



**A GUIDE TO
DOCUMENTING HISTORICAL IN-USE STRUCTURES**

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INTRODUCTION

In Arizona, where the Arizona State Museum (ASM) is mandated the responsibility of maintaining an inventory of archaeological sites discovered on state, county, and municipal land pursuant to the Arizona Antiquities Act (AAA) (A.R.S. §41-841 et seq.), the definition of an archaeological site has been refined to exclude historical structures that are still in use (see **Appendix A**, for full ASM policy statement). All historical in-use structures over 50 years old need to be addressed as part of a cultural evaluation effort. Therefore, the State Historic Preservation Office (SHPO), in partnership with the Historic Archaeology Advisory Committee (HAAC), developed a series of forms and processes for documenting and tracking these important resources—the Historic In-Use Structure Form (HISF). To assist in identifying and evaluating in-use historic structures, online information and resources are provided in **Appendix B**.

The HISFs are available as fillable Word documents on the SHPO website at <https://azstateparks.com/shpo/> and can be modified as necessary. As this document will be available in electronic format only, new information may be added once reviewed by HAAC and approved by SHPO. Thus, this guide should be considered a dynamic document.

The SHPO will manage the HISF and collected data. All inventory forms must be submitted electronically to SHPO in a pdf format, after the agency signs off on it. For non-mandated projects (see SHPO Guidance Point No. 11), the consultant may submit the forms directly to SHPO as long as the agency/proponent is copied. We request that the forms be submitted as a separate attachment, rather than as an appendix to a report to facilitate file management.

Within four weeks of SHPO concurrence, SHPO will assign the property an inventory number and upload the forms into the AZGEO Clearinghouse database, a shared GIS-based resource. **Agencies and consultants must create an account with AZGEO Clearinghouse “SHPO Historical Resources Group” in order to access the forms for research purposes.**

Click <https://azgeo.az.gov/azgeo/azgeo-maps-and-apps> to create an account and register for the SHPO group. It may take a few days to receive approval.

SHPO is partnering with ASLD, and possibly others, to develop a searchable geo-referenced database and mapping tool. In the interim, only the forms will be available.

History of the HISF

Arizona's rich cultural heritage consists of thousands of prehistoric and historical archaeological sites, buildings, structures, objects, and districts (collectively called "property types" following National Register Bulletin 15). The National Register definition of a site is "the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure." Structures are defined as "functional constructions made usually for purposes other than shelter." (We would argue that Bulletin 15's listing of roads as a "site" refers to abandoned segments only.) This clarification of ASM's responsibilities means that ASM site numbers are no longer assigned to historical in-use

structures, and ASM will not maintain an inventory of these structures. Once abandoned, however, a site number can be assigned.

More than a year prior to ASM's refinement/clarification policy, the SHPO began reviewing how managers of linear properties, including irrigation canals, transmission lines, roads, fences, etc., treated, documented, and evaluated such structures. SHPO subsequently held meetings in 2015 with resource managers, ASM, and representatives from the HAAC, and additionally with land managing agencies in 2016 to discuss approaches to how resource and land managers preferred to treat these resources. Valuable feedback led to the SHPO and HAAC sponsored workshop at the 2016 Historic Preservation Conference (HPC) in Phoenix. Shortly thereafter, ASM published its policy statement on historical in-use structures and SHPO changed course to include all historical in-use structures, not solely linear properties. Another workshop was held at the 2018 HPC in Scottsdale, at which time SHPO and HAAC presented field forms for documenting historical in-use structures during a beta testing period (September 2018 - March 2019).

This reference guide, presented by the SHPO and HAAC at the 2019 Historic Preservation Conference in Prescott, represents the culmination of all our efforts to develop documentation and reporting standards for historical in-use structures. While there is no mandate for the recorder to be a specialist (i.e., historical archaeologist or historical architect), SHPO recommends that the associated research, documentation, and evaluations are performed under the supervision of (or minimally, reviewed by) historical archaeologists. Land managing agencies may have other requirements.

The HISFs were developed to be stand-alone documents, similar in concept to the ASM site forms, and the existing SHPO Historic Property Inventory Form (HPIF).

SHPO and the agencies are aware of the complex nature of linear in-use structures in particular. Linear structures must be evaluated for eligibility in their entirety (or treated as eligible if unevaluated), with documented segments recommended as contributing or not contributing components to the structure's overall eligibility.

From the beginning of our nearly four-year-long process, we were mindful of the following issues which had to be addressed in order for these forms to succeed:

- There had to be a central database for storing the documented information, to ensure that Cultural Resource Management (CRM) companies and agencies could identify these structures in a Class I review;
- Certain information had to be on the forms, to ensure that Class I data searches were successful and expedient;
- We did not want, nor do CRM companies or agencies want, to repeatedly document the same nonlinear structures or segments of linear structures in the event of intersecting Class III projects and surveys;
- We did not want CRM companies or agencies to provide different recommendations of eligibility for structures without good reason or merit;
- We wanted to ensure the use of historic contexts developed for evaluating structures was uniform and balanced, recognizing that contexts may vary regionally or geographically;
- Understanding that the use of these forms increased time and expense for CRM companies and agencies, we wanted to ensure that agencies would fully support the new policy and

that the use of these forms would be universally applied—recognizing, of course, that federal agencies and tribal communities may have their own policies and requirements for these types of structures;

- Finally, we developed these forms with the goal of making this as painless as possible for those who must fill these forms out, and for the agencies who will be reviewing these forms and maintaining a central database, which will be maintained by SHPO.

