

# Federal Highway Administration and Arizona Department of Transportation Environmental Assessment Guidelines

## Introduction

The basic function of an environmental assessment (EA) is to help the Federal Highway Administration (FHWA)/Arizona Department of Transportation (ADOT) decide whether an environmental impact statement (EIS) is needed. Therefore, an EA should address only those resources or features that the FHWA or ADOT decides will have a likelihood of being significantly affected. An EA should be concise, and not contain long descriptions or detailed information that may have been gathered or analyzed as part of evaluating a proposed action. To minimize length, an EA should use quality maps and exhibits, references to and summaries of background data and technical analyses that support concise discussions of the alternatives and their impacts (incorporate technical documents/information by reference).

## General Directions

- Include all tracking numbers – example: full TRACs, federal number
- Make sure the study area is large enough to encompass the entire project action and formulate realistic expectations of the size and location of the project footprint. Present this as a graphic to the project team early in the project development process. Seek updates from the project team on a regular basis to verify environmental studies are adequately addressing the scope of each alternative of the proposed action.
- Is this project in the State Transportation Improvement Program/Transportation Improvement Program (STIP/TIP)? Be sure to disclose because a finding of no significant impact (FONSI) cannot be issued unless the project is in the STIP.
- The word “would” is used throughout any draft version of the EA. Only the final should be revised using “will” or “shall.”
- Color maps and graphics can be used in an EA, however, text, maps, and graphics are to be clear, readable, and reproducible in black and white.
- Maps should convey pertinent information – like all the roads and other locations discussed or referenced in the document. All maps should adhere to basic cartography standards and include a north arrow, scale, legend, and reference a source if applicable.
- Insert additional maps beyond the state and vicinity, such as land use or Section 4(f) resources map, if needed to help present complex and detailed information concisely.
- Provide sufficient detail for the reader to follow the discussion and understand the decisions made. Do not, however, provide excessive detail that would lengthen the document or could confuse readers or lead to a tangential discussion that does not help explain the impacts of the project. Be as clear and concise as possible.

- Consultant logos are not to be used, nor should consultant names be used in the document. When using a reference, cite only the author and year the report was completed, or the agency that sponsored the report if specific author(s) are unknown.
- Quality assurance/quality control (QA/QC) will be completed by the preparer on all documents prior to submittal to ADOT. Fact-check all documents and ensure information is consistent throughout all sections of the document.
- Complete the QA/QC Review Form (can be found on ADOT EPG website – [www.adotenvironmental.com](http://www.adotenvironmental.com)) and indicate the review process used for each submittal. Include signatures of those responsible for reviewing and approving the document for submittal.
- Do not bind EA documents in any way until ready for public circulation. (Use binder clips only, no three-ring binders for submittal to ADOT and the FHWA.)
- Administrative drafts sent to EPG are to be double-spaced with line numbers. Line numbering starts anew at the top of each page.
- Draft submittals are to be hard copy with a CD and an electronic copy posted to the EPG FTP website.
- For EA submittals to FHWA, use the cover page format, the FHWA submittal letter format, and signature page format (can be found on ADOT EPG website).

The following sections are required in an EA.

## **Cover Page**

See the ADOT/FHWA sample cover page template on the EPG website.

## **Signature Pages**

- See the ADOT/FHWA signature page template on the EPG website.
- Provide two original signed signature pages.

## **Table of Contents**

- The table of contents must include each of the bold headings shown from this point forward in these guidelines, with the exception of issues eliminated from study (see that section below for further explanation).
- Include a list of figures, tables, and appendices at the end.
- List the major headings only (using two tiers – Roman Numeral and uppercase letter)

## **List of Acronyms and Abbreviations**

- List all acronyms and abbreviations used in the document
- See the sample acronyms and abbreviations list on the EPG website
- Spell out all acronyms and abbreviations the first time they are used in the document
- Do not use acronyms and abbreviations in headings or in mitigation measures. They can be spelled out in the text for a second time if it adds clarity to the discussion
- Do not use an acronym or abbreviation if the word is only used once

## **Mitigation Measures**

- All mitigation measures used within the document should be listed, verbatim, in this section.
- When writing mitigation measures, be sure you can answer the “who, what, when, where” of the action. Mitigation must be clear and enforceable. When appropriate, there should also be a performance specification so there is a means of verifying the contractor has met the obligations in the measure – need item to be biddable.
- List all mitigation in a bulleted list under the proper responsibility subheading
- Refer to the “Commonly Used Mitigation Measures” document, found on the EPG website ([http://www.adotenvironmental.com/EPG\\_Common/Documents\\_NEPA\\_CE.asp](http://www.adotenvironmental.com/EPG_Common/Documents_NEPA_CE.asp)), for typical ADOT mitigation measures for ADOT transportation projects.
- For each mitigation measure listed, include the page number where the measure can be found in the EA in parentheses at the end of the measure.
- Each individual mitigation measure in its entirety should be on one page, not continued onto a separate page if it does not fit.
- Mitigation measures for draft documents should use the word “would” while the final EA document should use “will/shall.”
- No acronyms or abbreviations should be used in the mitigation measures section.
- Standard specifications included as mitigation should be listed at the end of the mitigation measure section. Go to [http://www.azdot.gov/Highways/cns/CNS\\_Stored\\_specs.asp](http://www.azdot.gov/Highways/cns/CNS_Stored_specs.asp)

## **Introduction**

### ***Explanation of an Environmental Assessment***

#### **Use the following text:**

This environmental assessment (EA) for the [name of project] was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) with the Federal Highway Administration (FHWA) acting as the lead federal agency. The Arizona Department of Transportation (ADOT) participated with FHWA as a joint lead agency in the planning, preparation, and review of all technical and environmental documents. For the preparation of the EA, the [list of cooperating/participating agencies and why they accepted/connection to the project] accepted FHWA's invitation to be a cooperating/participating agency.

According to Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Section 1508.9), the basic function of an EA is to describe the need for a proposed action, alternatives for implementing or constructing a proposed action, and the environmental impacts of a proposed action and alternatives. The EA also provides a listing of agencies and persons consulted. This document serves as a tool for FHWA and ADOT in the identification of potentially significant impacts to social, economic, and environmental resources and measures that can mitigate these impacts.

Note: The list of those consulted should be in an appendix.

### ***Location***

- Describe the location of the proposed action.
- Include the specific limits of the project including the route, mileposts, and length in miles from the beginning to the end of the project.
- Define terms you will use throughout the document such as study area, project limits or project vicinity. Be consistent with how you use these terms throughout the document.
- Include state and vicinity maps.
- For state maps - Insert a map of Arizona designating the location of the project and at a minimum all major cities, counties, and highways. The map must include a scale, north arrow, and be discernibly reproducible with a black and white copier.
- For vicinity maps - Insert a map showing the location of the project. The project limits must be clearly marked (or if more than one alternative is being considered, the area that encompasses the range of alternatives). Include all streets and features specifically referenced in the document. The map must include a north arrow, scale, and be discernibly reproducible with a black and white copier.

## ***Project Background and Overview***

- Provide an introduction
- Section should provide details of the studies and policy that have lead the sponsorship of the proposed project. Most projects take years of “studying” and can have political issues so there should be a history that can be described. Because of parallel and overlapping planning efforts, some project backgrounds will be complex and their history will need to be organized chronologically from several different sources or agencies. Focus on background information that will help you identify the purpose and need that follows this section.
- Be mindful of what is background and what is appropriate for the purpose and need section.
- Identify and summarize ADOT studies (any feasibility study and/or corridor study) or the Metropolitan Planning Organization’s (MPO) planning efforts for this project.

