Hazardous materials will need to be evaluated during NEPA.
Sensitive noise receivers	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Noise impacts will need to be evaluated during NEPA.
Air quality	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Air quality impacts would similar for all the alternatives. This issue will need to be evaluated during NEPA.
Other (list)	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	

Identification of potential environmental mitigation activities
Could the transportation planning process be integrated with other planning activities, such as land use or resource management plans? If so, could this integrated planning effort be used to develop a more strategic approach to environmental mitigation measures?
This study will inform regional planning activities with the Sun Corridor MPO. Locally, this study will establish right-of-way needs and a planned centerline alignment for future right-of-way dedication and roadway improvement. There is more than one preferred alternative that will require the City to choose one preferred alternative when development occurs.
With respect to potential environmental mitigation opportunities at the PEL level, who should ADOT consult with among federal, State, and local agencies and tribes and how formally and frequently should such consultation be undertaken?
Given the long time horizon of this project, it is premature to identify mitigation. The need for this project should be updated in the future. If the need moves up the Arizona Game & Fish Department should be contacted to discuss the potential understanding regarding the CAP canal as a potential wildlife corridor. The Arizona State Land Department currently controls the land in the eastern portion of the corridor, so plans will need to be coordinated if that property develops. The corridor crosses several canals requiring coordination with multiple irrigation districts and the Bureau of Reclamation.
Off-site and compensatory mitigation areas are often creatively negotiated to advance multiagency objectives or multiple objectives within one agency. Who determined what specific geographic areas or types of areas were appropriate for environmental mitigation activities? How were these determinations made?
It is premature to discuss compensatory mitigation for this project.
To address potential impacts on the human environment, what mitigation measures or activities were considered and how were they developed and documented?
Given the potential for development in this area and the long time horizon of this project it is premature to discuss mitigation measures related to the human environment.

Prepared by: _____Thor Anderson_____ Date: ____1-24-13_____

__PEL Program Manager_____

Environmental Planning Group, Arizona Department of Transportation

Attachment A: Technical Advisory Committee: Eleven Mile Corner Road Study (PARA)

Name	Organization	Title	Address	City/State/Zip	Phone	email
Study Area Representatives						
Susanna Struble	City of Coolidge	Public Works Director	355 S. 1st Street	Coolidge, AZ 85128	520-723-4882	sstruble@coolidgeaz.com
Rick Miller	City of Coolidge	Growth Management Director	131 W. Pinkley Avenue	Coolidge, AZ 85128	520-723-6075	rmiller@coolidgeaz.com
Tim Hansen	City of Coolidge	Planner	131 W. Pinkley Avenue	Coolidge, AZ 85128	520-723-6075	thansen@coolidgeaz.com
Ricky Lapaglia	City of Coolidge	Parks and Recreation Director	660 South Main Street	Coolidge, AZ 85228	520-723-4551	rlapaglia@coolidgeaz.com
Bob Flatley	City of Coolidge	City Manager	130 W. Central Avenue	Coolidge, AZ 85228	520-723-5361	bobf@coolidgeaz.com
Jill Dusenberry	City of Coolidge	Assistant City Manager	130 W. Central Avenue	Coolidge, AZ 85228	520-723-5361	jdusenberry@coolidgeaz.com
Mark Griffin	CAAG	Transportation Director	1075 S. Idaho Road, Suite 300	Apache Junction, AZ 85219	480-474-9300	mgriffin@caagcentral.org
Doug Hansen	Pinal County	Transportation Planner	31 N. Pinal Street, Bldg. F	Florence, AZ, 85132	520-509-3555	doug.hansen@pinalcountyaz.gov
Michelle Green	Arizona State Land Department	Planning Director	1616 W. Adams Street	Phoenix, AZ 85007	602-542-3000	mgreen@land.az.gov
John Mitchell	City of Eloy	Public Works Director	1137 W. Houser Rd.	Eloy, AZ 85131	520-466-2578	jmitchell@ci.eloy.az.us
Wayne Costa	City of Florence	Public Works Director	775 N. Main Street	Florence, AZ 85132	520-868-7617	Wayne.costa@florenceaz.gov
ADOT						
Charla Glendening	ADOT/MPD	Project Manager	206 S. 17th Ave MD310B	Phoenix, AZ 85007	602-712-7376	cglendening@azdot.gov
Tony Staffaroni	ADOT/CCP	Public Information Officer	1655 W. Jackson St. MD 126F	Phoenix, AZ 85007	602-245-4051	astaffaroni@azdot.gov
Thor Anderson	ADOT/MPD	PEL Manager	206 S. 17th Ave MD310B	Phoenix, AZ 85007		tanderson@azdot.gov
Wilson & Company						
Jim Townsend	Wilson & Company	Project Manager	410 N. 44th Street, Suite 460	Phoenix, AZ 85008	602-283-2720	jim.townsend@wilsonco.com
Alan Ferreira, PE	Wilson & Company	Engineer	410 N. 44th Street, Suite 460	Phoenix, AZ 85008	602-283-2718	alan.ferreira@wilsonco.com
Dan Marum	Wilson & Company	Principal	410 N. 44th Street, Suite 460	Phoenix, AZ 85008	602-283-2722	dan.marum@wilsonco.com

1.0 INTRODUCTION

The City of Coolidge has completed a Planning and Environmental Linkage (PEL) study to examine potential alignments for two planned primary travel corridors. The McCartney Road and Eleven Mile Corner Road corridors, when constructed, will provide opportunity for connectivity to the regional highway network and offer the City of Coolidge opportunities for economic development that do not exist today.

The McCartney Road corridor will ultimately be a six-lane principal arterial roadway extending between Interstate 10 to the west, to SR-79 to the east. McCartney Road currently exists as a two-lane paved roadway with an interchange at I-10, but terminates approximately 5-miles east of I-10 at Signal Peak Road. East of Signal Peak Road, the McCartney Road corridor would be new construction that traverses primarily undeveloped property currently being farmed.

The Eleven Mile Corner Road corridor would be a 6-lane Parkway roadway. Eleven Mile Corner Road is a two-lane paved roadway south of Bartlett Road. This PEL documents multiple alternatives to extend Eleven Mile Corner Road between McCartney Road to SR-87 to the north.

This PEL study was initiated immediately after finishing and the City of Coolidge adopting the Comprehensive Transportation Feasibility Study, to maintain the momentum of the planning efforts and keep the area participants engaged in the process.

This document is organized in the following manner:

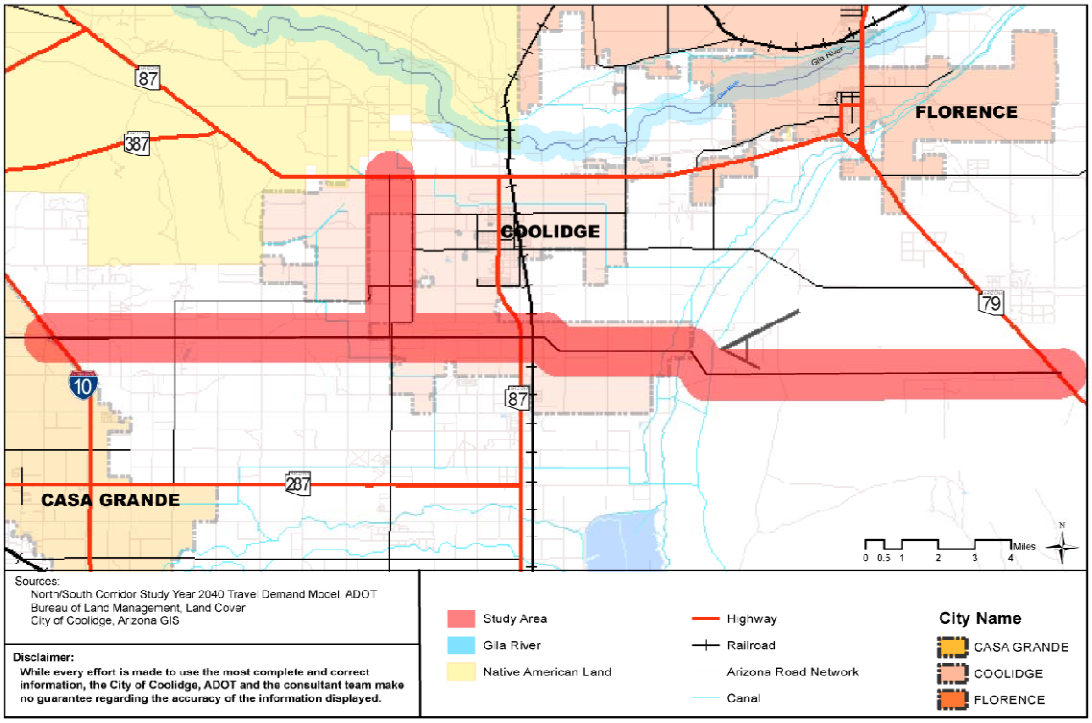
- Chapter 1: Introduction
- Chapter 2: Preliminary Purpose and Need
- Chapter 3: Environmental Setting
- Chapter 4: Summary and Conclusions

As part of the effort relating to summarizing the environmental setting, a Class I Cultural Resources Inventory was completed to provide a sound foundation to work from relating to archeological resources in the area.

1.1 STUDY AREA

Figure 1-1 illustrates the study area for the PEL evaluation. The McCartney Road study area extends approximately 25 miles in an east-west corridor between I-10 and SR-79. The Eleven Mile Corner Road corridor is approximately five miles extending between McCartney Road and SR-87.

Figure 1-1: Study Area



1.2 KEY STUDY CORRIDOR CONSIDERATIONS

The McCartney Road and Eleven Mile Corner Road corridors each have key considerations that should be noted from the onset for the reader to understand from this PEL document.

McCartney Road Corridor

- Planned as a 6-lane Principal Arterial road.
- Development interests made speculative land purchases prior to the adoption of the 2012 Transportation Plan and established Planned Area Developments (PADs) that may require adjustments without a loss of development entitlement.
- There is an existing interchange with I-10.
- The future alignment would be desirable to be grade separated with the railroad near SR-87/Arizona Boulevard.
- There would be a future potential interchange with the North-South Freeway.
- Would provide access to the future Westcor Mall site.
- Would provide critical access to the Coolidge Airport, supporting the future development identified in the Coolidge Airport Master Plan.
- Land owners along the corridor played a key role in the alternatives that were evaluated and remain as viable options.
- High power transmission lines played a critical role in determining a potential alignment.
- Existing canals and associated constraints played a critical role in determining a potential alignment.

- Much of the corridor has been previously surveyed for archeological artifacts.

Eleven Mile Corner Road Corridor

- Planned as a 6-lane Parkway road.
- Development interests made speculative land purchases prior to the adoption of the 2012 Transportation Plan and established Planned Area Developments (PADs) that may require adjustments without a loss of development entitlement.
- The Gila River Indian Community has all land interest in the vicinity of Signal Peak Road and SR-87, limiting the potential for improvements to Signal Peak Road.
- The Pima-Maricopa Irrigation Project canal has multiple canals, siphons, structures and valves along SR-87 between Macrae Road and Skousen Road that greatly limit options for improvements.
- The Western Area Power Authority (WAPA) has several high-power transmission line corridors in the vicinity, greatly impacting alternatives for improvement.
- The Casa Grande National Monument acts as a transportation barrier to the east of Skousen Road, resulting in no access to SR-87 between Skousen Road and SR-87/Arizona Boulevard.
- Much of the area included as alternative alignments has been previously surveyed for archeological artifacts.

1.3 Public Involvement

The PEL was conducted in a collaborative manner with the participation from regional technical staff serving on the study Technical Advisory Committee (TAC). This PEL process started approximately 6 months after the adoption of the Coolidge Transportation Plan which had provided recent public involvement activities.

The TAC was made up of regional agency staff members from both Planning Partners and Funding Partners for plan implementation. All aspects of the PEL were presented to the TAC for project guidance and discussion for regional collaboration.

The TAC membership included representatives from:

- City of Coolidge Public Works
- City of Coolidge Growth Management
- City of Coolidge City Manager
- City of Coolidge Parks and Recreation
- Arizona Department of Transportation
- City of Casa Grande (also representing Sun Corridor MPO)
- City of Florence
- City of Eloy
- Pinal County
- Central Arizona Governments (CAG)

TAC meetings were conducted on the following dates:

- January 23, 2013
- February 20, 2013
- April 17, 2013
- June 19, 2013

In addition, the study held 16 small group or individual meetings with affected land owners, developers and utility owners/managers on the following dates:

- March 19, 2013 (land owner/developer)
- March 20, 2013 (land owners and developers)
- April 4, 2013 (Pima-Maricopa Irrigation Project - email)
- April 9, 2013 (land owners and developers)
- April 16, 2013 (land owners and developers)
- April 24, 2013 (land owner)
- May 7, 2013 (land owners and developers)
- May 8, 2013 (Pima-Maricopa Irrigation Project - email)
- May 28, 2013 (Western Area Power Administration (WAPA) - email)
- June 12, 2013 (WAPA)
- June 12, 2013 (Pima-Maricopa Irrigation Project – email)
- June 25, 2013 (land owner/developer – email)
- August 8, 2013 (land owner-email)
- September 9, 2013 (land owner)
- November 18, 2013 (land owner)
- December 11, 2013 (land owner)

A City management update was given on November 7, 2013 for finalization of recommendations.

This study also conducted a public Open House, conducted a City Council Work Session, presented this project during the Circulation Element meeting for the General Plan update, and had phone and email conversation with affected land owners or stakeholders. These meetings occurred on the following dates:

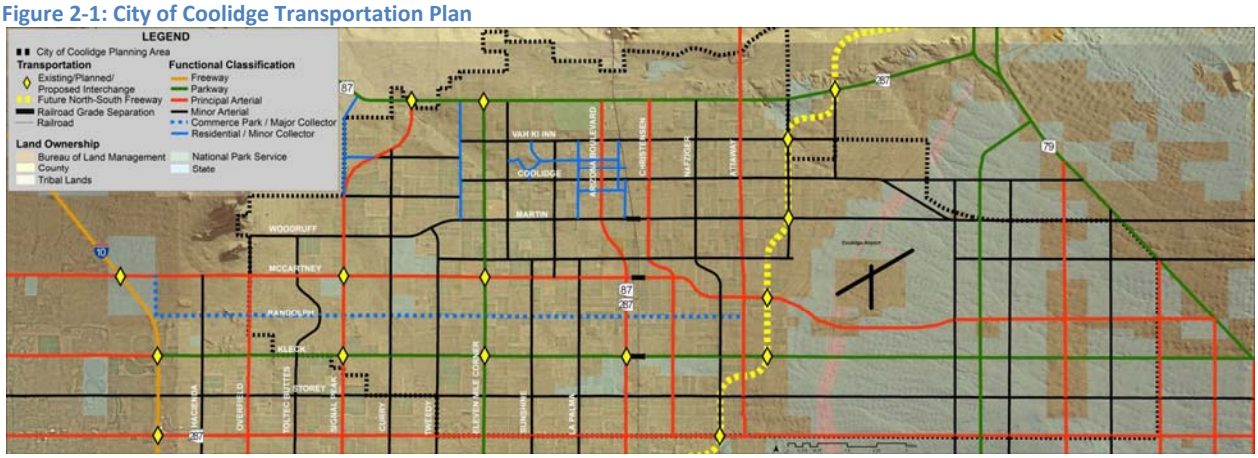
- February 7, 2013 – General Plan Update Meeting - Circulation Element
- August 12, 2013 – Open House
- August 12, 2013 – City Counsel Work Session
- February 22, 2014 – Anticipated City Counsel PEL Adoption

2.0 PRELIMINARY PURPOSE AND NEED

2.1 PLANNING GOALS

The City of Coolidge completed their Comprehensive Transportation Feasibility Study in June, 2012. The Transportation Plan that was adopted from that effort outlined the long-range multimodal transportation needs for City of Coolidge. Multimodal strategies for roadway, transit, bicycle and pedestrian facilities were included in the Plan. Figure 2-1 illustrates the adopted Plan.

Figure 2-1: City of Coolidge Transportation Plan



The Transportation Plan effort went through an exhaustive effort to document relevant studies, projects and plans. Appendix A includes the listing and summary of the relevant past studies completed in the region.

2.2 REGIONAL TRANSPORTATION COORDINATION

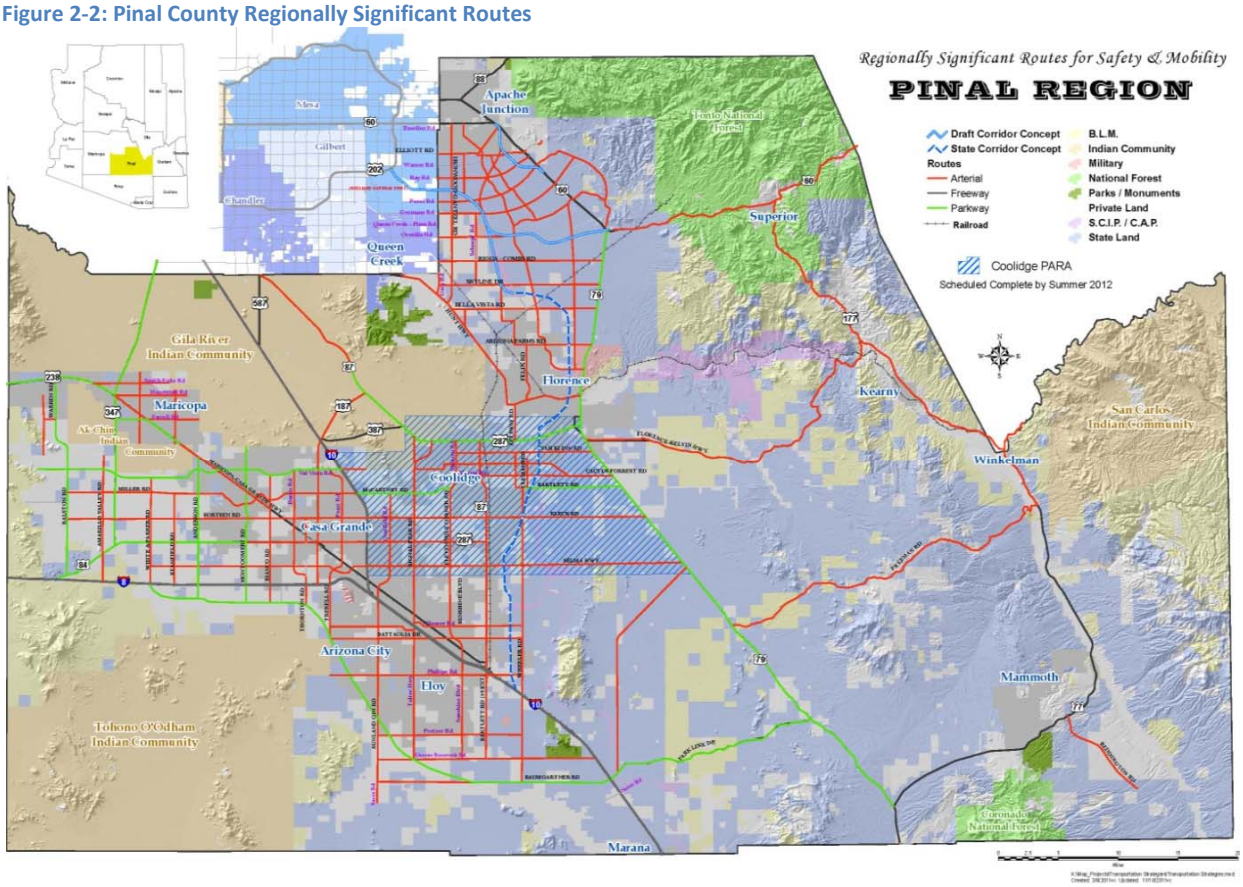
In 2012, the Central Arizona Governments (CAG) Council of Governments (COG) began working within the CAG region to develop the region's first Long Range Transportation Plan (LRTP). The effort was to develop a regional travel demand model with vetted socioeconomic inputs and projections. Since this LRTP effort began, it was determined that the Casa Grande region would be designated as a new Metropolitan Planning Organization (MPO) in Arizona. Since its designation, agencies potentially affected by this new designation were working to understand their options regarding regional planning and the roles that the new MPO would provide. The new MPO was formally named the Sun Corridor MPO and the City of Coolidge is part of the new MPO. Since the designation, the Sun Corridor MPO has been working closely with ADOT to formalize and establish operations.

2.2.1 PINAL COUNTY REGIONALLY SIGNIFICANT ROUTES FOR SAFETY AND MOBILITY

This plan worked closely with other regional stakeholders to ensure that plans were coordinated in an efficient manner. One of the key studies referenced throughout this work effort was the Pinal County Regionally Significant Routes for Safety and Mobility Study (RSRSM). The recommendations from the Comprehensive Transportation Feasibility Study informed and augmented the County's Regionally

Significant Routes (RSR) map (Figure 2-2). The figure illustrates regionally significant facilities designated for preservation through planning and access management applications. The principal arterials and parkway facilities illustrated in the Plan are integrated as Regionally Significant Routes for Pinal County.

Figure 2-2: Pinal County Regionally Significant Routes



2.2.2 Access Control

As part of the Comprehensive Transportation Feasibility Study and Plan adoption by City Council, the Council adopted access control guidelines for each functionally classified route. The following roadway functional classifications are recommended to provide a sound transportation system for the City of Coolidge to accommodate local growth and regional transportation demands. The functional classification of the roadway network in Coolidge has been established in accordance with the definitions provided by ADOT and FHWA, as summarized below:

- **Freeway –** a multi-lane, high-speed, controlled access, divided roadway with the primary purpose of efficiently serving longer regional or interregional trips;
- **Parkway –** a high capacity multi-lane, higher speed, controlled access, divided roadway with the primary purpose of efficiently and safely serving longer regional trips, major activity centers, providing access to freeways and arterials, and providing controlled access to abutting property owners;

- **Principal Arterial –** a higher speed, controlled access, divided roadway of two or more lanes in each direction, designed for efficient travel between major activity centers, providing access to freeways with limited access to/from abutting property;
- **Minor Arterial –** a higher speed, controlled access, divided roadway of two or more lanes in each direction connecting lower and higher functionally classified facilities as well as major activity centers, and facilitating access to and connectivity between larger land tracts and commercial developments;
- **Major Collector / Commerce Park Collector –** a two-lane roadway facilitating connectivity to the higher order arterial network, while providing direct access to the roadway network for larger commercial parcels and larger residential developments; and
- **Minor Collector / Residential Collector –** a two-lane roadway providing direct access to the roadway network for commercial parcels and multi-family residential developments via major collector and minor arterial roadways.

The Transportation Plan graphically depicts all freeway, parkway, principal and minor arterial routes planned for the Coolidge MPA. The regional routes that include the freeways, parkways and principal arterials facilitate regional travel and have the greatest amount of access control and management. Now that the City of Coolidge is integrated into the Sun Corridor Metropolitan Planning Organization, the freeways, parkways and principal arterials should all be considered part of the MPO's Long Range Transportation Plan and part of the Regional Transportation Plan network.

Figure 2-3: Access vs. Mobility

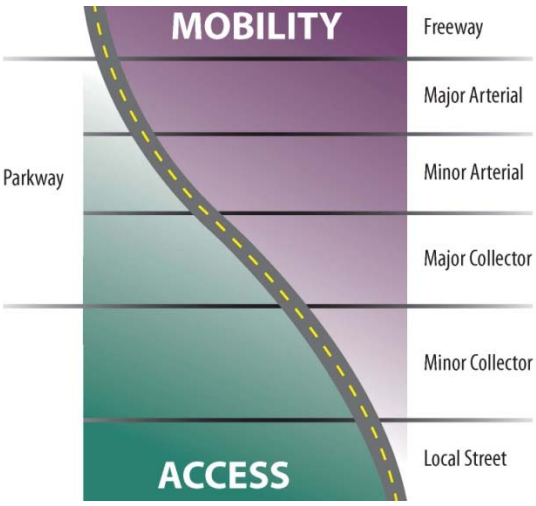


Figure 2-3 demonstrates the point as functional classification transitions from arterial roadways to local roadways, the level of access generally increases, the capacity decreases, and the purpose of the roadway changes from efficiently moving vehicles to providing direct property access. This system of functional classifications is critical to provide a network capable of accommodating regional mobility and local property access.

Roadway cross sections provide the framework for a community to understand how to move people from their travel origins to their destinations. Several factors are balanced when developing cross sections to best manage future traffic demand based on existing and future land uses, including:

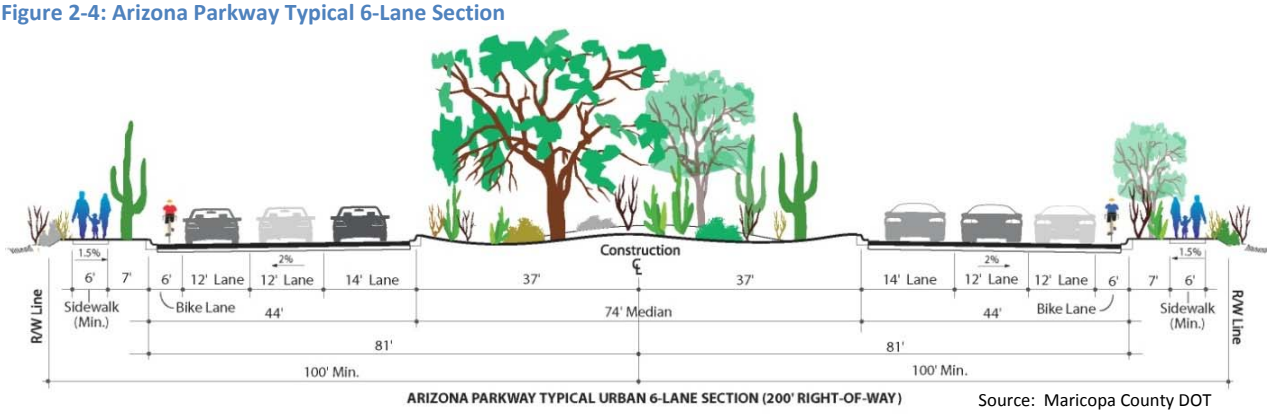
- Amount of traffic (high-volume versus low-volume).
- Type of traffic (large vehicles, heavy vehicles, buses, cars).
- Level of pedestrian activity.
- Level of bicyclist activity.
- Density of driveways.
- Turning traffic volume (driveways, street intersections, offset versus aligned intersections).
- Surrounding land uses (schools, residential, industrial, commercial).

- Regional mobility corridors (through route, established bicycle route).

In communities across the nation, transportation system investments have strived to better accommodate multiple travel modes through "Complete Streets" initiatives. Whether it is providing sidewalks for pedestrians, shared-use paths or shoulders for bicyclists, wide outside travel lanes to allow for a safe area for cyclists to ride either in the shoulder or in a signed bicycle lane, bus pull-outs for transit stops, or trails for equestrians, communities are making the investments to provide safe mobility options to their residents, employers and visitors.

All roadways should be designed in a context-sensitive manner; meaning the roadway condition should be proportional in scale to the adjacent development. This is particularly true in the two collector cross-sections (Commerce Park and Residential), which should be designed according to their adjacent land uses. Figures 2-4 and 2-6 through 2-9 depict the typical cross sections for each functional classification, and Figure 2-5 illustrates an indirect left-turn lane treatment for Parkway functional classification roadways.

Figure 2-4: Arizona Parkway Typical 6-Lane Section



Source: Maricopa County DOT

Figure 2-5: Indirect Left-Turn Treatment

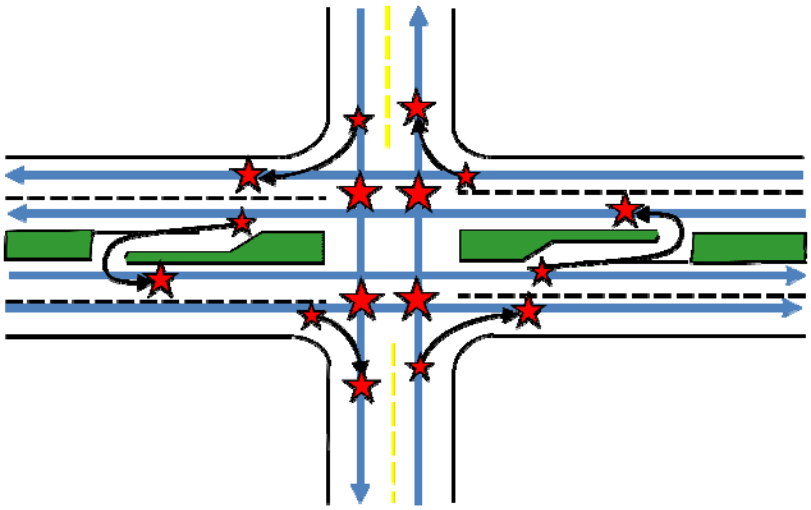


Figure 2-6: Principal Arterial Typical Section

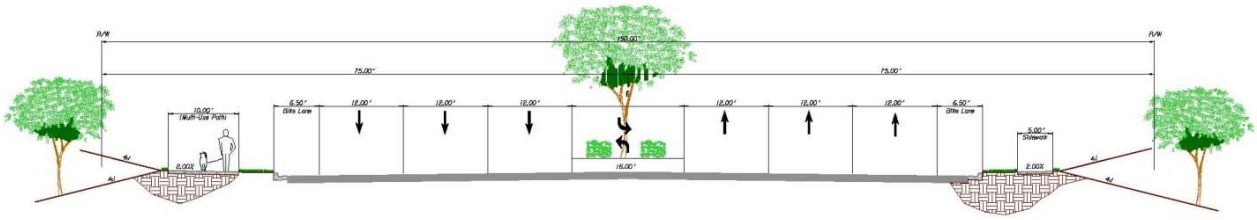


Figure 2-7: Minor Arterial Typical Section

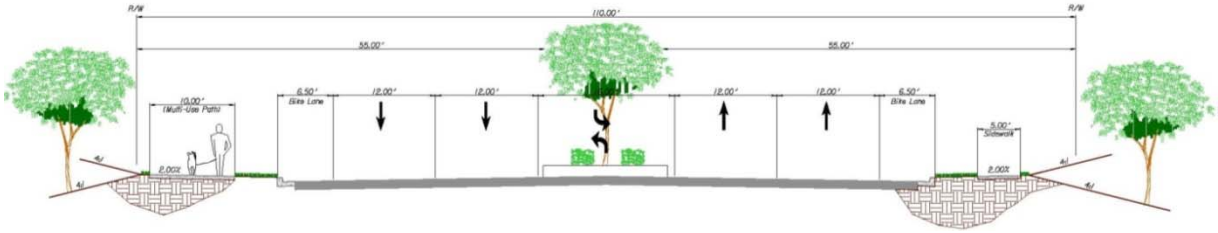


Figure 2-8: Commerce Park Collector Typical Section

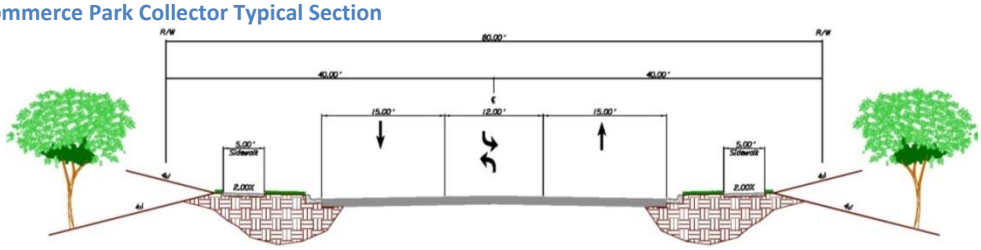


Figure 2-9: Residential Collector Typical Section

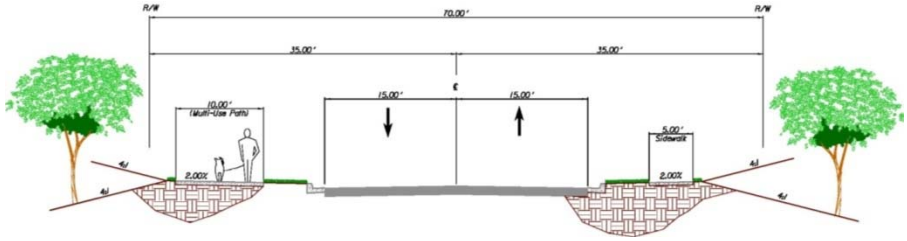


Table 2.1 documents the roadway criteria and design standards including the applicable access management strategy for each cross section above.

2.2.3 Freight Movement

Existing and future freight movement is anticipated to be focused on the freeway, parkway and arterial corridors. The functionally classified routes in Coolidge, as they are developed, will provide for a system that can support safe and efficient freight mobility and access to/from the interstate highway system.

2.2.4 Planning Level Goals and Objectives

At the onset of this PEL study, the goal was to establish a probable set of high-capacity arterial or parkway corridors that would provide the City and developer stakeholders a potential right-of-way footprint so that planning, planned area development and platting activities could take place without jeopardizing the constructability of these two very important corridors. Ultimately, these two corridors will be critical mobility corridors for Coolidge.

Table 2.1: Coolidge Access Management

Criteria	Functional Classification				
	Arizona Parkway	**Principal/Major Arterial**	**Minor Arterial**	**Commerce Park Collector**	**Residential Collector**
Road Purpose	Mobility	Mobility	Mobility/Access	Access	Access
Planning Average Daily Traffic	60,000 – 90,000	45,000 – 60,000	30,000	10,000	8,000
Design Standards					
Design Speed	55 mph	55 mph	45 mph	35 mph	35 mph
Right-of-Way Width	200’	130’ - 150’	110’	80’	70’
Median	Divided	Divided	Divided	TWTL	NA
Number of Lanes	6	4 - 6	4 – 5	2 – 4	2 – 3
Left-turn Lanes	Indirect Left-Turn. Spacing at 1320’ or 660’ as permitted	1/4 - 1/2 mile	1/4 - 1/2 mile	At all locations where permitted	At all locations where permitted
Right-turn Lanes	At all locations where permitted and warranted	At all locations where permitted and warranted	At all locations where permitted and warranted	At all locations where permitted and warranted	At all locations where permitted and warranted
Access Management Guidelines					
Public Access	1/8 – 1/2 mile	1/8 – 1/2 mile	1/8 – 1/4 mile	1/8 – 1/4 mile	1/8 mile
Property Access	Right in/Right out	Right in/Right out. Full access where approved	Right in/Right out. Full access where approved	Full access where approved	Full access where approved
Traffic Signal Spacing	1 mile; 1/2 mile where warranted and permitted	Mile and 1/2 mile locations where warranted, fully coordinated and progressed	1/2 mile locations, 1/4 mile locations where warranted, fully coordinated and progressed	1/2 mile locations, 1/4 mile locations where warranted	NA
Typical Traffic Control	Signalized, two-way stop	Signalized, two-way stop (interim – roundabout allowed)	Signalized, two-way stop (interim – roundabout allowed)	Signalized, roundabout stop	Signalized, roundabout stop
Parking	Prohibited	Prohibited	Prohibited	Restricted	Restricted
Alternative Modes					
Transit	Bus pull-outs and queue jumpers where warranted	Bus pull-outs and queue jumpers where warranted	Bus pull-outs and queue jumpers where warranted	NA	NA
Bike Lanes	Yes	Yes	Yes	Share the Road	Share the Road
Multi-use Path	10’	10’	10’	NA	10’
Sidewalk	6’	6’	6’	5’ (both sides)	5’

TWTL – Two-way Turning Lanes

2.3 PROJECT NEEDS

2.3.1 SOCIOECONOMIC CONDITIONS, POPULATION DATA, EMPLOYMENT AND GROWTH PATTERNS

This chapter contains substantial information regarding socioeconomic conditions and land use in the study area. This chapter presents excerpts from the Regional Transportation Study that are relevant to and representative of the principal characteristics of the study area land use, population, and employment. Additional detail specific to the Coolidge area is provided, as available.

2.3.1.1 SOCIOECONOMIC PROFILE

The economy of Coolidge, from its beginning in the early 1950s, mainly has been dependent on agriculture and, to a lesser extent, mining. Growth of the community was relatively steady until the late 1940s, when it leveled off. Diversification into manufacturing and winter tourism stimulated later growth and, today, the City is a regional trade and service center. The 500-acre Pima-Coolidge Industrial Park north of the City has supported manufacturing growth and government agencies have located offices in the City to serve the growing regional population. A new industrial park south of the City, known as Randolph Industrial Park, is expected to become a core employment center.

Between 2000 and 2009, the city experienced expansive growth consistent with growth through the region and State of Arizona. The population increased 68 percent from 2000 to 2010, based on Census Bureau estimates. However, the recession induced a significant downturn in the community's economy. Housing foreclosures increased and there has been a severe decline in building permit applications. It is estimated that the City has experienced a seven percent decline in population in the past two years. The unemployment rate, as of June, 2010, was just under 20 percent, compared to the State's unemployment rate of 9.5 percent.

2.3.1.2 EXISTING POPULATION, HOUSEHOLDS AND HOUSING UNITS

The United States Census reports population, households and housing units every ten years. The data included in this report reflect Census data reported for years 1990, 2000 and from the most recent 2010 Census. In all cases, the population reported includes the population in "Group Quarters."

Table 2.2 summarizes the City of Coolidge population, and compares the population with surrounding communities as defined by the boundaries of the Census Designated Place. The summary information in Table 2.2 includes all persons within the identified geographies.

Census data shows the county as a whole is experiencing continued growth patterns. Overall, the population in Pinal County has more than tripled between 1990 and 2010, with twice the amount of growth activity occurring between years 2000 and 2010.

The general population of Coolidge has increased from approximately 6,972 persons in 1990 to 11,825 persons in 2010, showing an increase of over 71 percent in twenty years. Coolidge does not have any inmate population. Additionally, the growth in household population has outpaced both Florence and Eloy, and the rate of growth has outpaced Arizona as a whole by approximately double.

Table 2.2: Population Summary

Geography	Year		
	1990 Population	1990 Incarcerated Population	1990 Population (household)
Arizona	3,665,228	41,508	3,623,720
Pinal County	116,397	4,800	111,597
Coolidge	6,927	0	6,927
Casa Grande	19,082	135	18,947
Eloy	7,211	9	7,202
Florence	7,510	4,229	3,281

Geography	Year				
	2000 Population	2000 Incarcerated Population	2000 Population (households)	Change in Household Population (1990 to 2000)	Percent Change (1990 to 2000)
Arizona	5,130,632	63,768	5,066,864	1,443,144	40%
Pinal County	179,727	13,876	165,851	54,254	49%
Coolidge	7,786	1	7,785	858	12%
Casa Grande	25,224	123	25,101	6,154	32%
Eloy	10,375	1,482	8,893	1,691	23%
Florence	17,054	11,830	5,224	1,943	59%

Geography	Year				
	2010 Population	2010 Incarcerated Population	2010 Population (households)	Change in Household Population (2000 to 2010)	Percent Change (2000 to 2010)
Arizona	6,392,017	84,788	6,307,229	1,240,365	24.5%
Pinal County	375,770	25,583	350,187	184,336	111.1%
Coolidge	11,825	0	11,825	4,040	51.9%
Casa Grande	48,571	47	48,524	23,423	93.3%
Eloy	16,631	7,293	9,338	445	5.0%
Florence	25,536	17,770	7,766	2,542	48.7%

Source: U.S. Census Bureau

Census household data is summarized in Table 2.3. This table shows that the number of households in Coolidge grew 69 percent between 1990 and 2010. The number of households provides an understanding of occupied housing units versus the total number of dwelling units within the market area, summarized in Table 2.3.

Table 2.3: Household Summary

Geography	Year		
	1990 Households	2000 Households	2010 Households
Pinal County	39,154	61,364	125,590
Coolidge	2,340	2,585	3,947
Casa Grande	6,495	8,920	17,651
Eloy	2,060	2,492	2,984
Florence	1,308	2,226	3,330

Source: U.S. Census Bureau

The Census information reveals that the number of households in Coolidge has increased 69 percent from the year 1990 to 2010, with 52 percent of the new household growth occurring between 2000 and 2010. Table 2.4 summarizes the available dwelling units, with an increase of 71 percent between 1990 and 2010, with most of the growth occurring between 2000 and 2010.

Table 2.4: Dwelling Unit Summary

Geography	Year		
	1990 Dwelling Units	2000 Dwelling Units	2010 Dwelling Units
Pinal County	52,732	81,154	159,222
Coolidge	2,806	3,212	4,796
Casa Grande	7,404	11,041	22,400
Eloy	2,333	2,734	3,691
Florence	2,143	3,216	5,224

Source: U.S. Census Bureau

2.3.1.3 Existing Employment Overview

Employment data for the City of Coolidge is not readily available, so the CAG Transportation Analysis Zone (TAZ) data was used to summarize current employment levels. The employment figures do not correlate to the same geography as the Census population data, so the two data sets are independent of each other.

Based on the CAG ca_TAZ2010 Projections dataset, there are 3,502 employees within the Coolidge MPA, primarily focused along the Arizona Boulevard (US-87) corridor. In examining the 2008 Coolidge-Florence Regional Transportation Study, it was reported that Coolidge had 4,436 employees; however, that was based on a different geographic boundary.

Employment in Coolidge is categorized into three major sectors including Agriculture, Government and Non-Agriculture Private as shown in Table 2.5. The government sector constitutes 43 percent of total employment with the majority of employment attributed to the Central Arizona College (CAC) campus in Coolidge.

Table 2.5: Coolidge Employment by Sector

Sector	Employment	Percent
Agriculture	775	18
Government	1,875	43
Non-Agriculture Private	1,686	42

Source: Coolidge-Florence Regional Transportation Study 2008

The majority of commercial activity happens along SR-87 and Central Avenue with numerous businesses including restaurants, grocery stores, convenience stores, gas stations, car dealerships and banks. Major employers include: Wal-Mart, Central Arizona College, Coolidge Unified School District, State of Arizona Training Program, City of Coolidge, and Pinal County Health Department.

2.3.2 System Linkage

The McCartney Road corridor has the opportunity to provide a direct linkage between Interstate 10, a proposed North-South Freeway (study completed by ADOT), and SR-79 to the east. Currently, there is not a direct route between the developed portion of the City of Coolidge and I-10 to the west.

The Eleven Mile Corner Road corridor will provide a critical north-south route providing a high-capacity connection to SR-87 to the north. Currently, Skousen Road provides the primary connection to SR-87, in addition to Arizona Boulevard. West of Arizona Boulevard, the Casa Grande National Monument limits access opportunities between Skousen Road and Arizona Boulevard.

2.3.3 Land Use and Development Patterns

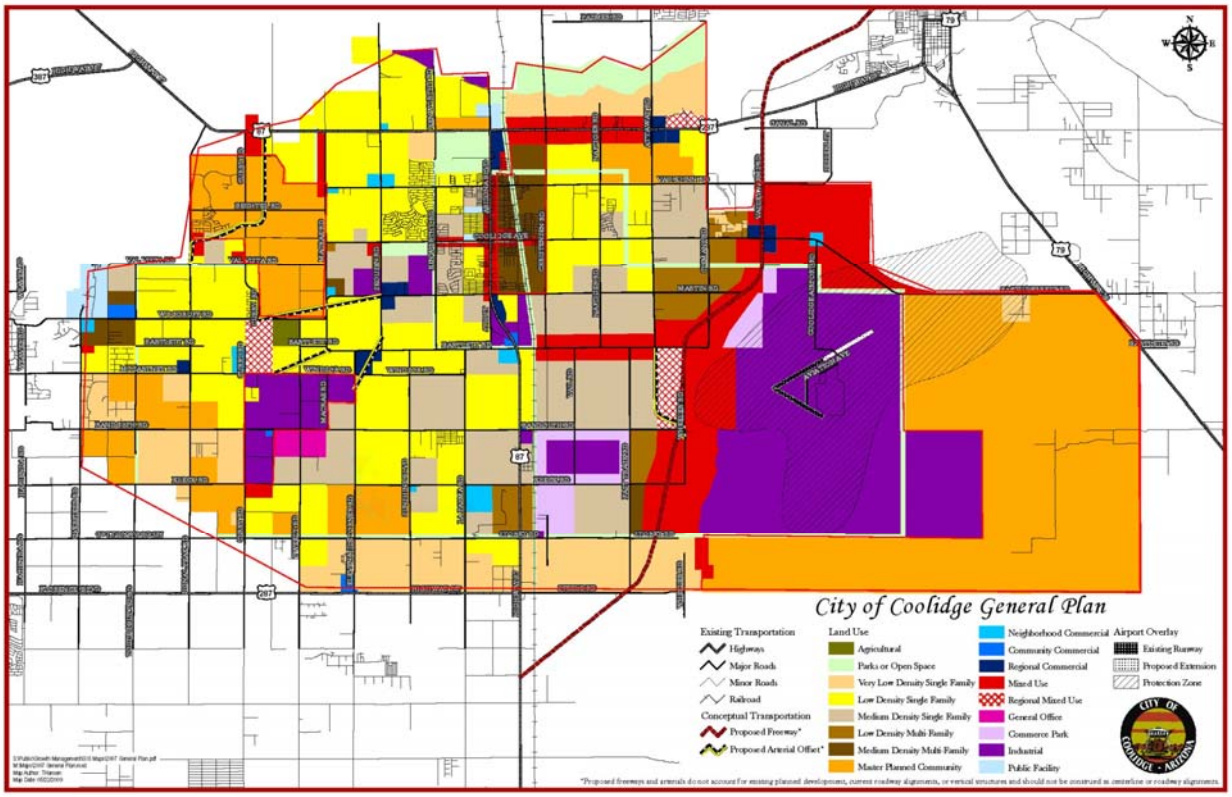
The majority of the community is planned for residential development. Low density single family residential development predominantly is located west of the Union Pacific Railroad (UPRR) tracks, although there is a four square-mile enclave of this land use east of the railroad, north of Martin Road. Very low density single family residential development areas are located at the perimeter of the community MPA, mostly to the south and west. A large portion of the area, east of the UPRR from Vah Ki Inn Road to Storey Road, is classified as medium density single family residential. A very large area (2.3 square miles), directly east of US-87/Arizona Boulevard and straddling the UPRR, is designated for medium density multi-family residential development. Master planned communities are planned in the southwest portion of the MPA area along with the area south and east of the airport.

Mixed use development areas are planned along US-87/Arizona Boulevard, mostly between Vah Ki Inn Road and Martin Road, and along Coolidge Avenue, between Kenworthy Road and Christensen Road. Mixed use development areas also are planned in the vicinity of the master planned community area in the northwest portion of the Plan area. In addition, two linear mixed use development areas are identified directly east of the UPRR: along the US-287/Florence-Coolidge Highway to Attaway Road and along Bartlett Road to Clemens Road. The latter area merges with a large zone designated for mixed use that flanks the proposed North/South freeway corridor from Storey Road to Vah Ki Inn Road. North of the airport, this area extends approximately two miles to the east centered on the airport entrance at Coolidge Avenue. Three areas have been designated for Regional mixed use development: one is south

of Bartlett Road on the along the west side of the proposed freeway; a second is located directly north of the west side Industrial area; and the third is situated along the north side of US-287/ Florence-Coolidge Highway, between Attaway Road and Clemens Road.

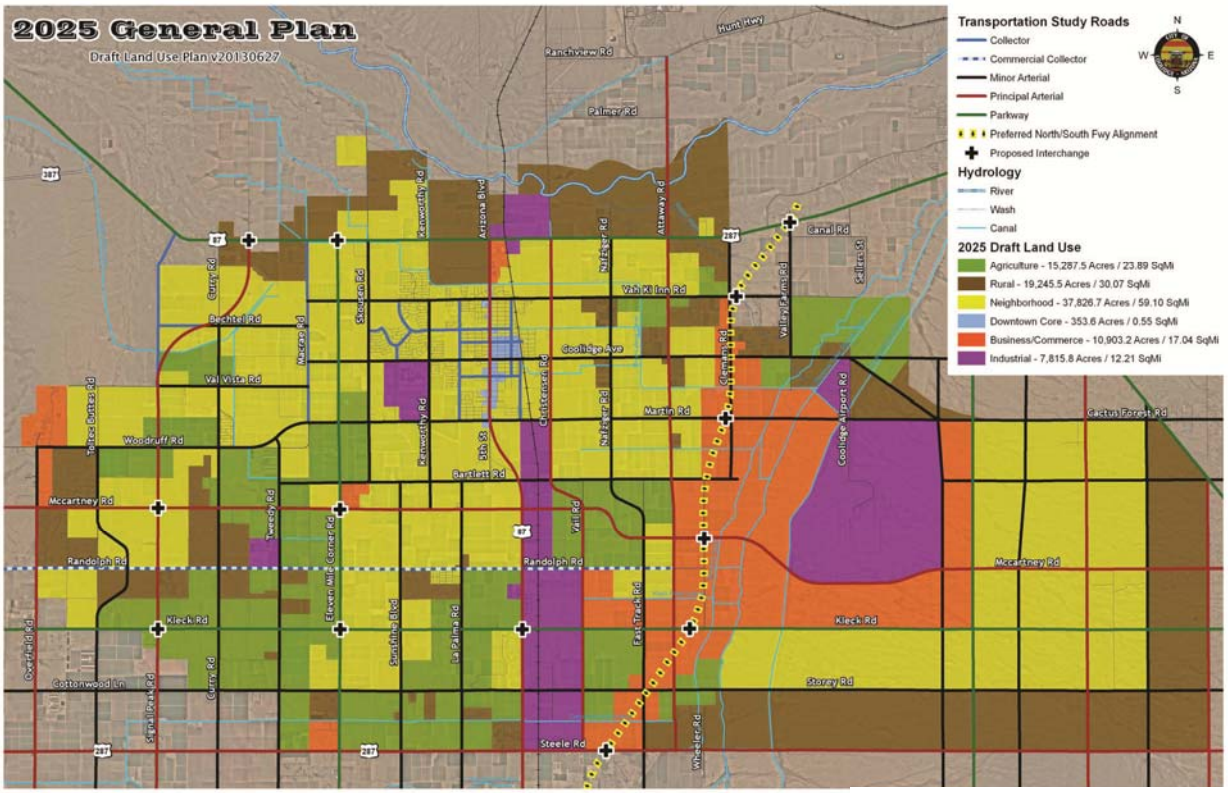
An area of approximately 17 square miles surrounding the Coolidge Municipal Airport is classified for industrial uses. A Protection Zone has been established around the airport, extending from Wheeler Road on the west and Storey Road on the south to approximately one-half mile from US-79/Pinal Pioneer Parkway on the east. Two other industrial land use areas have been identified to the west of the airport. One is situated on the east side of the UPRR and extends to East Track Road, between Randolph Road and Kleck Road. The area is surrounded by an area designated for a Commerce Park; it extends south along the east side of the UPRR to Storey Road and east to Vail Road. The second area identified for industrial land use is a 2.3-square-mile zone east of Curry Road and south of Windsor Road. Adjacent areas to the south and east are planned for general office land uses and medium density single family residential. Figure 2-10 illustrates the current City of Coolidge General Land Use Plan.

Figure 2-10: City of Coolidge General Plan



The City is currently updating the General Land Use Plan. Figure 2-11 illustrates the DRAFT Year 2014 General Land Use Plan that is currently being contemplated. This updated General Land Use Plan integrates the adopted Transportation Plan recommendations from June 2012.

Figure 2-11: DRAFT 2014 Update- General Land Use Plan



Source: City of Coolidge, 12/27/2013

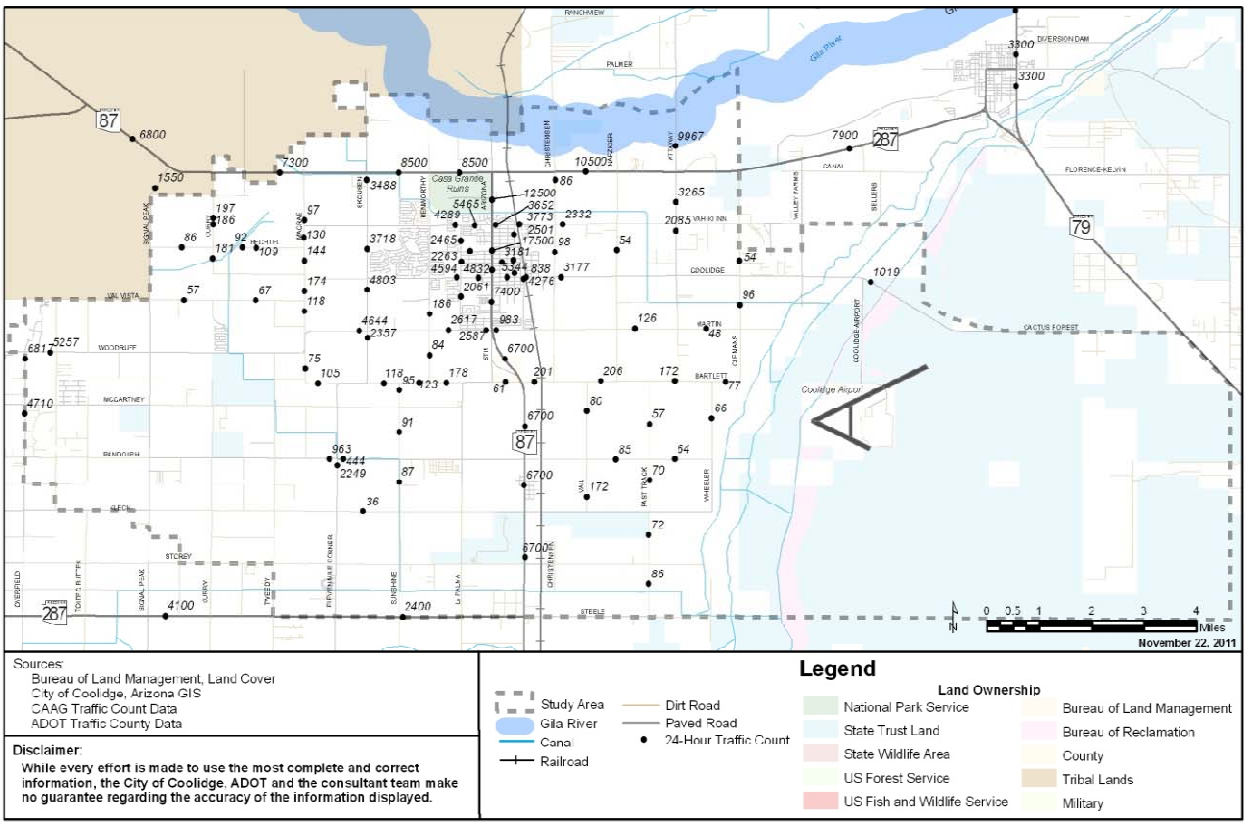
2.3.4 Deficiencies in Existing Facility Conditions

The existing McCartney corridor extends approximately five miles east of Interstate 10. The remaining 20-miles of the proposed corridor does not exist today. The current five miles of McCartney Road is two-lanes and has a paved surface with gravel shoulders. This is the primary route used by residents and industry to access Coolidge from Interstate 10.

2.3.5 Existing Traffic Volumes, Travel Time, and Level of Service

An inventory and evaluation of existing traffic counts was conducted based on traffic count data provided by the City of Coolidge and traffic counts available on the ADOT web site (accessed 2012). These counts provide the foundation for analyzing traffic operations and identifying current capacity needs within the study area. The counts also form the basis for calibrating the roadway network to reflect existing conditions and permit modeling to forecast future conditions. Figure 2-12 provides the inventory of existing traffic counts. As shown, the McCartney corridor carries approximately 4,700 vehicles per day.

Figure 2-12: Existing Traffic Counts



2.3.6 FUTURE NO-BUILD TRAFFIC VOLUMES, TRAVEL TIME, AND LEVEL OF SERVICE

The future growth of Coolidge is highly dependent upon constructing new roadways to access Interstate 10 to the west, improving internal circulation for both north-south roadways. As part of the Coolidge Transportation Plan effort, Technical Memorandum #2 was completed to evaluate future build and no-build travel demands. Figure 2-13 summarizes the year 2040 model generated traffic demand in the Coolidge area. The cutlines summarize the level of travel demand passing through a defined line. Based on the cutline evaluation, SR-87 will have significant issues and surrounding north-south travel demand will need to be accommodated using other routes. For planning level analyses, a volume to capacity ratio of less than 0.60 is cautionary, particularly in communities that are not significantly built-out. Technical Memorandum #2 is included as Appendix B in this PEL document.

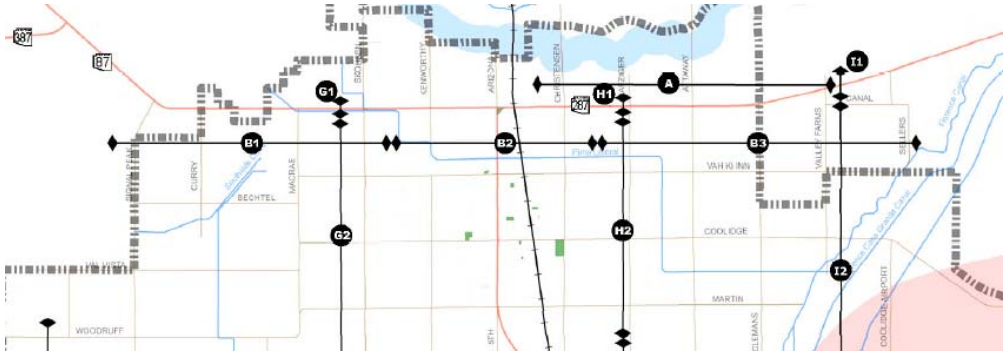
2.3.7 SAFETY DATA AND DEFICIENCIES

Safety deficiencies were not evaluated as most of the McCartney Road corridor and the Eleven Mile Corner Road corridor does not exist today.

2.3.8 MODES EVALUATED

The recommended cross sections used to identify potential right-of-way needs in the corridor included principal arterial and parkway cross sections. Both of these cross sections include accommodation for auto, truck, transit, bicycle and pedestrian modes.

Figure 2-13: Year 2040 No-build Travel Demand Forecast



Cutline	Road Name	From	To	Year 2040 Model Volume	Number of Lanes	Model Functional Class	Capacity	v/c Ratio	LOS	Cutline Volume	Cutline Capacity	Cutline V/C
East-West Cutlines (north-south travel)												
A	Christensen Rd.	SR-287	E. Palmer Rd.	66,320	4	Arterial	34,200	1.94	LOS E or F	100,160	128,400	0.78
	Attaway Rd.	SR-287	E. Palmer Rd.	25,400	6	Arterial	60,000	0.42	LOS D or Better			
	Valley Farms Rd.	SR-287	E. Palmer Rd. Alignment	8,440	4	Arterial	34,200	0.25	LOS D or Better			
			Cutline Total:	**100,160**			**128,400**	**0.78**				
B-1	Signal Peak Rd.	Val Vista Blvd.	SR-87	4,480	2	Arterial	15,500	0.29	LOS D or Better	186,390	256,100	0.73
	Val Vista Blvd./SR-87 Connector	Val Vista Blvd.	SR-87	21,440	2	Arterial	15,500	1.38	LOS E or F			
	Curry Rd.	Val Vista Blvd.	SR-87	4,960	2	Arterial	15,500	0.32	LOS D or Better			
	Skousen Rd.	Val Vista Blvd.	Vah Ki Inn Rd.	4,380	2	Arterial	15,500	0.28	LOS D or Better			
B-2	Kenworthy Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	22,370	4	Arterial	34,200	0.65	LOS D or Better			
	SR-87/Arizona Blvd.	Kenilworth Rd./Coolidge Rd.	W. Northern Ave.	32,920	4	Arterial	34,200	0.96	LOS E or F			
	N. Main St.	Kenilworth Rd./Coolidge Rd.	W. Northern Ave.	37,800	2	Arterial	15,500	2.44	LOS E or F			
	Christensen Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	25,840	2	Arterial	15,500	1.67	LOS E or F			
B-3	Attaway Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	20,700	4	Arterial	34,200	0.61	LOS D or Better			
	Clemens Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	5,440	2	Collector	10,800	0.50	LOS D or Better			
	Valley Farms Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	3,800	4	Arterial	34,200	0.11	LOS D or Better			
	Plant Rd.	Cactus Forest Rd.	Vah Ki Inn Rd.	2,260	2	Arterial	15,500	0.15	LOS D or Better			
			Cutline Total:	**186,390**			**256,100**	**0.73**				

2.3.9 NON-MOTORIZED CIRCULATION

As part of this PEL evaluation, the TAC identified that it was desirable to maintain a 10-foot path along the north side of McCartney Road and the east side of Eleven Mile Corner Road.

2.3.10 DESIGN STANDARDS, POLICIES, AND GUIDELINES

This PEL used the adopted Transportation Plan cross section standards for Parkway and Principal Arterial facilities as outlined in Figure 2-4 and 2-6 respectfully, and summarized in Table 2.1. The vertical alignment maintained a 0.5% slope for drainage purposes. Horizontal curves were drawn using 45 mile-per-hour design speed curves.

The Eleven Mile Corner Road Parkway facility used the Maricopa County Parkway Design Guidelines report per the direction of the TAC. Pinal County stated that they adopted the Maricopa County Design Guidelines as well for their Parkway facilities.

Major canal crossings adhered to providing 18-feet of vertical clearance, as outlined in the Bureau of Reclamation Guidelines for Canal Crossings, 2008. Additionally, the Pima-Maricopa Irrigation Project General Crossing Guidelines, dated May 10, 2011, was used for P-MIP crossing locations.

The Western Area Power Administration (WAPA) was consulted regarding constructing a roadway adjacent to or under the power lines and towers, particularly for the Eleven Mile Corner Road extension

north of Bartlett Road. Once an alignment is settled upon, a right-of-way application must be submitted to WAPA for approval if there is a crossing of their power lines.

2.3.11 Summary of Project Needs

The City of Coolidge is conducting this PEL evaluation on the McCartney Road and Eleven Mile Corner Road corridors to solidify stakeholder support by preliminarily defining a centerline alignment, identify potential right-of-way needs, and provide an early identification and potential avoidance or mitigation strategy regarding environmental constraints. The McCartney Road corridor is the northernmost existing interchange on I-10 that services the City of Coolidge. It currently terminates approximately 5-miles east of I-10, requiring users (including freight shippers) to meander indirectly to navigate between the urbanized area of Coolidge and I-10. The McCartney Road corridor was identified in the Transportation Plan as a 6-lane Principal Arterial roadway as defined in the Coolidge Transportation Plan, extending seamlessly between Interstate 10 and SR-79 to the east of Coolidge. The conceptual alignment uses the existing McCartney Road corridor to the terminus at Signal Peak Road. East of Signal Peak Road, it traverses across currently farmed land, crossing SR-87 (Arizona Boulevard) potentially grade separated, crossing the railroad with a grade separated structure, abutting the southern edge of the proposed Westgate Mall site where a planned interchange with the North-South Freeway will be constructed. The corridor will continue eastward along the southern edge of the Coolidge Airport property and extend east to SR-79. Appendix C contains a conceptual alignment and potential right-of-way impacts for the options examined for the McCartney Road corridor.

The Eleven Mile Road corridor is a north-south corridor that extends southward from Bartlett Road in Coolidge. This PEL evaluated several options to extend Eleven Mile Corner Road northward to intersect with SR-87 to the north. Eleven Mile Corner Road is planned to be a Parkway facility providing north/south connectivity west of the SR-87/Arizona Boulevard corridor, which is the only contiguous north/south route in Coolidge. Due to the Casa Grande National Monument, and the canal and power line issues along Skousen Road and SR-87, there are few opportunities to connect a high-capacity roadway to SR-87 to the north. Additionally, the Gila River Indian Community owns land to the west of Macrae Road, severely limiting opportunities to widen the existing Signal Peak Road, or create additional connections with SR-87 west of Macrae Road. Appendix D contains a conceptual alignment and potential right-of-way for the options examined for the Eleven Mile Corner Road corridor.

2.4 Project Purpose

Draft need – McCartney Road: *McCartney Road is the northernmost arterial roadway that has an interchange with Interstate 10 servicing the city of Coolidge residents and commerce needs. The current roadway ends at Signal Peak Road. This proposed project will extend McCartney Road to the east as new development occurs to accommodate the new traffic demand.*

Draft need – Eleven Mile Corner Road: *Arizona Boulevard is the only north-south contiguous route in Coolidge. The Casa Grande Ruins, the Gila River Indian Community and existing canal systems limit opportunities for additional north-south roadway capacity improvements west of Arizona Boulevard. Traffic generated from future development will exceed existing roadway capacity.*

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3.0 ENVIRONMENTAL SETTING

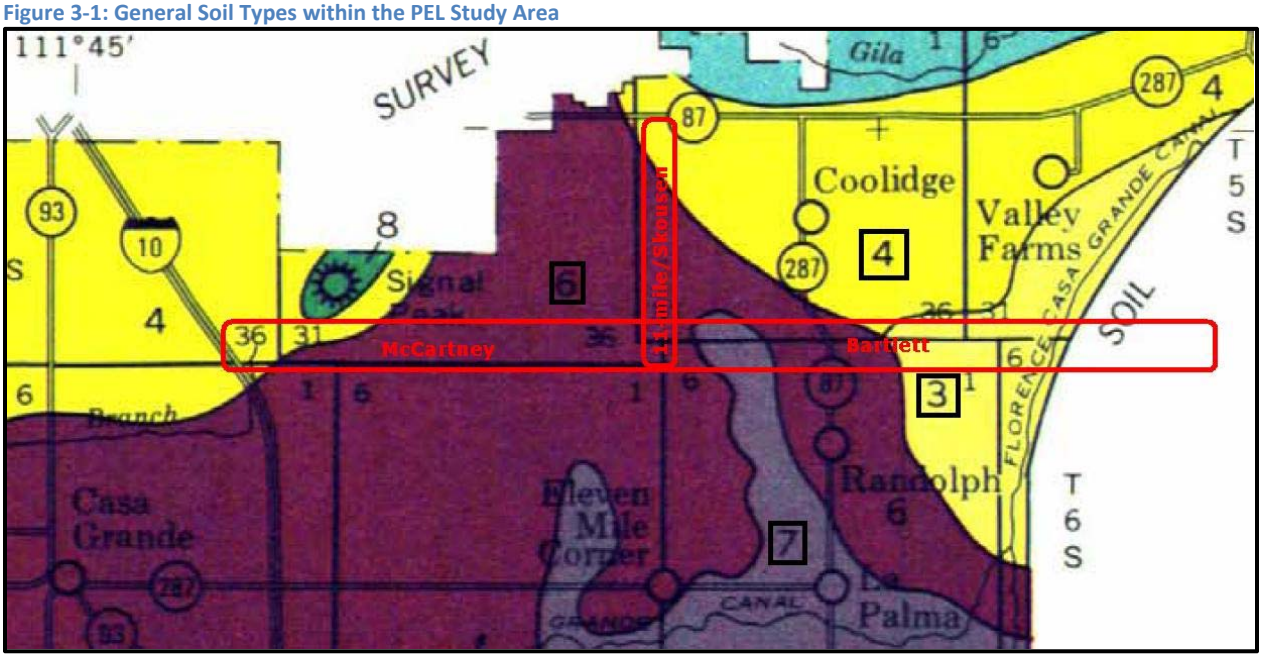
This chapter summarizes environmental conditions and constraints in the PEL study area for the two subject corridors, McCartney Road and Eleven Mile Corner Road in the Coolidge area, following the Arizona Department of Transportation *PEL for Corridor Studies Guidelines*. Thus, the following topics are addressed:

- Soils and topography
- Sensitive biological resources
- Archaeological/historical resources
- Section 4(f) and Section 6(f) resources
- Prime and unique farmlands
- Visual resources
- Title VI/environmental justice analysis
- Socioeconomic impacts
- Hazardous materials
- Air quality
- Noise

3.1 SOILS AND TOPOGRAPHY

The PEL study area has been evaluated as part of ongoing national efforts of the Natural Resources Conservation Service (formerly the Soil Conservation Service) of the United States Department of Agriculture. Figure 3-1 below reflects soil survey findings that four major soil units are present. None of these soil units typically presents constraints for roadway development.

Figure 3-1: General Soil Types within the PEL Study Area



Source: U.S. Department of Agriculture Soil Conservation Service, *Soil Survey of Pinal County, Western Part*, November 1991.

In order of prevalence, these soil units are:

- Casa Grande-Mohall-Dateland (shown in maroon and numbered as 6)
- Mohall-Cotine (shown in light yellow and numbered as 3)
- Toltec-Casa Grande-La Palma (shown in purple and numbered as 7)
- Denure-Laveen-Dateland (shown in darker yellow and numbered as 4)

The east-west McCartney Road corridor traverses all four of these soil units, while the north-south Eleven Mile Corner Road corridor traverses two of them.

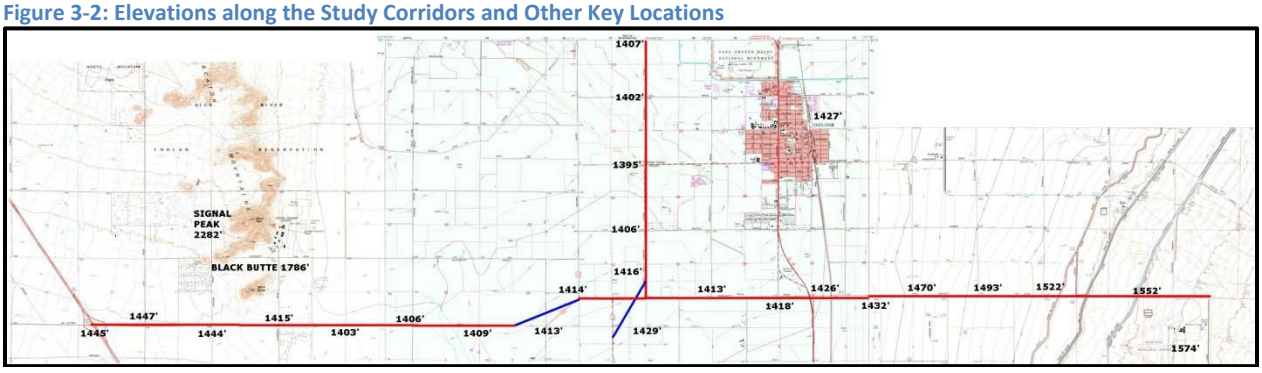
The predominant soil unit, Casa-Grande-Mohall-Dateland, comprises most of the length of both the east-west and the north-south corridors. It is summarized as "deep, well-drained, nearly level, loamy soils; on relict basin floors." For this unit, the soil survey indicated that, "The main limitations for home site development are the shrink-swell potential, the content of toxic salts, and the depth to the cemented pan." These development limitations do not pose significant constraints for roadway construction.

The Mohall-Cotine soil unit is found at the eastern end of the McCartney Road corridor, east of US 287 to the Coolidge Airport. The survey describes this soil unit generally as "deep, well-drained, nearly level to gently sloping, loamy and clayey soils; on fan terraces." The soil survey concludes that, "This unit has few limitations for home site development." Likewise, no issues for road construction are foreseen.

The Toltec-Casa Grande-La Palma soil unit is traversed by the McCartney Road corridor east of Eleven-Mile Corner Road. It is described as "deep and moderately deep, well drained, nearly level, loamy soils; on relict basin floors." The soil survey identifies no typical development constraints associated with this unit.

Finally, the Denure-Laveen-Dateland soil unit is found near both ends of the McCartney Road corridor and also at the northern end of the Eleven-Mile Corner Road corridor. This unit is described as "deep, somewhat excessively drained and well drained, level to sloping, loamy soils; on fan terraces." The soil survey adds that "This unit has few limitations for homesite development." No soil-related problems for roadway construction are anticipated. The soil units summarized above commonly are found in areas that are level or nearly level to gently sloping. A review of U.S. Geological Survey (USGS) topographical maps confirms that these conditions correctly describe the Coolidge PEL study area. Representative elevations in the study area are shown below in Figure 3-2.

Figure 3-2: Elevations along the Study Corridors and Other Key Locations



Source: U.S. Geological Survey maps

The City of Coolidge has an official elevation of 1,427 feet above Median Sea Level, and the majority of the area for the two roadway corridors has elevation in the range of 1,400 to 1,450 feet. No elevation changes along the study corridors present any challenges for roadway construction.

The most prominent elevation changes in the PEL study area are found east of Eleven Mile Corner Road, where the land rises from 1,426 feet at State Route 287 to 1,552 feet north of the Coolidge Airport. The Airport itself is slightly higher, at 1,574 feet.

There is a slight elevation drop along the western end of the McCartney Road corridor, from 1,445 feet at I-10 over the three miles to the east, to 1,415 feet. Along the Eleven-Mile Corner Road corridor, elevations slope gently downward from south to north, toward the Gila River.

Off the study corridors, the highest recorded elevations are the prominent visual features of Black Butte (1,786 feet) and Signal Peak (2,282 feet), located north of McCartney Road in the eastern side of the study area.

3.2 WATER RESOURCES

Surface waters, water quality, groundwater and potential permitting requirements regarding the PEL study corridors are discussed below.

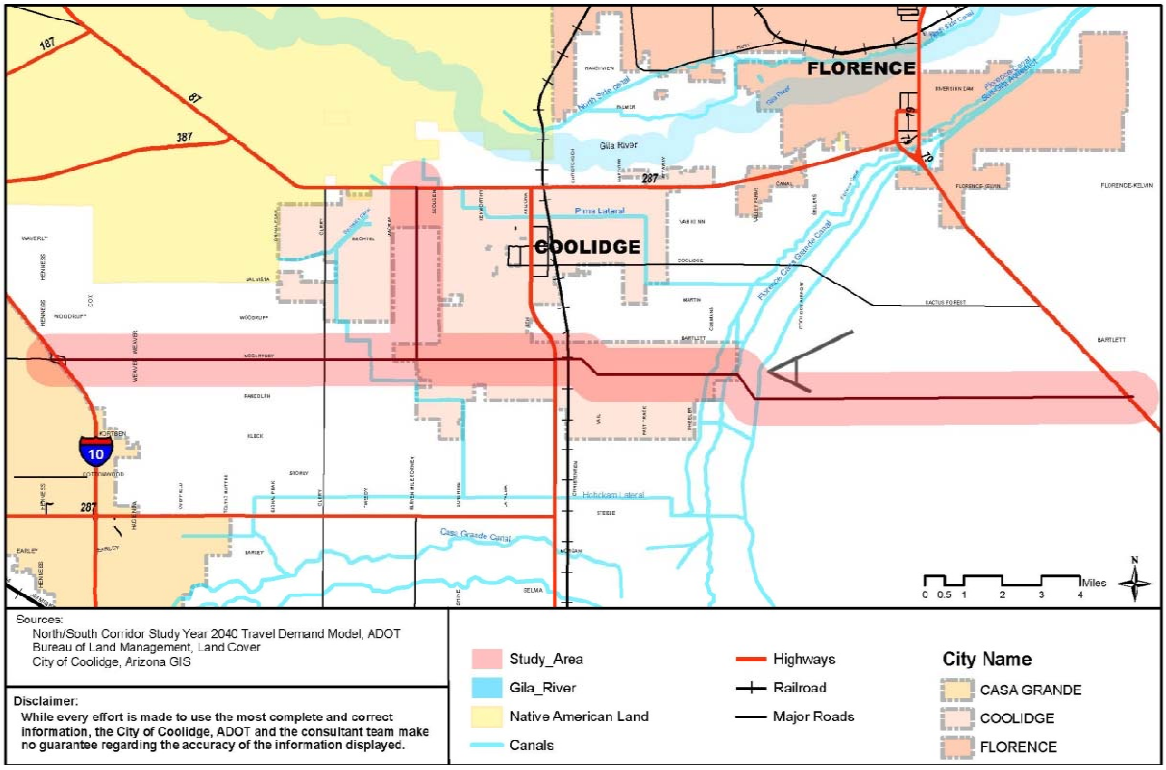
3.2.1 SURFACE WATERS

The Coolidge PEL study area is part of three sub-watersheds as identified on the Pinal County Flood Control District GIS maps. The north/south corridor is contained in the Coolidge Watershed. The east/west corridor is located in three sub-watersheds. From west to east the sub-watersheds are: Sacaton Mountain, Coolidge, and Florence. As shown on the Arizona Department of Environmental Quality ADEQ 2010 Statewide Assessed Waters Maps, the Sacaton Mountain sub-watershed is part of the Santa Cruz major watershed. The Coolidge and Florence sub-watersheds are part of the Middle Gila major watershed. The general direction of surface drainage is to the southwest in the western or Sacaton Mountain portion of the study area and to the north and northwest in the remainder of the study area.

Several ephemeral storm water drainages cross through the study area. Only one of these, the North Branch Santa Cruz Wash, is named on the United Stated Geological Survey Quadrangle Maps. This wash crosses the east/west corridor of the study area approximately 1.3 miles east of Interstate 10. A wide culvert structure appears to be in place to convey flow in this wash across existing McCartney Road. Another wide culvert structure appears to be in place at an un-named wash that crosses McCartney Road just east of Weaver Road. Storm runoff in the remainder of the drainages appears to cross the existing roads through small pipe culverts or over the surface of the roadways.

Several irrigation conveyance facilities cross through or run parallel to the study area. These range from relatively minor ditches to significant canals. The irrigation canals that cross the study area are shown in Figure 3-3. The un-named canal that crosses the east/west corridor at Tweedy Road is owned by Hohokam Irrigation. The Florence Canal and the Pima Lateral are owned by the San Carlos Irrigation and Drainage District. The Florence Casa Grande Canal is owned by the San Carlos Project. The Salt-Gila Aqueduct, shown as the CAP Canal on Figure 3-3 is owned by Central Arizona Project.

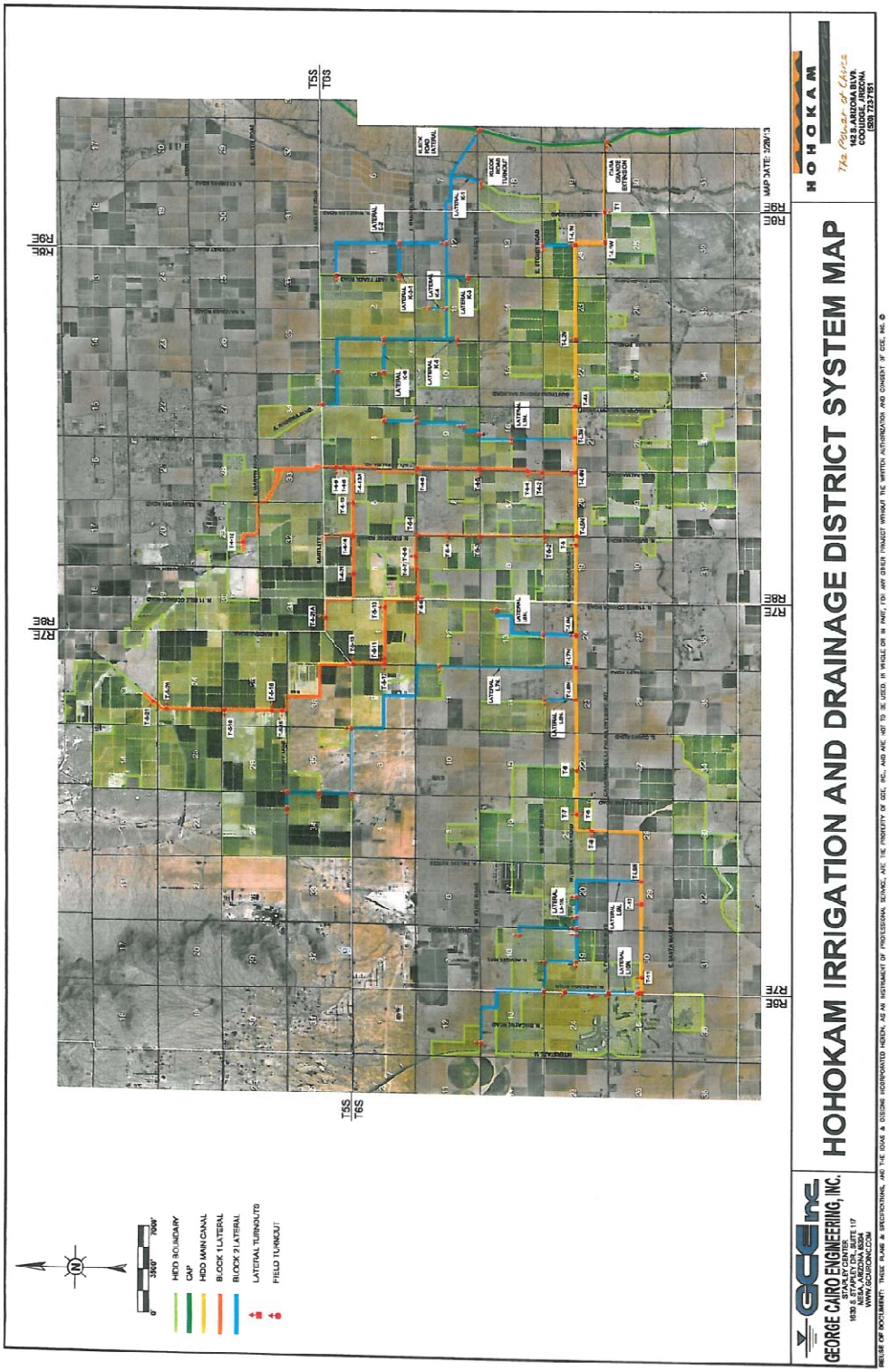
Figure 3-3: Major Irrigation Canals Located in the PEL Study Area



Source: City of Coolidge, Arizona

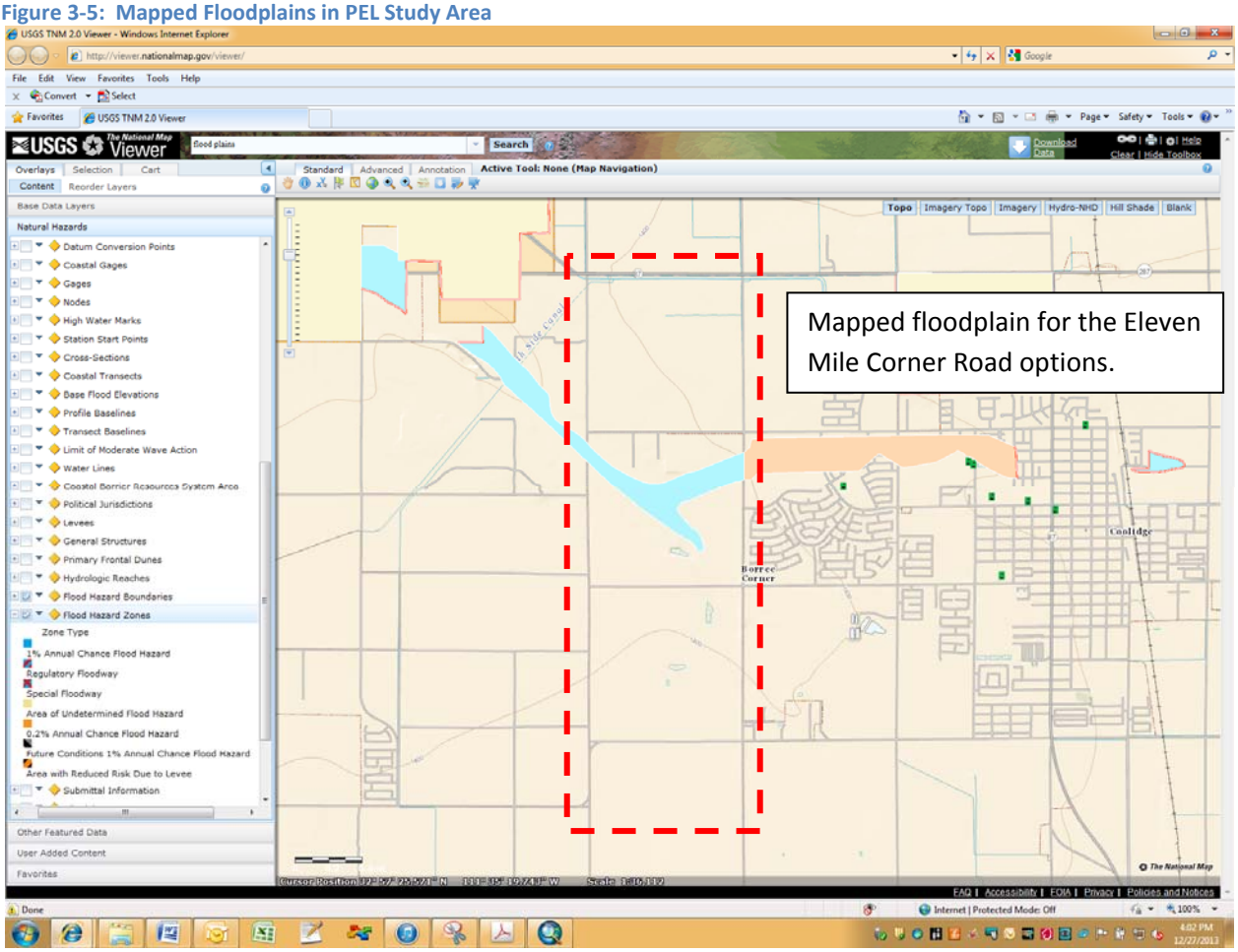
Figure 3-4 illustrates the Hohokam Irrigation District facilities.