General Exemptions

In general, field archaeologists should consider recording those resources on the HISFs that were previously documented as sites (prior to the 2016 ASM policy). However, not all historical in-use structures require full documentation. Indeed, just as the historic context is crucial for evaluating eligibility, we believe the historic context is also crucial for recommending that certain resources not be recorded as historical in-use structures. Notably, the resources identified below are considered exempt from documentation with the HISF forms during Class III survey. Research prior to and following a Class III survey is essential for making such a determination. Moreover, although these resources will be exempt from documentation on the HISF, they must nonetheless be mentioned in the Class III report in either the Built Environment portion of the report, or in the Previous Research portion of the report where previously undocumented resources are typically noted. It's worth noting that in some circumstances, these types of resources may be considered or evaluated as contributors to a potential or eligible historic district. In such cases, forms will be required for these resources.

The following list defines exemptions from using the HISF (see instructions for individual structure types for more information):

1. Any structure previously documented using the (original) SHPO Historic Property Inventory Form. Please include a reference to this form in the survey report.
2. Large Historic Natural Gas pipelines exempted from further review. From ACHP Program Comment to Exempt Consideration of Effects from projects involving Historic Natural Gas Pipelines (Federal Register published 4/5/2002).
3. Interstate Highways are excluded. However, frontage roads and associated features may be recorded using the HISF, if research indicates they were once a component of the HSHS (e.g., US Highways 66, 80).
4. "Excluded historic rail properties." From the ACHP Program Comment to Exempt Consideration of Effects to Rail Properties within Rail Rights-of-Way (Federal Register published 8/24/2018). This excludes railroads that illustrate the history of the development of the Nation's railroads or trail transit systems; however, the presence and significance of the railroad should be briefly discussed in the built environment section of the report.
5. Bridges/culverts that have been documented by FraserDesign (2008; see Bridges: Arizona Historic Bridge Inventory [1880–1964]) do not require a structure form. There are protocols, however, to be followed for bridges determined not eligible and those determined eligible for inclusion in the National Register of Historic Places (NRHP).

6. Structures previously documented through intensive inventories (using approved forms), Historic American Building Survey (HABS)/ Historic American Engineering Record (HAER) documentation, and NRHP nominations (including Multiple Property Documentation Forms [MPDFs]).
7. Isolated features under the previous (pre-December 2016) ASM site guidance may continue to be identified as isolates and briefly described in text or table format, rather than as historical in-use structures **with the following conditions:**
 - a) They are not part of a historic district,
 - b) They have not been previously determined eligible for listing in the NRHP,
 - c) There is no sufficient context in which to evaluate their historical significance.

If the conditions above are met, the following resources can be recorded as Isolated Features:

- Metal, plastic, and non-wooden pipelines for water, gas, etc.
- Livestock dams/reservoirs/tanks, troughs, spring boxes, windmills
- All survey and cadastral markers
- In-use fences and enclosures (barbed wire, chain link, buck-and-pole)
- Unimproved roads (two-track roads, ranch roads, seismic testing roads, etc.) that are unnamed in any of the sources consulted during records review
- Riprap and gabions (erosion control structures primarily made of rocks or wood to stabilize riverbanks, streambanks, or drainages)
- Water control channels, laterals, spreaders, distribution canals, and ditches that are not part of an organized irrigation system, irrigation district, or a listed or nominated historic district
- Wells listed in the Arizona Department of Water Resources well register except when spatially and/or temporally associated with historical buildings, sites, districts, structures that are eligible or listed in the NRHP

COMPLETING THE HISF

Because structures are so varied in form, function, and construction, creating a single form was just not tenable. We identified five structure types that we believe are commonly identified on Class III survey:

- Highways, roads, and trails
- Canals and laterals
- Railroads
- Transmission and utility lines
- Bridges and trestles

From these five property types we developed the HSIFs, which are organized in three components:

1. Structure Summary Form:

The structure summary form contains the necessary information for tracking these documented resources, whether in whole or in segments. Information entered on this form includes: structure type, locational and jurisdictional information, condition and integrity, National Register evaluation, criteria applied, and contexts used for evaluating the resources. Finally, a photograph is included on this form. This form is filled out for each structure documented on a survey. Linear structures with multiple recorded segments need only one structure summary form.

2. Individual Structure Forms:

The individual structure form is used for more detailed recording of a specific structure type and includes construction materials, measurements and dimensions, associated features, and relevant text. There are forms for each of the structure types identified above, plus a form for “Other / Miscellaneous” structures.

3. Continuation Form:

The continuation form is essentially a blank form for additional photographs and supplemental text if warranted.

The HISF should be used during a Class III survey in the same manner as an archaeological site form; unlike an archaeological site form, however, the HISF will be submitted to SHPO with a technical report. Although the individual forms should be self-explanatory, this guide includes additional context information and feature types that may be present and should be noted on the individual property type forms, like the Railroad or Transmission / Utility Line form. Note that if a linear resource includes in-use and abandoned segments, then the abandoned segment(s) must be documented as a site.

Structure Summary Form

The 3-page Structure Summary Form comprises the first part of the HISF submittal. Fill out the form as completely as possible.

General

- In the section below the shaded area, include the consultant's project name and number, the associated report title, author, and year. If applicable, include the ASM accession number and former site number.
- SHPO will assign an inventory number and add it to the top of the form.
- At the bottom of the form, type "Yes" as applicable for Continuation Form and Map.

Structure Identification

Structure Type: Identify the specific type of structure, such as railroad, canal, road, etc.

Historic Name(s): The official historic name; also cite source and year.

Use/Function: Describe how the property has been used over time, beginning with the original use if known.

Constructed by: Identify the relevant group/entity, such as Civilian Conservation Corps (CCC), or check "Not Determined".

Construction Date: Provide the date of construction, and check "Known" or "Estimated" as applicable.

Source(s)/References: List the reports/sources reviewed to obtain the information used in this research.