## **Purpose and Need**

### ***Project Need***

The purpose and need is a critical element of the document. If the need is not obvious and/or it is unclear, don't proceed based on personal assumption or expect others on the project team to provide it to you. Be proactive and discuss need and purpose with the EPG Planner, FHWA, ADOT PM and consultant design manager when a project begins. Develop an outline for discussion of need and purpose with your project team. Some projects may necessitate several meetings to produce a quality statement.

- What is the problem that we are trying to solve? Or what conditions are we attempting to prevent from forming in the future?
- Clearly define and describe the purpose of and need for the proposed action.
- Be sure to cover the purpose and need generally for the entire project scope of work
- If capacity or congestion is an issue, a level of service (LOS) discussion should be included in this section, including the definition of LOS and the standard LOS photographs. Include a congestion management discussion if applicable.
- Do not include a discussion of solutions, answers or alternatives.
- Begin the discussion with the need for the project. Do not segment or divide the section based on purpose versus need. Don't conclude the chapter with a separate purpose section. End the chapter with a summary of the need discussed earlier in the chapter and then explain the purpose of the project.
- Do not repeat information that is in the introduction.
- Refer to the FHWA's Guidance on Elements of a Purpose and Need (<http://www.environment.fhwa.dot.gov/projdev/tdmelements.asp>), and the AASHTO handbook ([http://environment.transportation.org/environmental\\_issues/nepa\\_process/#bookmarksubPurposeandNeed](http://environment.transportation.org/environmental_issues/nepa_process/#bookmarksubPurposeandNeed)) for specific purpose and need guidance.

### ***Conformance with Regulations, Land Use Plans, and Other Plans***

- This section should be used to discuss regional plans (examples include COG/MPO or county plans) and land management agency land use plans.
- Discuss any memoranda of understanding (MOUs) or operating agreements that apply.
- Discuss any applicable legislation (can be local, state or federal)

- Do not include a list of all the environmental regulations or a list of required permits.

## **Alternatives**

Make sure to look at a reasonable range of alternatives, including various multimodal options as appropriate. This should be discussed early in the project development process with the project team. Use graphics in this section to avoid lengthy narratives describing alternatives and minimize the use of technical jargon.

### ***Alternatives Considered But Eliminated From Further Study***

- Include alternatives that do not meet the proposed action's purpose and need, or have been eliminated according to evaluation criteria such as cost.
- Different approaches to meet the proposed action's purpose and need within the same alignment are separate options, not separate alternatives. Options that are eliminated should also be included in this section, along with explanations of their failure to meet evaluation criteria.
- A figure or table should be used to show alternatives or options eliminated.

### ***Alternatives Considered for Further Study***

- The No-Build Alternative is always carried forward in an EA.
- Build alternatives carried forward should be analyzed to the same level of detail

#### ***No Build Alternative***

- Because the No-Build Alternative will be used as the baseline for evaluating build alternatives, any planned improvements to the transportation facilities in the project area need to be accounted for in this analysis and described.
- Can be chosen as the recommended alternative.

#### ***Build Alternative***

- A Preferred Alternative does not need to be identified in the document if one has not been chosen at the time the draft EA is released to the public. The Preferred Alternative can be identified upon issuance of the final EA or Finding of No Significant Impact (FONSI).
- If no Preferred Alternative is chosen, this section can outline which alternatives are recommended to be considered during the public hearing, or can simply explain why one has not yet been chosen.
- If only one build alternative meets the evaluation criteria, refer to it as the build alternative in this chapter and throughout the environmental impacts chapter. The term Preferred Alternative should be used in the conclusion of the environmental impacts chapter whether the action is a Build or No-Build Alternative.

### ***General Project Schedule***

- Include estimated dates (example, summer 2035) to begin the design stage, estimate possible construction start dates (if known), construction duration and whether phasing will be used for construction.
- Cost estimates should include those for right-of-way (ROW), construction and design.
- Include a discussion of when the project is scheduled in ADOT's 5-year plan and the STIP/TIP.

## **Affected Environment, Environmental Consequences, and Mitigation Measures**

For every environmental resource/technical analysis area that is evaluated/discussed the following subsections are required:

- Existing Condition,
- Environmental Consequences or impacts (each listed below should have individual analyses)
  - Build Alternative(s)
  - No-Build Alternative
- Mitigation Measures (if no impacts, briefly state that no mitigation measures for this resource are required)
- Conclusion – be concise/brief

### ***Issues Eliminated from Detailed Study***

- List any resource or regulation concerns not discussed in the document because the resource does not exist in the area. Examples can include Coast Guard Permits, Sole Source Aquifer, etc.

### **Use the following text:**

Based on early coordination and a review of the project area, the proposed project would have no impact on [list the resources that will not be evaluated in the draft EA] because these resources do not occur within the study area.

## **Land Ownership, Jurisdiction, and Land Use**

- Provide an analysis of adjacent landowners and land use, even if the land or land use would not be affected by the proposed action. If the land or land use wouldn't be affected, be sure to state such.
- Include existing land use and any proposed development including commercial and/or residential.
- Show ROW needs if known and/or anticipated, with a short discussion and map (include detail if ROW is coming from private or public source).
- Identify the number of parcels affected and number of owners impacted if available. ADOT ROW should be able to help obtain this information, and utilize parcel maps from the various assessor's offices as well, if needed.
- Include maps that depict jurisdiction, ownership and use.

## **Social and Economic Considerations**

- Follow the ADOT EPG Guidelines for Environmental Justice Analysis on the EPG website.
- Include both neighborhood continuity and community cohesion in this section.
- Include both long-term and temporary impacts.
- Disclose any of the proposed action's impacts on emergency services, and community services including but not limited to schools, hospitals, libraries and/or other community services that would be affected by the proposed action.
- Census data/table - put in appendices along with any corresponding maps/figures.
- Social - schools, churches, medical facilities, police, firehouses, residences, etc.
- Economics – commercial and industrial enterprises (include business types and distribution), employment, local tax bases, etc.
- Assess potential impacts to minority owned businesses in your study area. Consult with the EPG planner to determine if business surveys to obtain this information are warranted.
- Title VI/Environmental Justice - be sure to cover both Title VI and Environmental Justice in this section. Do not define both in the beginning and then blend the analysis to the extent that the reader isn't sure which regulation is being discussed.

### **Sample language:**

#### **Social and Economic Considerations**

Existing Conditions

Population Growth

Race and Ethnicity

Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964 and related statutes ensure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, or disability. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs that programs, policies, and activities not have a disproportionately high and adverse human health and environmental effect on minority and low income populations. The rights of women, the elderly, and low-income populations are protected under related statutes. A comparison of disabled, low-income, elderly, female head-of-household, and

minority population percentages by census tracts (Figure #) between the study area and the surrounding municipalities and counties is shown in Table #.

Disabled Populations

Low-income Populations

Elderly Populations

Female Head-of-household Populations

### Economic Conditions

Existing Conditions

Business Types and Distribution

Travel and Commute Data

## **Cultural Resources**

- Include an overview of the cultural consultation process completed for the project, the names of reports referenced, and any applicable mitigation measures.
- Include historical and archaeological resources
- Include a table of cultural resources sites
- Be sure to include the effect determination and the eligibility criterion in this section.
- Refer to a cultural consultation table that should be placed in the appendix (see example below).
- Refer to a Programmatic Agreement (PA)/Memorandum of Agreement (MOA) table that should be placed in the appendix, if needed (see example below).
- Make sure the number, type of resource and type of impact discussed here matches any Section 4(f) discussion, if applicable.

### **Sample language and table examples:**

Section 106 of the National Historic Preservation Act (NHPA) and NEPA require federal agencies to take into account the effects of their undertakings on historic properties and afford the State Historic Preservation Office (SHPO) and other interested parties opportunity to comment on such undertakings. To comply with these laws, an assessment of cultural resources was completed for this EA. Regulations for Protection of Historic Properties (36 CFR Part 800) implement Section 106 of the NHPA. These regulations define a process for federal agencies to follow as federal projects are planned and implemented.