Figure 3-4: Hohokam Irrigation District Facilities



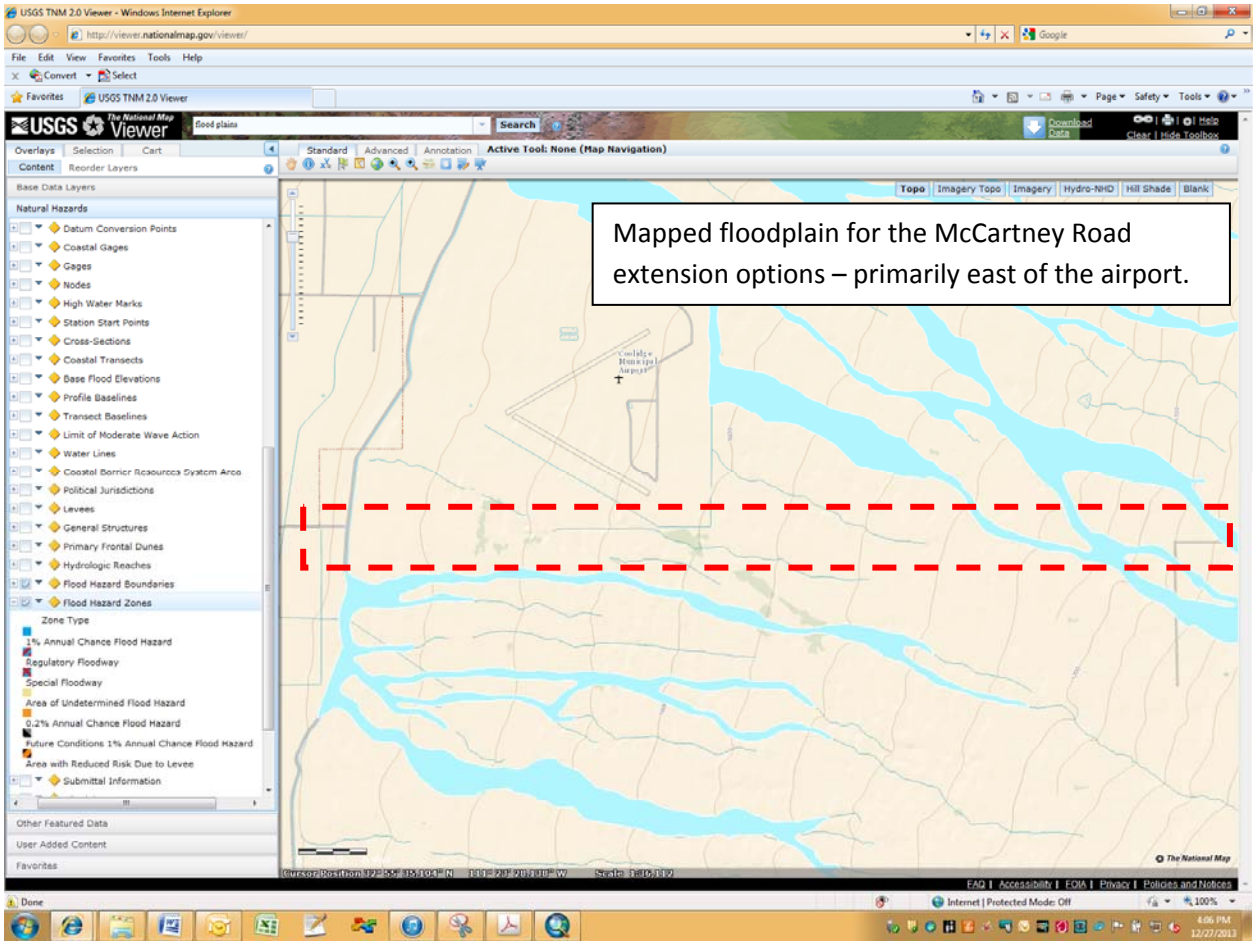
Regulatory FEMA floodplains have been mapped in two locations in the study area. A FEMA Zone A floodplain crosses the Eleven Mile Corner Road corridor alternatives approximately 1.2 miles south of SR-87. Another FEMA Zone A floodplain is mapped along the east side of Coolidge Airport Road at the eastern end of the study area. A third floodplain crossing the study area is shown in the Pinal County Flood Control District GIS mapping that is available on-line. This floodplain crosses the north/south corridor between East Kenilworth and East Martin Roads. The mapped floodplains that impact the study area are shown on Figure 3-5. Given the size of the watershed that contributes runoff to the study area, the existing roads are likely subject to flooding in other locations during and after significant rainfall events.

Figure 3-5: Mapped Floodplains in PEL Study Area



Source: Flood Zone Map for Coolidge, AZ Supplemented with Local Floodplain Area from Pinal County GIS

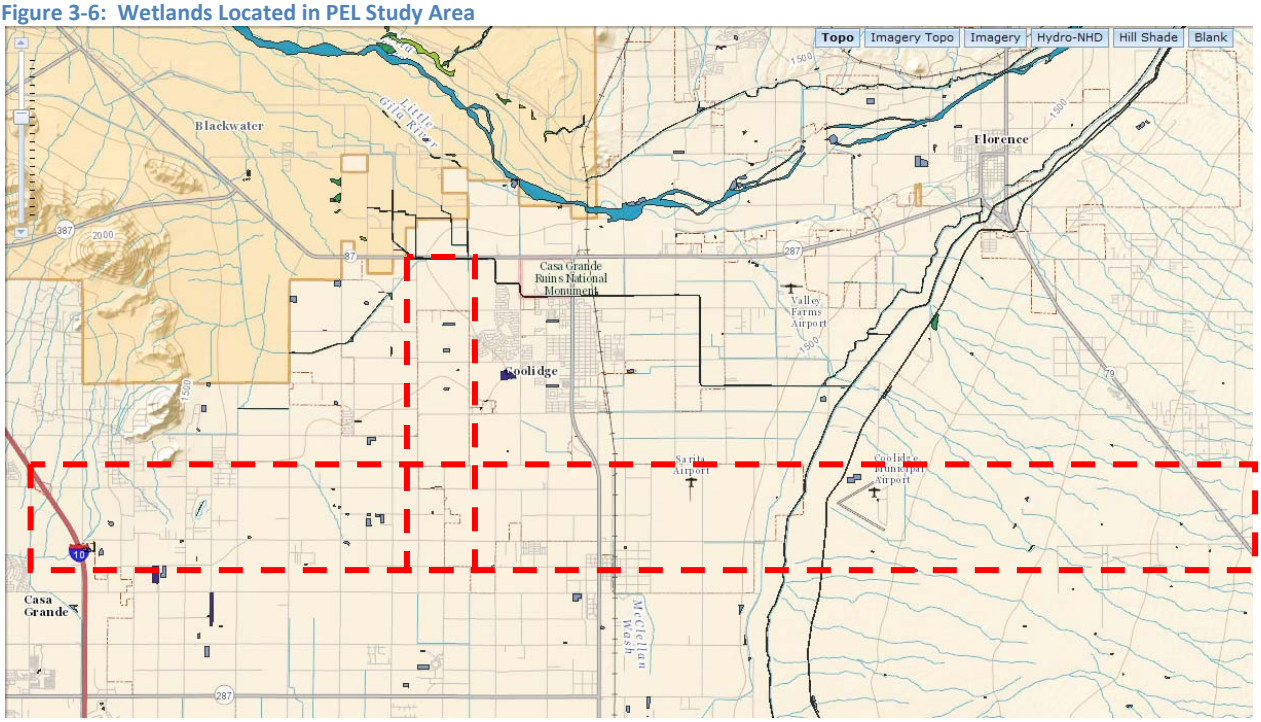
Figure 3-5: Mapped Floodplains in PEL Study Area (continued)



Source: Flood Zone Map for Coolidge, AZ Supplemented with Local Floodplain Area from Pinal County GIS

A review of the on-line National Wetland Inventory maintained by the U.S. Fish and Wildlife Service indicated that no significant lakes, ponds or wetlands are located in the study area. Figure 3-6 does show a few small freshwater ponds in or adjacent to the study area that should be avoided or mitigated as design and construction occurs.

Figure 3-6: Wetlands Located in PEL Study Area



Source: U.S. Fish and Wildlife Service National Wetlands Inventory

3.2.2 WATER QUALITY

A review of the ADEQ list of listed impaired waters did not indicate that any are listed in the Coolidge PEL study area.

3.2.3 GROUNDWATER

The Coolidge PEL study area is located within the Pinal Active Management Area (AMA) for groundwater. The mission of the management area is to ensure a reliable and sustainable water supply will efficiently meet current and future water uses within the Pinal AMA while protecting the environment and general economy.

Maps found on the Arizona Department of Water Resources internet site indicate that the PEL study area is located within the Eloy ground water sub-basin. Un-dated text from a historic version Pinal County Comprehensive Plan indicates that historically the Eloy Basin experienced a decline in groundwater levels. However, in more recent years the depth to groundwater has begun to stabilize and has risen in several areas. The text indicates that this is due to a reduction in groundwater pumping for cropland irrigation with increased use of Central Arizona Project (CAP) water and decreased crop acreage. Figure 8.2-6, Section 8.2, of Arizona Water Atlas 8 indicated that groundwater levels in the PEL study area increased in some areas and decreased in others between 1993-1994 and 2003-2004.
The EPA internet site lists only two sole source aquifers in the state of Arizona. A review of the maps of these aquifers indicated that they are not present in the study area. Maps available on the Arizona Department of Water Resources internet site indicate that approximately 300 existing water wells exist within one mile of the study area roadway corridors.

3.2.4 POTENTIAL PERMITTING REQUIREMENTS

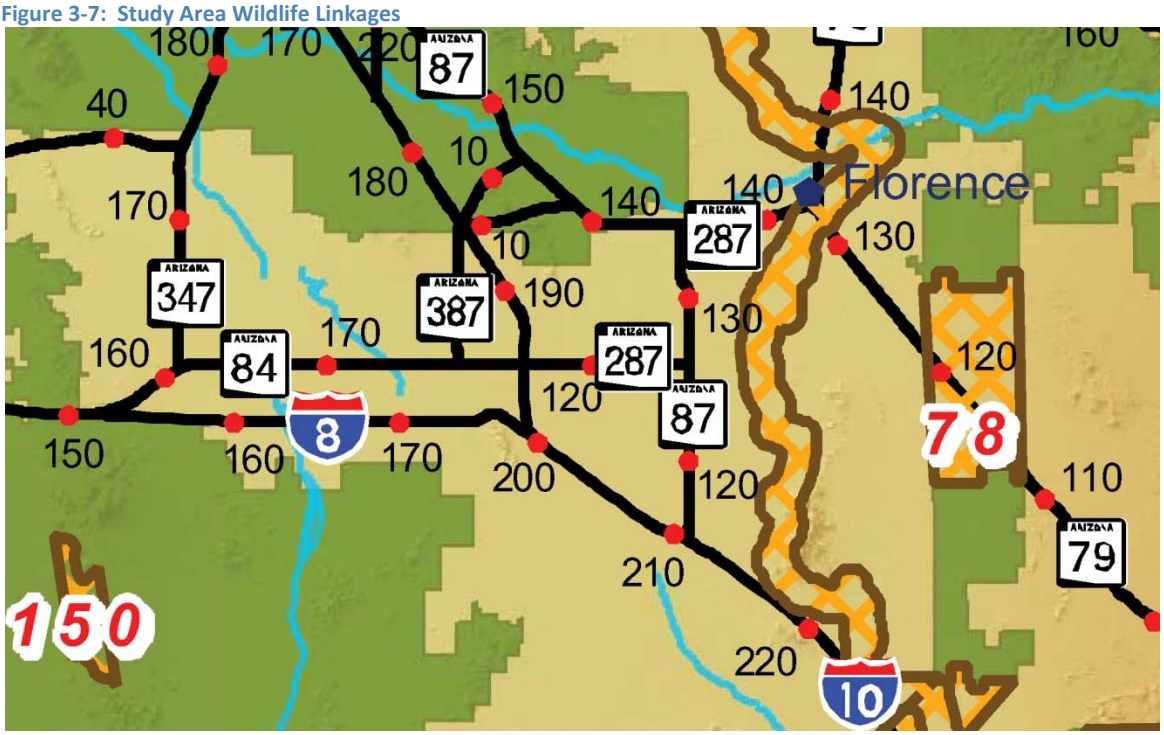
If the proposed PEL corridor roadway improvement projects will impact Mapped FEMA Floodplains or other floodplains associated with watercourses with 100-year flows that are 200 cubic feet per second or greater, a floodplain use permit administered by Pinal County Flood Control District will need to be obtained. Work that will modify mapped FEMA regulatory floodplains may generate the need for FEMA map revisions processes. These processes may include obtaining a Conditional Letter of Map Revision (CLOMR) prior to construction and obtaining a Letter of Map Revision (LOMR) after construction is complete.

Work within the dry washes that cross through the project corridor may need Section 404 permits administered by the United States Corps of Engineers (USACE). An Arizona Pollutant Discharge Elimination System (AZPDES) permit administered by Arizona Department of Environmental Quality will be required for construction of the project.

3.3 SENSITIVE BIOLOGICAL RESOURCES

The PEL study area is primarily agricultural, residential, and industrial development that limits wildlife habitat and use. It is largely considered a "fracture" zone, located between nearby areas of better habitat. The eastern edge of the PEL study area does contain wildlife habitat rated as "medium" quality in the *Pinal County Open Space and Trails Master Plan*. However, an environmental assessment (EA) prepared for the Coolidge Municipal Airport determined the airport EA study area did not contain habitat for listed wildlife and plant species. Figure 3-7 illustrates the documented wildlife linkages in the study area. The documented conflict is the CAP Canal, of which all canals are identified as linkages.

Figure 3-7: Study Area Wildlife Linkages



A total of 18 Federal Endangered, Threatened or Candidate Species are believed to occur in Pinal County, but not in or adjacent to the PEL study area. Based on review of existing data from the U.S. Fish

and Wildlife Service (USFWS) and the Arizona Game and Fish Department, no impacts to federally listed sensitive species are anticipated. If the project proceeds into a NEPA process, additional coordination with the USFWS and the Arizona Game and Fish Department will be required. These agencies will provide guidance on the level of biological studies required to determine the presence of federal listed species and their habitat, and Arizona sensitive species and their habitat, within the proposed study area. In particular, the Western Burrowing Owl (*Athene cunicularia hypugaea*) is an Arizona sensitive species that may occur within two miles of the PEL study area. Appendix E contains a map book of screen captures of potential habitat areas of all mapped species habitat areas contained in the Arizona Fish & Wildlife Habimap mapping program available online - http://www.habimap.org/ More detail on sensitive biological resources is provided in a worksheet at the end of this section.

Because the PEL study area contains primarily residential, industrial, and agricultural development, surveys for federal listed and Arizona sensitive species will be limited. Continued urban growth in the Coolidge area will convert existing agricultural lands and undeveloped desert into urban uses (primarily residential) consistent with the City's Comprehensive Plan General Land Use Map. Nevertheless, future planning studies in the area will require a thorough review of all federally listed and Arizona sensitive wildlife and plant species potentially present. During the NEPA process, the following biological studies and assessments are typically required:

- Collection of wildlife baseline data for the proposed project corridor. Surveys will be conducted for federal listed wildlife, Arizona sensitive species, migratory birds, and other wildlife issues such as migration corridors and wildlife habitats.
- Endangered plant surveys and collection of vegetation community baseline data.
- If a federal listed wildlife or plant species is identified as occurring in the study area, a biological assessment will be prepared to analyze the project impacts to listed species and identify mitigation measures.
- Preparation of biological resource reports that present baseline survey results.

3.4 Archaeological/Historic Resources

A Class I Archeological Assessment was conducted for a 1-mile corridor extending east/west along the proposed McCartney Road corridor and for a 2-mile corridor extending along the proposed Eleven Mile Corner Road alternative alignments. The Class 1 assessment is included as Appendix F.

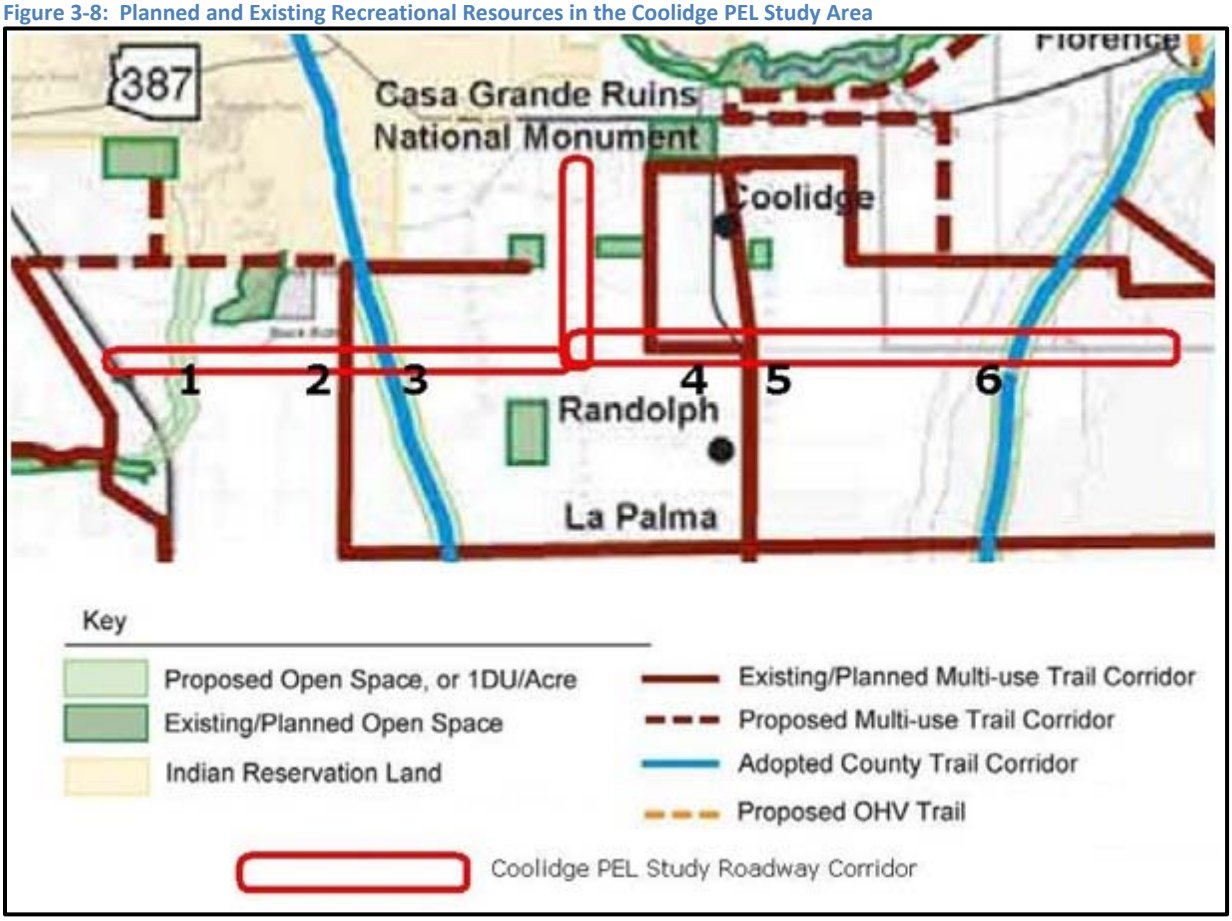
3.5 Section 4(f) and 6(f) Resources

Under Section 6(f) of the U.S. Department of Transportation (USDOT) Act of 1966, Federal transportation agencies are restricted from taking actions that would use land from historic sites and public parks or recreation areas, as well as wildlife and waterfowl refuges. Such uses can be approved if no prudent and feasible alternatives exist, but all possible planning must be made to avoid and minimize harm to the resource. The Section 4(f) regulations do not apply to non-USDOT agencies, or to projects that do not require USDOT funding or approval. When there is a chance that Federal funding might be requested for a project, however, it is advisable to screen for potential Section 4(f) impacts as early as possible in the project planning process.

The Coolidge PEL study area is located in a largely municipal setting in the Sonoran Desert, with no wildlife or waterfowl refuges. The proposed roadway corridors are not in close proximity to any parks,

but would likely cross planned trails and open spaces at six locations (noted on map), similar to the manner in which they cross them today. Figure 3-8, below, identifies six approximate locations where these resources may be encountered. This does not necessarily mean that a use of land as defined in Section 4(f) regulations would result. That is a determination to be made during project design.

Figure 3-8: Planned and Existing Recreational Resources in the Coolidge PEL Study Area



Source: *Pinal County Open Space and Trails Master Plan*, Oct. 2007, pg. 42.

There is the potential to encounter some historic properties, as discussed above in Appendix F. Potential impacts will need to be explored in more detail when potential roadway alignments can be defined in better detail. All possible planning will be needed to avoid taking land from any historic property if Federal funding or approval is needed for a transportation project.

Section 6(f) of the Land and Water Conservation Fund Act of 1965, protects properties such as parks that have been established with LWCF grants. Such property will not be converted to another use without replacement and substitution with other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location. Sometimes a Section 4(f) property is also protected by the unrelated Section 4(f) regulations described above.

A review of LWCF records indicates that six grants have been awarded to Coolidge over the past half century, since the program began. These six grants were used for improvements at the following three facilities:

1. East Park,
2. Regional Park, and
3. the park at West School.

The locations of these facilities are outside of the proposed roadway corridors of this PEL study.

3.6 PRIME AND UNIQUE FARMLANDS

Farmland is the predominant land use in the study area as shown in Figure 3-9. Farmlands are a valuable economic and cultural resource that is protected by the Farmland Protection Policy Act, 7 CFR Part 658. Prime farmland soils, which are limited, have properties that are favorable for the economic production of the highest yields with minimal inputs of energy and economic resources. The soils and climate in the Coolidge PEL study area are particularly suited for the production of cotton. Canals bringing Gila River irrigation water to the area are described in the water resources section of this chapter. In Figure 3-9 below, irrigated farmland sections appear green, unlike the gray color of the surrounding desert seen at the eastern and western ends of the PEL study area.

Figure 3-9: Aerial Photo Documenting Prevalence of Irrigated Agriculture in the PEL Study Area

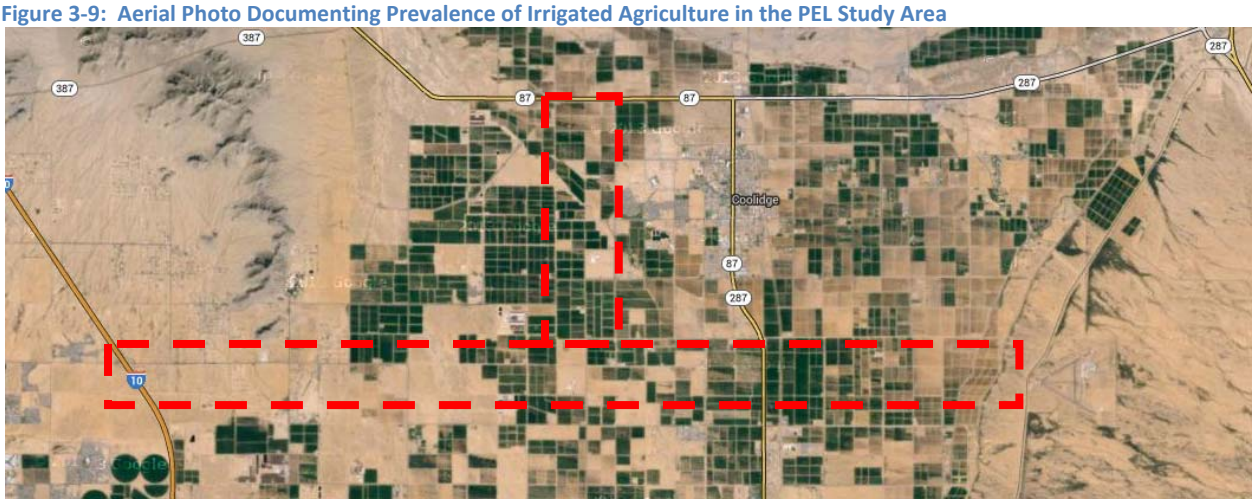


Photo source: Google maps.

According to the U.S. Department of Agriculture, the availability of water, soils properties and growing season are key factors in determining prime farmland. The project area has numerous canals and ditches that provide adequate and dependable supply of irrigation water. The project area also has the soil properties and long growing season which are favorable to high yields. Cited earlier, the USGS 1991 soils survey for Pinal County (Western Part) estimated that 76% of its study area could be considered prime and unique if irrigated. Based on these factors, a majority of the soils in the PEL project area meet the requirements for prime farmland when irrigated.

The Federal Farmland Protection Policy Act, 7 CFR Part 658, requires federal agencies to consider the adverse effects their programs may have on the preservation of farmland, review alternatives that could lessen adverse effects, and ensure that their programs are compatible with private, local, and state programs and policies to protect farmland.

3.7 VISUAL RESOURCES

As noted in the earlier discussion of topography, the Coolidge road corridors PEL study area is fairly flat, and largely consists of agricultural land use, undeveloped desert land, or low density residential use. Prominent visual features are Black Butte and Signal Peak, in the eastern portion of the study area, north of McCartney Road. No rivers flow through the study area. A key visual feature in the study area is the presence of numerous overhead transmission lines. See Figure 3-10 for photos depicting some of the visual elements mentioned here.

Figure 3-10: Representative Visual Elements from the PEL Study Area

Clockwise from upper left: Undeveloped desert land; irrigated cotton field; Signal Peak in background; overhead transmission lines along Skousen Road. Photos: Wilson & Company, Inc.

As noted earlier in the water resources discussion, there are a few minor natural drainage washes in the area, and there are three major canals east of Arizona Boulevard. As a general conclusion, there are no visual resources that would typically merit special consideration in a comprehensive plan.

Note that The City of Coolidge Comprehensive Plan anticipates long term development of current agricultural land and undeveloped desert to urban uses, including low density and medium density residential use. Thus, the visual character of the study corridors can be expected to change dramatically as future urban development occurs.

There are no scenic roads or byways in the study area. Maps and listings of currently designated scenic roads and byways in Arizona are maintained on ADOT's website. That online information indicates that there are no such facilities within or in close proximity to the Coolidge roadway corridors PEL study area.

Finally, there are no holdings of land by Federal land management agencies within the Coolidge road corridors PEL study area. Some such agencies establish visual resource management objectives. However, no such objectives apply within the PEL study area.

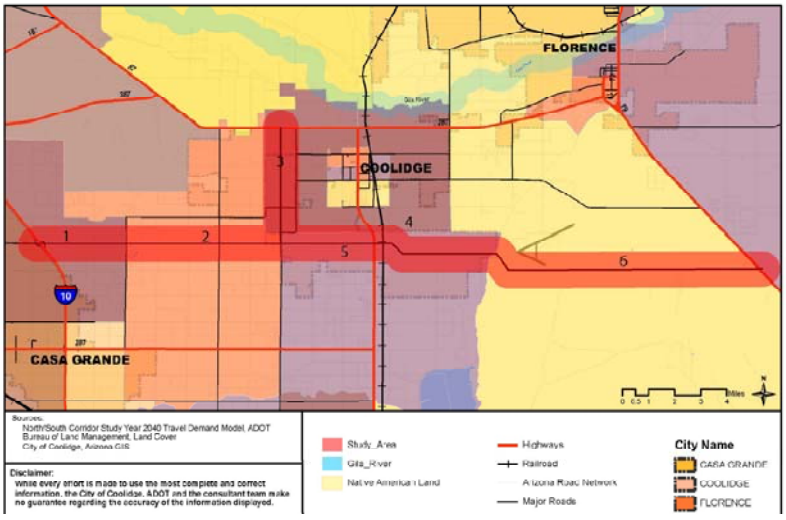
3.8 TITLE VI/ENVIRONMENTAL JUSTICE ANALYSIS

Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and subsequent initiatives including Presidential Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) seek to eliminate discrimination in Federal programs. With regard to the planning of transportation improvements, actions requiring any Federal approval should avoid disproportionally adverse impacts to vulnerable populations, and these populations should not be excluded from beneficial impacts. Further, efforts should be made to ensure that disadvantaged populations have meaningful opportunities for involvement in the planning process. Compliance with these anti-discrimination policies is facilitated by understanding whether or not and where disadvantaged populations are located within the project study area. Data from the U.S. Decennial Census of 2010 were examined for the PEL study area, and the results of this analysis are presented below.

A review of Census geography determined that the two PEL roadway corridors traverse a total of six Census Block Groups located within five Census Tracts. Figure 3-11 below indicates the location of the roadways corridors with respect to these Census Block Groups. The Census Block Groups were labeled one through 6 in the figure, for simplicity. Their actual designations are as follows:

1. Census Tract 13.03, Block Group 2 (includes eastern end of McCartney Road corridor)
2. Census Tract 12, Block Group 1 (includes central portion of McCartney Road corridor)
3. Census Tract 11, Block Group 4 (includes Eleven-Mile/Skousen Road corridor)
4. Census Tract 10, Block Group 2 (includes area north of Bartlett Road)
5. Census Tract 12, Block Group 2 (includes area south of Bartlett Road)
6. Census Tract 8.02, Block Group 1 (includes the Coolidge Airport)

Figure 3-11: Location of PEL Roadway Corridors with Regard to Census Block Groups



Source: U.S. Department of Commerce, Bureau of the Census

The number of people directly affected by roadway construction would be a very small fraction of any reported Block Group populations. Existing development in these corridors is very limited.

The 2010 combined total population for the six block groups identified above was 10,155 residents, which is slightly less than the population count for the City of Coolidge, at 11,825. The several small Block Group areas depicted in the upper right portion of the figure comprise the downtown Coolidge area of densest development, which would not be directly impacted by roadway construction in the PEL roadway corridors.

Census data for the areas surrounding the PEL roadway corridors are discussed below for the following populations:

- Minorities (racial and ethnic)
- Low-income
- Disabled
- Elderly
- Female Head of Household

Minorities (racial and ethnic): The self-reported racial composition for the six study-area block groups in the 2010 Census was predominantly White (70.9%), followed by "Some Other Race" (15.0%), then African –American (5.9%), Native American (3.9%), two or more races (3.6%) and Pacific Islander (0.1%). The White percentage for the study area (70.9%) was higher than that for the City of Coolidge (62.7%) but lower than the percentage for the entirety of Pinal County (72.4%).

Labeled number 4 on the earlier figure, Census Tract 10, Block Group 2 (CT10, BG2), the area with the lowest White percentage (58.4%), also had the highest percentage for Total Minorities. It had the highest percentages of "Some Other Race" (23.2%) and Native Americans (7.7%). This 23.2% figure stands out because the percentage for this category ranged from 11.4% to 15.4% in the other five Block Groups. As seen in the earlier figure, this block group is located north of Bartlett Road and east of State Route 87/287. Since the vicinity immediately adjacent to Bartlett Road has minimal housing, however, the actual minority concentrations suggested by these data are actually located farther north within the Block Group area.

Hispanic ethnicity for the six selected block groups combined was 32.5%, which is lower than the prevalence for the City of Coolidge (42%) but higher than the prevalence for the entirety of Pinal County (28.5%). The same block group discussed above, CT10, BG2, was again the statistical outlier for ethnicity, because its Hispanic ethnicity rate of 25.6% was notably lower than the other block groups and their range from 30.2% to 36.9%.

Low-income persons: Information regarding the percentage of the population with incomes below poverty level was obtained from a Census Bureau product called the American Community Survey, in accordance with ADOT's January 2012 "Guidance for Environmental Justice Analysis." Income data is updated more frequently than the Decennial Census but, unlike the Census, it is based on a sample of less than 100% of the population, and thus has a greater margin of error. The estimated percentage of persons with below-poverty incomes for the PEL study area is 17.9%, which is lower than the 20.6% for the City of Coolidge but higher than the percentage for Pinal County (14.3%). The PEL study area includes much of the city but not necessarily its oldest, densest lowest-income areas.

The percentage of individuals with below-poverty incomes ranged between 5.4% and 20.2% for five of the Census Block Groups examined, and the notable outlier was the remaining Block Group (CT10, BG2) at 28.6%. This is the same Block Group noted earlier as the area with the highest minority population. It is the area north of Bartlett Road, on the eastern side of the study area. Once again, because population concentrations in the Block Group are located well to the north of Bartlett Road, so McCartney Road improvements would have minimal impacts to any population, regardless of income level.

Disabled: The ADOT guidance memorandum cited above notes that current data regarding persons with disabilities is not yet available at the Block Group level, so the recommended methodology is to examine the last relatively complete data set, which is the 2000 Decennial Census. This is problematic because the Coolidge area grew significantly between 2000 and 2010. There were so many newcomers during this decade that they could shift the percentage of persons with disabilities fairly dramatically. Disability data are based on less than 100% sampling and so are subject to various margins of error.

The disability data from the 2000 Census followed the same pattern seen above for other environmental justice indicators. The percentage in the study area (25.2%) is lower than the percentage for Coolidge (27.4%) but higher than the percentage for Pinal County (22.9%). Percentages presented for Block Groups are year 2000 Census Tract averages, while the corresponding numbers for "Total population for whom disabled is determined" and "#" of disabled are Wilson & Company estimates imputed from these percentages. The range for five Census Block areas (derived from Census Tract-level estimates) ranged between 21.4% and 25.0%, with the usual outlier being the remaining Block Group (CT 10, BG2) discussed above, at 30.4%.

As an indicator of the impact of the newcomers to the area between 2000 and 2010, the most recent sample data from the American Community Survey showed the disability percentage for Coolidge at 19.2% (a major reduction from 27.4% in 2000) and the Pinal County figure declined as well (from 22.9% in 2000 to 12.6% in 2010). Based on the consistent pattern seen for all other environmental justice indicators, it can be expected that new disability data for the PEL study area will fall somewhere in-between the new figures for the city and county, thus in the range of 13% to 19%, which is lower than the 25.2% figure reported from the year 2000.

Elderly: The 2010 Census reported that 19.6% of the population in the PEL study area as a whole were persons age 60 or over, which is higher than the percentage within the Coolidge city limits (15.1%) but approximately equivalent to the number for Pinal County (19.7%). Within the study area, however, one Block Group stands out with a percentage nearly twice the study area average. Census Tract 12, Block Group 2 reported 37.8% elderly residents. This Block Group is located along the south side of Bartlett Road, in the central-eastern part of the study area. As also noted below, there is no particular concentration of residences along the McCartney Road corridor, meaning that these elderly residents actually reside farther south within the Block Group, away from potential roadway construction impacts.

A facility providing social services for elderly residents is found along McCartney Road in the western portion of the study area, in Census Tract 12, Block Group 1. Desert Rays of Pinal-Gila, the Region V Area Agency on Aging, is located at 8969 West McCartney Road. Future roadway improvements on McCartney Road could affect this property if improvements occur south of the existing roadway alignment.

Female Head of Household: According to the 2010 Census, of the 3,441 households in the study area, 272 of them, or 7.9%, had a female head of household with no husband present and children under the

age of 18 living at home. This is a lower percentage than for the City of Coolidge (9.7%) and a higher percentage than for Pinal County (6.7%). The percentages for individual Block Groups range from 3.4% to 15.2%. The 15.2% highest percentage, comprising 59 households, is found in Census Tract 10, Block Group 2, which is also the location of the highest minority populations and low-income as noted above. This Block Group is located north of Bartlett Road and east of State Route 87/287. Again, since the vicinity immediately adjacent to Bartlett Road has minimal housing, however, the actual minority concentrations suggested by these data are actually located farther north within the Block Group area.

3.9 SOCIOECONOMIC IMPACTS

This section describes existing and planned land uses of the PEL project corridors for the purpose of examining potential socioeconomic impacts of proposed roadway improvements. The earlier discussion of prime and unique farmlands noted that the central portion of the PEL study area is predominantly used for irrigated production of cotton. The eastern and western ends of the study area are not irrigated and so contain undeveloped desert land or low density development. The environmental justice discussion noted that both corridors have minimal development within the study area.

There is a prevalence of cotton farming in the PEL study area. The Coolidge-Florence Transportation Study (2008) indicated that agriculture accounts for 775 jobs in Coolidge, or approximately 18 percent of the area's employment. Government sector jobs accounted for 43 percent, "with the majority of employment attributed to the Central Arizona College (CAC) campus in Coolidge." That campus is located in northeastern Coolidge.

Roadway development along the two PEL corridors would take land out of agricultural production. In some cases, this would leave usable field remnants, but if roadside irrigation ditches were disrupted, the impact could affect entire fields, rather than limited strips just along the roads. However, it is not road development alone but the greater trend of urban development that is expected to largely displace agriculture from the study area within the next three decades. The roadway development is needed to support this anticipated growth.

A general description of the current condition of the subject roadways in this PEL study is as follows:

McCartney Road – McCartney Road is a primary route providing access to I-10. It is a paved 2-lane roadway from west of I-10 to Signal Peak Road. East of Signal Peak Road, it is a dirt road, primarily used to access farm fields.

Eleven Mile Corner Road – Eleven Mile Corner Road is a paved, two-lane roadway that provides contiguous north/south mobility between SR-287 to the south, to Bartlett Road to the north. At Bartlett Road, there is a one-half mile jog eastward where the paved roadway then extends north along the Skousen Road alignment. South of this study area, Eleven Mile Corner Road extends into Eloy.

Macrae Road – Macrae Road is a dirt road that provides access to SR-87 to the north. Several Planned Area Developments front Macrae Road, ultimately requiring improvements on this corridor.

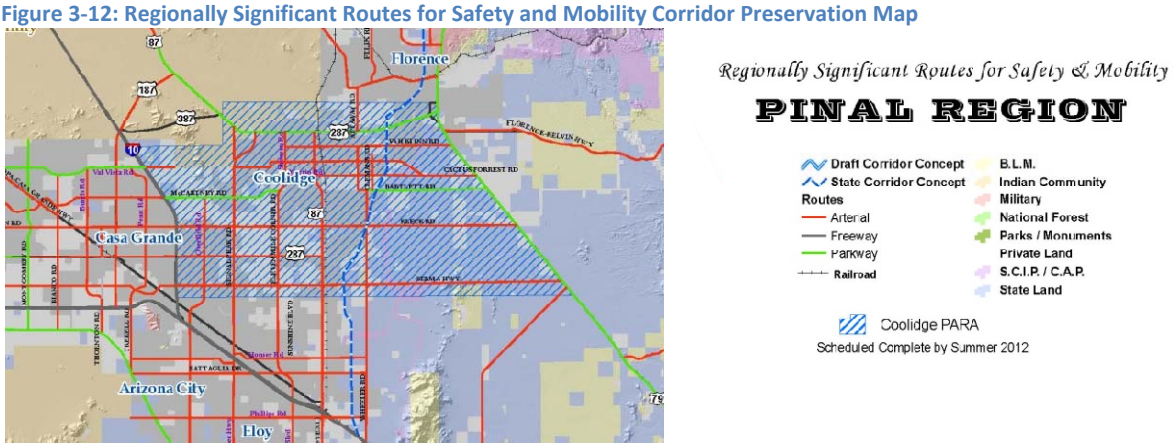
Skousen Road – Skousen Road is a paved, two lane roadway that provides contiguous north/south mobility between Bartlett Road to the south to SR-87 to the north. At Bartlett Road,

there is a one-half mile jog westward where the paved roadway extends south along Eleven Mile Corner Road. Skousen Road is generally the western boundary of the currently developed area of Coolidge. Skousen Road is also a primary power corridor with major power transmission lines on both sides of the roadway.

In the future, roadway paving and widening in both corridors will be needed as agricultural lands are converted to urban uses, which generate much higher traffic volumes per acre. The most prevalent planned land use within the PEL study area is low density residential. Medium density residential use is also a significant component. The planned land use cannot be accommodated by the existing network of two-lane, sometimes unpaved, sometimes non-contiguous roads.

Figure 3-12, an excerpt from a Pinal County Regionally Significant Routes for Safety and Mobility (RSRSM) transportation regional plan, indicates that the two PEL study corridors have significance that goes beyond serving just local needs. Both corridors will be important links on the future roadway grid system.

Figure 3-12: Regionally Significant Routes for Safety and Mobility Corridor Preservation Map



Source: Pinal County Public Works

3.10 HAZARDOUS MATERIALS

Hazardous materials are regulated by the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Arizona Department of Environmental Quality (ADEQ) implements CERCLA, commonly known as the Superfund, and its amendment, the Superfund Amendments and Reauthorization Act (SARA) of 1986. The inherent environmental concerns associated with hazardous materials and solid waste landfills require a preliminary investigation into the location of permitted and non-regulated hazardous material sites and solid waste facilities within the study area.

A brief review of the various state and federal databases for hazardous materials was conducted for the study area; a review of aerial photographs and a detailed search of these databases were not performed. Sources accessed include: the EPA Facility Registry System (FRS) database National Priority List (NPL) Sites (Federal Superfund), the state's Water Quality Assurance Revolving Fund (WQARF) Registry; the Arizona Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDFs) List; the ADEQ Underground Storage Tank (UST) List; the ADEQ Leaking Underground Storage Tank (LUST) List; the ADEQ Declaration of Environmental Use Restriction (DEUR);the ADEQ Drywell Registration; the ADEQ Hazardous Material (HAZMAT) Incident Logbook (HMIL); National Response Center (NRC) and the

Arizona Directory of Active/Inactive Landfills and Closed Solid Waste Landfills and the Voluntary Environmental Mitigation Use Restriction (VEMUR).

According to the information reviewed there are no currently known superfund, WQARF, UST, LUST, inactive landfills, septic haulers or drywell sites found in the study area. A search of the TSIS, TSCA, ADEQ Hazardous Material Incident Logbook and National Response Center databases revealed no TSCA facilities in the study area. Database reports listed one active landfill located on the northeast corner of Bartlett Road and South Arizona Boulevard. However, this location could not be verified.

3.11 AIR QUALITY

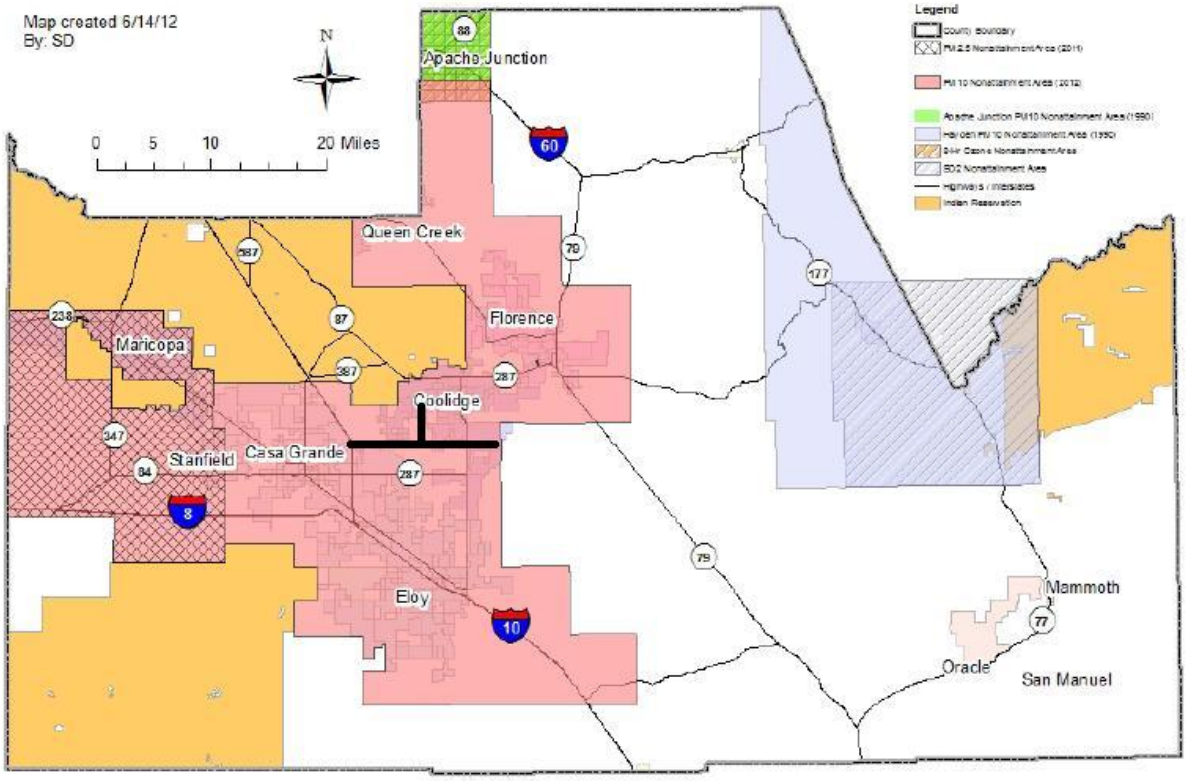
Pursuant to the Clean Air Act Amendments of 1977, the U.S. Environmental Protection Agency has established National Ambient Air Quality Standards (NAAQS) for various air pollutants to protect human health. EPA has modified the standards over time in response to new scientific findings. If air quality monitoring determines that an area that does not attain (meet) one of the standards, that area is classified as a "nonattainment area" and is required to prepare an implement a legally enforceable plan for air quality improvement. The City of Coolidge and the entire PEL study area are contained within a nonattainment area where the pollutant of concern is particulate matter ten microns or smaller in diameter (PM_{10}). The EPA finalized this nonattainment designation on May 31, 2012, with an effective date of July 2, 2012.

Some activities that typically contribute to PM_{10} problems include agricultural operations, driving on unpaved roads, and driving on paved roads that are dusty. All of these activities occur in the Coolidge area. Numerous unpaved roads provide access to agricultural areas. As an example, McCartney Road is unpaved to the east of Overfield Road.

Figure 3-13 shows that there are multiple nonattainment areas in Pinal County. With an area of 5,374 square miles, the county is large enough to have several nonattainment areas that do not include Coolidge. In the figure, the two roadway corridors of interest in this PEL study have been indicated with thick black lanes.

The Clean Air Act Amendments of 1991 mandated new regulations to ensure that Federal transportation actions do not cause or contribute to a violation of any air quality standard. Such transportation actions (plans, programs and projects) are required to conform to the purpose of applicable air quality plans, and therefore are referred to as transportation conformity regulations. These requirements are found in 40 CFR Part 93, and can be accessed in an EPA document called *Transportation Conformity Regulations as of April 2012* (Online at: http://www.epa.gov/otaq/stateresources/transconf/regs/420b12013.pdf).

Figure 3-13: Current Nonattainment Areas in Pinal County



Source: Pinal County Air Quality Department

In nonattainment areas, project level conformity determinations are required for non-exempt projects involving FHWA or FTA funding or approval. Additionally, for regionally significant nonfederal projects, the implementing agency is responsible for meeting applicable conformity and emissions analysis criteria required under federal regulations. ADOT assists agencies in project-level conformity analyses for both federal and nonfederal projects by performing regional emissions analyses as appropriate.

Some types of transportation projects that are expected to improve air quality or have no air quality impacts (e.g., safety, mass transit, interchange modification, traffic signal synchronization) are exempt from conformity requirements. Generally, projects that construct a new road or widen an existing roadway to add through-traffic capacity are not exempt. Roadway capacity projects in non-metropolitan areas are reviewed through ADOT-specified consultation processes to determine whether or not they are considered regionally significant. For additional information, see the ADOT Conformity Consultation Processes for the Nonattainment Areas Outside of a Metropolitan Planning Organization as Required Under Arizona Conformity Rule R18-2-1405. (Online at: http://mpd.azdot.gov/MPD/Air_Quality/pdf/ADOT-Conformity-Consultation.pdf.)

Improvements under consideration in the Coolidge PEL study would increase roadway capacity and are likely to be determined regionally significant, which would make them subject to PM_{10} conformity analysis requirements.

3.12 NOISE

Noise is defined as unwanted sound. While Pinal County has not developed a specific noise policy, the Arizona Department of Transportation has developed a Noise Abatement Policy that provides guidance in determining the need, feasibility, and reasonableness of noise abatement or reduction measures on roadway projects, regardless of funding source. This policy was developed in accordance with Federal Highway Administration (FHWA) regulations.

The ADOT Policy determines traffic noise impacts based upon the FHWA Noise Abatement Criteria (NAC), contained in 23 CFR 772. The FHWA criteria specify an allowable traffic noise level for different categories of land uses and activities. The ADOT Noise Abatement Policy states that impacts occur if the noise level "approaches" the FHWA criteria as specified in Table 3.1.

Table 3.1: FHWA Noise Abatement Criteria (Hourly Sound Level in A-Weighted Decibels [dB(A)][1])

Activity Category	Activity Criteria[2]		Evaluation Location	Activity Description
	Leq(h)	L10(h)		
A	57	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to its intended purpose.
B[3]	67	70	Exterior	Residential
C[3]	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[3]	72	75	NA	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	NA	NA	NA	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	NA	NA	NA	Undeveloped lands that are not permitted.

1 Either Leq(h) or L10(h) may be used on a project, but not both.
2 The Leq(h) and L10(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.
3 Includes undeveloped lands permitted for this activity category.

ADOT defines approach as three dBA below the FHWA NAC (Table 4-1) for Activity Categories A, B, C, D, and E. There is no noise impact threshold for Category F or G locations. Impacts also occur if the predicted noise levels result in a substantial noise level increase of 15 dBA or more when compared to the existing noise levels.

Noise activity categories B, C, D, F, and G occur within the study area. Much of the land within the study limits falls under Land Use Category F or G, and includes agricultural land, limited industrial facilities, and undeveloped lands that are not permitted. Category B land uses are concentrated in two areas of the corridors, the west end of McCartney Road and North Skousen Road at East Northern Avenue. The west end of McCartney Road has dispersed areas of large lot residential properties. North Skousen Road has a dense master-planned residential community between East Northern Avenue and East Kenilworth Road.

The generalized future land use projections for the corridors show substantial conversion of agricultural and vacant land to residential uses in addition to commercial and industrial uses.

According to the ADOT Noise Abatement Policy, road projects that create additional through lane capacity, include a change in horizontal alignment greater than 10 feet, or a change in vertical alignment greater than 3 feet must be evaluated to determine if noise abatement or reduction measures are warranted. If a roadway improvement project along these corridors would add capacity or result in a change in vertical or horizontal alignment as described above, a noise impact analysis in accordance with 23 CFR 772, and following ADOT Noise Abatement Policy would be required if State or Federal funds were used for improvements.

3.13 Summary of Environmental Constraints

Figure 3-14 is a compilation of environmental constraint information pertaining to the McCartney Road and Eleven Mile Corner Road study corridors. The maps also display the various alternatives that were contemplated during this process.

Appendix G contains summary worksheets for water resources, sensitive biological resources, 4(f) and 6(f), and Environmental Justice.

Figure 3-14: Environmental Constraints Summary

Figure 3-14: Environmental Constraints Summary (continued)

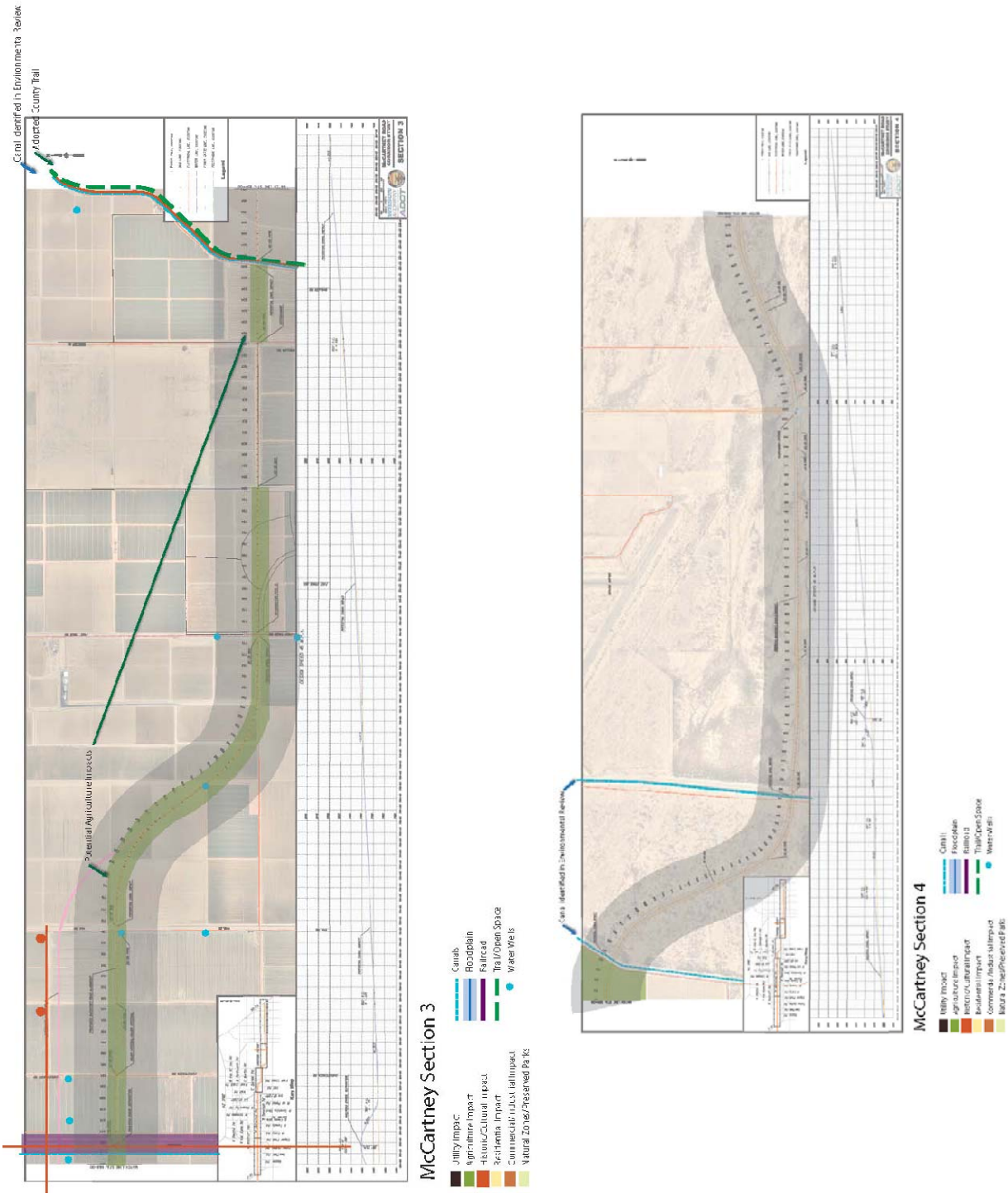
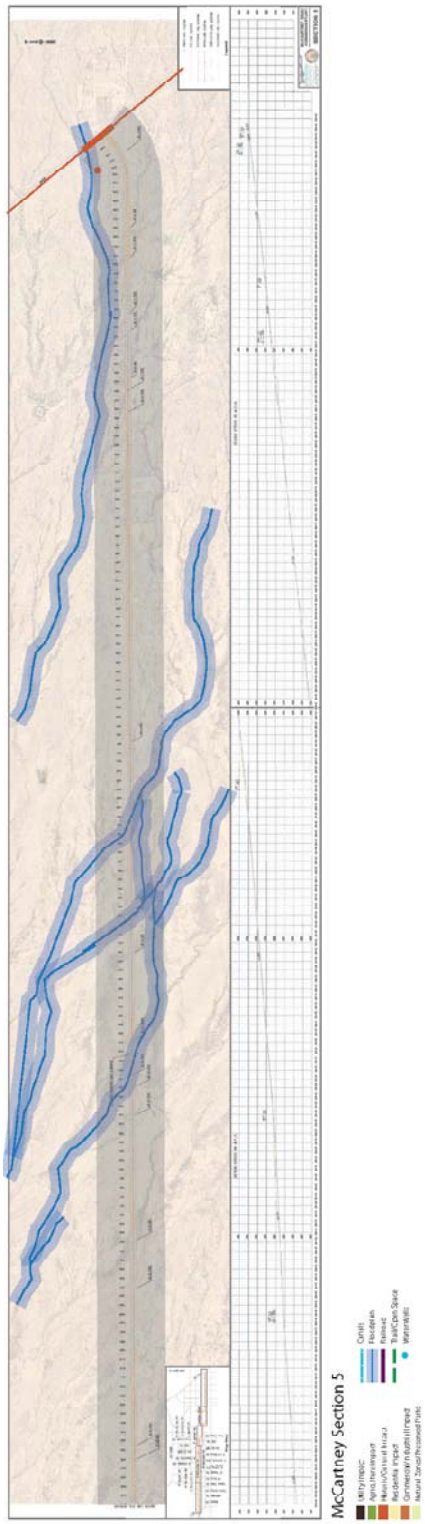


Figure 3-14: Environmental Constraints Summary (continued)



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4.0 SUMMARY AND CONCLUSIONS

This section describes the alternatives evaluated and the recommendations that should be carried forward for the McCartney Road and Eleven Mile Corner Road corridors.

4.1 MCCARTNEY ROAD CORRIDOR

The McCartney Road corridor was evaluated in five separate sections, including:

- Section 1: Interstate 10 to the current terminus at Signal Peak Road.
- Section 2: New roadway from Signal Peak Road to SR-87/Arizona Boulevard.
- Section 3: New roadway from SR-87/Arizona Boulevard to the Florence Canal.
- Section 4: New roadway from the Florence/Casa Grande Canal to the Coolidge Airport.
- Section 5: New roadway from the Coolidge Airport to SR-79.

4.1.1 SECTION 1 OPTIONS AND EVALUATION

Section 1 of the McCartney Road corridor is currently a 2-lane paved roadway. There is existing development on both sides of the roadway, including platted properties, and undeveloped/non-platted properties. Using the Principal Arterial roadway section (previously displayed as Figure 2-6), there is one area in this area that has private property impacts on developed property. Three options were developed, discussed with the TAC, shared with the public at the Open House, and presented at the City of Coolidge Council work session. The three options included:

- Option 1: Maintain a straight alignment with no adjustment in the standard cross section.
- Option 2: Shift the alignment to the north to avoid the majority of houses impacted by the alignment.
- Option 3: Shift the alignment to the north and attach the sidewalk and path to reduce the cross section required to implement the improvements.

Figure 4-1 illustrates the three options presented at the public meeting. Based on additional input, a fourth option was generated after the public meeting that includes a frontage/access road to service the drives along the south side of the improved roadway. Figure 4-2 illustrates the new frontage road concept.

The potential timing of improvements has a direct relationship to the level of potential impact. Therefore, all options examined should be retained for future NEPA examination. However, if conditions are similar to the conditions that exist today, Option 3 and Option 4 provide the greatest amount of benefit with the least amount of impact to the existing residents. Option 4 is preferred due to the level of direct driveway access that would be in very close proximity to Overfield Road. Option 4 consolidates all residential movement onto a parallel one-way frontage road, therefore eliminating the majority of direct residential driveway access from the homes south and west of the McCartney Road/Overfield Road intersection. No additional options were asked to be evaluated by the public or TAC members beyond the four options included in this section.

Figure 4-1: Section 1 Options Evaluated

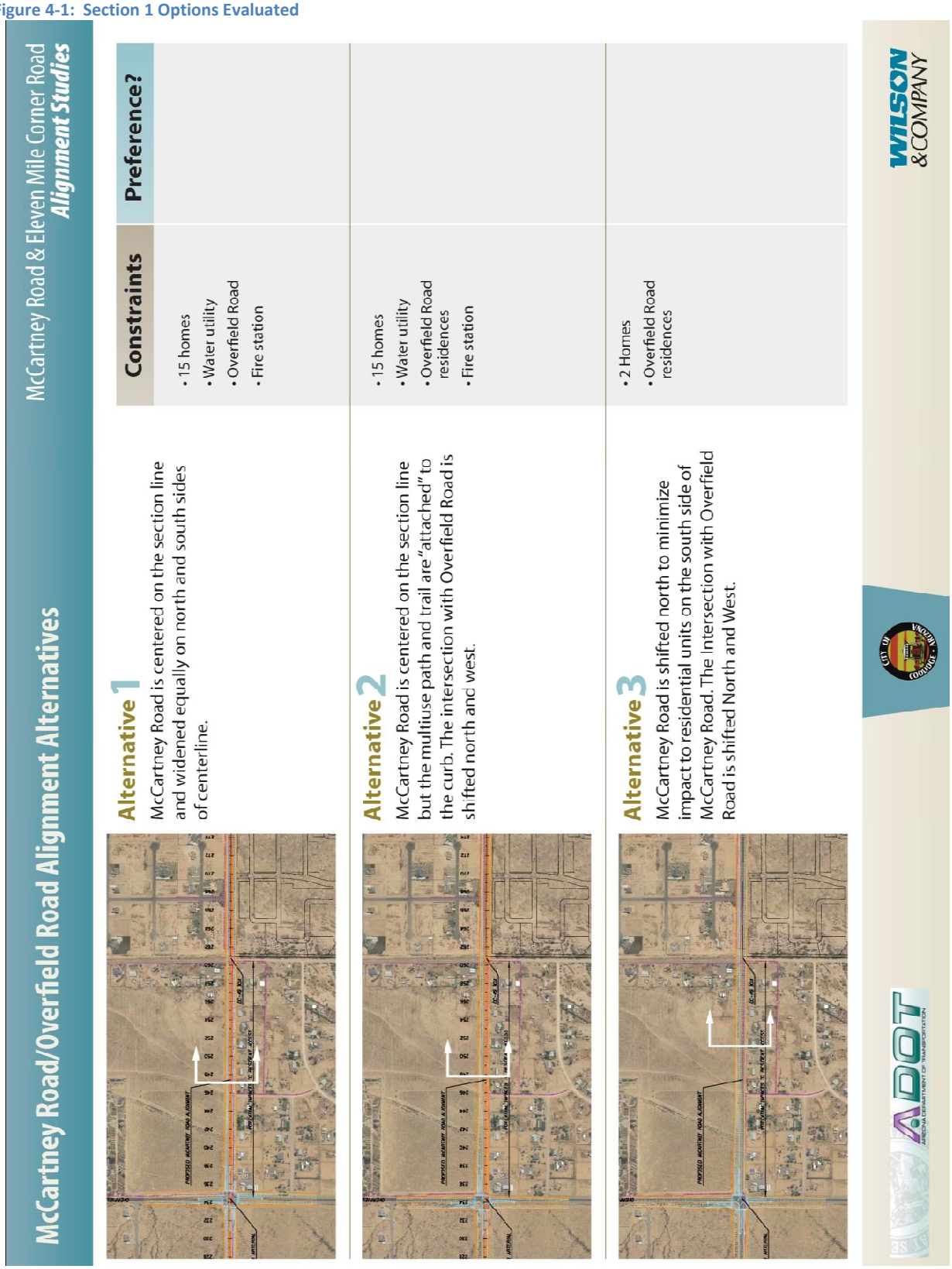
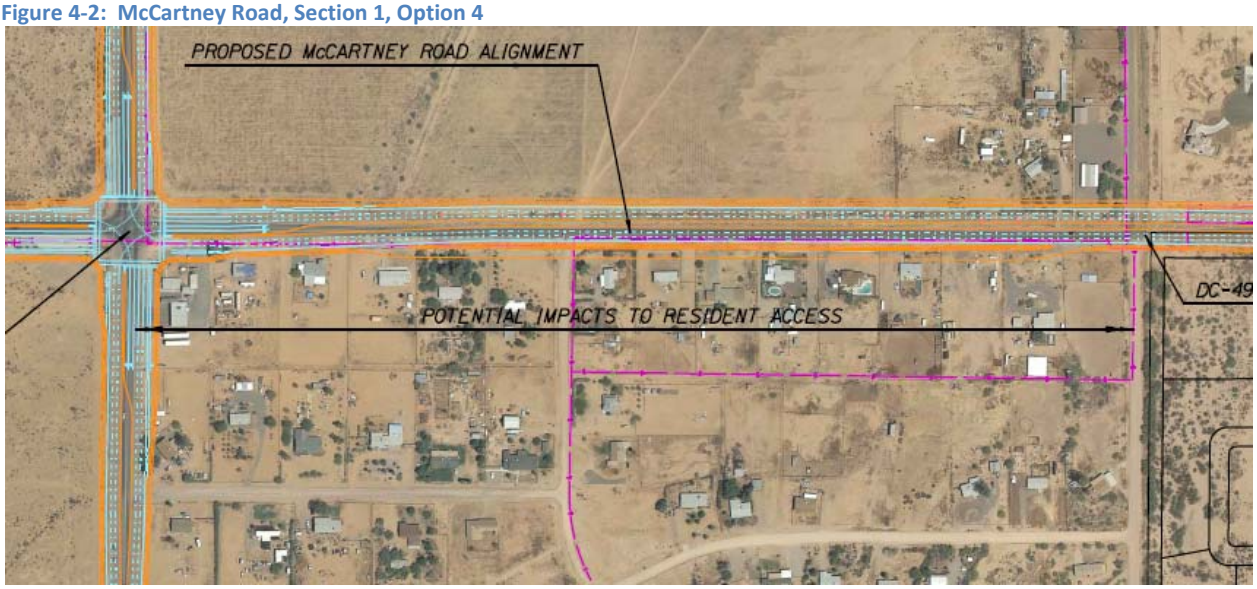


Figure 4-2: McCartney Road, Section 1, Option 4



Detailed conceptual layouts were developed for Options 1 and 4 and are included as Appendix C.

4.1.2 Section 2 Options and Evaluation

Section 2 of the McCartney Road corridor does not exist today. This section includes options examined between Signal Peak Road and SR-87/Arizona Boulevard. Some of this corridor, as it exists today, is a dirt path to support farming in the area. The study team developed 3 alternatives that tried to avoid existing utilities, residences and businesses. The options that were examined include:

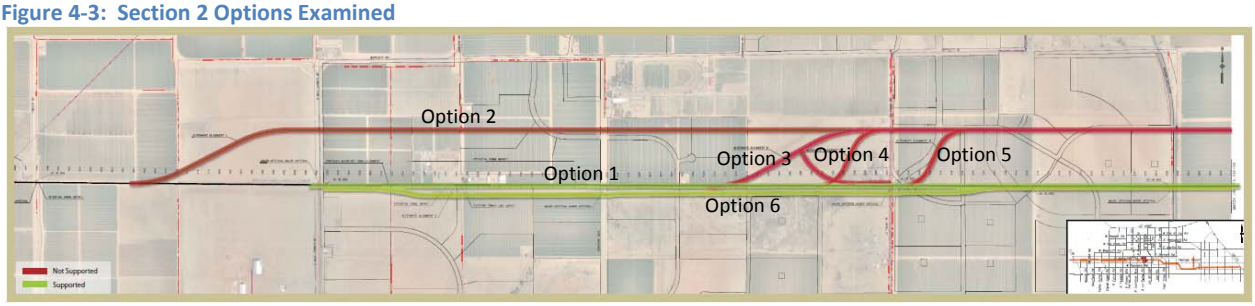
- Option 1: Maintain a straight east/west alignment.
- Option 2: Shift the alignment north between Eleven Mile Corner Road and SR-87
- Option 3: Shift the alignment north between La Palma Road and SR-87

The study team conducted a workshop with corridor land owners and developers that have interest along this study corridor to solicit feedback and input regarding additional potential options to examine. Three additional options were identified, including:

- Option 4: Shift the roadway north, west of La Palma Road using a 35MPH curve.
- Option 5: Shift the roadway north, east of La Palma Road using a 35MPH curve.
- Option 6: Shift the roadway south of the canal and ditch.
- Option 7: Maintain the irrigation ditch in a wide median.

Figure 4-3 illustrates the options examined. Based on the discussions with the land owners and workshop participants, Options 1 and 6 were the only two options that had broad-based support by the participants. No additional comments or options were generated at the Open House or Council work session.

Figure 4-3: Section 2 Options Examined



According to the land owners, Options 1 and 6 were preferred due to minimizing impacts to existing structures and farming operations. Options 1 and 6 also minimize impacts to existing Planned Area Developments (PAD). The Brighton Village PAD located between La Palma Road and SR-87 did object to these layouts due to a change in recommendations from past Transportation Plans to the existing adopted Transportation Plan that recommended shifting the roadway to the McCartney/Windsor alignment due to major utility impacts. The City is working directly with this developer to adjust their PAD so no loss of entitled development potential occurs. Detailed conceptual layouts were developed for Options 1 and 6 and are included as Appendix C.

4.1.3 Section 3 Options and Evaluation

Section 3, located between SR-87 and the Florence Canal did not have multiple options once it was determined that the McCartney/Windsor alignment was preferred. Section 3 provides an opportunity to provide a grade separated interchange with the existing railroad, maintain required clearances with the canal crossings for maintenance, and abuts the southern edge of the proposed Westcor mall located just west of the Coolidge Airport. The detailed layout for Section 3 is included as Appendix C.

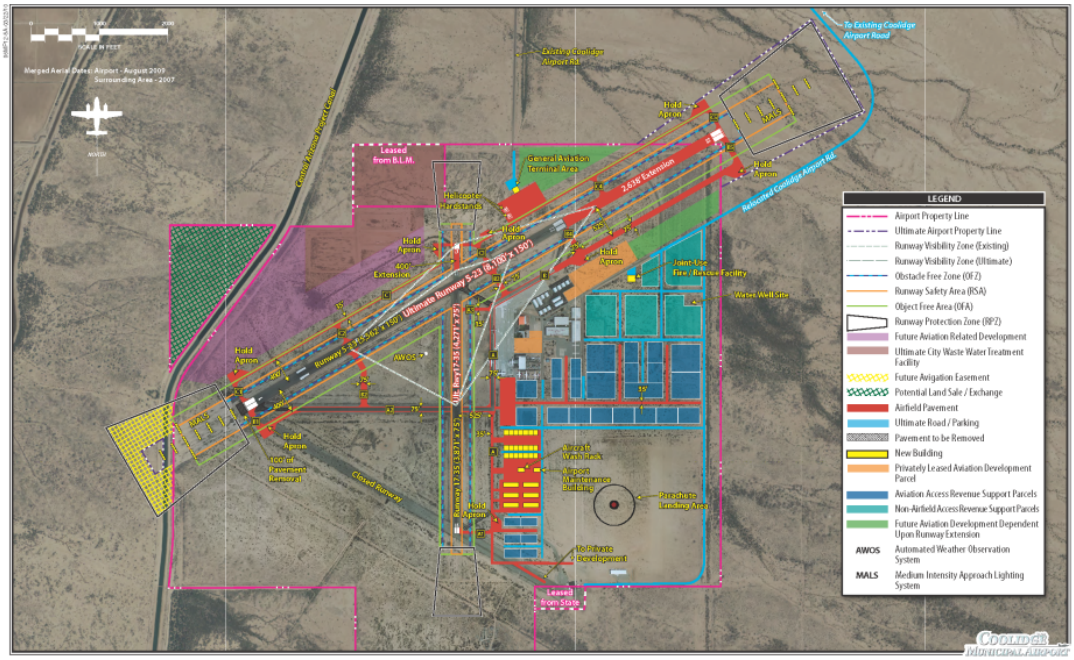
4.1.4 Section 4 Options and Evaluation

Section 4, located between the Florence Canal and the eastern edge of the Coolidge Airport property. Two alignment options were examined in this section including:

- Option 1: Locate the extension of McCartney Road approximately 2,000 feet south of the airport property.
- Option 2: Locate the extension of McCartney Road adjacent to the southern edge of the airport property.

When the Transportation Plan was developed and adopted in 2012, it was determined that the new roadway should be located south of the Coolidge Airport. Locating the new roadway south of the airport would better facilitate airport related traffic and support the planned development in the southern portion of the airport property as outlined in the Coolidge Airport Master Plan. Figure 4-4 illustrates the Coolidge Airport Master Plan. The City of Coolidge City Manager is also the Airport Manager. In discussing the options with the City, the City preferred to have the roadway be located adjacent to the southern edge of the airport property, south of the north/south runway protection zone. The detailed layout for Section 4 is included as Appendix C.

Figure 4-4: Coolidge Airport Master Plan



4.1.5 Section 5 Options and Evaluation

Section 5, located between the Coolidge Airport and SR-79 traverses primarily through State Land property. Ultimately this will be developed with a development proposal as a large-scale development. For this PEL, an alignment was developed using existing dirt roads as much as possible, adhering to the design criteria for a Principal Arterial road. Section 5 has the greatest potential for impacts to the natural environment as much of this area east of the Coolidge Airport is not developed. As such, this PEL includes the Habimap mapping in Appendix E to illustrate potential areas of biotic conflicts which exist primarily east of the airport.

4.2 Eleven Mile Corner Road Corridor

The Eleven Mile Corner Road corridor evaluated with this PEL includes an area north of the proposed future McCartney Road corridor to SR-87 north of the Pima-Maricopa Irrigation Project canal. The Eleven Mile Corner Road is proposed to be a six-lane Parkway facility as illustrated in Figure 2-4.

Six options were identified by the project team that included various alignment options between Skousen Road and Macrae Road. A key aspect of this study included developing stakeholder support for a single, or a set of stakeholder supported alignment options. A stakeholder workshop was conducted on March 19, 2013 and was followed up with several individual meetings to obtain feedback on the six alternatives, and try to identify other viable alternatives. Through this process, a total of 12 alternatives were evaluated for the Eleven Mile Corner Road corridor illustrated in Figure 4-5. Each of the alternatives are described herein, and details regarding the viability and impacts caused by each alternative are discussed. Appendix D contains the detailed layouts for the final Eleven Mile Corner Road alternatives.

Figure 4-5: Eleven Mile Corner Road Set of Alternatives

4.2.1 Common Constraints

Transportation Plans for the City of Coolidge, prior to the most recent Transportation Plan adopted in June 2012, illustrated a 6-lane Principal Arterial roadway traversing from Eleven Mile Corner Road south of Bartlett Road and using the existing Skousen Road corridor alignment to intersect with SR-87 to the north. There are three fatal flaw issues that were identified with the previously planned approach of using the Skousen corridor, including:

- The power transmission lines on both sides of Skousen Road severely limit the available right-of-way without moving the power transmission lines.
- Moving the power transmission lines along Skousen Road would be extremely costly and would be detrimental to any improvement project.
- The Skousen Road bridge located immediately south of SR-87 is a 4-lane bridge. The City has been told that the bridge is as wide as it can be based on the canal monitoring and valve equipment.

4.2.2 Options 1 and 2 – New Eleven Mile Corner Road Corridor

Description

This corridor would extend Eleven Mile Corner Road from the current alignment to SR-87 along the high power transmission lines. Option 1 extends differs from Option 2 based on the most northern portion of the route where it deviates from the power transmission lines. Figure 4-6 illustrates the proposed geometry, illustrating that the improvements would reside on the east and west sides of the WAPA corridor easement. Figure 4-7 illustrates the corridor alignment.

Figure 4-6: Eleven Mile Corner Road Power Line Corridor Cross Section

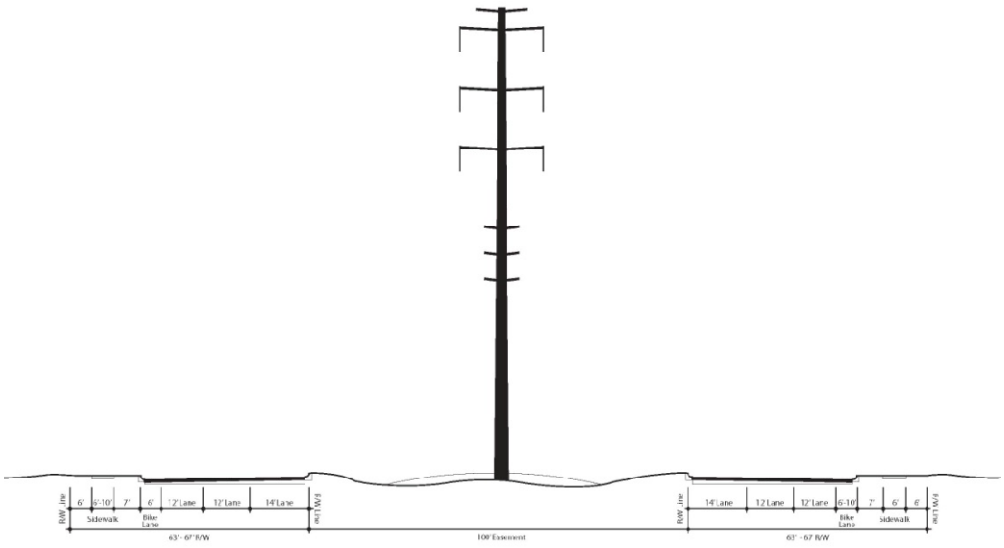
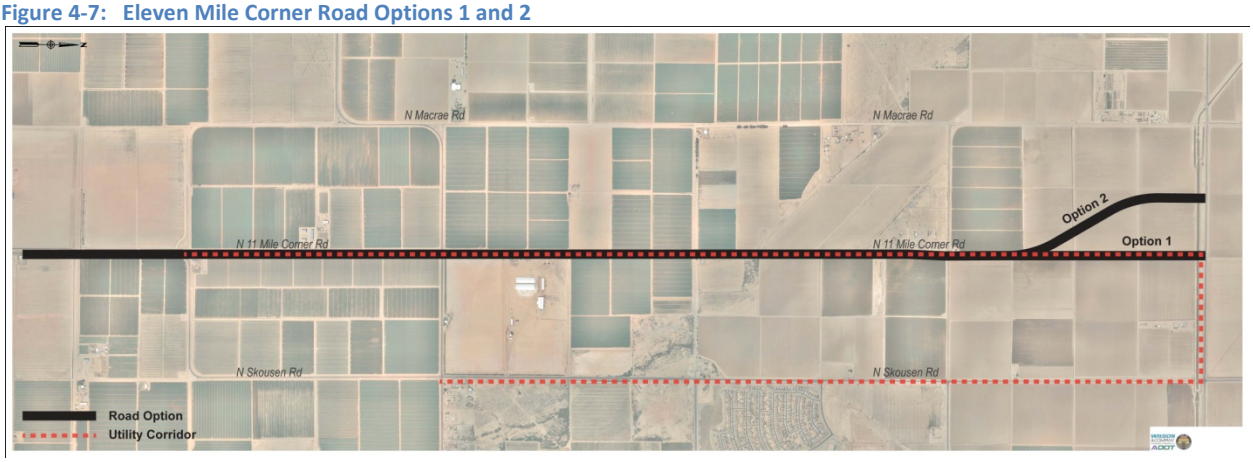


Figure 4-7: Eleven Mile Corner Road Options 1 and 2



Constraints

The power transmission line constraints as explained above would be extremely costly to move and establish new permanent easements. This option takes advantage of the 100' permanent easement to use as the Parkway median to facilitate the indirect left-turn movements. This option would require extensive permitting activity between the City and WAPA.

Based on stakeholder feedback, there is support for the option, with the exception of the Aviara development due to this option cutting through a portion of their PAD.

Recommendation

Both Option 1 and 2 are viable and should be retained as options. Option 1 would be preferred over Option 2 as it would have a reduced impact on the northernmost property south of the Pima-Maricopa Irrigation Project canal.

4.2.3 Options 3, 4 and 9: Macrae Road Options

Description

This corridor would extend Eleven Mile Corner Road from the current alignment to SR-87 using Macrae Road. The three options traverse diagonally from the curve at Eleven Mile Corner Road and Bartlett Road to Macrae Road, use the Macrae Road corridor and vary based on three options for intersecting with SR-87. Option 3 would extend directly to SR-87 using the existing Macrae Road alignment. Option 4 would shift the alignment east through the northernmost property, over the Pima-Maricopa Irrigation Project canal and intersect with SR-87 with a new interchange. Figure 4-8 illustrates the three options.

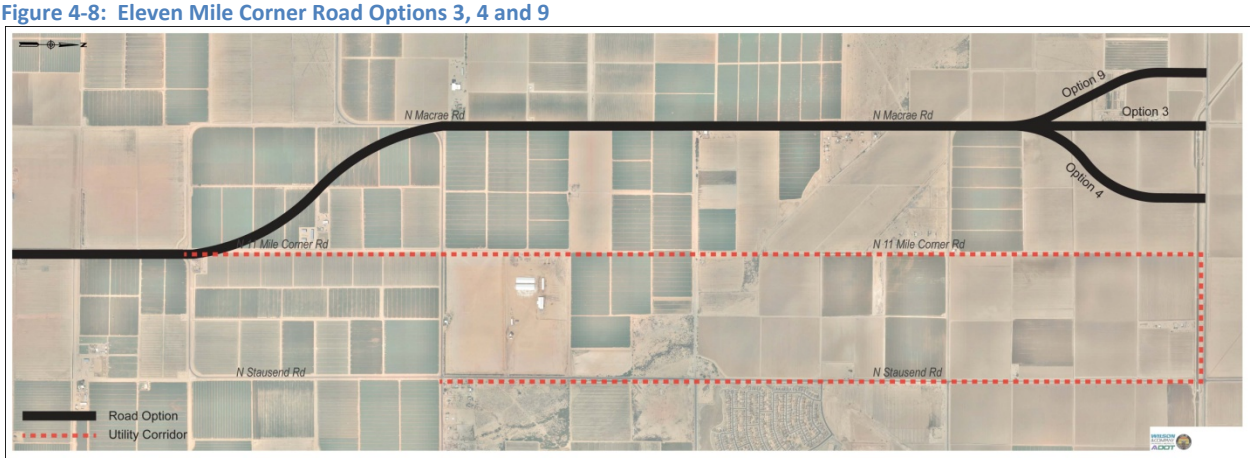
Constraints

Based on discussions with the Pima-Maricopa Irrigation Project staff, Option 3 is fatally flawed due to canal operations conflict issues. The Pima-Maricopa Irrigation Project staff identified that the Gila River Indian Community is pursuing purchasing land west of Macrae Road and south of SR-87. Based on this information, Option 9 was also deemed as fatally flawed due to potential land ownership constraints. Option 4 to the north was supported by the northernmost property owner as a viable alternative, and is supported by the Pima-Maricopa Irrigation Project staff as a viable alternative. However, the south end

of this alternative was deemed fatally flawed by the property and business owner that farms the property located east of Macrae Road, south of Martin Road, North of Bartlett Road and west of Skousen Road.

Based on stakeholder feedback, there is support for using the Macrae Road alignment; however a different alternative alignment is needed south of Martin Road so not to diagonally cut-through the farming property on the south end of the alignment. This option will require modifications to the PADs on both sides of Macrae Road due to the Parkway type of facility that will potentially utilize this corridor.

Figure 4-8: Eleven Mile Corner Road Options 3, 4 and 9



Recommendation

Maintain Macrae Road and a viable option and pursue Option 4 to potentially connect with SR-87 to the north. Identify a different alternative to the south end of the alternative to avoid impacts to the farming property. Option 11 displayed in Figure 4-12 presents this new alternative.

4.2.4 Options 5 and 6: New Corridor Located West of Skousen Road

Description

This corridor would extend Eleven Mile Corner Road from the current alignment to SR-87 using a new alignment located approximately 1,000 feet west of Skousen Road. The two options traverse diagonally from the curve at Eleven Mile Corner Road and Bartlett Road to this new corridor alignment. Figure 4-9 illustrates the alignments for Options 5 and 6.

Constraints

Based on discussions with the property / business owner that own and farm the property located at the south end of this alternative, it was deemed fatally flawed due to the level of impact. Additionally, the alignment north of Kenilworth Road crossing back to the power line corridor (Option 5) is seen as a viable alternative, but Option 6 is not due to the impacts of the existing PADs that are in place.

Recommendation

Do not pursue additional study on Options 5 and 6.

Figure 4-9: Eleven Mile Corner Road Options 5 and 6

4.2.5 Options 7 and 8: Skousen Road Corridor

Description

This corridor would traverse from the current alignment to Skousen Road and extend northward on Skousen Road to SR-87. South of the Pima-Maricopa Irrigation Project canal, Option 7 would shift to the west and intersect with SR-87 with a new interchange. Option 8 would use the existing Skousen Road alignment and intersect with SR-87 at the existing intersection. Figure 4-10 illustrates the corridor alignment.

Figure 4-10: Eleven Mile Corner Road Options 7 and 8

Constraints

Both Options 7 and 8 have power utility corridor impacts that would greatly increase the costs of any improvements along Skousen Road. Also, based on discussions with the Pima-Maricopa Irrigation Project staff, Option 8 is fatally flawed due to canal operations conflict issues that would be detrimental and cost prohibitive.

Recommendation

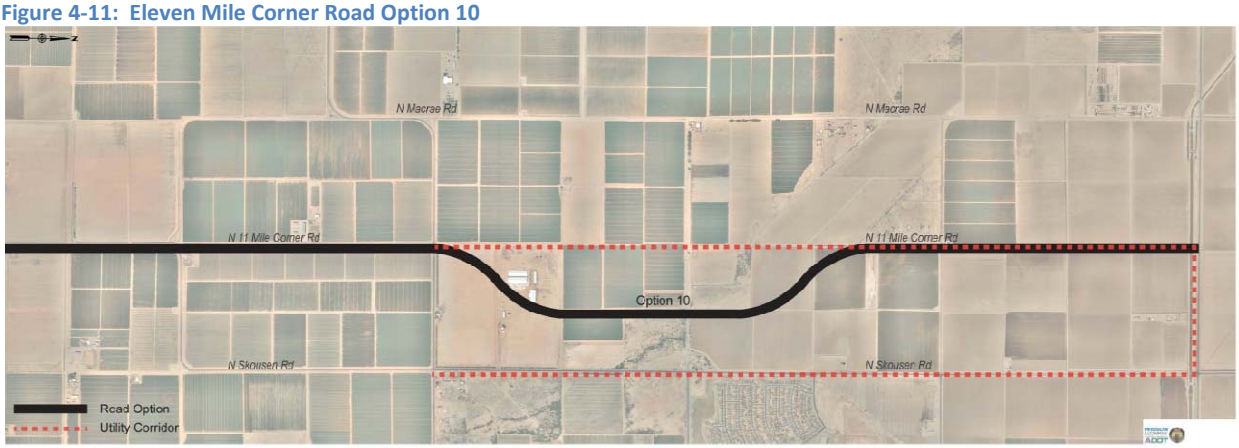
Do not pursue additional study on Options 7 and 8.

4.2.6 Option 10: Variation of Option 1 Extending Eleven Mile Corner Road Corridor

Description

This corridor would extend Eleven Mile Corner Road from the current alignment to SR-87 along the high power transmission lines, and navigate around much of the Aviara PAD property through the cotton gin property. Figure 4-11 illustrates the corridor alignment.

Figure 4-11: Eleven Mile Corner Road Option 10



Constraints

Based on the feedback from the farming operation located to the south, this option is a viable option. However, there are several constraints related to Option 10 that would need to be mitigated before Option 10 can be pursued, primarily the relocation of the cotton gin property.

Recommendation

Do not pursue additional study on Option 10 unless the cotton gin property is acquired by private property interests that will dedicate and construct the Parkway corridor. It could potentially be a potential variation of Option 1 if desirable.