Locational Information

USGS 7.5' map name: List all within the project area or APE.

UTM reference (NAD 83). Identify "Zone", "Easting and Northing" as a center point for non-linear structures, and include start and end UTM points for linear segments. In the event that multiple discontinuous segments of a linear structure are documented, a table may need to be included on the continuation form to delineate UTM's of all segments.

Jurisdiction: The underlying land manager; list agency, municipality, county, or private.

Structural Condition

Check the condition of the structure at the time of the survey. As needed, discuss on continuation form.

- Good - well maintained, no serious problems apparent
- Fair - some problems apparent
- Poor - major problems, imminent threat

Structure Summary Form, Page 2.

General

- At the top of the form (below the shaded area), identify the historic name of the structure (from page 1).
- The bottom of page 2 includes a shaded area for agency and SHPO review.

Significance

- Check the box(es) for the criteria of significance following National Register criteria, or indicate if the structure is unevaluated.
- If the structure is ineligible, refer to the section identified as “Recommendations for Eligibility.”

Briefly provide the applicable historic context(s); this must be as specific as possible, with the appropriate period of significance, place, and theme (i.e., Irrigation in South Gila Valley, ca. 1915-1970). The context must be included even if the property is recommended unevaluated or ineligible. With recommendations of ineligible, you are stating that the property does not meet the criteria of significance for that historic context. Please note the following:

1. The form will not be accepted if there is not an appropriate historic context statement, which must be included whether or not the structure is significant.
2. The historic context statement used on the form should be expanded and described more fully in the technical report. The statement on the form should be as specific as possible.
3. Historic context studies are also available on the SHPO website.

Integrity

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information on a continuation form above aspects of integrity that apply to the structure. Check one or more boxes, as appropriate.

National Register Status

This applies to structures already listed on the National Register. Use the National Register database (<https://www.nps.gov/subjects/nationalregister/data-downloads.htm>) or NEPAAssist website (<https://www.epa.gov/nepa/nepassist>) to identify listed properties. Check the appropriate box. List the date.

Recommendations of Eligibility

- This is the consultant’s recommendation based on their own documentation for the current project. Check the appropriate box(es).

- Include a justification if more information is needed to evaluate eligibility - state what type of additional research is necessary.

Structure Summary Form, Page 3.

General

At the top of the form, below the shaded area, identify the historic name of the structure (from page 1).

Photographs

- Include an overview photograph of the structure. More photographs, if warranted, can be added to the continuation form.
- Photographs must include the date taken, the direction, and photograph number.
- We recommend attaching a photo log if numerous photographs are included.
- Identify the person completing the form (the recorder, and if necessary the specialist overseeing the work), the date recorded, affiliation, address, and phone number.

Highways / Roads/ Trails Form

It is not uncommon that multiple segments of an in-use road will be documented on a Class III survey. In such cases, one Structure Form will be filled out for the linear resource as a whole; if warranted, a Continuation Form may be completed with additional photographs or text. If documented road segments are similar in width, materials, and general condition, then multiple segments may be documented on one Structure Form. However, a separate Structure Form must be completed for recorded segments if these conditions are present:

- Features are present on a recorded segment;
- The structure type and/or treatment are different (e.g., one segment is an unimproved, gravel-surfaced road, while another segment is paved)
- Width of recorded segments are markedly different (e.g., 10 ft vs. 24 ft)

Exemptions:

1. Municipal and County arterial streets are excluded provided they have no historical significance, i.e., they are not part of a historical streetscape, historic district, or were not previously components of the Arizona Historic State Highway System (HSHS).
2. Some companies have thoroughly inventoried in-use segments of significant trails, roads, and highways over the course of many decades. Filling out a HSIF for these inventoried portions of linear structures is not required, provided that **the report details these previous inventories** (including evaluation of the segments), and provided that **no integrity loss is evident** on these previously recorded resources.
3. Some portions of in-use historic highways and trails may have received more thorough inventories and documentation through NRHP nominations, or through

ADOT's HSHS mitigation program. If located within a project area/APE, these recorded segments would not require further documentation, with the following caveats:

- a. The previous inventories are thoroughly summarized in the report, including documented road segments and features.
- b. Documented road segments and features have not experienced significant integrity loss since their original documentation.
- c. No additional features or structures are present along the recorded segment(s).

Filling out the Form:

General

Top of form - Identify the structure by its historic name (from Structure Summary Form, page 1).
Bottom of form - to be completed by sponsoring agency and SHPO.

Segment Number

Enter the segment number (multiple segments if they are similar in construction and exhibit no features)

Road Structure Type

Enter the structure road type as either a trail, wagon road, or automobile road/highway.

Road Treatment and Construction Materials

Unimproved	Dirt roads, two-track roads, trails
Improved	Gravel surface, or other materials, such as oil or other materials
Paved	Concrete or asphalt surface

Alterations

Note any alterations that have been done on the recorded segment (e.g., widening, new materials, and location).

Dimensions

Length of segment (ft.), Roadbed Width, Road Prism Width (roadbed, shoulders, berms, crown ditches)

ROW Width (Current and Historical) (if known)

This data may only be available on Engineering Records and ROW maps.

Associated Features

List all associated features and note whether contributing or not to the eligibility of the overall linear structure. Include representative photographs for the various features. Some features and structures may exhibit distinctive attributes and may be considered eligible as contributing features under Criterion C. These features/structures may require separate documentation. A Continuation

Form may be necessary for additional representative photographs of various features and additional text.

Bridges and Appropriate Documentation

It should be noted that while Bridges may be regarded as associated features to a linear resource, it may be necessary to document these structures separately with the Bridge/Trestles Structure Form in order to evaluate them individually under Criteria A and C.