Historic properties include prehistoric and historic districts, sites, buildings, structures, or objects included in or eligible for inclusion in the National Register of Historic Places (NRHP). Historic properties may be eligible for nomination to the National Register if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following criteria:

Criterion A – be associated with events that have made a significant contribution to the broad patterns of our history

Criterion B – be associated with the lives of persons significant in our past

Criterion C – embody the distinctive characteristics of a type, period, or method of construction; or represent the work of a master; or possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction

Criterion D – have yielded, or may be likely to yield, information important in prehistory or history

**Sample of what to put in the appendix prior to the consultation letters:**

**Cultural Resources Consultation**

Agencies consultation for determinations of impacts on cultural resources under Section 106 of the Historic Preservation Act occurred on [fill in number] occasions over the duration of the study.

[fill in month and year] Consultation

In [fill in month and year], the FHWA conducted initial consultation with appropriate agencies and tribes to gather their input and concurrence on recommendations for further cultural resource evaluation based on the results of the Class I literature review. In the [fill in date] consultation letter, the FHWA recommended that new or additional surveys be conducted within the area of potential effects (APE). The initial set of consultations did not make an eligibility determination and cited the need for additional survey.

[fill in month and year] Consultation

In [fill in month and year], the FHWA conducted continuing consultation with appropriate agencies and tribes to give them an opportunity to review the findings of additional surveys and to provide their concurrence on FHWA recommended determination. In the consultation letter, the FHWA recommended that a finding of [fill in effect determination] is appropriate for this project.

A list of agencies and tribes consulted and a summary of the responses and concurrence dates for the consultations are shown in the table on the next page. All respondents concurred with the findings presented in the [fill in month and year] and [fill in month and year] consultation letters. The signed agency and tribal correspondence letters are attached following the table.

## Cultural Resources Consultation and Responses

	Recipient	Response Received	Date of Concurrence
Initial Consultation Letters Sent [fill in date]	Bureau of Land Management	X	01/04/2006
	State Historic Preservation Office		
	Ak-Chin Indian Community	X	01/06/2006
	Gila River Indian Community		
	Hopi Tribe	X	01/06/2006
	Salt River Pima-Maricopa Indian Community		
	Tohono O'odham Nation	X	01/03/2006
	Tonto Apache Tribe		
	Yavapai Apache Nation	X	01/18/2006
	Yavapai-Prescott Indian Tribe		
Continuing Consultation Letters Sent [fill in date]	Bureau of Land Management	X	10/11/2007
	State Historic Preservation Office	X	11/09/2007
	Ak-Chin Indian Community		
	Gila River Indian Community		
	Hopi Tribe	X	10/04/2007
	Salt River Pima-Maricopa Indian	X	11/29/2007
	Tohono O'odham Nation		10/10/2007
	Tonto Apache Tribe	X	10/11/2007
	Yavapai Apache Nation		
	Yavapai-Prescott Indian Tribe		

## Cultural Resources MOA/PA Responses

	Consulting Party	Will Participate Response	Will Not Participate Response	Date Signed
Draft MOA/PA Letters Sent [fill in Date]	Bureau of Land Management	X		01/04/2006
	State Historic Preservation Office		X	
	Ak-Chin Indian Community	X		01/06/2006
	Gila River Indian Community		X	
	Hopi Tribe	X		01/06/2006
	Salt River Pima-Maricopa Indian Community			
	Tohono O'odham Nation	X		01/03/2006
	Tonto Apache Tribe		X	
	Yavapai Apache Nation	X		01/18/2006
	Yavapai-Prescott Indian Tribe			
Final MOA/PA Letters Sent [fill in Date]	Bureau of Land Management	X		10/11/2007
	State Historic Preservation Office	X		11/09/2007
	Ak-Chin Indian Community		X	
	Gila River Indian Community			
	Hopi Tribe	X		10/04/2007
	Salt River Pima-Maricopa Indian	X		11/29/2007
	Tohono O'odham Nation	X		10/10/2007
	Tonto Apache Tribe	X		10/11/2007
	Yavapai Apache Nation			
	Yavapai-Prescott Indian Tribe			

## **Section 4(f) Resources**

- Section 4(f) properties include parks, recreation areas, wildlife refuges, lakes, streams, rivers (all publicly-owned water bodies), school playgrounds, historical sites, etc. These include planned facilities that have yet to be developed or constructed but are designated in the land-manager's plan or other similar planning documents.
- Refer to Title 23 CFR Part 774 and FHWA Section 4(f) guidance when preparing this section.
- Consult with the EPG NEPA Planner and the FHWA if you believe there could be a use of a Section 4(f) property.
- Disclose whether Section 4(f) properties are located within ¼ mile of the project limits. If there would be a use of said properties as defined in the Section 4(f) regulation, what has been done to avoid the Section 4(f) property, what measures would be implemented to minimize harm, and any applicable mitigation.
- If there are multiple properties, complete the discussion related to each property in total before moving to the next property. For each property include: a description of the property, an explanation of why avoidance is not possible, a disclosure of efforts to minimize harm, a disclosure of the mitigation identified, and a conclusion.
- Section 4(f) analysis requires coordination and concurrences from the agency with jurisdiction over the property. Be sure to obtain the written concurrence from the agency with jurisdiction, include it in an appendix, and discuss it in this section.

### **Sample language:**

Section 4(f) of the US Department of Transportation Act of 1966, as amended, states that FHWA "...may approve a transportation program or project ...requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if

- (1) there is no prudent and feasible alternative to using that land; and
- (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use" (49 USC 303[c]).

A "use" of a Section 4(f) resource, as defined in 23 CFR 774, occurs: 1) when land is permanently incorporated into a transportation facility; 2) when there is a temporary occupancy of land that is adverse in terms of the statute's preservationist purposes; or 3) when there is a constructive use of the Section 4(f) resource. A constructive use of a Section 4(f) resource occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. For example, a constructive use can occur when:

a) the projected noise level increase, attributable to the project, substantially interferes with the use and enjoyment of a noise-sensitive facility of a resource protected by Section 4(f);

b) the proximity of the proposed project substantially impairs aesthetic features or attributes of a resource protected by Section 4(f), where such features or attributes are considered important contributing elements to the value of the resource (an example of such an effect would be the location of a proposed transportation facility in such proximity that it obstructs or eliminates the primary views of an architecturally significant historical building or substantially detracts from the setting of a park or historic site that derives its value in substantial part due to its setting);  
and/or

c) the project results in a restriction of access that substantially diminishes the utility of a significant publicly owned park, recreation area, or historic site.

## **Section 6(f) Resources**

- Determine whether any Section 6(f) properties that will be affected are in the project area (see <http://waso.lwcf.ncrc.nps.gov/public/index/cfm>).
- Consult with the EPG planner and FHWA early if you believe there are Section 6(f) concerns. If there are unavoidable impacts, Arizona State Parks and NPS involvement will be required.

### **Sample language:**

Section 6(f) of the Land and Water Conservation Fund Act (LWCFA), administered by the Interagency Committee for Outdoor Recreation (IAC) and the National Park Service (NPS), pertains to projects that would cause impacts on or result in the permanent conversion of outdoor recreational property acquired with LWCFA assistance. The LWCFA established the Land and Water Conservation Fund (LWCF), a matching assistance program providing grants paying half the acquisition and development cost of outdoor recreational sites and facilities. Section 6(f) prohibits the conversion of property acquired or developed with these grants to a nonrecreational purpose without approval from the IAC and the NPS. The NPS must ensure replacement lands of equal value, location, and usefulness are provided as conditions of approval for land conversions (16 US Code 4601-4 through 4601-11).