4.2.7 Option 11: Macrae Road Alternative

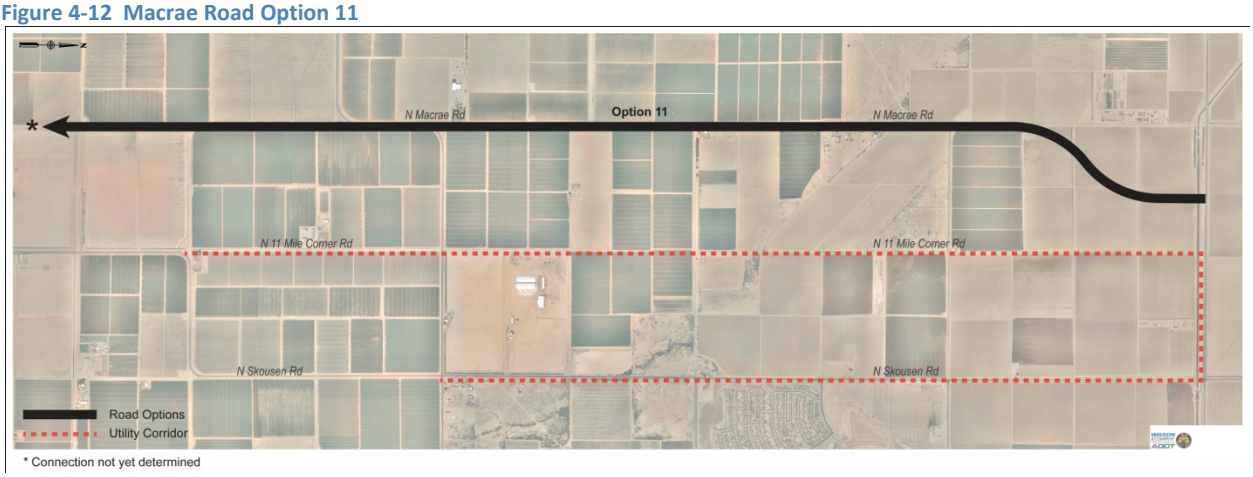
Description

This corridor would use the Macrae Road corridor to provide a north/south parkway alignment. The corridor will connect with a future transition to Eleven Mile Corner Road south of the McCartney Road corridor. It is envisioned that a corridor will extend southward and ultimately connect with I-10 near Eloy, but that corridor has not been determined yet. Figure 4-12 illustrates the Macrae Road corridor.

Constraints

This option should use the Option 4 alignment as it nears and intersects with SR-87 with a new interchange. Ultimately a new corridor or connection with Eleven Mile Corner Road will need to be identified south of McCartney Road.

Figure 4-12 Macrae Road Option 11



Recommendation

Retain Option 11 for further study for future implementation. Macrae Road has the least amount of impact to existing PADs, utility corridors, and the canal. A determination is still needed on how the corridor continues south of the McCartney Road corridor.

4.2.8 SUMMARY

Figure 4-13 illustrates the optional alignments that should be retained for future study and potential implementation of a new north/south Parkway facility. All three options are viable and can address the future anticipated future needs. Other options, such as Option 10 may become viable if the cotton gin property is purchased and the appropriate right-of-way is dedicated along the corridor. However, once one development occurs on the corridor, that action may set the preferred option in motion for the appropriate direction.

Figure 4-13: Viable Alignment Options for Eleven Mile Corner Road

Appendix A: Summary of Relevant Statewide or Regional Transportation Plans and Studies

Appendix A: Summary of Relevant Statewide or Regional Transportation Plans and Studies

Coolidge Comprehensive Transportation Feasibility Study

Compendium of Relevant Studies

Prepared for:

City of Coolidge
130 W. Central Ave
Coolidge, Arizona 85128

Arizona Department of Transportation
Multi-Modal Planning Division
206 S. 17th Avenue
Phoenix, Arizona 85007

Prepared by:

Wilson & Company, Inc., Engineers and Architects
410 N. 44th Street, Suite 460
Phoenix, Arizona 85008

Date: June 23, 2011

Introduction

The City of Coolidge is updating the Regional Transportation Plan with current information, examining the feasibility of transportation routes on several corridors, and adding bicycle and pedestrian elements to develop a context sensitive multimodal transportation plan. This document provides an overview of the previous studies completed to date and allows the study team to identify potential conflicts between past study efforts and conclusions relevant to the current and changed conditions of the region.

Transportation Plan and Community Reference Review

Numerous independent studies have been conducted that address various components of the transportation system and its components in the Coolidge study area. Some are in process, others have been completed in recent years, and still others are foundational studies from several years back that have guided transportation investments to this point. Discussions, findings, and conclusions reported from these studies have relevance to this study in that they can provide system information and a context for proceeding with definition of an overall long-range transportation plan vision. Thus, an important aspect of this study will be integration of relevant information from each of these studies as may be appropriate and effective to communicate the vision for a future multimodal transportation system. A summary of the findings and conclusions from these sources is provided for each resource document.

Two key studies that are underway and are not included in this summary document, including the North/South Corridor Study being conducted by ADOT and the East/West Corridor Design Concept Report being conducted by Pinal County. These studies are in the beginning study stage and information from these two studies as it relates to the Coolidge Plan will be monitored.

Coolidge-Florence Regional Transportation Study

(Coolidge, Florence, and ADOT, prepared by Lima & Associates with Kimley-Horn and Associates and Economic and Real Estate Consulting, February, 2008)

The Coolidge-Florence Regional Transportation Study was accomplished through a cooperative effort of the City of Coolidge, Town of Florence, and the Arizona Department of Transportation (ADOT). The planning area for this study encompassed 336 square miles of central Pinal County approximately midway between the City of Phoenix and City of Tucson and incorporated the combined planning areas of the City of Coolidge and the Town of Florence. The planning area is projected to experience population growth in the range of 250,000 to 300,000 persons over the next 20 years. The study produced a plan for a multimodal transportation system for the Coolidge and Florence planning areas. The plan recognizes regional growth dynamics and the need for a coordinated multimodal transportation system. Although the study included roadway facilities under the jurisdiction of ADOT, improvements to the State Highway System can be made only after ADOT completed in-depth planning and engineering studies and upon approval of the State Transportation Board. The final report defined a road plan, methods for implementing the plan, funding priorities, and a public transportation component.

Key figures/tables from this study include:

- Figure 6-2 – Recommended Functional Road Classification
- Figure 6-3 – Recommended Year 2025 Number of Lanes
- Table 6-2 – Minimum Road Design and Access Criteria
- Figure 6-4 – Typical Cross Sections
- Figure 8-2 – High Priority Corridors

Regionally Significant Routes for Safety and Mobility (RSRSM)

(Lima & Associates, Kittelson & Associates, Inc., and Kimley-Horn and Associates, Inc., September, 2008)

This report describes the planning process and documents the results associated with a study develop a plan to ensure mobility and safety through a partnering approach with federal, state, county, local, Native American Communities, and private stakeholders. The plan's purpose is to provide guidance to County and other stakeholders for implementing and funding regionally significant routes (RSRs). An initial implementation step is the preservation of rights-of-way for these routes. The study of RSRs was deemed necessary due to: unprecedented growth in the planning area; increasing congestion resulting from restricted road capacity; deterioration of traveler safety; and the lack of continuity and connectivity of the road system. Preparation of the plan included identification and screening of candidate corridors, evaluation of access management techniques for preserving roadway capacity and safety, documentation of potential corridors for future study as development occurs.

Key figures/tables from this study include:

- Corridor Preservation Map
- Priority Map
- Figure 8 – Typical Section, Regionally Significant Route
- Table 5 – Regionally Significant Routes Classification and Access Criteria

Pinal County Comprehensive Plan

(Pinal County, November 18, 2009)

This plan translated Countywide visioning scenarios into a comprehensive land use and transportation plan. It is intended "…to steer the County on a positive course of action to manage growth, preserve the quality of life, and promote sustainability. An important step in plan development was compilation of a compendium of existing conditions to provide better understanding regarding the County's opportunities and constraints. It was shown that many changes are occurring, including: diminishing agriculture enterprises, urban and mixed-use development is encroaching on industrial mining in the County, municipal cores are expanding, and large master-planned communities springing up at the fringes of incorporated areas. The adopted Plan applies the concept of "Buildout," which "…is defined as the ultimate development of land in Pinal County with appropriate land uses based on a series of assumptions, including land ownership patterns, topographic and environmental constraints and opportunities, development potential, infrastructure support, and private property rights. Buildout does not depend on a benchmark." The Comprehensive Plan is one of the components of the County's Growth Planning Initiative, which is geared toward creating a comprehensive structure to manage growth and development effectively, while enhancing the County's quality of life. The Plan includes a Compliance component to assure a "…project's conformity with the Plan's land use designations, graphic depictions, and activity centers as well as the vision, goals, objectives, policies, and planning guidelines outlined in the Comprehensive Plan. A Compliance Checklist has been adopted with the Plan, which is intended to provide guidance in determining Plan compliance relative to vision components and key concepts.

Key figures/tables from this study include:

- Figure 4-4 – Multimodal Circulation Plan: Roadways
- Figure 4-5 – Multimodal Circulation Plan: Rail Transit and Aviation

Pinal County Corridors Definition Study

(ADOT, prepared by Kimley-Horn and Associates, Inc., with Cambridge Systematics, Inc., and Kaneen Advertising and Public Relations, January, 2007)

This study was undertaken in response to an Arizona State Legislature request to perform a planning study to better-define four corridors originally proposed in a 2003 MAG/CAAG study. The study focused on determining the need for and feasibility of two corridors within the Apache Junction/Coolidge Study Area and the East Valley Study Area. It considered high-level issues, such as: the projected population of the areas, location of employment and activity centers, and anticipated commuting patterns. The study also addresses the potential feasibility of a new state highway and evaluated possible impacts relative to neighborhoods, geographic features, environmental issues, and archeological resources. The objective of the study was to develop recommendations for presentation to the State Transportation Board regarding: the need for a roadway, the general alignment (if needed), the type of facility, the function of the road (i.e., state, regional, and local), and the responsible entities for building and maintaining the road.

Key figures/tables from this study include:

- Figure 12-2 – Recommended Corridor Definition in the Florence/Coolidge Area

NOTE: The City Council has approved a Resolution in support of the Rose Law Alignment which is different from the alignment displayed in Figure 12-2.

Pinal County Transit Plan

(Pinal County, prepared by Nelson/Nygaard with Jacobs, June, 2009)

The Pinal County Small Area Transportation Study (SATS) completed in 2006 resulted in the conclusion that there a demand of public transit services existed in the County. It was recommended that the feasibility of providing such service be further explored. The Pinal County Transit Feasibility Study was initiated in 2008 to determine whether demand was sufficient and, if so, to explore "…ways to create, administer, and sustain a regional transit system." The study, which is still in progress, is addressing: existing conditions, currently available transit services, population and growth forecasts for the County, and possible service options. This ongoing effort has completed evaluations of existing and future conditions and outlined service options, which are being reviewed through an extensive public involvement framework.

Key figures/tables from this study include:

- Figure 4 – Proposed Bus Service Areas, Transit Corridors and Park-and-Ride Lots
- Figure 5 – Proposed Passenger Rail Services and Transit Center Locations

Coolidge Municipal Airport Master Plan Update (January 2011)

(City of Coolidge, prepared by Coffman Associates, Inc., January, 2011)

Coolidge Municipal Airport is as a vital economic asset for the City and surrounding areas located approximately five miles southeast of the City. This plan was developed to evaluate the airport's capabilities and role in the region. It involved a forecast of future aviation demand and formulation of a plan to effect timely development of new or expanded facilities necessary to meet that demand. The ultimate Master Plan provides systematic guidance for future development actions, operations, and maintenance. It is an important instrument in assuring reservation of sufficient areas for future facility and operational needs. It also is important for its definition of needs to protect development areas to allow the airport mangers/operators to readily meet future demands when required. The Master Plan provides a detailed land use concept, outlining specific uses for all areas of airport property consistent with the vision for the airport covering the next 20 years and beyond.

Key figures/tables from this study include:

- Figure 5A – Master Plan Concept

CAAG Economic Plans

(Central Arizona Association of Governments, 2007)

This Comprehensive Economic Development Strategy (CEDS) formulated by the Central Arizona Association of Governments (CAAG) is an extensive planning effort incorporating an array of economic development initiatives reflecting concerns at various levels throughout the CAAG planning area. The CEDS is representative of the needs, goals, and objectives of the CAAG District's constituents. The document addresses important planning elements pertaining to: administrative organization; past development efforts and potential growth centers; key characteristics and resources of the District; environmental considerations; economic potentials and constraints; development strategy; and implementation. Development of the CEDS supports the District's request "…continued designation as an Economic Development District (EDD) by the United States Department of Commerce, Economic Development Administration. This document provides an extensive inventory of: past development efforts; land use; infrastructure; human, economic, and financial resources; cultural resources, and sensitive environmental resources. Based on a detailed assessment of District resources and an understanding of community goals and objectives, the CEDS spells out general standards for identifying growth centers, examines economic development potential, and offers a strategic plan for implementing development projects in each individual community within the CAAG planning area.

The Future at Pinal

(Pinal County Board of Supervisors, prepared by Morrison institute for Public Policy, Arizona State University, July, 2007)

From about 300,000 residents now, Pinal County is expected to experience substantial development in the future and large developments already have been completed or are underway. Although the effects of the Great Recession have slowed development activity in Pinal County, the trajectory of the County "…easily could be assumed to be an extension of the patterns in Maricopa and Pima counties." This statement from *The Future at Pinal* is a cry for action for many leaders and residents, who would like to see something different, even better for the County. The Pinal County Board of Supervisors commissioned this report, prepared by the Morrison Institute for Public Policy (School of Public Affairs, Arizona State University), to stimulate a progressive "…long-term visioning and planning process among residents, elected officials, business leaders, and community activists." This document and visioning/planning process supported development of the countywide comprehensive plan discussed above. The report provides information and ideas intended to inspire creative thinking about Pinal's future. As a result of this exercise, it was concluded that Pinal's leaders and residents "…share the values of cooperation, identity, and quality for the foundations of their communities and identified 6 outcomes they would like to see happen in Pinal." These "placemaking attributes" or goals, as they are referred to, are:

- Distinguish Pinal from Maricopa County and Pima County;
- Protect miles of desert and open land;
- Provide choices for transportation and mobility;
- Support unique, "fair share" communities;
- Create and attract career pay – career path jobs; and
- Develop Pinal's talent pool.

I-10 Phoenix-Tucson Bypass Study (ADOT: January, 2008)

(ADOT Transportation Planning Division, prepared by URS with Wilbur Smith Associates, January, 2008)

The purpose of this study was "…to make a preliminary assessment of the need for and feasibility of a new transportation corridor that would provide an alternative to I-10 to divert through traffic out of the…" two major metropolitan areas of Arizona: Phoenix and Tucson. Following adopted of a purpose and need statement, the number of existing lanes on I-10 was compared to existing traffic volumes, and plans for future capacity for I-10 and other related routes were identified. Potential corridors were identified and refined by locating environmental constraints, gaining input from stakeholders, and field reconnaissance. Criteria, based on the purpose and need statement, were used to evaluate alternative corridor and segments of corridors. Travel demand forecasts were prepared that provide a "…reasonable basis for determining the amount of traffic that might be diverted from I-10 and the volume of long-trip and through traffic that might use the potential corridor." A basic cross-section was adopted for the corridor, based on the "long-trip" needs identified by the travel forecasts. The study includes a "preliminary, order-of-magnitude cost estimate" and discussion of potential funding sources for securing right-of-way and constructing the bypass.

2010 Statewide Transportation Planning Framework

(ADOT and bqAZ, March, 2010)

This document represented the first effort by ADOT-Multimodal Planning Division (MPD), to formulate a long-range vision for the transportation future of Arizona that went beyond the typical 20-year planning horizon. In this case, long-range was defined as a vision for 2050, with 2030 adopted as an intermediate planning horizon. This study also broke new ground by emphasizing all major surface transportation facilities and services, whether under the jurisdiction of state, local, federal, or tribal governments. ADOT-MPD also sought coordination with Arizona's five neighboring states to assure assessment of the need for seamless connections between the State and its neighbors. And, the study included evaluation of freight movement in general and international trade, in particular, with attention also to the State rail system. Developing this planning framework was a cooperative effort, involving an extensive array of state, federal, regional and local entities. Thus, it presents a comprehensive transportation vision and strategic multimodal transportation opportunities that supports place-sensitive and environmentally responsible mobility choices to promote economic prosperity in conjunction with development of livable communities. The 2050 timeframe advances consideration of the critical connection between land use and transportation planning to promote balanced and sustainable statewide growth.

Key figures/tables from this study include:

- Figure 33 – Recommended Statewide 2050 Transportation Framework Scenario
- Figure 34 – Recommended Statewide Scenario – Roadway Features
- Figure 47 – Existing and Potential Passenger Rail Options

Cotton Express: City of Coolidge Five Year Transit Plan

(ADOT: January, 2009)

Cotton Express is the City of Coolidge's transit service that has been in operation for the past eighteen years. Initially, only demand response service was offered, with all trips accommodated through a reservation system. The Cotton Express now provides service on four routes, operating on two loops through the West Central and East Central sections of the City. In addition to route deviation service to provide curb-to-curb mobility limited riders, dial-a-ride services are provided to eligible residents by reservation. ADOT's Public Transportation Section of the Multimodal Planning Division (MPD), which is charged with administering the Section 5311 Rural Transit Program, recently completed this 5-year plan for Coolidge. The Plan notes that "in order to address the management responsibility of administering these [5311] grant programs, it will be important that these five year plans have specific accountability elements and consistent formatting. This will enable appropriate analysis of accomplishment of goals and comparison of performance indicators to better assist local agencies and help direct allocation of limited resources. Thus, the Plan includes: a statement of community goals; a profile of the community; an estimate of transit service demand; an inventory of transit service operations, equipment, and facilities; a strategy for coordinating services and agencies associated with the provision of transit; an analysis of alternatives for improving service, administration, and management; and a 5-Year Implementation Plan. The Five Year Transit Plan provides a roadmap for implementing transit services in the City and a matrix of tasks and responsibilities to provide a framework management oversight of the rural transportation programs supported by ADOT. The Five Year Transit Plan includes: a minimal fleet replacement schedule; improvements to bus stops/shelters, signs, and benches; a new Transit Facility; on-board payment system; and, office equipment. New additions to service routes are proposed.

Coolidge Downtown Action Agenda 2007

(The National League of Cities and HyettPalma, Inc., December 11, 2006)

The agenda created for the City of Coolidge includes a vision statement of the Downtown and a compendium of findings supporting a market analysis. A specific economic enhancement strategy is outlined for the Downtown project area. A *Course of Action* is defined, based on the desires and concerns expressed by the people of Coolidge. The *Course of Action* combines these desires and concerns with a realistic analysis of Downtown's market potential and is framed for implementation by both the public and private sectors. The Agenda incorporates that recommendation to create three districts in the Downtown to establish economic orientations and "…direct the appropriate placement of uses within the Downtown. These districts are: Historic Downtown Coolidge; Boulevard Auto; and Housing Revitalization. Specific recommendations are made regarding expansion of the Downtown Master Plan to include streetscape improvements, particularly improvements that would result in a more pedestrian-friendly Downtown while retaining all on-street parking.

City of Coolidge General Plan

(Stantec Consulting for City of Coolidge, Adopted November 10, 2003)

Arizona Revised Statutes (ARS) require each city adopt a comprehensive, long-range general plan to guide the community's physical development. The purpose of the general plan is to:

- Express the community's vision
- Identify the community's goals and development priorities
- Serve as a policy guide for local decision-making
- Fulfill legal requirements created by state law

The City of Coolidge General Plan provides extensive and detailed information regarding community characteristics, environmental characteristics, socioeconomic and housing characteristics, community resources, and community facilities and utilities. The Plan also establishes for the community a set of goals and objectives with respect to each of these categorical areas of concerns and, in addition, specifically addresses future land use. The Plan includes a Land Use Element and a Transportation Circulation Element. Plus, it addresses the requirements of the Arizona Growing Smarter Act, as specified for a community the size of Coolidge.

The Plan identifies important regionally-significant roadways and outlines the transit services available. Transportation concerns are discussed, a forecast of future transportation deficiencies is presented, and Circulation Plan is proposed to satisfy future travel demand. A Design Plan is included to establish a framework for developing pedestrian and bicycle facilities. Also, guidance for updating the Mass Transit Plan is provided.

Key figures/tables from this study include:

- General Plan Map

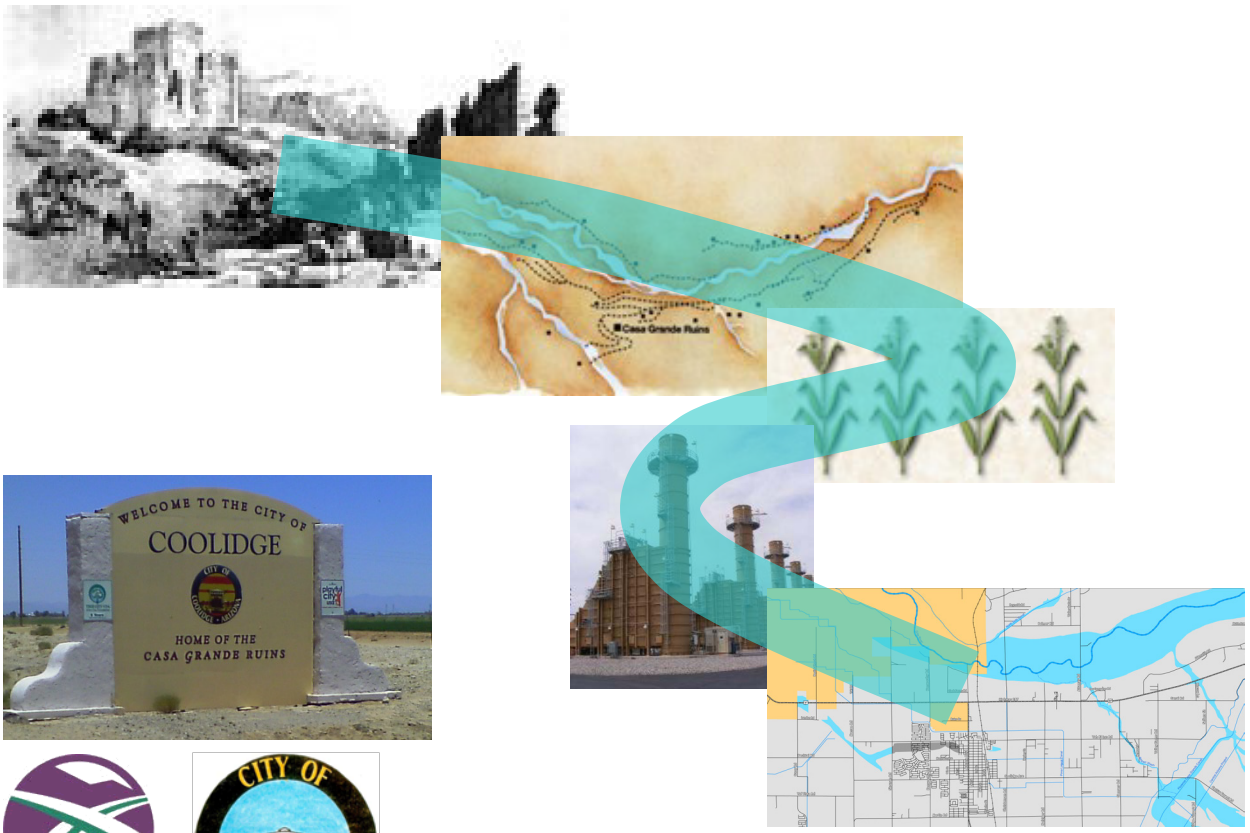
Appendix B: Future No-Build Traffic Summary

Appendix B: Future No-Build Traffic Summary

Technical Memorandum

Assessment of Year 2040 Roadway Network

Comprehensive Transportation Feasibility Study



Coolidge, AZ

ADOT Planning Assistance for Rural Areas

ADOT Project MPD 17-11(B)

WILSON & COMPANY
ENGINEERS & ARCHITECTS

December 2, 2011

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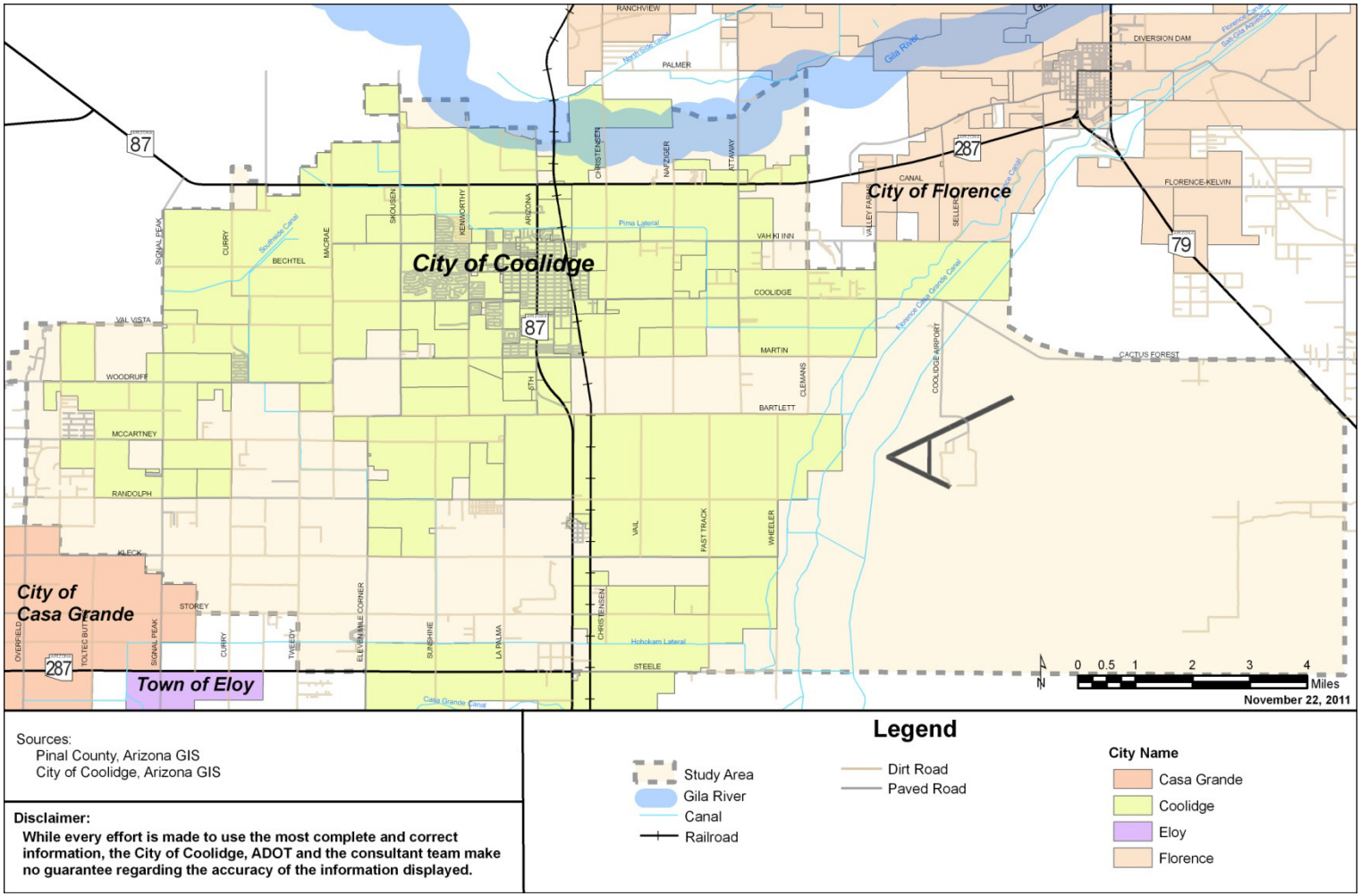
1.0 INTRODUCTION

This Technical Memorandum provides an overview of the process followed to assess the year 2040 travel conditions. This assessment looks at the planned improvements in light of a 2040 horizon year, which is consistent with current planning activities of the Arizona Department of Transportation with respect to the proposed North-South Corridor. The North-South Corridor anticipates a freeway facility connecting Interstate 10 (I-10) south of Coolidge with US-60 north of Coolidge in the eastern portion of the Phoenix metropolitan area. As the new freeway in the North-South Corridor will pass through the central portion of Coolidge, it will influence future travel on major roadway serving Coolidge. Therefore, an assessment of effects on previously planned roadway improvements resulting from this new freeway facility is appropriate at this time.

The relevant planning area for the Comprehensive Transportation Feasibility Study is shown in Figure 1-1. Proposed improvements identified in the Pinal County Regionally Significant Routes for Safety and Mobility (RSRSM) Plan and the Coolidge-Florence Regional Transportation Study (CFRTS) were identified as they pertain to the roadway network within the study area. The proposed facility upgrades and new facilities used in the Year 2040 travel demand model developed and adopted for the North-South Corridor Study is not the full set of planned improvements identified in these two studies, but a subset of improvements and upgrades. The subset of improvements represent the Existing plus Committed (E+C) improvements that could reasonably be funded by year 2040.

Initially, a No Build Year 2040 scenario was tested that permitted evaluation of the operational capacity of the E+C roadway network. Committed and planned improvements were incorporated into the network and deficiencies determined through application of the travel demand model. Alternative scenarios that would address noted deficiencies are identified and described in Chapter 5 of this memorandum, to be evaluated in *Working Paper 2: Develop Evaluation Criteria and Plan for Improvements*. The scenarios will be evaluated to determine the feasibility of developing a roadway network that allows for planned growth in the region.

Figure 1-1: Study Area



2.0 RELEVANT BACKGROUND STUDIES

Two studies completed in 2008 recognized the need to identify improvements to major roadway facilities in Pinal County and the Coolidge-Florence area. These two studies, described below, provide the framework for identifying and assessing the feasibility of implementing proposed improvements. Each study provides a glimpse of the transportation needs of the study area and offers certain remedies to apparent and forecast network deficiencies

2.1 REGIONALLY SIGNIFICANT ROUTES FOR SAFETY AND MOBILITY (RSRSM) PLAN

This report describes the planning process and documents the results of a plan developed to ensure transportation mobility and safety in Pinal County through a partnering approach with federal, state, county, local, Native American Communities, and private stakeholders. The plan's purpose is to provide guidance to County officials and key stakeholders regarding implementation and funding of regionally significant routes (RSRs). An initial implementation step is the preservation of rights-of-way for proposed RSRs. This study was deemed necessary due to unprecedented growth in the planning area, which was resulting in: increasing congestion due to restricted road capacity; a lack of continuity and connectivity of the road system; and deterioration of traveler safety. Preparation of the plan included identification and screening of candidate corridors, evaluation of access management techniques for preserving roadway capacity and safety, documentation of potential corridors for future study as development occurs.

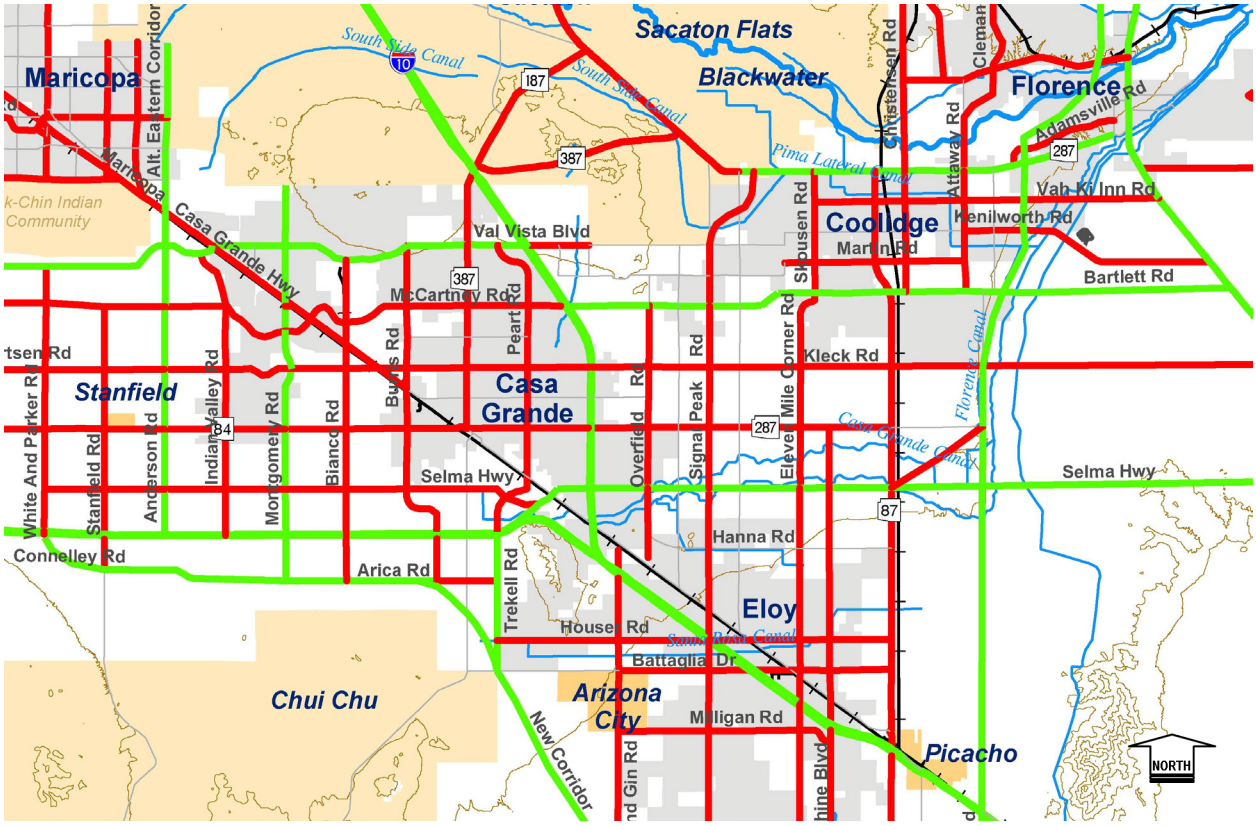
Key figures/tables from this study include:

- Figure 2-1: Corridor Preservation Map;
- Figure 2-2: Priority Map;
- Figure 2-3: Figure 8 – Typical Section, Regionally Significant Routes; and
- Table 2.1: Table 7 – Regionally Significant Routes Classification and Access Criteria

This plan did not incorporate a major east-west regional connecting route to serve the core area of the City of Coolidge. Kleck Road is the closest east-west parkway facility to the downtown providing access to SR-79 to the east and I-10/Casa Grande to the west. Kleck Road is 4.5 miles south of the downtown. SR-287, two miles north of the downtown, and Bartlett Road, two miles south of downtown, are identified as a Principal Arterials. Other facilities are identified for central Coolidge; however, none would provide adequate regional access.

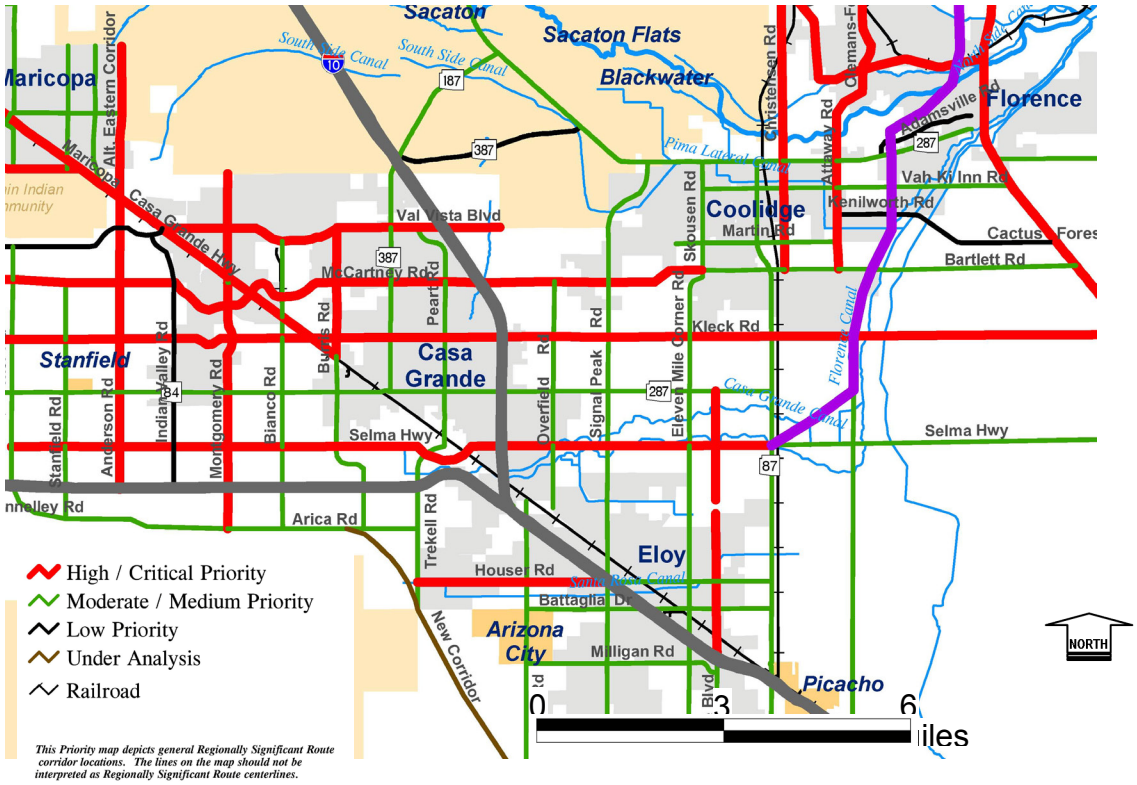
The classification of Principal Arterial limits the capacity of the facilities to six lanes, which can carry 45,000 to 50,000 vehicles per day (vpd). Whereas, the RSR Parkway classification also incorporates a six-lane cross-section, the capacity of this type of

Figure 2-1: Regionally Significant Routes Corridor Preservation Map



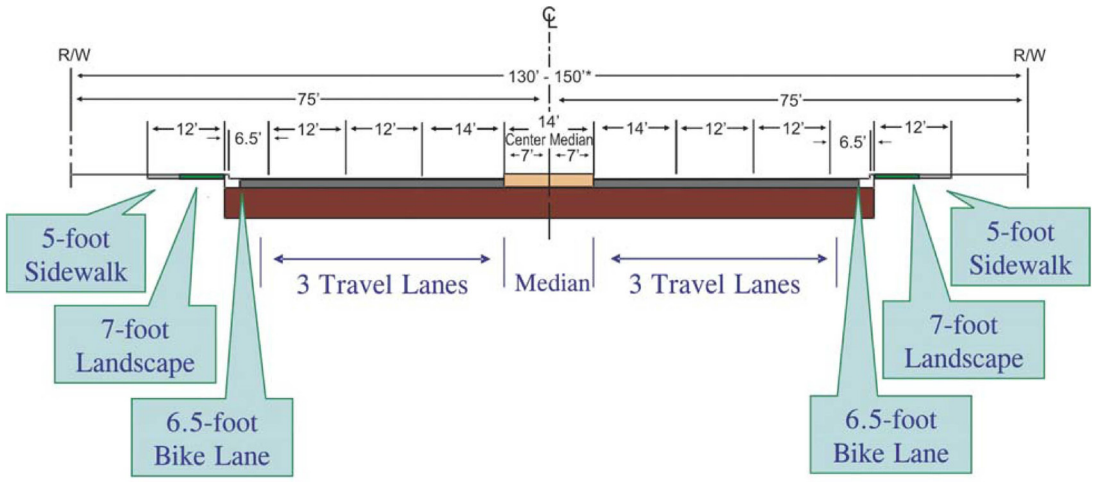
Source: Excerpt from Figure 11, Regionally Significant Routes Plan for Safety and Mobility (RSRSM), Lima & Associates, et al., September 2008.

Figure 2-2: Regionally Significant Routes Priority Map



Source: Excerpt from Figure 12, Regionally Significant Routes Plan for Safety and Mobility (RSRSM), Lima & Associates, et al., September 2008.

Figure 2-3: Typical Section, Regionally Significant Routes



1. Additional right-of-way may be required at intersections to provide additional turning lanes and pedestrian refuge space in the median.
2. Sidewalk and landscape widths will transition to local jurisdiction standards.

* Right-of-way widths of 130' to 140' will accommodate a modified divided six-lane cross section.

Source: Figure 8, Regionally Significant Routes Plan for Safety and Mobility (RSRSM), Lima & Associates, et al., September 2008.

Table 2.1: Regionally Significant Routes Classification and Access Criteria

Item	RSR Parkway	RSR Principal Arterial
Laneage and Planning Capacity		
Number of Lanes	Six lanes	Six lanes
Planning Capacity	88,000 vehicles per day	50,000 vehicles per day
Design Standards		
Posted Speed	50-65 mph	35-50 mph
Right-of-Way	200 feet	130-150 feet
Medians	To be determined by Pinal County in reference to the Final Arizona Parkway Guidelines	Divided with full or directional median openings at ¼ mile spacing
Lane Width		Lane widths as in Typical Section
Left Turn Lanes		At all locations where left turns are permitted
Right Turn Lanes		At all locations where right turns are permitted and volumes warrant
Access Management Guidelines		
Public Access/Intersections	To be determined by Pinal County in reference to the Final Arizona Parkway Guidelines	¼ mile to ½ mile spacing
Traffic Signal Spacing		¼ mile and ½ mile locations Fully coordinated and progressed where warranted
Typical Traffic Control		Signalized, two-way stop
Private Access/Driveways:		
Full Access Driveway from Signal		660 feet
Partial Access Driveway from Signal		330 feet See Note 5
Driveway Spacing		330 feet
Grade Separated Interchanges Spacing	One mile locations where possible where warranted	One mile locations where warranted
Grade Separated Interchanges Type	Single–Point Urban Interchange (SPUI), tight diamond, System-to System where warranted and feasible	May include SPUI or tight diamond if warranted and feasible
Frontage Roads	Possible, but not desirable with SPUI's	Possible
On-Street Parking	Prohibited	Prohibited
Alternate Travel Modes		
Transit	Provide for pull-outs and queue jumper lanes where warranted	Provide for pull-outs and queue jumper lanes where warranted
Bicycle and Pedestrian Facilities	Provide roadway width for bicycles and sidewalks for pedestrians Grade-separated pedestrian/ bicycle crossings where warranted.	Provide roadway width for bicycles and sidewalks for pedestrians Grade-separated pedestrian/ bicycle crossings where warranted.

Notes:
1. Additional right-of way may be required at intersections to provide additional turning lanes and pedestrian refuge space in the median.
2. Sidewalk and landscape widths will transition to local government standards.
3. U-turn movements will be permitted at the median openings of RSR Principal Arterials if conditions warrant.
4. All standards are subject to the approval of the Pinal County Engineer.
5. For parcels with short frontage, proposed driveways with less than 330 feet spacing will be considered case by case.

Source: Table 7, Regionally Significant Routes Plan for Safety and Mobility (RSRSM), Lima & Associates, et al., September 2008.

facility for planning purposes is 65,000 – 90,000 vpd. Thus, the issues assessed with regard to this study are related to:

(1) the functional classification of roadways,
(2) whether or not the classification is supported by travel demand forecasts, and
(3) the ability to construct the facility within the corridor identified.

2.2 COOLIDGE-FLORENCE REGIONAL TRANSPORTATION PLAN

The Coolidge-Florence Regional Transportation Study (RTS) was accomplished through a cooperative effort of the City of Coolidge, Town of Florence, and the Arizona Department of Transportation (ADOT). The planning area for this study encompassed 336 square miles of central Pinal County, approximately midway between the City of Phoenix and City of Tucson, and incorporated the combined planning areas of the City of Coolidge and the Town of Florence. This area is projected to experience population growth in the range of 250,000 to 300,000 persons over the next 20 years. The study produced a plan for a multimodal transportation system for the combined planning area. The plan recognizes regional growth dynamics and the need for a coordinated multimodal transportation system. The final report defined a road plan, methods for implementing the plan, funding priorities, and a public transportation component. Although the study included roadway facilities under the jurisdiction of ADOT, improvements to the State Highway System can be made only after ADOT completes in-depth planning and engineering studies, which must be submitted to the State Transportation Board for approval.

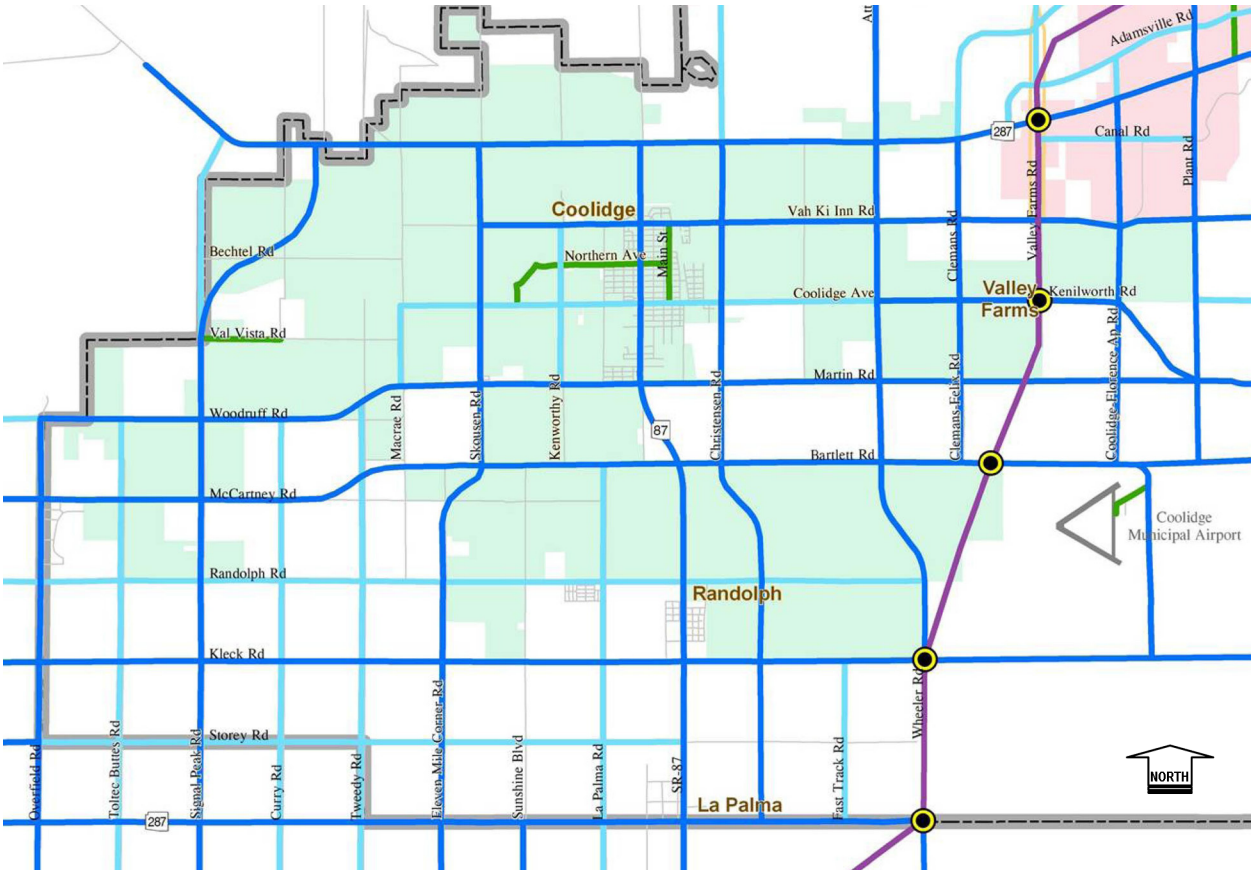
Key figures/tables from this study include:

- Figure 2-4 – Recommended Functional Road Classification;
- Figure 2-5 – Recommended Year 2025 Number of Lanes;
- Table 2.2 – Minimum Road Design and Access Criteria;
- Figure 2-6 – Typical Cross-Sections; and
- Figure 2-7 – High Priority Corridors

This plan, like the RSRSM Plan, did not incorporate a major east-west regional connecting route to serve the core area of the City of Coolidge. However, it does identify SR 287, two miles north of the downtown, and Bartlett Road, two miles south of downtown, are identified as a Major Arterials with an interchange at the proposed freeway in the North-South Corridor, five miles east of the downtown. These two facilities also have connections with SR 79, as do Vah Ki Inn Road and Martin Road. To the west, SR 287 links with SR 87 for access to the Phoenix metropolitan area, but only Bartlett Road is shown connecting with I-10.

In the classification scheme adopted for this plan, Major Arterial facilities are identified as having six lanes that have a capacity of 45,000 to 55,000 (vpd). Required

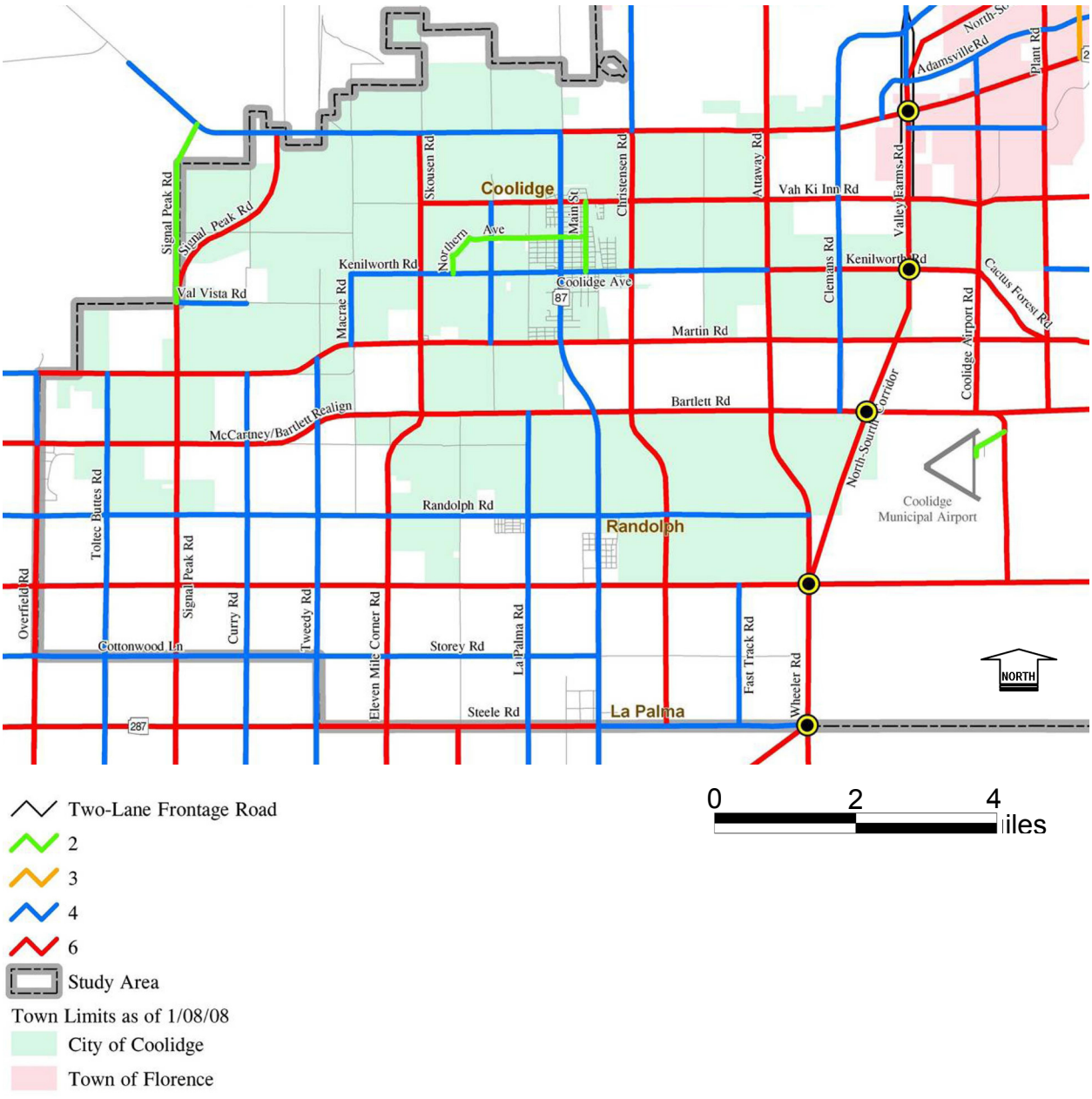
Figure 2-4: Recommended Functional Road Classification



Interstate
Freeway
Major Arterial
Minor Arterial
Major Collector
Minor Collector
Frontage Road
Potential Interchanges
Study Area
Town Limits as of 1/08/08
City of Coolidge
Town of Florence

Source: Excerpt from Figure 6-2, Coolidge-Florence Regional Transportation Plan, Lima & Associates, et al., April 2008.

Figure 2-5: 2025 Number of Lanes



Source: Excerpt from Figure 6-3, Coolidge-Florence Regional Transportation Plan, Lima & Associates, et al., April 2008.

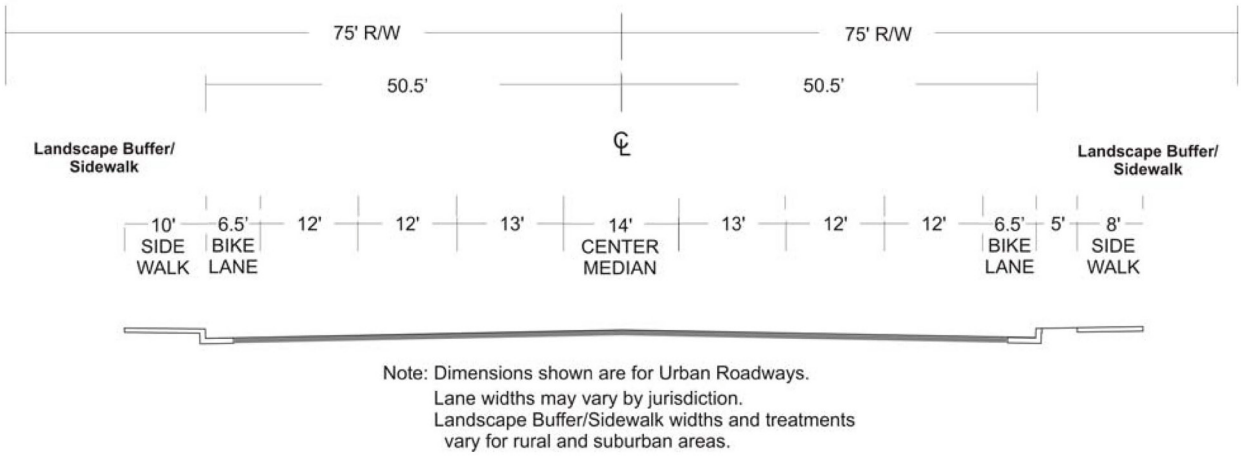
Table 2.2: Minimum Road Design and Access Criteria

Criteria	Freeway	Principal/Major Arterial
Road Purpose	Mobility	Mobility
Planning Average Daily Traffic	>55,000	45,000-55,000
Design Standards		
Design Speed	75 mph	55 mph
Right-of-Way Width	300'+	130'-150'
Median	Divided	Divided
Number of Lanes	4 and Greater	6
Left-turn Lanes	NA	At all locations where permitted
Right-turn Lanes	NA	At all locations where permitted and warranted
Access Management Guidelines		
Public Access	Grade-Separated Interchanges Only	1/8-1/2mile
Property Access	None	Rt. in/Rt. Out Full access where approved
Traffic Signal Spacing	NA	Mile and ½ mile locations, Fully coordinated and progressed where warranted
Typical Traffic Control	NA	Signalized, two-way stop
Parking	Prohibited	Prohibited
Alternative Modes		
Transit	Potential HOV Lane	Bus pull-outs and queue jumpers where warranted
Bike Lanes	No	Yes
Sidewalk (both sides)	None	6'

TWTL – Two-way Turning Lanes

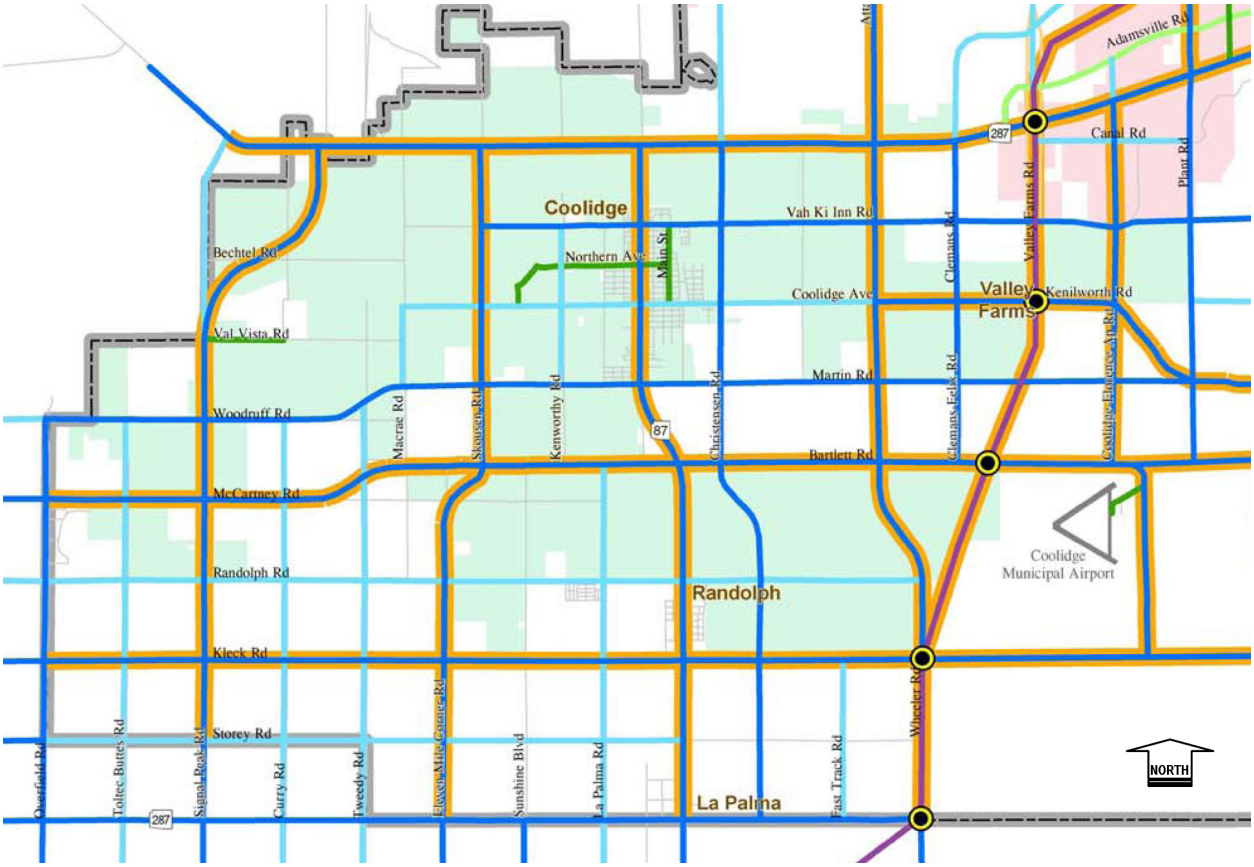
Source: Excerpt from Table 6-2, Coolidge-Florence Regional Transportation Plan, Lima & Associates, et al., April 2008.

Figure 2-6: Typical Cross-Sections – Major Arterial



Source: Excerpt from Figure 6-4, Coolidge-Florence Regional Transportation Plan, Lima & Associates, et al., April 2008.

Figure 2-7: High Priority Corridors



- Interstate
- Freeway
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Frontage Road
- High Priority Corridor
- Potential Interchanges
- Study Area

Town Limits as of 1/08/08

- City of Coolidge
- Town of Florence

Source: Excerpt from Figure 8-2, Coolidge-Florence Regional Transportation Plan, Lima & Associates, et al., April 2008.

right-of-way for this type facility is 130-150 feet. Preliminary evaluation of the facilities identified in this plan indicate there would be excess capacity for anticipated travel demand in 2040. Additionally, the available right-of-way was examined to identify constructability issues and constraints for each arterial corridor. Thus, the issues assessed with regard to this study are the same as identified for the RSRSM Plan:

(1) the functional classification of roadways,
(2) whether or not the classification is supported by travel demand forecasts, and
(3) the ability to construct the facility within the corridor identified.

3.0 FEASIBILITY ASSESSMENT METHODOLOGY

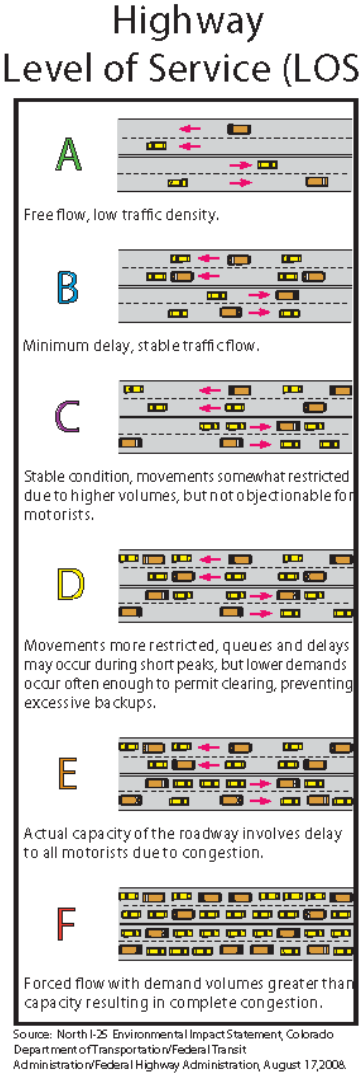
This chapter presents the framework within which Year 2040 No-Build travel conditions in the study area were evaluated.

3.1 METHODOLOGIES AND STANDARDS

The study area roadway network was defined and classified according to levels of service provided by each facility and segments of a facility. How a facility and its segments are defined identifies the amount of capacity available for travel. This section establishes a rational basis for assessing the performance of the existing roadway network and, therefore, the feasibility of implementing various improvements to the system.

3.2 LEVEL OF SERVICE ASSESSMENT

As defined in the 2010 Highway Capacity Manual (2010HCM), level of service (LOS) is a qualitative measure describing operating conditions within a traffic stream.[1] Six levels of service are defined using letters, with LOS A representing the best operating condition and LOS F the worst. Each LOS designation represents a range of operating conditions and the driver's perception of these conditions, which are graphically depicted in the in the figure at right. The various criteria of LOS are generally defined as follows:



Source: North I-25 Environmental Impact Statement, Colorado Department of Transportation/Federal Transit Administration/Federal Highway Administration, August 17,2008.

- **LOS A** represents free flow.
- **LOS B** is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable.
- **LOS C** is in the range of stable flow, but marks the beginning of the range in which the operation of individual users becomes significantly affected by others.
- **LOS D** represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
- **LOS E** represents operating conditions at or near the capacity level. All speeds are reduced to a low but relatively uniform value.

[1] Highway Capacity Manual 2000, Transportation Research Board (TRB) of the National Academies.

- **LOS F** is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point.

LOS can be estimated for various roadway parameters and time frames. LOS can be calculated for roadway segments, intersections, as well as freeway mainline lanes and ramps. LOS also can be calculated for different time periods, including daily conditions and peak-hour conditions. Specific criteria for LOS applied during conduct of this feasibility study are highlighted below.

The operating efficiency of a roadway segment under general planning conditions is often defined by comparing the daily or 24-hour (daily) traffic volume on a roadway segment to the daily capacity as defined by a particular segment's functional classification. LOS E generally is used as the acceptable threshold for planning-level analysis of traffic conditions in heavily developed urban areas, but it assumes acceptance by vehicle operators of a certain level of congestion. LOS D supports greater mobility and represents less congestion for vehicle operators. LOS D has been adopted as the standard for this study.

Table 3.1 illustrates the capacity thresholds for facility types in the Coolidge study area. Daily traffic volumes equal to or exceeding the listed capacity thresholds would indicate a condition in which the volume on the roadway segment exceeds the planning-level capacity threshold for that facility.

TABLE 3.1: ROADWAY SEGMENT CAPACITY THRESHOLDS AT LOS D BY FACILITY TYPE

Functional Classification	Number of Lanes	Divided/ Undivided	Left-Turn Lane	Description	Capacity Threshold (LOS D)
Freeway	4	Divided	N/A		101,600
	6	Divided	N/A		152,400
Parkway	4	Divided	ILT		60,000
	6	Divided	ILT		90,000
	8	Divided	ILT		120,000
Principal Arterial	2	Undivided	Yes	State Class 1	15,500
	4	Undivided	No	Arterials	23,940
	4	Divided	Yes		34,200
	6	Divided	Yes		51,400
Minor Arterial	2	Undivided	No	State Class 2	11,600
	2	Undivided	Yes	Arterials	14,500
	4	Undivided	No		22,900
	4	Divided	Yes		30,600
Major Collector	2	Undivided	No		10,800
	2	Undivided	Yes		13,600
	3	Continuous LTL	Yes		15,000
	4	Undivided	No		15,200
Minor Collector	2	Undivided	No		7,500
	2	Undivided	Yes		9,400
	3	Continuous LTL	Yes		12,000

Source: Florida Department of Transportation *Quality Level of Service Handbook, 2002*

4.0 NORTH-SOUTH CORRIDOR TRAVEL DEMAND MODEL

Prior to the evaluating potential future roadway network needs based on the 2040 North-South Corridor travel demand forecasts, an assessment of the existing, planned, and committed (E+C) roadway system was undertaken. The 2040 E+C network is represented by those facilities identified in the RSRSM Plan and Coolidge-Florence RTS, as discussed in the previous section. It represents the Base Future Transportation Network that can be used to test the adequacy of the transportation system under assumptions and recommendations specified in the two planning documents for the Year 2040. Thus, the Base Future Transportation Network is represented by the existing roadway system, with modifications derived consistent with recommendations accepted as a result of the *Hassayampa Framework Study*.

4.1 YEAR 2040 SOCIOECONOMIC DATA FORECASTS

The urbanization process and general population growth is expected to add significantly to the number of households in the Study Area through year 2040, and beyond. Household and employment growth will be further enhanced by the regional transportation investments currently being contemplated. Being directly between the two metropolitan areas of Phoenix and Tucson, Coolidge is situated to provide residents and businesses a great amount of flexibility and proximity to these two key areas of Arizona.

Table 4.1 summarizes the projected growth of households and employment in the Study Area for the years 2010, 2020, 2030, and 2040. The regional household and employment forecasts were included to provide valuable insight to the regional travel demand needs primarily due to the extensive growth in Pinal County. Households in the region will increase substantially through 2040, increasing by 670.2%. This is also reflected within the study area, with a 570% growth in households. Employment is anticipated to increase dramatically, outpacing the population and employment projections by approximately double. The assumptions identified in Table 4.1 were accepted into the North/South Corridor Study travel demand model and are reflected in the analysis for this study.

Table 4.1: Study Area Socioeconomic Growth Assumptions: 2010 – 2040

	Year					
	Year 2010 CAAG Summary	Year 2020 CAAG Summary	Year 2030 CAAG Summary	Year 2040 CAAG Summary	2010-2040 Change	2010-2040 Percent Change
Households	5,641	12,905	23,823	37,772	32,131	570%
Population	17,666	40,552	75,471	120,436	102,770	582%
Employment	3,502	10,824	20,275	44,122	40,620	1,160%

The following figures graphically illustrate the assumptions for growth in the Coolidge Area:

- Figure 4-1: Year 2010 Population (Persons per Acre)
- Figure 4-2: Year 2020 Population (Persons per Acre)
- Figure 4-3: Year 2030 Population (Persons per Acre)
- Figure 4-4: Year 2040 Population (Persons per Acre)
- Figure 4-5: Year 2010 Employment (Employees per Acre)
- Figure 4-6: Year 2020 Employment (Employees per Acre)
- Figure 4-7: Year 2030 Employment (Employees per Acre)
- Figure 4-8: Year 2040 Employment (Employees per Acre)

Based on the information contained in Figures 4-1 through 4-8, the population and employment forecasts accurately provide for growth in the areas that are anticipated to exhibit growth. The City of Coolidge continuously works with CAAG to refine the socioeconomic data forecasts as development occurs and significant transportation investments are made.

Figure 4-1: Year 2010 Population (Persons per Acre)

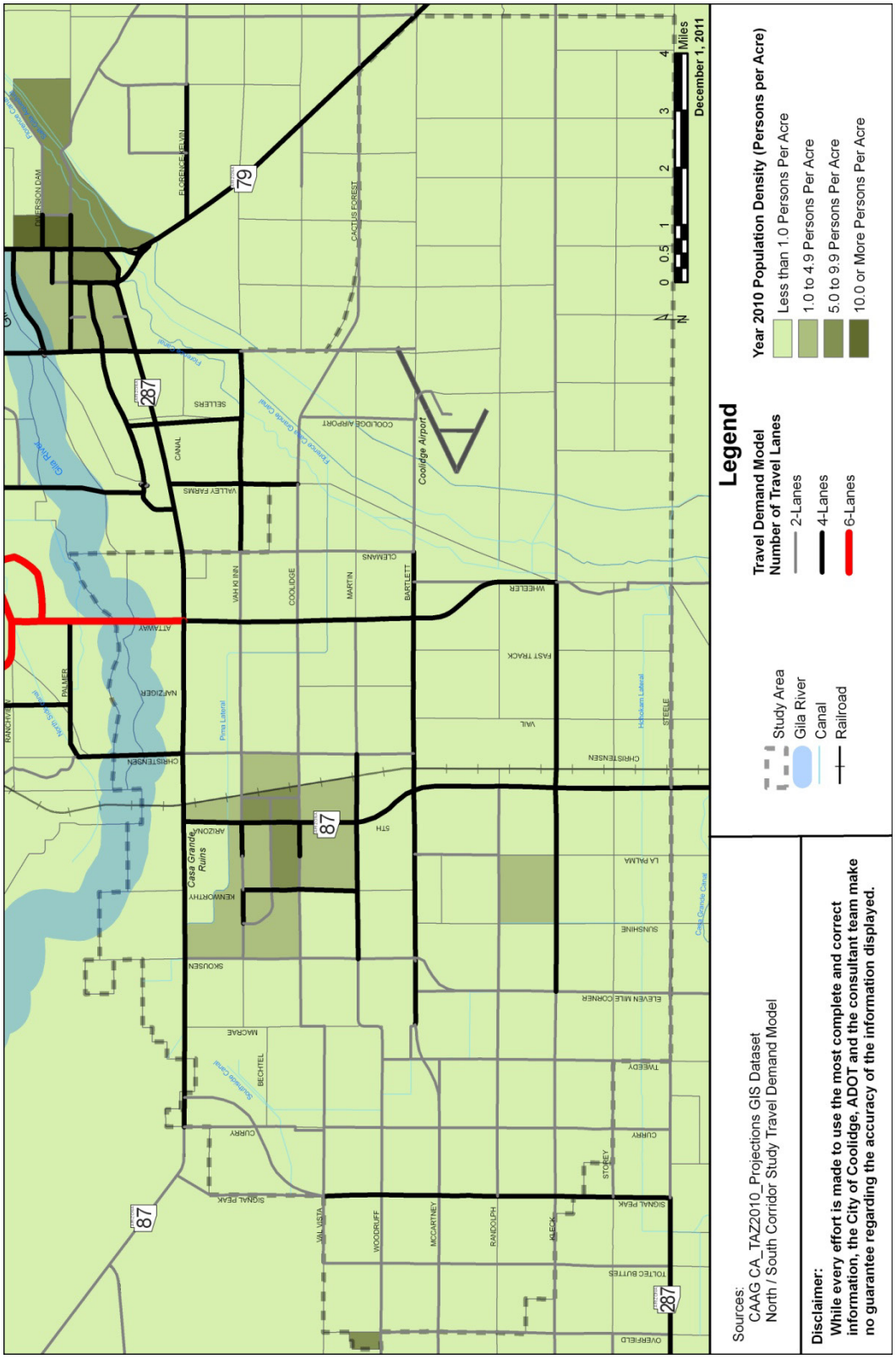


Figure 4-2: Year 2020 Population (Persons per Acre)

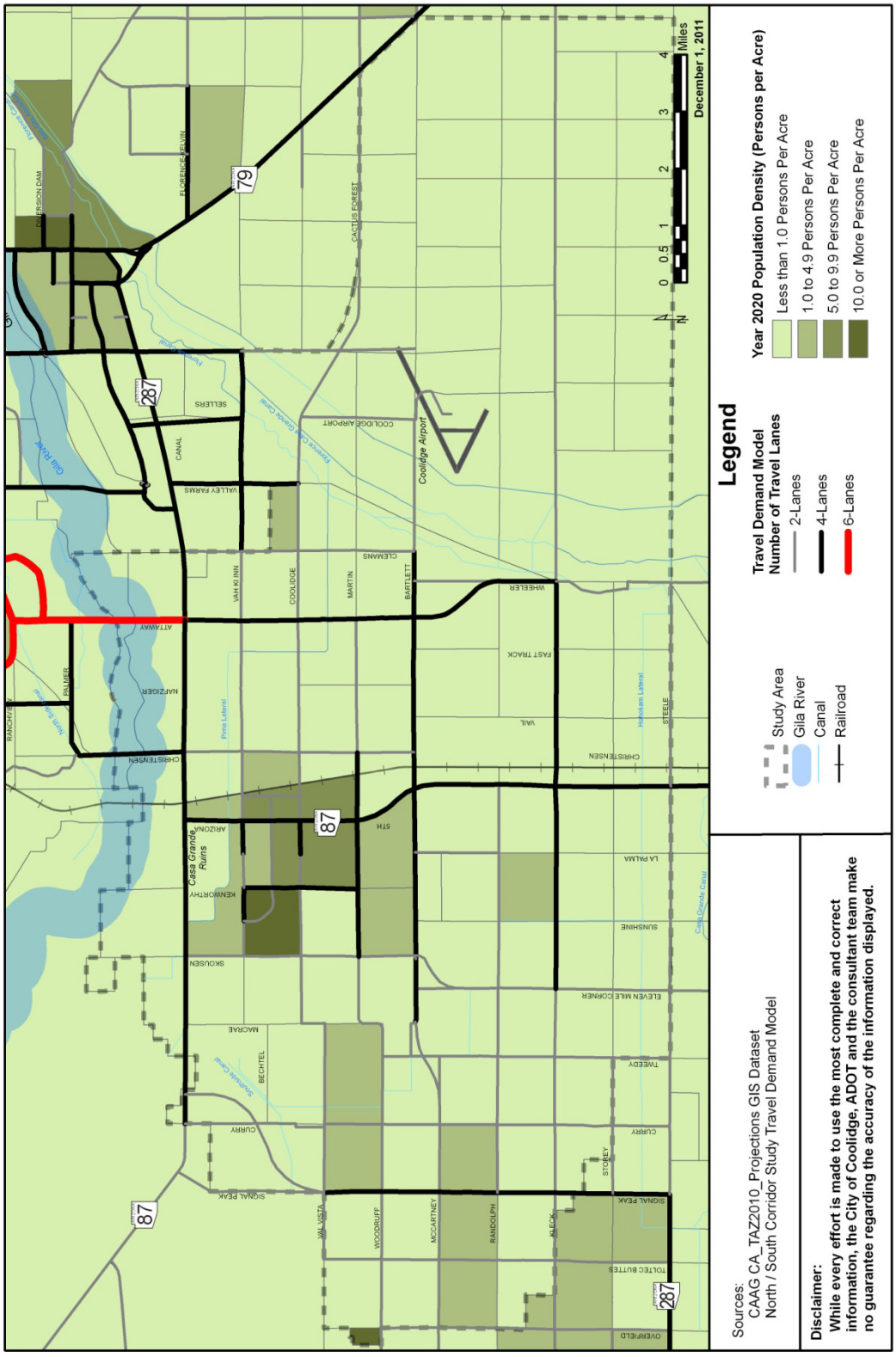


Figure 4-3: Year 2030 Population (Persons per Acre)

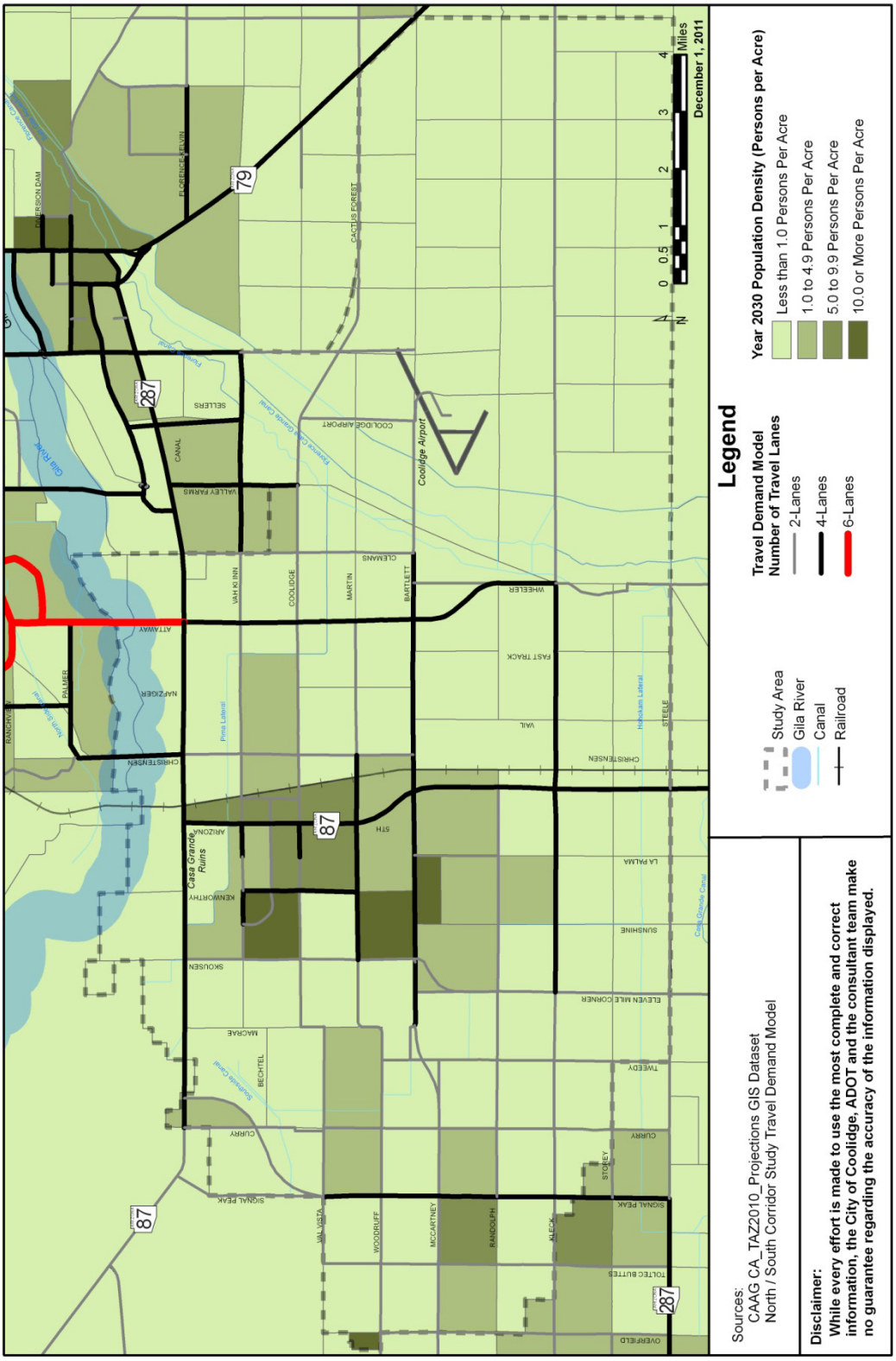


Figure 4-4: Year 2040 Population (Persons per Acre)

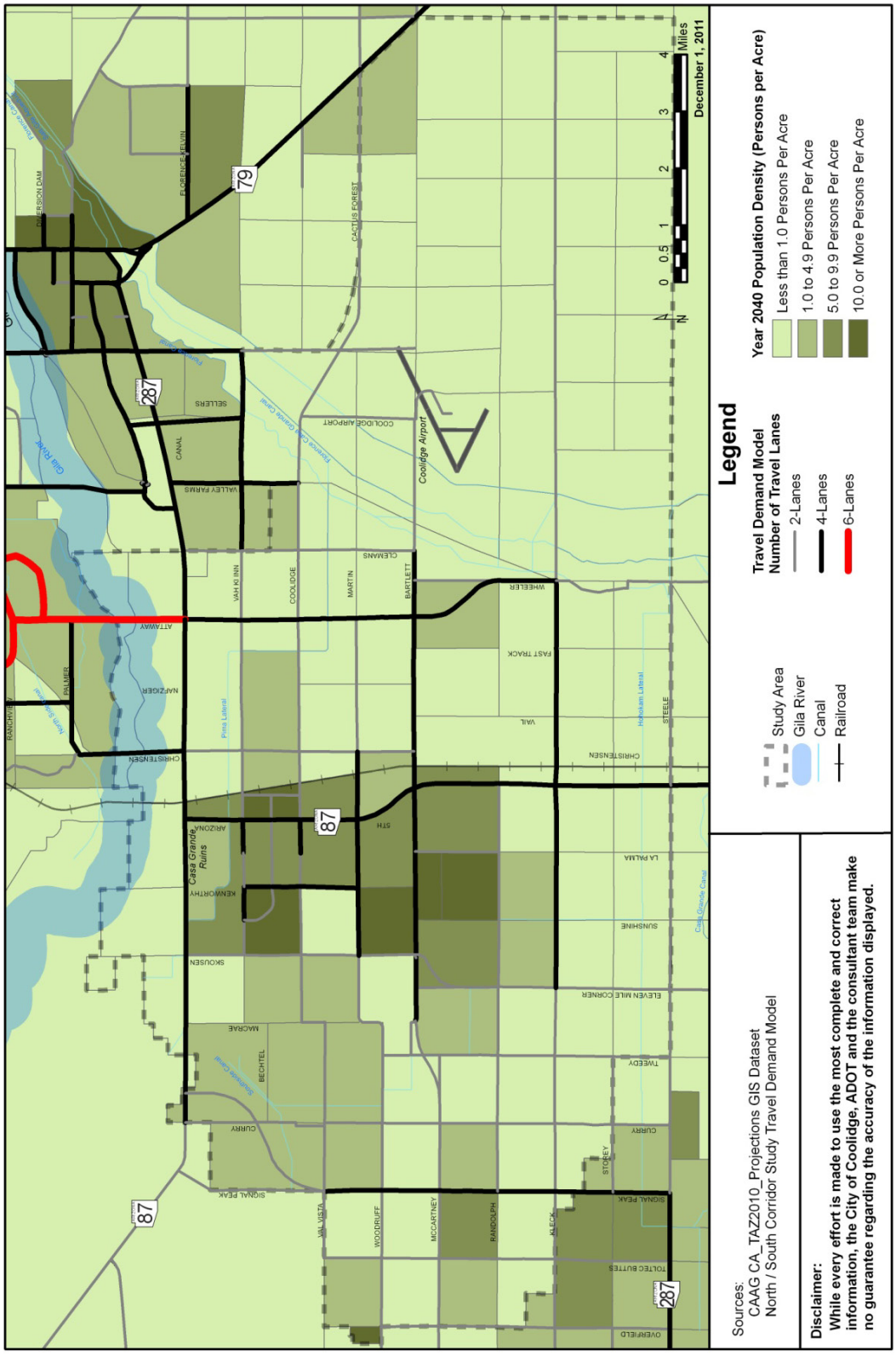


Figure 4-5: Year 2010 Employment (Employees per Acre)

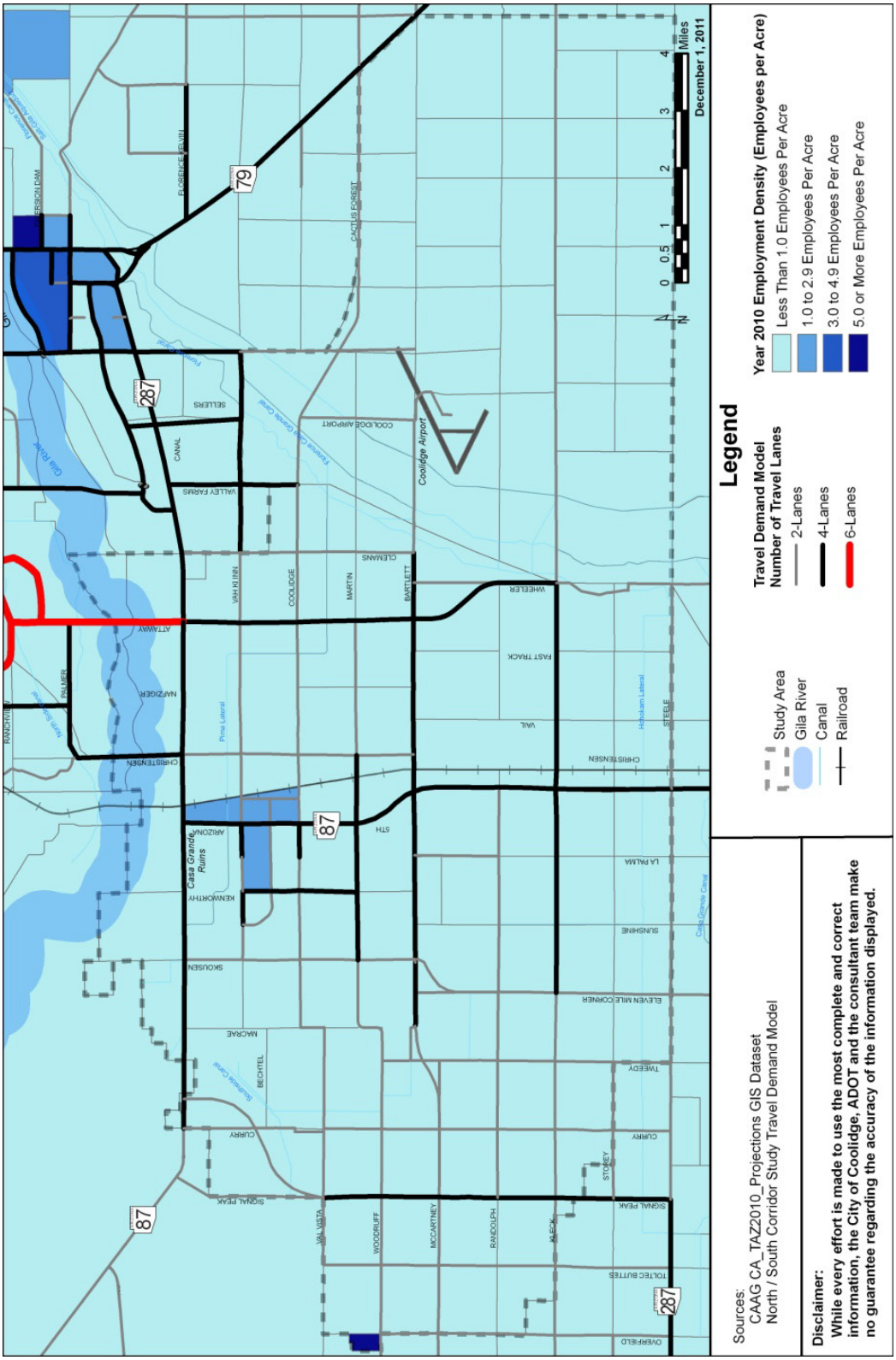


Figure 4-6: Year 2020 Employment (Employees per Acre)