Additional Comments

Include distinctive attributes of the linear resource, or inscriptions and markings that have been observed on associated features/structures (e.g., CCC and WPA construction, distinctive graffiti of the historic period, etc.).

Table 1. Common Features and Structures Identified along Highways / Roads / Trails		
Feature Type	Definition	In-use Structure Form Required?
Bridges	A raised structure allowing a road to cross a river, road, railroad, or other obstacle.	It may be necessary to document these structures separately with the Bridge/Trestles Form in order to evaluate them individually under Criteria A and C.
Culverts	A structure that allows water to flow under a road. A culvert may be made from a pipe, reinforced concrete or other material.	Culverts can be considered part of the road and do not require separate documentation. Please note that some larger culverts have been documented by FRASERDesign (2008). Culverts affiliated with Depression-era labor programs may warrant separate documentation on a General/Miscellaneous form if they are distinctive and retain integrity.

Table 1. Common Features and Structures Identified along Highways / Roads / Trails

Feature Type	Definition	In-use Structure Form Required?
Retaining walls	<p>Constructed along the roadway to protect the corridor from erosional processes and flooding.</p>	<p>These features can be considered part of the road and may not require separate documentation if postdating World War II.</p> <p>Distinctive stone and masonry retaining walls (typical in pre-WWII roads) may warrant separate documentation on a General/Miscellaneous form if they retain integrity. These structures may be affiliated with the Depression-era programs.</p>
Crown ditches and other drainage ditches, dykes, etc.	<p>Constructed along a roadway to collect surface drainage from the treated surface (crown and drainage ditches).</p> <p>Other structures constructed, such as dykes direct floodwaters away from roadway.</p>	<p>These features can be considered part of the road and do not require separate documentation.</p>
Miscellaneous features	<ul style="list-style-type: none"> ● Boundary markers ● Surface rock alignments ● Concentration of historical trash (wastepiles, small dumps) ● Cattleguards ● Guardrails ● Drainpipes ● Surface concrete drainages ● Signs, guide posts, etc. ● ROW fencelines (if clearly historical) 	<p>These features can be considered part of the road and do not require separate documentation.</p>

Table 1. Common Features and Structures Identified along Highways / Roads / Trails

Feature Type	Definition	In-use Structure Form Required?
Roadcuts and Through-Cuts	Cuts made in the construction of a roadway through a hill or sloped area.	<p>Roadcuts and Through-Cuts are not usually recorded as features, as they have no function to the operation of the road or highway. However, as a man-made component to the roadway, they should still be documented in a separate table, numbering the cuts sequentially (e.g., RC 1-10).</p> <p>Include the following in the table: length, maximum height, and MP if possible.</p>

Canals / Laterals Form

It is not uncommon that multiple segments of canals, laterals, or ditches will be documented on a Class III survey. In such cases, one Structure Form will be filled out for the linear resource as a whole; if warranted, a Continuation Form may be completed with additional photographs or text. If the documented segments are similar in width, materials, and general condition, then multiple segments may be documented on one Structure Form. However, a separate Structure Form must be completed for recorded segments if the following conditions are present:

- Portions of the canal feature varying treatments (e.g., earthen channels, with portions lined with concrete/gunite);
- The structure type is different (e.g., recorded segments of a main canal, distribution lateral, or farm ditch);
- Associated features and structures occur on some segments, but not others.

Multiple farm ditches are often encountered on large farm parcels and properties, conveying water to different fields. If the archival research indicates the ditches are owned by the same individual(s), and if the conditions in bullet points above do not apply, then one form is all that is required for multiple farm ditches encountered and documented.

Exemptions:

It is not intended that all associated infrastructure along an irrigation system be thoroughly documented with the use of multiple HISFs. Many associated features/structures are ubiquitous within a system and should only be recorded as associated features of the recorded channel segment(s). There are, however, exceptions to this general rule, particularly when the feature/structure exhibits distinctive attributes of design or engineering. For instance, structures constructed under New Deal programs (i.e., CCC or WPA) may merit separate documentation. Large flumes spanning a river or water channel or exhibiting distinctive attributes (e.g., China Wash flume, Beardsley Canal flume) would merit separate documentation as well.

Reclamation projects in Arizona include the Salt River Project, the Yuma and Yuma Auxiliary Projects, Gila Project (Wellton-Mohawk and Yuma Mesa Divisions), and San Carlos Irrigation Project (SCIP). A number of dams have been constructed as part of these projects along the Colorado, Gila, Salt and Verde Rivers. These projects have, for the most part, been thoroughly inventoried to MPDF, HAER and NRHP standards. Many of these documents are available online for download, and can also be requested from SHPO or Reclamation. Requests may also be made to the CRMs, companies, or individuals who completed the documentation.

Main canals are likely to have been inventoried, as well as prominent distribution laterals. Dams, camps and headquarters, siphon structures, lifts, and other structures reflecting distinctive engineering and construction attributes are also likely to have been inventoried. In such cases where a HISF is not required for structures in a project area or APE, include a brief summary of the property/feature in the technical report, along with its previous documentation and evaluation (e.g., individually eligible, contributor or noncontributor).

Filling Out the Canals / Laterals Form**General**

Top of form - Identify the structure by its historic name (from Structure Summary Form, page 1).

Bottom of form - to be completed by sponsoring agency and SHPO.

Structure Type

Enter the structure type as either a main canal, distribution lateral, sublateral, or farm ditch.

Associated System:

Indicate what system (e.g., Salt River Project, San Carlos Irrigation Project) is associated with the structure.

Associated Main Canal

List the main canal that conveys water to the recorded segment (if applicable).

Construction Materials

Unlined channel (earthen), gunite or concrete-lined.