All Section 6(f) properties in the study area would be avoided and are, therefore, no longer applicable to the process.

## **Air Quality Analysis**

- Please talk to the Air/Noise Team before beginning any analysis (including cost estimates, field work) to determine the level of analysis necessary for the project.
- Consider mobile source air toxics (MSATs)
- Analysis of applicable criteria pollutants – example: PM<sub>10</sub>, CO
- Greenhouse gases need to be discussed in any project
- The EPA Motor Vehicle Emissions Simulator (MOVES) 2010b or 2014 version is the required model for all projects analyzing CO, PM<sub>2.5</sub>, PM<sub>10</sub> and Greenhouse gases effective December 20, 2012.
- All projects after October 7, 2016 must use MOVES2014.

### **Sample language and table:**

#### Background

The Federal Clean Air Act (CAA) of 1970 was the first comprehensive legislation aimed at reducing levels of air pollution throughout the country. The 1970 law required the US Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS), which set maximum allowable concentrations for seven criteria pollutants: carbon monoxide, nitrogen dioxide, ozone, particulate matter and fine particulate matter, sulfur dioxide, and lead (Table #).

The EPA is required to periodically review the NAAQS and modify them, as necessary. The EPA recently modified the NAAQS for ozone (O<sub>3</sub>) based on new studies that showed a lower level was needed to protect public health. The EPA also regulates air toxics. Most air toxics originate from human-made sources, including vehicles, airplanes, dry-cleaning equipment, factories, and refineries.

<http://www3.epa.gov/ttn/naaqs/criteria.html>

**National Ambient Air Quality Standards (NAAQS)**

Pollutant [final rule cite]	Primary/ Secondary	Averaging Time	Level	Form	
<a href="#">Carbon Monoxide</a> [76 FR 54294, Aug 31, 2011]	primary	8-hour	9 ppm	Not to be exceeded more than once per year	
		1-hour	35 ppm		
<a href="#">Lead</a> [73 FR 66964, Nov 12, 2008]	primary and secondary	Rolling 3 month average	0.15 µg/m <sup>3</sup> <sup>(1)</sup>	Not to be exceeded	
<a href="#">Nitrogen Dioxide</a> [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]	primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	primary and secondary	Annual	53 ppb <sup>(2)</sup>	Annual Mean	
<a href="#">Ozone</a> [73 FR 16436, Mar 27, 2008]	primary and secondary	8-hour	0.075 ppm <sup>(3)</sup>	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years	
<a href="#">Particulate Pollution</a> Dec 14, 2012	PM <sub>2.5</sub>	primary	Annual	12 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		secondary	Annual	15 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years
	PM <sub>10</sub>	primary and secondary	24-hour	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
<a href="#">Sulfur Dioxide</a> [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]	primary	1-hour	75 ppb <sup>(4)</sup>	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	

## Mobile Source Air Toxics

Mobile source air toxics (MSATs) are a subset of the 188 air toxics defined by the CAA. MSATs consist of 93 compounds emitted from highway vehicles and nonroad equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. Of the 93 MSATs, a subset of seven compounds has been designated by the EPA as the priority MSATs. These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel particulate emissions), formaldehyde, naphthalene, and polycyclic organic matter (POM).

The EPA is the lead federal agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The EPA has examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, its national low emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. The FHWA developed a tiered approach with three categories for analyzing MSAT in NEPA documents, depending on specific project circumstances: 1.No analysis for projects with no potential for meaningful MSAT effects; 2.Qualitative analysis for projects with low potential MSAT effects; or 3.Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects. [Refer to FHWA December 6, 2012 Memorandum, "INFORMATION: Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA" for more information.]

## Particulate Matter

Particulate matter refers to solid or liquid particles suspended in the air that may be composed of acids, organic chemicals, metals, or soil and dust particles. Particle sizes range from those large enough to be seen as smoke or haze to those so small that they act as a gas and are visible only through an electron microscope. Those particles with diameters less than 2.5 microns are denoted as PM<sub>2.5</sub>, and sources include fuel combustion, power plants, and diesel vehicles. Those particles with diameters of 2.5 to 10 microns are denoted as PM<sub>10</sub>, and sources include fugitive dust from unstable or disturbed dirt surfaces, vehicle travel on unpaved roads, crushing and grinding operations, and open burning. [Refer to the Air Quality website of Environmental Planning for a listing of PM<sub>10</sub> and PM<sub>2.5</sub> nonattainment areas.]

## Hot-spot Analyses

An air quality hot-spot analysis is an estimation of the likely future localized pollutant concentrations and a comparison of those concentrations with the relevant air quality standards. The focus is usually the immediate area around a proposed project, as opposed to the regional focus of an emissions inventory for an entire nonattainment area. Hot-spot analyses may be either quantitative, in which future concentrations are calculated for specific locations in the study area, or qualitative, in which the proposed project and study area are compared with similar existing facilities, existing monitoring data, and other readily available information.

A hot-spot analysis is required for certain projects in CO, PM2.5, and PM10 nonattainment and maintenance areas. Project-level conformity requires that a new project must not cause or contribute to any new or existing localized CO, PM10, and/or PM2.5 violations, or delay timely attainment of any NAAQS or interim milestones in CO, PM10, or PM2.5 nonattainment and maintenance areas. PM hot-spot analysis is required only for projects of of Air Quality Concern as determined the interagency consultation process. (40 CFR 93.105).The transportation conformity regulations provide specific guidelines for determining when a hot-spot analysis should be conducted for CO and PM ( 40 CFR 93.123)

All NEPA analysis for CO should follow the FHWA’s 1987 Technical Advisory 6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, which provides some general considerations for determining if a CO hot-spot analysis should be conducted for NEPA purposes and provides guidance on the documentation of CO hot-spot analyses. For transportation conformity purposes in nonattainment areas, the EPA provides guidance on how to use MOVES for a quantitative analysis on their project level conformity website.

#### Greenhouse Gas (GHG)

Greenhouse gas emissions are a global issue and not a concern for hot-spot analysis, but it is worth noting the availability of Draft CEQ Guidance for the analysis of greenhouse gas emissions in NEPA documents. The EPA also released guidance "Using MOVES for Estimating State and Local Inventories of On-Road Greenhouse Gas Emissions and Energy Consumption" for states that are interested in modeling GHG emissions.

#### Construction Air Quality Impacts

NEPA applies to both long-term and short term impacts and construction air quality impacts need to be considered (at least qualitatively), even though quantitative analysis may not be required for the project under the transportation conformity regulations. Mitigation: NEPA documents need to discuss mitigation measures whenever there are “adverse impacts.” An adverse impact could occur from an increase in pollutant concentrations due to the project that does not exceed the NAAQS and thus would not require mitigation under transportation conformity. NEPA documents do not need a written commitment for each potential mitigation measure discussed. Final NEPA mitigation commitments for the preferred alternative are documented in the ROD or FONSI.

## **Noise Analysis**

- A traffic noise analysis is required for all ADOT projects that increase capacity or move an alignment closer to sensitive receivers. The analysis should identify noise impacts and incorporate reasonable and feasible mitigation measures into the project.
- Please talk to the Air/Noise Team before beginning any analysis (including cost estimates, field work) to determine the level of analysis necessary for the project.
- Follow the most current ADOT Noise Abatement Policy for the analysis.
- Disclose whether receivers are within the impact area, what the noise measurements were, and whether mitigation is recommended.
- If needed, include a mitigation measure stating that the noise studies will be updated and any impacts mitigated during final design.

**Sample Noise Report:** Please reference the 2011 ADOT Noise Abatement Policy – Appendix D, “Traffic Noise Study Report Format Guide 2015”

## **Utilities**

Disclose any existing utilities within the project limits, if there are impacts to utilities, if the utility company or ADOT has prior rights, and any mitigation measures that apply.

