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CHAPTER 2: ADOT DEVELOPMENT PROCESS ON BLM AND USFS LANDS

2
GUIDELINES

CHAPTER 2: ADOT DEVELOPMENT PROCESS ON BLM AND USFS LANDS

2.1 CHAPTER GOALS

Integrating the ADOT Project Development Process

Highway corridor development refers to the process by which roadways are planned, designed, constructed and maintained. As the state transportation agency, the Arizona Department of Transportation (ADOT) Project Development Process is described herein as the primary development process. The United States Forest Service (USFS), the Bureau of Land Management (BLM) and the Federal Highway Administration (FHWA) will integrate their input and reviews with this process. Therefore, one goal of this chapter is to outline the ADOT development process, describe the type of information that is typically prepared at each stage in this process and alert the reader to the significance of that information so that timely feedback can be provided.

Integrating the Environmental Review Process

The ADOT development process typically incorporates an extensive environmental analysis culminating in an environmental document. Because the management of natural, cultural and aesthetic resources is central to USFS and BLM agency mandates and their planning policies, this environmental analysis is of high concern to those agencies. A second goal of this chapter is to describe the types of issues that are typically included in the review so that the project team can anticipate and integrate these environmental concerns into the ADOT project development process.

BLM/USFS Policies

Both BLM and USFS have their own planning methods and policies that may affect ADOT's development process. The ADOT development process should be integrated with these federal procedures. A third goal of this chapter is to identify those BLM and USFS policies that may affect the ADOT development process.

2.2 ADOT PROJECT DEVELOPMENT PROCESS

To meet ADOT's responsibility for providing a statewide network of highways, the State Transportation Board sets priorities for needed construction or reconstruction projects using the available funds. Each year, ADOT plans for the addition of these improvements to the State Highway System through the Five Year Construction Program. Development of the Five Year Construction Program results from long range planning. These processes are outlined below (for more information, refer to ADOT's Project Development Process Manual, available from the ADOT website listed at the conclusion of this chapter). Representatives from BLM or USFS have numerous opportunities to provide input into the planning process and these opportunities are also outlined below (as well as the approximate length of time).

Long-Range Planning (5 to 20-plus years prior to construction)

Long Range Planning includes:

- Regional Transportation Profiles.
- Small Area Transportation Studies.
- Multi-Modal Transportation Studies.
- Statewide Access Management Plan.
- Policy Issues.
- Long Range Plan.
- Feasibility/Corridor Study (18 months to prepare)
- Five-year Program.

It is important that ADOT long-range plans be coordinated with BLM/USFS long-range plans. BLM/USFS representatives may advise on the selection of projects to be recommended to the Transportation Board to be included in the Five Year Construction Program.

Project Scoping

- Project Scoping Documents are typically initiated five to seven years prior to construction and will be one of the types listed below:
  - Project Scoping Letter (6 months to prepare)
  - Project Assessment (12 months to prepare)
  - Location/Design Concept Report (LCR/DCR) (24+ months to prepare)

The project process for either the Feasibility/

Corridor Study or the LCR/DCR includes the following in which BLM/USFS representatives can participate and/or review:

- Kick Off and Agency/Field Review
- Initial and final project scoping documents
- Environmental overview
- Public meetings, hearings or other opportunities for public input at various stages throughout the process

As discussed in Chapter 1, for highways constructed on BLM or USFS lands, the project team should strive for Context Sensitive Solutions; that is, it should seek to minimize impacts to natural and cultural resources, *Figures 2.1* and *2.2* integrate the proposed highway corridor with the surrounding natural landscape. The success of this integration depends largely on the project scoping document which will, in turn, set parameters for the design process. Therefore, the project team should carefully and fully explore implications for design that are contained in the scoping document. Issues typically addressed in the project scoping document that will affect the integration of the highway with the surrounding landscape (and that are described in greater detail in later chapters) include:

Figure 2.1 Natural Resources include flora and fauna.