Alterations

Note any alterations that have been done on the recorded segment (e.g., widening, new materials, and location).

Dimensions

Length of segment (ft.), Depth (ft.), and Width of channel (ft.), and Total width (including berms, access roads, etc.) (ft.)

Associated Features

List all associated features and note whether contributing or not to the eligibility of the overall linear structure. Include representative photographs for the various features. Some features and structures may exhibit distinctive attributes and may be considered eligible as contributing features under Criterion C. These features/structures may require separate documentation. A Continuation Form may be necessary for additional representative photographs of various features and additional text.

Additional Comments

Include distinctive attributes of the linear resource, or inscriptions and markings that have been observed on associated features/structures (e.g., CCC and WPA construction, distinctive graffiti of the historic period, etc.).

Table 2. Common Features and Structures Identified along Canals / Laterals.		
Category and Associated Structures	Definition and Comments	In-use Structure Form Required?
Conveyance Structures: <ul style="list-style-type: none">• Canals, laterals, ditches	Convey water from a storage source to users Berms located along conveyance channels can be considered part of the channel and do not require documentation with a HISF.	Yes.
<ul style="list-style-type: none">• Siphons, piping, crossings• Flumes, drops, chutes, culverts		Generally, no.

Table 2. Common Features and Structures Identified along Canals / Laterals.

Category and Associated Structures	Definition and Comments	In-use Structure Form Required?
Containment/Diversion Structures: <ul style="list-style-type: none"> ● Dams / check dams ● Reservoirs ● Dikes 	Containment structures impound water and regulate its release. Diversion structures divert water into a conveyance system and impound water for later use	Yes.
Regulating Structures: <ul style="list-style-type: none"> ● Turnouts ● Checks, check-drops ● Division structures 	Raise, lower, or control the release and volume of the water flow.	Generally, no
Water Measurement / Protective Structures: <ul style="list-style-type: none"> ● Weirs, weir boxes ● Parshall / Venturi flumes ● Open flow meters ● Constant head orifices ● Wasteway ditches 	Water measurement structures are used to gauge water flow and ensure equitable distribution. Protective structures minimize the adverse effect of flooding or uncontrolled drainage water on the system	Generally, no
Miscellaneous: <ul style="list-style-type: none"> ● Groundwater wells ● Tunnels, bridges, ● Fish screens and ladders ● Safety features 	Components of other category types.	Generally, no
Construction Features: <ul style="list-style-type: none"> ● Construction camps ● Quarry sites ● Highways, railroads, telephone lines. 	Related to construction of an irrigation system	May be documented as archaeological sites. May require HPIF for standing architecture. Would require HISF for associated linear infrastructure (roads, railroads, transmission lines)

Table 2. Common Features and Structures Identified along Canals / Laterals.		
Category and Associated Structures	Definition and Comments	In-use Structure Form Required?
Support Features: <ul style="list-style-type: none"> • Zanjero / Tender houses • District offices (if warranted) 	Constructed for operation and maintenance of a system	May require HPIF for standing architecture.
Power Features: <ul style="list-style-type: none"> • Power plants • Switchyards, substations • Transmission towers, distribution lines 	Power generation and delivery systems on large irrigation systems	May require General/MISC form.

Transmission / Utility Lines Form

Exemptions:

Components of several prominent transmission systems have been thoroughly documented to HAER and NRHP standards, including the Childs-Irving Hydroelectric Project, and the Eastern Mining Area Transmission Line. Some transmission line properties may also have been inventoried in the course of documentation of large dams and related facilities. Recently, an historic context statement was prepared for the Western Area Power Administration (WAPA) Desert Southwest Region. This context included an inventory of structures and structure types in the system, as well as themes and contexts for evaluating structures. In addition, guidance was provided for evaluating significant properties affiliated with the extensive transmission system. As with inventoried canal systems, the documentation on transmission facilities above does not include all components, such as smaller distribution lines, transformer stations, and former camps that may include structures requiring inventory. Many of these documents are available online for download, and can also be requested from SHPO, Reclamation, WAPA and other agencies that manage these properties (e.g., APS, SRP, SCIDD).

Filling Out the Structure Form for Transmission / Utility Lines

General

Top of form - Identify the structure by its historic name (from Structure Summary Form, page 1).

Bottom of form - to be completed by sponsoring agency and SHPO.

Structure Identification, Dimensions, and Construction

Transmission Type

Telephone, distribution (12kV), subtransmission (69kV), transmission (110kV and greater)

Transmission / Utility Type

Monopole, H-pole, Tri-pole, Four-pole, steel structure / towers.

Construction Materials

Indicate whether poles are metal, wood, etc.

No. of Cross-Arms

Indicate how many horizontal arms are on the pole

Alterations

Note any alterations that have been done on the recorded segment (e.g., new materials, and location).

Dimensions

Length of segment(s) (ft.)

Number of poles in recorded segment and pole numbers (if known)

Pole numbers may be present on tags or plates on the pole or base of the pole.

Estimated Height of Poles (ft.)

If plans are available, indicate height or estimate

Diameter/Width of Poles (ft.)

Insulator types(s)

Indicate material and any makers' marks present

Direction of Line and Overall Distance (if known or applicable)

Refers to utility line as a whole—overall direction and length of line

Associated Features

List all associated features and note whether contributing or not to the eligibility of the overall linear structure. Include representative photographs for the various features. Some features and structures may exhibit distinctive attributes and may be considered eligible as contributing features

under Criterion C. These features/structures may require separate documentation. A Continuation Form may be necessary for additional representative photographs of various features and additional text.

Additional Comments

Include distinctive attributes of the linear resource, or pole tags and markings that have been observed on associated features/structures.