## **Visual Resources**

- Discuss near, mid-range and distant views, both from the road looking outward and toward the road.
- Refer to FHWA Context Sensitive Solutions (CSS) Guidance – <http://fhwa.dot.gov/context/index.cfm>
- Review any visual quality objectives required by federal land management agencies in the study area (Forest Service, Bureau of Land Management, National Park Service) and obtain agency concurrence on the visual impact analysis.
- Land managing visual guidance links:
  - <http://www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactAssmt.pdf>
  - [http://www.azdot.gov/highways/Roadway\\_Engineering/Roadside\\_Development/HwyBLM\\_USFS.asp](http://www.azdot.gov/highways/Roadway_Engineering/Roadside_Development/HwyBLM_USFS.asp)
  - [http://www.blm.gov/wo/st/en/prog/Recreation/recreation\\_national/RMS.html](http://www.blm.gov/wo/st/en/prog/Recreation/recreation_national/RMS.html)
  - [http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning\\_and\\_Renewable\\_Resources/recreation\\_images/national\\_programs/VRM.Par.62809.File.dat/GQBE\\_WEB.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/recreation_images/national_programs/VRM.Par.62809.File.dat/GQBE_WEB.pdf)
  - [http://library.rawlingsforestry.com/fs/landscape\\_aesthetics/ah\\_701.pdf](http://library.rawlingsforestry.com/fs/landscape_aesthetics/ah_701.pdf)

### **Sample language:**

In a roadway improvement project, visual resources are considered from two perspectives: 1) the view from the roadway to motorists and, 2) the view of the roadway to the surrounding community. Visual resources and effects to these resources are defined by identifying key views and considering community goals and preferences.

### Visual Quality Objectives

Important natural visual resources within the study area (landform, water, vegetation, and natural colors) and cultural visual resources (ranching and grazing lands, residential, commercial, and industrial developments) were assessed and evaluated following the guidelines of the FHWA *Visual Impact Assessment for Highway Projects (1981)*.

The objective of the visual impact assessment is to better provide roadway users and community project viewers with a transportation system that is pleasing to the senses, assimilates the visual qualities of the community's visual resources into its design, and makes the project compatible with the community at large.

### Impacts

Visual impacts of the proposed improvements were determined by assessing the change in visual resources caused by the build alternative and then by predicting viewer response to that change of visual resources. To assess the visual resource change, the visual compatibility and/or visual contrast of the proposed alternative with the visual character

of the existing landscape was examined. To predict viewer response, viewer exposure and viewer sensitivity was considered. Viewer exposure considers the physical limits of the views and the number of affected viewers. Viewer sensitivity considers viewer expectations based on the existing environment and the extent to which visual elements may be important to the viewer. The visual impacts of the build alternative were analyzed from six viewpoints and then given a Visual Impact Rating (VIR) of low, moderate, moderately high or high.

## **Drainage and Floodplain Considerations**

- If the project is within the limits of the floodplain, include the FEMA/FIRM floodplain map number.
- If the project is within a floodplain, coordinate with the local floodplain administrator during the EA process.

### **Sample language:**

This section identifies drainage and floodplain issues to be considered when evaluating impacts resulting from the Build and No-Build alternatives. Included in this analysis are applicable drainage patterns such as surface water and groundwater as well as floodplain issues. Surface water includes water present above the soil surface such as rivers, streams, lakes, pools, and stormwater runoff. Groundwater is water that flows below the soil surface that can be collected by underground wells or other facilities constructed for collecting water or for monitoring.

Executive Order 11988, Floodplain Management, requires that impacts to floodplains be evaluated for all federal actions, and directs agencies to reduce impacts to floodplains, minimize flood risks on human safety and wellbeing, and restore and preserve floodplain values. Floodplains are delineated and managed by the Federal Emergency Management Agency (FEMA). A floodplain is generally level land subject to periodic flooding from an adjacent body of water.

A 100-year flood is a storm having a 1 percent chance of being exceeded in magnitude in any given year. The 100-year floodplain includes areas adjoining a water body that are inundated by water during a 100-year flood. The floodway is the area within the floodplain where the water is likely to be the deepest and fastest; this area should be kept free of obstructions to allow 100-year floodwaters to move downstream without increasing the water surface elevation more than 1 foot. FEMA Flood Insurance Rate Maps (FIRMs) depict the delineated 100-year floodplain. The 100-year floodplain is divided into flood zones including:

Zone A: areas subject to inundation by 100-year floods that have been identified through qualitative methodologies; no base flood elevations have been determined

Zone AE: areas subject to inundation by 100-year floods that have been identified through quantitative methodologies; base flood elevations have been determined

Zone AH: areas subject to inundation by 100-year shallow floods where ponding occurs and flood depths are between 1 and 3 feet deep; base flood elevations have been determined

Zone AO: areas subject to inundation by 100-year shallow floods typified by sheet flow on sloping terrain with flood depths of between 1 and 3 feet; base flood elevations have been determined

## **Section 404 and 401 of the Clean Water Act and National Pollutant Discharge Elimination System**

- Use “Waters” as an acronym for Waters of the United States
- Refer to the Clean Water Act (CWA) guidance documents on the ADOT EPG website ([http://www.adotenvironmental.com/EPG\\_Common/Documents\\_Technical\\_Section\\_404\\_Procedures.asp](http://www.adotenvironmental.com/EPG_Common/Documents_Technical_Section_404_Procedures.asp)).
- If design/construction will occur within 5 years of the completion of the EA, complete a jurisdictional delineation (JD) for the project. If construction will not begin within 5 years of an approved EA, coordinate with the EPG planner, who will coordinate with the FHWA, to determine how jurisdictional Waters will be identified for the project. This should be completed as early in the process as possible.
- Coordinate with the planner early in the process to determine whether an individual Section 404 permit may be needed.

### ***Clean Water Act***

- Section 401 – Water quality (Arizona Department of Environmental Quality [ADEQ] or EPA, tribes that complete their own Section 401 certification are the Navajo, Hualapai, White Mountain Apache, and Hopi tribes)
- Section 404 – dredge and fill materials (US Army Corps of Engineers)
- Section 402 – erosion control (National Pollutant Discharge Elimination System [NPDES], Arizona Pollutant Discharge Elimination System [AZPDES])

### **Sample language:**

The Clean Water Act (CWA) is the primary federal statute governing discharge of pollutants into jurisdictional Waters of the United States (Waters), which, in Arizona, include perennial and ephemeral watercourses and their tributaries and adjacent wetlands. The principal goal of the CWA is to establish water quality standards to restore and maintain the chemical, physical, and biological integrity of the nation’s Waters by preventing point (concentrated output) and nonpoint (widely scattered output) pollution sources.

Section 401 of the CWA requires any applicant requesting a federal permit or license for activities that may result in discharge into Waters to first obtain a Section 401 certification from the state in which the discharge originates. The Section 401 certification verifies the prospective permits comply with the state’s applicable effluent limitations and water quality standards. Federal permits or licenses are not issued until the Section 401 certification is obtained. The ADEQ [or EPA/Tribe] is responsible for the Section 401 certification. If a project meets criteria for conditional Section 401 certification, notification to the ADEQ is not required. However, if a project does not

meet criteria for conditional certification, such as projects occurring within 0.25 mile of unique or impaired waters, an individual Section 401 certification application to the ADEQ is required.