- The preferred roadway alignment.
- The proposed design speed, which will determine the maximum roadway grade, the minimum turning radius, the minimum sight distance and the size of the clear zone.
- The typical roadway section including the number of lanes and the widths of the shoulder and roadside ditch.
- The locations, numbers and types of major structures (bridges, box culverts and retaining walls).
- The anticipated cut slope heights and cut slope ratios. Proposed cut slope ratios should be made in association with the preliminary geotechnical information along with potential for revegetation. Both of which may not be completed until the Stage II (30%) review.

National Environmental Policy Act (NEPA) Process

The NEPA process begins during Project Scoping and culminates in the Environmental Document. The magnitude of the anticipated impacts resulting from the project will determine the type of NEPA process utilized and the resulting environmental document as follows:

Figure 2.2 Cultural Resources include sites such as Wupatki National Monument.

- Categorical Exclusion (CE).
- Environmental Assessment which results in a Finding of No Significant Impact (FONSI).
- Environmental Impact Statement which results in a Record of Decision (ROD).

Opportunities for BLM/USFS input during the NEPA process include the following:

- Participate as a member of the interdisciplinary team during the development of the Categorical Exclusion (CE), or the Environmental Assessment (EA) or the Environmental Impact Statement (EIS).
- Provide input on issues during agency environmental scoping meetings and/ or field reviews.
- Review and comment on the CE, EA or EIS

throughout its development.
- Comment on Draft EA or EIS during agency review and public comment periods.
- Provide letter of concurrence for inclusion in the final NEPA document.
- Review the ROD for the EIS.

The NEPA process is discussed in greater detail later in this chapter.

Project Development (one to three years prior to construction)

Project development, also known as Stages I through V, includes increasingly detailed design submittals for review and comment in preparation of construction documents. At each of the stages, it is important to review the Scoping and NEPA documents to ensure that engineering and/or environmental mitigation requirements are carried through into the project contract documents. Opportunities for BLM/USFS input include participation in the following:

- Design Kick-Off Partnering Meeting and Field Review.
- Monthly coordination meetings during Stage I (15% plans development) and provide comments to Stage I documents. (Stage I may take place during Scoping or Project Development.) Stage I documents typically incorporate the following information:
  - Surveys and Mapping
  - Initial typical roadway sections, *Figure 2.3*, (refer to Chapter 4)
  - Initial Roadway Plan and Profile Drawings
  - Tentative plans layout
  - Initial environmental mitigation measures
  - Request for utility designation services
  - Structure Planning Report (refer to Chapter 5)
- Monthly coordination meetings during Stage II (30%) and provide comments to Stage II documents. Stage II documents typically incorporate the following information:
  - Surveys and Mapping
  - Typical Roadway Sections
  - Initial Roadway Alignment
  - Initial Drainage Report (refer to Chapter 6)
  - Initial Interchange and Intersection Layouts
  - Initial Traffic Control and Construction Phasing
  - Traffic Analysis Report
  - Geotechnical, Pavement Design and Initial Materials Memo
  - Structure Planning Report and Preliminary Foundation Investigation
  - Initial R/W and Preliminary R/W Plans
  - Quantities and Cost Estimate
- Monthly coordination meetings during Stage III (60%), participate in Field Review and provide comments to Stage III documents. Stage III typically marks the final stage at which changes to the preferred highway design described by the scoping document may be made. Stage III documents typically incorporate the following information:
  - Typical Roadway Sections
  - Plan and Profile Drawings including slope grading limits and recommended slope ratios
  - Final Drainage Report
  - Preliminary Interchange and Intersection