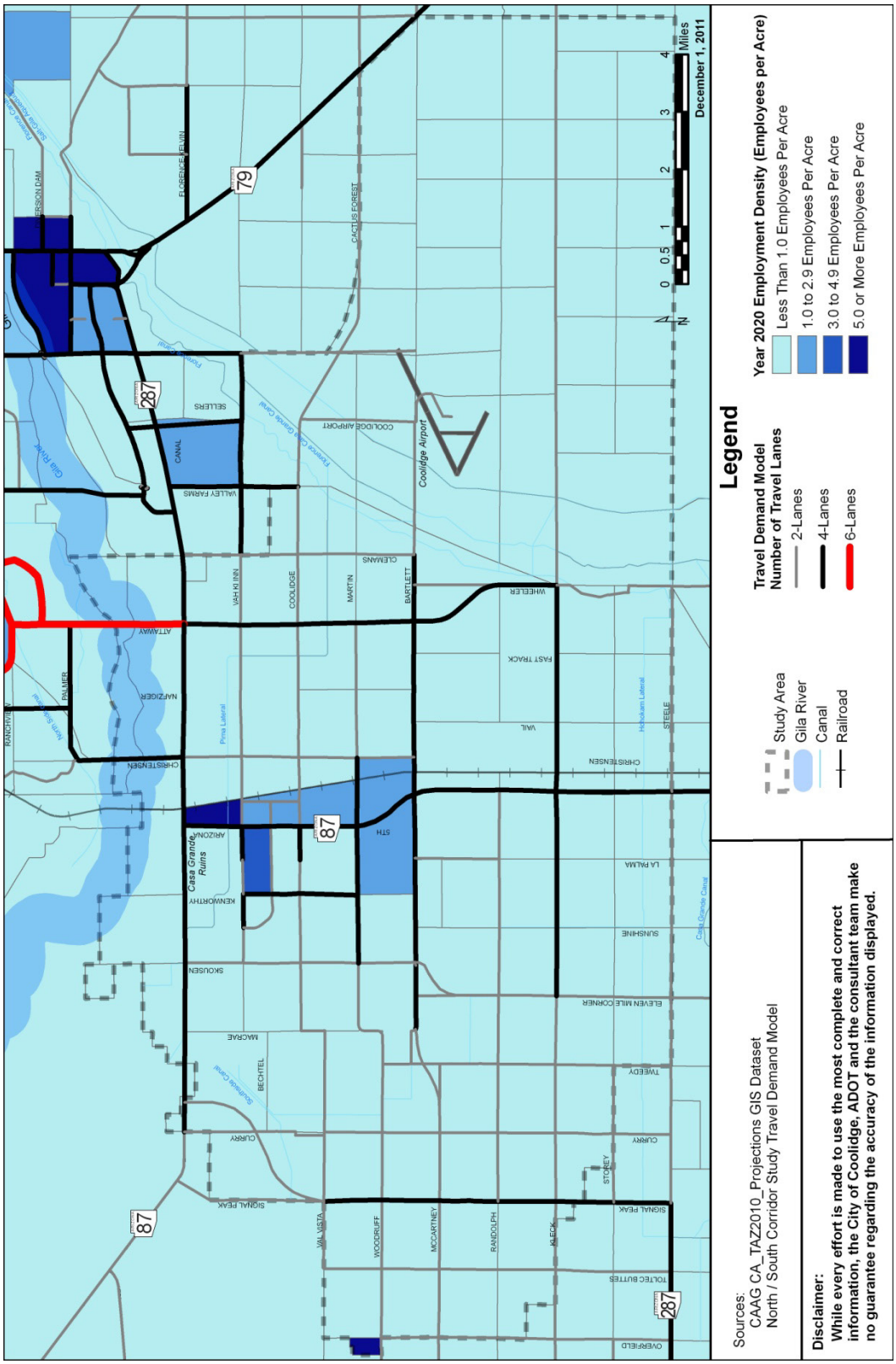


Figure 4-7: Year 2030 Employment (Employees per Acre)

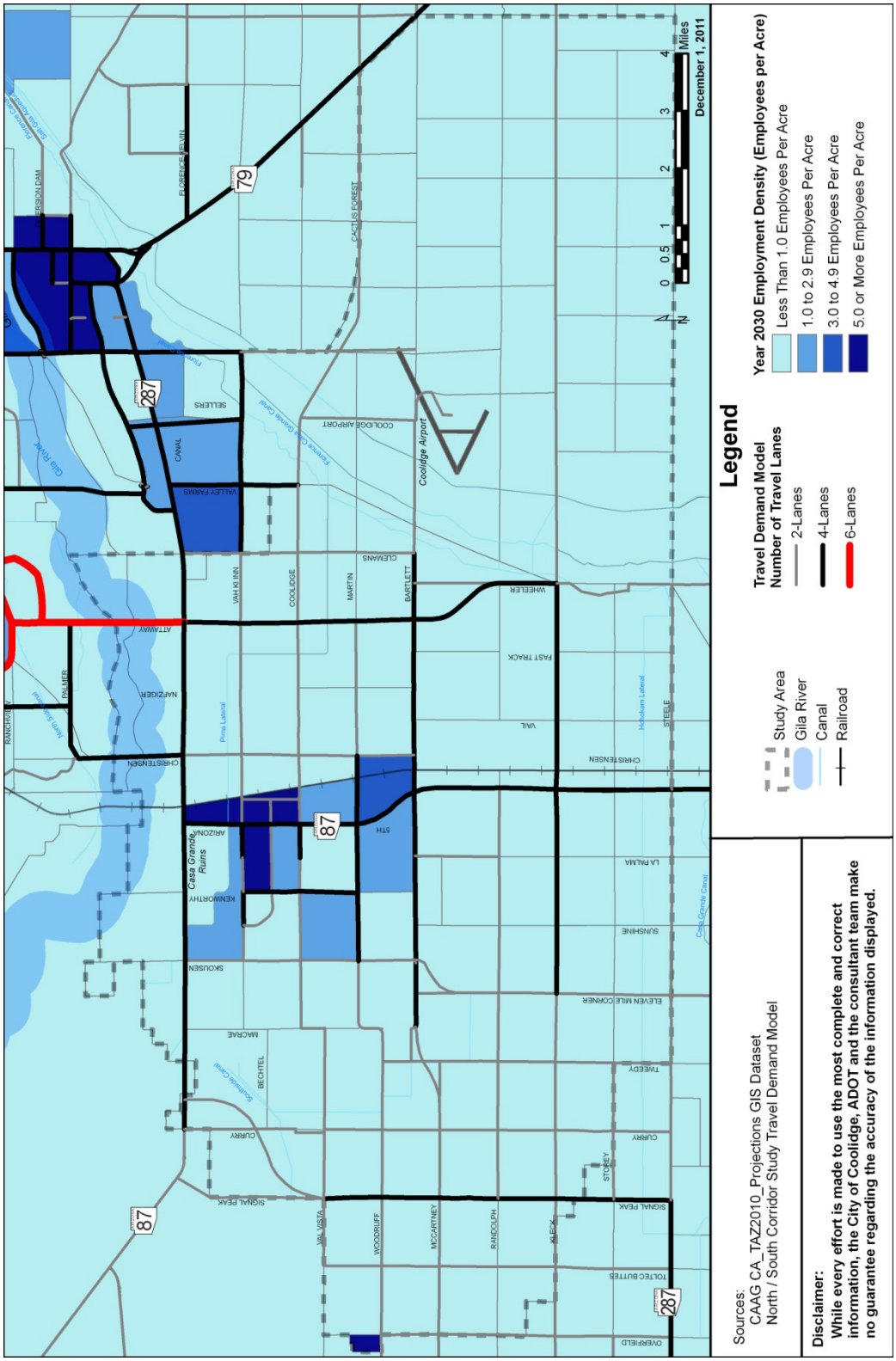
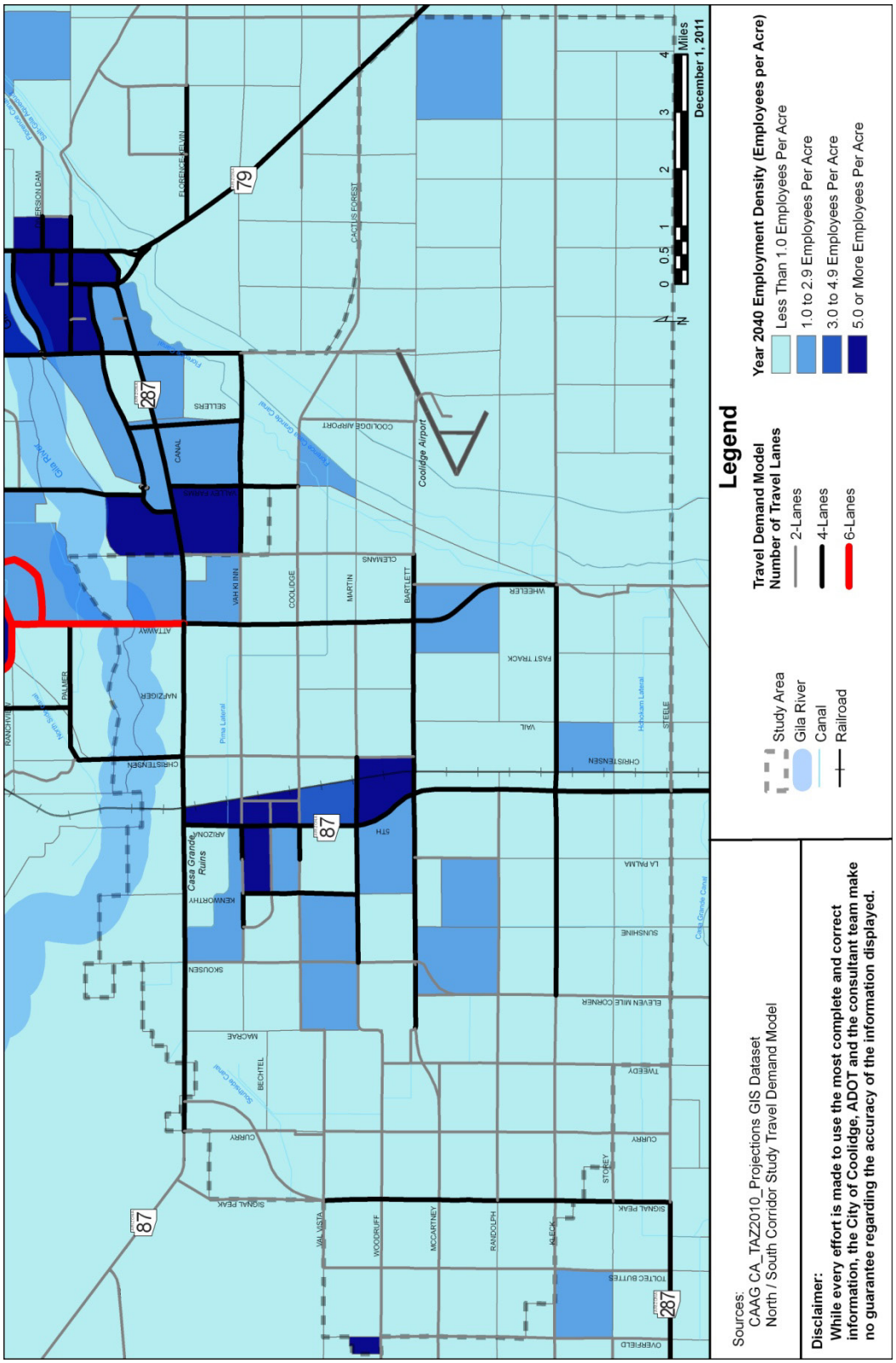


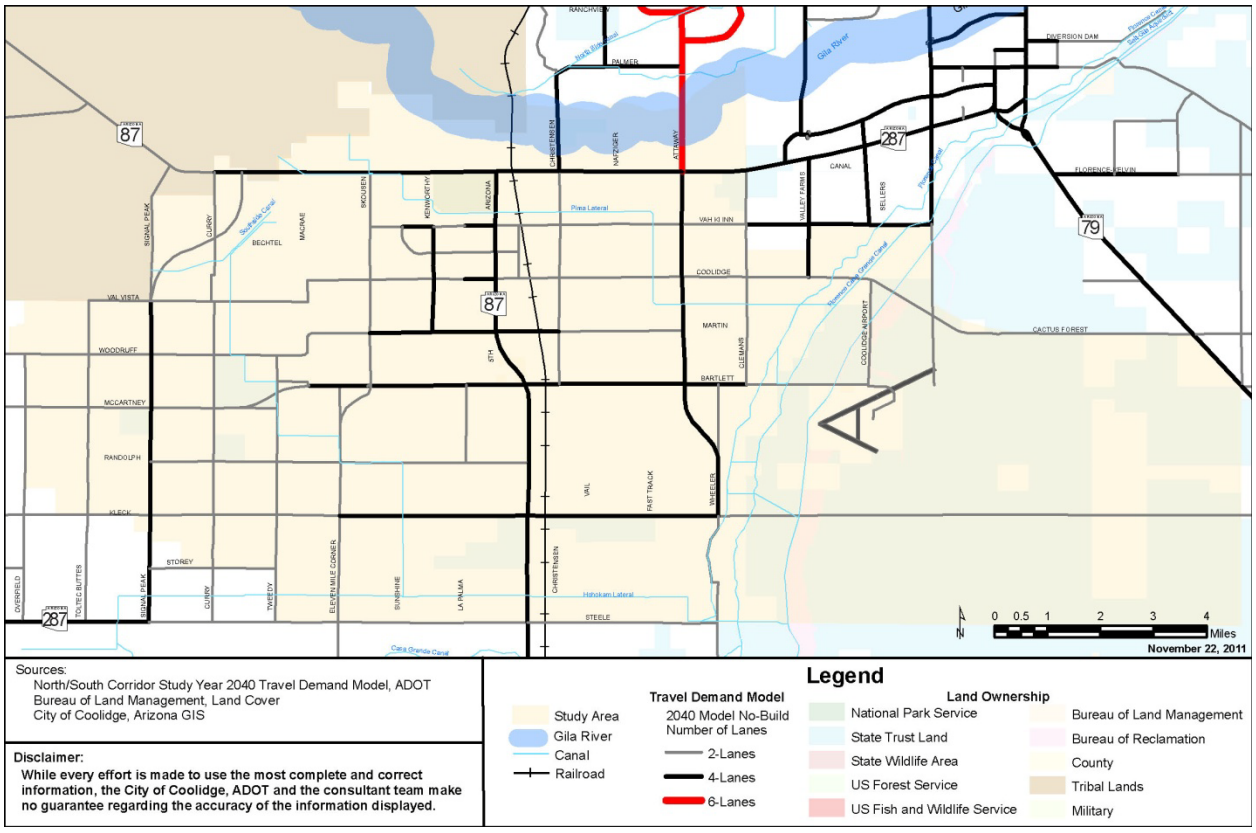
Figure 4-8: Year 2040 Employment (Employees per Acre)



4.2 TRAVEL DEMAND MODEL NO-BUILD NETWORK

Assumed modifications/improvements were defined in terms of the appropriate functional classification, and cross-sections were identified to establish facility capacity for major facilities (Major or Principal Arterials, Parkways, and Freeways). Then, the number of lanes stipulated in the cross-sections was identified. This information was used with the 2040 North-South Corridor travel demand model to forecast traffic volumes on the assumed network. The resulting network essentially represents a No Build scenario that incorporates no other capacity expansion or new facilities other than those already identified through previous studies of area needs. Figure 4-9 illustrates the Year 2040 Network and number of lanes used for this study analysis. Improvements that are anticipated to be completed include paving the existing network, developing a direct connection between McCartney and Bartlett, developing a direct connection between Eleven Mile Corner Road and Skousen Road, and realigning Signal Peak Road between Val Vista and SR-87.

Figure 4-9: Year 2040 No-Build Network



4.3 YEAR 2040 TRAFFIC FORECASTS & NETWORK PERFORMANCE

The Year 2040 traffic forecast and network performance assessment was completed to assess base travel conditions to understand the magnitude of transportation system improvements needed to accommodate future travel demand. Due to the issues relating to developing a travel demand model in general, the North-South Corridor analysis team will provide model output files for this Coolidge Transportation Feasibility

Study to use. Modeling efforts will not be completed to assess different alternative networks due to the modeling efforts currently being conducted for the North-South Corridor Study. Instead, cut-line evaluations, as described below, will be conducted to evaluate regional travel demand needs and improvement strategies.

4.3.1 YEAR 2040 TRAVEL MODEL FORECAST

The travel demand model forecasts are provided in Figure 4-10 based on the Year 2040 socioeconomic data presented above.

4.3.2 CUT-LINE ANALYSIS

A cut-line analysis was used to identify roadway corridors that may show congestion by year 2040, based on projected growth and modeling assumptions. A "cut-line" analysis focuses on key travel corridors to identify whether the roadway network alternative would provide adequate capacity. It is a technique that allows a broader assessment of the relationship between network capacity and travel demand. Traffic volumes on specific facilities may be high or low, due to variances in the model assignment process. Cut-line analysis permits evaluation of traffic volumes as the total demand for travel in a given direction over a broader portion of the network. The cut-line analysis also allows this study team to identify potential travel demand capacity issues for the Coolidge Study Area based on a broader assessment using the North-South Corridor travel demand model output.

4.3.3 METHODOLOGY

Forecast traffic volumes were evaluated using the cut-line technique to determine how the structure of roadway network alternatives would perform relative to forecast 2040 travel demand, i.e., is there adequate capacity to accommodate forecast traffic volumes. The capacity of any given roadway link, or segment, in a roadway network is a function of the number of travel lanes available, functional classification of the facility, and volume of traffic. The capacity of the cut-line is the cumulative sum of traffic on all links crossing the cut-line compared to the cumulative capacity of those links. Each roadway link crossing the cut-line is reviewed, and average daily capacity threshold associated with its functional classification is determined. Capacity values for each individual roadway link crossing the cut-line are added together to arrive at a total capacity value for the cut-line. This total capacity value then is compared to the total traffic volume of all roadway links crossing the cut-line. The comparison yields a volume-to-capacity (*v/c*) ratio, which provides a basis for assessing the adequacy of network capacity for directional travel, as defined by the cut-line, relative to network travel demand.

4.3.4 CUT-LINE ANALYSIS RESULTS

North-south and east-west cut-lines were drawn across the arterial roadway network of the North-South Corridor no-build alternative to understand overall system level demands. Figure 4-11 shows the locations of the cut-lines used to evaluate traffic flow and *v/*c values under year 2040 no-build conditions.

Figure 4-10: Year 2040 No-Build Traffic Volume Forecast

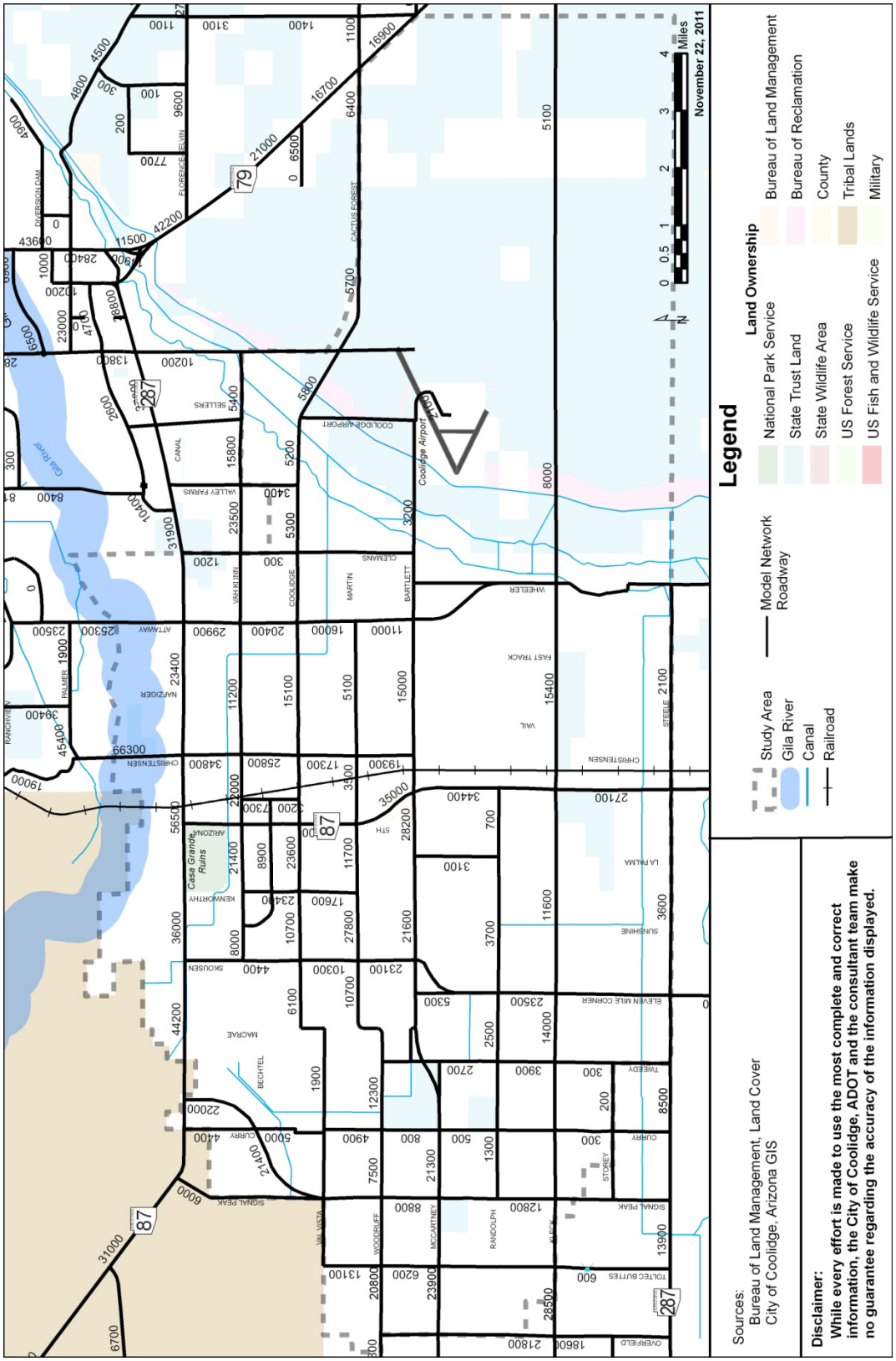
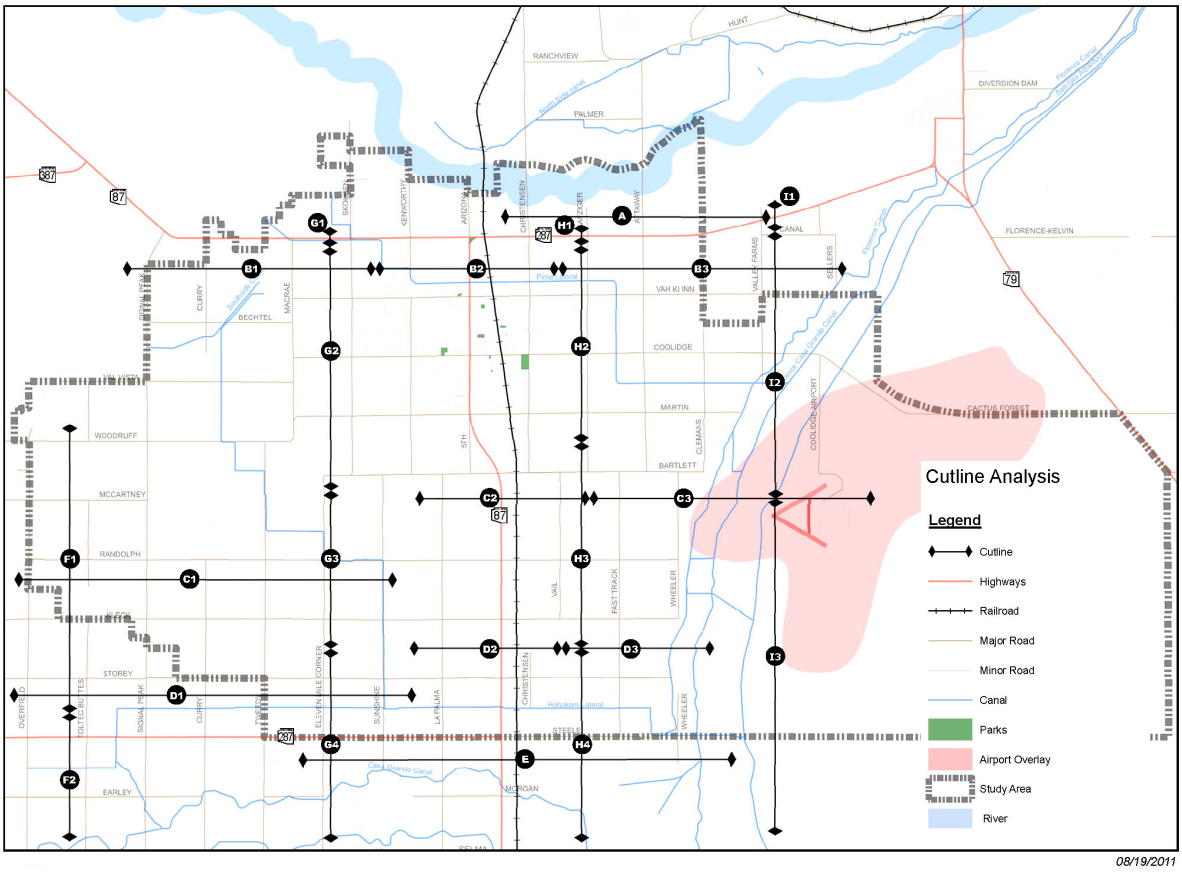


Figure 4-11: Cut Line Analysis Locations



Some of these deficiencies can be addressed by upgrading the two-lane arterial roadways to four-lanes. Other deficiencies are more regional in nature and should be addressed through a regional solution such as a new high capacity transportation facility.

A detailed cut-line analysis for the No Build Scenario (i.e., Base Future Transportation Network) that reflects 2040 travel conditions is provided in Table 4.1. The table reveals that 19 roadway segments in the study area are expected to function at LOS E or F. None of the cut-lines is without at least one roadway segment forecast to operate at LOS E or F. Thus, the cut-line analysis of the Base Future Transportation Network, assuming 2040 travel demand, reveals substantive requirements for additional capacity in the study area based on the socioeconomic forecasts provided by CAAG. In other words, expected enhancements associated with the Year 2040 E+C network will adequately accommodate traffic volumes forecast to be crossing the nine cut-lines. However, there are roadway segments associated with each cut-line that will create impedance to efficient travel in both the north-south and east-west directions.

The worst conditions in the study area are anticipated to be associated with Cut-lines E and F:

Cut-line E provides a gauge of travel demand into and out of the southern portion of the study area via Eleven Mile Corner Road, SR 87/Arizona Boulevard, and Wheeler Road. Two of the three roads are forecast to have adequate capacity as planned and expected to operate at LOS D. Eleven Mile Corner Road, however, is forecast to have a traffic volume almost twice its planned capacity.

Cut-line F provides a measure of travel demand on five east-west roads, again at the outer (western) edge of the study area. Three of the five roads associated with this cut-line are forecast to have v/c ratios exceeding 1.3 and, therefore, expected to operate at LOS E or F. All three roads have planned capacity significantly below the forecast Year 2040 traffic volumes.

TABLE 4.2
YEAR 2040 CUT-LINE ANALYSIS – NO BUILD SCENARIO

Cutline	Road Name	From	To	Year 2040 Model Volume	Number of Lanes	Model Functional Class	Capacity	v/c Ratio	LOS	Cutline Volume	Cutline Capacity	Cutline V/C
East-West Cutlines (north-south travel)												
A	Christensen Rd.	SR-287	E. Palmer Rd.	66,320	4	Arterial	34,200	1.94	LOS E or F	100,160	128,400	0.78
	Attaway Rd.	SR-287	E. Palmer Rd.	25,400	6	Arterial	60,000	0.42	LOS D or Better			
	Valley Farms Rd.	SR-287	E. Palmer Rd. Alignment	8,440	4	Arterial	34,200	0.25	LOS D or Better			
			Cutline Total:	**100,160**			**128,400**	**0.78**				
B-1	Signal Peak Rd.	Val Vista Blvd.	SR-87	4,480	2	Arterial	15,500	0.29	LOS D or Better	186,390	256,100	0.73
	Val Vista Blvd./SR-87 Connector	Val Vista Blvd.	SR-87	21,440	2	Arterial	15,500	1.38	LOS E or F			
	Curry Rd.	Val Vista Blvd.	SR-87	4,960	2	Arterial	15,500	0.32	LOS D or Better			
	Skousen Rd.	Val Vista Blvd.	Vah Ki Inn Rd.	4,380	2	Arterial	15,500	0.28	LOS D or Better			
B-2	Kenworthy Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	22,370	4	Arterial	34,200	0.65	LOS D or Better			
	SR-87/Arizona Blvd.	Kenilworth Rd./Coolidge Rd.	W. Northern Ave.	32,920	4	Arterial	34,200	0.96	LOS E or F			
	N. Main St.	Kenilworth Rd./Coolidge Rd.	W. Northern Ave.	37,800	2	Arterial	15,500	2.44	LOS E or F			
	Christensen Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	25,840	2	Arterial	15,500	1.67	LOS E or F			
B-3	Attaway Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	20,700	4	Arterial	34,200	0.61	LOS D or Better			
	Clemens Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	5,440	2	Collector	10,800	0.50	LOS D or Better			
	Valley Farms Rd.	Kenilworth Rd./Coolidge Rd.	Vah Ki Inn Rd.	3,800	4	Arterial	34,200	0.11	LOS D or Better			
	Plant Rd.	Cactus Forest Rd.	Vah Ki Inn Rd.	2,260	2	Arterial	15,500	0.15	LOS D or Better			
			Cutline Total:	**186,390**			**256,100**	**0.73**				
C-1	Overfield Rd.	Kleck Rd.	McCartney Rd.	21,850	2	Arterial	15,500	1.41	LOS E or F	128,470	198,400	0.65
	Toltec Buttes Rd.	Kleck Rd.	McCartney Rd.	190	2	Collector	10,800	0.02	LOS D or Better			
	Signal Peak Rd.	Randolph Rd.	McCartney Rd.	18,270	4	Arterial	34,200	0.53	LOS D or Better			
	Curry Rd.	Randolph Rd.	McCartney Rd.	540	2	Collector	10,800	0.05	LOS D or Better			
	Tweedy Rd.	Randolph Rd.	McCartney Rd.	3,280	2	Collector	10,800	0.30	LOS D or Better			
	Eleven Mile Corner Rd.	Randolph Rd.	Bartlett Rd.	23,670	2	Arterial	15,500	1.53	LOS E or F			
C-2	La Palma Rd.	Randolph Rd.	Bartlett Rd.	22,760	2	Collector	10,800	2.11	LOS E or F			
	SR-87/Arizona Blvd.	Randolph Rd.	Bartlett Rd.	34,440	4	Arterial	34,200	1.01	LOS E or F			
C-3	Attaway Rd.	Wheeler Rd.	Bartlett Rd.	1,220	4	Arterial	34,200	0.04	LOS D or Better			
	Wheeler Rd.	Attaway Rd.	Bartlett Rd.	170	2	Collector	10,800	0.02	LOS D or Better			
	Coolidge Airport Rd.	Airport	Bartlett Rd.	2,080	2	Collector	10,800	0.19	LOS D or Better			
			Cutline Total:	**128,470**			**198,400**	**0.65**				
D-1	Overfield Rd.	SR-287/Florence Blvd.	Storey Rd.	6,730	2	Arterial	15,500	0.43	LOS D or Better	67,760	142,600	0.48
	Toltec Buttes Rd.	SR-287/Florence Blvd.	Kleck Rd.	1,940	2	Collector	10,800	0.18	LOS D or Better			
	Signal Peak Rd.	SR-287/Florence Blvd.	Storey Rd.	6,250	4	Arterial	34,200	0.18	LOS D or Better			
	Curry Rd.	SR-287/Florence Blvd.	Storey Rd.	150	2	Collector	10,800	0.01	LOS D or Better			
	Tweedy Rd.	SR-287/Florence Blvd.	Storey Rd.	270	2	Collector	10,800	0.03	LOS D or Better			
	Eleven Mile Corner Rd.	SR-287/Florence Blvd.	Kleck Rd.	24,130	2	Arterial	15,500	1.56	LOS E or F			
D-2	SR-87/Arizona Blvd.	SR-287/Florence Blvd.	Kleck Rd.	27,110	4	Arterial	34,200	0.79	LOS D or Better			
D-3	Wheeler Rd.	Steel Rd.	Kleck Rd.	1,180	2	Collector	10,800	0.11	LOS D or Better			
			Cutline Total:	**67,760**			**142,600**	**0.48**				
E	Eleven Mile Corner Rd.	Selma Hwy.	SR-287/Florence Blvd.	28,360	2	Arterial	15,500	1.83	LOS E or F	54,400	60,500	0.90
	SR-87/Arizona Blvd.	Selma Hwy.	SR-287/Florence Blvd.	24,590	4	Arterial	34,200	0.72	LOS D or Better			
	Wheeler Rd.	Selma Hwy.	SR-287/Florence Blvd.	1,450	2	Collector	10,800	0.13	LOS D or Better			
			Cutline Total:	**54,400**			**60,500**	**0.90**				

Table 4.2 (Cont.)
Year 2040 Cut-Line Analysis – No Build Scenario

Cutline	Road Name	From	To	Year 2040 Model Volume	Number of Lanes	Model Functional Class	Capacity	v/c Ratio	LOS	Cutline Volume	Cutline Capacity	Cutline V/C
North-South Cutlines (east-west travel)												
F-1	Woodruff Rd.	Overfield Rd.	Toltec Buttes Rd.	20,940	2	Arterial	15,500	1.35	LOS E or F	109,460	114,900	0.95
	McCartney Rd.	Overfield Rd.	Toltec Buttes Rd.	23,880	2	Arterial	15,500	1.54	LOS E or F			
	Kleck Rd.	Overfield Rd.	Toltec Buttes Rd.	28,550	2	Arterial	15,500	1.84	LOS E or F			
F-2	SR-287/Florence Blvd.	Overfield Rd.	Toltec Buttes Rd.	14,810	4	Arterial	34,200	0.43	LOS D or Better			
	Selma Hwy.	West of Overfield Rd.	Toltec Buttes Rd.	21,280	4	Arterial	34,200	0.62	LOS D or Better			
			Cutline Total:	**109,460**			**114,900**	**0.95**				
G-1	SR-87	Curry Rd.	Skousen Rd.	44,170	4	Arterial	34,200	1.29	LOS E or F	123,300	175,400	0.70
G-2	Kenilworth Rd./Coolidge Rd.	Curry Rd.	Skousen Rd.	6,050	2	Arterial	15,500	0.39	LOS D or Better			
	Martin Rd.	Tweedy Rd.	Skousen Rd.	10,710	2	Arterial	15,500	0.69	LOS D or Better			
G-3	Bartlett Rd.	Tweedy Rd.	Eleven Mile Corner Rd.	18,980	4	Arterial	34,200	0.55	LOS D or Better			
	Randolph Rd.	Tweedy Rd.	Eleven Mile Corner Rd.	2,510	2	Collector	10,800	0.23	LOS D or Better			
	Kleck Rd.	Tweedy Rd.	Eleven Mile Corner Rd.	14,020	2	Arterial	15,500	0.90	LOS E or F			
G-4	SR-287/Florence Blvd.	Tweedy Rd.	Eleven Mile Corner Rd.	8,590	2	Arterial	15,500	0.55	LOS D or Better			
	Selma Hwy.	Curry Rd.	Eleven Mile Corner Rd.	18,270	4	Arterial	34,200	0.53	LOS D or Better			
			Cutline Total:	**123,300**			**175,400**	**0.70**				
H-1	SR-287	Christensen Rd.	Attaway Rd.	24,070	4	Arterial	34,200	0.70	LOS D or Better	69,890	151,700	0.46
H-2	Vah Ki Inn Rd.	Christensen Rd.	Attaway Rd.	11,230	2	Arterial	15,500	0.72	LOS D or Better			
	Kenilworth Rd./Coolidge Rd.	Christensen Rd.	Attaway Rd.	15,090	2	Arterial	15,500	0.97	LOS E or F			
	Martin Rd.	Christensen Rd.	Attaway Rd.	5,140	2	Arterial	15,500	0.33	LOS D or Better			
H-3	Bartlett Rd.	Christensen Rd.	Attaway Rd.	15,000	4	Arterial	34,200	0.44	LOS D or Better			
	Kleck Rd.	SR-87/Arizona Blvd.	Wheeler Rd.	15,400	4	Collector	15,200	1.01	LOS E or F			
H-4	Steel Rd.	SR-87/Arizona Blvd.	Wheeler Rd.	2,100	2	Collector	10,800	0.19	LOS D or Better			
	Selma Hwy.	SR-87/Arizona Blvd.	Wheeler Rd.	5,930	2	Collector	10,800	0.55	LOS D or Better			
			Cutline Total:	**93,960**			**151,700**	**0.62**				
I-1	SR-287	Valley Farms Rd.	N. Sellers St.	31,610	4	Arterial	34,200	0.92	LOS E or F	71,150	121,000	0.59
I-2	Vah Ki Inn Rd.	Valley Farms Rd.	N. Sellers St.	15,800	4	Arterial	34,200	0.46	LOS D or Better			
	Kenilworth Rd./Coolidge Rd.	Valley Farms Rd.	Coolidge Airport Rd.	5,200	2	Arterial	15,500	0.34	LOS D or Better			
	Bartlett Rd.	Clemens Rd.	Coolidge Airport Rd.	3,240	2	Arterial	15,500	0.21	LOS D or Better			
I-3	Kleck Rd.	Wheeler Rd.	SR-79	8,680	2	Collector	10,800	0.80	LOS D or Better			
	Selma Hwy.	Wheeler Rd.	SR-79	6,620	2	Collector	10,800	0.61	LOS D or Better			
			Cutline Total:	**71,150**			**121,000**	**0.59**				

Prepared by: Wilson & Company, 08/16/2011.

5.0 YEAR 2040 ROADWAY NETWORK NEEDS

Three scenarios were defined by the Study Team to be tested to determine the feasibility of implementing capacity changes to meet the needs revealed in the examination of the Year 2040 Base Future Transportation Network – the No Build Scenario. Each scenario attempts to correct identified deficiencies through upgrades to the system provided under the No Build Scenario or upgrades combined with new facilities intended to provide capacity where capacity is needed.

The three scenarios were defined as follows:

- Network Upgrades
  - Year 2040 Base Future Roadway Network
  - All Arterials Constructed to 4-5 Lanes
- Network Upgrades with New High-Capacity Facilities
  - Year 2040 Base Future Roadway Network
  - All Arterials Constructed to 4-5 Lanes
  - North-South Freeway
  - East-West Parkway
- Network Upgrades with New Freeway and Kleck as a Parkway
  - Year 2040 Base Future Roadway Network
  - All Arterials Constructed to 4-5 Lanes
  - North-South Freeway
  - East/North Parkway using the existing Kleck Road

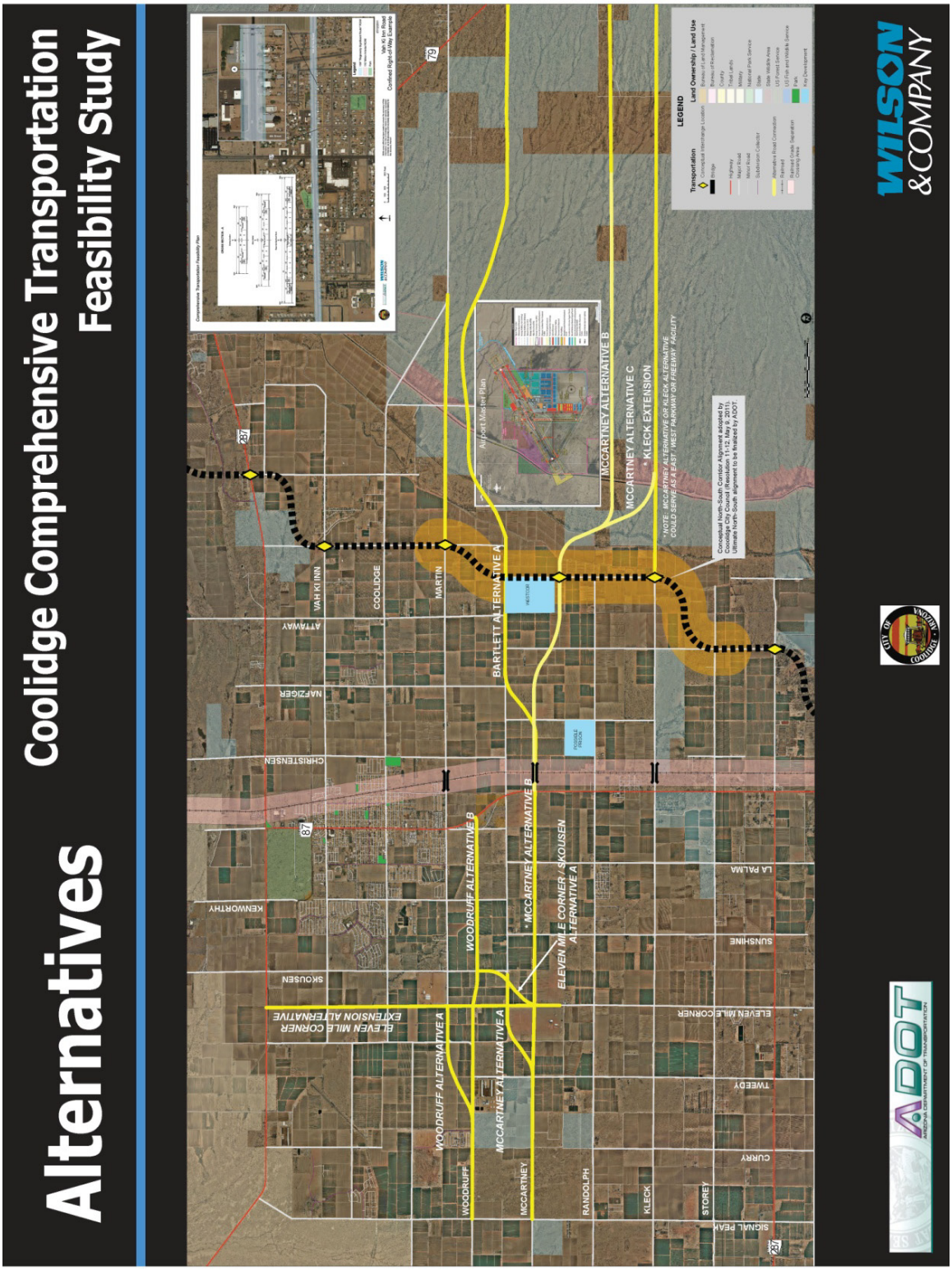
With all of these alternatives, the Study Team is assuming that there will be three interchanges with I-10 that can be accessed directly from the study area, including:

- McCartney Road (Existing);
- Kleck Road (New); and
- SR-287 (Existing)

Additionally, key connections and alternative routes were developed for several key arterials, as illustrated in Figure 5-1. Figure 5-1 was included as a graphic at the September 26, 2011 Council Workshop and joint Open House to solicit feedback on various alternatives being considered as part of this process.

The alternatives listed above establish the framework and an initial set of alternatives to examine for Working Paper #2: Evaluation Criteria and Plan for Improvements. The Study Team will work from the above scenarios in examining initial multimodal alternatives for the Coolidge study area.

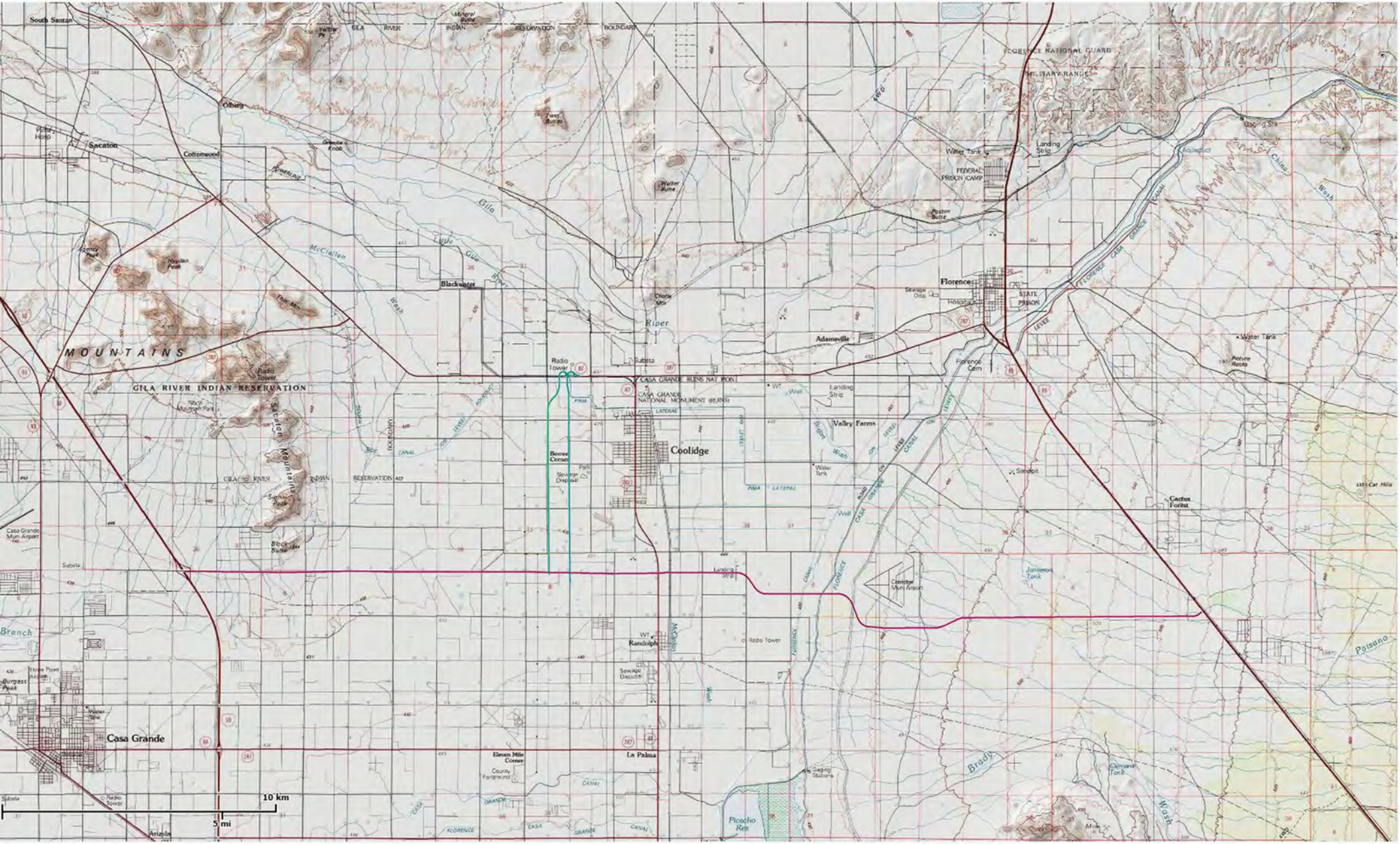
Figure 5-1: Road Alternatives Presented at the September 26, 2011 Open House



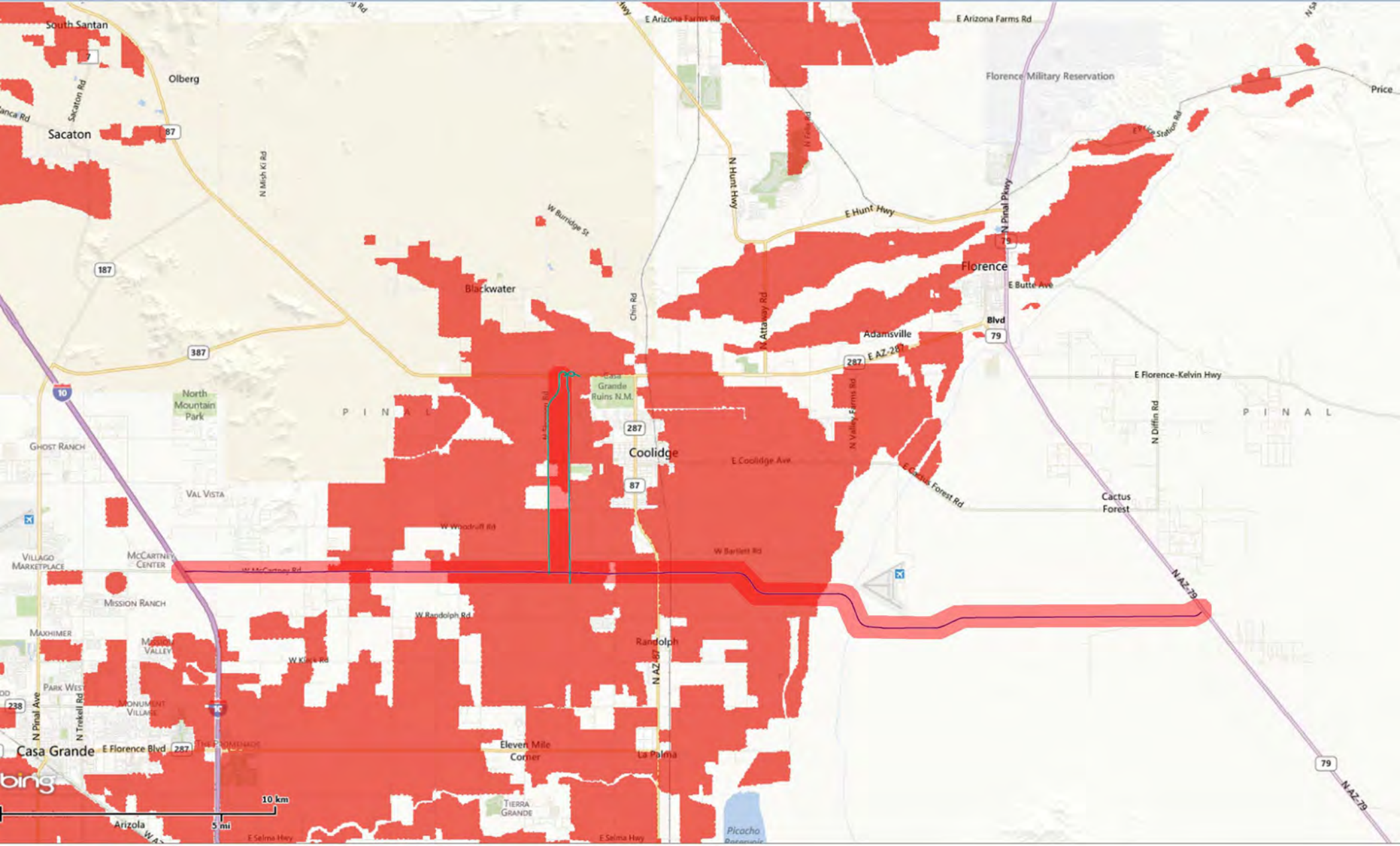
Appendix C: McCartney Road Corridor Alignment Layout (under separate cover)

Appendix D: Eleven Mile Corner Road Alignment Layout (under separate cover)

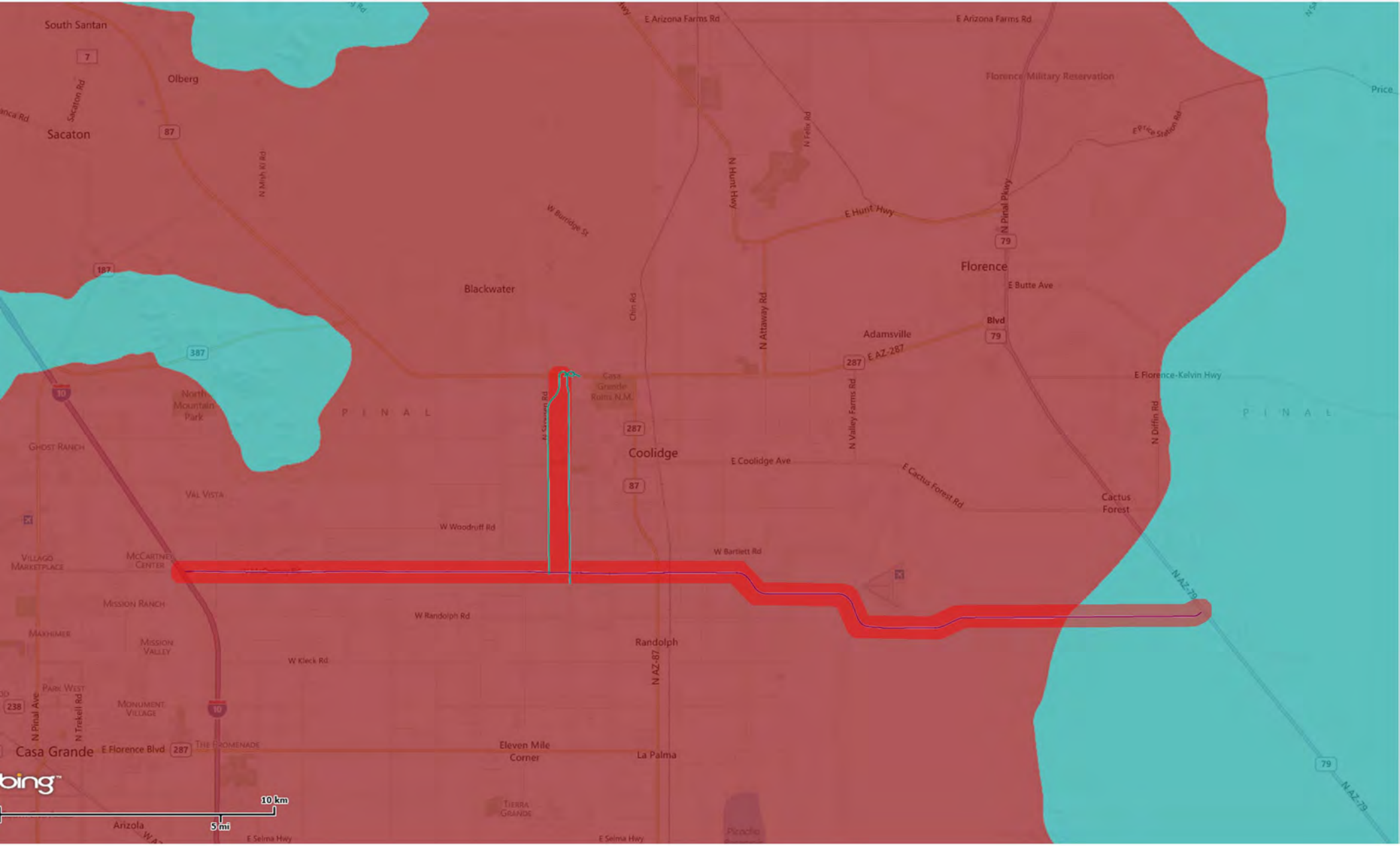
Appendix E: Habimap Mapping



Environmental Overlays



Agriculture Conversion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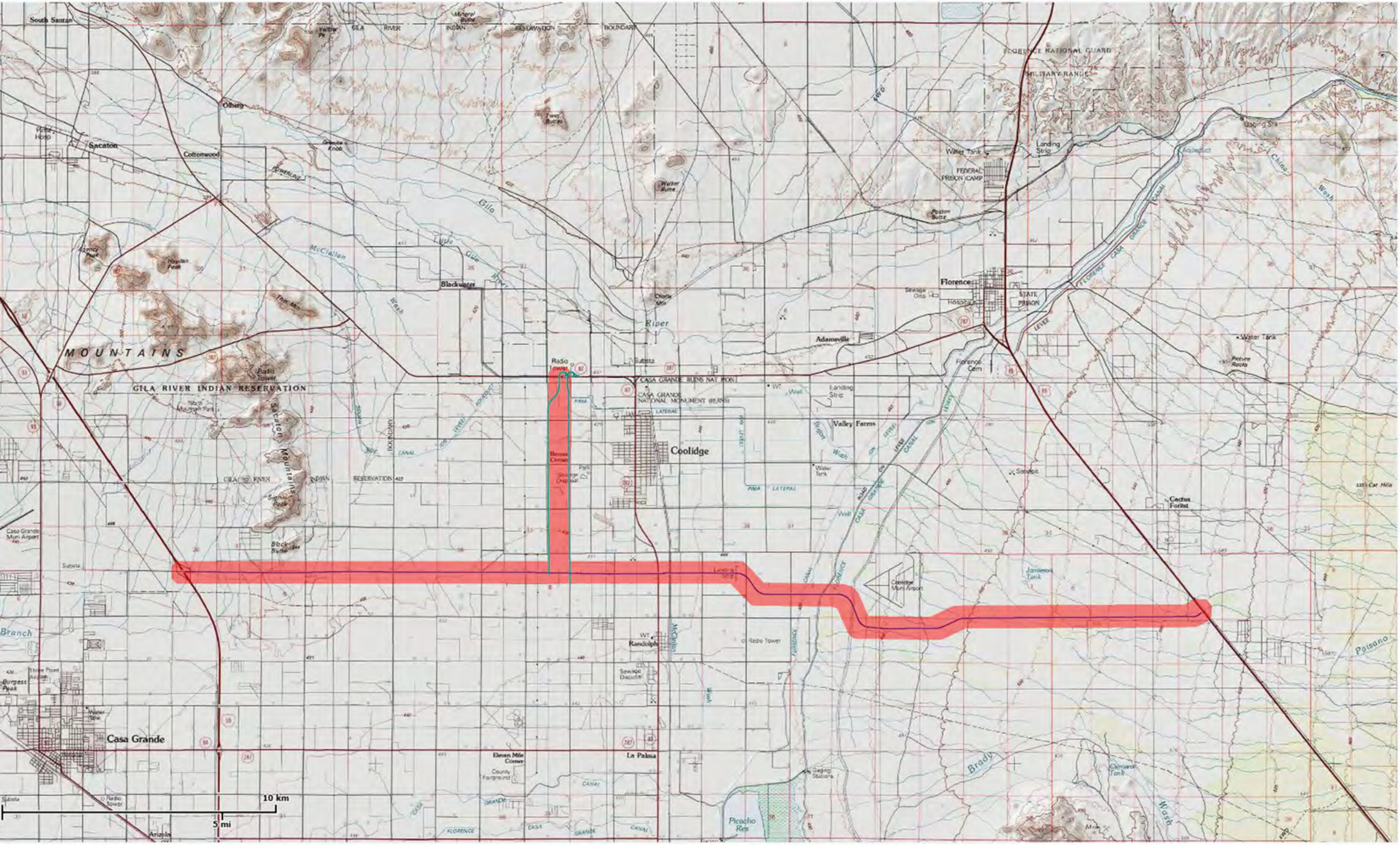
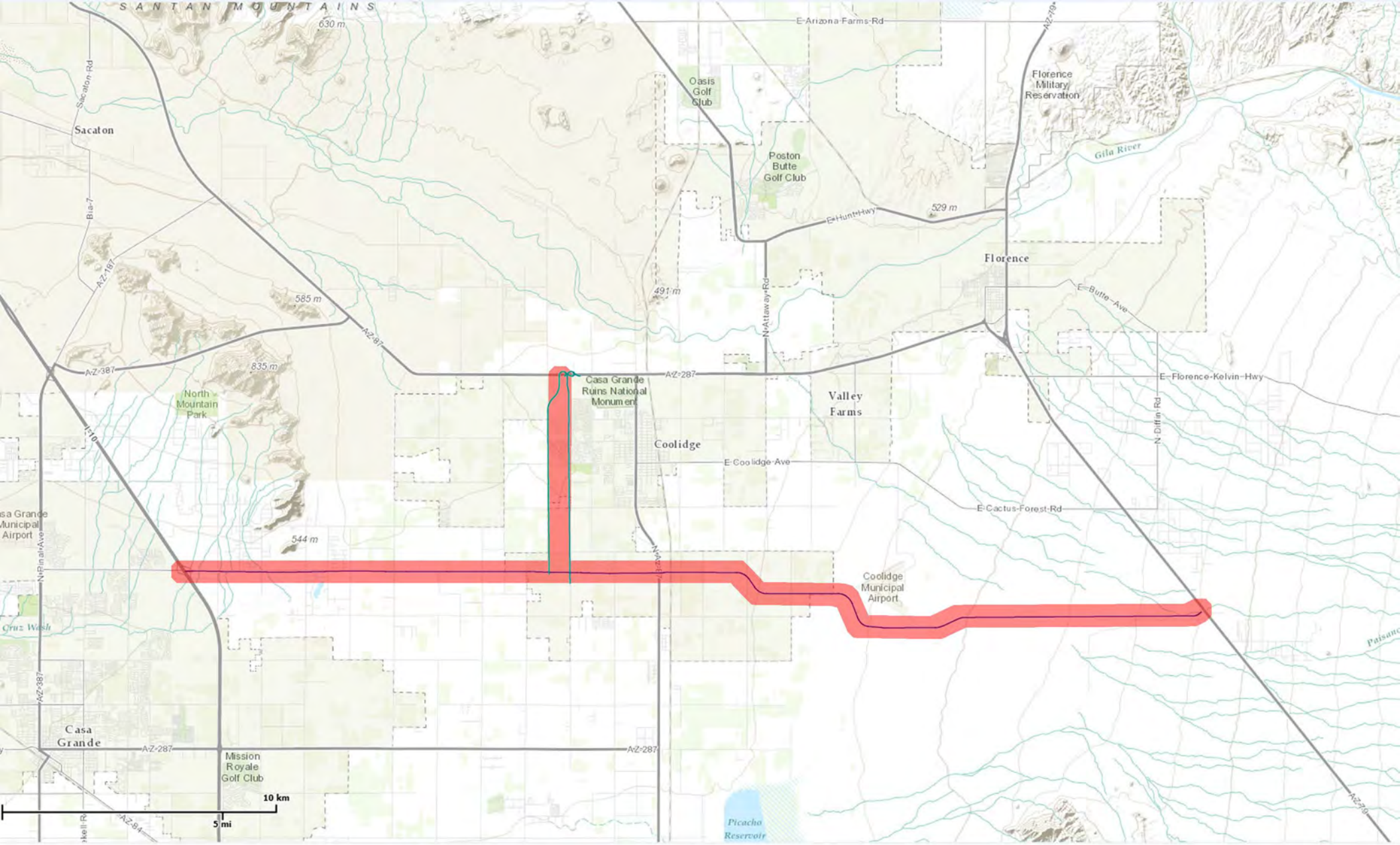
Olberg
Sacaton
Florence Military Reservation
E Arizona Farms Rd
E Hunt Hwy
Blackwater
Florence
E Butte Ave
Adamsville
E AZ-287
E Florence-Kelvin Hwy
PINAL
Coolidge
E Coolidge Ave
E Cactus Forest Rd
Cactus Forest
W Woodruff Rd
W Bartlett Rd
W Randolph Rd
Randolph
W Kleck Rd
N AZ-87
Casa Grande
E Florence Blvd
Eleven Mile Corner
La Palma
Arizola
E Selma Hwy
10 km
5 mi

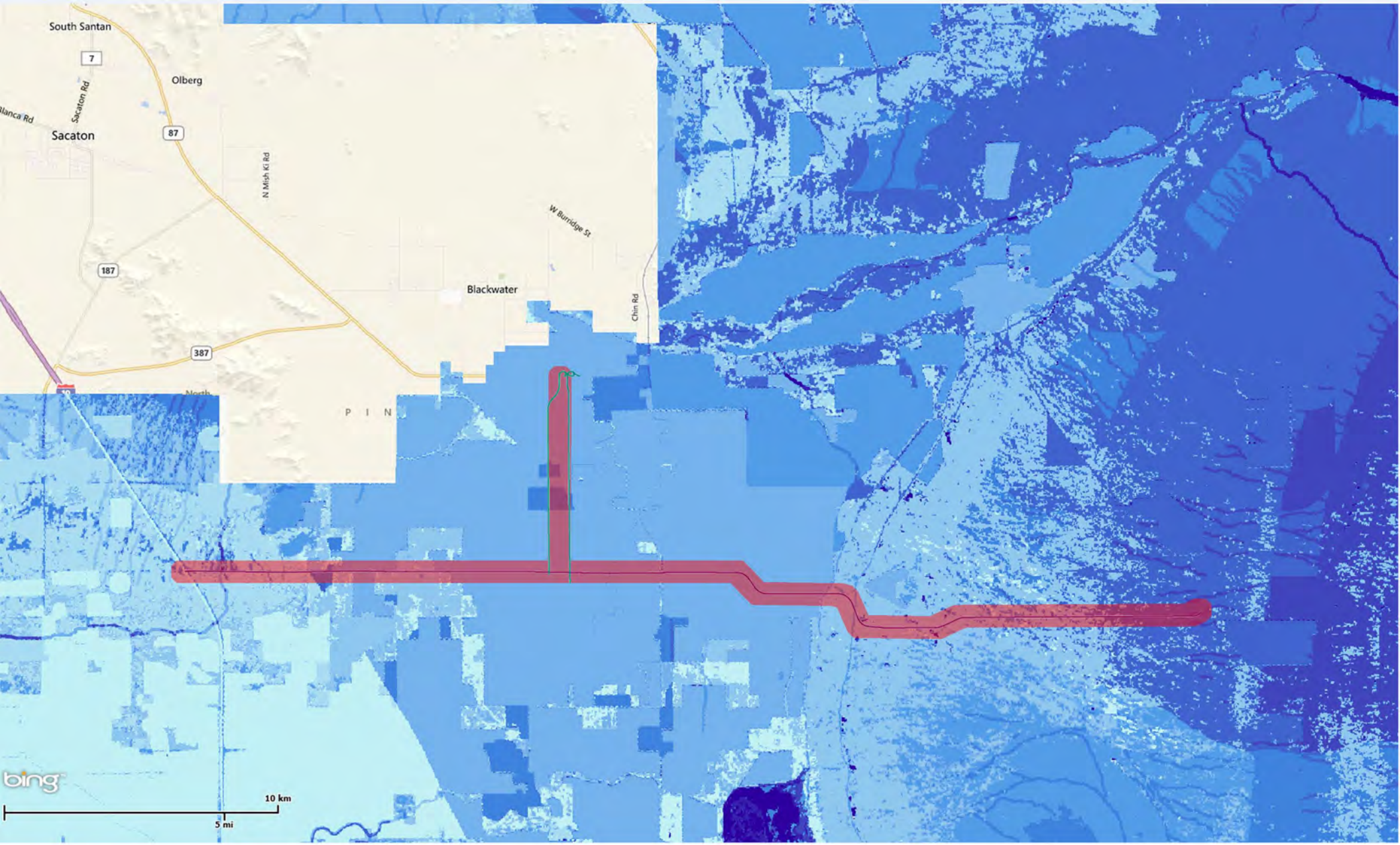
Biotic


Coolidge
Florence
Casa Grande
Valley Farms
Adamsville
Blackwater
Sacaton
Randolph
La Palma
GILA RIVER INDIAN RESERVATION
MOUNTAINS
Sacaton Mountains
FLORENCE NATIONAL GUARD
MILITARY RANGE
FEDERAL PRISON CAMP
STATE PRISON
CASA GRANDE RUINS NAT MON
CASA GRANDE NATIONAL MONUMENT (RUINS)
Picacho Res
10 km
5 mi

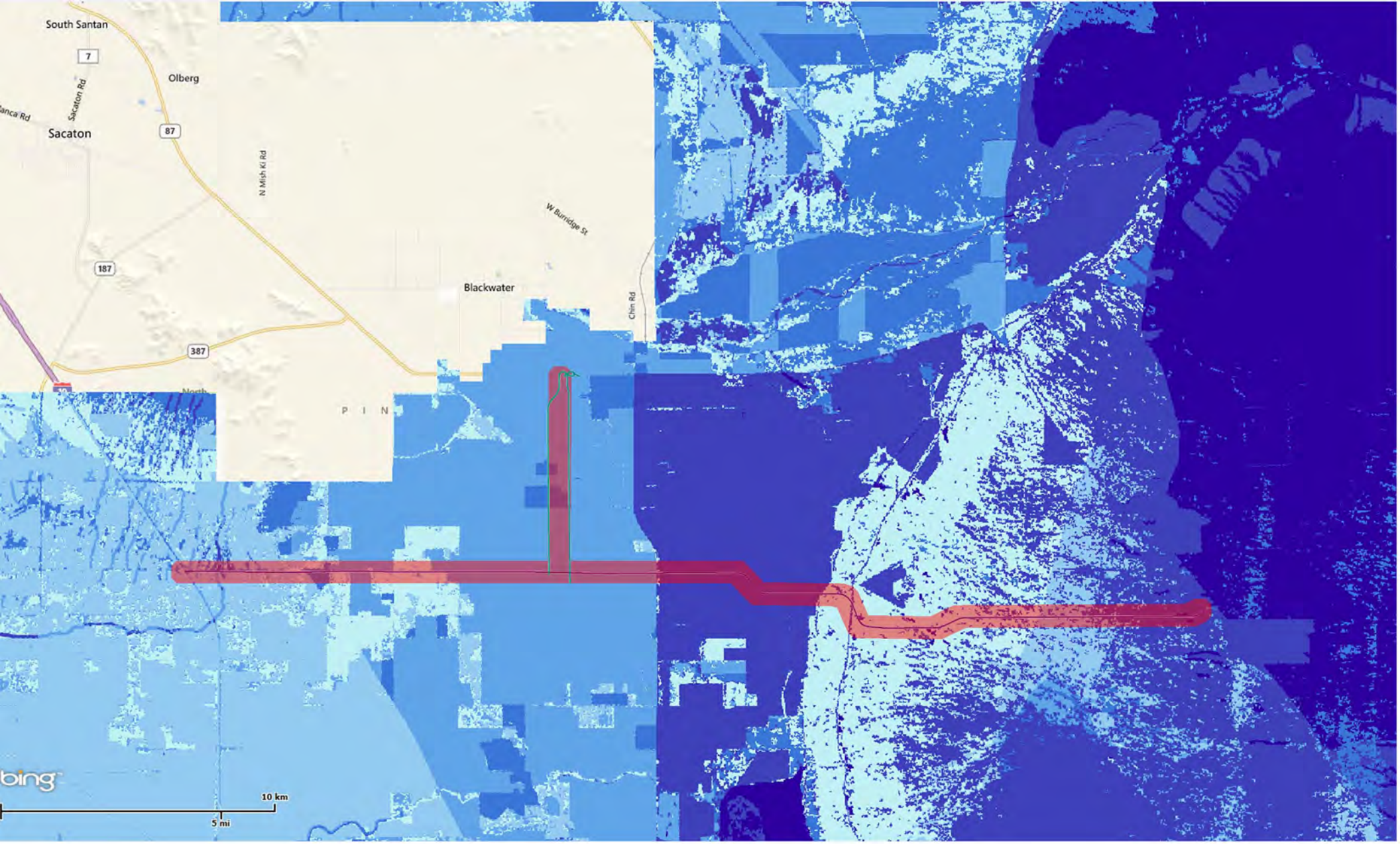
USGS Base



Topology Base



Species of Greatest Conservation Need


South Santan
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Sacaton Rd
Sacaton
87
N Mish Ki Rd
W Burridge St
187
Blackwater
Chin Rd
387
P I N
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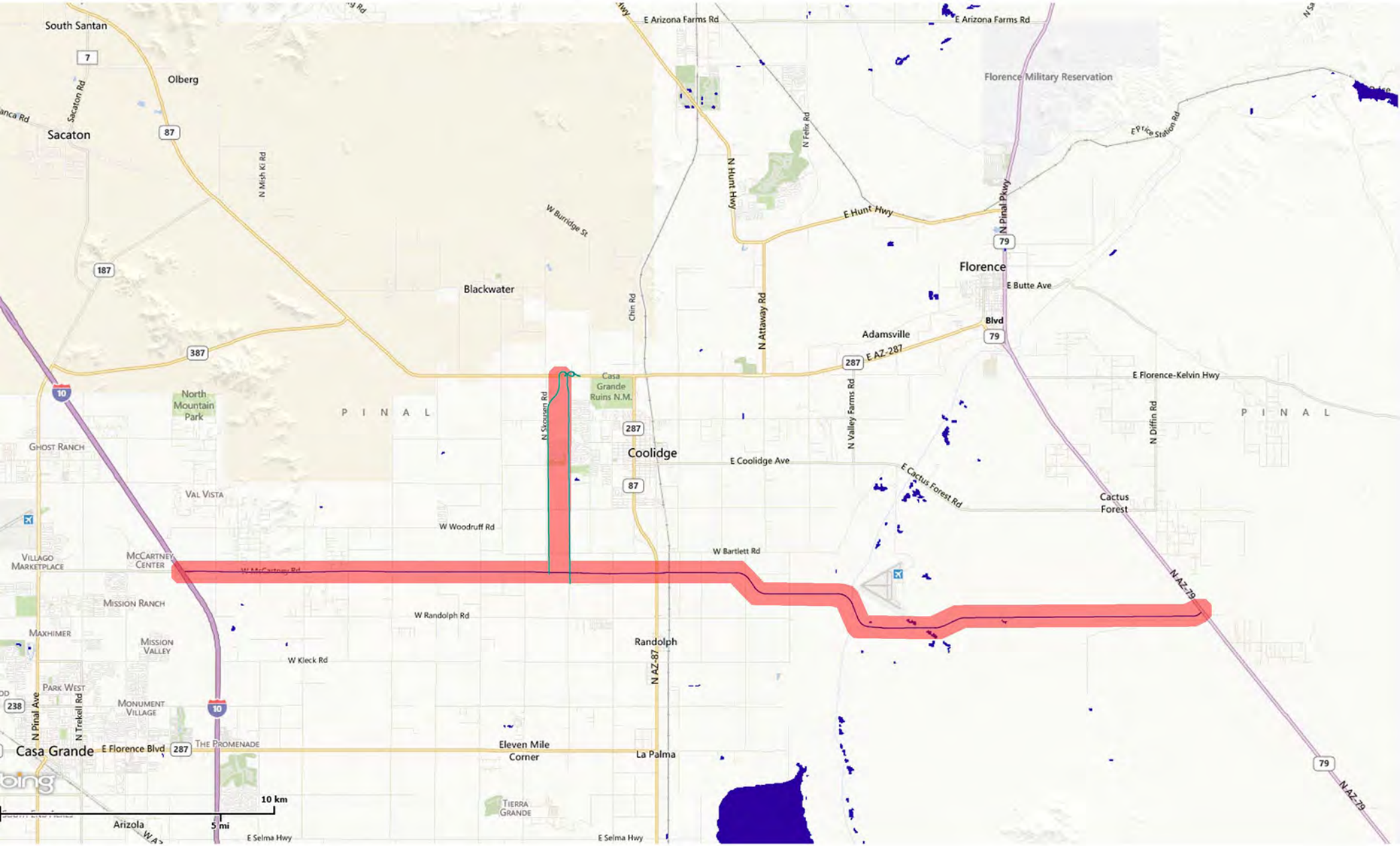
10 km
5 mi

SHCG Model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Florence Military Reservation
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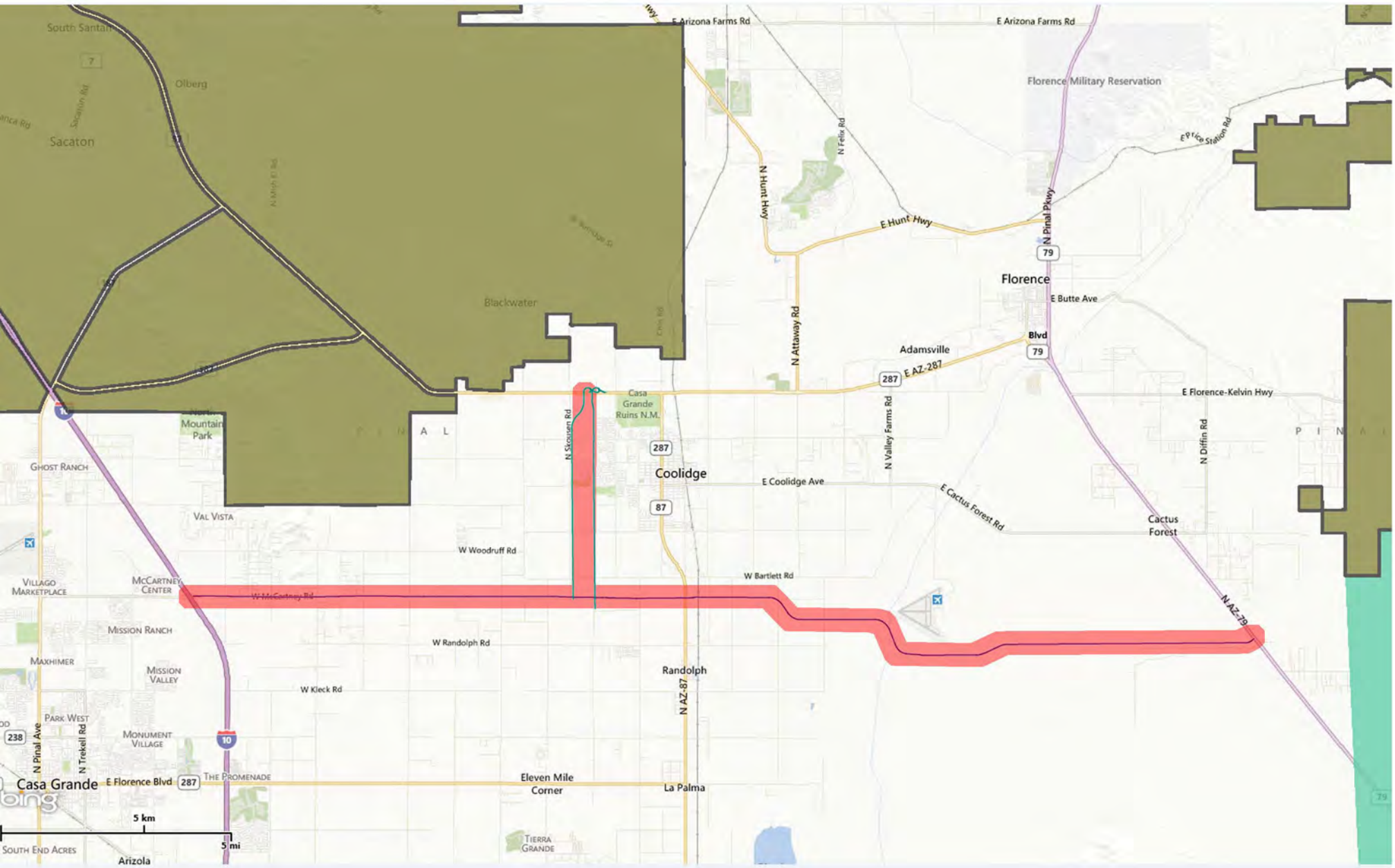
N Pinal Pkwy
Florence
E Butte Ave
Blvd
Blackwater
W Burridge St
Chin Rd
N Attaway Rd
Adamsville
E AZ-287
E Florence-Kelvin Hwy
North Mountain Park
P I N A L
Casa Grande Ruins N.M.
N Skousen Rd
N Valley Farms Rd
N Diffin Rd
Coolidge
E Coolidge Ave
E Cactus Forest Rd
Cactus Forest
Ghost Ranch
Val Vista
W Woodruff Rd
W Bartlett Rd
Villago Marketplace
McCartney Center
Mission Ranch
W Randolph Rd
Maxhimer
Mission Valley
W Kleck Rd
Randolph
N AZ-87
N AZ-79
Park West
Monument Village
N Pinal Ave
N Trekell Rd
Casa Grande
E Florence Blvd
The Promenade
Eleven Mile Corner
La Palma
Tierra Grande
Arizola
E Selma Hwy
10 km
5 mi

Riparian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Florence Military Reservation
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Sacaton
Blackwater
N Hunt Hwy
E Hunt Hwy
N Pinal Pkwy
Florence
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N Attaway Rd
Adamsville
E AZ-287
E Florence-Kelvin Hwy
Casa Grande Ruins N.M.
Coolidge
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Cactus Forest
N Valley Farms Rd
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Ghost Ranch
Val Vista
W Woodruff Rd
W Bartlett Rd
Villago Marketplace
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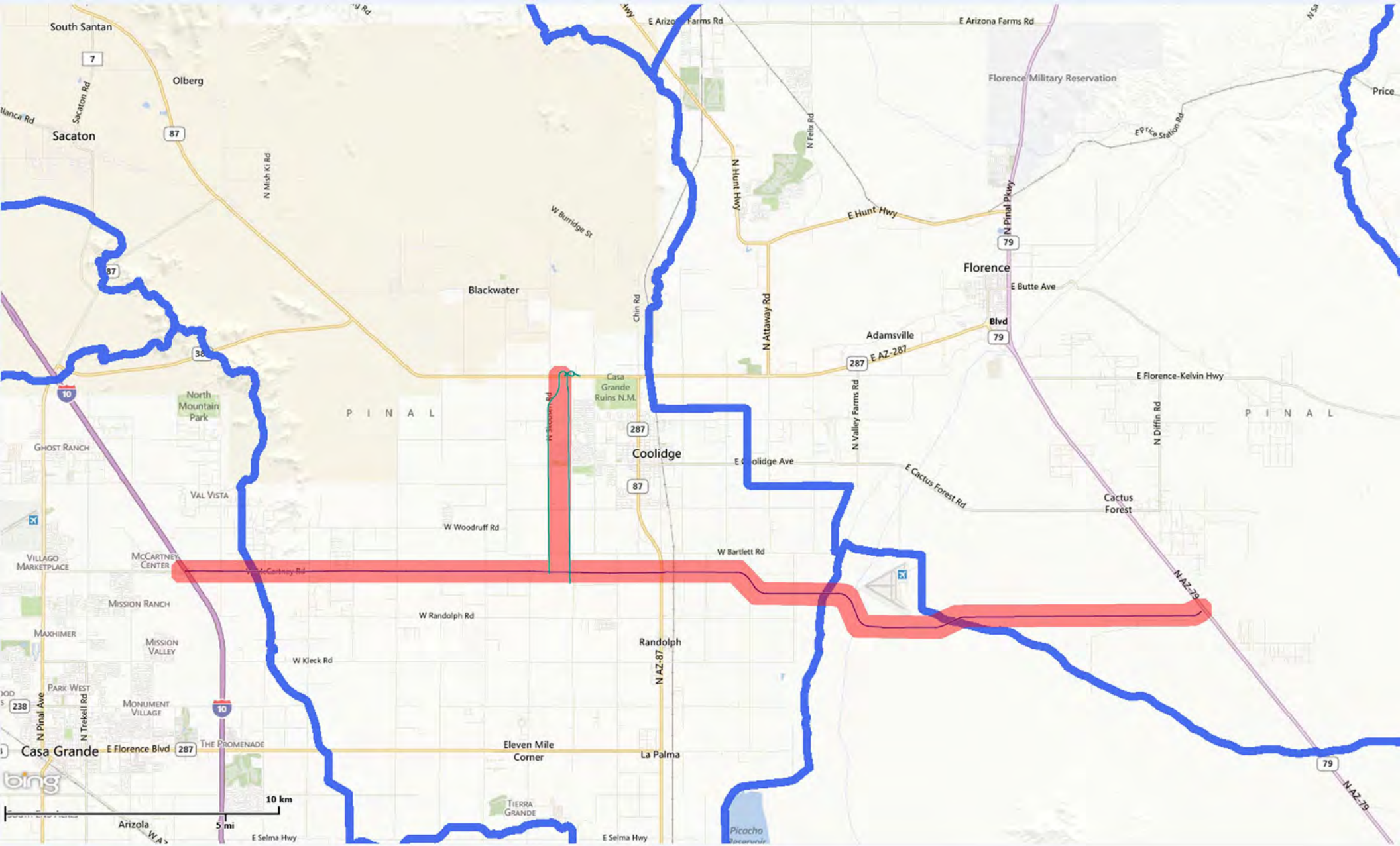
Mission Valley
W Randolph Rd
W Kleck Rd
Randolph
N AZ-87
N AZ-79
Park West
Monument Village
N Pinal Ave
N Trekell Rd
Casa Grande
E Florence Blvd
The Promenade
Eleven Mile Corner
La Palma
Tierra Grande
South End Acres
Arizola
5 km
5 mi