Section 402 of the CWA formed the National Pollutant Discharge Elimination System (NPDES), which regulates pollutant discharges, including stormwater, into Waters. An NPDES permit sets specific discharge limits for point-source pollutants into Waters and outlines special conditions and requirements for a particular project to reduce impacts to water quality. In 2002, the EPA authorized the ADEQ to administer the NPDES program at the State level, called the Arizona Pollutant Discharge Elimination System (AZPDES). AZPDES permits require that the project be designed to protect Waters that erosion control best management practices (BMPs) be implemented, and that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for construction activities exceeding 1 acre of ground disturbance.

Section 404 of the CWA regulates the discharge of earthen fill, concrete, and other construction materials into Waters, and authorizes the US Army Corps of Engineers (Corps) to issue permits regulating the discharge of dredge or fill material into Waters. The limits of Waters are defined through a preliminary or approved jurisdictional delineation (JD) accepted by the Corps. A preliminary JD assumes all drainages within a given area are subject to the jurisdiction of the Corps. An approved JD requires that all ephemeral drainages display a significant nexus to the downstream traditional navigable water, which for this project is [state location]. The most common types of Section 404 permits for transportation projects are 1) Nationwide Permit 14 (Linear Transportation Projects), which authorizes projects with less than 0.50 acre of permanent loss to Waters with no impacts to special aquatic areas such as wetlands, and 2) individual permits, which are required for projects that affect more than 0.50 acre of Waters or cause impacts to jurisdictional wetlands. An individual permit requires mitigation to minimize or offset the impacts to Waters with no net loss of functions and values of the water resource.

#### Existing Conditions

The Arizona List of Unique Waters (Arizona Administrative Code R18-11-112(E)) and the Arizona 2006/2008 Section 303(d) List of Impaired and Not Attaining Waters were reviewed to determine whether any unique or impaired waters are present. Detail whether unique waters, EPA Section 303(d) non-attaining impaired waters, or EPA Section 303(d) impaired waters occur in or within 1 mile of the study area

### ***303(d) Impaired Waters***

Disclose any impaired waters within the project limits, if there are impacts to impaired waters, and if mitigation measures may be necessary.

List of Impaired Waters in AZ:

- <http://azdeq.gov/environ/water/assessment/assess.html>

- <http://www.epa.gov/region9/water/tmdl/303d.html>

### ***Outstanding Waters (formerly Unique Waters)***

Disclose any existing outstanding waters within the project limits, if there are impacts to outstanding waters, and if mitigation measures may be necessary.

List of outstanding waters in AZ –

<http://azdeq.gov/enviro/water/permits/download.oaw.pdf>

## **Sole Source Aquifers**

- Follow the Sole Source Aquifer MOU and read the ADOT EPG Categorical Exclusion (CE) guidelines for more information.
- Refer to the EPA website (<http://www.epa.gov/region9/water/groundwater/ssa.html>) for the latest information and maps regarding location of sole source aquifers.
  - Upper Santa Cruz & Avra Basin Aquifer
  - Bisbee-Naco Aquifer
- If project is located within a sole source aquifer, a Section 1424(e) review by the EPA is required. A letter requesting review by the EPA will be sent through FHWA and include the project review information listed in this document (<http://www.epa.gov/region9/water/groundwater/ssa-pdfs/Sole-Source-Aquifer-Proj-Rvu-Info.pdf>)
- Discuss the November 2002 U.S. Environmental Protection Agency (EPA)/FHWA MOU, if it applies.

### **Sample language:**

Under Section 1424(e) of the Safe Drinking Water Act, the U.S. Environmental Protection Agency (EPA) designated the Upper Santa Cruz and Avra Valley Basin, which underlies the study area, as a sole source aquifer. This designation means that the area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health.

As a result of this designation, proposed federal financially-assisted projects which have the potential to contaminate the designated sole source aquifer are subject to EPA review. Under the Memorandum of Understanding (MOU) between EPA and FHWA dated November 2002, any proposed project that is within a designated sole source aquifer and which is subject to analysis through an EA, is subject to a Section 1424(e) review by EPA.

To establish compliance with Section 1424(e) of the Safe Drinking Water Act, a letter describing the project area and scope, anticipated involvement of groundwater during construction, and methods to protect groundwater resources during construction was sent to the EPA's Groundwater Office.

This project is within the Upper Santa Cruz and Avra Basin Sole Source Aquifer designated area. Perched water tables are in the project vicinity. Groundwater was encountered at two boring locations during the geotechnical investigations at depths of approximately # feet and # feet. Groundwater was not encountered in the other boring drilled for this project.

Historic well data obtained from the Arizona Department of Water Resources indicate that the regional groundwater depth has ranged from about # to # feet below ground surface along location. It should be noted that groundwater levels could fluctuate

because of seasonal variations, irrigation, groundwater withdrawal or recharge, and other factors not apparent at the time of the most recent fieldwork.

Perched water conditions should be expected in other areas across the site; however, their depths and horizontal extent are subject to seasonal changes. However, it is probably not accurate to call this a perched aquifer because these types of conditions appear in agricultural settings all over and are a localized lens where sandy silts are encountered above fat clays that hold water for a time and then dry up. Their presence is seasonal and does change so it is likely that no water will be encountered once farming operations cease in the local area of the project site.

This is a transportation project, and no additional consumption of water, no impact to aquifer recharge or discharge areas, and no new wells or discharges of pollutants around existing well sites or to the aquifer are anticipated. Material used for the pier construction would not leach to the aquifer, and methods used for construction would not create a pathway for other materials to reach the aquifer.

All wells in the project area would be properly abandoned in accordance with Arizona Department of Water Resources standards prior to construction activities, therefore, there will be no potential for discharges to the sole source aquifer. This is a highway project, and no additional consumption of water, no impact to aquifer recharge or discharge areas, and no new wells or discharges of pollutants around existing well sites or to the aquifer are anticipated.

## **Biological Resources**

- Discuss all project details with your EPG planner and the ADOT Biologist early in the process.
- If you are on USFS lands, a Management Indicator Species Report may also be required.
- If Section 7 Consultation is required for the project, make sure to discuss this as early as possible with the EPG Biologist and FHWA. Formal consultations can be time consuming. Early and continued coordination with all parties involved is paramount to being successful. Include a summary of the consultation and concurrences of impacts from USFWS. Add conservation measures (i.e., mitigation measures) issued by the USFWS in their response.
- Attach the biology document in an appendix and all correspondence.

Include an introduction followed by a discussion of each of the following topics:

1. **Threatened and Endangered Species** - Cover impacts to threatened, endangered and proposed species, critical habitat, Arizona species of concern, and federal- and tribal-listed species of concern (if on these lands). Give a brief overview of the species analyzed in detail in the Biological Evaluation, the effect determination for those species, an overview of coordination conducted with regulatory and land management agencies, and any applicable mitigation.
2. **Other Special-status species** – Arizona Species of Concern, Migratory Bird Treaty Act (MBTA) species, Bald and Golden Eagle Protection Act, USFS Sensitive Species – for others that may apply to project, please discuss with the EPG Biologist and FHWA
3. **Native Plants** - Discuss any protected native plants within the project limits and whether there will be an impact to them. If there are any highly safeguarded plants that will be adversely affected, be sure to disclose this and inform the ADOT Roadside Development Section. Coordinate impacts of vegetation on Federal lands with the respective agency. Remember that the Arizona Native Plant Law does not apply on Federal lands and mitigation can differ. See the typical mitigation measures document on the EPG website for native plant mitigation guidance.
4. **Invasive Species** - For invasive species, be sure to reference Executive Order 13112 Invasive Species (<http://www.invasivespeciesinfo.gov/laws/execorder.shtml>) and give an overview of what the order states. Coordinate with the EPG biologist and the ADOT Roadside Development Section when invasive species are of concern, particularly when working on federal or tribal lands.