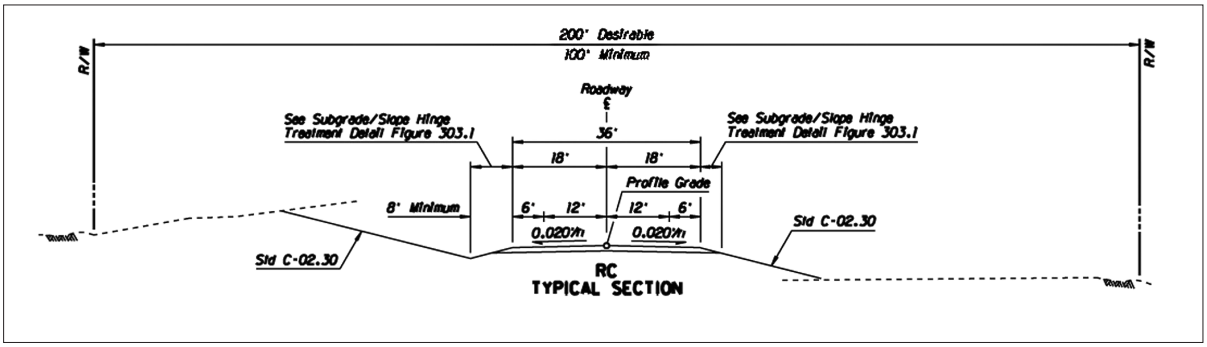

Figure 2.3 Example of a typical roadway section.

Layouts.
    - Structure Selection Reports and Foundation Design
    - Proposed Traffic Control and Construction Phasing
    - Traffic Signal and Lighting Plans
    - ADOT and BLM/USFS signing requirements
    - Pavement Marking Plans
    - Utility Plans
    - Preliminary Resource Protection Plans
    - Preliminary Landscape and Environmental Mitigation Plans
    - Preliminary Storm Water Pollution Prevention Plans
    - Final R/W Plans
    - Draft Special Provisions
    - Preliminary Quantities and Cost Estimate
    - Final Materials Memo
- Monthly coordination meetings during Stage IV (95%) and provide comments to Stage IV documents. Stage IV documents are typically a complete set of construction documents for review. The end of Stage IV typically marks the completion of all environmental clearances.
- Provide input during development of or subsequent updates to NEPA during Project Development process.

At the conclusion of Project Development, ADOT advertises the project and accepts bids from qualified contractors; the State Transportation Board awards the project to the selected contractor.

Refer to ADOT's Project Development Process Manual for detailed submittal requirements for each Stage.

Construction (subsequent to award of contract by Transportation Board)
The following outline describes the traditional ADOT design-bid-build project. Opportunities for BLM/USFS input include the following:
- Participate in Construction Partnering Workshop.
- Communicate regarding any contractor proposed use areas that are not included in the contract documents.
- Participate in Field Inspections.
- Participate in weekly construction meetings and/or review and comment on minutes from those meetings.
- Participate in Field Reviews.
- Participate in Walk-Through (final Field Inspection).
- Participate in Partnering Closeout Workshop.

For design-build projects, design and construction take place at the same time.

Maintenance
Following completion and formal acceptance by ADOT of the constructed project, maintenance and operation of the highway begins. Opportunities for BLM/USFS input include the following:
- Participate in Annual Highway Maintenance Partnering
- Participate in NEPA review (when required).

2.3 NATIONAL ENVIRONMENTAL POLICY ACT

All projects constructed on lands administered by BLM or USFS are required to be in compliance with the National Environmental Policy Act (NEPA), which requires that social, economic and environmental issues, concerns and values be given consideration in decision-making along with economic and technical considerations. As described earlier in this chapter, the final product of the NEPA process is the Environmental Document. Depending on the nature and magnitude of the anticipated project-related impacts, the Document will be one of three types: (1) Categorical Exclusion, (2) EA Finding of No Significant Impact or (3) EIS Record of Decision. The NEPA documentation process is central to the highway corridor development process and is binding to all agencies involved. The NEPA process ensures that (a) environmental impacts resulting from construction are anticipated and identified, (b) measures to avoid, minimize or mitigate these impacts are recommended for public review and comment and (c) approved measures are ultimately incorporated into the constructed project.

The NEPA process typically examines the following aspects of the affected environment for ADOT projects:
- Social (includes schools, churches, medical facilities, police, firehouses, residences, relocations, etc.).