Linkages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La Palma
Tierra Grande
Picacho
E Selma Hwy
Arizola
10 km
5 mi
N AZ-79
N AZ-87
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N Hunt Hwy
N Attaway Rd
N Valley Farms Rd
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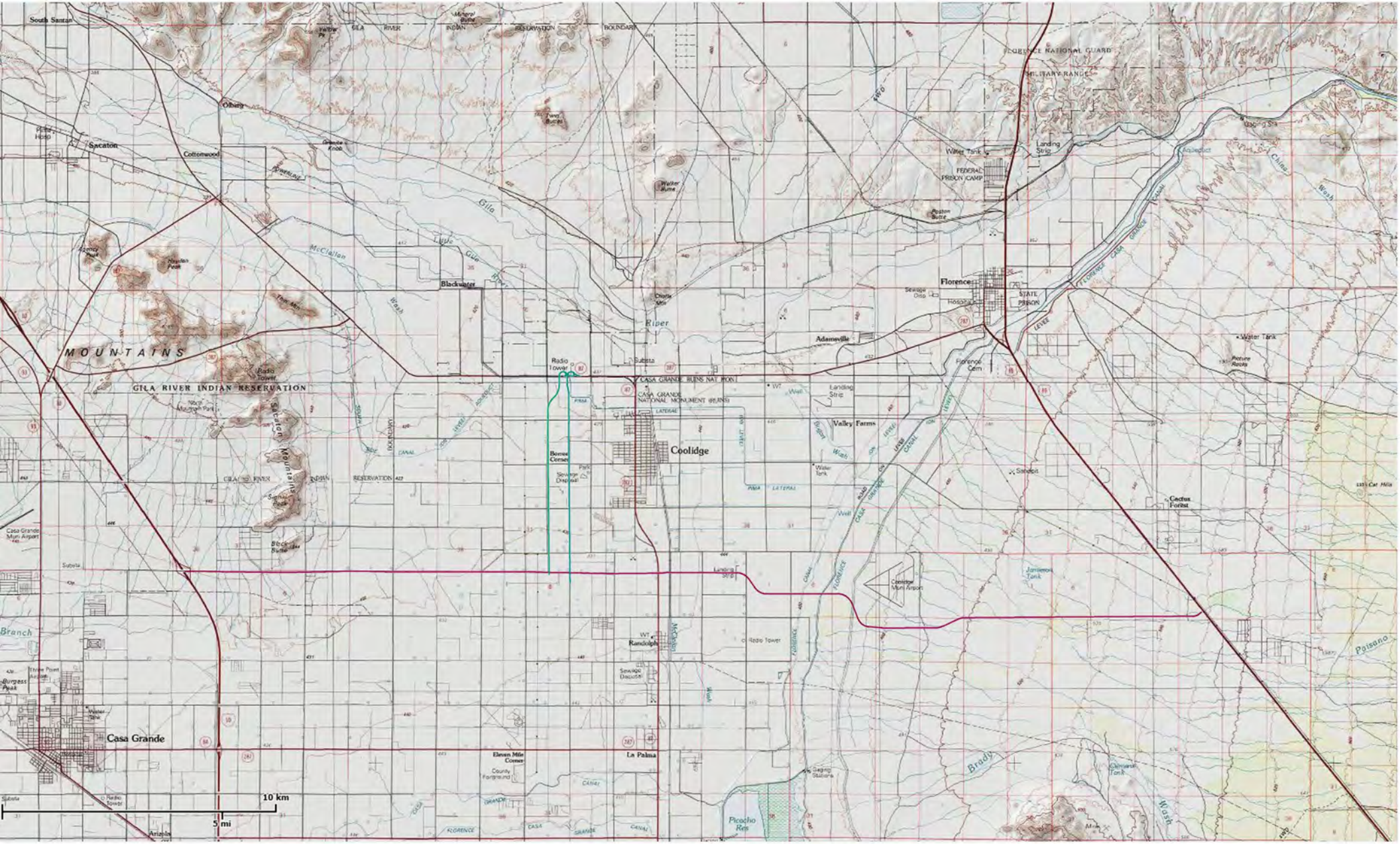
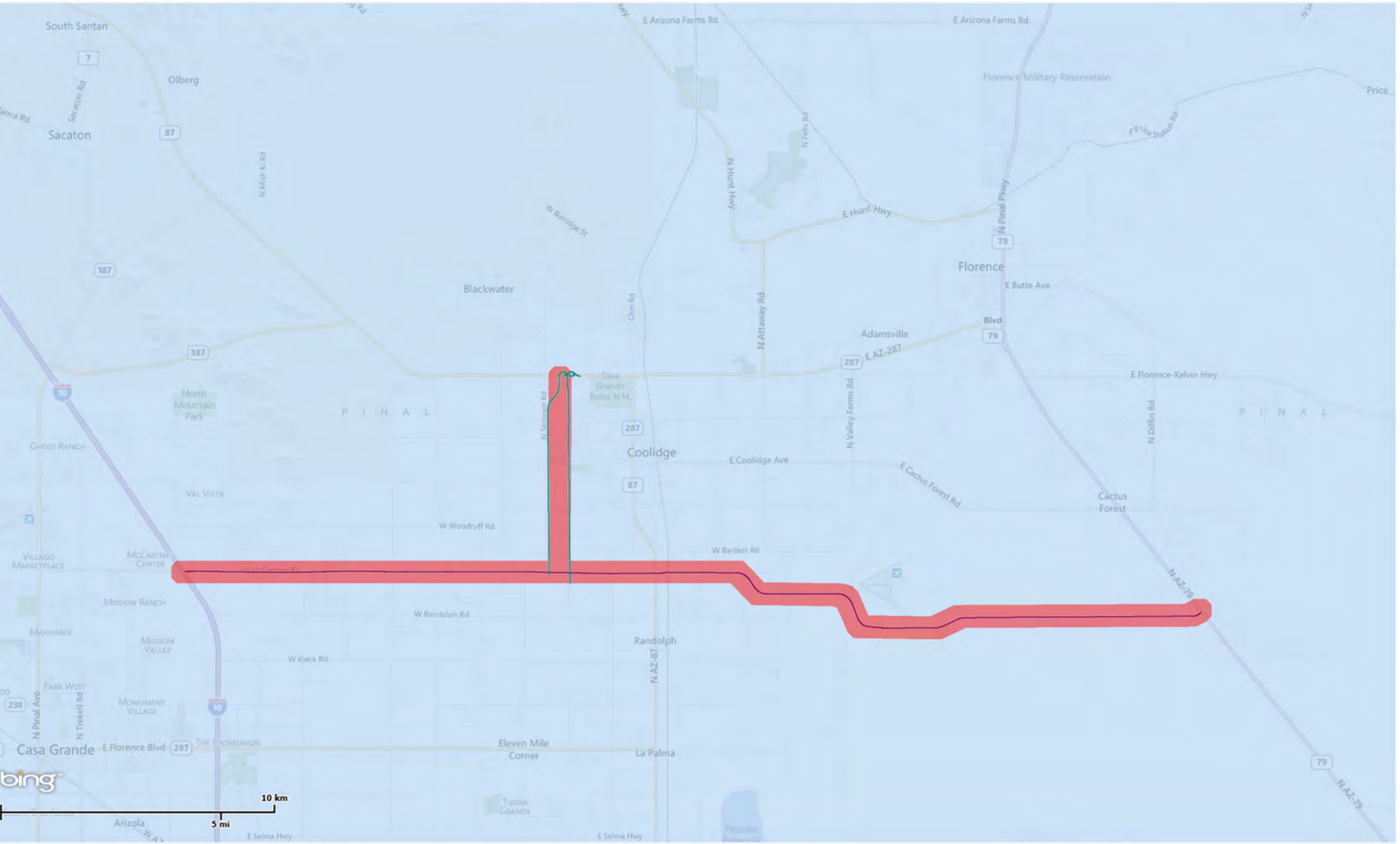
N Misk Ki Rd
Sacaton Rd
N Felix Rd

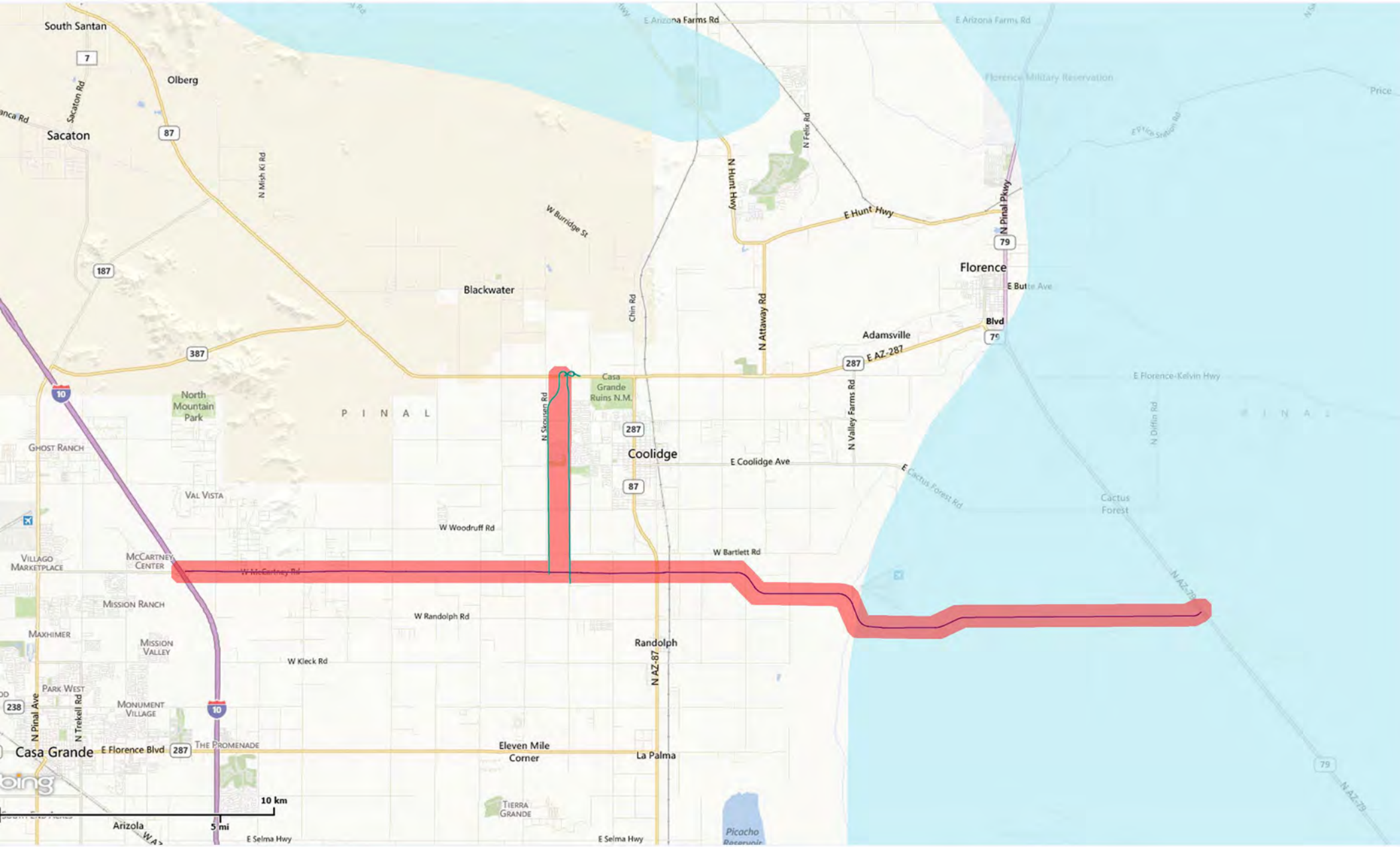
Hydrology



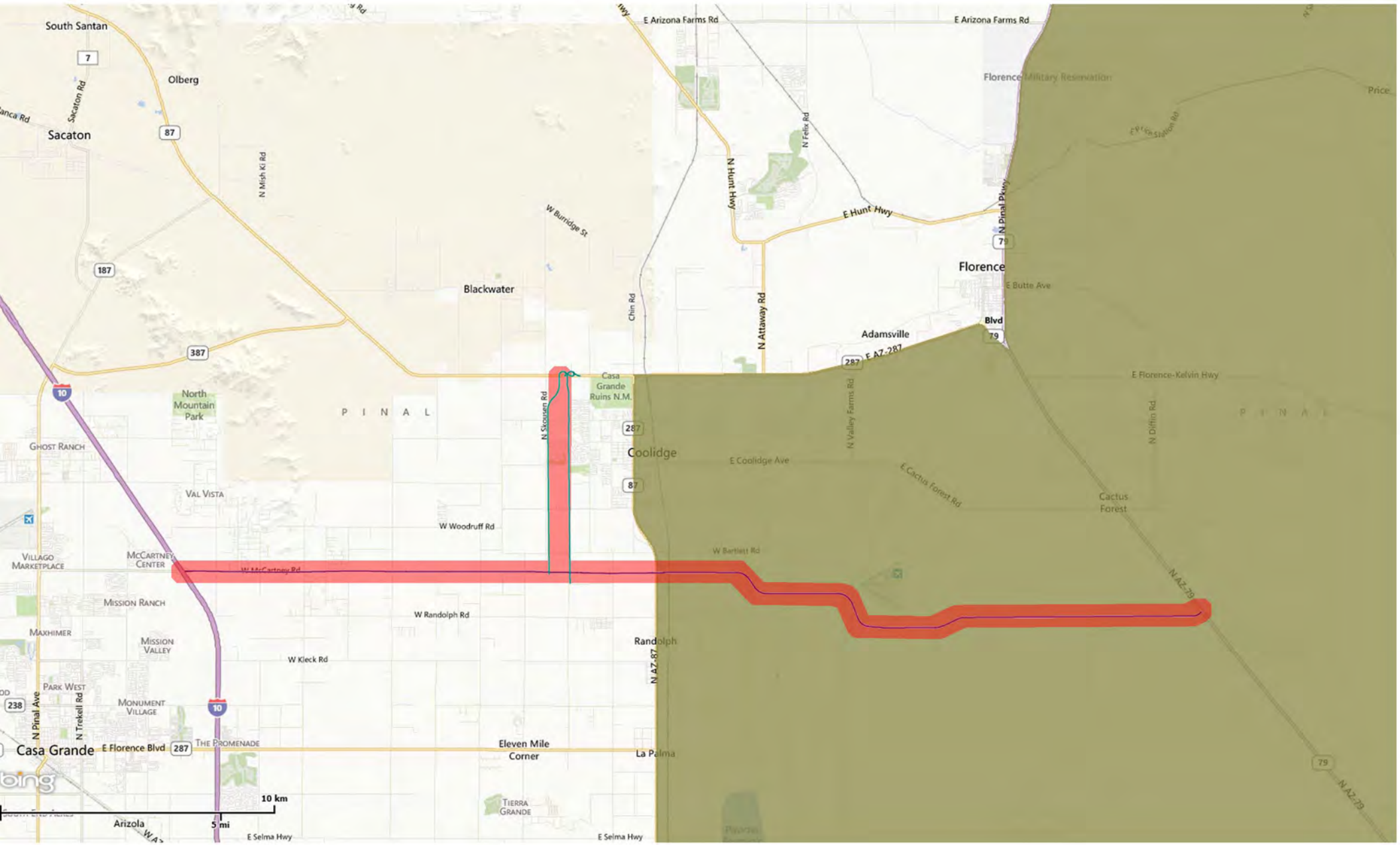
Sonoran Environmental Research Institute



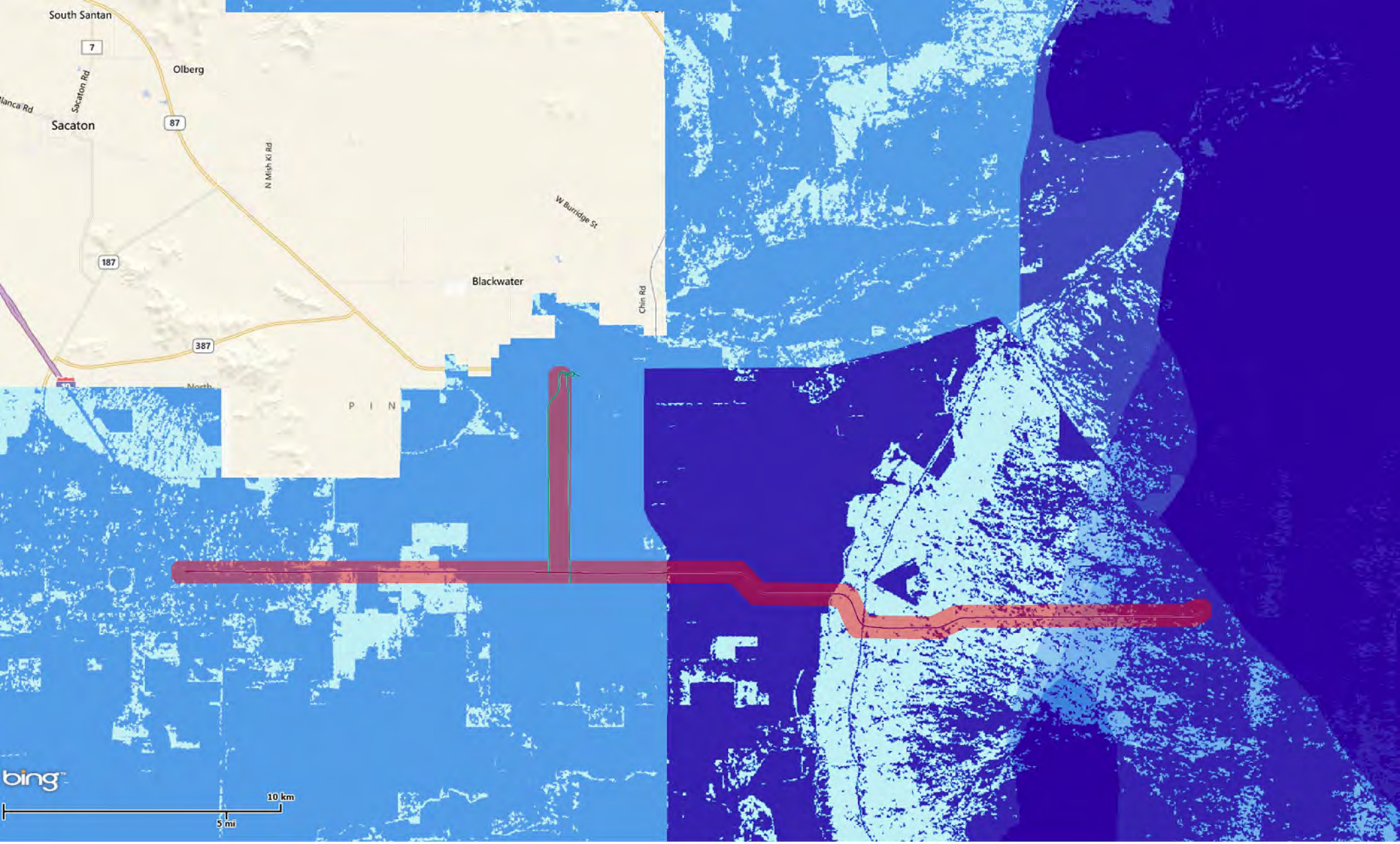
SERI White-winged Dove



SERI Mule Deer



SERI Mountain Lion


South Santan
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Sacaton Rd
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N Mish Ki Rd
W Burridge St
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Blackwater
Chin Rd
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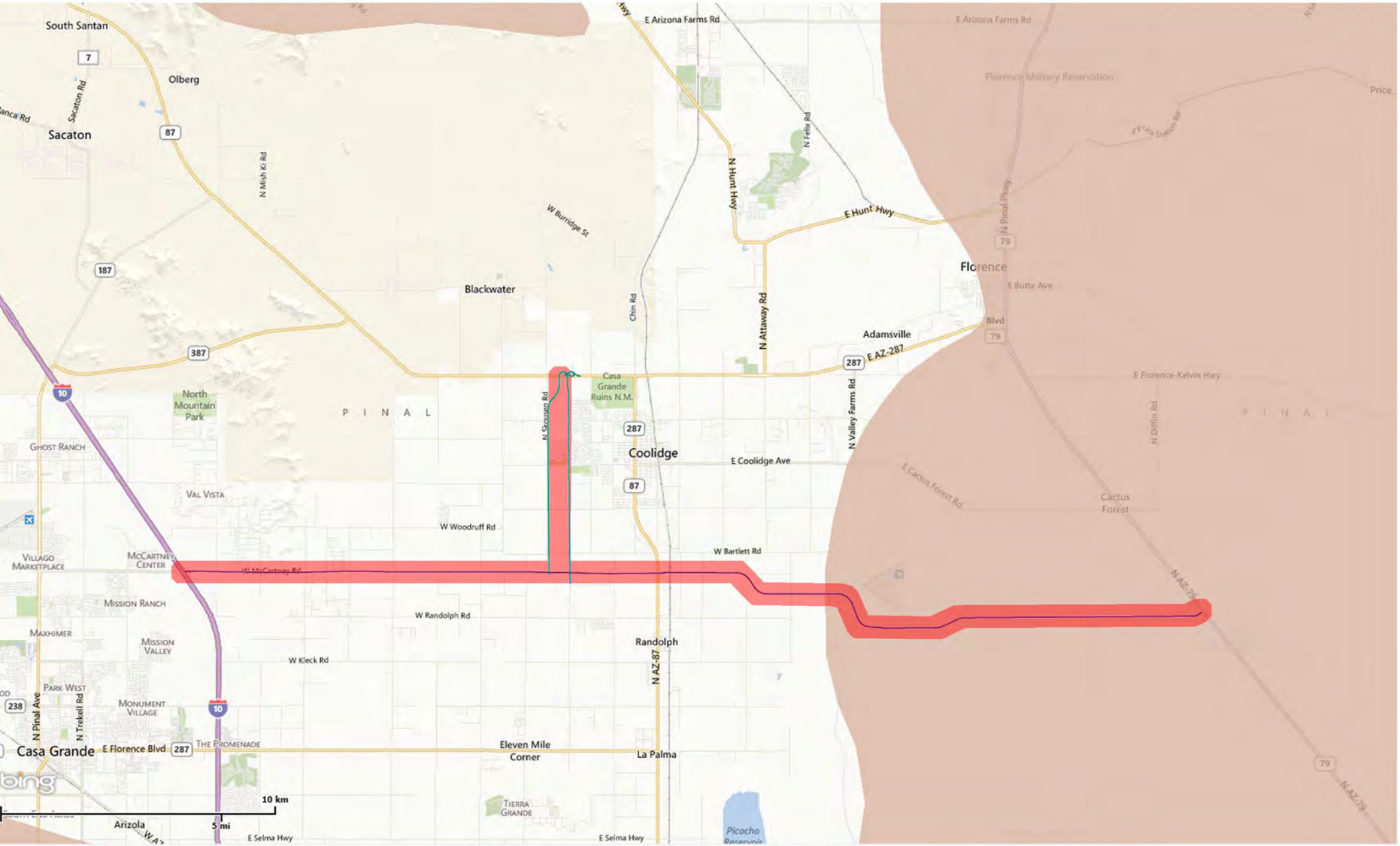
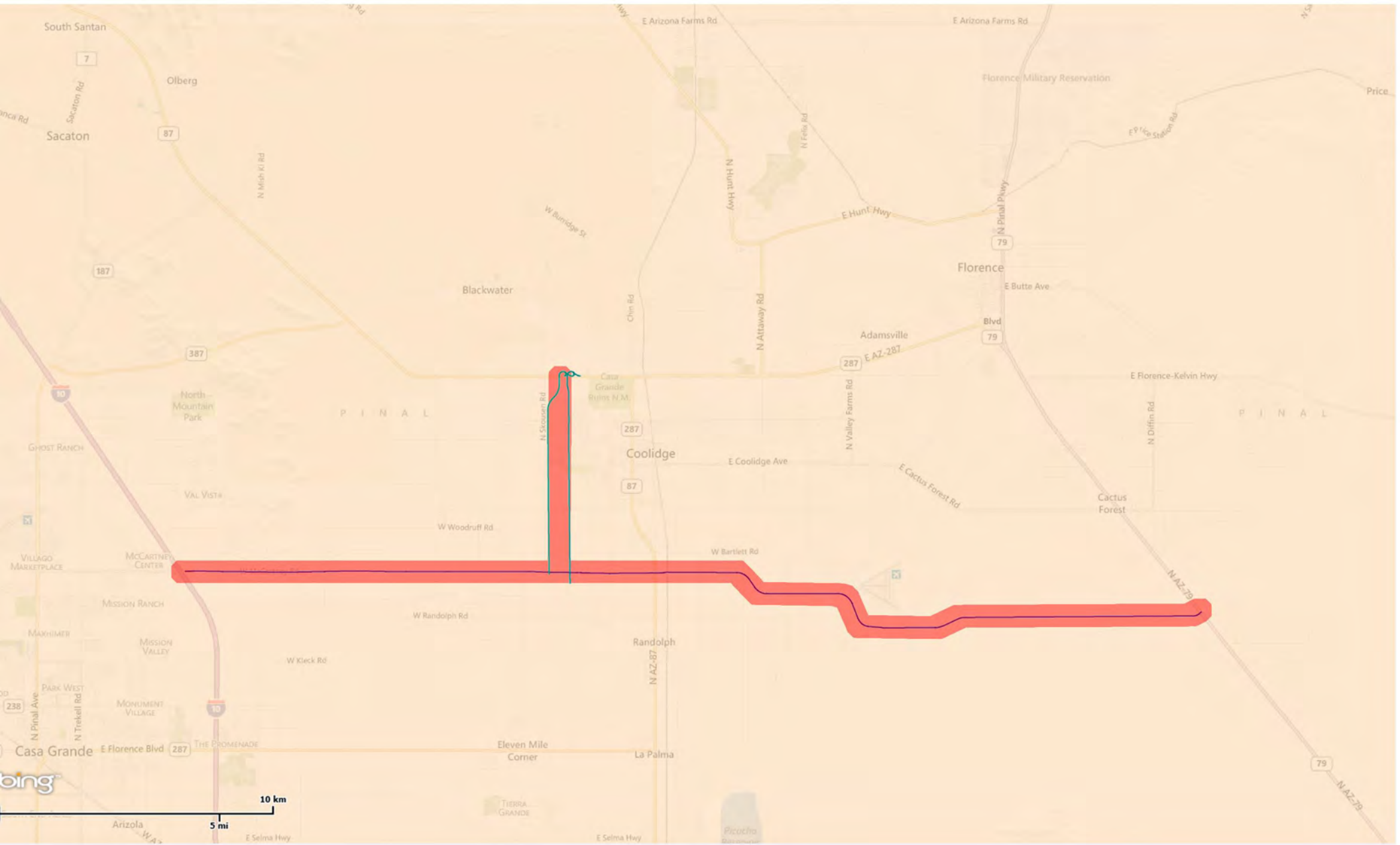
10 km
5 mi

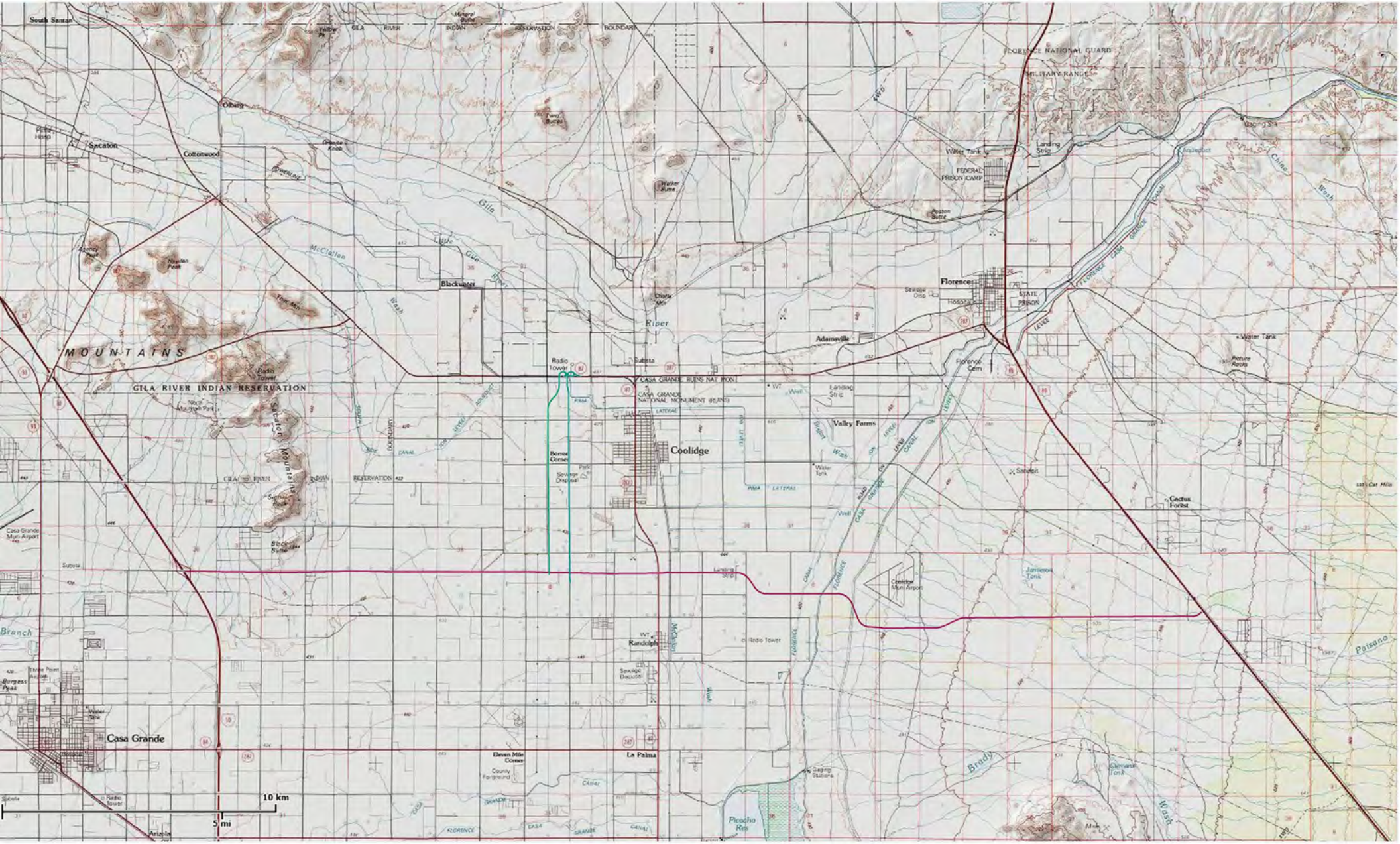
SERI Model



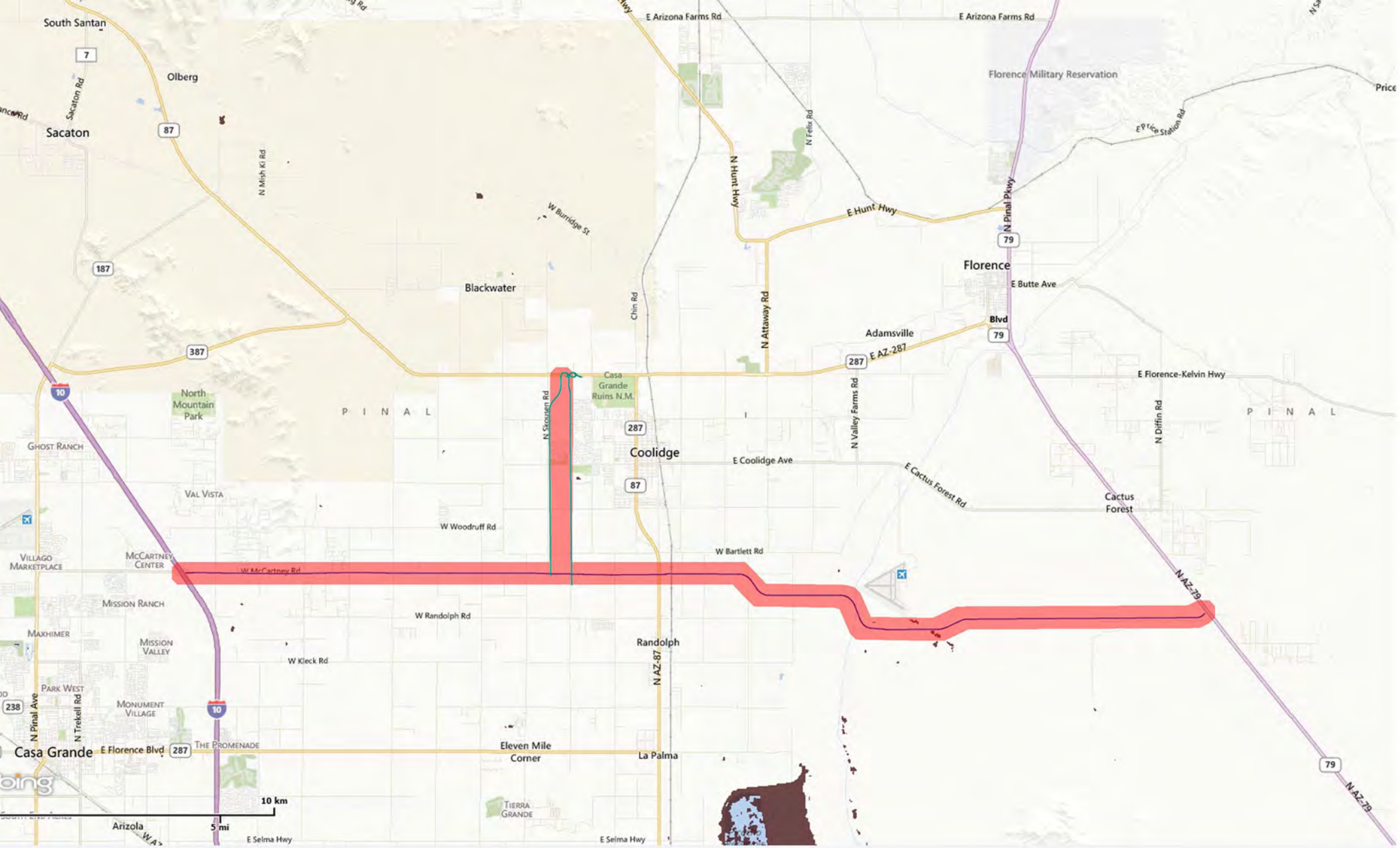
SERI Javelina



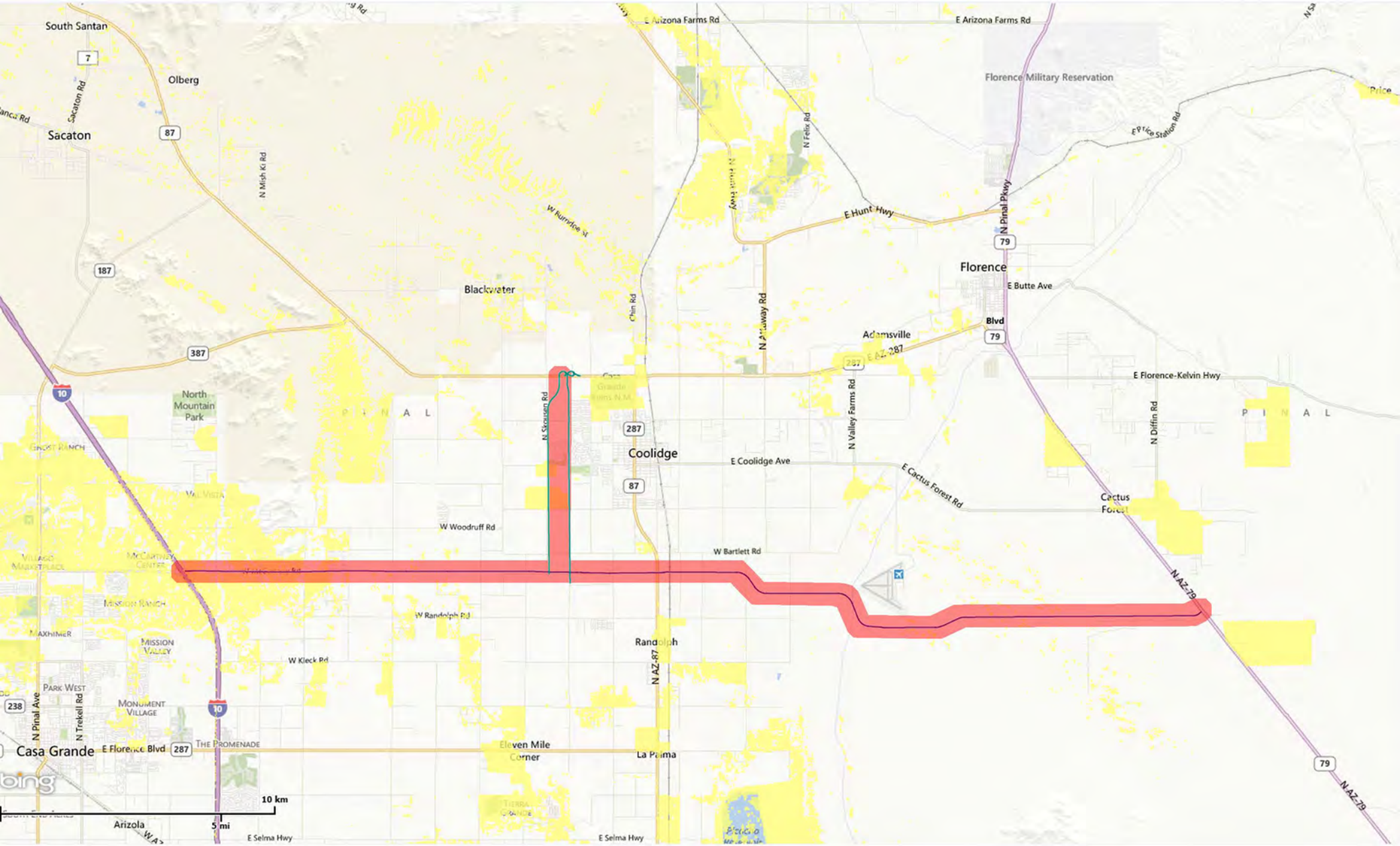
SERI Gambel's Quail


South Santan
Sacaton
Cottonwood
Gila River
Blackwater
MOUNTAINS
GILA RIVER INDIAN RESERVATION
Radio Tower
CASA GRANDE RUINS NAT MON
Coolidge
Florence
Adamsville
Valley Farms
Casa Grande
Eleven Mile Corner
La Palma
Picacho Res
10 km
5 mi

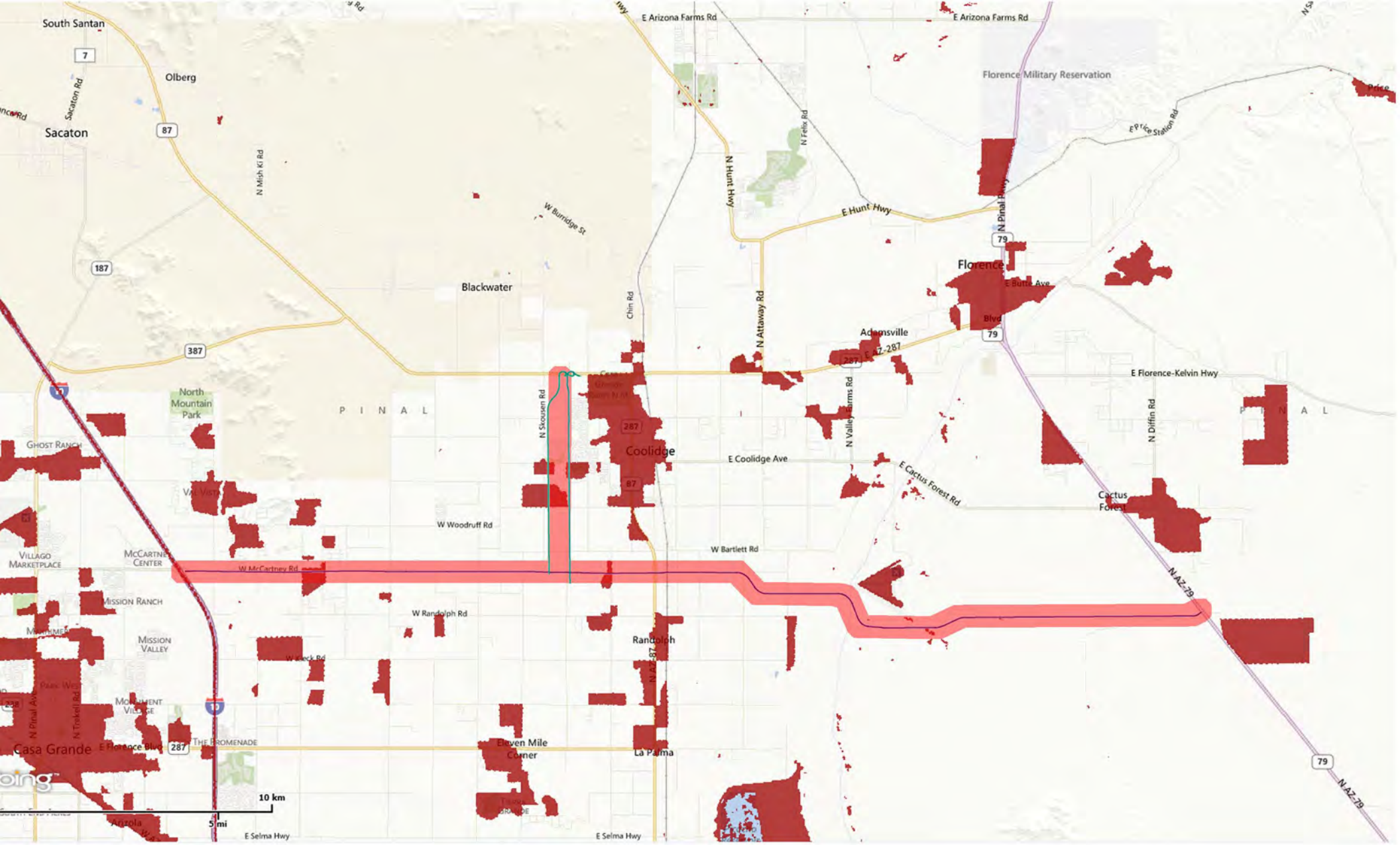
Birds



Yumma Clapper Rail



Yellow Warbler


South Santan
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Florence Military Reservation
E Arizona Farms Rd
E Hunt Hwy
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Florence
Adamsville
E Florence-Kelvin Hwy
North Mountain Park
P I N A L
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Cactus Forest
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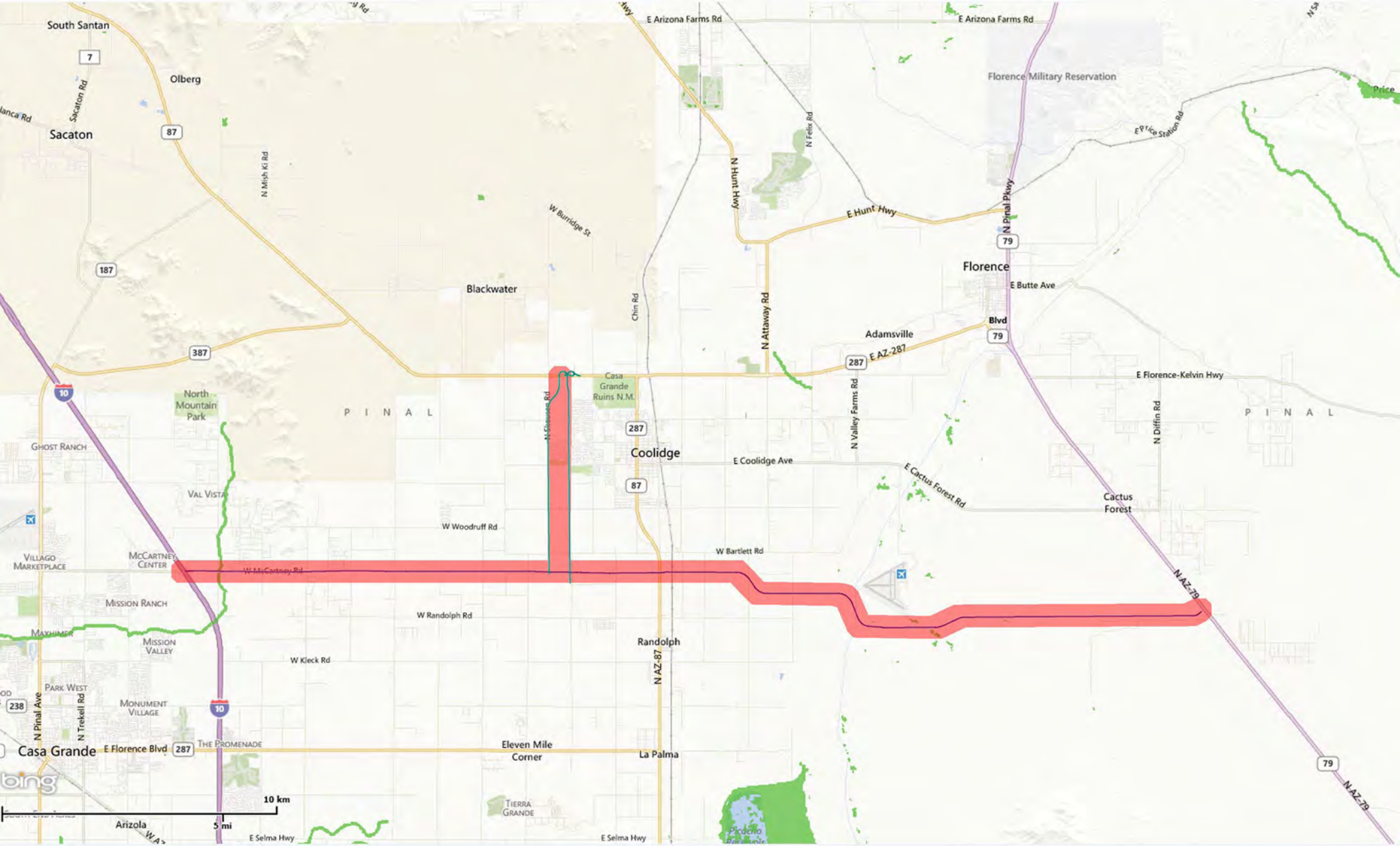
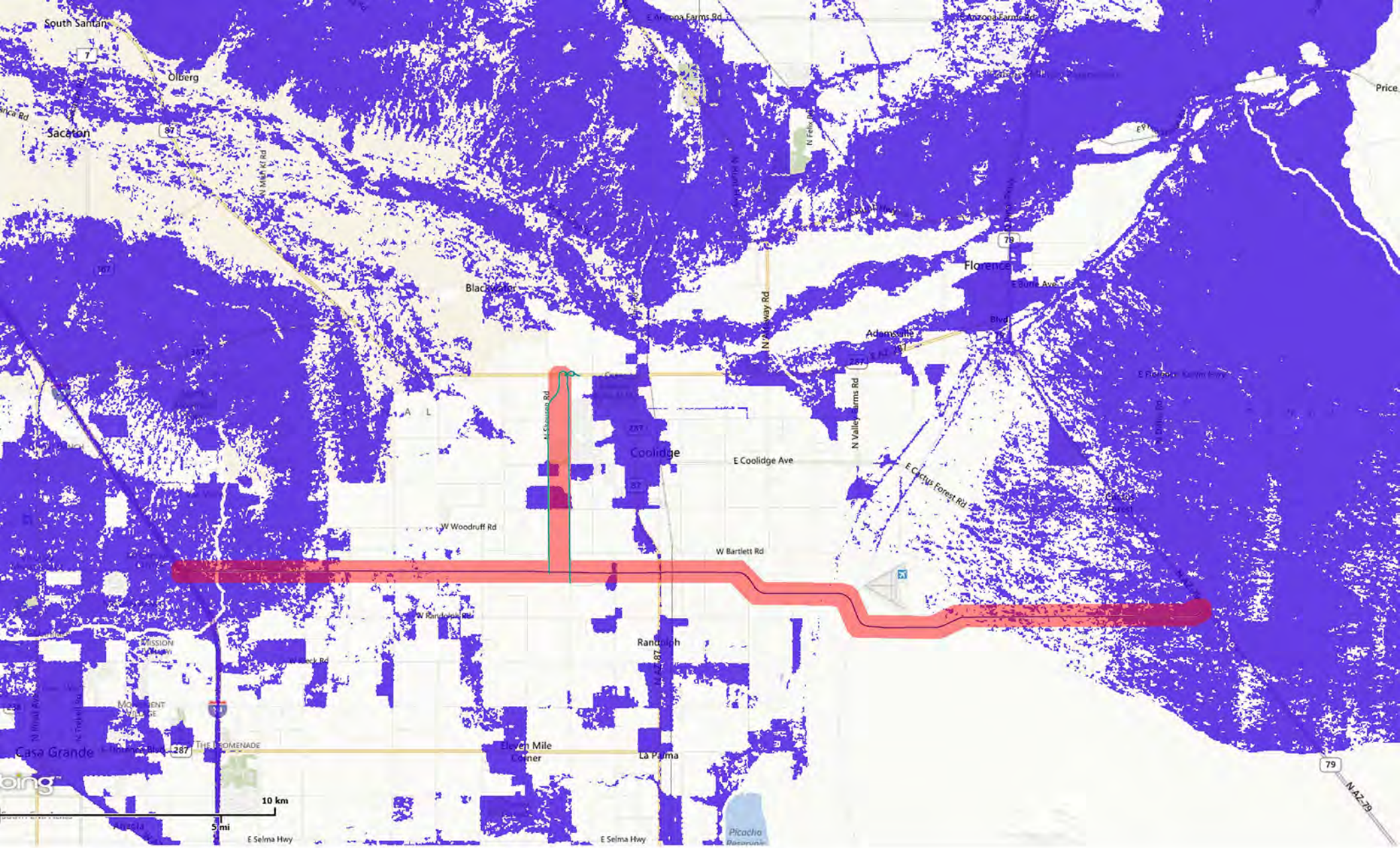
W Bartlett Rd
W Randolph Rd
Randolph
Mission Ranch
Mission Valley
Casa Grande
Eleven Mile Corner
La Palma
N AZ-79
E Selma Hwy
10 km
5 mi