Table 3. Common Features and Structures Identified Along Transmission / Utility Lines.		
Feature Type	Definition	In-use Structure Form Required?
Utility line structures	<p>Single and multiple wood and steel poles and lattice towers. Steel poles and towers are generally comprised of galvanized metal anchored by plate, grillage, or rock footings, occasionally rising from poured concrete footings with bolted legs.</p> <p>The majority of the lines consist of tangent suspension structures and dead ends are used at angle points, long crossings, terminal spans (or the last span into a substation), etc.</p> <p>Towers are additionally configured as horizontal delta, vertical with single and double circuit designs, and lattice pole, with varied conductor supports, depending upon voltage and use.</p>	<p>If no previous HAER documentation, utility line structures should be documented on a single form (i.e., multiple structures documented on a single form).</p>
Power (generation) plant	<p>A facility designed to produce electric energy from another form of energy, such as fossil fuel, nuclear, hydroelectric, geothermal, solar, and wind.</p>	<p>If no previous HAER documentation, power plants should be documented.</p>

Table 3. Common Features and Structures Identified Along Transmission / Utility Lines.

Feature Type	Definition	In-use Structure Form Required?
Substations	<p>High-voltage facilities of the transmission power systems that contain all of the necessary equipment and components to modulate voltage.</p> <p>In addition to serving as the beginning and end-point for each of the system’s transmission lines, they also monitor the status and operation of the system’s equipment and circuits and house protective systems which allow segments of the transmission lines to be disconnected or energized for safety or maintenance purposes.</p> <p>Substations typically contain a number of ancillary buildings and structures, including switchyards, control houses, communication buildings, oil houses, and generic facilities such as storage rooms and workshops.</p>	<p>If no previous HAER documentation, substations should be documented.</p>

Railroads Form

The obvious necessary condition for a railroad to be in use is that trains still use the route, no matter how infrequently. The **main line**, or **mainline** in American English, of a railway is a track that is used for through trains or is the principal artery of the system from which branch lines, yards, sidings and spurs are connected. A **spur** is a type of secondary track used by **railroads** to allow customers at a location to load and unload railcars without interfering with other **railroad** operations. A secondary use for spurs is to store rolling stock. A characteristic of a spur is that it dead ends, unlike the mainline, which is continuous.

Additional Definitions:

- Grade – the relatively level prepared surface upon which the roadbed is placed. Grades steeper than 1 1/2% were generally avoided.
- Roadbed – The built surface of the roadbed that supports the rails and other superstructure elements that permit the rolling stock to move across the landscape.

- Ballast – The material that supports the superstructure (rails, ties, etc.). Ballast normally consists of crushed rock, clinkers, cinders, or similar material.

Filling Out the Railroads Form

General

Top of form - Identify the structure by its historic name (from Structure Summary Form, page 1).
Bottom of form - to be completed by sponsoring agency and SHPO.

Railroad Structure Type

Transcontinental mainline (single, double) branch line, Mainline, spur, unknown

Railroad Gauge

Standard or narrow gauge (US) other

Track Work Present

Are there rails, ties, etc.

Ballast Materials

Usually crushed rock, clinkers, cinders, etc.

Ballast / Bed Width (ft.)

Does not necessarily include the entire grade width

Alterations

Note any alterations that have been done on the recorded segment (e.g., new materials, and location).

Length (ft.)

Length of segment(s) (ft.)

Associated Features

List all associated features and note whether contributing or not to the eligibility of the overall linear structure. Include representative photographs for the various features. Some features and structures may exhibit distinctive attributes and may be considered eligible as contributing features under Criterion C. These features/structures may require separate documentation. A Continuation Form may be necessary for additional representative photographs of various features and additional text.

Additional Comments

Include distinctive attributes of the linear resource, or pole tags and markings that have been observed on associated features/structures.

Table 4. Common features associated with Railroads and Signals

Feature Type	Definition	In-use Structure Form Required and Other Notes
<p>Rails</p>	<p>There are two main types of railroad line that are likely to be found in Arizona: standard gauge and narrow gauge.</p> <p>Standard gauge lines have rails that are set 4 feet, 8 1/2 inches apart, as measured from the inside of the rails. Historic narrow gauge lines, not surprisingly, are set closer apart, often 3 feet apart in Arizona.</p> <p>Modern nonstandard gauge lines are unlikely to be found in freight hauling, but may be found as trolley lines, light rail, and tourist and amusement rides.</p> <p>Rails may be imprinted by the date of manufacture and an abbreviation of the manufacturing company.</p> <p>Rails are often mechanically joined with plates and bars. These fixtures also may have dates and maker's marks imprinted on them (Fig. F.1).</p>	<p>Rails can be considered part of the railroad grade feature and do not require separate documentation.</p> <p>Like many pieces of rail hardware, rails may have been reused so their date cannot be conclusive.</p> <p>Like many pieces of rail hardware, rail joiners may have been reused so their date cannot be conclusive.</p>
<p>Switches</p>	<p>Switches are systems of rails and controls that enable trains to be diverted from one track to another. The controls may be hand powered, but increasingly, pneumatic, hydraulic, or electrically operated mechanisms are being employed (Fig. F.2). The actual switches may be as simple as a siding, which consist of a track parallel to the main line that can be used to store unused sections of rolling stock,</p>	<p>Switches should be briefly described and photographed as necessary as a component of the Railroad HISF.</p>

Table 4. Common features associated with Railroads and Signals

Feature Type	Definition	In-use Structure Form Required and Other Notes
	<p>or to allow trains to pass one another. Another simple switch is known as a wye, which is a "Y" shaped structure used to turn a train by backing it up and through the branches of the wye.</p> <p>A wye also is used to divert a train to another direction while retaining the original track.</p> <p>Much more complicated switches and controls will be found in switching yards, where trains are assembled for long-distance travel.</p>	
Ties	<p>These are traditionally wood timbers soaked in creosote to prevent weathering and insect decay. They were placed perpendicularly to the rails. Increasingly, ties are now made of precast concrete, particularly on main lines experiencing high loads.</p>	Ties can be considered part of the railroad grade feature and do not require individual documentation.
Spikes	<p>Spikes (and screws) are one of the most iconic aspect of railroad artifacts. Their significance as an in-use material is that they may also feature a date stamp that may help date the rail line (Fig. F.3).</p>	Like many pieces of rail hardware, spikes may have been reused so their date cannot be conclusive.