- Economics (includes commercial and industrial enterprises, employment, local tax bases, etc.).
- Minority (neighborhoods, businesses, residences, etc.).
- Land Use.
- Section 4(f) properties (includes parks, recreation, wildlife refuges, lakes, streams, school playgrounds, historical, etc.).
- Section 106 (Cultural Resources including historical and archaeological investigations; refer to Appendix G for process regarding USFS lands).
- Farmlands (prime and unique, statewide importance).
- Natural Resources (water, lands, air, etc.).
- Water Quality.
- Section 404 (Army Corps—dredged and fill materials in Waters of the U.S.).
- Threatened and/or Endangered Species (plants and wildlife).
- Native Plants (Arizona Native Plant Law).
- Riparian Habitats, *Figure 2.4*.
- Floodplains.
- Wetlands.
- Hazardous Materials (NESHAPs).
- Air Quality (TIP, STIP).

Figure 2.4 Riparian habitat.

- Noise.
- Wild and Scenic Rivers.
- Local Traffic Patterns.
- Right-of-Way (additional and existing).
- Construction Impacts.
- Visual Qualities.
- Materials Pits and Waste Sites.
- Utilities.
- Erosion Control (NPDES/AZPDES).
- Habitat Connectivity.

The level of environmental analysis and the documentation required, Categorical Exclusion (CE), Environmental Assessment (EA) or Environmental Impact Statement (EIS) is typically based on the anticipated level of potential impact that may result from a project. The level of analysis may, in turn, affect the length of time required to complete the NEPA process. For minor projects (i.e. minor road widening projects, projects with limited disturbances), a CE is usually adequate and may require a few days or up to 12 months. More complex projects typically require an EA or EIS, which can require 1-3 years or more to complete.

As part of the NEPA process, other public agencies may become involved in the review process in order to ensure compliance with pertinent laws and regulations such as:

- Endangered Species Act.
- National Historic Preservation Act.
- American Graves Protection and Repatriation Act.
- Archaeological Resources Protection Act.
- Others as may apply.

For major corridors, the design process may take place over several years and may encounter unforeseen conditions. The NEPA document can be reevaluated if during the subsequent course of design new additional significant environmental impacts are identified or if the final design differs substantially from what was originally approved. Reevaluation of the NEPA document can also be required if significant time passes prior to the initiation of project construction.

Even when full NEPA investigations are not required, biological and archaeological clearances will be required for all ground disturbing projects on BLM or USFS lands. The time required for

these clearances will depend on the status of endangered species and/or archaeological sites within the project limits. When these species or sites are present, the review process may require 6 to 12 months or longer to complete and will require coordination with the US Fish and Wildlife Service, the BLM/USFS archaeologist and/or the State Historic Preservation Office.

NEPA Process

Each federal public agency approaches the NEPA process in a different way based on that agency's mandates and adopted NEPA guidelines. For highway projects, the funding source used to design and construct the highway corridor will dictate which agency is assigned responsibility for complying with NEPA requirements, as seen in the flow chart on the following page, *Figure 2.6*. The responsible agency will, in turn, determine standards for addressing NEPA. The responsible agency is known as the "lead agency."

- For those projects that utilize Federal-aid transportation funds, the Federal Highway Administration (FHWA) acts as the lead agency. FHWA is therefore responsible for complying with NEPA (and other federal requirements such as the Endangered Species Act and the National Historic Preservation Act) and for related consultation with other agencies, including the U.S. Fish and Wildlife Service and the State Historic Preservation Office. As FHWA's agent, ADOT assumes that responsibility in accordance with FHWA standards. For all projects occurring on BLM Lands, BLM will be a cooperating agency, unless they notify FHWA that they choose to decline. For all projects occurring on USFS Lands, USFS will be a cooperating agency, unless they notify FHWA that they choose to decline.
- For projects on BLM or USFS lands that do not utilize Federal-aid funds, the BLM or USFS is the lead federal agency responsible for complying with NEPA. ADOT's role is that of an applicant and therefore it must address NEPA requirements in accordance with BLM or USFS guidelines.
- Regardless of the funding source, for projects on USFS lands, the USFS will act as the lead agency for Archaeological Resources Protection Act (1979) and the Native American Graves Protection and Repatriation Act (1990). These will be discussed further in this chapter.