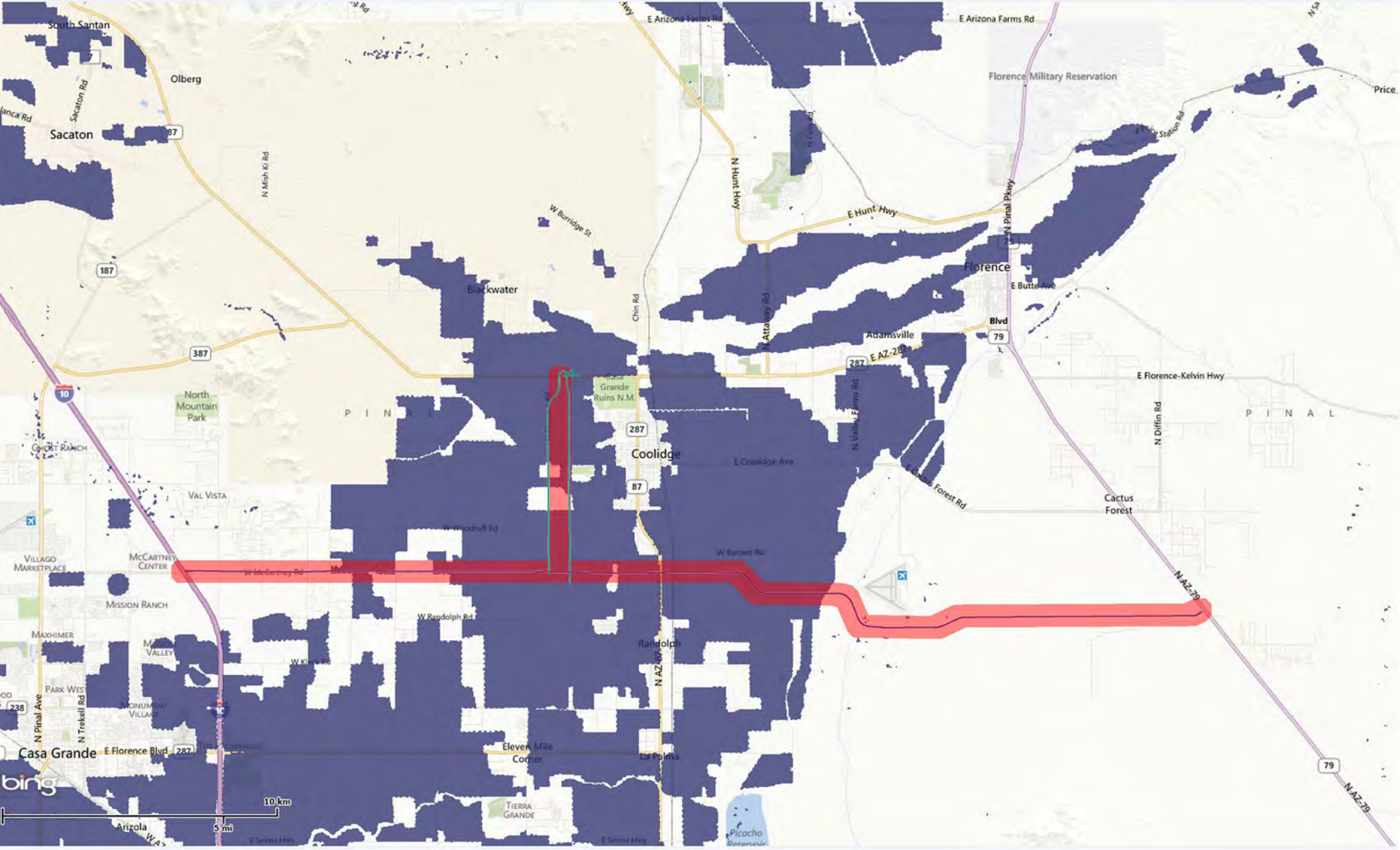
Wood Duck



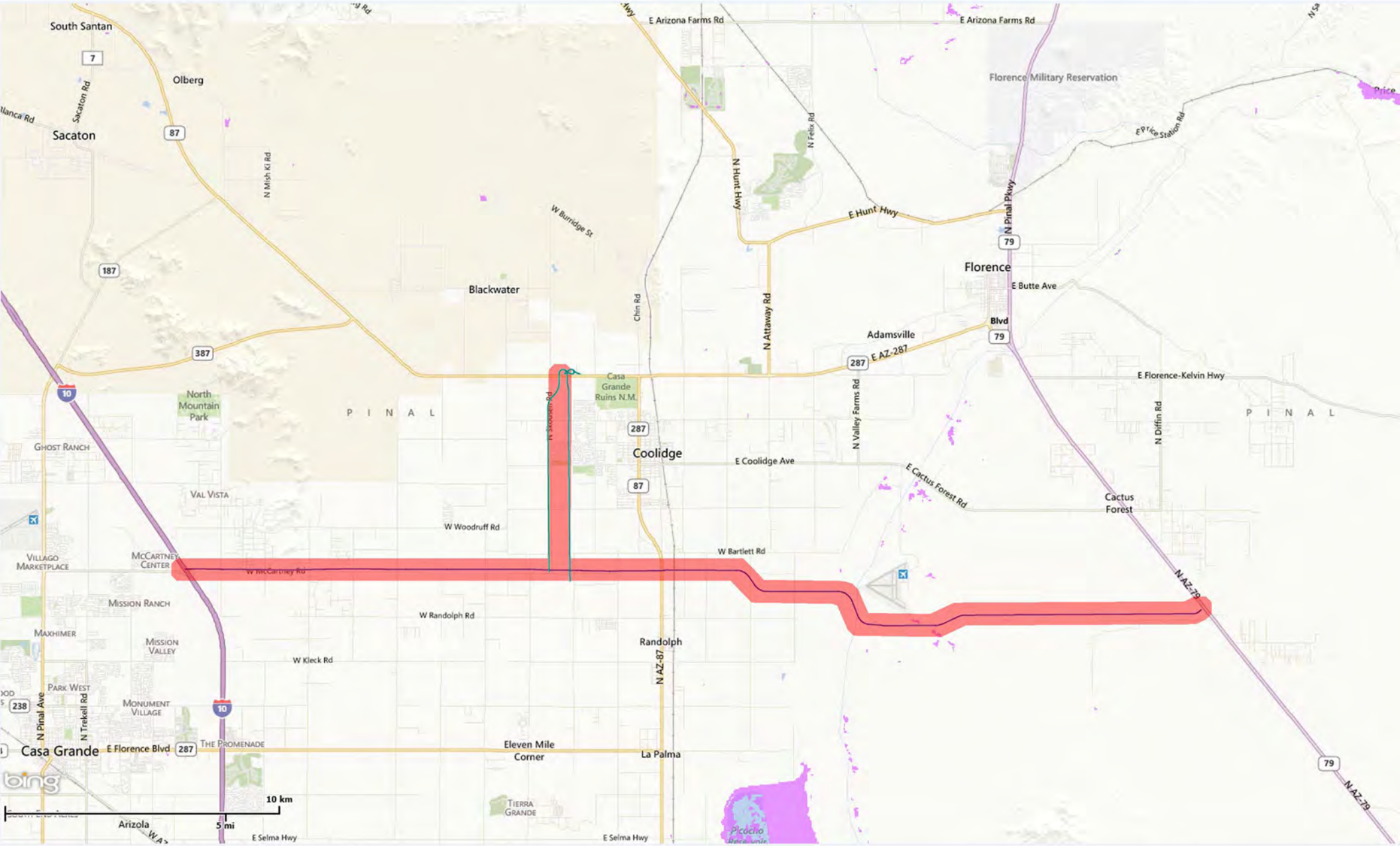
Western Yellow Cuckoo



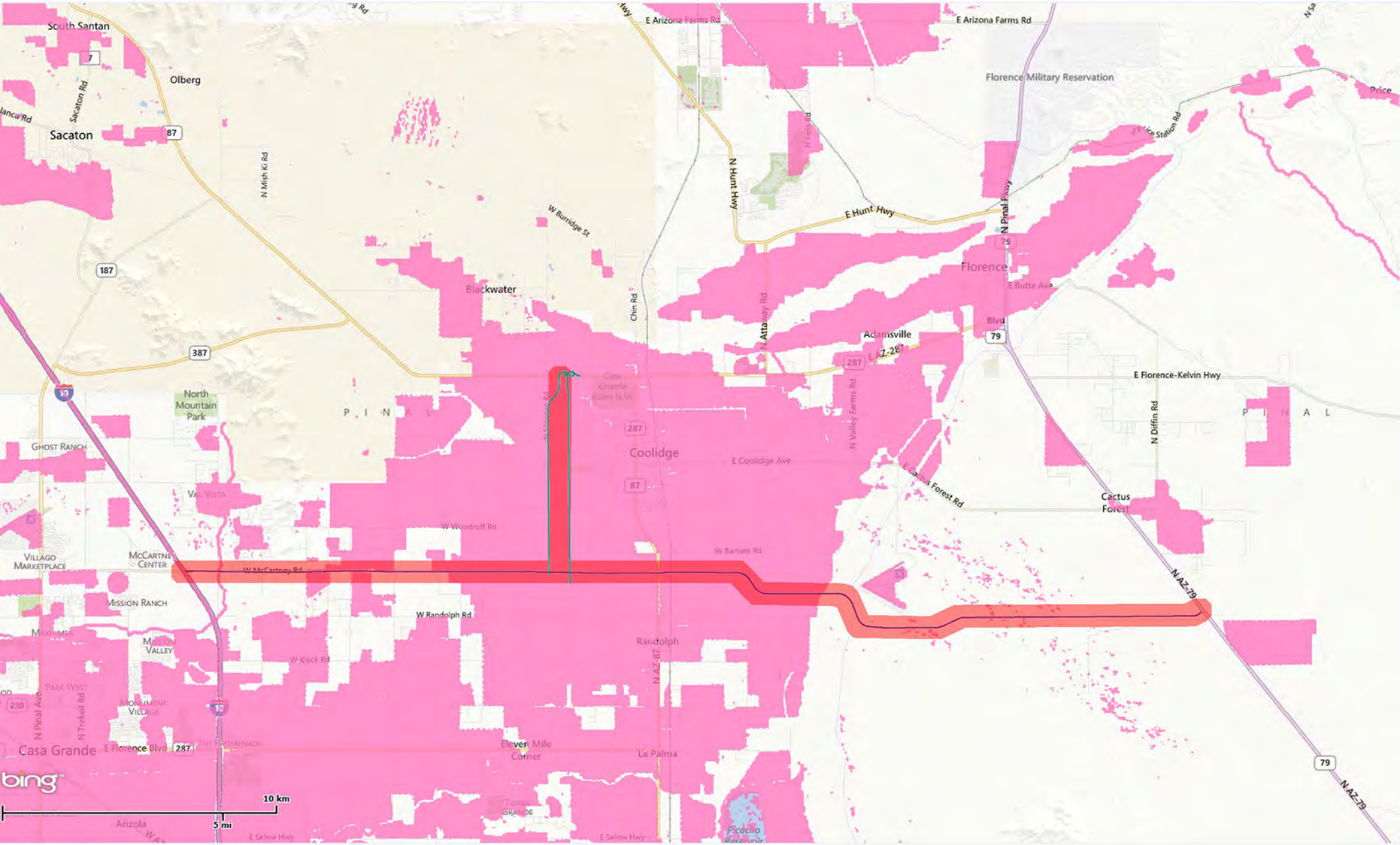
Western Burrowing Owl



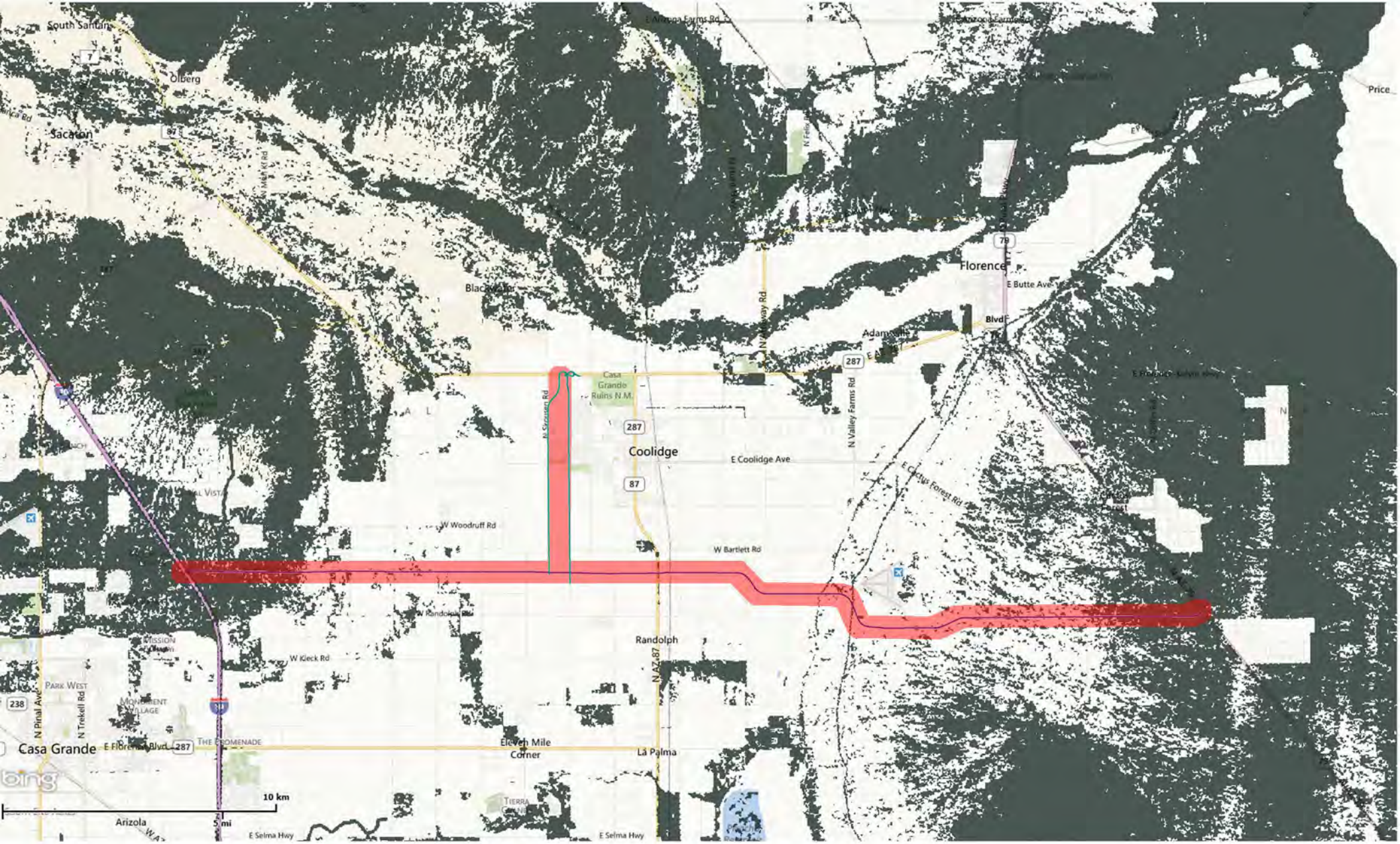
Savanah Sparrow



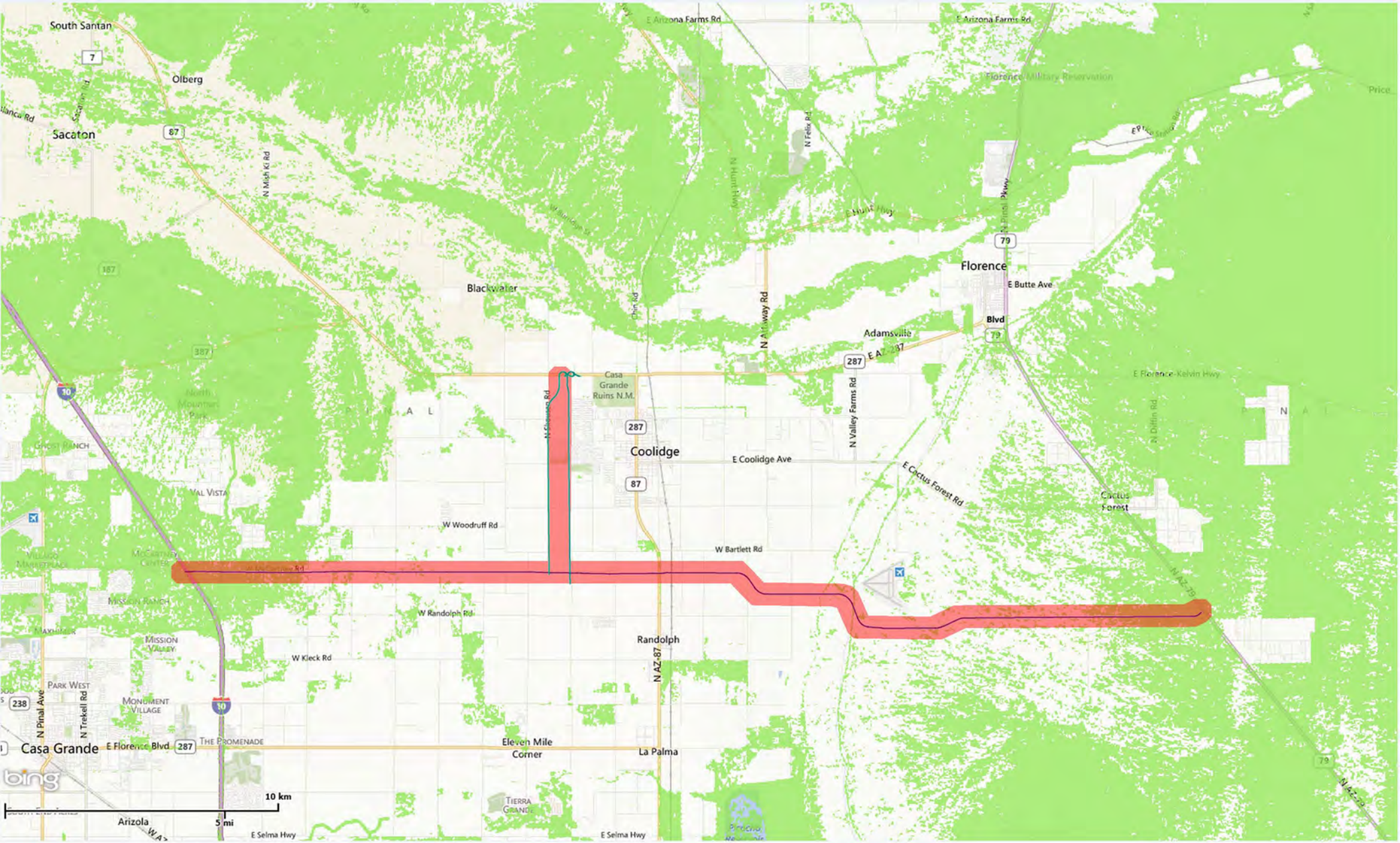
Pacific Wren



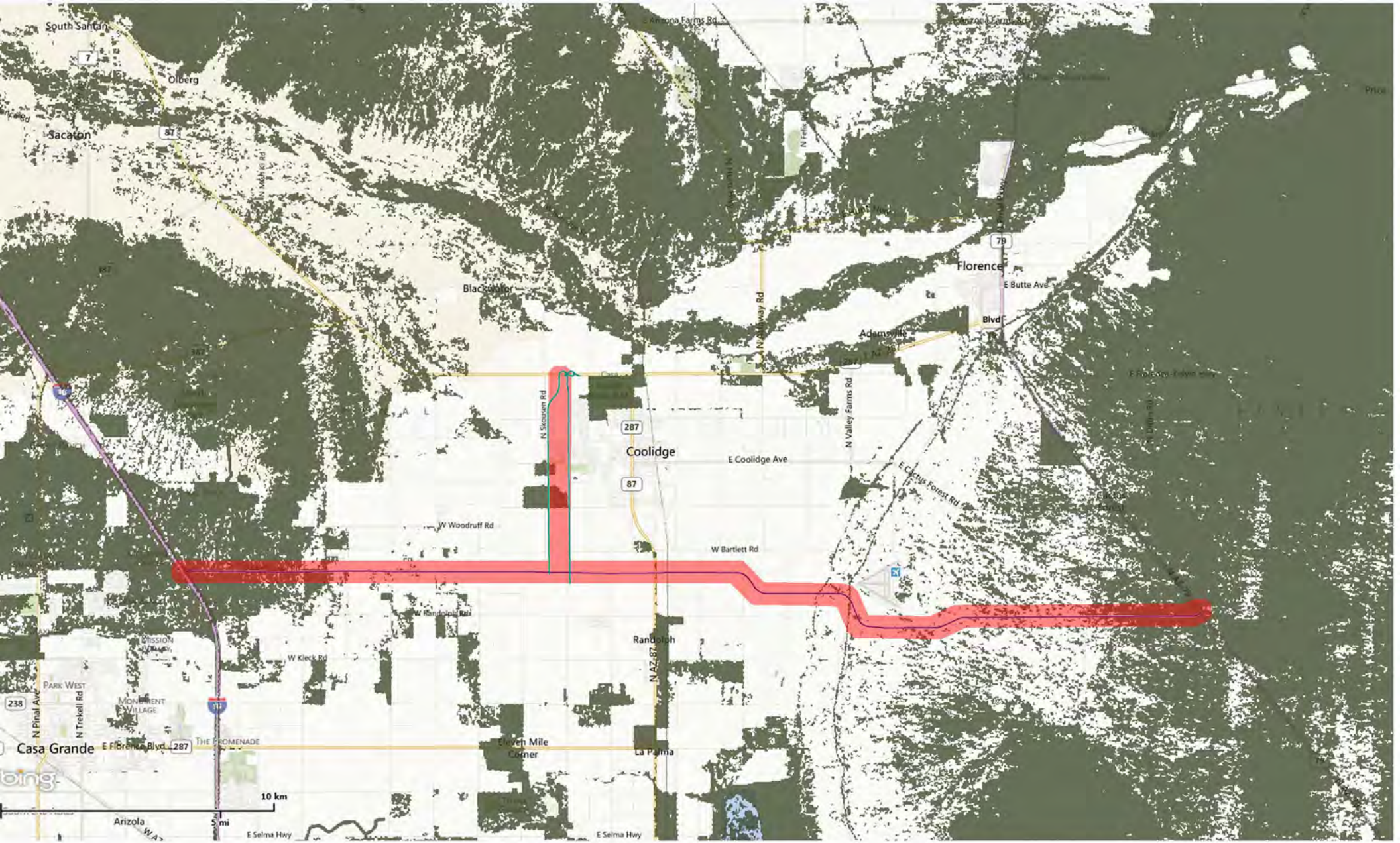
Lincoln’s Sparrow



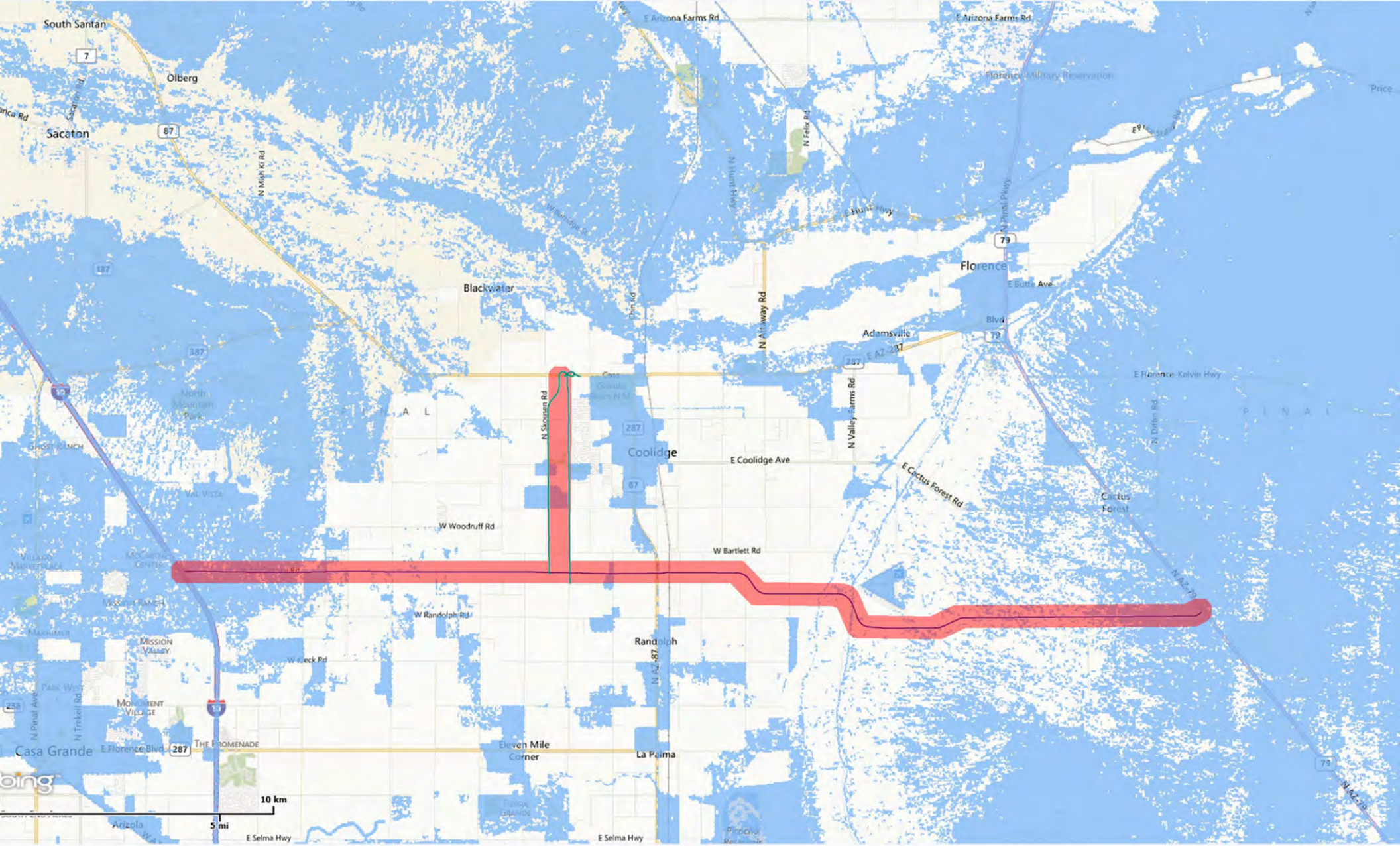
LeConte's Thrasher



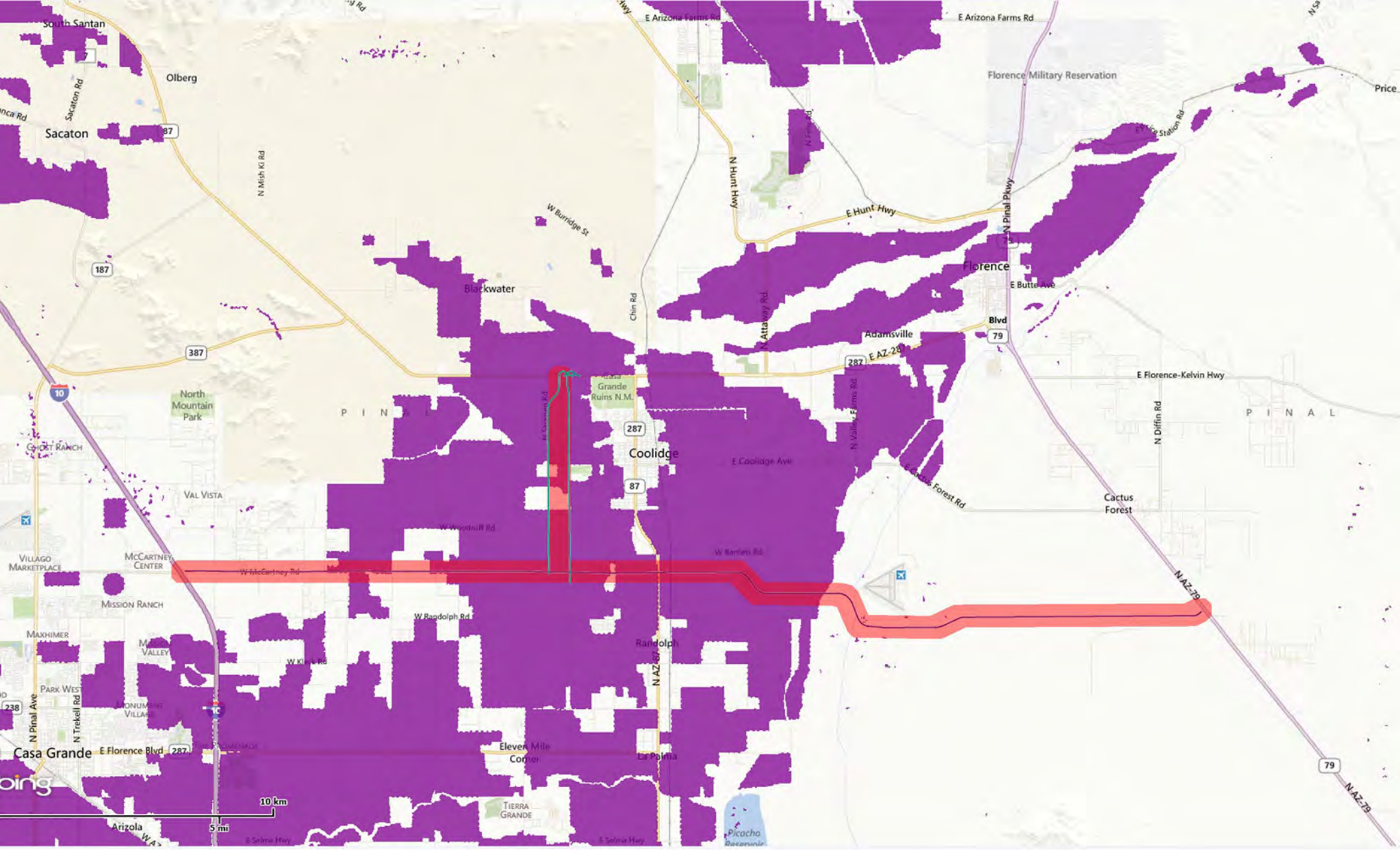
Golden Eagle



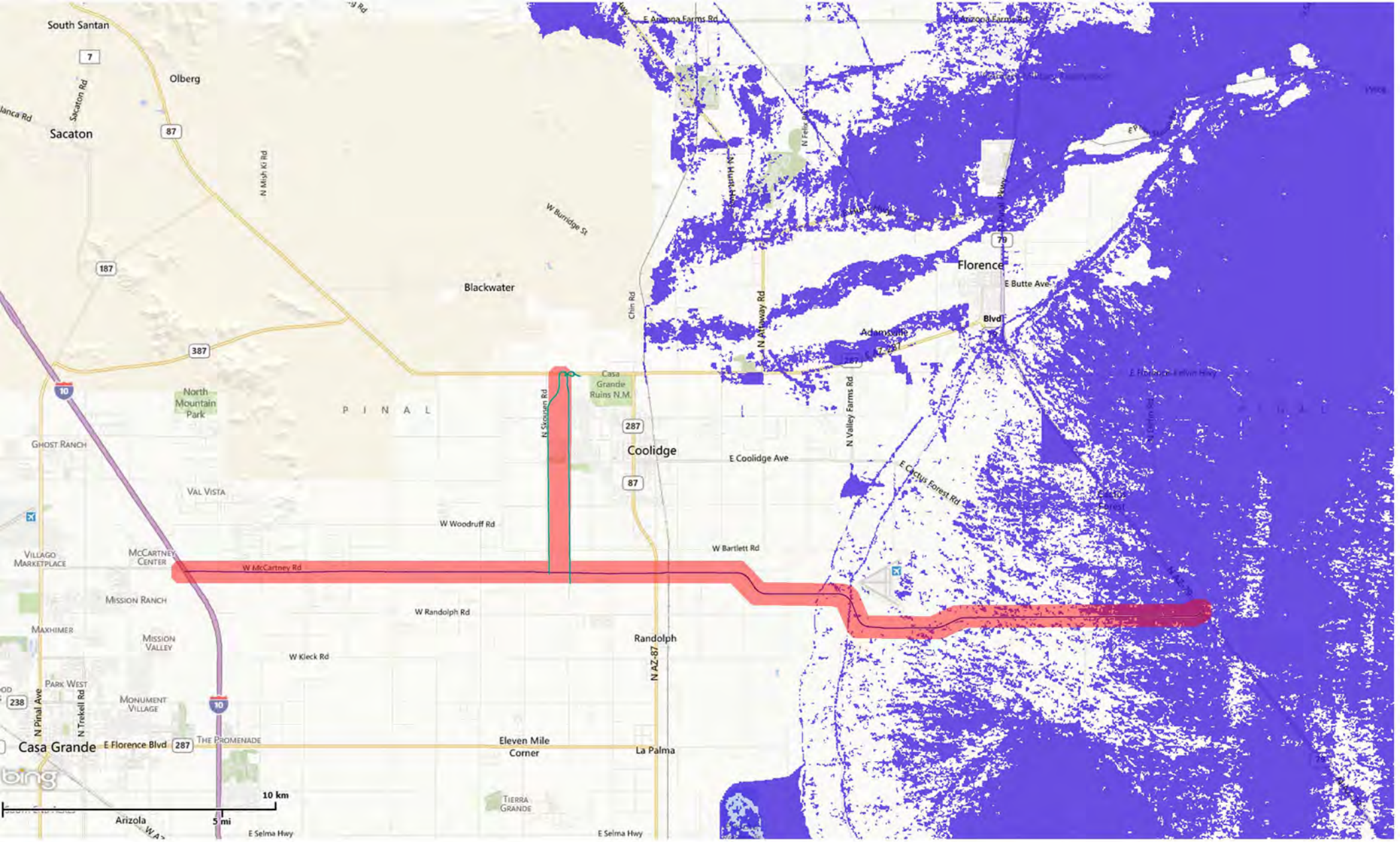
Gilded Flicker



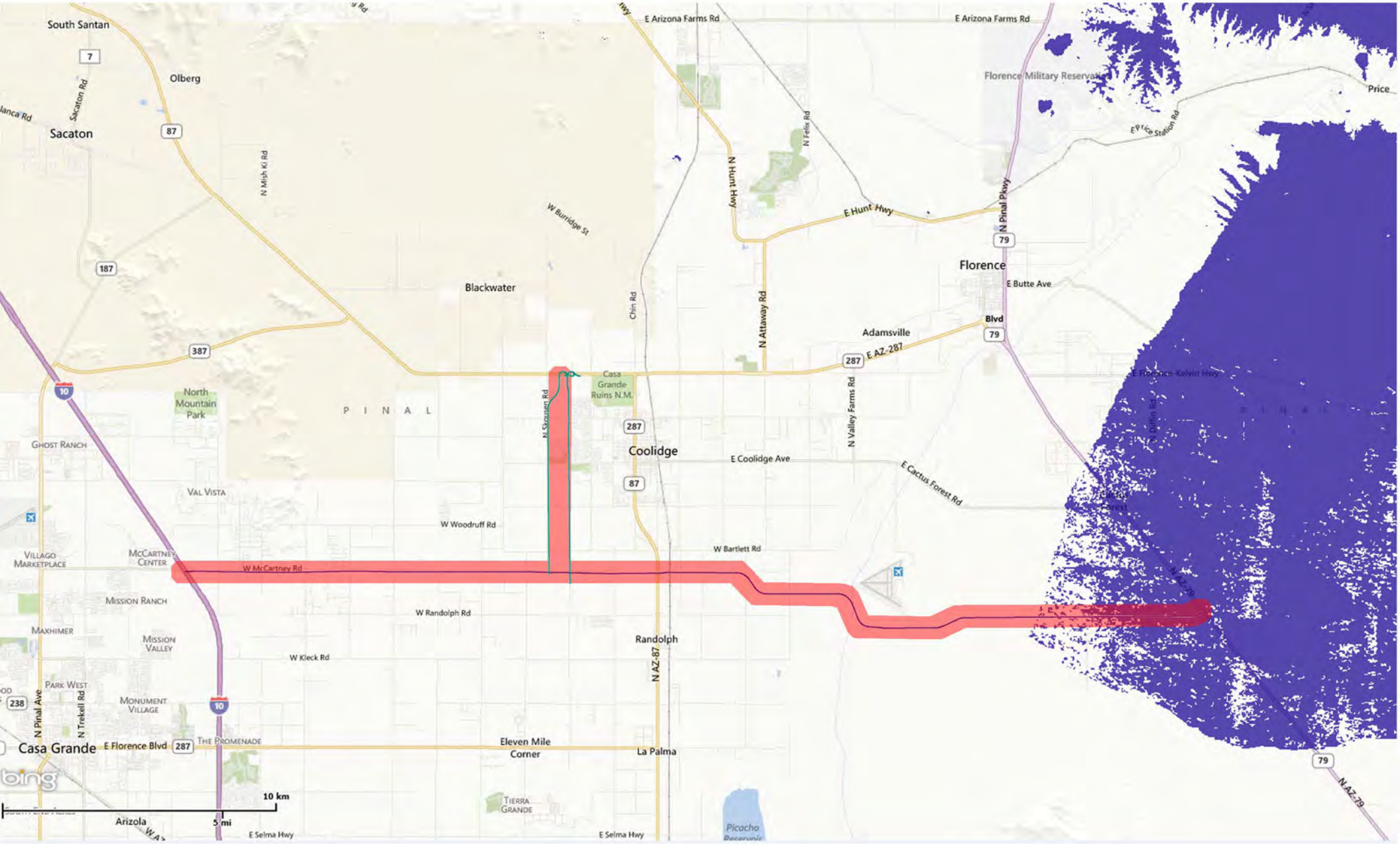
Gila Woodpecker



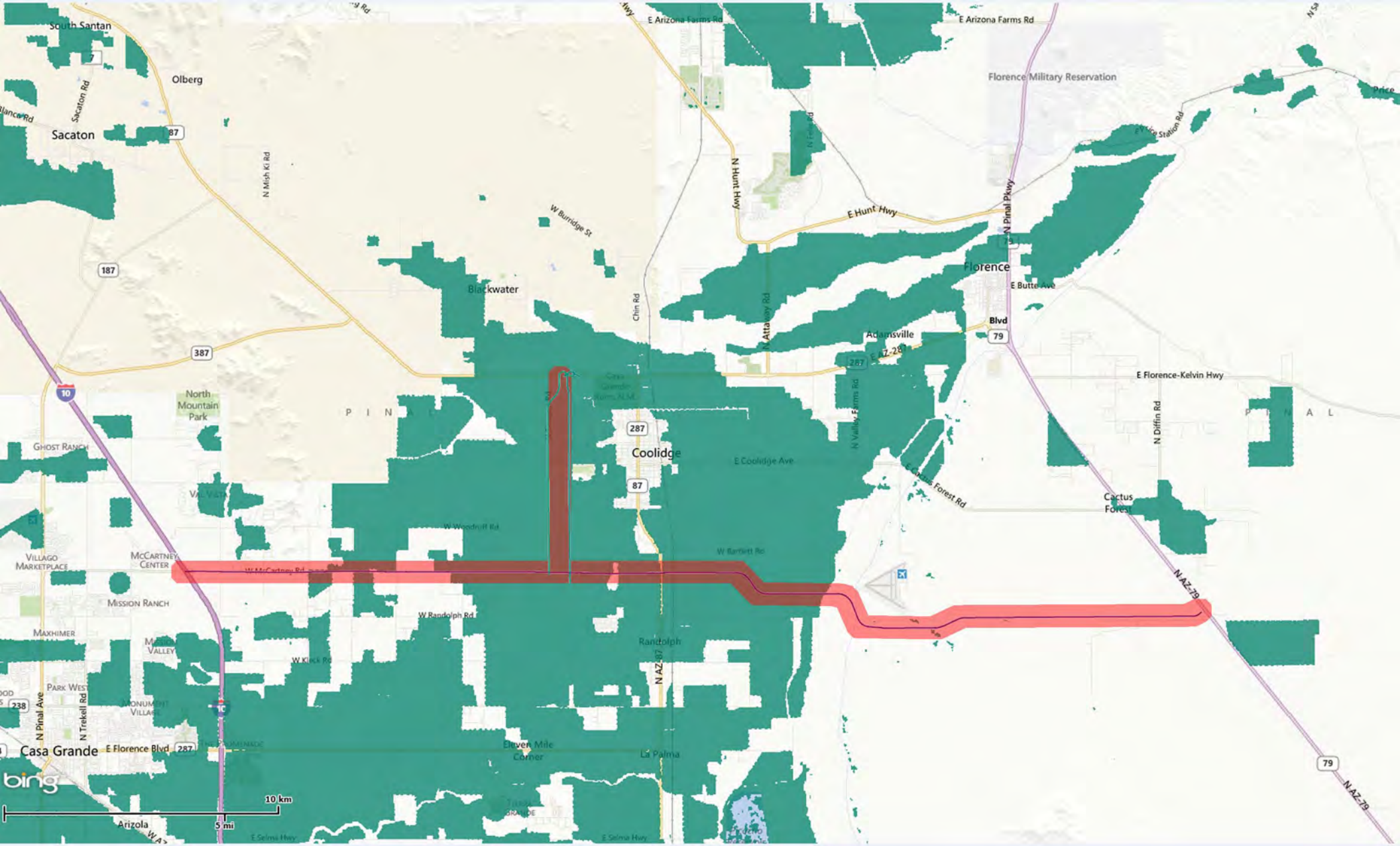
Ferruginous Hawk



Deep Purple Martin



Brown-billed Hummingbird


South Santan
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E Arizona Farms Rd
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E Hunt Hwy
Florence Military Reservation
N Pinal Pkwy
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Blvd
Adamsville
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Blackwater
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N Attaway Rd
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Mission Ranch
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Maxhimer
Randolph
N AZ-87
N AZ-79
Park West
N Pinal Ave
N Trekell Rd
Casa Grande
E Florence Blvd
Eleven Mile Corner
La Palma
Arizola
E Selma Hwy
10 km
5 mi
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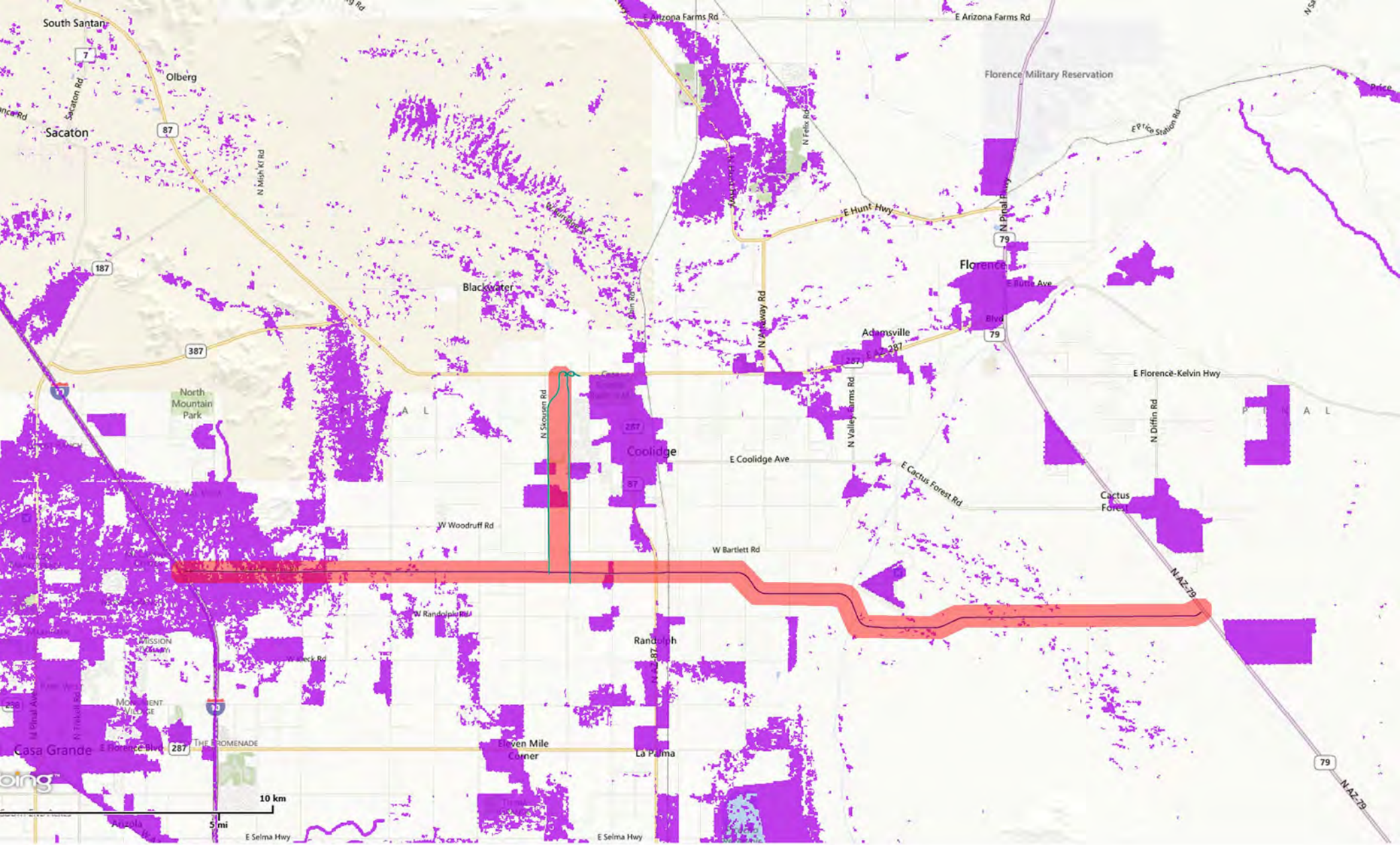
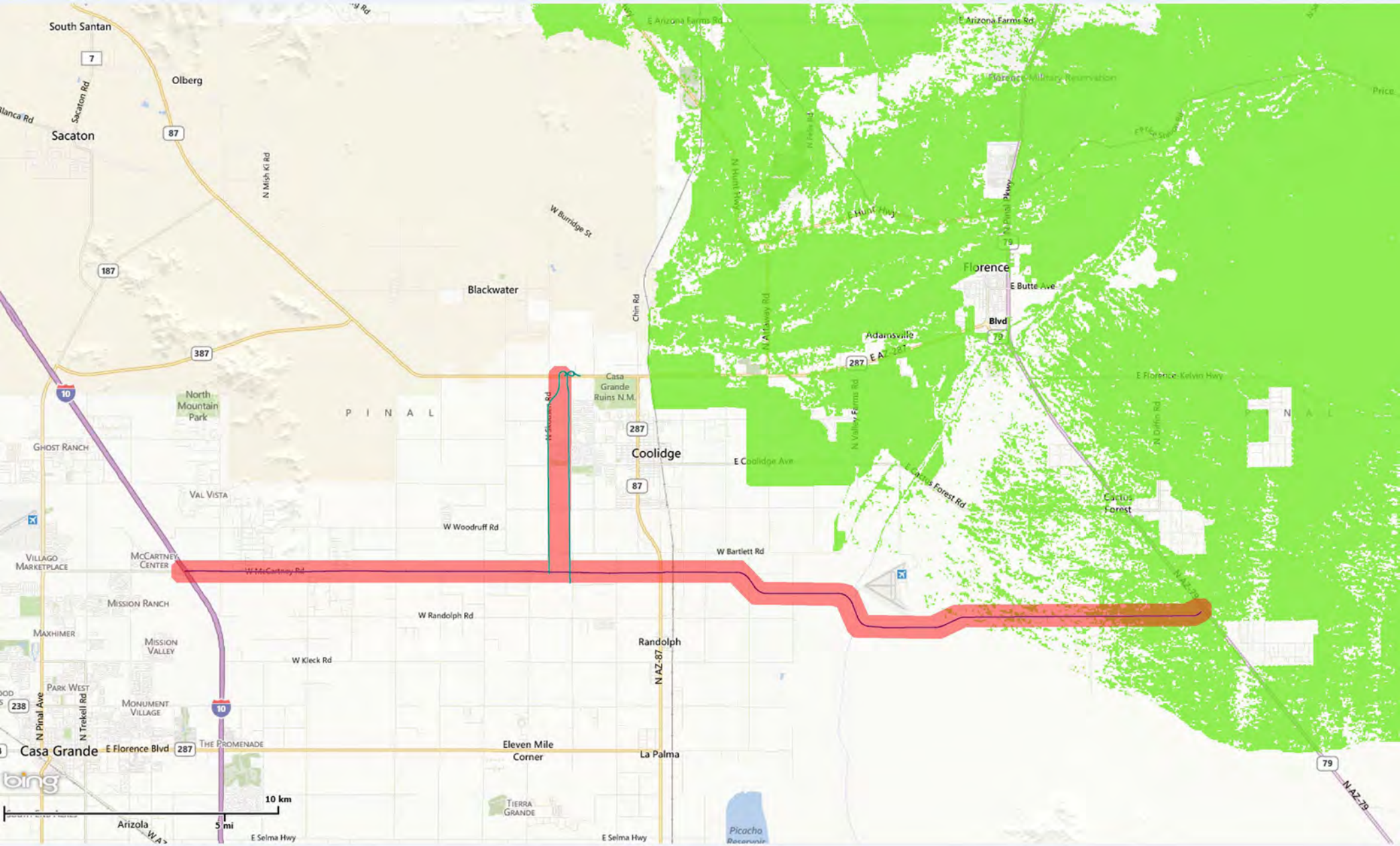
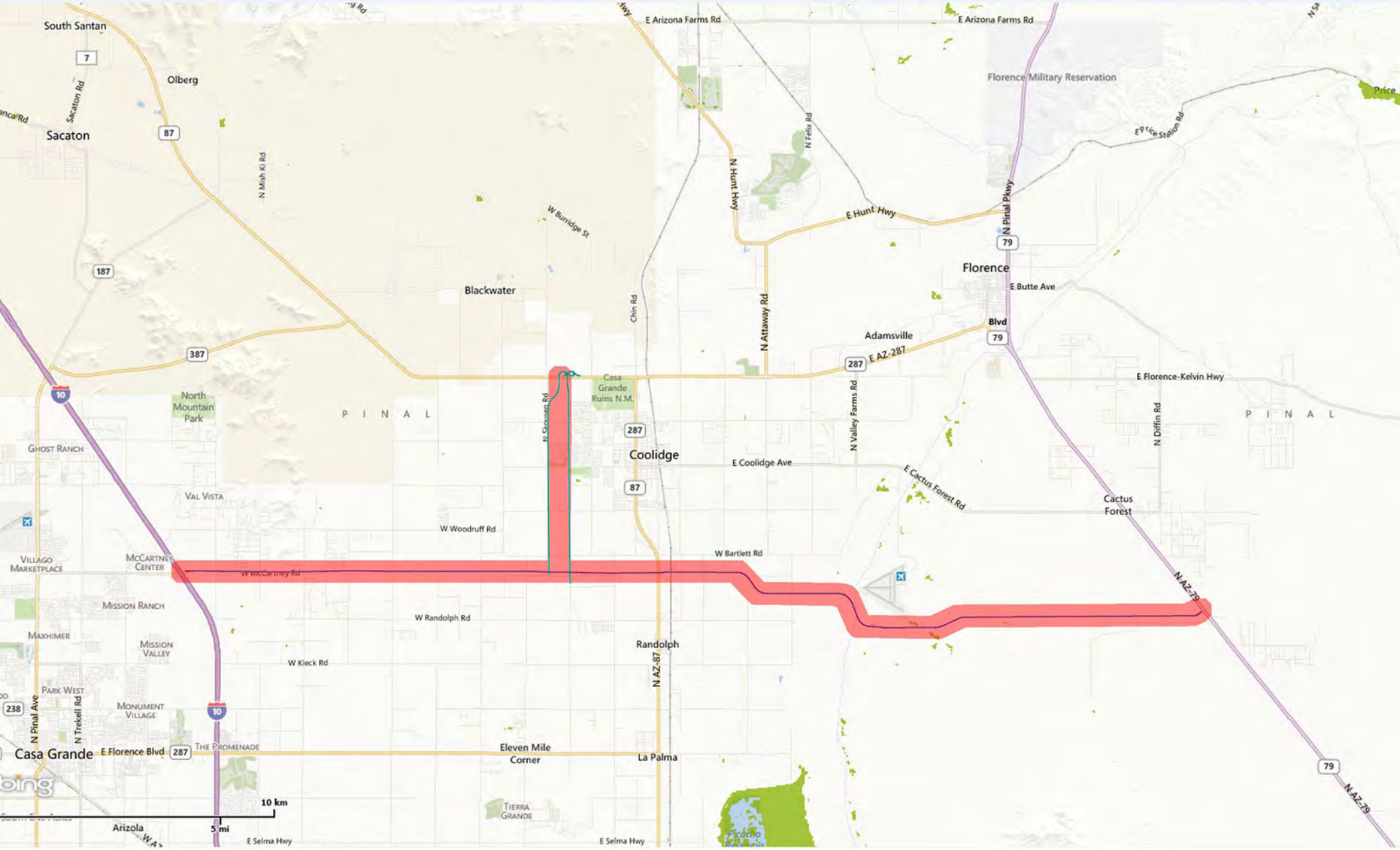
Bald Eagle



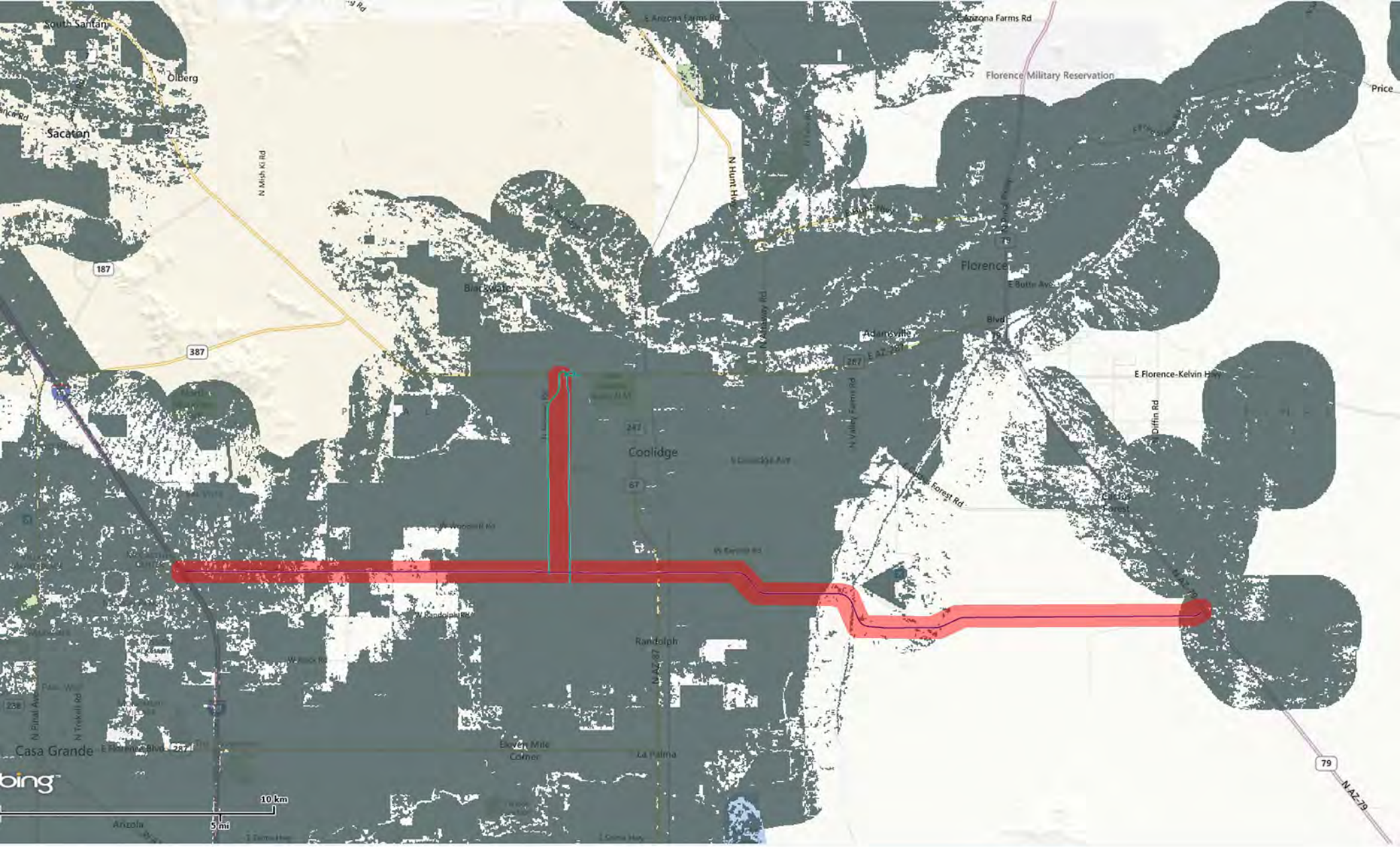
Arizona Bells Viero



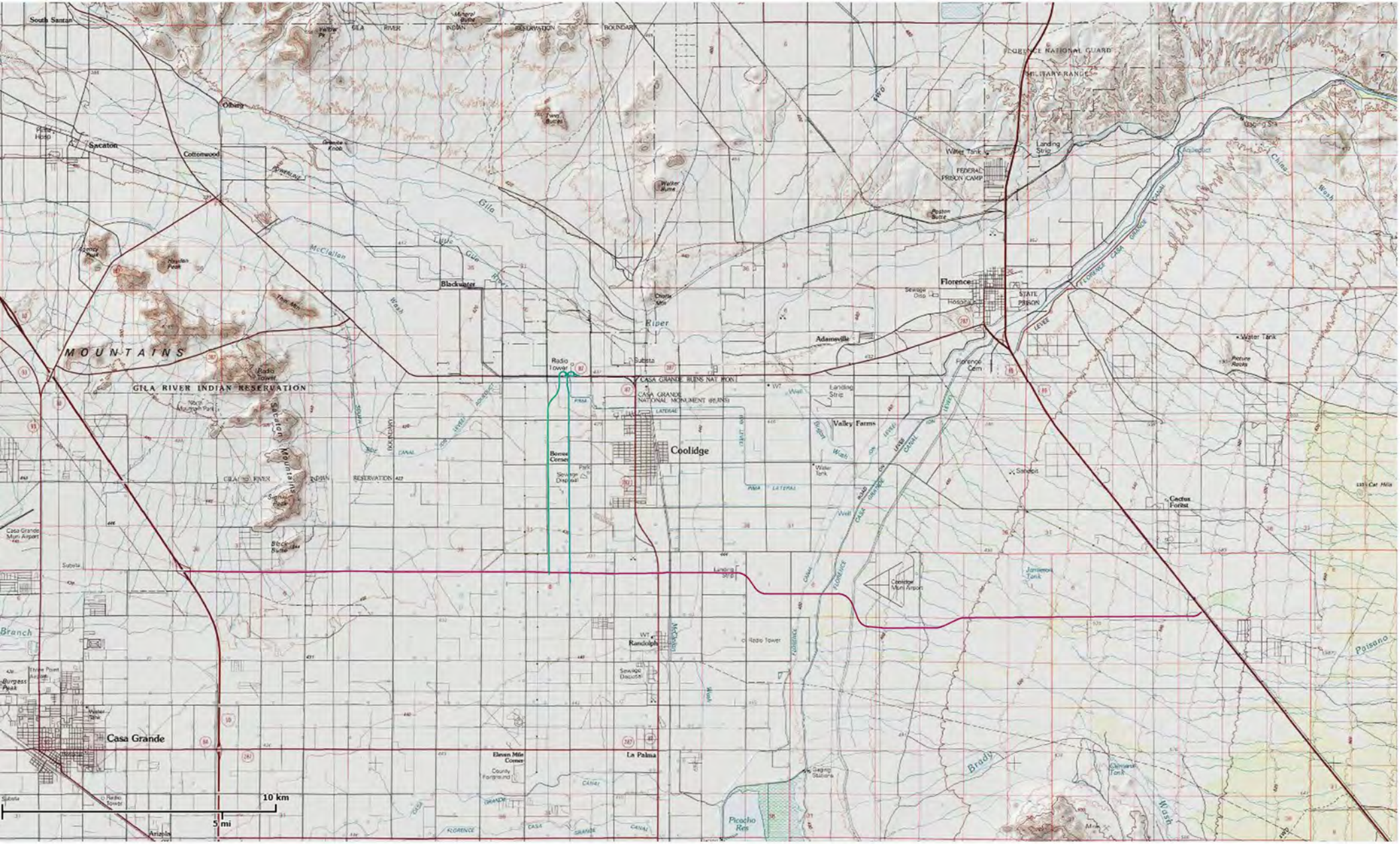
American Peregrine Falcon



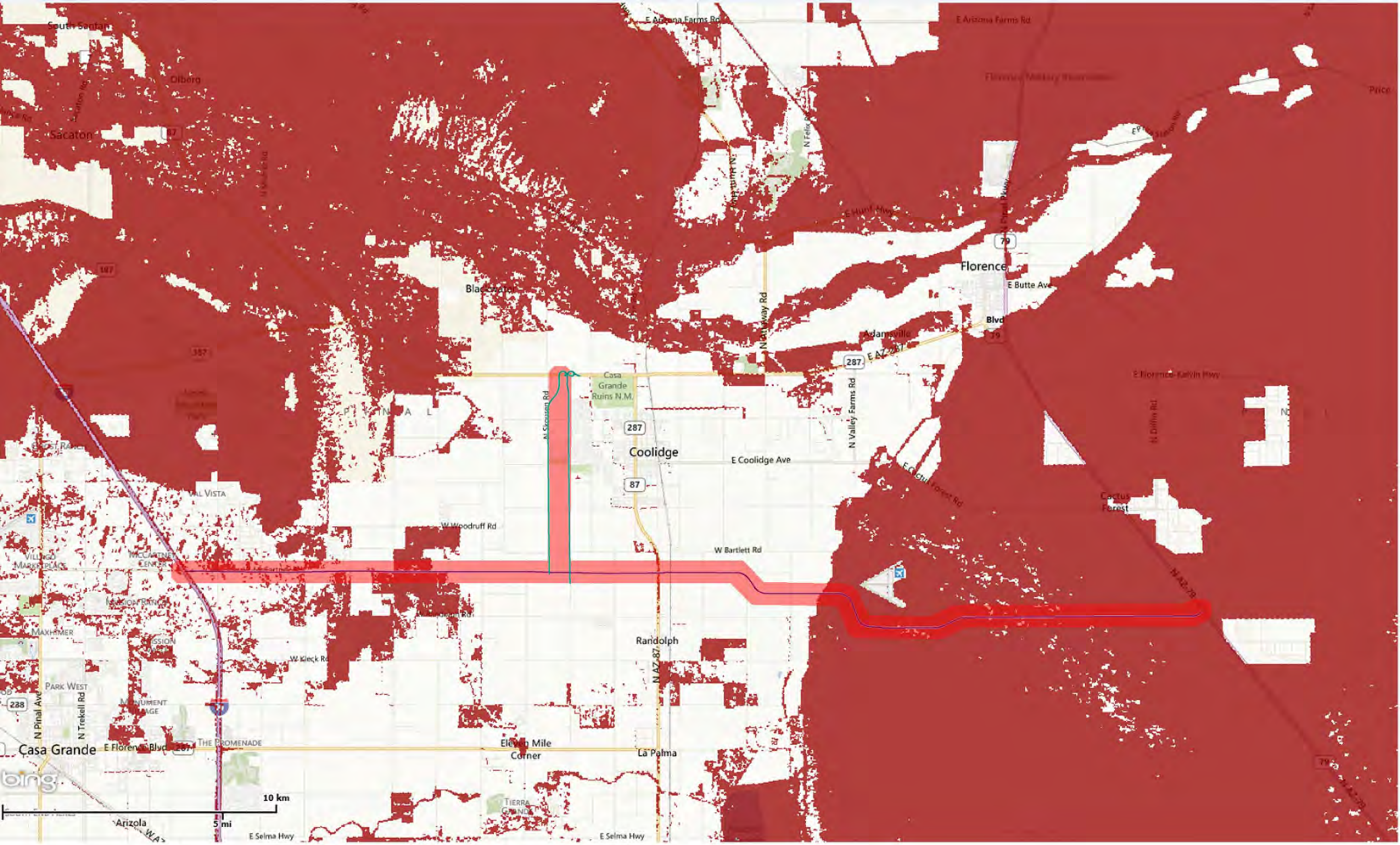
American Bittern



Albert's Towhee


South Santan
Sacaton
Cottonwood
Gila River
Blackwater
MOUNTAINS
GILA RIVER INDIAN RESERVATION
Casa Grande
Coolidge
Florence
Adamsville
Valley Farms
Randolph
La Palma
Eleven Mile Corner
Picacho Res
Cactus Forest
10 km
5 mi

Mammals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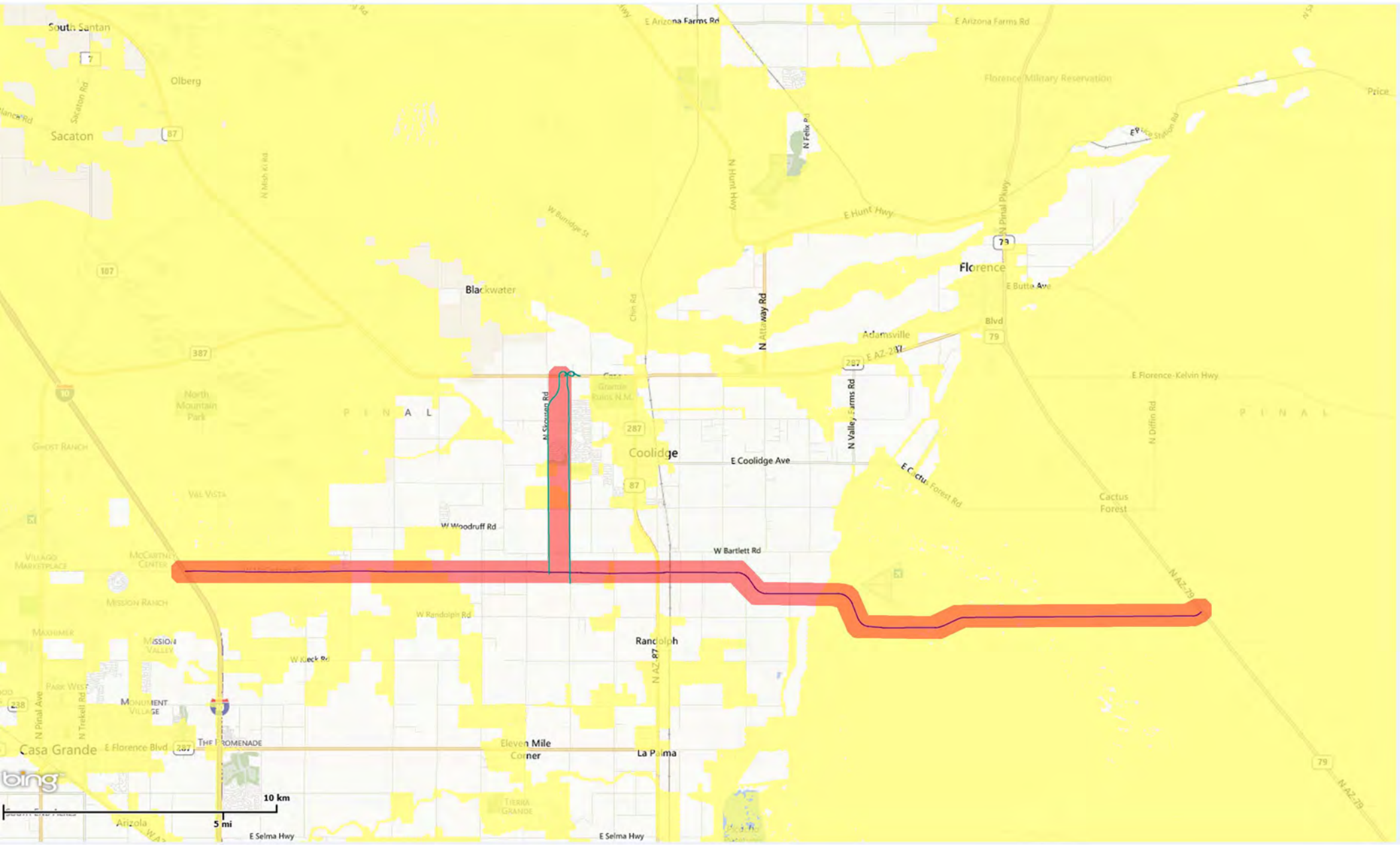
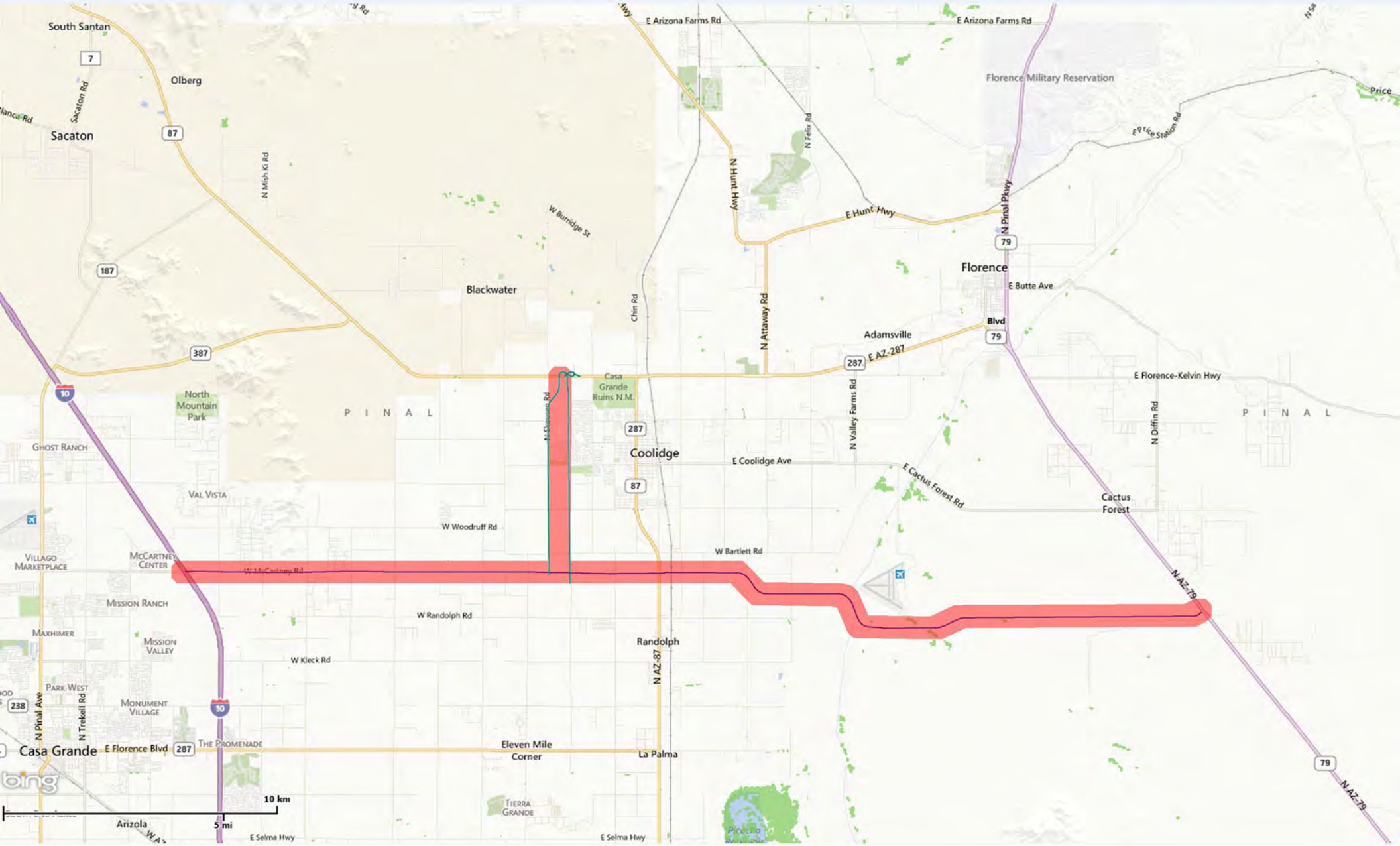
Casa Grande
E Florence Blvd
The Promenade
Eleven Mile Corner
La Palma
Tierra Grande
Arizola
E Selma Hwy
10 km
5 mi
bing

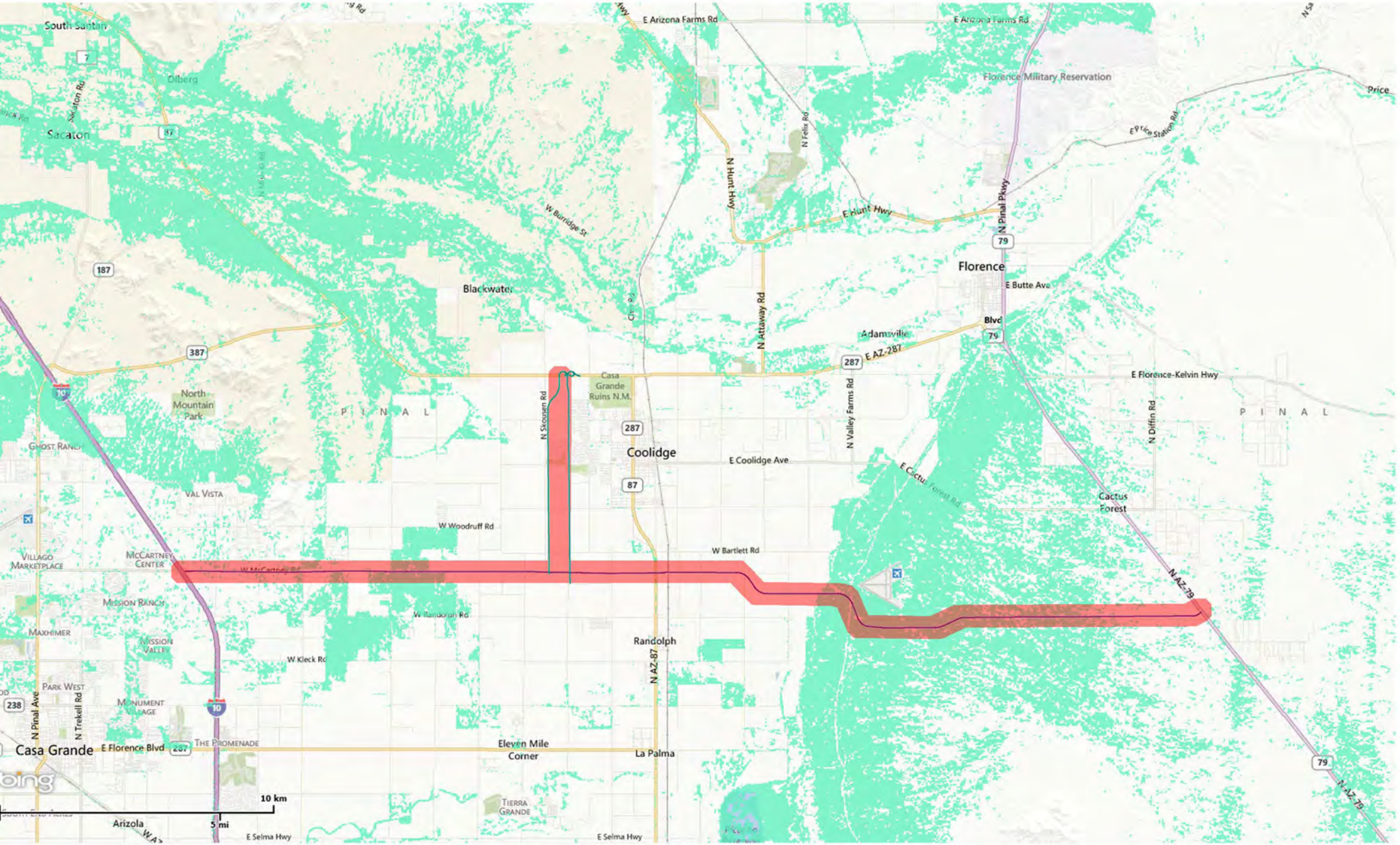
Yuma Myotis



Western Yellow Bat



Western Red Bat


E Arizona Farms Rd
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N Hunt Hwy
N Felix Rd
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Blackwater
N Attaway Rd
Adamsville
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North Mountain Park
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Casa Grande Ruins N.M.
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Monument Village
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The Promenade
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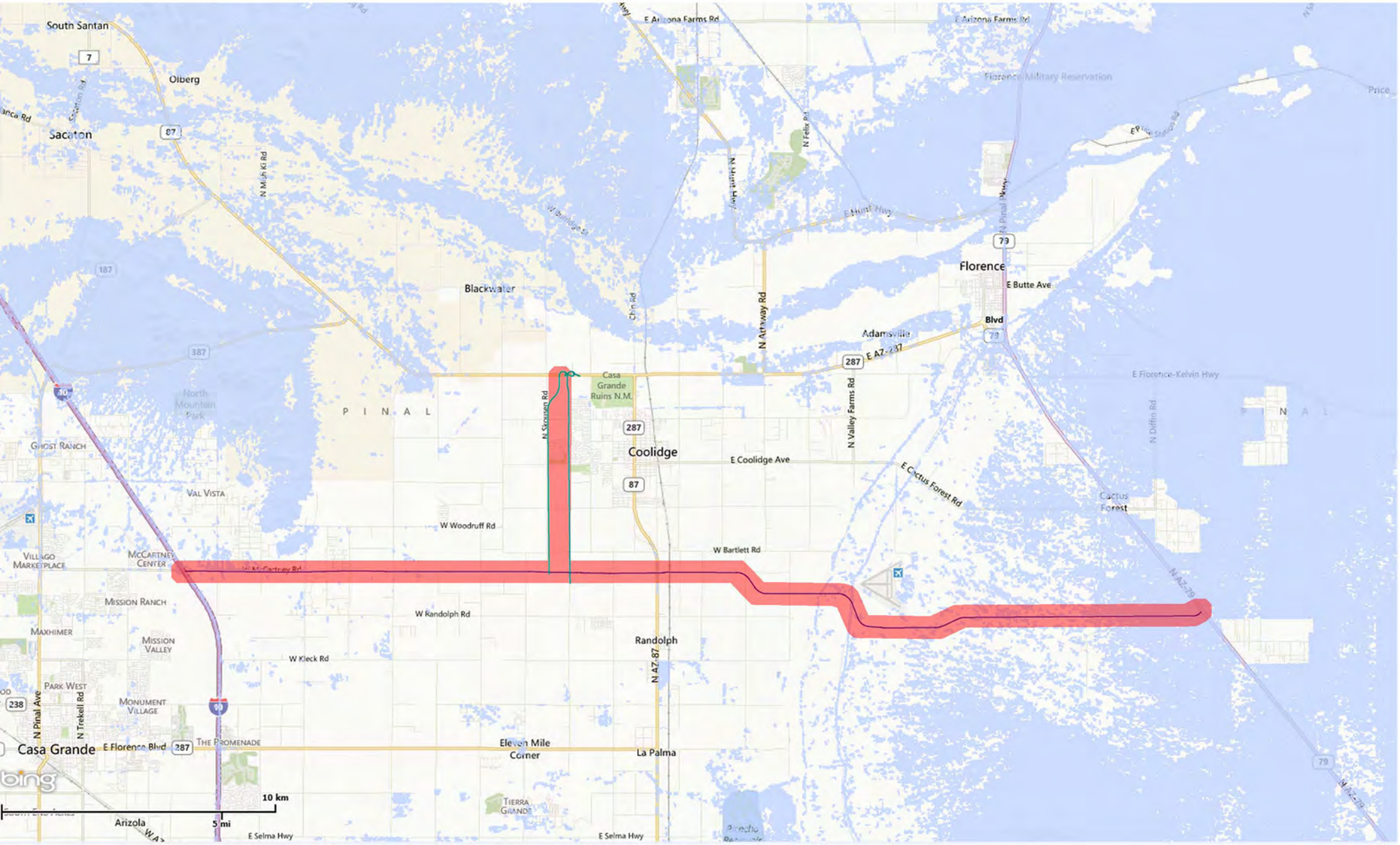
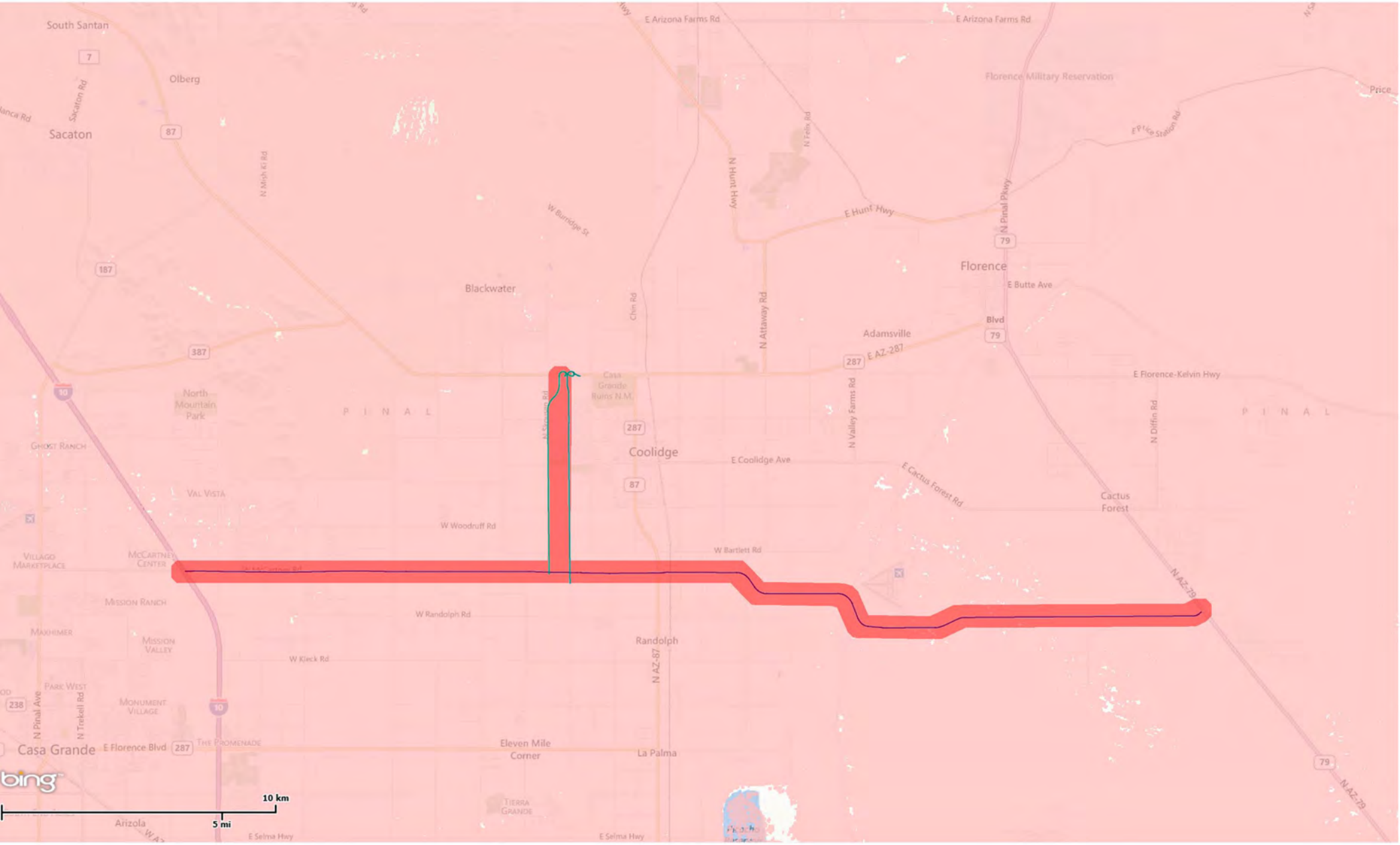
La Palma
10 km
5 mi
Arizola
Tierra Grande
E Selma Hwy

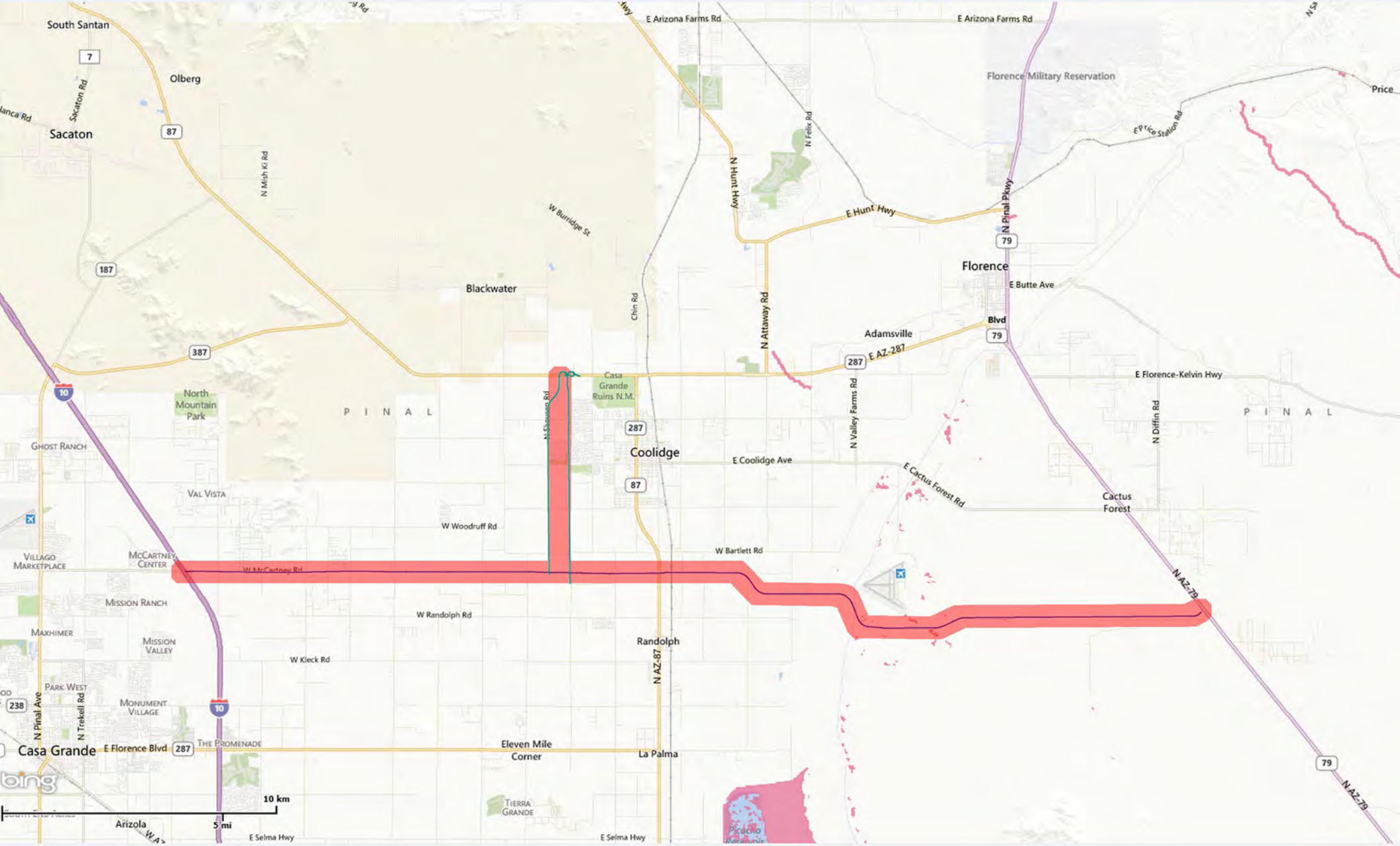
Spotted Bat



Pocketed Free-tailed Bat



Pale Townsend’d Big-eared Bat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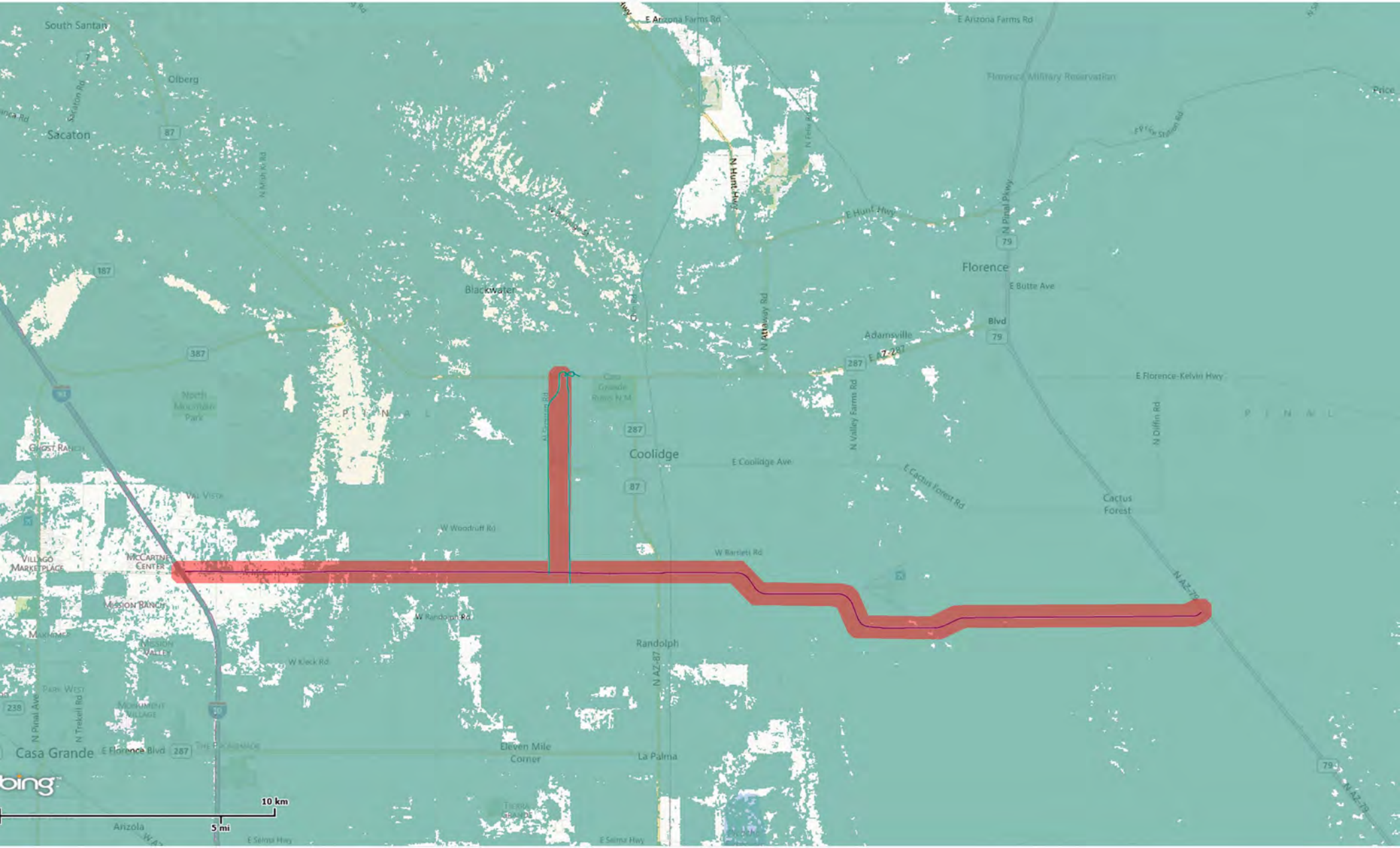
Sacaton
Florence Military Reservation
Price
E Arizona Farms Rd
E Hunt Hwy
Florence
E Butte Ave
Blackwater
Adamsville
E AZ-287
E Florence-Kelvin Hwy
North Mountain Park
P I N A L
Casa Grande Ruins N.M.
Coolidge
E Coolidge Ave
Ghost Ranch
Val Vista
W Woodruff Rd
W Bartlett Rd
E Cactus Forest Rd
Cactus Forest
Villago Marketplace
McCartney Center
Mission Ranch
W Randolph Rd
Maxhimer
Mission Valley
W Kleck Rd
Randolph
Park West
Monument Village
The Promenade
Casa Grande
E Florence Blvd
Eleven Mile Corner
La Palma
Tierra Grande
Arizola
E Selma Hwy
10 km
5 mi
N AZ-79
N AZ-87
N Pinal Pkwy
N Hunt Hwy
N Attaway Rd
N Valley Farms Rd
N Diffin Rd
Chin Rd
W Burridge St

Ocelot



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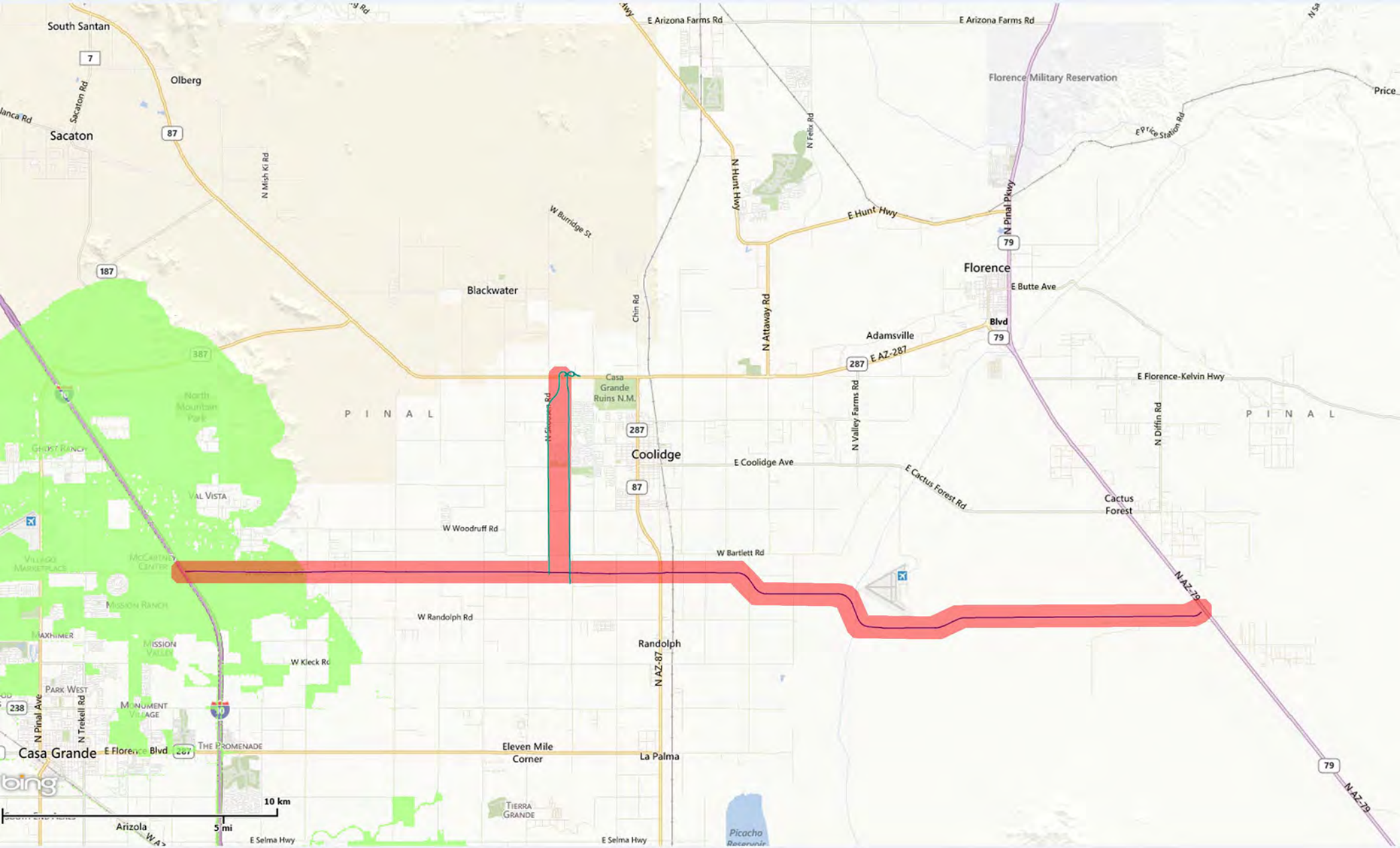
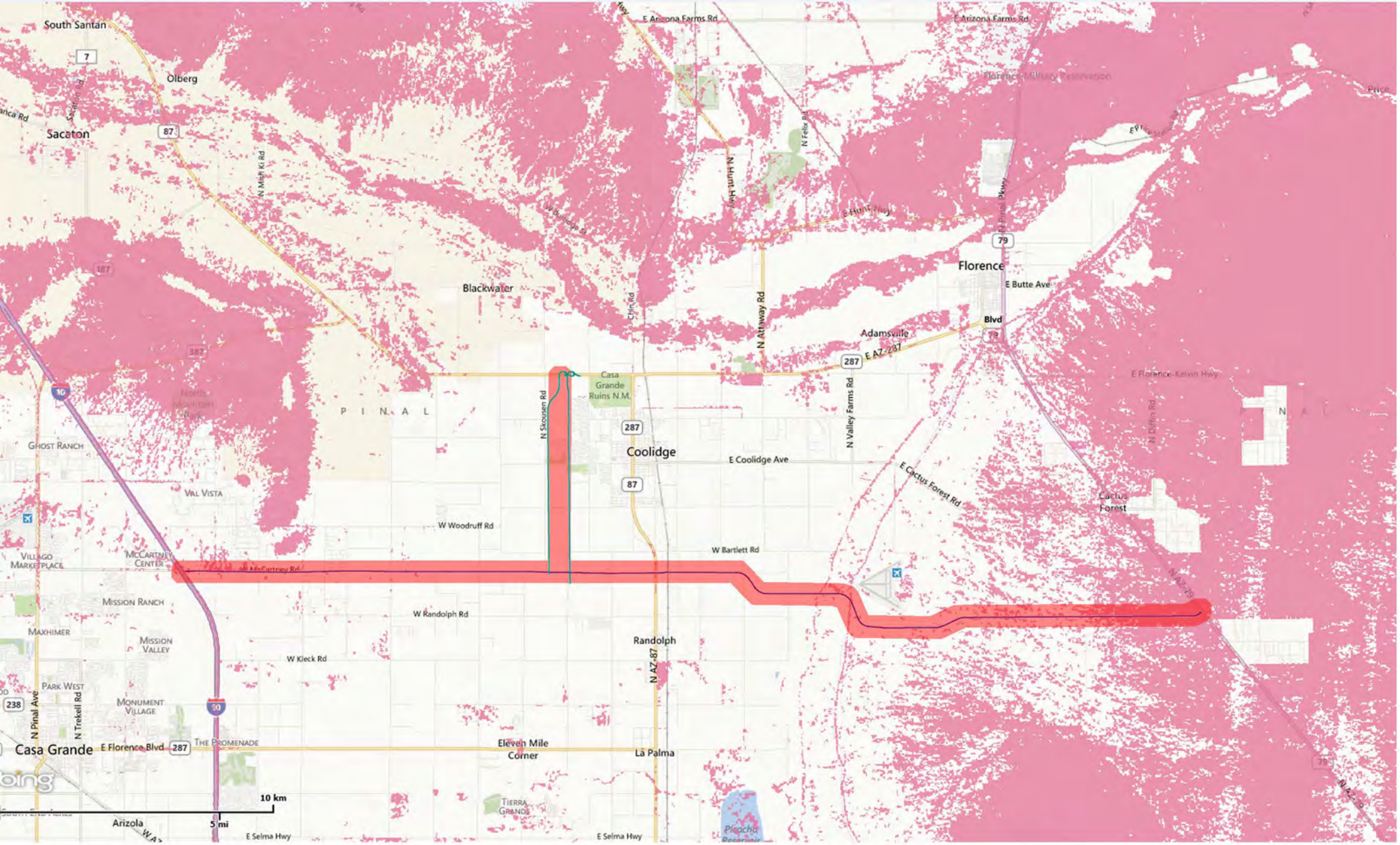
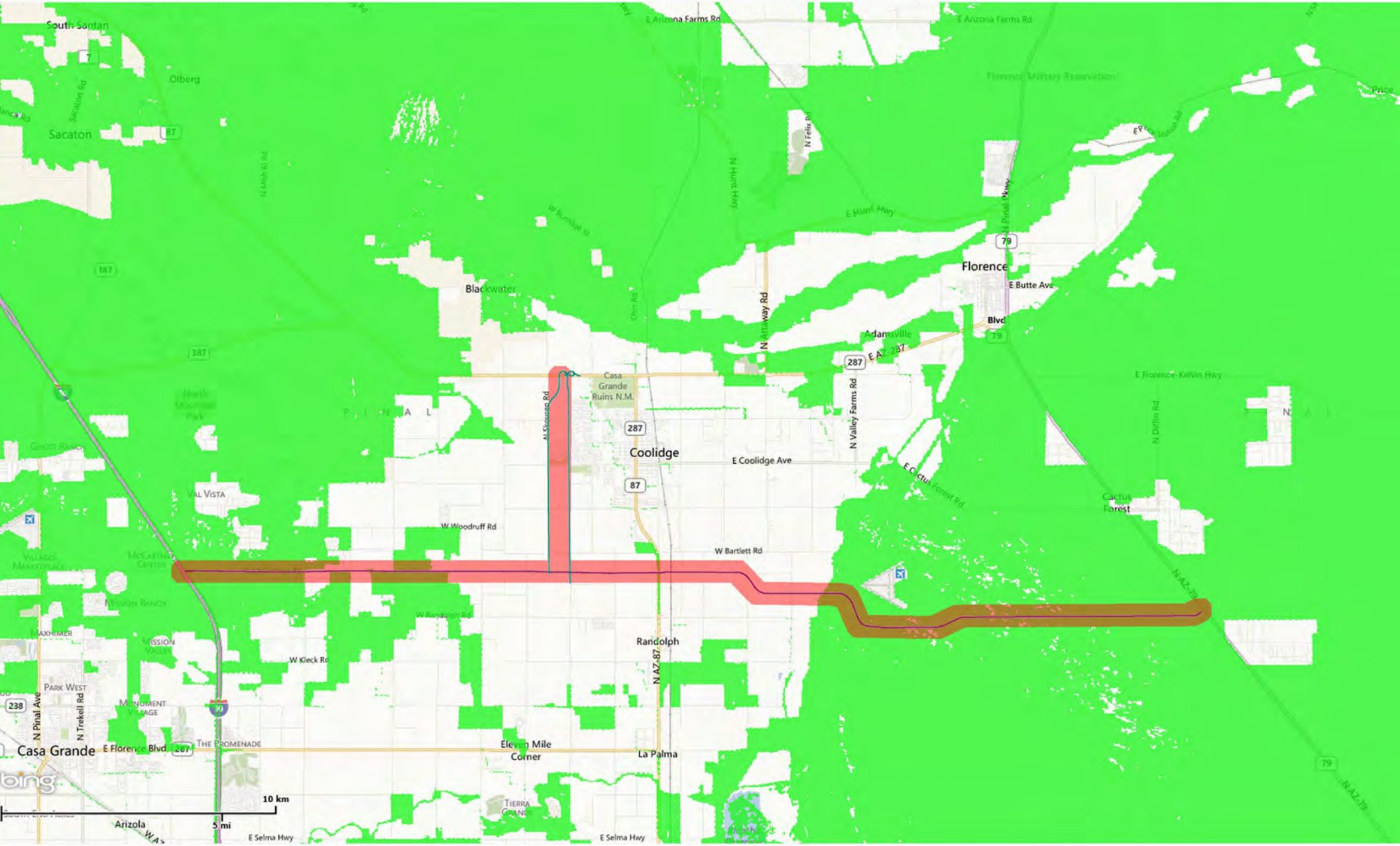


Little Pocket Mouse



Lesser Long-nosed Bat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Coolidge
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W Bartlett Rd
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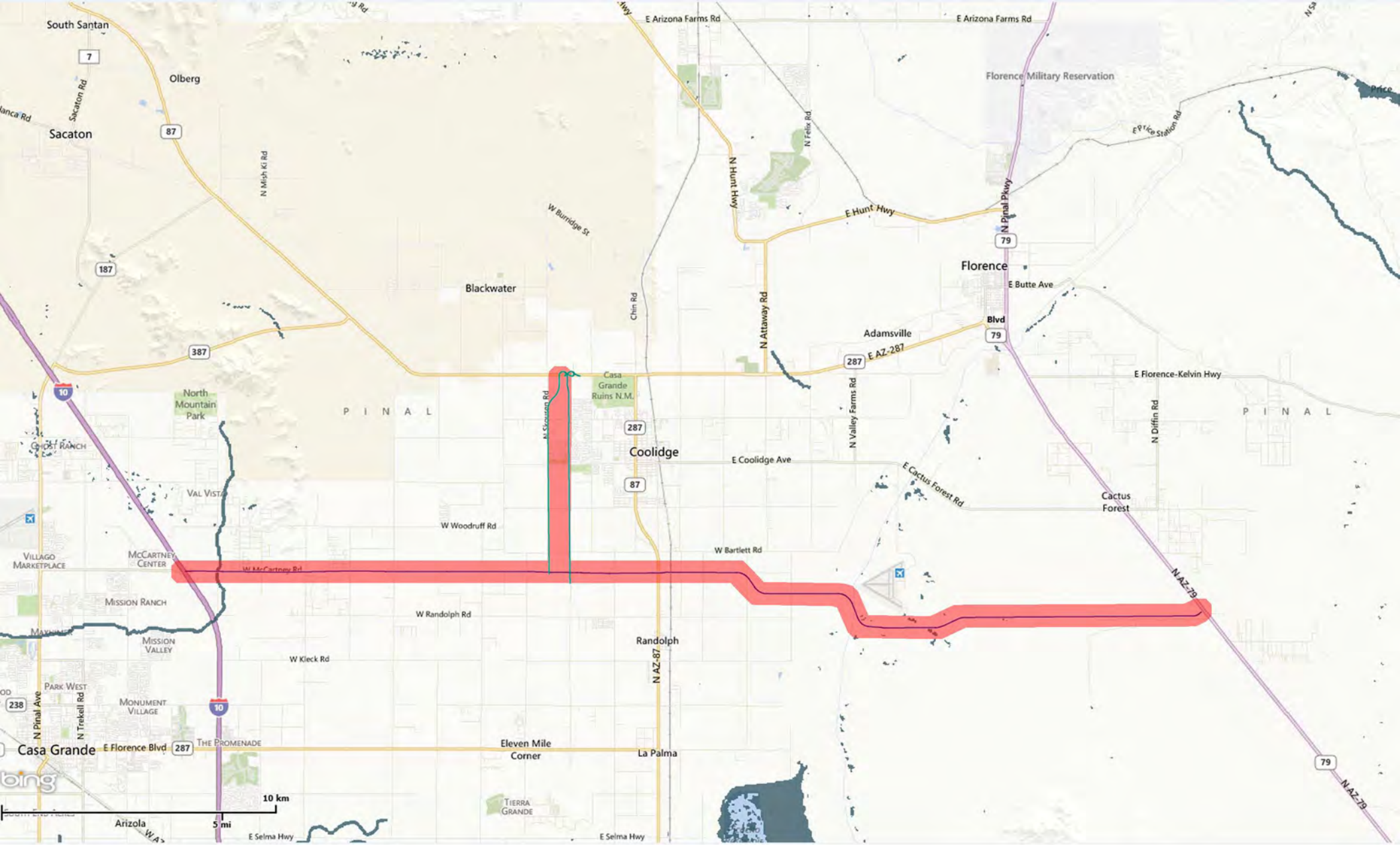
Eleven Mile Corner
La Palma
Arizola
E Selma Hwy
10 km
5 mi

Kit Fox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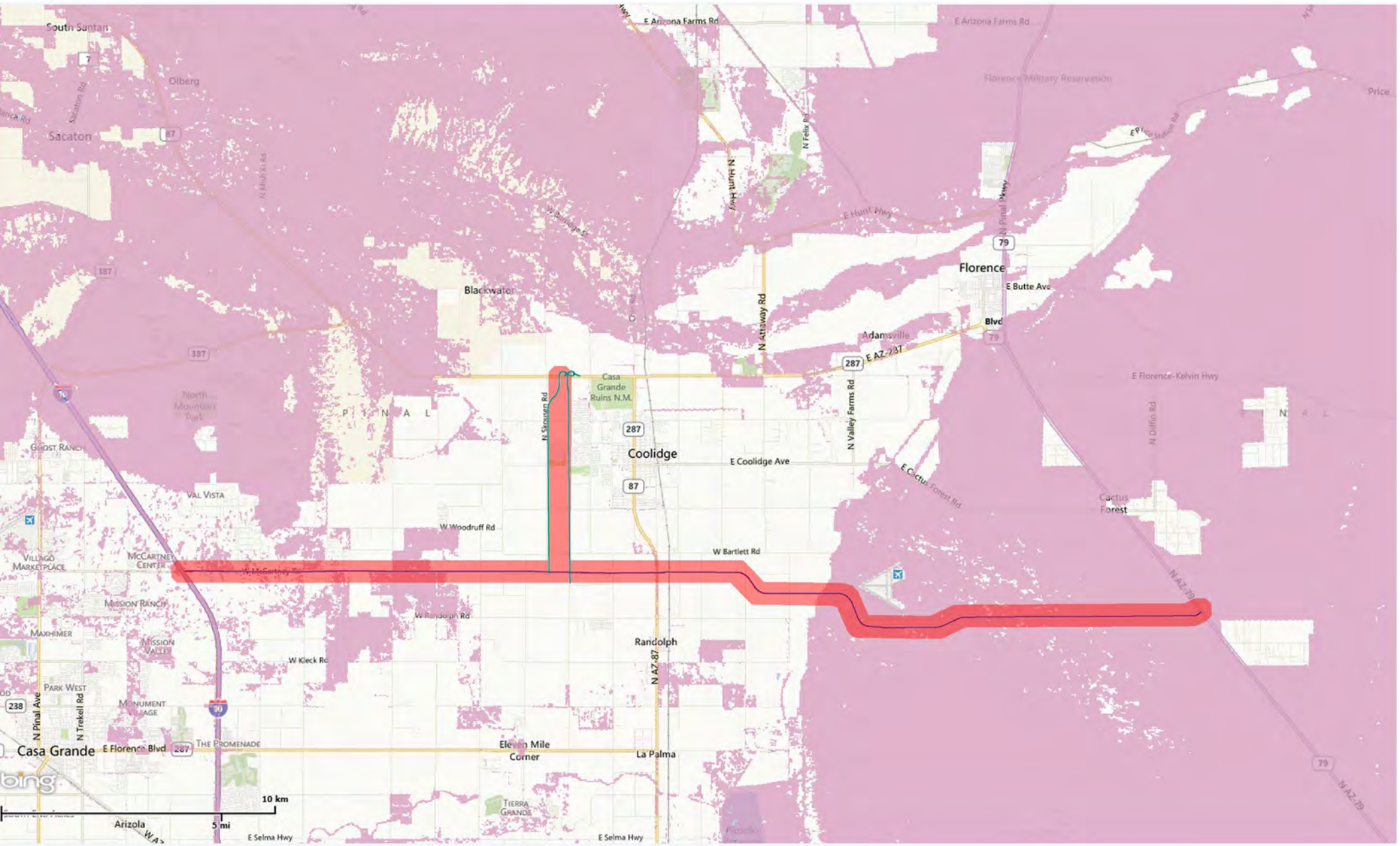
P I N A L
Casa Grande Ruins N.M.
Coolidge
E Coolidge Ave
E Cactus Forest Rd
Cactus Forest
W Woodruff Rd
W Bartlett Rd
Mission Ranch
W Randolph Rd
Randolph
W Kieck Rd
Park West
Monument Village
Casa Grande
E Florence Blvd
The Promenade
Eleven Mile Corner
La Palma
Tierra Grande
Arizola
E Selma Hwy
10 km
5 mi
N AZ-79
N AZ-87

Jaguar



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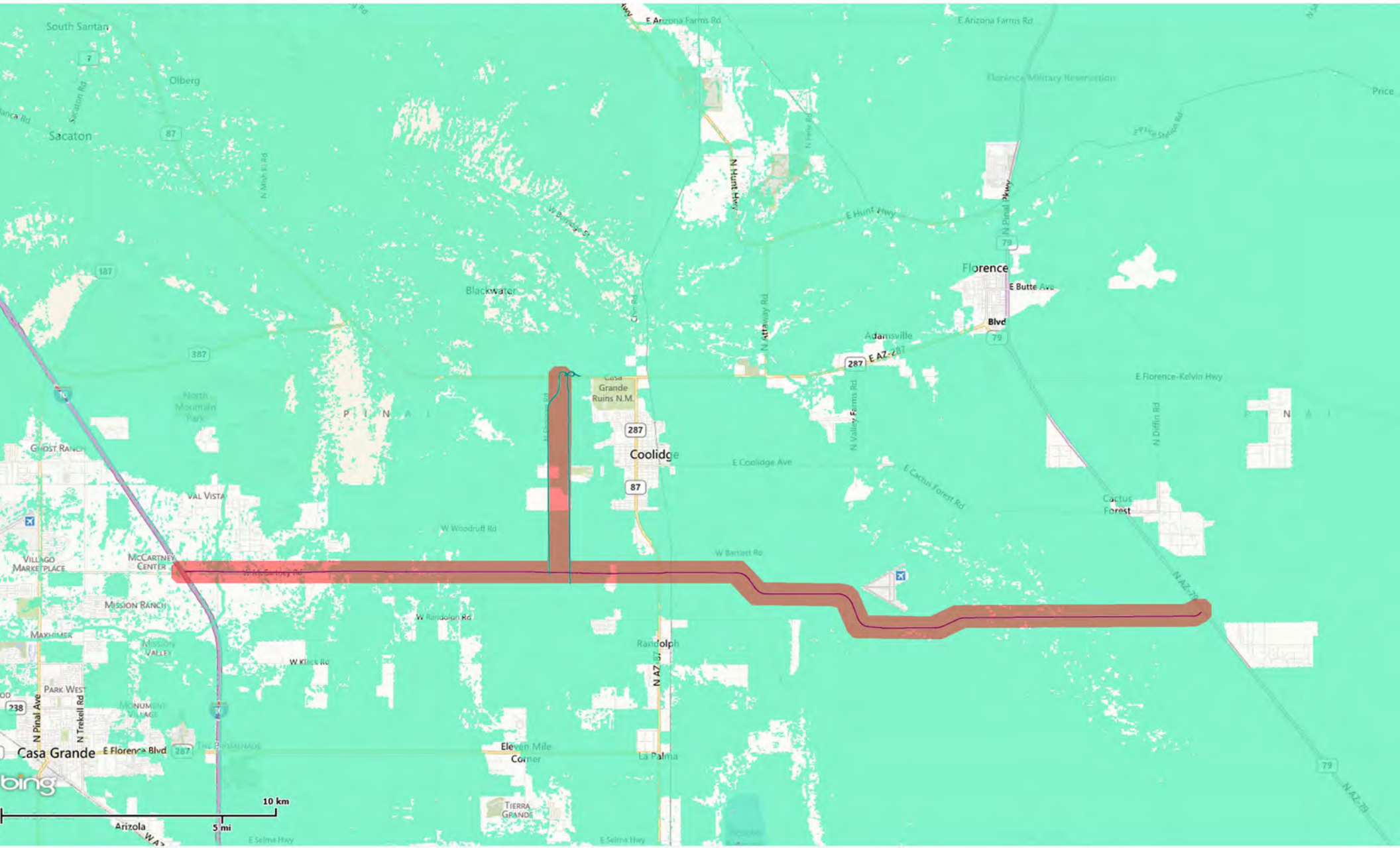

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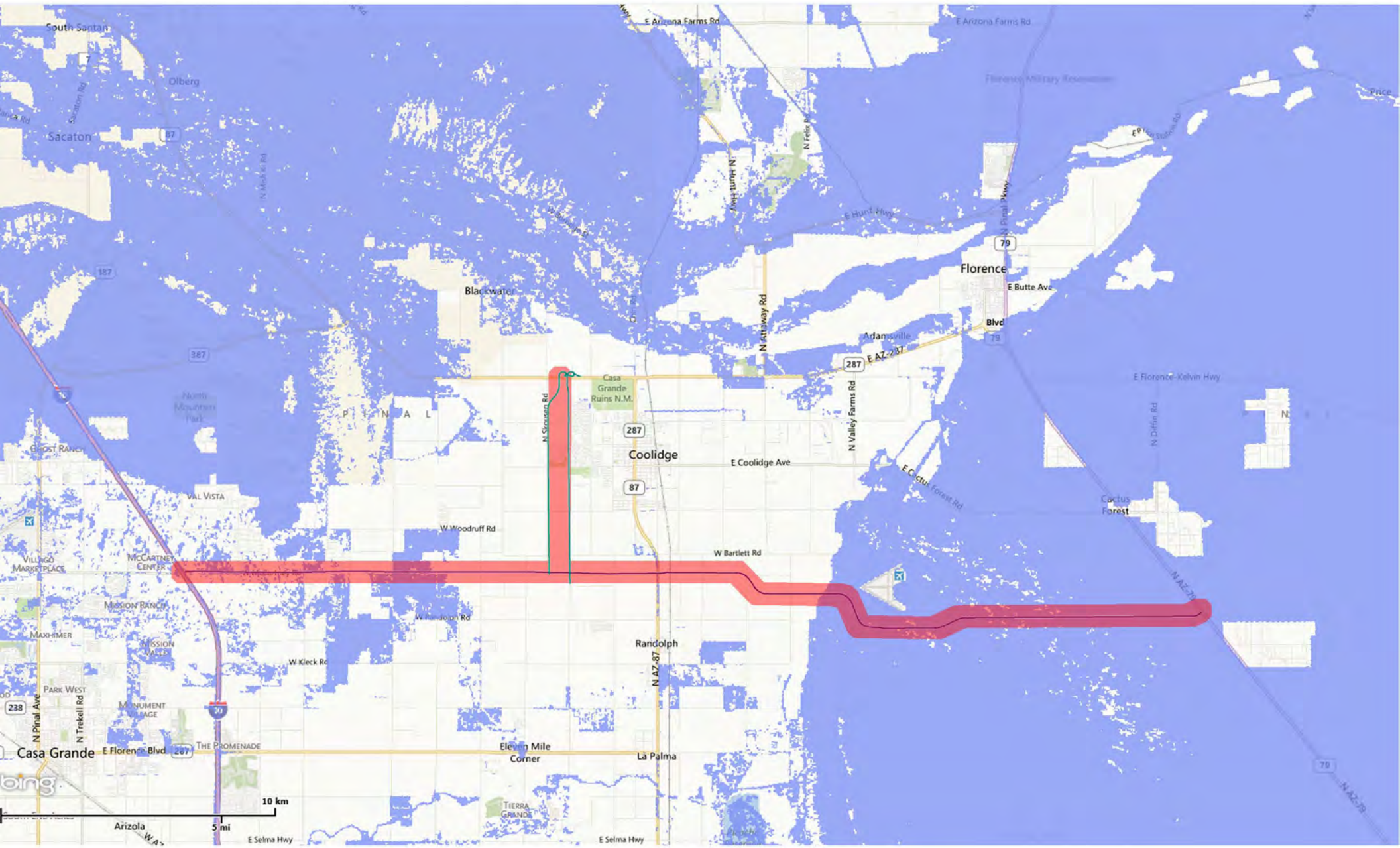
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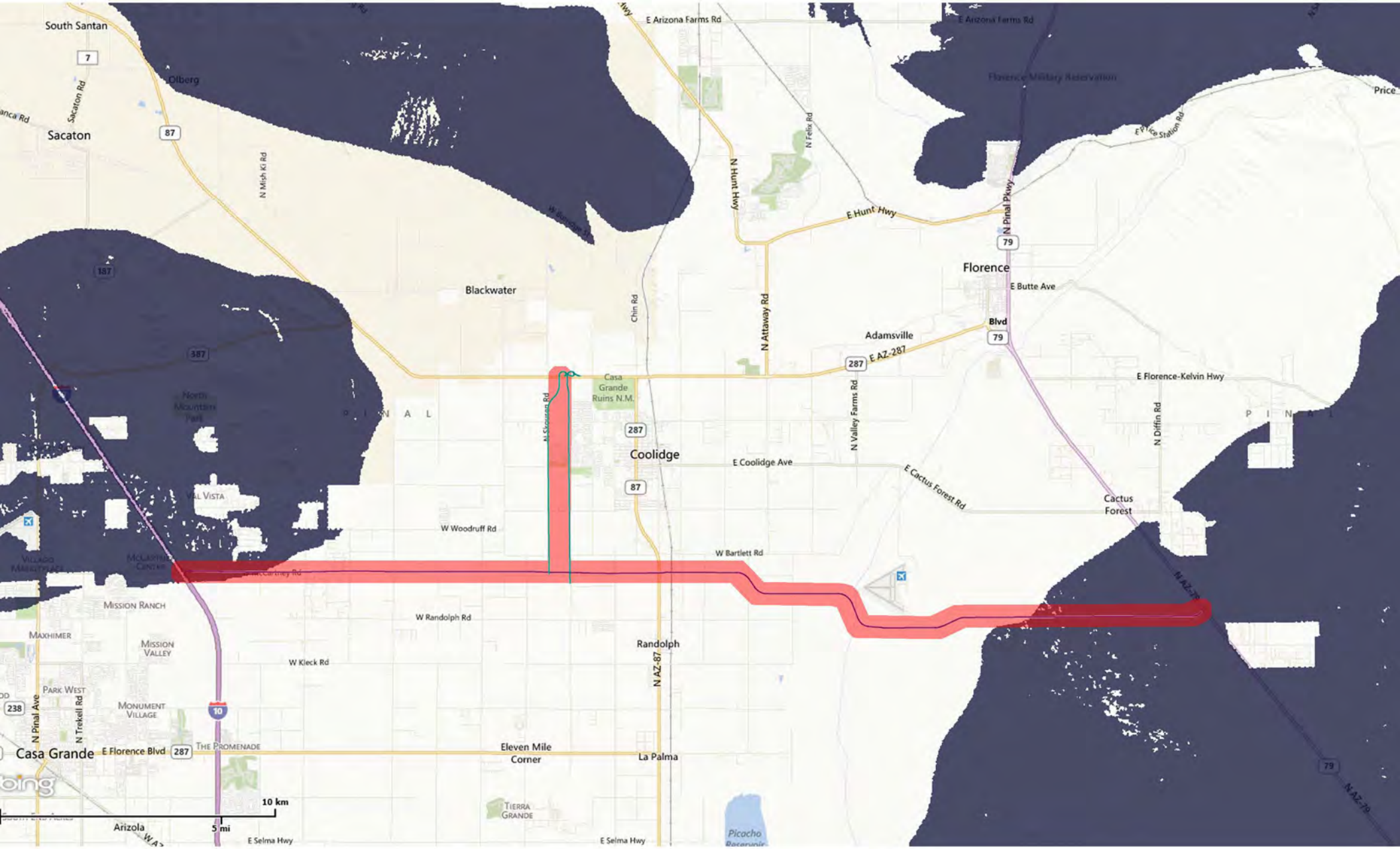
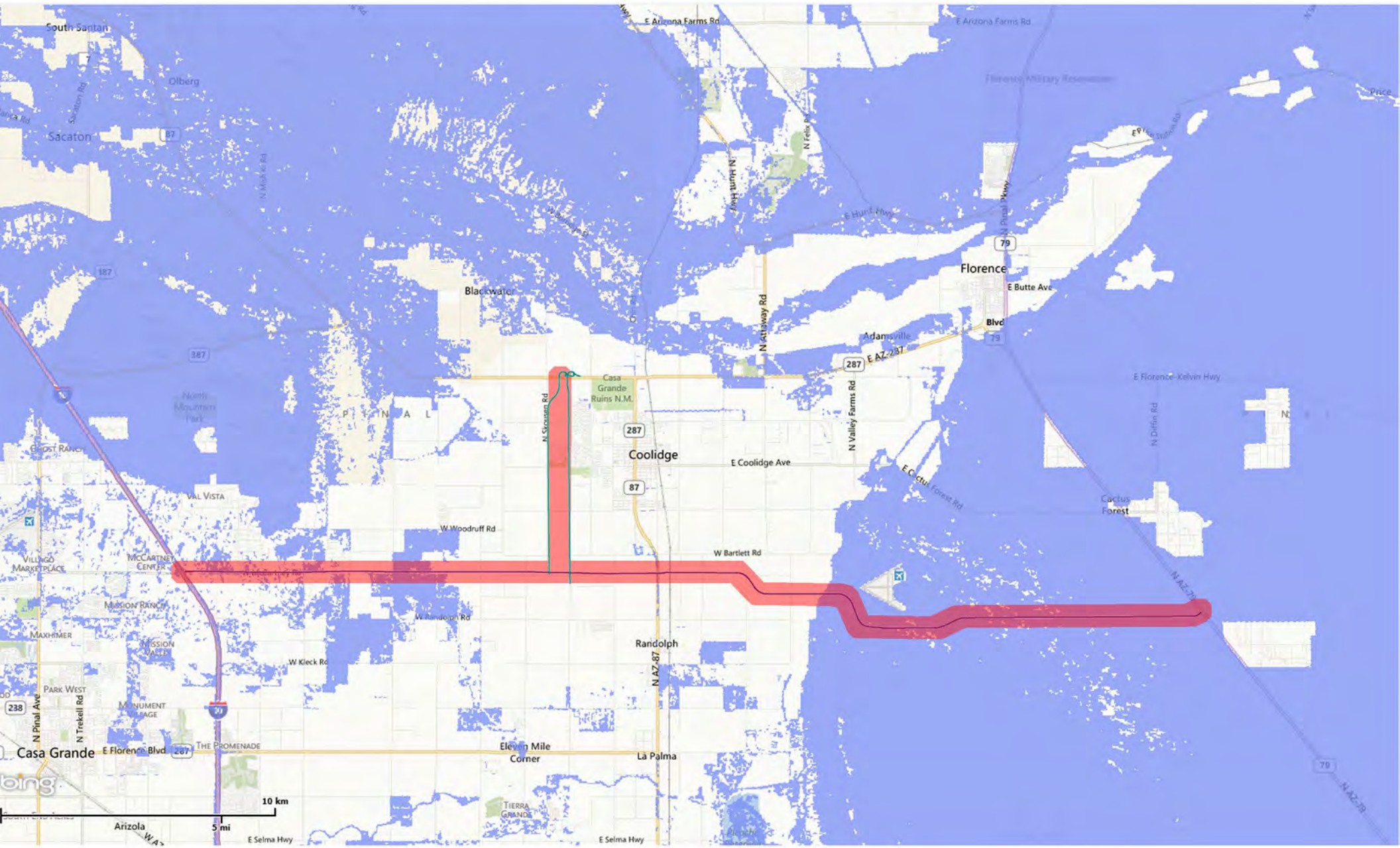
Florence
E Butte Ave
Adamsville
E AZ-287
Casa Grande Ruins N.M.
Coolidge
E Coolidge Ave
Ghost Ranch
Val Vista
W Woodruff Rd
W Bartlett Rd
Randolph
La Palma
Eleven Mile Corner
Casa Grande
E Florence Blvd
Arizola
E Selma Hwy
Cactus Forest
10 km
5 mi