Table 4. Common features associated with Railroads and Signals

Feature Type	Definition	In-use Structure Form Required and Other Notes
Culverts	Culverts are perhaps the simplest water control structure, consisting of a corrugated metal pipe, a mortared stone tunnel, or a wooden box culvert, which are designed to convey small amounts of water from one side of the track to the other (Fig. F.4).	Document type, dimensions, condition, and any date stamps or other markings.
Trestles	Trestles are more substantial structures that are used to convey a rail line across a more substantial depression, often associated with an intermittent or permanent stream. Trestles are generally openwork constructions made of wood, stone, concrete, and/or metal (Fig. F.5).	Trestles that have not been subjected to HAER documentation or a National Register of Historic Places (NRHP) form should be documented using a HISF.
Cut and Fill	It was desirable to make a railroad grade as level as possible. Cutting and filling earth and rock was often an economical solution to creating steep grades.	Cut and fill episodes need only to be noted as components of the Railroad HISF. Measurements of length and photographs may be taken as necessary.
Signaling Systems	<p>Signaling systems may be static signs, mechanical, lighted, or a combination of these types.</p> <p>Common static signs are road crossing warning signs (a sign warning the conductor that the rail line is approaching a crossing and a warning signal should be made), mile markers, and train movement signs (Fig. F.6).</p>	Signals should be briefly described and photographed as necessary as a component of the Railroad HISF.

Table 4. Common features associated with Railroads and Signals

Feature Type	Definition	In-use Structure Form Required and Other Notes
	<p>Mechanical signs use electricity and some type of remote switch to create movement in the signal (Fig. F.6).</p> <p>Lighted signals use electrical lights convey information by position of the lights, by their color, or a combination of both (Fig. F.6).</p> <p>Mechanical and lighted systems may be combined to enhance visibility.</p>	
Rolling Stock	<p>These are locomotives, carrier cars, cabooses, track maintenance cars, etc.</p>	<p>These generally should not be described. These machines are either literally in use, or on standby. A modern railroad will not permit rolling stock to remain idle for any length of time.</p>
Buildings	<p>Related in-use buildings, such as passenger stations, employee offices, and maintenance yards, should be described and documented as with any other building.</p>	<p>The SHPO's HPIF may be used for this purpose.</p>

Bridges / Trestles Form

The vast majority of bridges constructed along the HSHS have been documented by FraserDesign (2008 Bridges: Arizona Historic Bridge Inventory [1880–1964]). SHPO, FHWA and ADOT have concurred with the findings of this extensive MPDF; that is, most of the estimated 1,100 bridges inventoried have been determined ineligible for inclusion in the NRHP. Inventoried bridges do not need to be recorded on the HISF.

Filling out the Structure Form for Bridges / Trestles

General

Top of form - Identify the structure by its historic name (from Structure Summary Form, page 1).
Bottom of form - to be completed by sponsoring agency and SHPO.

Bridge / Trestle Type:

Example types include slab & girder, arch, box culvert, suspension, cable, truss.

Construction Materials:

Timber, steel, stone, brick, concrete, or combination of one more material types.

Substructure Characteristics:

Abutments:

End supports of a bridge that carry the support of the bridge and provide embankment support at each end of the approach. All material types were used in construction of these bridge features.

Wing walls:

Functioning as retaining walls and additional support at each abutment end.

Piers:

Vertical supports, typically in the waterway that lend support to the superstructure between the abutments. All material types were used in construction of these bridge features.

Girders:

Horizontal support beam that carries weight of floor beams. Common material types of girders are steel i-beams and concrete.

Additional Features:

The most common associated feature is the guardrail, which come in a variety of forms: galvanized beam (e.g., single, triple thrie); concrete (e.g., jersey); wood beam; stone; brick. Pedestrian guardrails are higher than traditional guardrails.

Alterations

Note any alterations that have been done on the bridge (e.g., added materials, added features, maintenance to abutments and superstructure).

Span Number:

Number of vertical supports (piers) between the abutments. A single span bridge will feature only the abutments at each end, while multispan bridges include one or more vertical piers.

Span Length (ft.):

Distance between two vertical supports, or between the abutments and the vertical support (note if estimated)

Total Length (ft.):

Total length of bridge between the two approaches (note if estimated)

Roadbed Width (ft.):

Total width of the roadway itself.

Total Width (ft.):

Includes infrastructure of the bridge (note if estimated).

Additional Comments

Include distinctive attributes of resource, as well as inscriptions and markings that have been observed (e.g., CCC and WPA construction, distinctive graffiti of the historic period, etc.).

General / Miscellaneous Structures Form

This property type includes a number of nonlinear, as well as linear structures that may be associated with the linear types previously listed, but may merit documentation on their own. See “Exemptions” for structures that should be documented as isolated features.