Mitigation

As described above, the NEPA process documents the anticipated impacts resulting from highway construction. Other laws, such as Section 4(f) and the Endangered Species Act may require avoidance or mitigation of these anticipated impacts. These requirements will be included in the Environmental Document; possible examples include the following:

- Design and construction of bridges over riparian habitats, *Figure 2.5*.
- Avoidance/preservation of outstanding natural vegetation or landscape features.
- Salvage of native vegetation.
- Habitat restoration outside of ADOT easement.
- Staining or painting of structures and rock cuts to blend better into the surrounding landscape.
- Reclamation of contractor use areas.
- Construction of replacement facilities where possible.

Since they are of critical concern to BLM/USFS and may be unique to the project, environmental mitigation measures require careful coordination between ADOT and BLM/USFS both during design

Figure 2.5 Steel bridge over riparian habitat.

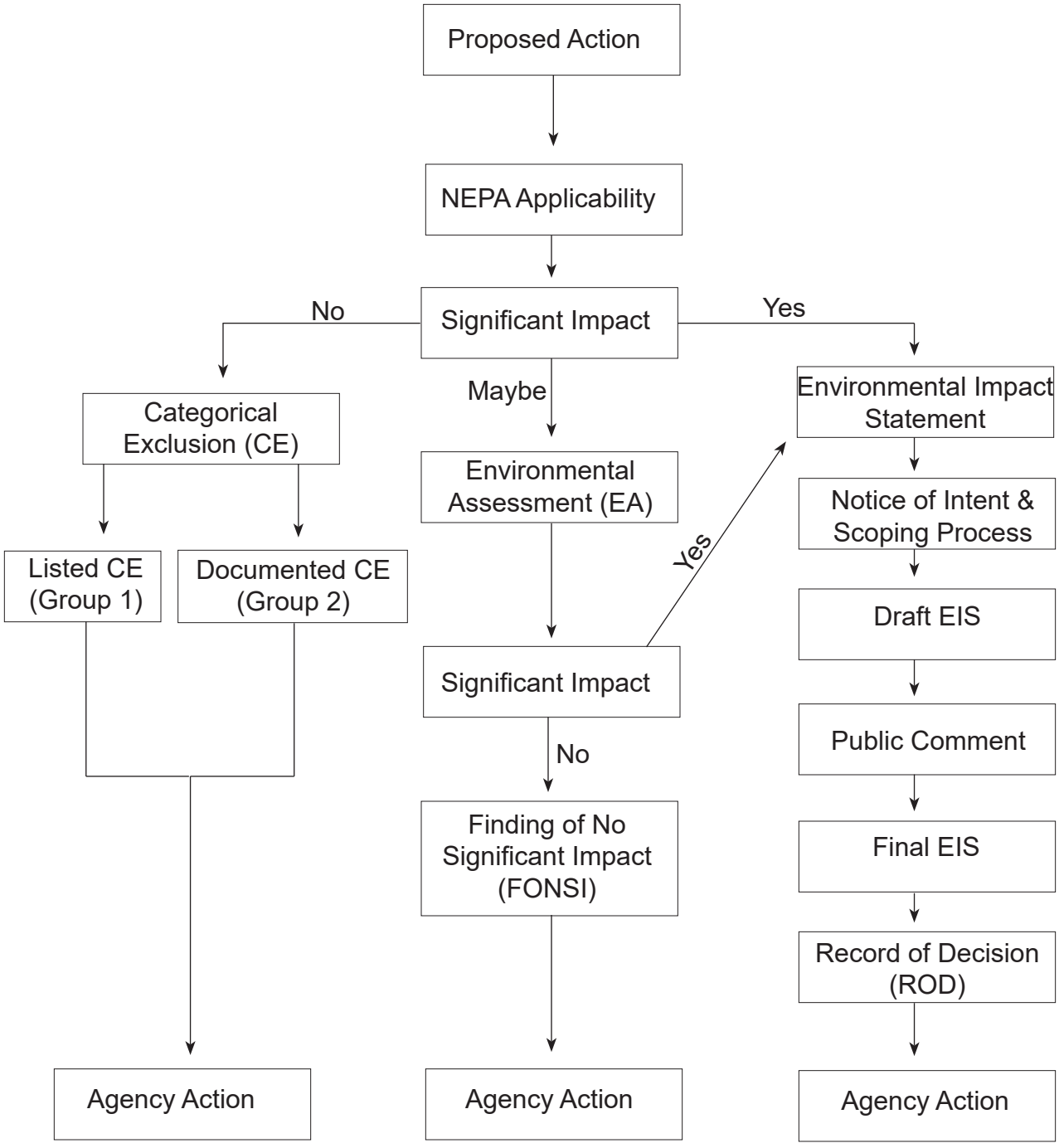

Figure 2.6 NEPA Process Flow Chart

and construction. During the design process, the project team should regularly review the NEPA document for required mitigation measures. These measures should become part of the construction documents. In addition, because they may be unique to the project and/or involve atypical construction practices, these measures should be "value analyzed" during design. **During the construction process, these mitigation measures may not be "value engineered" out of the project scope without the written approval of FHWA.**

Visual Impact Assessment

As part of the effort to provide Context Sensitive Solutions, the planning and design teams should seek to visually integrate the highway corridor with the surrounding natural landscape on BLM or USFS lands.

The visual impacts—positive as well as negative—of a highway project should be thoroughly assessed during the NEPA process. These visual impacts must be studied from two perspectives:

- Views from the roadway, *Figure 2.7*.
- Views of the roadway from the surrounding area, *Figure 2.8*, especially in critical or popular viewing areas.

Figure 2.7 Views from the roadway.

Visual impacts are typically prioritized by studying the following criteria:

- The number of potential viewers from both within and outside of the proposed right-of-way.
- The duration of those views.
- The type(s) of potential viewers: How concerned are the viewers (both within and outside of the proposed right-of-way) with the quality of the scene?

Visual resource investigation typically includes existing natural or man made features as well as the anticipated visual impacts resulting from the proposed highway. For projects on USFS lands, the USFS visual assessment model will be used. For projects on BLM lands, the BLM visual assessment model will be used.

The NEPA documents may require visual mitigation measures that affect the following highway features, explored in greater detail in later chapters:

- Roadway alignment and engineered slopes (refer to Chapter 4).
- Natural drainages and bridges (refer to Chapter 5).