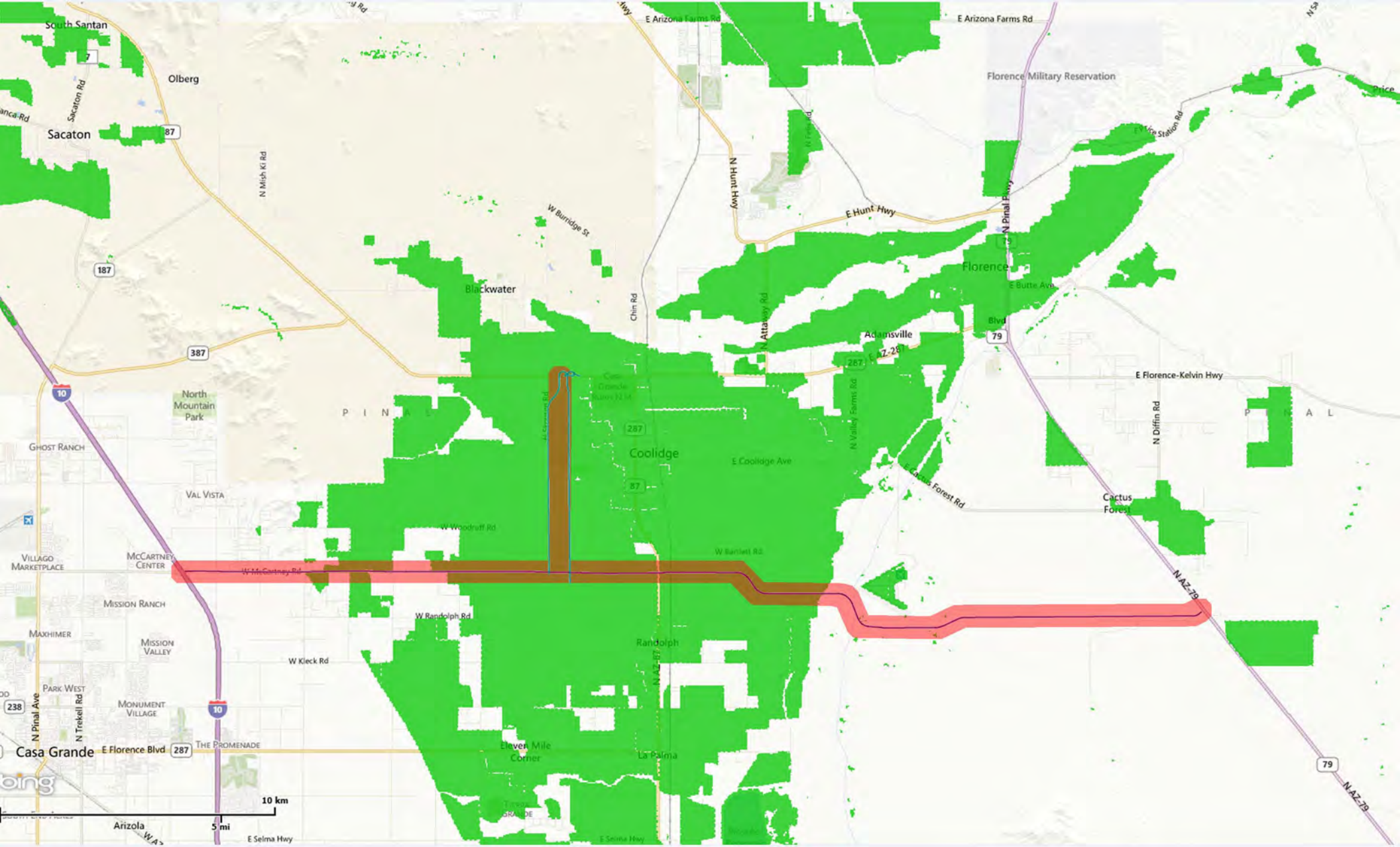
Cave Myotis



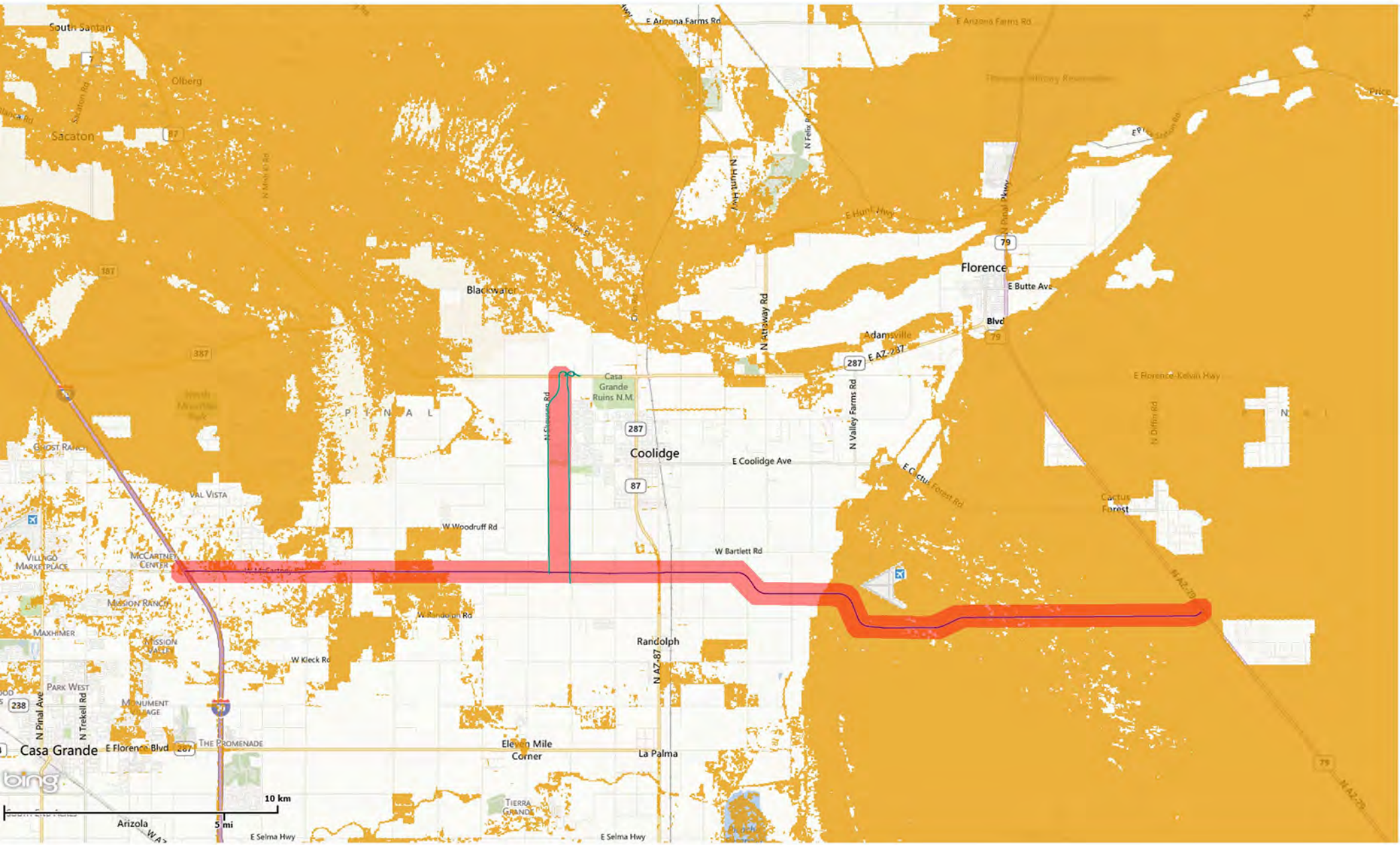
California Leaf-nosed Bat



Arizona Pocket Mouse



Arizona Myotis



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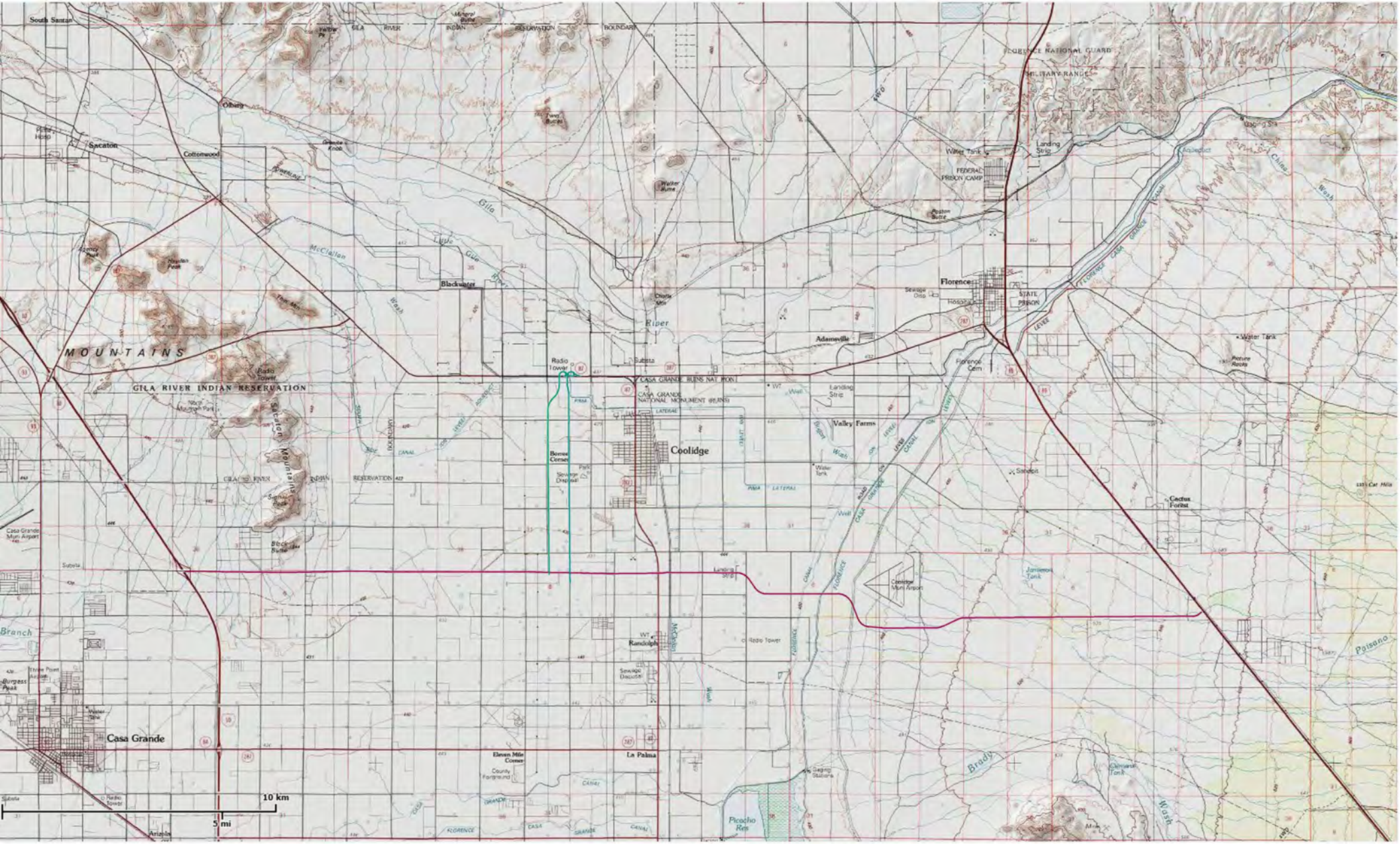
South Santan
Sacaton
Cottonwood
Gila River
Blackwater
MOUNTAINS
GILA RIVER INDIAN RESERVATION
Casa Grande Ruins Nat Mon
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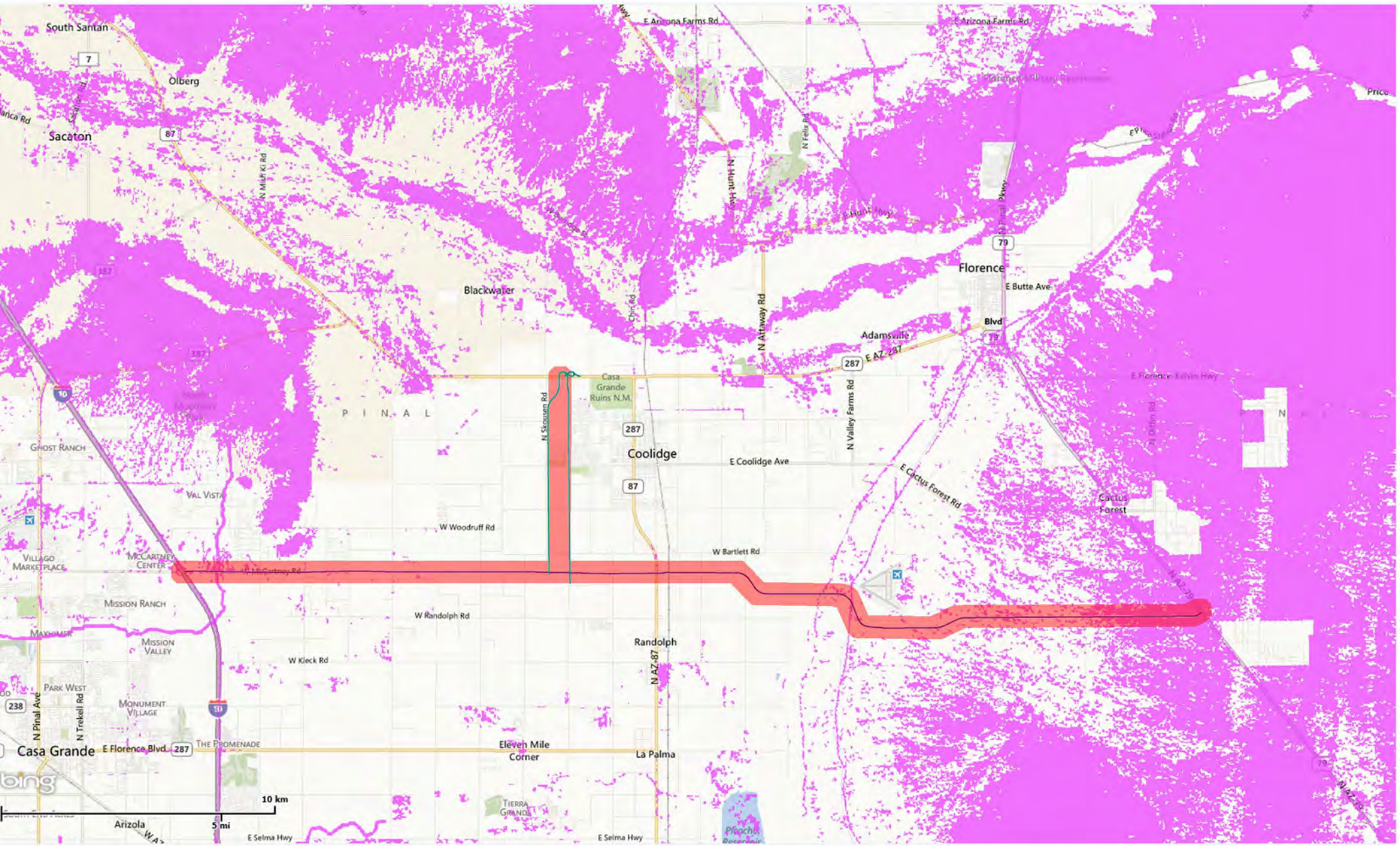
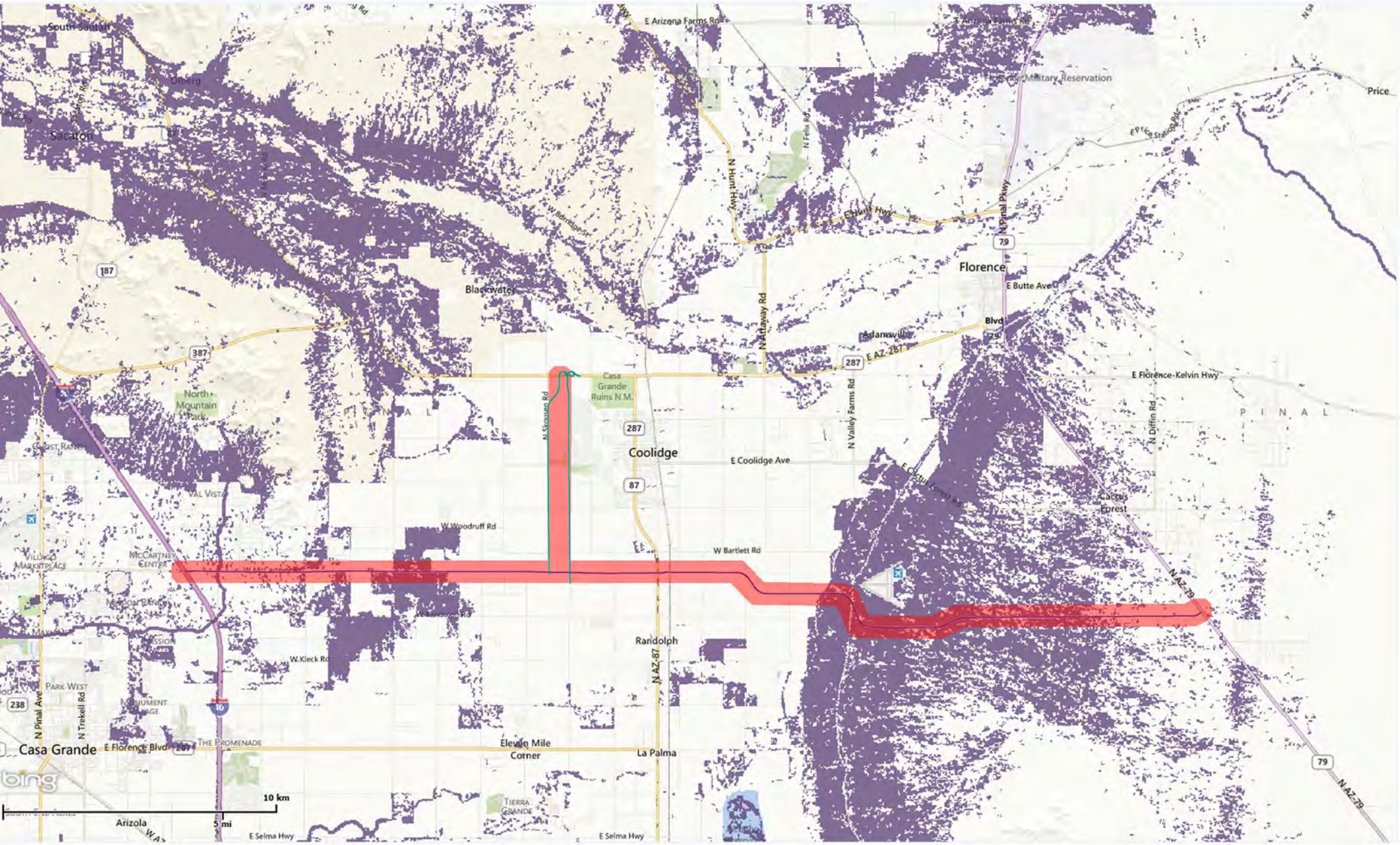
Florence
Adamsville
Valley Farms
Randolph
La Palma
Casa Grande
Picacho Res
10 km
5 mi

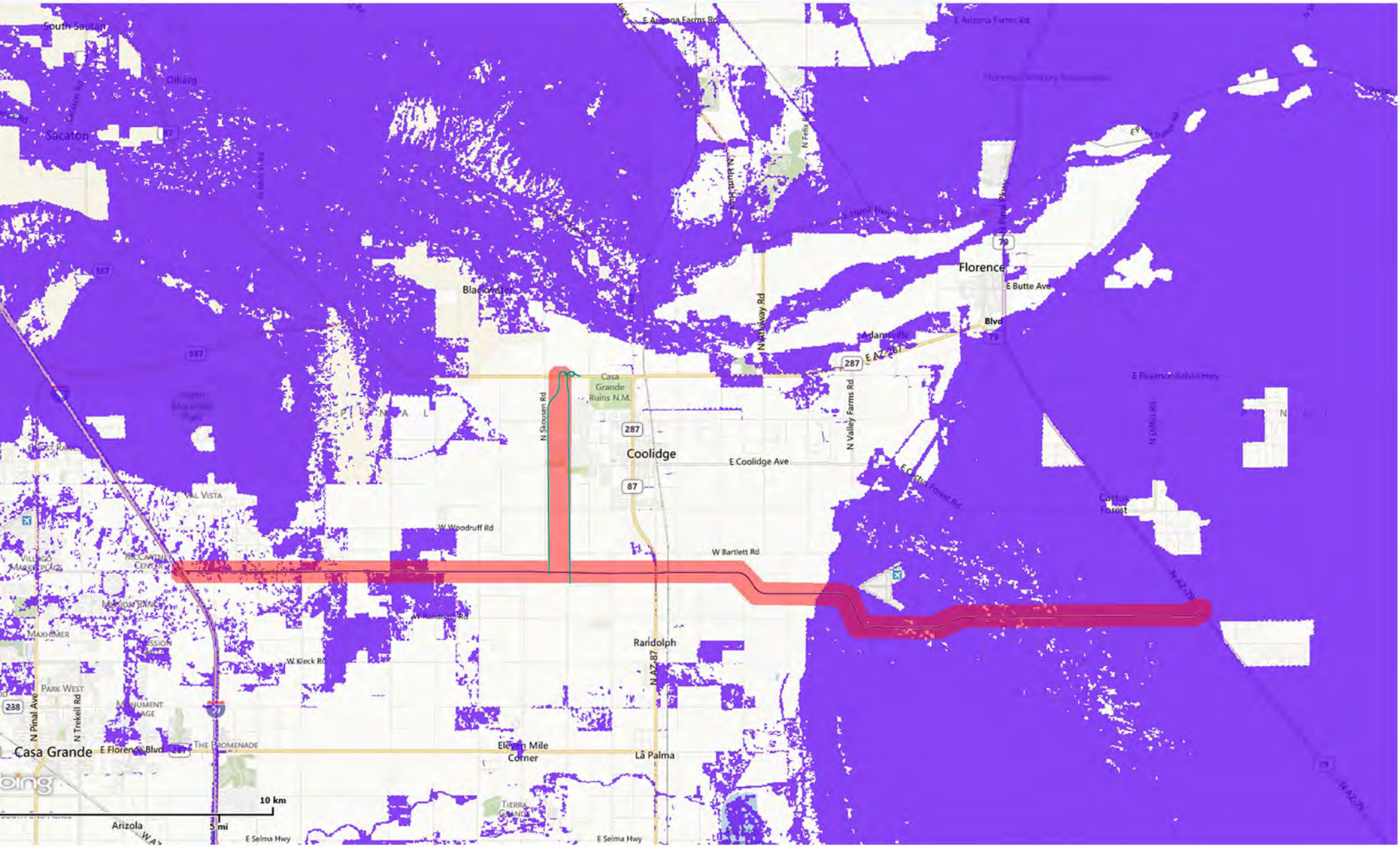
Reptiles



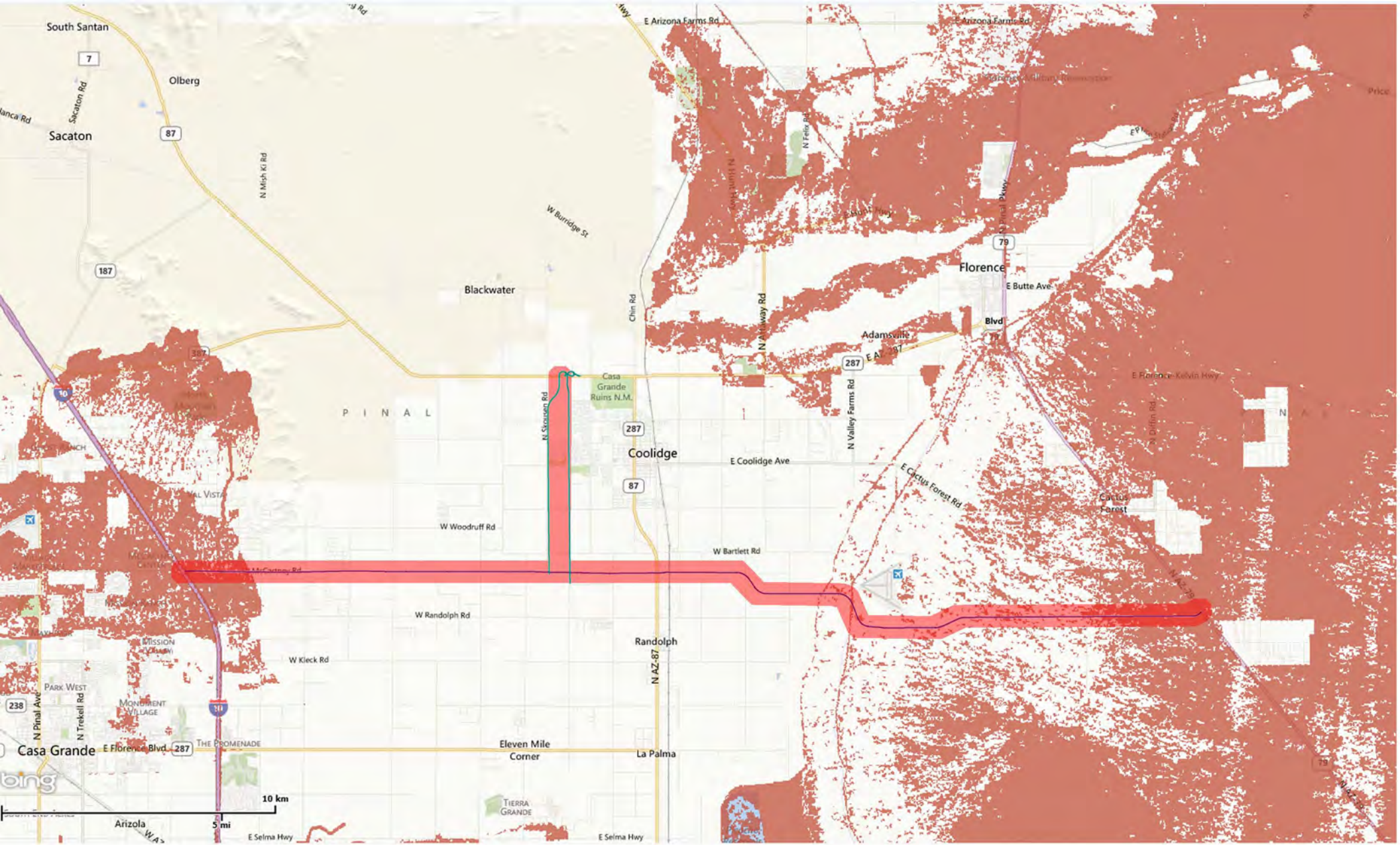
Variable Sandsnake



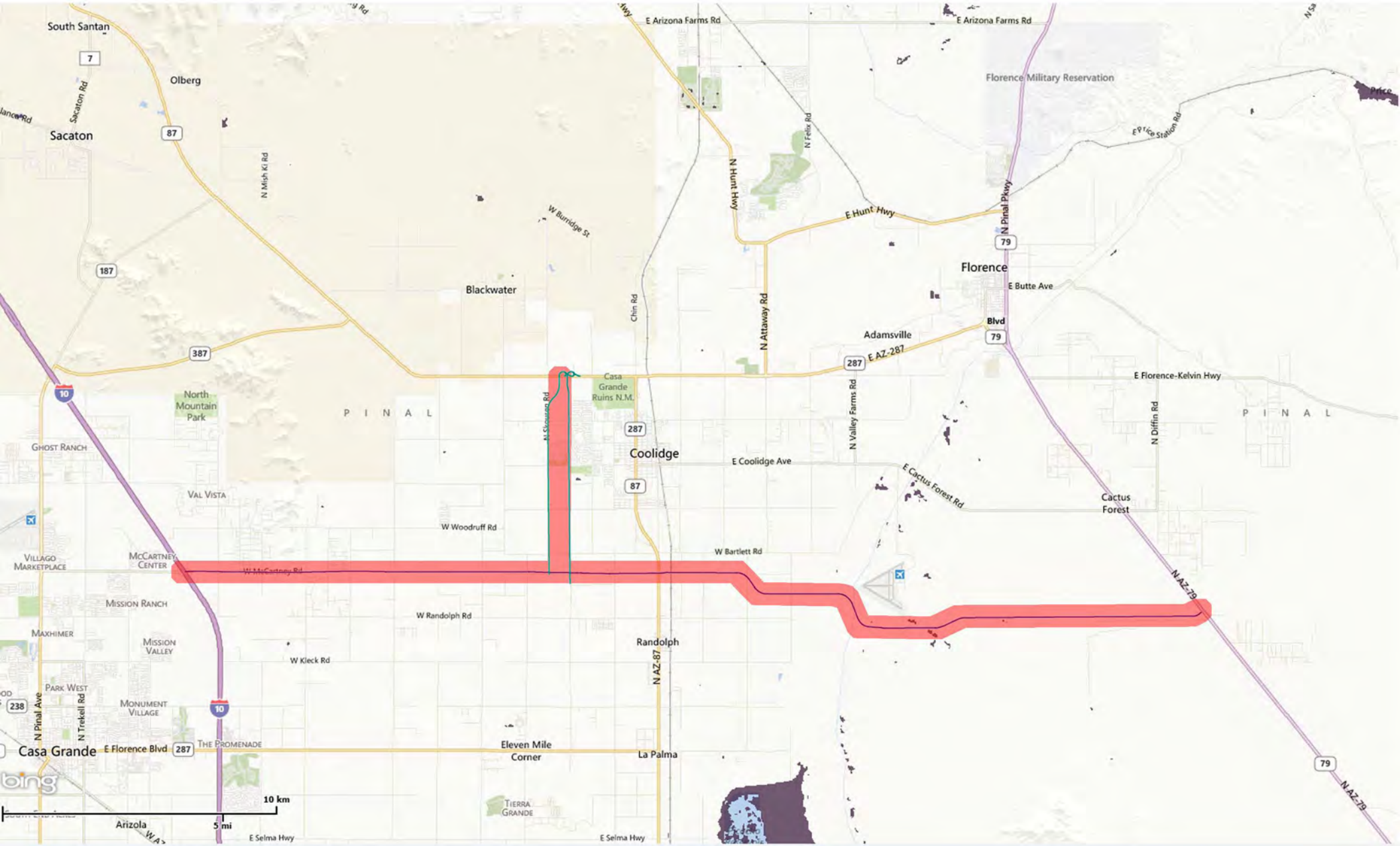
Tucson Shovel-nosed Snake



Tiger Rattlesnake



Sonoran WhipSnake



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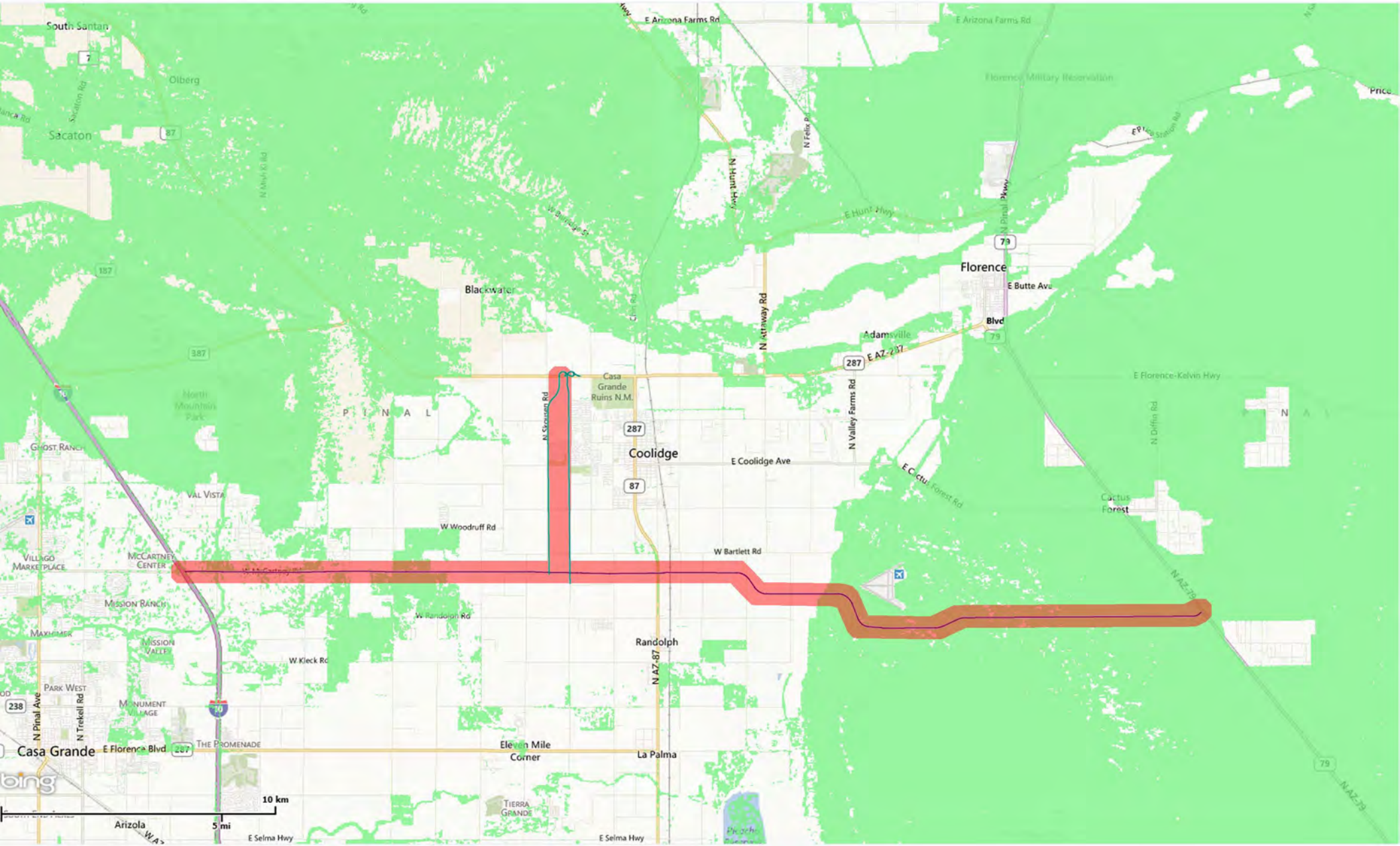
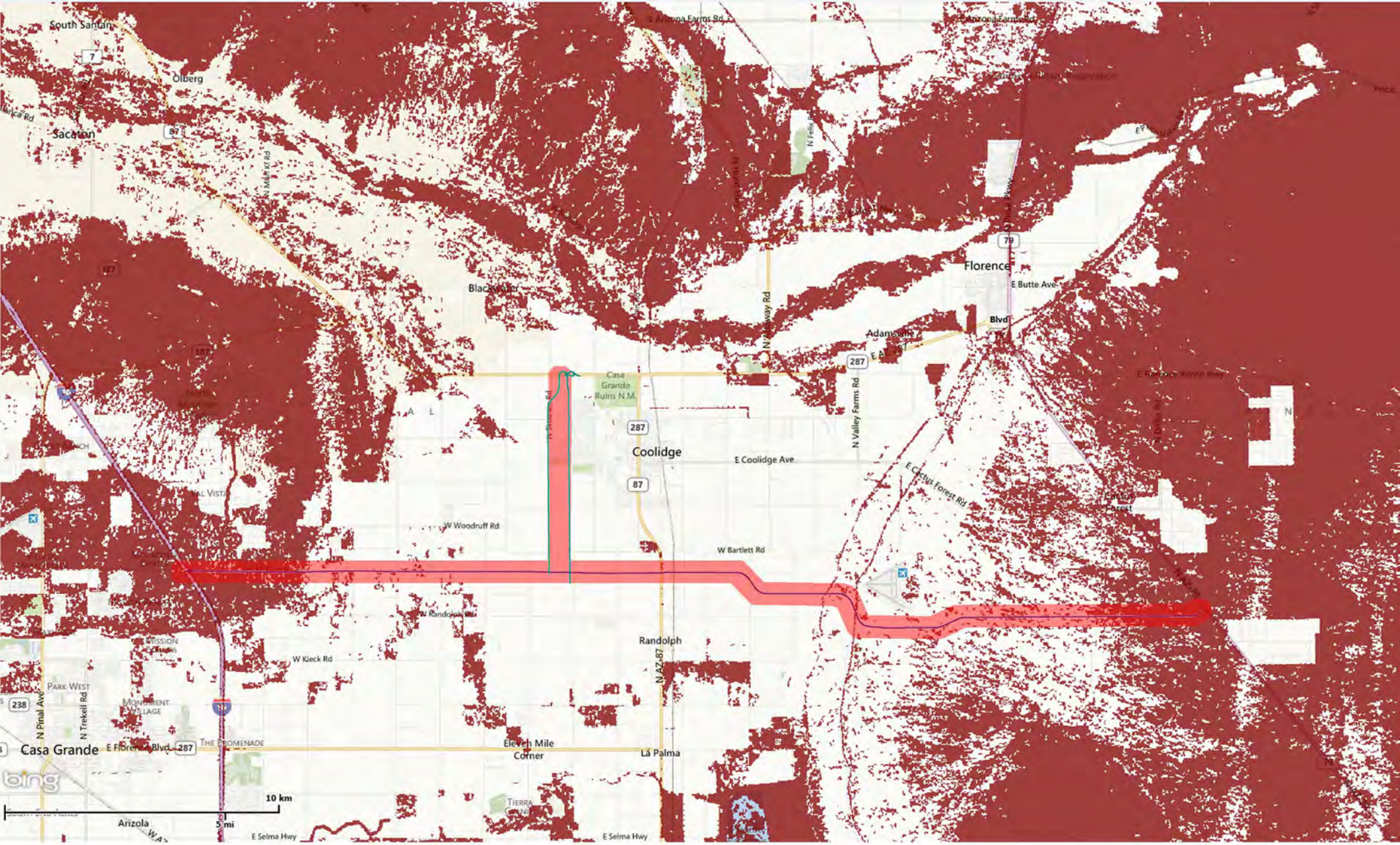
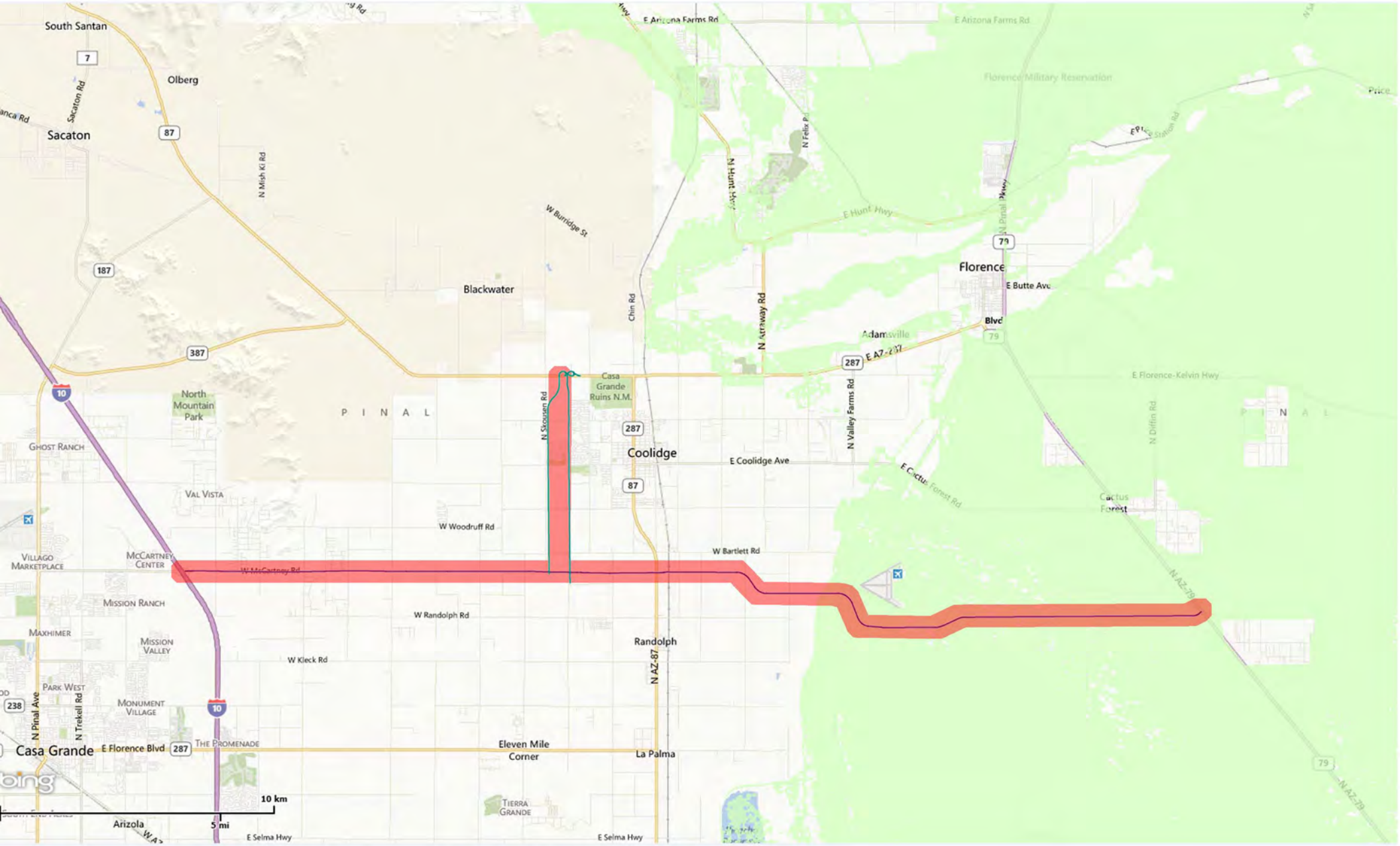


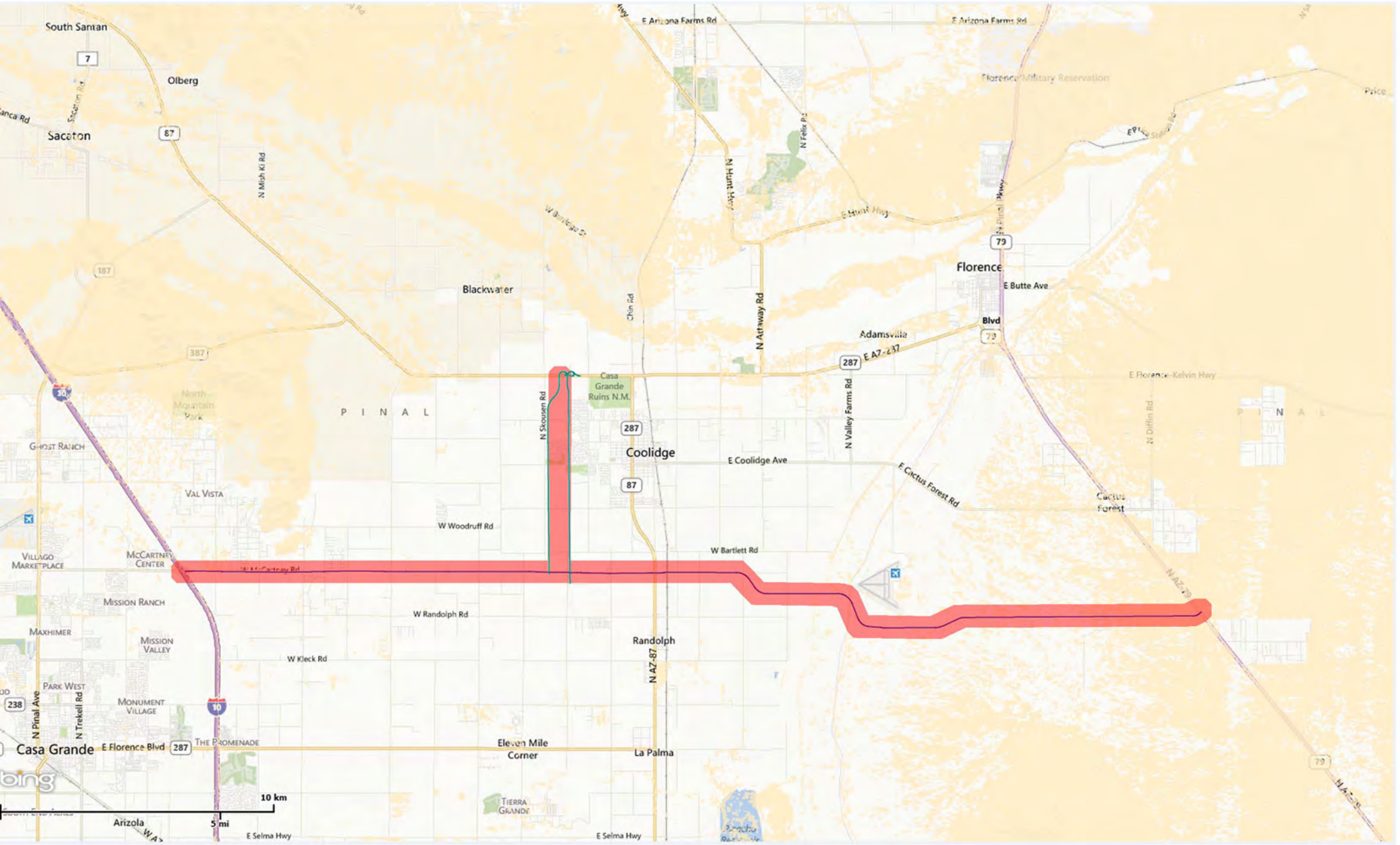
Sonoran Desert Tortise



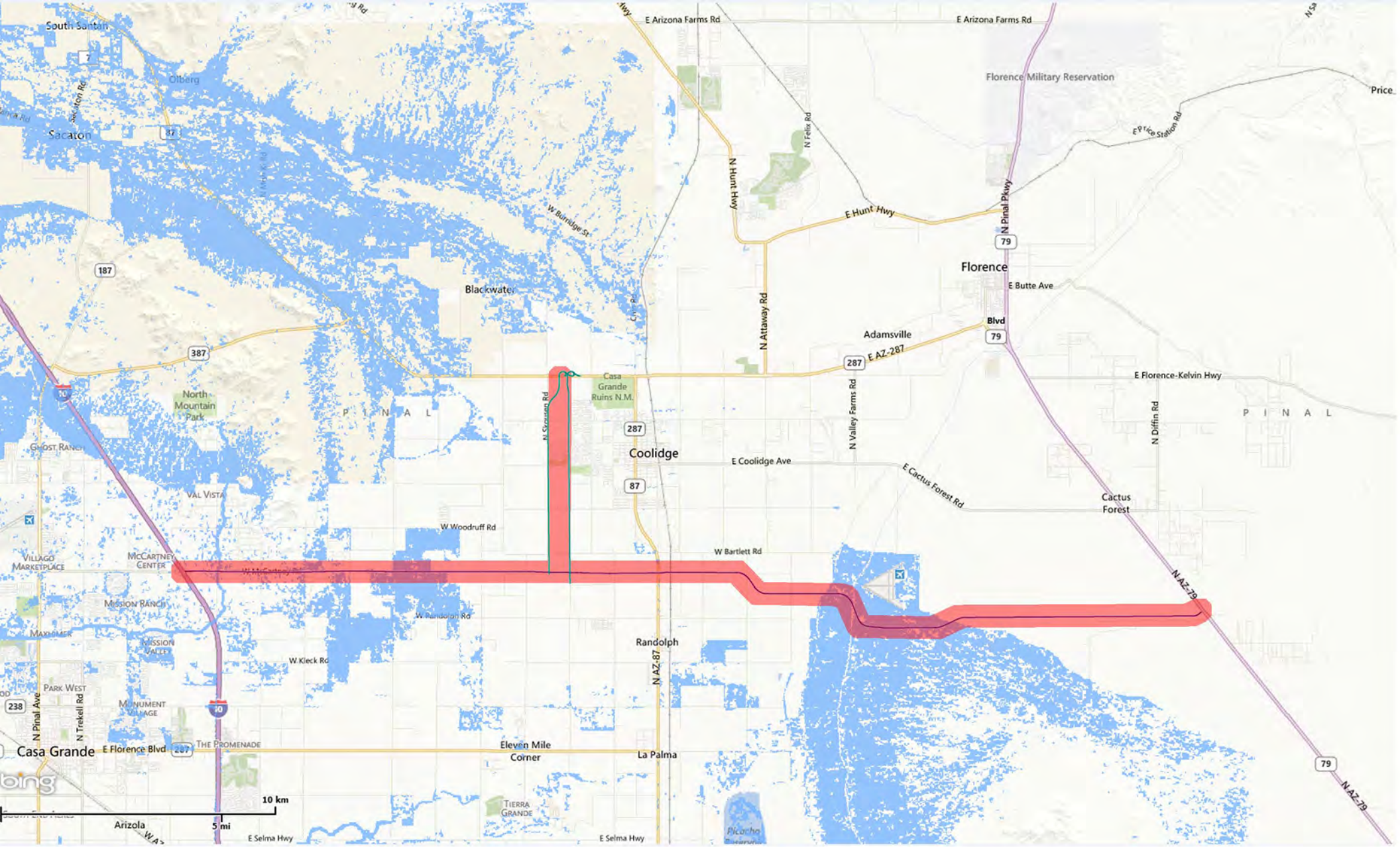
Sonoran Coral Snake



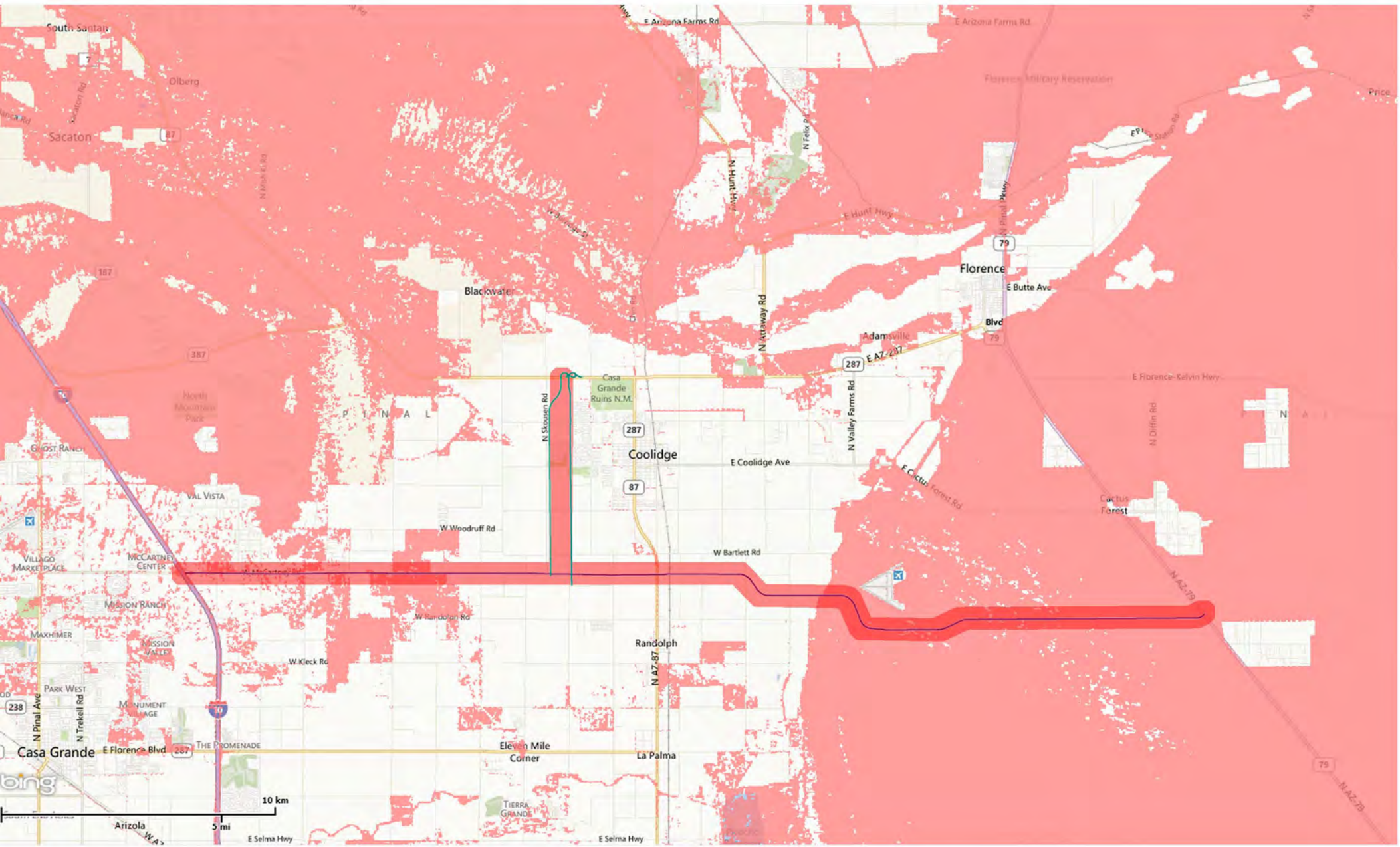
Saddled Leaf-nosed Snake



Regal Horned Lizard



Goode's Horned Lizard



Gila Monster

Appendix F: Class I Cultural Resource Inventory

Appendix F: Class I Cultural Resource Inventory

A Class I Cultural Resources Inventory for the Comprehensive Transporation Feasibility Study in Coolidge, Pinal County, Arizona

Prepared for:

City of Coolidge

On behalf of:

Wilson & Company, Inc., Engineers & Architects

Prepared by:

Leigh Davidson, B.A.

Submitted by:

Kathryn Leonard, M.A., RPA

Logan Simpson Design Inc.
51 West Third Street, Suite 450
Tempe, AZ 85281

June 2013 (Submittal 1)

LSD Technical Report No. 125649

ABSTRACT AND MANAGEMENT SUMMARY

Report Title	A Class I Cultural Resources Inventory for the Comprehensive Transportation Feasibility Study in Coolidge, Pinal County, Arizona
Report Date	June 2013
LSD Project Name	Wilson - Coolidge Class I
Agency Nos.	None
Agencies Involved	City of Coolidge
Land Ownership (Proposed Alignment and Alternatives)	State Trust land under the jurisdiction of the Arizona State Land Department (ASLD); Private land
Funding	Not yet assigned
LSD Project No.	125649
Project Description	In anticipation of future transit development and enhancements for the City of Coolidge, Wilson & Company, Inc. has been contracted by the City of Coolidge to conduct a comprehensive transportation feasibility study. Preliminary plans include future multimodal transit system enhancements, such as the construction and extension of sidewalks as multi-use paths for pedestrians and nonvehicular transportation. The study area includes McCartney Road, between the Interstate-10 (I-10) and State Route-79 (SR-79), with 5 alternative alignments, and Eleven Mile Corner Road, from McCartney Road to State Route-287 (SR 287), with 8 alternative alignments. Wilson & Company Inc. has requested Logan Simpson Design Inc. (LSD) to prepare a Class I cultural resources inventory to assess the level of previous cultural resources surveys and to identify known cultural resources sites. The study area for the Class I inventory encompasses a one half-mile wide corridor on either side of McCartney and Eleven Mile Corner Road and includes all alternatives.
Project Location	Within portions of Section 34 in T5S, R6E; Sections 12-13, 24-25, 34-36 in T5S, R7E; Sections 7-8, 17-20, 29-31 in T5S, R8E; Sections 1-4 in T6S, R6E; Sections 1, 4-6 in T6S, R7E, Sections 1-6 in T6S, R8E; Sections 4-6, 8-12 in T6S, R9E; Sections 3-7, 9-10 in T6S, R10E, Gila and Salt River Baseline and Meridian [G&SRB&M] (USGS 7.5' Quadrangles, Blackwater, Ariz., 1966, 1981; Cactus Forest, Ariz., 1992; Casa Grande East, Ariz., 1992; Coolidge, Ariz., 1992; and Valley Farms, Ariz., 1992)
Methods	Records search/site files check and literature review
No. Previously Recorded Sites	***McCartney Road*** Total: 32 sites Intersecting Proposed Alignment Alternatives: 10 sites ***Eleven Mile Corner Road*** Total: 14 sites Intersecting Proposed Alignment Alternatives: 9 sites
NRHP Eligible Sites	***McCartney Road*** Total: 12 — AZ AA:2:149(ASM), AZ AA:2:183(ASM), AZ AA:3:211(ASM), AZ AA:3:215(ASM), AZ AA:3:226(ASM), AZ AA:3:230(ASM)

		AZ AA:3:234(ASM)	AZ AA:3:235(ASM)
		AZ AA:6:36(ASM)	AZ AA:8:360(ASM)
		AZ FF:9:17(ASM)	AZ T:10:84(ASM)
	Intersecting Proposed Alignment Alternatives: 6		
		AZ AA:2:149(ASM)	AZ AA:3:211(ASM)
		AZ AA:3:215(ASM)	AZ AA:6:63(ASM)
		AZ FF:9:17(ASM)	AZ T:10:84(ASM)
	Eleven Mile Corner Road		
	Total: 7	AZ AA:2:63(ASM)	AZ AA:2:104(ASM)
		AZ AA:2:130(ASM)	AZ AA:2:203(ASM)
		AZ AA:2:204(ASM)	AZ AA:2:261(ASM)
		AZ U:14:108(ASM)	
	Intersecting Proposed Alignment Alternatives: 4		
		AZ AA:2:104(ASM)	AZ AA:2:130(ASM)
		AZ AA:2:203(ASM)	AZ AA:2:261(ASM)
NRHP Ineligible Sites	***McCartney Road***		
	Total: 15	AZ AA:2:128(ASM)	AZ AA:2:132(ASM)
		AZ AA:2:175(ASM)/ AZ AA:2:195(ASM)	AZ AA:2:176(ASM)/ AZ AA:2:196(ASM)
		AZ AA:2:184(ASM)	AZ AA:2:185(ASM)
		AZ AA:2:186(ASM)	AZ AA:2:187(ASM)
		AZ AA:2:192(ASM)	AZ AA:2:193(ASM)
		AZ AA:2:194(ASM)	AZ AA:2:207(ASM)
		AZ AA:2:216(ASM)	AZ AA:2:307(ASM)
		AZ BB:5:134(ASM)	
	Intersecting Proposed Alignment Alternatives: 3		
		AZ AA:2:175(ASM)/ AZ AA:2:195(ASM)	AZ AA:2:176(ASM)/ AZ AA:2:196(ASM)
		AZ AA:2:307(ASM)	
	Eleven Mile Corner Road		
	Total: 5	AZ AA:2:127(ASM)	AZ AA:2:129(ASM)
		AZ AA:2:175(ASM)/ AZ AA:2:195(ASM)	AZ AA:2:210(ASM)
		AZ AA:2:307(ASM)	
	Intersecting Proposed Alignment Alternatives: 4		
		AZ AA:2:127(ASM)	AZ AA:2:129(ASM)
		AZ AA:2:175(ASM)/ AZ AA:2:195(ASM)	AZ AA:2:307(ASM)
Sites Not Evaluated For NRHP Eligibility	***McCartney Road***		
	Total: 5	AZ AA:2:94(ASM)	AZ AA:2:109(ASM)
		AZ AA:2:111(ASM)	AZ AA:2:136(ASM)
		AZ AA:3:25(ASM)	

Intersecting Proposed Alignment Alternatives: 1

AZ AA:2:109(ASM)

Eleven Mile Corner Road

Total: 2 AZ AA:2:111(ASM) AZ AA:2:271(ASM)

Intersecting Proposed Alignment Alternatives: 1

AZ AA:2:271(ASM)

Summary and Recommendations

LSD's research indicates that approximately 60 percent of Eleven Mile Corner Road and its alternatives and approximately 40 percent of McCartney Road and its alternatives have been previously surveyed for cultural resources, both prior to and following construction of the roads. In all, 43 sites have been previously recorded in the half-mile-wide study area, including 10 sites determined eligible for inclusion in the National Register of Historic Places (NRHP).

LSD recommends that new survey be conducted in areas of the preferred alternative in which previous surveys do not meet current standards. Pedestrian survey should also be conducted for unsurveyed portions of the preferred alternative. In addition, all previously recorded sites within the preferred alternative that have not been determined NRHP eligible should be re-located to evaluate their current condition and NRHP eligibility and to assess potential impacts.

Upon the completion of a Class III survey and site relocation and recordation, recommendations should be made for the treatment, preservation, or avoidance of sites, as appropriate. Based on current research, it is known that seven NRHP-eligible linear sites intersect one or more of the alternative alignments, and 17 sites are in proximity to one or more of the alignments. If federal funds are involved and it is subsequently determined that one or more NRHP-eligible cultural resources cannot be avoided by project activities, a Memorandum of Agreement or Programmatic Agreement should be developed to resolve the adverse effect of the project to historic properties.

Any potential impacts to the Florence Canal [AZ AA:3:211(ASM)], the Florence-Casa Grande Canal [AZ AA:3:215(ASM)], or the Pima Lateral Canal [AZ AA:2:130(ASM)] will require further assessment in consultation with the Bureau of Reclamation (BOR) and the San Carlos Irrigation Project (SCIP). Additionally, if implementation of this project moves forward with funding from the Federal Highway Administration, it will require compliance with Section 4(f) of the Department of Transportation Act of 1966 (23 U.S.C § 138, as amended). Any historic properties determined NRHP-eligible under Criteria A, B, or C are afforded protection under Section 4(f) and additional analyses may be required if they are affected by project activities.

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INTRODUCTION

Wilson & Company, Inc. requested that Logan Simpson Design Inc. (LSD) conduct a Class I cultural resources inventory for a comprehensive transportation feasibility study, in anticipation of future transit development and enhancements for the City of Coolidge, Pinal County. Preliminary plans include future multimodal transit system enhancements, such as the construction and extension of sidewalks as multi-use paths for pedestrians and nonvehicular transportation. The study area includes McCartney Road, between the Interstate-10 (I-10) and State Route-79 (SR-79), with 5 alternative alignments, and Eleven Mile Corner Road, from McCartney Road to State Route-287 (SR 287), with 8 alternative alignments (Figure 1).The study area encompasses portions of T5S, R6-9E and T6S, R6-10E, Gila and Salt River Baseline and Meridian (G&SRB&M) (Table 1; Figure 1). The McCartney Road study area encompasses State Trust land under the jurisdiction of the Arizona State Land Department (ASLD), Bureau of Reclamation (Reclamation), Bureau of Land Management (BLM), and Gila River Indian Community (GRIC) land, and private land. The Eleven Mile Corner Road study area consists of GRIC and private land (Figure 1).

Table 1. Study area legal description (McCartney Road and Eleven Mile Corner Road).

McCartney Road	
Location[1]	**Map reference[2]**
Sections 34, 35, and 36, T5S, R6E	Casa Grande East, Ariz., 1992
Sections 31, 32, 33, 34, 35, and 36, T5S, R7E	Casa Grande East, Ariz., 1992; Coolidge, Ariz., 1992
Sections 31, 32, 33, 34, 35, and 36, T5S, R8E	Coolidge, Ariz., 1992; Valley Farms, Ariz., 1992
Sections 34 and 35, T5S R9E	Valley Farms, Ariz., 1992
Sections 1, 2, 3, and 4, T6S, R6E	Casa Grande East, Ariz., 1992
Sections 1, 2, 3, 4, 5, and 6, T6S, R7E	Casa Grande East, Ariz., 1992; Coolidge, Ariz., 1992
Sections 1, 2, 3, 4, 5, and 6, T6S, R8E	Coolidge, Ariz., 1992
Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, T6S, R9E	Valley Farms, Ariz., 1992; Cactus Forest, Ariz., 1992
Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11, T6S, R10E	Cactus Forest, Ariz., 1992
Eleven Mile Corner Road	
Location[1]	**Map reference[2]**
Sections 12, 13, 24, 25, and 36, T5S, R7E	Blackwater, Ariz., 1966, 1981; Coolidge, Ariz., 1992
Sections 7, 8, 17, 18, 19, 20, 29, 30, 31, and 32, T5S, R8E	Blackwater, Ariz., 1966, 1981; Coolidge, Ariz., 1992
Section 1, T6S, R7E	Coolidge, Ariz., 1992
Section 6, T6S, R8E	Coolidge, Ariz., 1992

[1]G&SRB&M, NAD 83, Zone 12; [2] USGS 7.5' Quadrangles Blackwater (1966, 1981); Cactus Forest (1992); Casa Grande East (1992); Coolidge (1992); Valley Farms (1992), Arizona

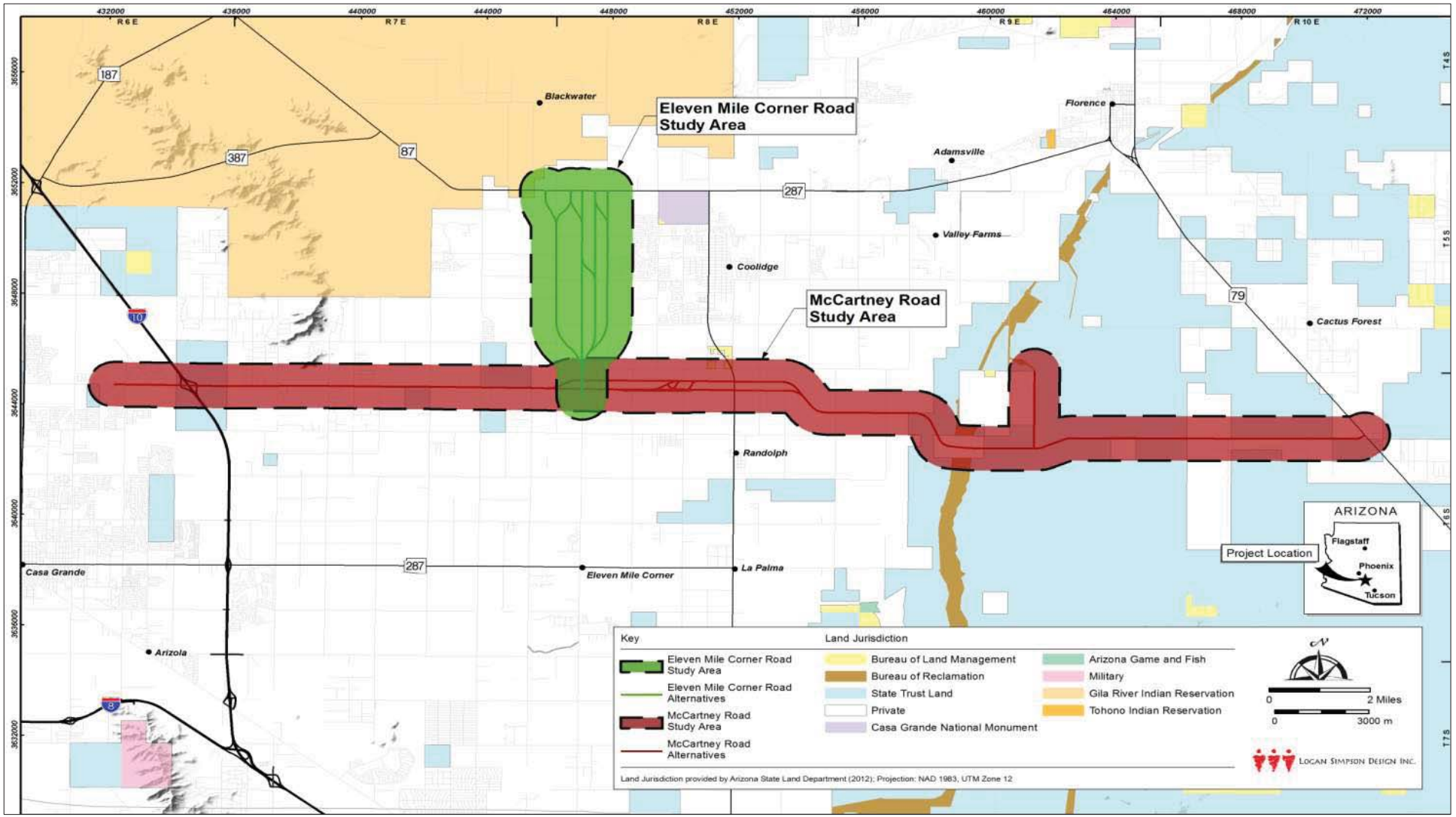

Figure 1. Land jurisdiction and study area limits.

PHYSICAL SETTING

The study area is situated at an average elevation of 3,580 ft above mean sea level and is located in the Basin and Range physiographic province, which is characterized by low desert surrounded by fault-block mountain ranges (Chronic 1983). The region is part of the Lower Colorado River Valley subdivision Grassland subdivision of the Sonoran Desertscrub biotic community (Turner and Brown 1994), which has high temperatures and low precipitation. Prior to Euro-American settlement and development of the region, the native vegetation communities were probably dominated by bursage and creosotebush with a mix of saguaro, prickly pear, cholla cactus, saltbush, grasses, ocotillo, and palo verde. The largest drainage in the vicinity of the study area is the Gila River. Topographic features surrounding the study area include Cholla Mountain to the north, the Sacaton Mountains to the east, the Picacho Mountains to the southeast, and the Santan Mountains to the northwest. The local geology consists of Tertiary and Quaternary basin-filled alluvium. A review of Google Earth indicates that the study area is characterized by undeveloped lots, farmland, residential communities, and businesses. The Coolidge Municipal Airport is also located in the McCartney Road portion of the study area

CULTURE HISTORY

Human presence in the Southwest began as long as 11,000 years ago. The initial period of occupation, during the Paleoindian period dating from approximately 9500 B.C. to 8500 B.C., appears to have been intermittent, given the limited amount of recovered evidence. The evidence consists primarily of isolated surface finds of Clovis points, as well as buried megafaunal kill sites in alluvial contexts that have yielded associated lithic assemblages (Haynes 1980).

Reports of Paleoindian and Archaic period remains in the Middle Gila River valley are limited. Two isolated Clovis points are reported in the general vicinity of the current project area; one was on the north bank of the Gila River north of Coolidge and the other from near Florence (Agenbroad 1967). Waters (2008) notes the presence of Paleoindian remains in the Middle Gila River valley and suggests the lack of more such finds is the result of erosion of likely early contexts by the Gila River.

Archaic period remains also appear elusive in the Middle Gila River valley, and this is also likely due to erosion caused by the Gila River. However, Waters (2008) suggests that because of the occurrence of some overbank alluvium dating back to 3,800 B.P., Archaic period remains dating to that time could be present. Any earlier Archaic period remains would likely be deeply buried or occur in redeposited or secondary contexts. Middle Archaic period remains have been identified just to the east of the current project area (Doelle 1976; Vanderpot 1992). These remains occur on an old Pleistocene terrace—designated the O surface and named the Target Terrace by Huckleberry (1993a, 1993b). Huckleberry suggests this terrace is between one and two million years old. Excavations at the Gila Dunes site (Fish 1967) east of Florence exposed Middle Archaic period deposits underlying Hohokam deposits, and a substantial Late Archaic/Early Agricultural settlement component has been documented at the Kearny site, east of Middle Gila River valley (Clark 2000). It is of note that that a survey of 146,000 acres of the Gila River Indian Community (GRIC), west-northwest of the current project area, has resulted in the recovery of an array of Archaic period projectile point types that span the entire period (Loendorf and Rice 2004).

Nevertheless, a more comprehensive understanding of the Archaic period in the Middle Gila River valley can only come about if more sites are identified and investigated.

Early Agricultural period or early Formative period Red Mountain phase materials have not been identified in the Middle Gila River valley; these too may be deeply buried by Holocene alluvium (e.g., Waters 2008; Waters and Ravesloot 2001). Excavations at Snaketown west of the current project resulted in the definition of the Hohokam pre-Classic period sequence (Gladwin et al. 1938). Pre-Classic period remains in proximity to the current project area have not been extensively identified or studied with the major exception of work at the Grewe Site where pre-Classic period remains are dated between A.D. 500 and A.D. 1100 (Craig 2001a:141). Work there resulted in the identification of a sizable Pioneer period component; Craig (2001b:141) notes evidence for continuity between the early and the late Pioneer period although no evidence of Estrella or Sweetwater components was present. Based on this, Craig suggests dropping the Estrella and Sweetwater phases from future Hohokam chronological schemes.

Craig (2001a:141) discusses a decline in the intensity of the occupation at Grewe between the Pioneer and Colonial periods although there is persistent occupation through most of the Colonial and Sedentary periods. There is little doubt that there was a significant population at the Grewe Site; however, setting population estimates aside, Craig (2001a:141–142) notes some interesting trends in the ebb and flow of populations at the site. Population growth was not uniform. Rapid growth, likely associated with immigration, occurred during the early Pioneer period, the late Pioneer period, and the early Colonial period. The lower growth rates of the middle Colonial and middle Sedentary period are suggested to be typical of natural growth rates and small-scale immigration. There were periods of notable decline during the transition between the Pioneer and Colonial periods and during the middle Sedentary period. By A.D. 1050, the Grewe site was generally abandoned when the occupation shifted to the Casa Grande Ruins area.

With the Grewe excavations, it was demonstrated that two significant Pioneer period settlements—Grewe and Snaketown—were present in the Middle Gila River valley and that both were substantial. Although Pioneer period canals are present at Snaketown (Haury 1976), none have been identified at Grewe. Nevertheless, as Craig (2001a:144) points out, the occupants of the site must have had knowledge of irrigation technology and its benefits and it is likely that Pioneer period age canals at the site are yet to be discovered. In terms of agricultural production and population trends, Craig (2001a:145) discusses the rather precipitous population decline at Grewe between A.D. 725 and A.D. 775 in terms of reduced food production resulting from a highly variable Gila River stream flow, including a five-year period of severe to extreme flooding, and five years of severe drought (see Graybill et al. 2006). It is further noted that this period coincides with the expansion of Hohokam into outlying drainages. The Colonial period expansion has previously been seen as the result of the success of the Hohokam along the Gila River and the need to settle new places and expand agricultural productivity (e.g., Haury 1976, 1978). However, Craig (2001a:145) suggests this expansion may actually have been the result of environmental stress and the need to decrease population density. Nevertheless, by the late A.D. 700s, the construction of new canals seems to have stabilized the situation and people returned to Grewe for a period of prosperity (Craig 2001a:145).

Clearly the excavations at the Grewe Site have added significant detail to our understanding of the pre-Classic and early Classic period Hohokam occupation of the Middle Gila River valley. The question is, are the trends seen at the Grewe Site evident at other pre-Classic sites in the area and how extensive was that occupation in other parts of the Middle Gila River valley? The Grewe Site and Snaketown appear to be the only sizable pre-Classic villages; other pre-Classic manifestations are far less sizable and visible (Crown 1984b:103).

Ballcourts are another marker of pre-Classic sites in the Middle Gila River valley. Wilcox and Sternberg (1983:116–117) report the existence of at least 27 courts between Florence and the confluence of the Salt and Gila rivers. Three of these sites occur in the vicinity of the current project area—Grewe-Casa Grande, Adamsville, and Bisnaga Pueblo (Pinkley 1935; Wilcox and Sternberg 1983:133); three courts have been identified at the Grewe Site (Marshall 2001).

The Classic period occupation of the Middle Gila River valley has long been a focus of archaeological research (e.g., Cummings 1926; Doyel 1974; Fewkes 1908; Gladwin 1928; Midvale 1965; Steen 1965; Wilcox 1975; Wilcox and Shenk 1977). Four platform mound sites—the Casa Grande Ruin, Bisnaga Pueblo, Adamsville, and Florence Pueblo—occur on the south side of the Gila River in the vicinity of the current project area, and on the north side of the river is the Escalante Ruin platform mound site. Craig (2001a:147) notes that the platform mounds along the Casa Grande Canal are spaced at 2 to 3 mile intervals. Teague (1984:146; see also Gregory and Nials 1985) notes that there are 11 platform mounds in the Middle Gila River valley. These sites are situated adjacent to extensive prehistoric canal systems including the Casa Grande Canal on the south side of the Gila River and the Poston or North Gila Canal (Crown 1987; Midvale 1965) on the north side of the river. A number of lesser Classic period sites lacking platform mounds, most of which appear to cluster near platform mound sites, are also present along with numerous non-irrigated/dry farming agricultural sites. Crown (1984a:103) observes these sites are located on the side of the canal away from the river while irrigated lands were located between the canal and the river. She further notes that dry-farmed areas also occur on the side of the canal away from the river and that these fields were located within 3 km of habitation sites. Along this stretch of the Gila River, the location of habitation sites was strongly influenced by the location and availability of agricultural land. This land-use pattern is also reflected in the distribution of sites on the north side of the Gila River (Brown and Van Dyke 1995; Doelle 1976; Vanderpot 1992). It is also clear that a settlement hierarchy—platform mound villages, villages, hamlets, and field houses—existed and that this system allowed the Classic period occupants of the area to exploit a range of resources in various environmental settings.

Aggregation of populations at the platform mound sites is a hallmark of the late Classic period Civano phase, a trend set in motion in the late Sedentary period. How many people actually lived at these sites is debated. However, Craig (2001a:142, 146) suggests some sites, such as Casa Grande, may have been larger than previously estimated. Additional compounds beyond the boundary of the National Monument have been identified and it is likely that others existed. This is also true at the Escalante Mound Ruins where at least one—if not two—previously unreported compounds may be located south and southeast of the platform mound. The presence of these additional compounds has significant implications for the current interpretation of the Escalante Mound group (Doyel 1974). Nevertheless, Casa Grande appears to

be unique in that it had two platform mounds and a Great Houses and that it "overlooked" an amount of irrigable land half again as large as the next largest settlement (Craig 2001a:147; Crown 1987).

The presence of Salado polychrome ceramics—Gila Polychrome and Tonto Polychrome (A.D. 1325–1450)—ceramics at larger villages such as Casa Grande, Adamsville, and Escalante indicates they were occupied during the Late Classic period. However, by A.D. 1450, the Middle Gila River valley appears to have generally been abandoned with the collapse of the Hohokam.

The Protohistoric occupation of the Middle Gila River valley has recently been examined as a result of work on the GRIC (Wells 2006). While little is known of the occupation of the Middle Gila River valley between the demise of the Hohokam in the mid A.D. 1400s and the arrival of Father Kino in 1694, artifact types thought to be associated with the Protohistoric period include Sobaipuri/O'odham projectile points and Hopi Yellow Ware. These projectile points are triangular, concave-base points with serrated edges (Loendorf and Rice 2004:60–62). Loendorf and Rice (204:58; Randolph et al. 2002:13-14) indicate that these were made as late as 1950. Early Hopi Yellow Wares date to between A.D. 1300 and 1600/1625 (Adams et al. 1993; Colton 1956; Crown 1983). Wells (2006:27) suggests the co-occurrence of the Sobaipuri/O'odham point and Hopi Yellow Ware may be indicative of Protohistoric period sites or sites with Protohistoric period components.

Historic sources (e.g., Sobin 1977) indicate that O'odham (Pima) occupied the Middle Gila River valley west of Florence when the Spanish first entered the area. When Kino arrived at Casa Grande Ruins in 1694, he encountered Piman speakers along the Gila River. At that time they practiced floodwater farming. By the late 1700s, Apache raids resulted in a constriction of the O'odham territory; they subsequently shifted to irrigation agriculture and the cultivation of wheat (Winter 1973). Doelle (1981) indicates the O'odham wheat production grew to a point where it was substantial enough that they sold surpluses to the Euro-American settlers in the area. However, by the late 1880s, as subsequent Euro-American settlement occurred and Euro-American agriculture expanded, water was diverted from the Gila River and the O'odham farmers downstream were literally left high and dry (Sobin 1977). Continued Apache raiding and the lack of sufficient water for agriculture forced some O'odham groups to congregate near permanent water sources along the Gila River and others to move northward to the Salt River.

At the time of Spanish contact in the mid- to late sixteenth century, O'odham and Pee-Posh (Maricopa) occupied the middle portion of the Gila River. Euro-American incursion into the area occurred after 1846 as a result of the Mexican-American War and its aftermath; first came the military, explorers, surveyors, immigrants, and then finally settlers. The war ended in 1848 with the signing of the Treaty of Guadalupe Hidalgo. The American era (A.D. 1853–1950) began with the Gadsden Purchase of 1853, when the area of Arizona south of the Gila River became part of the United States. Ten years later, the Territory of Arizona was established. The late 1800s saw an influx of settlement into the Salt and Gila River valleys, encouraged by a series of national public land laws, such as the National Homestead Act (1862), Timber Culture Act (1873), Desert Land Act (1877), and Enlarged Homestead Act (1909) (Bostwick and Rice 1987; Stein 1990). The majority of homesteads filed in Arizona during this period, however, were along the Salt River (Stein 1990).

In 1866, the communities of Florence and Adamsville were founded simultaneously along the Gila River (Sobin 1977). Within a few years, each settlement had excavated irrigation canals to bring water from the river to farms and ranch lands. A lucrative agricultural enterprise emerged as merchants partnered with settlers to supply food crops to nearby military and mining installations, and by the 1870s, many settlers in the area were extensively cultivating land (Arizona Board of Regents 1989).

Pinal County was created in 1875, with the county seat placed in Florence, the largest town on the middle Gila River. Beyond the limits of Adamsville and Florence, however, Euro-American settlement was slow due to limited water supply and frequent flooding. Through the final decades of the nineteenth century, a number of canals were constructed by settlers to convey river water to agricultural fields along the Gila River. Many of these canals were subsequently abandoned or subsumed by the Florence Canal & Land Company after the 1890s when the Florence Canal was completed. Others operated independently despite the hardships resulting from the construction of the Florence Canal. The Florence Canal system consisted of an enlarged main canal that extended 15 miles south of Florence to a basin known as the Picacho Reservoir, then continuing west to irrigate lands southwest of Florence (Baldwin 1941:43–46).

The Florence Canal and Land Company was established in 1886, with a stock of $1,000,000.00 and shares valued at $10.00. Construction of the irrigation system commenced, with at least 16 miles of the canal constructed by the end of 1887. The earthen channel at this time measured 25 ft to 30 ft wide, with a depth of approximately 4 ft. Due to budgetary issues as a result of this initial construction, the company was forced to convey all its holdings to another entity, known as the Florence Canal and Water Company. Construction on the Florence Canal and Picacho Reservoir resumed from 1887–1889 under a new corporate entity, the Florence Canal Company (Southworth 1919:147–148). When completed in the early 1890s, the canal was approximately 50 miles long.

The early success of the Florence Canal and Water Company can be measured by the more than 52,000 acres claimed under the canal shortly after completion in the 1890s (many of these claims were entries under the Desert Lands Act). Unfortunately, however, silting, erosion and flooding of the canal system would prevent the successful reclamation of the bulk of these lands until the completion of the San Carlos Irrigation Project in the twentieth century. These costly maintenance issues, however, did not prevent the company from acquiring the rights to a number of lesser irrigation ditches in the Florence and Adamsville vicinity. The general poor business management of the Florence Canal system led to frequent transfers of ownership through the first decades of the twentieth century. Lawsuits by farmers and investors appear to have been the primary motivation behind the selling or conveyance of interests in Florence Canal and Picacho Reservoir. By 1914, the canal was irrigating only 3,500 acres out of an estimated maximum available acreage of 11,000 acres (Southworth 1919:148–152). Federal engineers would later conclude that the cost of cleaning and refurbishing the canal would be more expensive than constructing a new alignment (Pfaff 1996:38).

The fertile soil of the Gila Valley was considered the greatest resource of Pinal County, but the biggest concern was how to deliver water to the area. Since the 1890s, the people of Florence and Casa Grande, as well as others who had an interest in developing the region, had been promoting plans for building the

San Carlos Project. This proposed irrigation system required construction of a dam on the Gila River near the Apache Agency at San Carlos to store all of the floodwaters that typically washed through the valley every spring (Introcaso 1986:28–29). The passage of the National Reclamation Act of 1902 raised hopes of getting federal funding for the project, but Pinal County could not compete against the Salt River Valley, where extensive farmland was already developed. Thus, while the Salt River Project was approved, the San Carlos Project continued to be just an idea.