5. **Wildlife and Habitat Connectivity** - Refer to the Arizona's Wildlife Linkages Assessment for information and maps showing linkage corridors. If a linkage corridor exists within the study area, address potential impacts and mitigation here. Also, coordination with the EPG biologist is required. If any land management or resource management agency raises a connectivity concern, discuss it here.
  
6. **Riparian Areas and Wetlands** – Determine whether these are present, within the project vicinity, and coordinate with the EPG biologist. See the CE guidelines for additional information.

## **Wild and Scenic Rivers**

- If the project is located in the vicinity of a Wild and Scenic River, include the river name.
- Wild and scenic rivers in AZ
  - Fossil Creek (<http://www.rivers.gov/wsr-fossil.html>)
  - Verde River (<http://www.rivers.gov/wsr-verde.html>)

### **Sample language:**

This project is located within the vicinity of \_\_\_\_\_ which is a listed Wild and Scenic River. The Wild and Scenic Rivers Act signed by Congress in 1968 established the National Wild and Scenic Rivers System that includes rivers administered by the Bureau of Land Management (BLM), U.S. Forest Service (USFS), the National Park Service (NPS), and the U.S. Fish and Wildlife Service (USFWS). Rivers are classified as wild, scenic or recreational with the following definitions:

“Wild” river areas – Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

“Scenic” river areas – Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in place by roads.

“Recreational” river areas – Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

## **Prime and Unique Farmlands**

- Prime, unique and statewide importance
- Determine whether farmland is present in the project vicinity and indicate the Natural Resources Conservation Service (NRCS) map.
- Allow time for coordination with NRCS if applicable.
- Refer to [www.nrcs.gov](http://www.nrcs.gov)

### **Sample language:**

This section identifies prime or unique farmland that may be affected by the proposed project. An analysis of prime and unique farmland is being conducted because federal funds would be used to construct this project. This section addresses compliance with the Farmland Protection Policy Act (FPPA) regulations (7 CFR 658). The FPPA requires identification of proposed actions that would affect land classified as prime or unique farmland before federal agency approval of any activity that would convert such farmland to other uses, including converting farmland to ROW for transportation improvements.

The Natural Resources Conservation Service (NRCS), part of the US Department of Agriculture (USDA), administers the FPPA as it relates to protection of farmland. Congress passed the FPPA because of a substantial decrease in the amount of open farmland. Under the FPPA, the Secretary of Agriculture is required to set criteria to identify and take into account the potential effects of federal agency activities on the preservation of farmland. FPPA regulations (7 CFR 658.5) establish the criteria for such evaluation, with an emphasis on urban aspects of proposed programs. In Title 7 CFR 658.3, it is stated that the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses would be minimized. In Title 7 CFR 658.4, it is stated that federal programs shall be administered in a manner that, as practicable, would be compatible with state, local government, and private programs and policies to protect farmland. It requires identification of proposed federal actions that would affect any land classified as prime or unique farmland and the consideration of alternative actions. Pursuant to the FPPA, farmland includes:

Prime – Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary of Agriculture. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber [7 United States Code (USC) 4201(c)(1)(A)].

Unique – Land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruits, and vegetables. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. [7 USC 4201(c)(1)(B)].

Other – This encompasses farmland, —other than prime or unique farmland, that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops, as determined by the appropriate State or unit of local government agency or agencies, and that the Secretary of Agriculture determines should be considered as farmland for the purposes of this chapter. [7 USC 4201(c)(1)(C)].

In the FPPA regulations (7 CFR 658.2–658.3), a description of land not subject to (i.e., it is not protected by) provisions of the FPPA is provided and includes land that: (1) receives a combined score of less than 160 points from the land evaluation and site assessment criteria, (2) is identified as an —urbanized area on US Census Bureau maps, (3) is designated as an urban area and shown as a —tint overprint on US Geological Survey topographical maps, (4) is shown as white (not farmland) on US Department of Agriculture Important Farmland Maps, (5) is shown as urban-built-up on US Department of Agriculture Important Farmland Maps (according to guidance of the National Resources Inventory, areas 10 acres or larger without structures are not considered urban-built-up and are subject to the FPPA), (6) is used for national defense purposes, or (7) is privately owned and no federal funds or technical assistance are used.

Existing Conditions

## **National Natural Landmarks**

- Determine whether any are present in the study area and summarize if there are any impacts from the project.
- List of the those in Arizona:
  - Barfoot Park,
  - Barringer Meteor Crater
  - Canelo Hills Cienega
  - Comb Ridge
  - Grapevine Mesa Joshua Trees
  - Kaibab Squirrel Area
  - Onyx Cave
  - Patagonia-Sonoita Creek Sanctuary
  - Ramsey Canyon
  - Willcox Playa
- Additional information can be found at <http://www.nature.nps.gov/nnl/>

## **Hazardous Materials**

- Include information and analysis regarding hazardous materials found within the study area, including any asbestos and lead-based paint testing.

### **Sample language:**

Hazardous materials and hazardous waste sites pose a threat to any infrastructure project, beginning with ownership liability concerns and ending with construction safety concerns. The EPA's 2002 Brownfields Act identified the appropriate steps of all appropriate inquiry for investigating hazardous materials sites, and the ASTM International (ASTM) E1527-05 standard was written to provide a set of guidelines for the assessment of properties and the qualifications of environmental professionals engaged to perform the analysis (ASTM International 2006). The FHWA has adopted a step-wise approach to hazardous materials site analysis that conforms to the ASTM series of standards governing Phase I-type site investigations.

ADOT employs a preliminary initial site assessment (PISA) scope of work as an early comparative tool for projects with multiple possible alternatives. It includes a review of regulatory history of sites within the study area and a limited field review by the environmental professional (term defined in ASTM). The PISA is not fully ASTM-compliant, but provides elements of the ASTM scope that give the study team adequate information to compare potential alternatives for fatal flaws or hazardous materials issues that may be sufficiently large enough to provide a basis of preference for one alternative over another. Once a corridor is selected, an initial site assessment (ISA) is performed to assess specific sites of potential concern along the corridor in more detail. The ISA conforms to the ASTM E1527-05 standard and includes site-specific analysis with interviews and historic waste-stream data analysis.

The goal of the hazardous materials Phase I equivalent ISA are to provide adequate information for the project owner to move forward with property acquisitions, and to develop management strategies for sites that have been identified with hazardous materials and/or hazardous-waste issues.

Existing Conditions

## **Material Sources and Waste Materials**

- Disclose whether material from outside the project limits will be needed to complete the work and where the material would be obtained from, if known.
- Disclose where waste material will be disposed of – this can be specific information, or general information (e.g., “excess waste material and construction debris would be disposed of at sites supplied by the contractor in accordance with the ADOT Standard Specifications for...”).
- Refer to the ADOT Standard Specifications on the EPG website:
  - SECTION 104 – SCOPE OF WORK - 104.12 Environmental Analysis
  - SECTION 1001 – MATERIAL SOURCES

### **Sample language:**

Preliminary calculations indicate that construction of the Build Alternative would require approximately # cubic yards of borrow material. It would be the responsibility of the contractor to identify any needed material sources or waste disposal sites and to provide the environmental documentation regarding the potential use of these sites, as specified in the ADOT Standard Specifications for Road and Bridge Construction (ADOT 2008). The No-Build Alternative would not require the use of borrow material or waste sites. Therefore, the No-Build Alternative would have no impact related to the use of materials sources or waste sites.