- Preservation of existing vegetation (refer to Chapter 7).
- Procedures to reestablish vegetative cover (refer to Chapter 7).

NEPA and Geotechnical/Archaeological Reports

As will be discussed in greater detail later in this manual, geotechnical and archaeological investigations are important components of the design process of most highway projects and are typically performed during the early stages of design. Both types of investigation typically involve ground disturbing activities. Where the planned roadway will be located outside of an existing right-of-way, access to that future alignment (typically in the form of a "pioneer road") will be required in order to complete these investigations. The design team should be aware that NEPA compliance

Figure 2.8 Views of the roadway.

will be required prior to the construction of the pioneer road and the onset of the geotechnical and archaeological investigations. (Biological and archaeological clearances are also typically required.)

NEPA and Cultural Resources (Section 106, ARPA and NAGPRA)

A part of the National Historic Preservation Act (1966), Section 106 refers to the federal review process designed to ensure that historic properties are considered during federal project planning and execution. The review process is administered by the Advisory Council on Historic Preservation, an independent federal agency, with assistance from the State Historic Preservation Office.

For purposes of Section 106, any property listed in or eligible for the National Register of Historic Places is considered historic. The Register is this country's basic inventory of historic resources and is maintained by the Secretary of the Interior. The list includes buildings, structures, objects, sites, districts, and archaeological resources. The listed properties are not only of nationwide importance; most are significant at the state or local level. The protections of Section 106 extend to properties that possess significance but have not yet been listed or formally determined eligible for listing.

The Archaeological Resources Protection Act (ARPA, 1979) addresses the protection of archaeological resources on public lands. The Native American Graves Protection and Repatriation Act (NAGPRA, 1990) requires that federal agencies provide information regarding the discovery and recovery of Native American human remains and archaeological artifacts to Native American tribes.

USFS and BLM lands in Arizona have among the highest densities of historic property sites in the nation. Most sites are well preserved, have the potential for human remains and are frequently significant to Arizona tribes. The sites may or may not be visible from the surface. As discussed earlier in this chapter, during the ADOT planning process, a number of alternative corridors may be considered for a proposed highway. These corridors typically each incorporate significant areas of land and, consequently, may incorporate large numbers of historic property sites. As resource managers, the USFS and BLM have long-term stewardship responsibilities for all of these sites, both those that fall outside of and those that are included within the final approved easement.