At this point the non-Indian farmers' desire for a greater water supply coincided with the interests of the Pima and the Maricopa Indians who had lost access to Gila River water a generation earlier. Casa Grande Valley farmers saw that a combined effort to supply the reservation with water and bring irrigation to new private lands might be the best approach to securing federal funding. The San Carlos Project was then promoted as a means to supply water for 40,000 acres on the reservation and 55,000 acres of non-reservation lands (Introcaso 1986:50–52; Pima-Maricopa Irrigation Project 2004. In 1914, Senator Henry Ashurst and Representative Carl Hayden were unsuccessful in passing a bill for the San Carlos Project in both houses of Congress, but effectively obtained an appropriation in 1916 to build the Florence Diversion Dam, the first component of the planned irrigation system. This marked the beginning of the Florence-Casa Grande Project. A new Florence-Casa Grande Canal was dug east of and parallel to the old Florence Canal, and the Pima Lateral was set off of the main canal to the west to supply the reservation during times when the flow in the river channel was too low. Construction of the dam began in 1921; it was completed in 1922 and dedicated on May 10, when it was renamed the Ashurst-Hayden Diversion Dam. Construction of the Sacaton Diversion Dam was subsequently initiated farther downstream, and completed in June of 1925.

Agricultural development started expanding beyond Florence and Casa Grande during World War I. Groundwater could be drawn with centrifugal pumps, which were often operated with gas- or diesel powered engines. The main crop that was introduced into the area was cotton. By 1918 nearly 100,000 acres in the Salt River Valley and Yuma were planted in cotton, and the high prices farmers received for their harvest prompted Pinal County residents to plant the same.

With the completion of the Ashurst-Hayden Diversion Dam in 1922, it appeared that an agricultural boom would finally come to the area. When the Southern Pacific Railroad (SPRR) began construction of a mainline through Phoenix in 1925, it planned to serve the new farms by building the railroad about midway between Florence and Casa Grande (Myrick 1980:786–791). Shortly after the railroad was completed, a state highway was built parallel to the tracks. This alignment was approved as part of the state highway system in 1927 and designated State Route (SR) 87 (Cross et al. 1960; Gribble 1928). It was originally a graded dirt road (Arizona Automobile Association 1930), but was paved by 1933 (Arizona State Highway Commission 1933). Construction of SR 87 immediately spurred the development of new towns along the route, including Coolidge, Randolph, La Palma, and Eloy, as well as other small nearby settlements like Borree Corner and Eleven Mile Corner. This led to the immediate filing of claims for patents, mostly by Desert Land entries or lands selected in lieu of other lands relinquished to the federal government (Bureau of Land Management 2009).

Ranchers and farmers appear to have settled in the Coolidge vicinity only after completion of the Florence Canal in the late nineteenth century. Among the earliest of these pioneer homesteaders was Ida B. Hurley, who received a CE patent for all of Section 22 in 1891. Hurley was one of the principal organizers of the Florence Canal & Land Company and, with the aid of his wife, had invested in a number of land claims under the Florence Canal. By the late 1890s, a small number of dedicated farmers comprised a loose community that became known as the Kenilworth District. Crops raised by these pioneer farmers included alfalfa, wheat, grapes and nuts (Kelm 1941:15–18). Unfortunately, however, as described previously, poor management of the Florence Canal in conjunction with seasonal flooding and droughts significantly limited the potential growth of this small community of farmers. Frequently, families would leave the area in times of difficulty; only to return when conditions were more favorable. In many cases, new farmers purchased deserted land claims, or filed claims of their own. The area appears to have seen increased settlement after 1915 when the San Carlos Project was being intensely promoted by political leaders in Congress (Vargas and Jones 2011).

RESEARCH METHODS AND RESULTS

A Class I inventory, consisting of a literature review and site records search, was undertaken to assess the status of previous surveys and to identify known cultural resources and archaeological sites within the study areas. Records were accessed at ADOT, the Arizona State Historic Preservation Office (SHPO), and using AZSITE, the state's electronic inventory of cultural resources. Information about past projects and previously recorded sites on tribal land, which is considered culturally-sensitive, was not obtained; only 0.004 percent of the half-mile-wide study area encompasses Gila River Indian Reservation land. The National Register Information System, which catalogs cultural resources listed in the National Register of Historic Places (NRHP), was also reviewed. Additionally, available BLM General Land Office (GLO) maps were accessed electronically to identify features documented historically.

GLO MAPS

The data compiled from the GLO maps is presented in Table 2. The earliest of the historic surveys was recorded in 1870. The majority of the early-recorded historic features were identified as roads. Houses, a railroad, canals, unidentified structures, groves, and land claims were also recorded.

Table 2. Historic GLO maps and identified features within the study areas.

McCartney Road

Plat	Date Filed	Township	Range	Section	Features
1625	12-3-1919	T5S	R6E	34-35	"John Batterman" house & barn; "Mrs. Johnson" engine house;" structure labeled "Mrs. Johnson's House;" unnamed road
1626	12-2-1870	T5S	R6E	36	Road from Casa Blanca to Blue Water
1628	2-12-1930	T5S	R7E	31-33	2 unnamed roads
1632	9-6-1892	T5S	R7E	32-36	Stage road from Casa Grande to Florence; 2 unnamed roads; stage road from Tucson to Florence
1633	12-2-1870	T5S	R7E	35	Road from Tucson to Sacaton; structure labeled "Honneda's Station"
1634	7-6-1955	T5S	R8E	34	State Highway No. 87; Southern Pacific rail-line
1635	2-12-1930	T5S	R8E	31, 33-35	4 unlabeled structures; road to Tucson; Southern Pacific rail-line
1637	3-17-1921	T5S	R8E		No features
1638	12-2-1870	T5S	R8E	34	Road from Gila Settlement to Bluewater
1639	2-12-1930	T5S	R9E	35	Unnamed road
1640	12-2-1870	T5S	R9E	34-35	No features
1685	5-15-1930	T6S	R6E	3	Unlabeled structure
1686	4-3-1890	T6S	R6E	1-4	No features
1687	5-15-1930	T6S	R7E	1, 5-6	Unlabeled strucuture; unnamed road
1688	4-3-1890	T6S	R7E	3, 5-6	Sacaton Road; Road to Florence
1689	5-15-1930	T6S	R8E	2, 6	Unnamed road segment; 2 unlabeled structures
1690	4-30-1890	T6S	R8E	1-6	Road to Quinn's; old road; old road to Tucson; 1892 desert land claims by Leonora C. Wrampelmier , David H. Wixoms, Christian Walrict, Leonard Wood, Scovell McAffee, and Jole M. Charlott (no buildings, structures, or noted improvements exist on these parcels)
1691	11-10-1955	T6S	R9E	4	No features
1692	5-15-1930	T6S	R9E	1-3, 6-7, 10	4 unnamed roads; Casa Grande – Florence Canal; canal
1693	9-6-1892	T6S	R9E	1-3, 6-7, 10	Wood Road; wagon road from Picacho to Florence; wagon road; Florence Canal; road to Quinn's
1694	4-14-1932	T6S	R10E	3-4, 6-7, 10-11	4 unnamed road segments; road to Florence; 2 unnamed roads; 2 unlabeled structures

Eleven Mile Corner Road

Plat	Date Filed	Township	Range	Section	Features
1628	2-12-1930	T5S	R7E	12	Canal
1632	9-6-1892	T5S	R7E	12, 24-25	Wood Road; Stage road from Casa Grande to Florence
1635	2-12-1930	T5S	R8E	18-20, 29-31	5 unlabeled structures; cotton gin
1638	12-2-1870	T5S	R8E	19-20	Mesquite groves
1687	5-15-1930	T6S	R7E	1	Unlabeled structure
1690	4-30-1890	T6S	R8E	6	1892 desert land claim by Scovell McAffee (no buildings, structures, or noted improvements exist on this parcel)

PREVIOUS CLASS III CULTURAL RESOURCES SURVEYS

The results of the records search indicate that a total of 78 surveys have been previously conducted in the study area (Tables 3-5; see Appendices Figures A.1-7). Most of these surveys were completed for various residential and business development and infrastructure projects.

Table 3. Previous research in study area for McCartney Road and Eleven Mile Corner Road.

Reference number	Author and year	Figure[1]	Reference number	Author and year	Figure[1]
1973-13.ASM	Grady et al.1973	4	2003-1202.ASM	Foster 2000	6
1979-124.ASM	Stein 1979	4	2003-1548.ASM	Estes et al. 2004	3
1982-49.ASM	Rogge 1982	4	2004-103.ASM	Shepard 1999	6
1982-78.ASM	Madsen 1982	4	2004-123.ASM	Kober 2003	7
1985-226.ASM	Batcho 1985; Higgins and Brunson 1985; Plog et al. 1989	1, 2, 3	2004-370.ASM	Rodrigues et al. 2003	2
1985-228.ASM	Effland 1985	5	2004-453.ASM	Marshall 2003	3
1985-238.ASM	Hackbarth and Van Nimwegen 1990	2, 3, 7	2004-627.ASM	Newsome and Berg 2001	3
1986-19.ASM	Bilsbarrow 1998; Shaw 2001	2, 3, 6	2004-724.ASM	Brodbeck and Touchin 2004	1
1986-70.ASM	Madsen 1986a	4	2004-1802.ASM	Schmidt and Lindly 2004	1
1986-152.ASM	Madsen 1986b	4	2004-1829.ASM	Shaw 2004	6
1987-222.ASM	O'Brien et al. 1987	3	2005-237.ASM	Hart 2004	2, 7
1988-5.ASM	Roth 1988	5	2005-431.ASM	Bellavia and Lindly 2005	1
1991-133.ASM	Adams 1991	1	2005-1257.ASM	Hopkins 2005a	3
1992-159.ASM	Roth 1992	2	2005-1279.ASM	Moore 2005a	3, 4
1993-126.ASM	Stone 1993	6	2006-92.ASM	Boloyan 2005a	7
1993-144.ASM	Telles 1993	4	2006-93.ASM	Boloyan 2005b	3, 7
1993-329.ASM	Gregory and Huckleberry 1994; Gregory and Douglas 1994	6	2006-97.ASM	Hopkins 2005b	6
1997-184.ASM	Lindeman 1997	5	2006-100.ASM	Hopkins 2005c	6, 7
1997-209.ASM	Self 1997	3	2006-223.ASM	Moore 2005b	2
1998-439.ASM	Barz 1998	1	2006-412.ASM	Moore 2005c	3
1998-443.ASM	Woodall 1999	3, 6	2006-451.ASM	Bellavia and Mitchell 2006	6
1998-529.ASM	Wright et al. 1999	5	2006-663.ASM	Kennedy and Behrend 2006	6
1998-559.ASM/ SHPO-2000-0582	Fratt and Rude 1999	4	2007-692.ASM	Darby 2009; Henderson et al. 2008; Henderson et al. 2009	3
1999-587.ASM	Doak 1999a-d; Doak 2001; Hesse 2002	3	2008-102.ASM	Goldstein 2007	4
2000-82.ASM	Hackbarth 2000	2	2008-441.ASM	Caldwell 2008	4
2000-222.ASM/ SHPO-2000-1872	Boloyan 2000	5	2008-692.ASM	Langan 2008	3
2000-459.ASM	Coriell and Courtright 2000	1	2008-763.ASM	Schilling et al. 2009	2, 7

continued

Table 3. Previous research in study area for McCartney Road and Eleven Mile Corner Road.

Reference number	Author and year	Figure[1]	Reference number	Author and year	Figure[1]
2000-723.ASM/ SHPO-2000-1717	Kearns et al. 2001	3	2009-138.ASM	Trakes 2009a	4
2001-311.ASM	Boloyan 2001	4	2009-449.ASM	Trakes 2009b	2
2001-406.ASM	Baker and Webb 2001	3	2009-643.ASM	Cox and Rogge 2009	1
2001-674.ASM	O'Mack 2001	2, 6, 7	2009-868.ASM	Trakes 2009c	2
2001-777.ASM	Lundin 2001	1	2009-873.ASM	Vaughn 2009	3
2001-787.ASM	Barger 2002	7	2010-280.ASM	Luhnow and Schilz 2010	7
2003-516.ASM/ SHPO-2002-2213	Lindly et al. 2002a-c	3	2012-594.ASM	North 2000	1, 2, 3
2003-910.ASM	Railey and Yost 2001	3	CCRS-82-6 (AREA 1)	Unknown	4
2003-1166.ASM	Brodbeck and Neily 1998	6	CCRS-82-6 (AREA 2)	Unknown	4
2003-1185.ASM	Morgan and Talas 2001	1	11.248.SHPO	Unknown	4
2003-1192.ASM	Rhoades and Woodson 2002	6	11.278.SHPO	Unknown	6
2003-1196.ASM	Mintmier and Simon 2002	2			

[1] Map figures can be found within the appendices of the report.

Table 4. Previous cultural resources surveys intersecting Eleven Mile Corner Road and Alternatives.

Reference Numbers	Author and year	Figure[1]	Road Alignment
1985-238.ASM	Hackbarth and Van Nimwegen 1990	7	Alternatives 1, 2, 3, 4, 5, 6, 7, 8
1986-19.ASM	Bilsbarrow 1998; Shaw 2001	6	Alternatives 3, 4
1998-443.ASM	Woodall 1999	6	Alternatives 1, 2, 3, 7, 8
2001-674.ASM	O'Mack 2001	6, 7	Alternatives 1, 2, 3, 4, 5, 6, 7, 8
2003-1166.ASM	Brodbeck and Neily 1998	6	Alternatives 1, 2, 3, 7, 8
2004-103.ASM	Shepard 1999	6	Alternatives 1, 2, 3, 4, 6, 7, 8
2004-123.ASM	Kober 2003	7	Alternatives 7, 8
2004-1829.ASM	Shaw 2004	6	Alternative 6, 7, 8
2005-237.ASM	Hart 2004	7	Alternatives 1, 2
2006-100.ASM	Hopkins 2005c	6	Alternatives 7, 8
2006-663.ASM	Kennedy and Behrend 2006	6	Alternatives 1, 2, 4, 5, 6, 7, 8
2008-763.ASM	Schilling et al. 2009	7	Alternatives 1, 2, 4, 5, 7, 8
2010-280.ASM	Luhnow and Schilz 2010	7	Alternative 1

[1.] Map figures can be found within the appendices of the report.

Table 5. Previous cultural resources surveys intersecting McCartney Road and Alternatives.

Reference Numbers	Author and year	Figure[1]	Road Alignment
1973-13.ASM	Grady et al.1973	4	McCartney Road Alternative
1979-124.ASM	Stein 1979	4	McCartney Road Alternative
1985-238.ASM	Hackbarth and Van Nimwegen 1990	2, 3	McCartney Road Alternative; Alternatives 1, 2, 3, 5
1986-19.ASM	Bilsbarrow 1998; Shaw 2001	2, 3	McCartney Road Alternative; Alternatives 2, 3
1986-70.ASM	Madsen 1986a	4	McCartney Road Alternative
1986-152.ASM	Madsen 1986b	4	McCartney Road Alternative
1987-222.ASM	O'Brien et al. 1987	3	McCartney Road Alternative
1991-133.ASM	Adams 1991	1	McCartney Road Alternative
1992-159.ASM	Roth 1992	2	McCartney Road Alternative
1993-144.ASM	Telles 1993	4	McCartney Road Alternative
1998-439.ASM	Barz 1998	1	McCartney Road Alternative
1998-443.ASM	Woodall 1999	3	McCartney Road Alternative; Alternative 2
1998-529.ASM	Wright et al. 1999	5	McCartney Road Alternative
1998-559.ASM/ SHPO-2000-0582	Fratt and Rude 1999	4	McCartney Road Alternative
1999-587.ASM	Doak 1999a-d; Doak 2001; Hesse 2002	3	McCartney Road Alternative; Alternative 2
2000-82.ASM	Hackbarth 2000	2	McCartney Road Alternative
2000-459.ASM	Coriell and Courtright 2000	1	McCartney Road Alternative
2000-723.ASM/ SHPO-2000-1717	Kearns et al. 2001	3	McCartney Road Alternative; Alternative 2
2001-406.ASM	Baker and Webb 2001	3	McCartney Road Alternative; Alternative 2
2001-674.ASM	O'Mack 2001	2	McCartney Road Alternative; Alternative 1
2001-777.ASM	Lundin 2001	1	McCartney Road Alternative
2003-516.ASM/ SHPO-2002-2213	Lindly et al. 2002a-c	3	McCartney Road Alternative; Alternative 2
2003-910.ASM	Railey and Yost 2001	3	McCartney Road Alternative
2003-1196.ASM	Mintmier and Simon 2002	2	McCartney Road Alternative
2004-370.ASM	Rodrigues et al. 2003	2	McCartney Road Alternative
2004-453.ASM	Marshall 2003	3	McCartney Road Alternative; Alternative 2
2004-627.ASM	Newsome and Berg 2001	3	McCartney Road Alternative; Alternative 2
2004-724.ASM	Brodbeck and Touchin 2004	1	McCartney Road Alternative
2005-237.ASM	Hart 2004	2	McCartney Road Alternative; Alternative 1
2005-431.ASM	Bellavia and Lindly 2005	1	McCartney Road Alternative
2005-1279.ASM	Moore 2005a	3, 4	McCartney Road Alternative
2006-223.ASM	Moore 2005b	2	McCartney Road Alternative

continued

Table 5. Previous cultural resources surveys intersecting McCartney Road and Alternatives.

Reference Numbers	Author and year	Figure[1]	Road Alignment
2006-412.ASM	Moore 2005c	3	McCartney Road Alternative; Alternative 2
2007-692.ASM	Darby 2009; Henderson et al. 2008; Henderson et al. 2009	3	McCartney Road Alternative; Alternative 2
2008-102.ASM	Goldstein 2007	4	McCartney Road Alternative
2008-763.ASM	Schilling et al. 2009	2	McCartney Road Alternative; Alternative 1
2009-449.ASM	Trakes 2009b	2	McCartney Road Alternative
2009-643.ASM	Cox and Rogge 2009	1	McCartney Road Alternative
2009-868.ASM	Trakes 2009c	2	McCartney Road Alternative
CCRS-82-6 (AREA 2)	Unknown	4	McCartney Road Alternative

[1.] Map figures can be found within the appendices of the report.

Table 6. Eleven Mile Corner Road and Alternatives Survey Coverage.

Road Alignment	Percentage
Alternative 1	90%
Alternative 2	90%
Alternative 3	15%
Alternative 4	35%
Alternative 5	35%
Alternative 6	65%
Alternative 7	75%
Alternative 8	75%

Table 7. McCartney Road and Alternatives Survey Coverage.

Road Alignment	Percentage
Alternative 1	20%
Alternative 2	65%
Alternative 3	40%
Alternative 4	0%
Alternative 5	100%
Proposed McCartney Alignment	35%

As the data from Tables 6-7 illustrate, more than half of the study area intersecting Eleven Mile Corner Road and its alternatives was surveyed both prior to and following construction of the road. Less than 40 percent of the study area for McCartney Road, intersecting the proposed alignment and its alternatives, has been surveyed. Most survey work accomplished along McCartney Road and its alternatives occurred within the western portion of the study area. The eastern portion of the study area is almost entirely unsurveyed, from the Coolidge Municipal Airport east to SR-79.

PREVIOUS CLASS III CULTURAL RESOURCES SITES

LSD's research indicates that a total of 43 sites—24 historic, 15 prehistoric, 2 multicomponent and 2 of unknown age and affiliation—have been recorded within the study area, (Table 8; see Appendices Figures A-1-7). Historic-era cultural resources include highways, roads, a transmission line, a railroad, and an adobe structure. Three historic canals also are present, including the Florence Canal, the Florence-Casa Grande Canal, and the Pima Lateral Canal. The canals and other historic-era resources attest to the Euro-American occupation and development of the region, primarily from the latter half of the nineteenth century to the mid-twentieth century. Of the prehistoric sites, most are affiliated with the Hohokam culture (A.D. 450–1450/1500). These sites include artifact scatters, temporary and permanent habitation sites, and domestic features. The multicomponent site includes both historic Euro-American and prehistoric Hohokam artifact scatters.

Table 8. Previously recorded sites in the study area (sites that intersect the proposed alignments and alternatives are in bold).

McCartney Road					
Site number	**Figure[1]**	**Site type**	**Affiliation/Age**	**NRHP eligibility**	**Intersected Road Alignments**
AZ AA:2:94(ASM)	1	P-artifact scatter	Hohokam	Not evaluated	N/A
AZ AA:2:109(ASM)	3	P-artifact scatter	Hohokam	Needs testing	McCartney Road; Alternative 3
AZ AA:2:111(ASM)	2	P-artifact scatter	Hohokam	Not evaluated	N/A
AZ AA:2:128(ASM)	3	H-Christensen road	Euro-American; A.D. pre-1928	Recommended not eligible	N/A
AZ AA:2:132(ASM)	3	H-La Palma Road and bridge	Euro-American; A.D. pre-1928	Recommended not eligible	N/A
AZ AA:2:136(ASM)	1	H-artifact scatter	Euro-American; A.D. 1900-1950	Not evaluated	N/A
AZ AA:2:149(ASM)	3	H-State Route 287	Euro-American; A.D. 1935-present	Determined eligible, Criterion D	McCartney Road; Alternative 2
AZ AA:2:175(ASM)/ AZ AA:2:195(ASM)	2	H-Eleven Mile Corner Road	Euro-American; A.D. 1900-1950	Recommended not eligible	McCartney Road; Alternative 1
AZ AA:2:176(ASM)/ AZ AA:2:196(ASM)	3	H-Sunshine Road	Euro-American; A.D. 1900-1950	Recommended not eligible	McCartney Road; Alternatives 1, 3
AZ AA:2:183(ASM)	1	P-artifact scatter with feature	Hohokam; A.D. 750-950	Determined eligible, Criterion D	N/A
AZ AA:2:184(ASM)	1	P-artifact scatter	Hohokam; A.D. 200-1500	Recommended not eligible	N/A
AZ AA:2:185(ASM)	1	P-artifact scatter	Hohokam; A.D. 750-950	Recommended not eligible	N/A
AZ AA:2:186(ASM)	1	P-artifact scatter	Hohokam A.D. 200-1500	Recommended not eligible	N/A
AZ AA:2:187(ASM)	1	P-artifact scatter	Hohokam A.D. 200-1500	Recommended not eligible	N/A
AZ AA:2:192(ASM)	2	H-Road	Euro-American	Recommended not eligible	N/A

continued

Table 8. Previously recorded sites in the study area (sites that intersect the proposed alignments and alternatives are in bold).

McCartney Road					
Site number	**Figure[1]**	**Site type**	**Affiliation/Age**	**NRHP eligibility**	**Intersected Road Alignments**
AZ AA:2:193(ASM)	2	H-Signal Peak Road	Euro-American	Recommended not eligible	N/A
AZ AA:2:194(ASM)	2	H-Tweedy Road	Euro-American	Recommended not eligible	N/A
AZ AA:2:207(ASM)	2	H-trash scatter with canal and associated features	Euro-American	Recommended not eligible	N/A
AZ AA:2:216(ASM)	3	H-Bartlett Road	Euro-American A.D. 1900-1950	Recommended not eligible	N/A
AZ AA:2:307(ASM)	2	H-Coolidge-ED2 #1 115-kV Transmission Line	Euro-American	Recommended not eligible	McCartney Road; Alternative 1
AZ AA:3:25(ASM)	4	P-artifact scatter	Hohokam; A.D. 200-1500	Not evaluated	N/A
AZ AA:3:211(ASM)	4	H-Florence canal	Euro-American A.D. 1700-1950	Determined eligible, Criterion A	McCartney Road
AZ AA:3:215(ASM)	4	H-Florence-Casa Grande canal/ Main canal	Euro-American A.D. 1500-1950	Determined eligible, Criterion A	McCartney Road
AZ AA:3:226(ASM)	5	MC-artifact scatter with features	Hohokam; A.D. 1300-1500; Euro-American	Recommended eligible	N/A
AZ AA:3:230(ASM)	5	P-artifact scatter with canal and features	Hohokam; A.D. 1300-1500	Recommended eligible	N/A
AZ AA:3:234(ASM)	4	P-artifact scatter	Hohokam; A.D. 950-1100	Recommended eligible	N/A
AZ AA:3:235(ASM)	4	H-habitation site with multiple features	Euro-American	Recommended eligible	N/A
AZ AA:6:63(ASM)	3	H-State Route 87/Beeline Highway	Euro-American; A.D. 1927-present	Determined eligible, Criterion D	McCartney Road; Alternative 2
AZ AA:8:360(ASM)	5	H-Phoenix-Tucson Highway Alignment	Euro-American; Pre-1939	Recommended eligible	N/A
AZ BB:5:134(ASM)	5	H-Coolidge-Oracle 115-kV Transmission Line	Euro-American	Recommended not eligible	N/A
AZ FF:9:17(ASM)	5	H-State Route 80/ U.S. Highway 80	Euro-American; A.D. 1900-present	Determined eligible, Criterion D	McCartney Road
AZ T:10:84(ASM)	3	H-Southern Pacific Railroad: Wellton-Phoenix-Eloy Spur/ Sunset Route	Euro-American; A.D. 1926	Determined eligible, Criterion A	McCartney Road; Alternative 2
Eleven Mile Corner Road					
Site number	**Figure[1]**	**Site type**	**Affiliation/Age**	**NRHP eligibility**	**Intersected Road Alignments**
AZ AA:2:63(ASM)	6	P-Grande Vista Site	Hohokam	Determined eligible, Criterion D	N/A

continued

Table 8. Previously recorded sites in the study area (sites that intersect the proposed alignments and alternatives are in bold).

Eleven Mile Corner Road					
Site number	**Figure[1]**	**Site type**	**Affiliation/Age**	**NRHP eligibility**	**Intersected Road Alignments**
AZ AA:2:104(ASM)	7	MC-artifact scatter	Hohokam; A.D. 950-1100; Euro-American; A.D.1500-1950	Recommended eligible, Criterion D	Alternatives 1, 2, 5, 6, 7, 8
AZ AA:2:111(ASM)	7	P-artifact scatter	Hohokam	Not evaluated	N/A
AZ AA:2:127(ASM)	6	H-Bechtel road	Euro-American; A.D. 1930's	Determined not eligible	Alternatives 3, 4
AZ AA:2:129(ASM)	6	H-Southside canal	Euro-American; A.D. 1930's	Recommended not eligible	Alternative 3
AZ AA:2:130(ASM)	6	H-Pima Lateral Canal	Euro-American; A.D. 1928	Determined eligible, Criterion A	Alternatives 1, 2, 4, 5, 6, 7, 8
AZ AA:2:175(ASM)/ AZ AA:2:195(ASM)	7	H-Eleven Mile Corner Road	Euro-American; A.D. 1900-1950	Recommended not eligible	Alternatives 1, 2
AZ AA:2:203(ASM)	6	P-artifact scatter	Prehistoric	Recommended eligible	Alternatives 1, 2
AZ AA:2:204(ASM)	7	P-artifact scatter with feature	Prehistoric	Recommended eligible	N/A
AZ AA:2:210(ASM)	6	H-trash scatter with feature	Euro-American	Recommended not eligible	N/A
AZ AA:2:261(ASM)	6	P-Artifact scatter	Unknown	Recommended eligible	Alternative 6
AZ AA:2:271(ASM)	6	H-Abode building on Borree Corner (intersection of Kenworth Rd and Skousen Rd)	Unknown	Not evaluated	Alternatives 7, 8
AZ AA:2:307(ASM)	6-7	H-Coolidge-ED2 #1 115-kV Transmission Line	Euro-American	Recommended not eligible	Alternatives 1, 2, 3, 4, 7, 8
AZ U:14:108(ASM)	6	P-artifact scatter with features	Hohokam; A.D. 450-1450	Determined eligible, Criterion D	N/A

[1.] Map figures can be found within the appendices of the report.

In summary, approximately 60 percent of the Eleven Mile Corner Road study area has been surveyed. Among the alternative alignments, survey coverage ranged from 15 to 90 percent, with Alternatives 1 and 2 containing the most coverage. Fourteen sites were recorded within the Eleven Mile Corner Road study area; nine of those sites actually intersect Eleven Mile Corner Road and alternatives.

Less than 40 percent of the McCartney Road study area has been surveyed, with survey coverage ranging from 0 to 100 percent among the proposed road and alternative alignments. Both Alternatives 2 and 4 have not been surveyed in their entirety; Alternative 5 contains 100 percent coverage. Thirty-two sites have been recorded within the McCartney Road study area and 10 of those sites intersect proposed McCartney Road alignment and alternatives.

NATIONAL REGISTER STATUS OF PREVIOUSLY RECORDED SITES

Historic properties determined eligible for inclusion in the NRHP must be at least 50 years old and possess integrity of location, design, setting, materials, workmanship, and association; and meet one of the following criteria:

- Association with events that have made a significant contribution to the broad patterns of our history (Criterion A); or
- Association with the lives of people of past significance (Criterion B); or
- Embodiment of the distinctive characteristics of a type, period or method of construction, or represent the work of a master or possess high artistic value (Criterion C), or;
- Has yielded or has the potential to yield information important to the prehistory or history of the area (Criterion D).

Ten sites (7 historic, 3 prehistoric) recorded in the study area have been determined eligible for inclusion in the NRHP. The historic sites include three roads (AZ FF:9:17(ASM), SR 80; AZ AA:6:63(ASM), SR 87; and AZ AA:2:149(ASM), SR 287), all of which are part of the Historic State Highway System (Criterion D); one railroad line (AZ T:10:84(ASM), Southern Pacific Railroad (SPRR) Wellton-Phoenix-Eloy Spur) (Criterion A); and three canals under the jurisdiction of Reclamation and maintained by SCIP (AZ AA:3:211(ASM), Florence Canal; AZ AA:3:215(ASM), Florence-Casa Grande Canal; and AZ AA:2:130(ASM), Pima Lateral Canal) (all Criterion A). The significance of the canals maintained by SCIP has been formally documented in Historic American Engineering Records documentation (Pfaff 1994). The NRHP eligibility status of the remaining sites identified during this research are as follows: 5 sites were unevaluated, NRHP eligibility testing was recommended for 1 site, 1 site was determined not eligible, 17 sites were recommended not eligible, and 9 sites were recommended eligible for inclusion in the NRHP.

SUMMARY AND RECOMMENDATIONS

Wilson & Company, Inc. requested that Logan Simpson Design Inc. (LSD) conduct a Class I cultural resources inventory for a comprehensive transportation feasibility study, in anticipation of future transit development and enhancements for the City of Coolidge. The study area includes McCartney Road, with 5 alternative alignments, and Eleven Mile Corner Road, with 8 alternative alignments. The Class I inventory results are provided to assist in the evaluation of proposed alternatives. Considerations include the methods and coverage or extent of past surveys, and the number of identified cultural resources that have been recommended or determined eligible for inclusion in the NRHP. Additionally, if implementation of this project moves forward with funding from the Federal Highway Administration, it will require compliance with Section 4(f) of the Department of Transportation Act of 1966 (23 U.S.C § 138, as amended). Any historic properties determined NRHP-eligible under Criteria A, B, or C are afforded protection under Section 4(f) and additional analyses may be required if they are affected by project activities (refer to Table 9).

LSD's research identified 78 previously conducted surveys in the study area—13 surveys intersect Eleven Mile Corner Road and its alternatives and 40 surveys intersect the proposed McCartney Road Alignment and its alternatives. Background results indicate that approximately 60 percent of Eleven Mile Corner Road and its alternatives and approximately 40 percent of the McCartney Road Alignment and its alternatives

have been surveyed. Among the alternative alignments, survey coverage ranged from 15 to 90 percent for Eleven Mile Corner Road and from 0 to 100 percent for McCartney Road (Table 9).

Overall, 43 cultural resources sites have been recorded in the study area, including 10 sites determined eligible for inclusion in the NRHP. Fourteen sites were recorded within the study area for Eleven Mile Corner Road, 3 of which were determined NRHP-eligible. Nine sites intersect Eleven Mile Road or one of its alternatives; one of these sites has been determined NRHP-eligible.

Thirty-two sites have been recorded within the study area of McCartney Road, 7 of which were determined NRHP-eligible. Ten sites intersect the proposed alignment or an alternative; six of those sites have been determined NRHP-eligible (Table 9).

Table 9. Background Summary for McCartney Road and Eleven Mile Corner Road Alternatives (includes survey coverage and cultural resources).

McCartney Road			
Road Alignment	**Survey Coverage**	**Intersecting Sites**	**Intersecting NRHP-Eligible Sites[1]**
Alternative 1	20%	AZ AA:2:175(ASM)/AZ AA:2:195(ASM); AZ AA:2:176(ASM)/AZ AA:2:196(ASM); AZ AA:2:307(ASM)	None
Alternative 2	65%	AZ AA:2:149(ASM); AZ AA:6:63(ASM); AZ T:10:84(ASM)	AZ AA:2:149(ASM) (*Criterion D*); AZ AA:6:63(ASM) (*Criterion D*); **AZ T:10:84(ASM) (*Criterion A*)**
Alternative 3	40%	AZ AA:2:109(ASM); AZ AA:2:176(ASM)/AZ AA:2:196(ASM)	None
Alternative 4	0%	None	None
Alternative 5	100%	None	None
Proposed McCartney Alignment	35%	AZ AA:2:109(ASM); AZ AA:2:149(ASM); AZ AA:2:175(ASM)/AZ AA:2:195(ASM); AZ AA:2:176(ASM)/AZ AA:2:196(ASM); AZ AA:2:307(ASM); AZ AA:3:211(ASM); AZ AA:3:215(ASM); AZ AA:6:63(ASM); AZ FF:9:17(ASM); AZ T:10:84(ASM)	AZ AA:2:149(ASM) (*Criterion D*); **AZ AA:3:211(ASM) (*Criterion A*);** **AZ AA:3:215(ASM) (*Criterion A*);** AZ AA:6:63(ASM) (*Criterion D*); AZ FF:9:17(ASM) (*Criterion D*); **AZ T:10:84(ASM) (*Criterion A*)**
Eleven Mile Corner Road			
Road Alignment	**Survey Coverage**	**Intersecting Sites**	**Intersecting NRHP-Eligible Sites**
Alternative 1	90%	AZ AA:2:104(ASM); AZ AA:2:130(ASM); AZ AA:2:175(ASM)/AZ AA:2:195(ASM); AZ AA:2:203(ASM); AZ AA:2:307(ASM)	**AZ AA:2:130(ASM) (*Criterion A*)**
Alternative 2	90%	AZ AA:2:104(ASM); AZ AA:2:130(ASM); AZ AA:2:175(ASM)/AZ AA:2:195(ASM); AZ AA:2:203(ASM); AZ AA:2:307(ASM)	**AZ AA:2:130(ASM) (*Criterion A*)**
Alternative 3	15%	AZ AA:2:127(ASM); AZ AA:2:129(ASM); AZ AA:2:307(ASM)	None
Alternative 4	35%	AZ AA:2:127(ASM); AZ AA:2:130(ASM); AZ AA:2:307(ASM)	**AZ AA:2:130(ASM) (*Criterion A*)**
Alternative 5	35%	AZ AA:2:104(ASM); AZ AA:2:130(ASM)	**AZ AA:2:130(ASM) (*Criterion A*)**

continued

Table 9. Background Summary for McCartney Road and Eleven Mile Corner Road Alternatives (includes survey coverage and cultural resources).

Eleven Mile Corner Road			
Road Alignment	**Survey Coverage**	**Intersecting Sites**	**Intersecting NRHP-Eligible Sites[1]**
Alternative 6	65%	AZ AA:2:104(ASM); AZ AA:2:130(ASM); AZ AA:2:261(ASM)	**AZ AA:2:130(ASM) (*Criterion A*)**
Alternative 7	75%	AZ AA:2:104(ASM); AZ AA:2:130(ASM); AZ AA:2:271(ASM); AZ AA:2:307(ASM)	**AZ AA:2:130(ASM) (*Criterion A*)**
Alternative 8	75%	AZ AA:2:104(ASM); AZ AA:2:130(ASM); AZ AA:2:271(ASM); AZ AA:2:307(ASM)	**AZ AA:2:130(ASM) (*Criterion A*)**

[1.] Potential Section 4(f) Properties in bold.

SHPO Guidance Point No. 5 (April 2004) suggests that surveys conducted more than 10 years previously may not meet current professional standards, resulting in the need for new survey. LSD therefore recommends that new survey be conducted in areas of the preferred alternative in which previous surveys do not meet current standards. Pedestrian survey should also be conducted for unsurveyed portions of the preferred alternative. In addition, all previously recorded sites within the preferred alternative that have not been determined NRHP eligible should be re-located to evaluate their current condition and NRHP eligibility and to assess potential impacts.

Upon the completion of a Class III survey and site relocation and recordation, recommendations should be made for the treatment, preservation, or avoidance of sites, as appropriate. Based on current research, it is known that seven NRHP-eligible linear sites intersect one or more of the alternative alignments, and 17 sites are in proximity to one or more of the alignments. If federal funds are involved and it is subsequently determined that one or more NRHP-eligible cultural resources cannot be avoided by project activities, a Memorandum of Agreement or Programmatic Agreement should be developed to resolve the adverse effect of the project to historic properties.

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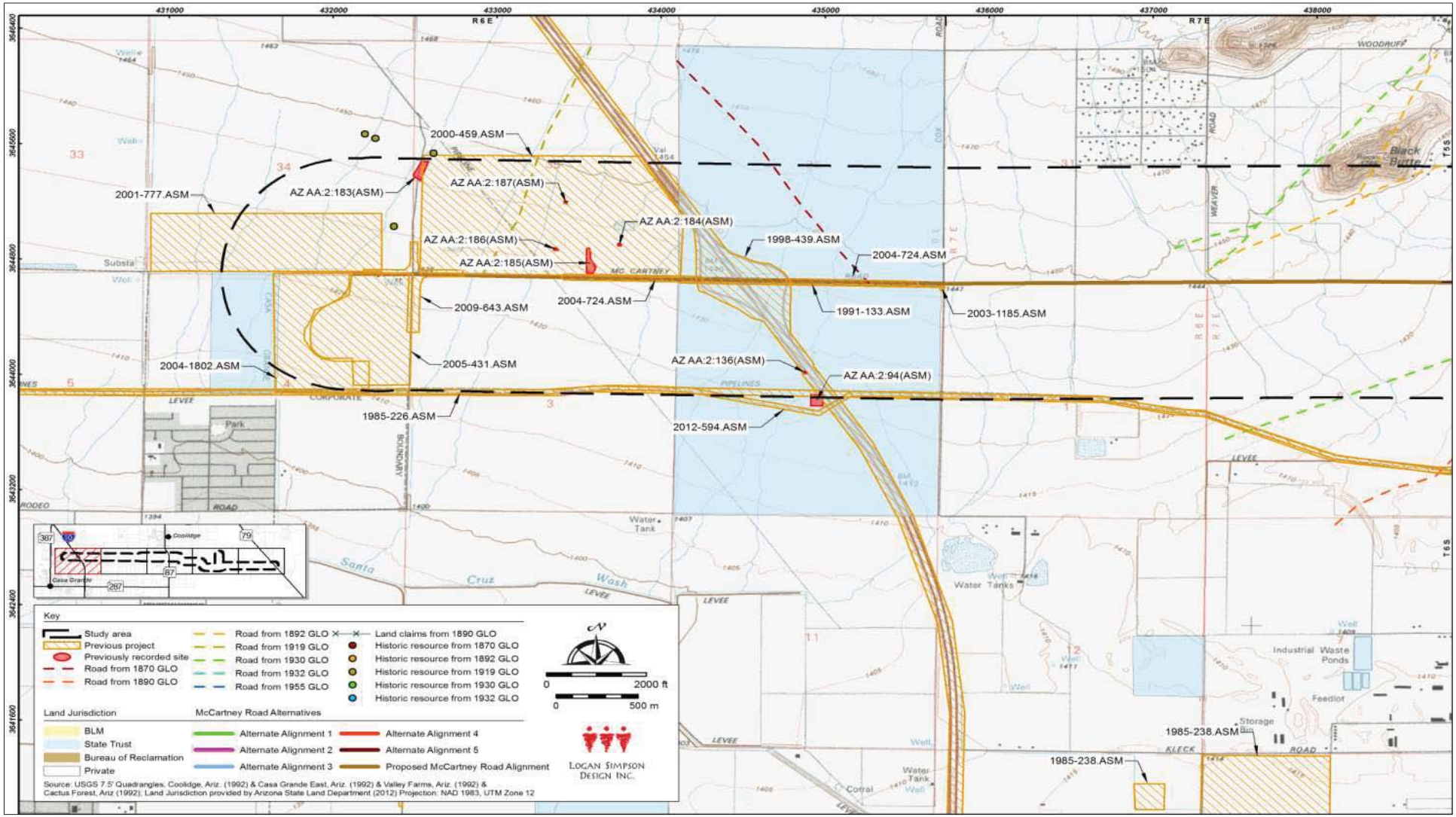
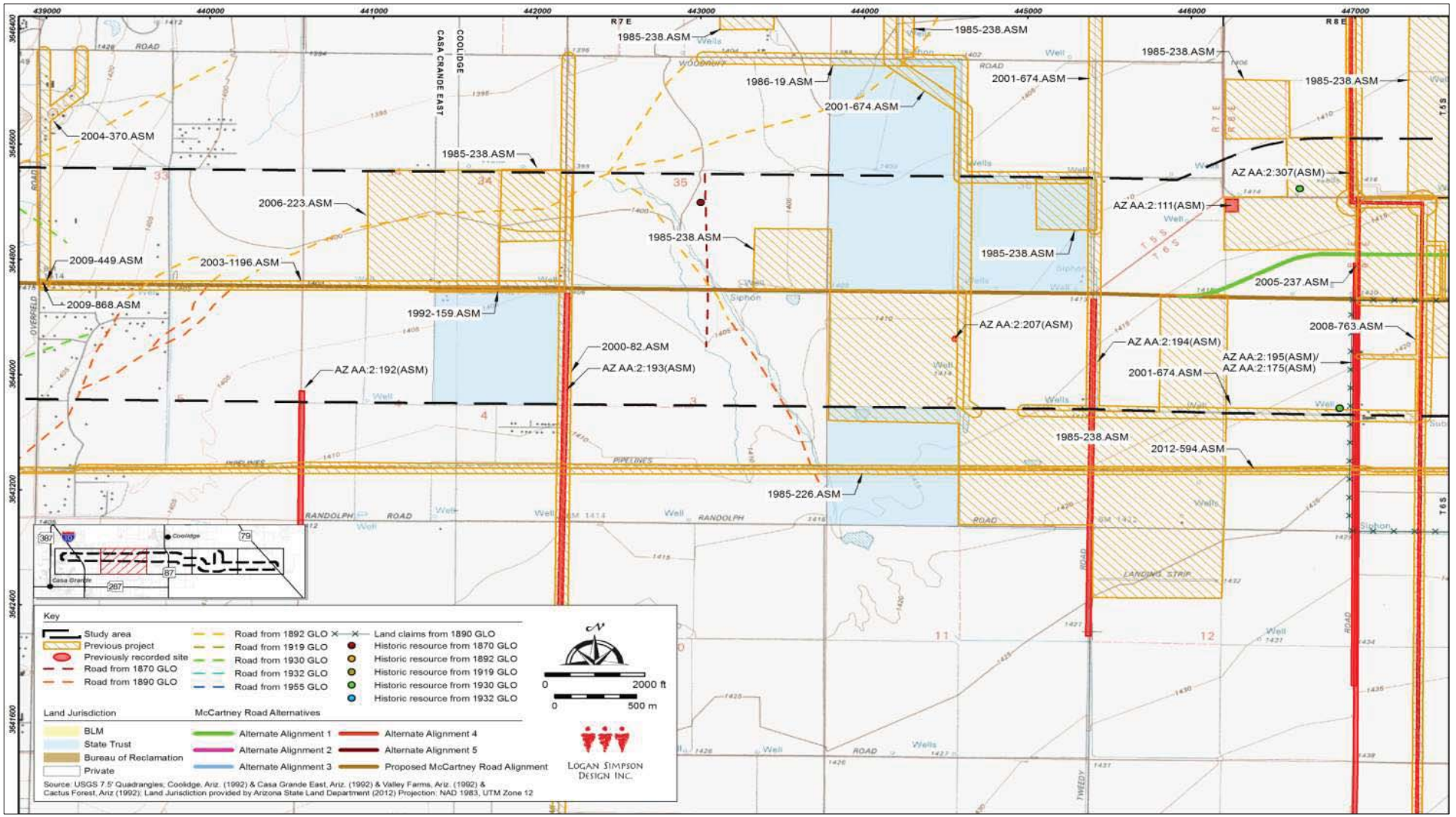
Appendices
Confidential Information

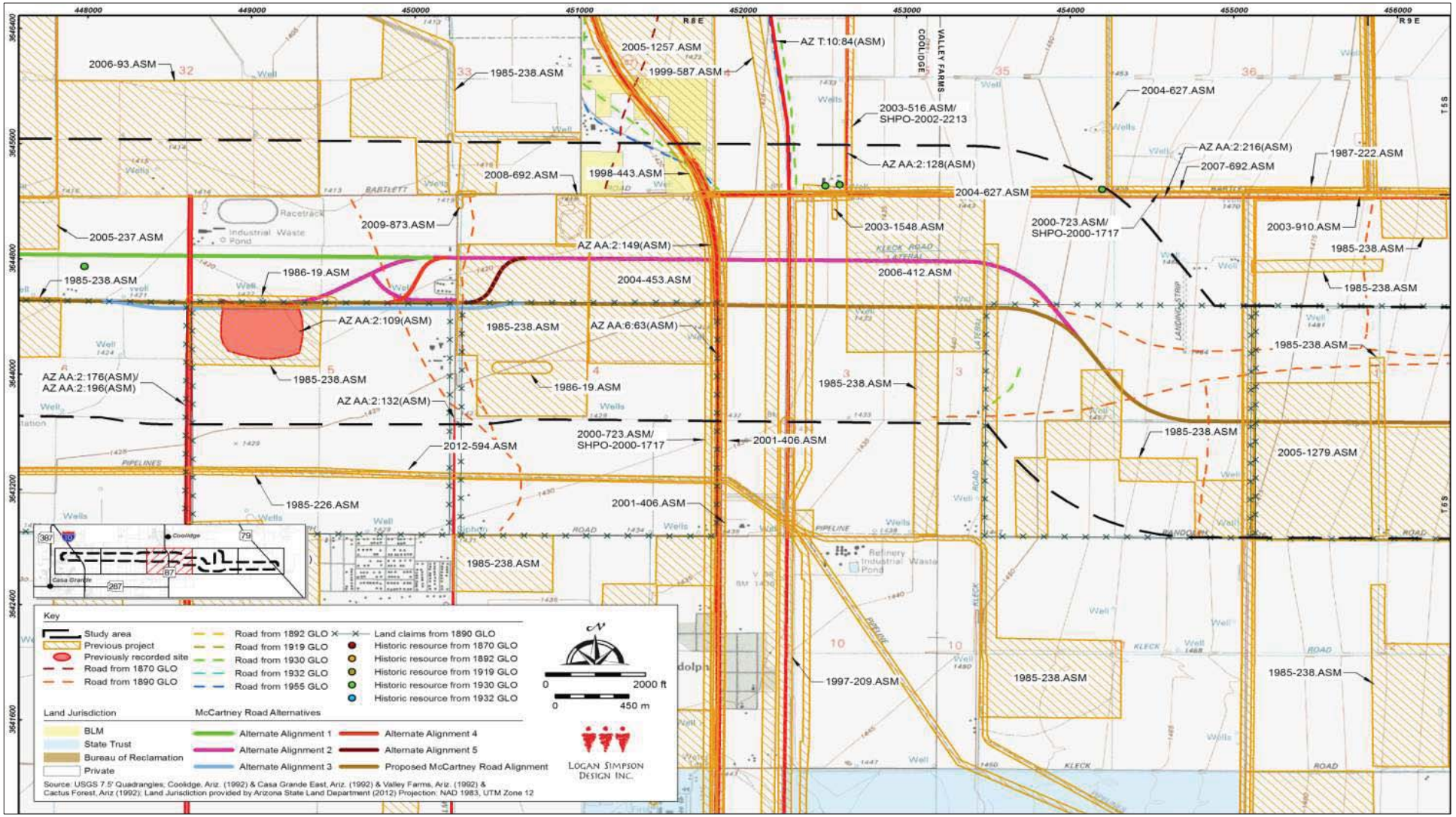
Appendix A.
Previous Research Maps



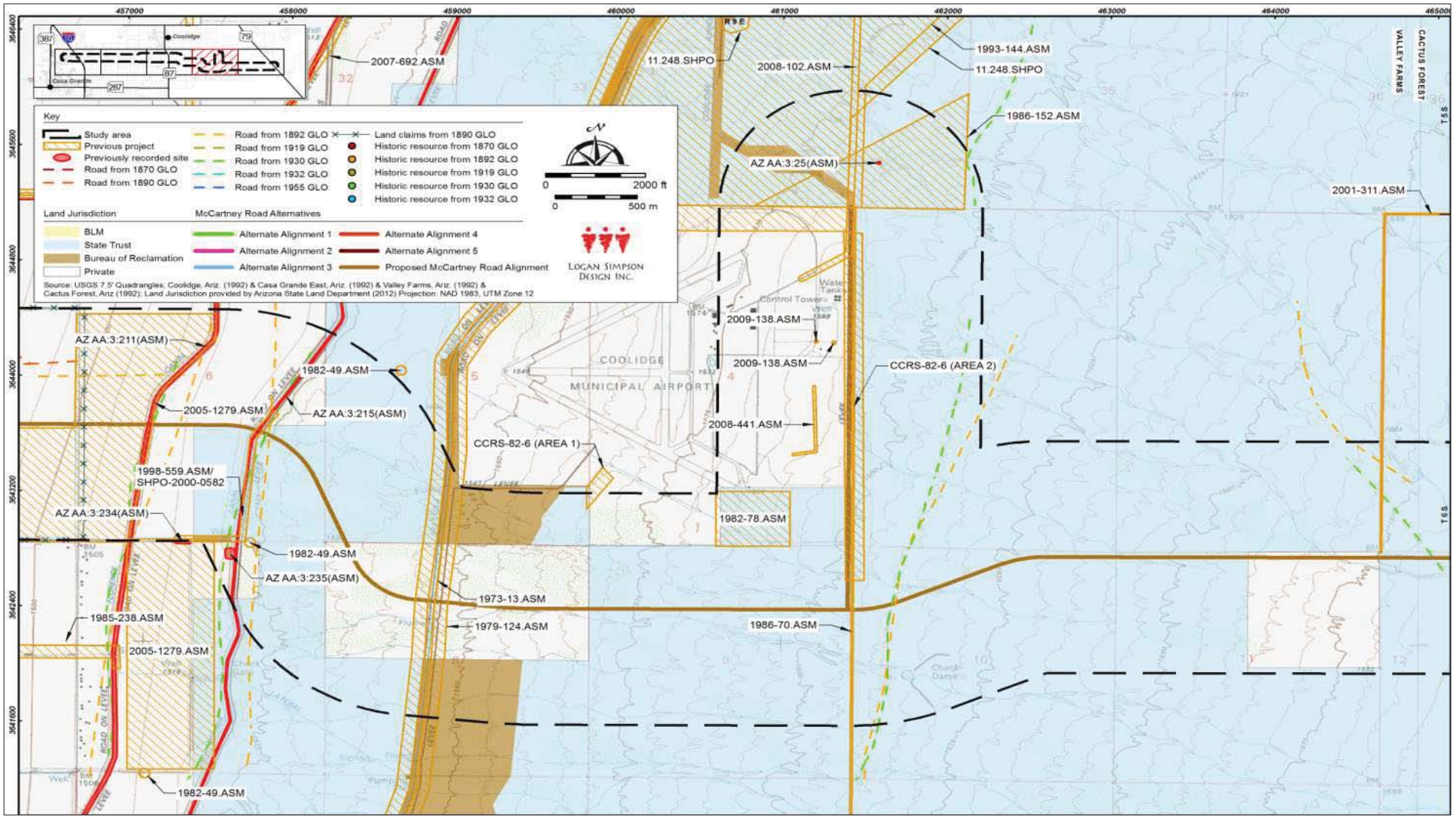
Appendix A. 1. Previous sites and projects along McCartney Road and Alternatives in Sections 34-36, T5S, R6E; Sections 31-32, T5S, R7E; Sections 1-4, T6S, R6E; Section 6, T6S, R7E (USGS 7.5' Casa Grande East, Ariz., 1992)



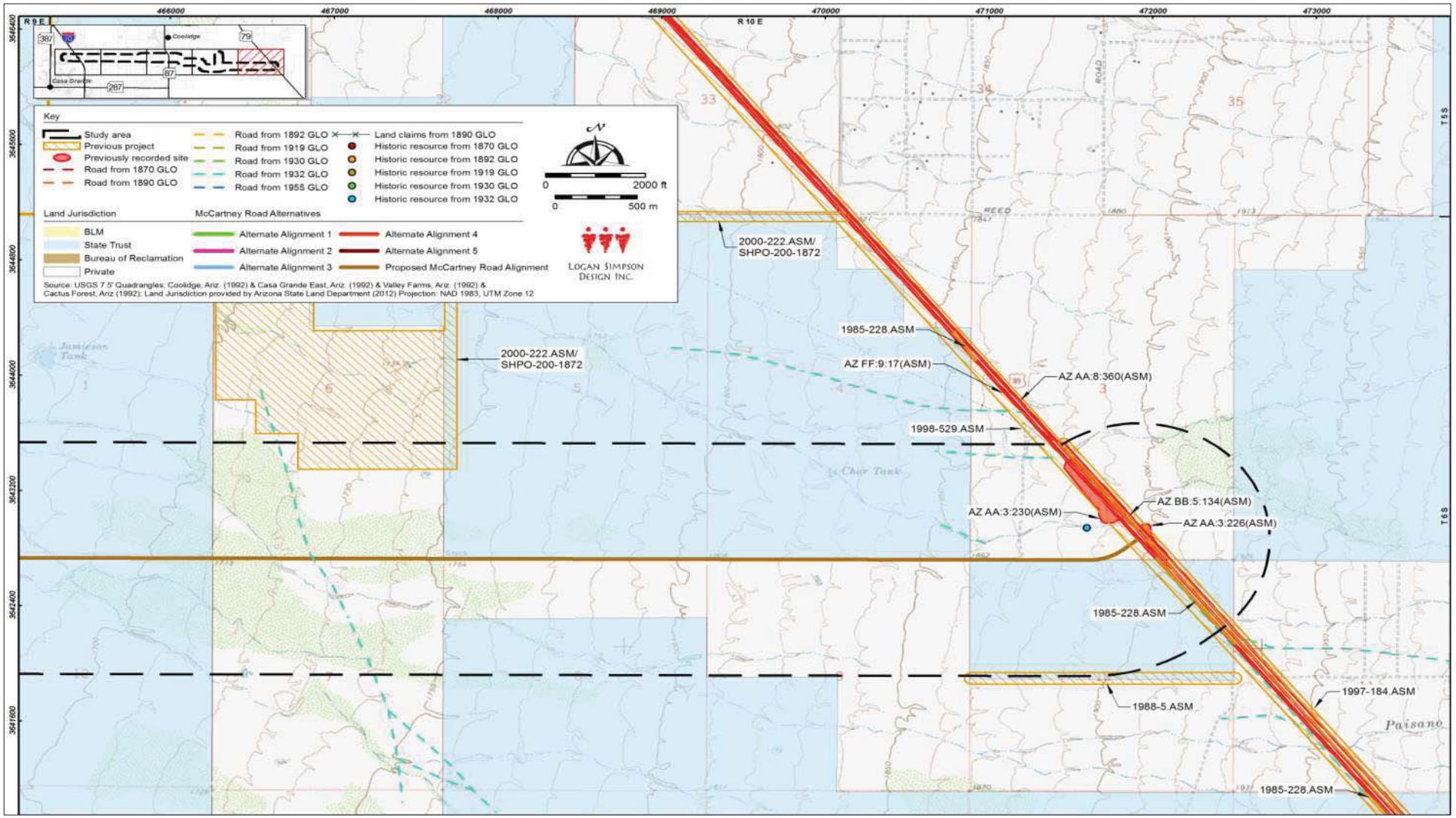
Appendix A. 2. Previous sites and projects along McCartney Road and Alternatives in Sections 32-36 T5S, R7E; Section 31, T5S, R8E; Section 1-6, T6S, R7E; Section 6, T6S, R8E (USGS 7.5' Casa Grande East, Ariz., 1992; Coolidge, Ariz., 1992)



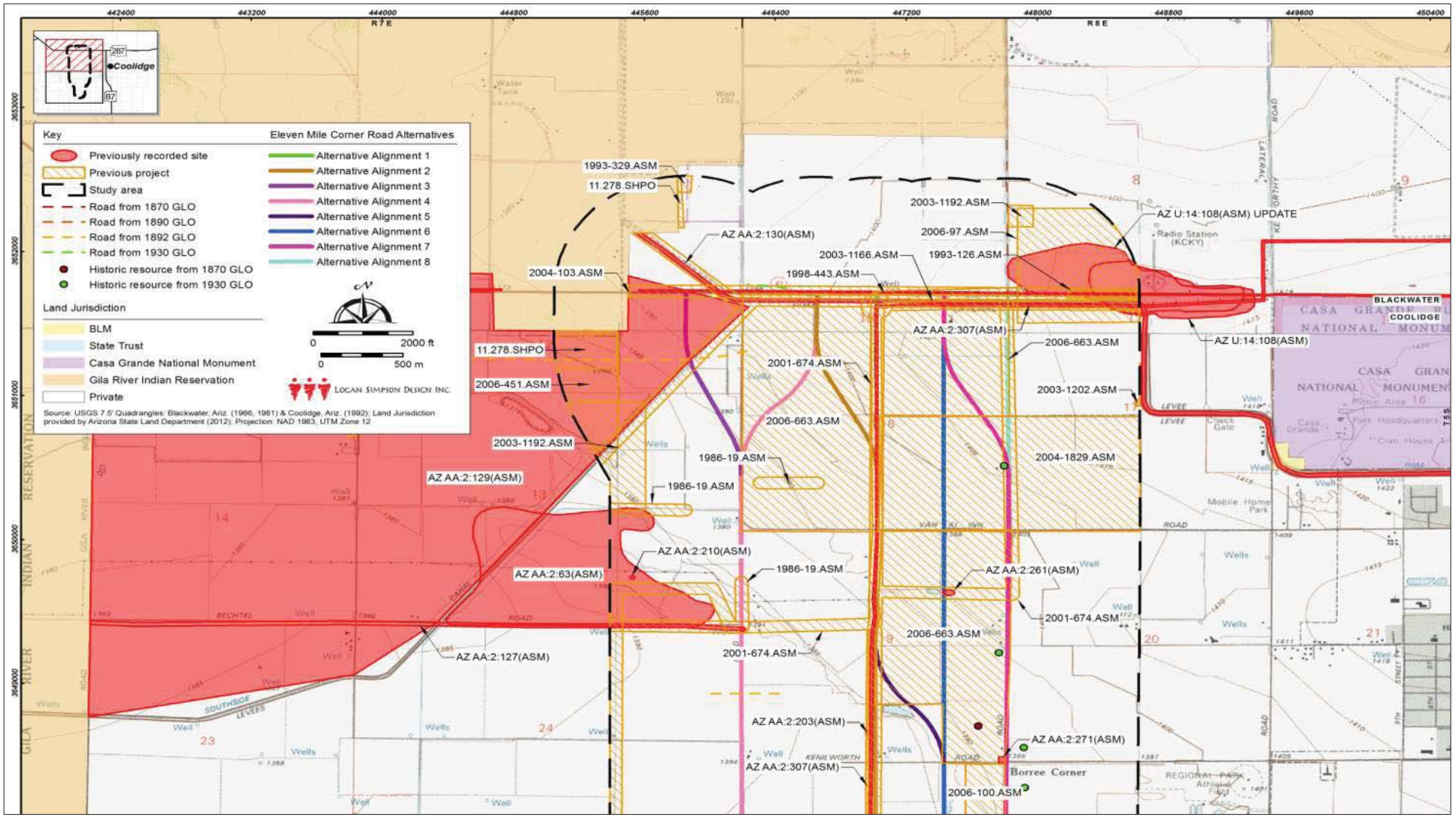
Appendix A. 3. Previous sites and projects along McCartney Road and Alternatives in Sections 31-35, T5S, R8E; Sections 1-6, T6S, R8E (USGS 7.5' Coolidge, Ariz., 1992; Valley Farms, Ariz., 1992)



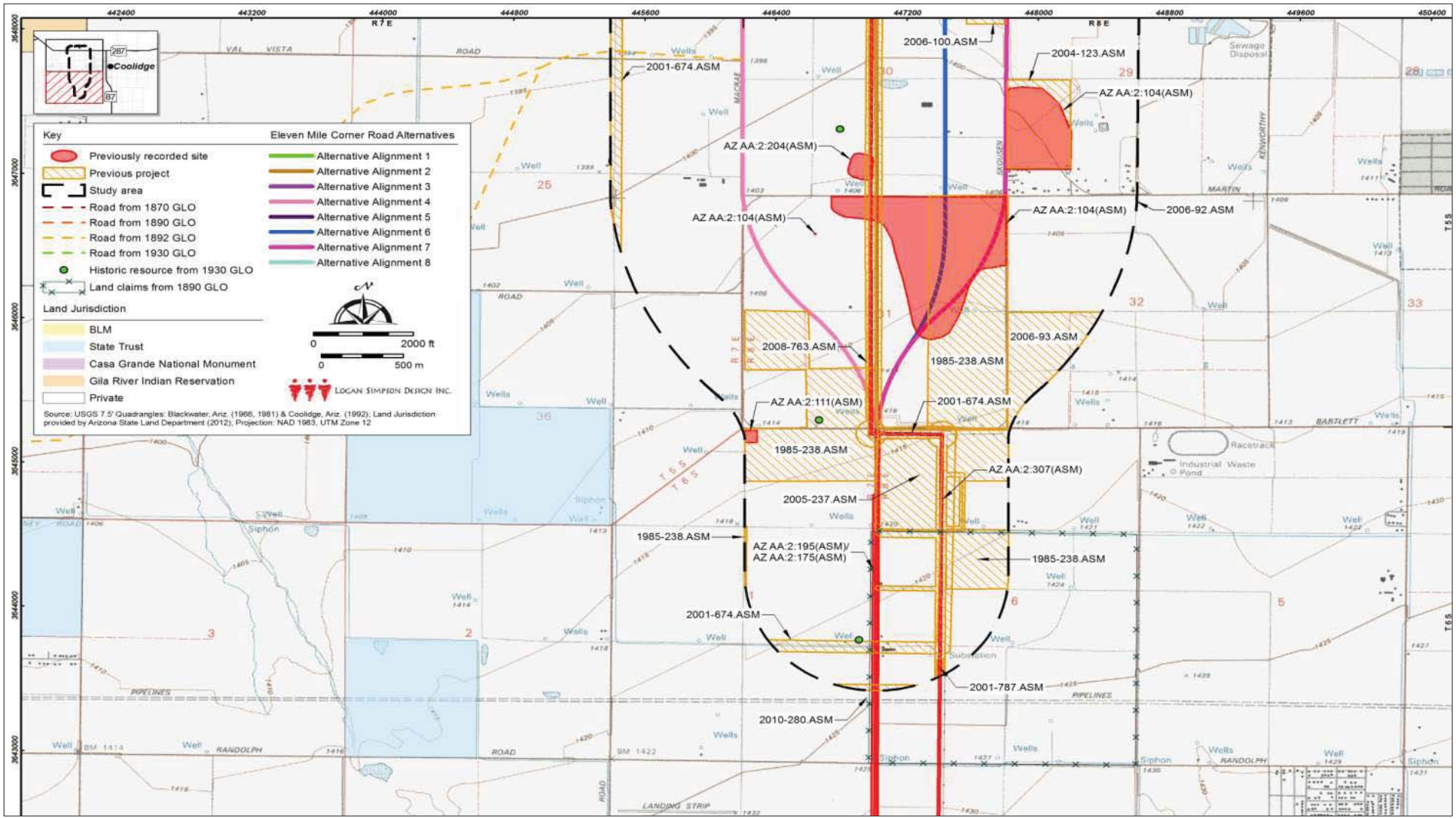
Appendix A. 4. Previous sites and projects along McCartney Road and Alternatives in Sections 34-35, T5S, R9E; Sections 1 & 12, T6S, R8E; Sections 1-12, T6S, R9E (USGS 7.5' Valley Farms, 1992; Cactus Forest, Ariz., 1992)



Appendix A. 5. Previous sites and projects along McCartney Road and Alternatives in Sections 1 & 12, T6S, R9E; Sections 2-11, T6S, R10E (USGS 7.5' Cactus Forest, Ariz., 1992)



Appendix A. 6. Previous sites and projects along Eleven Mile Corner Road and Alternatives in Sections 12-13, 24-25, T5S, R7E; Sections 7-8, 17-20, 29-30, T5S, R8E (USGS 7.5' Blackwater, Ariz., 1966, 1981; Coolidge, Ariz., 1992)



Appendix A. 7. Previous sites and projects along Eleven Mile Corner Road and Alternatives in Sections 24-25, 36, T5S, R7E; Sections 29-32, T5S, R8E; Section 1, T6S, R7E; Section 6, T6S, R8E (USGS 7.5' Coolidge, Ariz., 1992)

Appendix G: Resource Worksheets

WATER RESOURCES WORKSHEET

Provide the following information, based on literature search, aerial photo and topographical map review (no field work). The information can be presented on a map.

1.	Surface Waters			
		a.	Watercourse	Several un-named irrigation ditches and laterals, Un-named Irrigation canal owned by Hohokam Irrigation, Pima Lateral, Florence Canal, Florence Casa Grande Canal, Salt-Gila Aqueduct
			Drainages	Several un-named ephemeral drainage courses and North Branch Santa Cruz Wash. The north/south corridor is in the Coolidge Watershed, the east/west corridor is in 3 watersheds from west to east: Sacaton Mountain, Coolidge, and Florence.
			Water bodies (lakes, ponds, wetlands, etc.)	Only a few small ponds indentified in the study area.
2.	Water Quality (section 401/402)			
		a.	Unique and Impaired Waters	None identified in the vicinity of the corridors
3.	Groundwater			
		a.	Active Management Areas	Pinal Active Management Area
		b.	Sole source aquifers	None Identified
		c.	Wells	Approximately 300 within 1 mile of the corridors
4.	Potential Permitting Requirements			Pinal County Floodplain Area Use Permit, FEMA CLOMR/LOMR, USACE Section 404 permit, ADEQ AZPDES

SENSITIVE BIOLOGICAL RESOURCES ANALYSIS WORKSHEET

Provide the following information based on literature review/database research and phone/written correspondence (no field work).

1.	Habitat description			
		a.	Vegetation types	Wildlife habitat is limited along and adjacent to the Coolidge PEL study area because of commercial, residential, and agricultural development. The *Pinal County Open Space and Trails Master Plan* mapped wildlife habitat values in the county and rated most of the corridor as low quality habitat. However, at the east end of the PEL study area the plan has rated the wildlife habitat as medium quality. The habitat at this location transitions to native Sonoran Desert Vegetation that provides higher quality wildlife habitat. The Arizona Game and Fish online HabiMap also rated wildlife habitat on the east end of the corridor as moderate to higher quality (AGFD 2013). Native vegetation on the east end of the project area consists of Sonoran desert scrub consisting primarily of creosote bush (*Larrea tridentata*) and white or triangle leaf bursage (*Ambrosia* sp.). The Sonoran vegetation may also include pockets of mixed cactus although the topography favored by this vegetation community is higher elevation gradients. The mixed cactus vegetation communities tend to be more diverse consisting of saguaro cacti (*Carnegiea gigantea*) with cholla (*Cylindropuntia* sp.), barrel cacti (*Ferocactus* sp.), brittlebush (*Encelia farinosa*), creosote bush, mesquite (*Prosopis* sp.), and ironwood (*Olneya tesota*). Both of these native Sonoran vegetation communities provide higher quality wildlife habitat for mammal, avian, and reptile species. The *Pinal County Open Space and Trails Master Plan* identifies most of the PEL study area as a “fracture zone”. Fracture zones consist of fragmented habitat between habitat blocks. These fractured zones restrict wildlife movement and use of the fragmented habitat within these zones. Fractured zones consist of urbanized and developed lands, transportation corridors, and large industrial areas. For these fracture zones to become more valuable wildlife habitat significant restoration of habitat must occur. The study also identified habitat blocks that are defined as habitat areas expected to remain wild for at least 50 years. In Pinal County, habitat blocks are located west and

				east of the City of Coolidge. Within the study corridor, the medium quality habitat on the eastern fringe of the PEL study area would be considered a habitat block.
		b.	Infrastructure data from the Nature Conservancy	A review of the Nature Conservancy's online map, "Arizona: Places We Protect," indicates that the nearest TNC preserve is the Aravaipa Canyon Preserve, located approximately 50 miles east of the Coolidge Airport, and thus 50 miles east of the PEL study area.
		c.	AZ Game and Fish Dept. HabiMap data	HabiMap data for the study area were extracted from website and listing provided by Kelly Wolff-Kraute, Habitat Program Manager for the AZ Game and Fish Department.
2.	Threatened and Endangered Species			
		a.	Identify reported listed species that are threatened, endangered, proposed or candidates, or any designated critical habitat in or adjacent to the study area or corridor	The *Pinal County Open Space and Trails Master Plan* (2007) did not identify critical habitat for federal listed species in the PEL study area. 12 Endangered species, 1 Threatened Species, and 5 Candidate Species are believed to occur in Pinal County, but not in or adjacent to the study area. Of these 18 species, 7 are fish. The PEL study area does not include any lakes or rivers. The reported listed species are specifically identified in the table which follows this worksheet.
		b.	Did coordination with the USFWS occur?	No. See attached letter at end of this worksheet.
3.	Federal Sensitive Species			
		a.	Does the study area or corridor include Federal land?	No.
		b.	If so, identify the land-management agencies' sensitive species in or adjacent to the study area.	Not applicable because there are no tribal lands in the study area.
		c.	Did coordination with the Federal land-managing agency occur?	
4.	Tribal Sensitive Species			
		a.	Does the study area or corridor include tribal land?	No.
		b.	If so, identify the Tribe's sensitive species in or adjacent to the study area.	Not applicable because there are no tribal lands in the study area.
		c.	Did coordination with the Tribe occur?	

5.	Arizona Species of Concern			
		a.	The AZ Game & Fish Dept has requested consideration of the following Arizona Species of Concern for the study area or corridor: (no request was made)	The Arizona Department of Game and Fish online database identified the following two special status species occurring within two miles of the project corridor: • Western burrowing owl (*Athene cunicularia hypugaea*) Desert sucker (*Catostomus clarkii*) – this is a fish found in the Gila River, north of the PEL study area. The PEL study corridors do not cross any river.
		b.	Does the Arizona Wildlife Linkages Assessment indicate that the study area or corridor contains a potential wildlife linkage zone? Include a review of the more detailed county Wildlife Linkages Assessments, if available.	A coalition of state and federal agencies, and private-non-profit organizations produced the *Arizona's Wildlife Linkages Assessment* that identifies wildlife connectivity areas in the state. The Arizona Department of Transportation was a participant in this planning process. The closest potential linkage corridor to the PEL study area is the CAP Canal. This canal is located at the eastern boundary of the study area and has been identified as a potential wildlife linkage zone. The CAP Canal is fenced on both sides for the entire length of the canal to prevent wildlife from accessing the canal. During the early operational years of the canal, significant deer and other wildlife mortality occurred in the canal, and this resulted in the installation of the fencing. Native vegetation communities exist along the canal in Pinal County and wildlife crossing areas have been built to facilitate movement of wildlife across the canal. These attributes classify the canal a potential wildlife linkage zone.

List of Federal Candidate, Threatened, and Endangered Species in Pinal County

Species	Status	Habitat
Arizona Hedgehog Cactus (*Echinocereus triglochidiatus* var. *arizonicus*)	Endangered	Ecotone between interior chaparral and madrean evergreen woodland.
Nichol Turk's Head Cactus (*Echinocactus horizonthalonius* var. *nicholli*)	Endangered	Sonoran desert scrub vegetative community.
Desert pupfish (*Cyprinodon macularius*)	Endangered	Shallow springs, small streams, and marshes. Will tolerate saline and warm water.
Gila chub (*Gila intermedia*)	Endangered	Found in pools, springs, cienegas, and streams
Gila topminnow (*Poeciliopsis occidentalis occidentalis*)	Endangered	Found in vegetated shallows of small streams, springs, and cienegas
Loach minnow (*Tiaroga cobitis*)	Endangered	Benthic species of small to large streams with swift shallow water.
Razorback sucker (*Xyrauchen texanus*)	Endangered	Riverine and lacustrine areas, favors slow moving water or backwater.
Spikedace (*Meda Fulgida*)	Endangered	Medium to large streams with moderate to swift velocity water. Requires cobble and gravel substrate.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	Endangered	Cottonwood/willow and tamarisk vegetation along rivers and streams.
Yuma clapper rail (*Rallus longirostris yumanensis*)	Endangered	Requires marsh habitat with dense emergent vegetation.
Lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*)	Endangered	Desert scrub habitat with agave and columnar cacti for food sources.
Ocelot (*Leopardus pardalis*)	Endangered	Desert scrub habitat in Arizona.
Mexican spotted owl (*Strix occidentalis lucida*)	Threatened	Prefers older forests of mixed ponderosa pine and gambel oak.
Yellow-billed cuckoo (*Coccyzus americanus*)	Candidate	Large blocks of riparian woodlands consisting of cottonwood, willow, or tamarisk.
Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*)	Candidate	Inhabits Sonoran Desert scrub with sandy soils and sparse gravel.
Northern Mexican gartnersnake (*Thamnophis eques megalops*)	Candidate	Cienegas, stock tanks, and large-river riparian woodlands and forests.
Sonoran Desert Tortoise (*Gopherus morafkai*)	Candidate	Prefers rocky hillsides and bajadas of Mohave and Sonoran desert scrub. May use desert grassland, juniper woodland, and interior chaparral.
Roundtail chub (*Gila robusta*)	Candidate	River and stream habitat with deep pools.

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV
REGION VI, 7200 E. UNIVERSITY DRIVE, MESA, AZ 85207

April 22, 2013

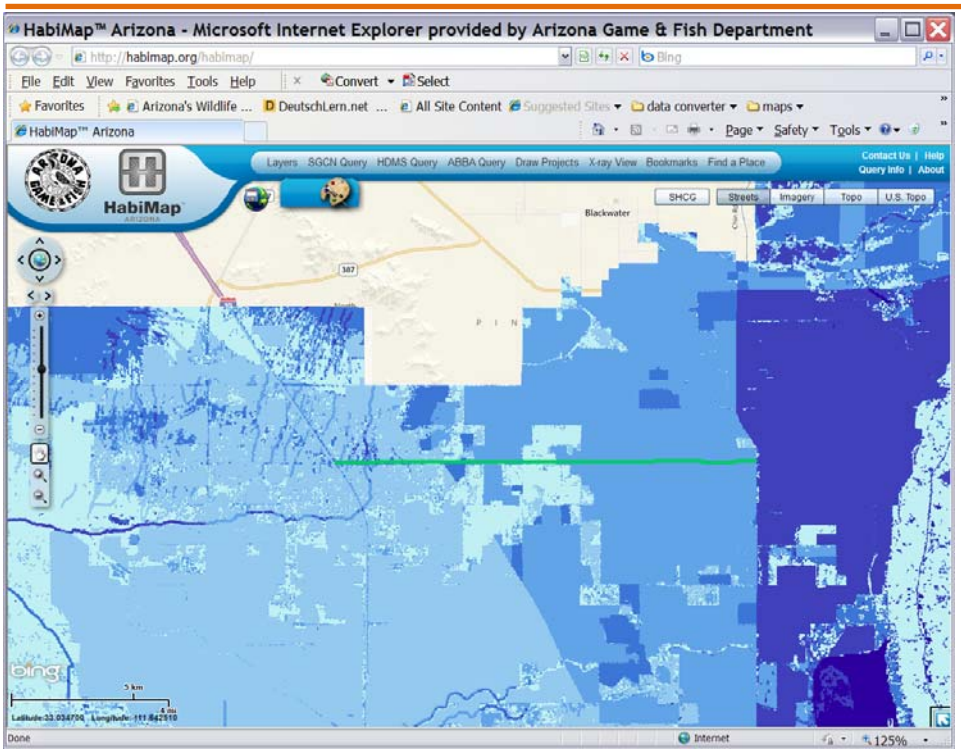
Robert Belford
Wilson & Company
999 18th Street, Suite 2600
Denver, CO 80202

RE: City of Coolidge-McCartney Road-Pinal County

Dear Mr. Belford,

The Arizona Game and Fish Department (Department) has received and reviewed your request for the City of Coolidge, McCartney Road improvements project. The Department understands the proposed corridor utilizes existing roadways in mostly developed areas. We have provided information from our online tools, including the Environmental On-Line Review tool and HabiMap™ for species and habitats within your study area for additional consideration as this project develops. The receipt from the Environmental On-Line Review tool is provided as an attachment.

The below represents an initial query of the project area through our HabiMap™ online tool (http://habimap.org/). We have provided a map using the HabiMap™ tool for representation of the species and habitats conservation potential and recreational and economic importance (attached) (the dark blue areas being of higher potential/importance at a coarse scale) the list of the Species of Greatest Conservation Need (SGCN) for Arizona (the list excludes plants and insects). The SGCN are species that the State has identified as most in need of conservation actions in Arizona's State Wildlife Action Plan (SWAP), and those that are indicative of the diversity and health of the State's wildlife. Many of these species are currently listed as Threatened or Endangered under the ESA, and many have low and declining populations. The Department's newest tool, the HabiMap (http://www.azgfd.gov/w_c/WildlifePlanning.shtml) is intended to display the spatial components of the SWAP and can be used to view the potential habitat distributions of SGCN, as well as economically important game species, and information from Arizona's Breeding Bird Atlas. Within HabiMap you can also view the Species and Habitat Conservation Guide (SHCG). The guide can be used to visually explore how wildlife is distributed throughout the State and where conservation can have the greatest impact. However, the Department notes that all habitat types are inherently valuable to Arizona's natural heritage and worthy of conservation actions. The Department recommends consideration of the SGCN species as part of the ecosystem and biodiversity overview and additional information related to the stressors that are affecting wildlife, conservation actions, and each species vulnerability ratings (Appendix E) can be found in Arizona's State Wildlife Action Plan: 2012-2022. Please refer to the SWAP document for additional information @ http://www.azgfd.gov/w_c/swap.shtml.



Common	Scientific	Tier
Abert's Towhee	Melozone aberti	1b
American Bittern	Botaurus lentiginosus	1b
Antelope Jackrabbit	Lepus alleni	1b
Arizona Bell's Vireo	Vireo bellii arizonae	1b
Arizona Myotis	Myotis occultus	1b
Arizona Pocket Mouse	Perognathus amplus	1b
Bald Eagle	Haliaeetus leucocephalus	1a
California Leaf-nosed Bat	Macrotus californicus	1b
Cave Myotis	Myotis velifer	1b
Ferruginous Hawk	Buteo regalis	1b
Gila Monster	Heloderma suspectum	1a
Gila Woodpecker	Melanerpes uropygialis	1b
Gilded Flicker	Colaptes chrysoides	1b
Golden Eagle	Aquila chrysaetos	1b
Goode's Horned Lizard	Phrynosoma goodei	1b
Greater Western Mastiff Bat	Eumops perotis californicus	1b
Harris' Antelope Squirrel	Ammospermophilus harrisii	1b
Kit Fox	Vulpes macrotis	1b
Le Conte's Thrasher	Toxostoma lecontei	1b
Lesser Long-nosed Bat	Leptonycteris yerbabuenae	1a
Lincoln's Sparrow	Melospiza lincolnii	1b
Mexican Free-tailed Bat	Tadarida brasiliensis	1b

Pale Townsend's Big-eared Bat	Corynorhinus townsendii pallescens	1b
Pocketed Free-tailed Bat	Nyctinomops femorosaccus	1b
Regal Horned Lizard	Phrynosoma solare	1b
Savannah Sparrow	Passerculus sandwichensis	1b
Savannah Sparrow	Passerculus sandwichensis	1b
Sonora Mud Turtle	Kinosternon sonoriense sonoriense	1b
Sonoran Coralsnake	Micruroides euryxanthus	1b
Sonoran Desert Toad	Bufo alvarius	1b
Spotted Bat	Euderma maculatum	1b
Tiger Rattlesnake	Crotalus tigris	1b
Tucson Shovel-nosed Snake	Chionactis occipitalis klauberi	1a
Variable Sandsnake	Chilomeniscus stramineus	1b
Western Burrowing Owl	Athene cunicularia hypugaea	1b
Western Red Bat	Lasiurus blossevillii	1b
Wood Duck	Aix sponsa	1b
Yellow Warbler	Dendroica petechia	1b
Yuma Clapper Rail	Rallus longirostris yumanensis	1a
Yuma Myotis	Myotis yumanensis	1b

The Department appreciates the opportunity to provide review and comment on these roadway improvement projects. If you have any questions regarding these comments or require additional information, please contact me @ kwolff-krauter@azgfd.gov or 480-324-3550.

Sincerely,

Kelly Wolff-Krauter
Habitat Program Manager, Mesa

Attachment

Cc: Laura Canaca, Project Evaluation Program Supervisor
Rod Lucas, Regional Supervisor

SECTION 4(f) and 6(f) RESOURCES WORKSHEET

Consider land takings, temporary occupancy, and constructive use (e.g., noise impairment, proximity, access restriction).

For Section 4(f) resources, based on literature research, list the property by name, location (include on a map) and ownership or administration.	
• 4(f) Public park	The PEL study corridors are not in close proximity to any public park.
• 4(f) Recreational lands	The PEL study corridors are not in close proximity to any recreational land.
• 4(f) Wildlife refuge	The PEL study area includes no wildlife refuge.
• 4(f) Waterfowl refuge	The PEL study area includes no waterfowl refuge.
• 4(f) Historic site	See Appendix F for Class 1 Archeological Inventory.
Based on literature search, list the property name, type, location, and ownership or administration of Section 6(f) resources - and depict them on a map.	Improvements in the PEL study corridors would not take land or otherwise impair any Section 6(f) resource.

Table G-1. 2010 Racial and Ethnic Demographics

Area	Total population	White		African American		Native American		Asian		Pacific Islander		Other Race		Two or more races		Hispanic* ETHNICITY	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
CT 8.02, BG 1	1,079	853	79.1%	26	2.4%	31	2.9%	4	0.4%	0	0.0%	123	11.4%	42	3.9%	326	30.2%
CT 10, BG 2	1,274	745	58.5%	74	5.8%	98	7.7%	1	0.1%	0	0.0%	296	23.2%	60	4.7%	326	25.6%
CT 11, BG 4	2,524	1,665	66.0%	276	10.9%	77	3.1%	47	1.9%	6	0.2%	355	14.1%	98	3.9%	904	35.8%
CT 12, BG 1	2,403	1,764	73.4%	101	4.2%	109	4.5%	15	0.6%	1	0.0%	318	13.2%	95	4.0%	805	33.5%
CT 12, BG 2	2,140	1,573	73.5%	114	5.3%	63	2.9%	2	0.1%	1	0.0%	330	15.4%	57	2.7%	670	31.3%
CT 13.03, BG 2	735	597	81.2%	5	0.7%	18	2.4%	4	0.5%	0	0.0%	101	13.7%	10	1.4%	271	36.9%
Study Area Total	**10,155**	**7,197**	**70.9%**	**596**	**5.9%**	**396**	**3.9%**	**73**	**0.7%**	**8**	**0.1%**	**1,523**	**15.0%**	**362**	**3.6%**	**3,302**	**32.5%**
City of Coolidge	11,825	7,418	62.7%	928	7.8%	670	5.7%	115	1.0%	13	0.1%	2,095	17.7%	586	5.0%	4962	42.0%
Pinal County	375,770	272,013	72.4%	17,215	4.6%	20,949	5.6%	6,492	1.7%	1,565	0.4%	434,215	115.6%	14,323	3.8%	106,977	28.5%

* Hispanic refers to ethnicity and is derived from the total population, not as a separate race; i.e., it is calculated differently from the other columns in this table.
Gray-shaded areas denote percentages notably higher or lower than comparison area percentages.

Table G-2. 2010 Total Minority, Age 60 Years and Over, Below Poverty Level, Disabled, and Female Head of Household Populations

Area	Total population	Total Minority[a]		Age 60 years or over		Total population for whom disabled is determined	Disabled		Total population for whom poverty is determined	Below Poverty		House-holds	Female Head of Household	
		#	%	#	%		#	%		#	%		#	%
CT 8.02, BG 1	1,079	386	35.8%	236	21.9%	301	74	24.7%	759	67	8.8%	409	25	6.1%
CT 10, BG 2	1,274	820	64.4%	163	12.8%	358	109	30.4%	1,228	351	28.6%	389	59	15.2%
CT 11, BG 4	2,524	1,327	52.6%	193	7.6%	266	60	22.5%	2,273	343	15.1%	746	84	11.3%
CT 12, BG 1	2,403	1,016	42.3%	432	18.0%	1,813	453	25.0%	2,064	418	20.2%	814	62	7.6%
CT 12, BG 2	2,140	837	39.1%	808	37.8%	1,617	404	25.0%	1,838	372	20.2%	816	28	3.4%
CT 13.03, BG 2	735	291	39.6%	156	21.2%	212	52	21.4%	696	38	5.4%	267	14	5.2%
Study Area Total	**10,155**	**4,677**	**46.1%**	**1,988**	**19.6%**	**4,567**	**1,152**	**25.2%**	**8,858**	**1,589**	**17.9%**	**3,441**	**272**	**7.9%**
City of Coolidge	11,825	6,672	56.4%	1,782	15.1%	7,154	1,959	27.4%	10,315	2,125	20.6%	3,947	384	9.7%
Pinal County	375,770	155,284	41.3%	74,125	19.7%	153,427	35,207	22.9%	324,948	46,508	14.3%	125,770	8,462	6.7%

Source: U.S. Department of Commerce, Bureau of the Census. # = number of persons % = percentage CT = Census Tract BG = Block Group
A "Total Minority" is composed of all people who consider themselves non-white racially plus those who consider themselves to be white and Hispanic.