## **Secondary Impacts**

- Secondary effects are those that are "caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR 1508.8). Generally, these impacts are induced by the initial action. They comprise a wide variety of secondary effects such as, changes in land use, water quality, economic vitality and population density.
- See the following links for additional information:
  - [http://www.environment.transportation.org/environmental\\_issues/indirect\\_effects/](http://www.environment.transportation.org/environmental_issues/indirect_effects/)
  - <http://www.environment.fhwa.dot.gov/guidebook/qaimpact.asp>
  - <http://nepa.fhwa.dot.gov/ReNEPA/ReNepa.nsf/home?OpenForm&Group=Cumulative%20and%20Indirect%20Impacts&Collapse=>
  - [http://environment.transportation.org/center/products\\_programs/practitioners\\_handbooks.aspx](http://environment.transportation.org/center/products_programs/practitioners_handbooks.aspx) (AASHTO Practitioner’s Handbook 12)

### **Sample language and table:**

Actions that may induce secondary (or indirect) impacts are perhaps less obvious than those identified as direct impacts. They are more difficult to quantify, additive in nature, or long-term in occurrence and effect. This section identifies the likely, foreseeable secondary impacts that would result from the construction of the proposed roadway; any cumulative impacts are addressed in the following section.

The FHWA is required to implement NEPA and the CEQ guidelines under 23 CFR Part 771. The FHWA has developed interim guidance on the analysis of indirect and cumulative impacts (FHWA 2003), which supplements the CEQ guidance. Combined, these documents provide the primary basis for analysis. The classification of secondary and cumulative impacts, in accordance with FHWA guidance, is presented in Table #.

**TABLE # SECONDARY AND CUMULATIVE IMPACTS CLASSIFICATION**

<b>Impact Category</b>	<b>Impact Classification</b>	<b>Description</b>
<b>Type</b>	Neutral, positive, or negative	Compares the final condition of a given resource with its existing condition (assumes that the expected impact occurs); impacts on personal property are considered negative
<b>Severity</b>	Minor, moderate, or substantial	Considers the relative contribution of the proposed action to a given impact
<b>Duration</b>	Temporary or permanent	Assumes “permanent” unless otherwise specified

Secondary impacts are reasonably foreseeable consequences of the action, but are later in time or farther removed in distance. Secondary impacts —may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8).

The analysis of secondary impacts from the Build Alternative concentrates on reasonably foreseeable future actions that could contribute to impacts on key environmental considerations. As a result of the Build Alternative,...

## **Cumulative Impacts**

- Cumulative effects are impacts which result from the incremental consequences of an action when added to other past and reasonably foreseeable future-actions (40 CFR 1508.7). The cumulative effects of an action may be undetectable when viewed in the individual context of direct and even secondary impacts, but nonetheless can add to other disturbances and eventually lead to a measurable environmental change.
- Refer to links under Secondary Impacts for further information.

### **Sample language:**

Cumulative impacts include the direct and indirect impacts of a project together with the impacts of all other anticipated past, present, and reasonably foreseeable future actions in the area including those of others. This analysis of cumulative impacts concentrates on current and future actions that could contribute to cumulative impacts on the key considerations of [list applicable resources]. Past, present, and reasonably foreseeable future actions considered in this analysis are the result of planned/proposed projects developed by the [list applicable cities and counties, federal agencies, developers, etc].

For this cumulative impacts assessment, past, present, and reasonably foreseeable future transportation projects and non-transportation-related projects are considered. This EA assumes that the local municipalities and county comprehensive and general plans direct the type of development in the study area. This development would likely occur eventually whether or not the [project/route name] project is implemented.

#### Past Actions/Completed Projects

This section describes existing conditions of the applicable environmental resources and considerations that exist from some of the past actions or projects completed since 2000:  
[list them in bullet form]

#### Ongoing/Present Actions

Ongoing or present actions in the study area, on-going or present actions that have a cumulative impact on the Build Alternative include:  
[list them in bullet form]

#### Reasonably Foreseeable Future Actions

[list them in bullet form]

The Build Alternative, when combined with past, present, and future actions would improve access to and promote development in currently undeveloped portions of the project vicinity...

## **Conclusion**

- Provide an overview of what the impacts are from the proposed action and the level of impacts (context and intensity). This can be completed in a table, if desired.
- Include a statement of recommendation that (a) the team picks a recommended or preferred alternative, name it, based upon analysis...; or (b) the team identifies no recommended alternative, detail which alternatives are being moved forward to the public hearing and explain the decision process that is to follow.

### **Sample table:**

**Table # – Summary of Environmental Impacts**

<b>Resource</b>	<b>Preferred Alternative</b>	<b>No-Build Alternative</b>
Land Ownership, Jurisdiction, and Land Use	Requires 71.5 acres of new R/W from private land; would accommodate regional growth and development	No new R/W required; would not accommodate regional growth and development
Water Quality	Would adversely affect water quality because of culvert extensions, new roadway embankment, and ground disturbance; however, standard practices to protect water quality during construction would be followed	Would have no impact on water quality
Biological Resources	Would require removing protected native plants, reducing the amount of available wildlife habitat because of construction of a roadway on existing habitat, and creating a wider expanse of roadway for wildlife to cross; however, standard practices to protect wildlife, plants, and habitat during construction would be followed	Would have no impact on biological resources
Visual Resources	Would result in a negligible change to the visual character of the area, considering the already disturbed setting and development currently occurring in the project vicinity	Would have no impact on the existing visual character of the project vicinity
Air Quality	Vehicle emissions would be greater than existing conditions because of increased traffic volumes in the future; temporary impacts would be mitigated by the use of dust abatement measures and MSATs concentrations would be slightly increased in areas where travel lanes would be closer to homes, schools, and businesses	Vehicle emissions would be higher in comparison with the Preferred Alternative because of increased congestion and greater idling time for vehicles in the project limits; no temporary impacts would occur and there would be no change in MSATs concentrations
Noise	Twelve locations would exceed ADOT Noise Abatement Criteria (NAC); noise impacts would occur during construction	Two locations would exceed ADOT NAC; no construction noise would occur
Cultural Resources	Would require disturbance of Old US 89; photo documentation would be conducted prior to disturbance	Would have no impact on cultural resources

## **Public Involvement/Project Coordination**

- Provide an overview of public and agency coordination on the project.
- Coordinate with ADOT Communication and Community Partnerships.
- For the various meetings below, explain the method used to announce the meetings, what the meeting format was, when and where the meetings were held, how many people attended the meetings, what comments were received and what the responses to the comments were.
- Place the Public Involvement Summary Report in the appendix and reference instead of repeating all the information.
- When addressing the public comments, if not in the Report, a table can be used and like comments can be lumped together along with a single response in the text of the EA. Specific comments and the associated comment sheets should be included in the appendix.
- See the EPG website and the ADOT public involvement manual for more information.
- Do not include private citizens' names or contact information.
- List agencies who received coordination letters and which agencies responded (can be put in a table).
- Phases of Agency and Public Involvement:
  - Scoping – agency, public
  - Public Information Meetings
  - Public Hearing – include date and location, if known

## **Bibliography**

- Follow standard formatting guidelines
- List all references

## **Appendix**

- Attach all necessary supporting documentation – refer to FHWA
- Agency letters – Section 106, threatened and endangered species, Section 4(f), scoping, etc. – see examples on the EPG website
- All other project correspondence

## **Final Environmental Assessment Guidelines**

- The FEA can be in one of two formats – errata or complete FEA – FHWA determines which format is appropriate.
  - Errata – Only document the changes to the DEA
  - Complete FEA – Used if additional alternatives are identified after the DEA has been made available to the public and require further study or if there are substantial changes to the analysis completed in the DEA.
    - Use the DEA guidelines for formatting and content
- Include a summary of the public hearing information and place the public hearing report including the official transcript in the appendix.
- Submit the FEA with a cover letter and two signature pages

## **Finding of No Significant Impact**

- See examples on EPG website
- Send one copy of the FONSI for signature with the FEA
- If not able to mitigate impacts to the level of not significant, then must complete an EIS.

## **EA Re-evaluations**

- See the EA Re-evaluation guidance on the EPG website