Due to the fact that archaeological features may be buried or hidden from view, planning for historic property considerations can be challenging. In consideration of these challenges, it is critical that ADOT and the BLM/USFS coordinate early and throughout the highway development process. The coordination process between ADOT, FHWA and USFS is outlined in Appendix G.

NEPA and Water Development

During the construction of large highway projects, over 500,000 gallons of water per day may be needed for the proper compaction of embankment slopes and other fill areas and for dust control. These high water demands may impact local environments if that water is obtained from local watersheds. This issue is compounded by the facts that much of Arizona receives less than 12 inches of annual precipitation and aquifers are of limited size. Therefore, water is a precious resource for both natural resources and human activities. In addition, the State of Arizona places a high value on the maintenance of aquifers and the downstream effects of changes to those aquifers. Potential sources of water may be further complicated by the fact that surface and groundwater may be physically related but owned by separate parties.

For these reasons, it is often necessary to obtain both federal and state clearances when developing sources of water for construction. The project team may want to consider alternative sources when feasible, such as reclaimed water.

Given the potential impact to natural and human activities and possible necessary coordination with other public agencies, the project team should consider including the water development process in the NEPA review.

NEPA and Material Sources

As will be described in greater detail in Chapter 9, material sites are typically locations outside the highway corridor easement from which rock or other construction materials may be mined and processed to serve the needs of new construction and/or maintenance activities. Because they involve ground disturbing activities and because

they take place outside of the easement, the development of material sources requires NEPA clearance. Depending on the nature of this disturbance, NEPA clearance may require several years to complete. Since the contractor generally identifies their material sources after the award of contract, these sources are not usually identified in the project NEPA document. For post award material source requirements refer to ADOT Specifications.

NEPA and Maintenance
Generally, operations and maintenance activities of an existing alignment do not require NEPA documentation. Refer to Chapter 11 for a listing of maintenance activities that typically do or do not require NEPA documentation.

2.4 PROJECT REFERENCE

For complex highway projects, the ADOT development and NEPA processes may require years to complete and involve numerous decisions that affect the final project contract documents and the subsequent construction of the highway. In order to properly design and construct the highway, it is important to retain a record of those decisions made during the life of the project. As described in greater detail in Appendix K, the Project Reference serves as a compilation of those decisions made during the planning and design processes that need to be implemented during design and construction. The reference is a means of tracking these decisions in order to ensure that they are not overlooked or forgotten during subsequent design and construction.

2.5 ARIZONA PARKWAYS, HISTORIC AND SCENIC ROADS

In response to public concerns regarding unchecked development adjacent to public roadways, ADOT was charged in 1982 with responsibility for administering the state's Parkways, Historic and Scenic Road Program. The program allows for the nomination, designation and maintenance of these types of roads. Any interested group or individual may nominate roads by requesting designation to the Parkways, Historic and Scenic Roads Advisory Committee, as described in *Application Procedures for Designation of Parkways, Historic and Scenic Roads in Arizona*. In addition to providing an inventory of the unique qualities of that road, the nomination process will include a list of recommendations to protect or enhance those unique features and special natural or cultural resources in the area. State laws applicable to this program provide for the exemption from standard construction and maintenance practices to ensure resource protection. Revised construction and maintenance procedures for such designated roads and parkways may be developed to reasonably provide for the safety and service of the traveling public. Possible recommendations include:

- Modifications to structures and signs.
- Pruning or removal or addition of plant materials.
- Enhancement of historical markers.
- Erosion control.
- Pedestrian traffic.
- Locations of scenic viewpoints.

When preparing plans for improvements to designated parkways, historic or scenic roads, the design team should review the documented resources in order to integrate these into the design. During construction or maintenance of any type, vehicular access should be carefully controlled in order to minimize disturbance. Maintenance of roadside vegetation should be timed to maximize opportunities for wildflower displays and seed production.

The FHWA National Scenic Byways Program, the USFS National Forest Scenic Byways and BLM Back Country Byways are other programs that recognize, preserve and enhance selected roads in Arizona.

2.6 USFS PROCESSES THAT AFFECT ADOT HIGHWAY DEVELOPMENT

Because USFS desires to work with ADOT as a partner in the Project Development Process, it is useful to outline the process by which USFS plans for transportation needs within National Forests. In addition to the processes described above, the following USFS processes may affect ADOT highway development process.

National Forest Land and Resource Management Plan
Each National Forest is required by law to develop, update and implement a Land and Resource Management Plan or "Forest Plan." The Plan typically specifies goals for environmental quality and natural resource management.

Access Management Objectives
As a part of the Plan implementation process, each Forest develops "Access Management Objectives" to provide public access to the Forest. These objectives describe the extent and form of access needed to achieve management goals. Forms of access may include hiking, horseback riding, motor vehicle, air or watercraft.

Access Management Process
Specific management objectives are developed by USFS District Rangers for each road and trail under USFS jurisdiction. Objectives for roads are known as "Road Management Objectives." Objectives for off-highway travel are known as "Off-Highway Travel Management Objectives." USFS engineers and technical specialists use the Objectives to develop road design standards, maintenance plans, sign plans, use restrictions, forest visitor maps and all other processes used to manage access to and within National Forests. Many Access Management Objectives developed to implement Forest Plans can be applied to highway corridors without impairing ADOT goals. Deviations from typical ADOT practices may be requested by the USFS to make projects comply with Forest Plans, such as slope treatments, setbacks and ditch widths.

Letter of Consent
The FHWA has authority to appropriate National Forest Land (BLM and USFS) for highway purposes. The USFS generally consents to FHWA appropriation and transfer of affected lands by means of a Letter of Consent (LOC). The LOC does not relate to highway engineering functional items, but it does include stipulations (terms and conditions) required for project construction and for future management of the easement. These stipulations assure adequate protection of resources and utilization of adjacent USFS lands.

Merchantable Timber
When merchantable timber must be cleared from within the project limits of a highway construction project, the exact quantity of timber must be measured and its value determined. The USFS must then sell that timber to ADOT prior to the commencement of roadway construction activities.

In order for the USFS to determine quantities of merchantable timber, the clearing limits of the project must be established on the ground by ADOT. These clearing limits cannot be marked until the roadway geometric design has been completed (Stages II and III). Clearing limits are usually established by "slope staking" limits of cuts and fills. Staking accuracy is required for an accurate timber inventory and must reflect slope rounding, warping and laying back ends of cut slopes.

Once clearing limits are established, USFS employees measure (cruise) the timber within the defined limits and make an appraisal of current market value. USFS employees will mark the trees that have been cruised, and only the trees that have been marked may be cut. The sale is then completed to ADOT.

The length of time needed for cruising, appraisal, sale and removal will depend on the scale of the operation. Weather may also impact the length of time required, especially in higher elevations where snow may be encountered during winter months. Where the proposed highway design will affect thousands of trees, the length of time required for cruising, appraisal, sale and removal can require up to five years.

If during construction, design changes require the removal of additional trees, these trees must not be cut until they are measured, marked and sold to ADOT. Failure to observe this procedure must be investigated as a timber theft under current USFS policy. Civil and criminal penalties may result.

2.7 BLM PROJECT DEVELOPMENT PROCESS

BLM's project development process is similar to that of USFS and is described in the Operating Agreement (refer to Appendix D).

2.8 ADDITIONAL RESOURCES

ADOT home page:
azdot.gov

ADOT Multimodal Planning Division:
azdot.gov/planning

ADOT Project Development Process:
Currently available only on the ADOT Internal website: **adotnet.az.gov/our-agency/intermodal-transportation/project-resource-office-pro.**
Other agencies should contact ADOT Statewide Project Management at 602.712.7545 to arrange access.

BLM home page:
https://www.blm.gov/arizona

FHWA home page:
fhwa.dot.gov/
fhwa.dot.gov/byways/

USFS and NEPA:
fs.fed.us/emc/