The following may help when assessing the need to document these structures on a HISF:

- Does the structure(s) merit evaluation for eligibility in the NRHP for its:
 - Contribution (individually) to a historic event in a specific area or region, and has not been documented in previous inventories or nominations, such as:
 - Forest Tourist Camps in the early twentieth century
 - Soil Conservation Service Projects in Arizona (1930s-1960s):
 - Distinctive attributes of engineering or construction, or a rare property type, such as:
 - WPA or CCC constructed culverts, bridges, and retaining walls, and other structures located on historic highways, roads and canals;
 - Steel water tanks located along a historic railroad (please see Section 3 for excluded rail properties);

- Distinctive structures constructed in the late nineteenth-early twentieth centuries that still retain integrity (e.g., large flumes, bridges, municipal water tanks and towers)
 - Transmission towers or transformer stations made from patented methods (e.g., Weltrus beams and poles)
- Does the structure occur as an “isolate” within the project area or APE (that is the primary linear property not in the survey corridor)?
- Does the primary property, for which the structure is associated, completely surround the survey corridor and review area (e.g., a large ranch or mining property)?

If one or more of these conditions are met, the structure(s) will need to be documented with a HISF and evaluated individually and as a contributor to a potential larger district (e.g., rural; district [ranch] or mining district). Please see below for a list of common structures that may be encountered in a Class III survey. It is worth noting again that ubiquitous structures affiliated with large linear systems do not need additional documentation with a HISF if none of the conditions above are met.

Filling out the General / Miscellaneous Structures Form

General

Top of form - Identify the structure by its historic name (from page 1).

Bottom of form - to be completed by sponsoring agency and SHPO.

Structure Identification, Dimensions, and Construction

A. Non-linear Structures

1. Identify the Structure Type, Construction Materials, and obvious Alterations from the original structure.
2. For rectilinear structures, record the length and width.
3. For circular structures, record the maximum and minimum diameters.

B. Other Linear Structures (recorded segments only)

1. Identify the Structure Type, Construction Materials, and obvious Alterations from the original Structure
2. Record dimensions (length, depth, total width)

Associated Features

List all associated features and note whether they contribute, or not, to the eligibility of the primary structure. Include photographs.

Additional Comments

Document distinctive attributes as well as inscriptions, markings, metal tags, etc.

EXAMPLE: Ranching Structures

The Arizona SHPO has prepared two Multiple Property Documentation Forms for the NRHP about Cattle Ranching (available on the SHPO website):

- Cattle Ranching in Arizona, 1540-1950 (Collins 1992)
- Arizona Cattle Ranching in the Modern Era, 1945-1970 (Collins 1992)

All information in the table, below, derives directly from the above-referenced contexts; updates were made when necessary.

While individual buildings and structures associated with historic ranches may have been abandoned or destroyed, the ranch should be documented using the historical in-use structure (or building) inventory forms as long as the ranch continues to operate in a capacity similar to its original function. It is not acceptable to simply identify individual features as “ranching infrastructure” or as isolated features. Realizing that ranches may be thousands of acres in size, adequate research should still be conducted to characterize the landscape of the historic ranch in the vicinity of the project area and its historical significance.

NOTE: Some features associated with ranching and grazing activities may be recorded as isolates.

Table 5. Examples of Structures that may be Documented with the General/Miscellaneous Structure Form.		
Feature Type	Definition	In-use Structure Form Required?
Ranch House	The ranch house is the building that served as the primary residence of the owner or operator. In addition to serving as a house, the ranch house typically also served as the business office of the ranch.	No. Ranch houses (in-use or abandoned) should be documented using an Arizona Historic Property Inventory Form. If a Historic American Buildings Survey (HABS) form has previously been completed, no additional documentation is necessary.

Table 5. Examples of Structures that may be Documented with the General/Miscellaneous Structure Form.

Feature Type	Definition	In-use Structure Form Required?
Windmills	<p>Windmills are a common means for powering pumps, particularly in isolated areas where other sources of power are difficult to obtain.</p> <p>A windmill is a structure with large fan blades that are turned by the wind. This rotational energy is transmitted through gears and shafts to the pump which draws up the water.</p>	Windmills are considered part of the well feature and do not require separate documentation.
Springs	<p>A spring is a naturally occurring place where water comes to the surface without the aid of pumps. In much of Arizona, where the land is arid, a natural spring is a tremendously valuable resource. In pioneer times, the location of springs often determined the location of ranches and limited the extent of grazing. It</p>	Yes. Any improvements to a natural spring should be recorded.

APPENDIX A
ASM POLICY AND PROCEDURES REGARDING
HISTORICAL SITES AND FEATURES

*A.R.S. §41-841; Rules Implementing A.R.S. §15-1631 And §41-841 Et Seq., The Arizona Antiquities Act,
Policy 8-205(B), Duty To Report Discoveries*

(used with permission of ASM)

I. Definition

“In-use historical sites and features” means, without limitation, buildings, structures, transmission lines, pipelines, canals, trails, roads, and railroads that are 50 years old or older and that are operated, maintained, or repaired for original or similar purposes.

II. Policy

A.R.S. §41-841 does not include in-use historical sites and features. Rules Implementing A.R.S. §15-1631 and §41-841 et seq., The Arizona Antiquities Act, Policy 8-205(B), Duty to Report Discoveries does not include in-use historical sites and features.

III. Procedures

- A. Arizona State Museum (ASM) does not accept site updates for in-use portions of historical sites that were previously assigned ASM site numbers.
- B. ASM does not issue new site numbers for in-use historical sites.
- C. Abandoned portions of linear historical sites and wholly abandoned non-linear historical sites shall be reported pursuant to “Duty to Report Discoveries.”
 - 1. If a linear in-use historical site does not have an existing ASM site number, and if it is partially abandoned, then the abandoned portion(s) of the site shall be assigned one, new ASM site number; the site number does not include the in-use portion(s). It is the responsibility of the archaeological researcher to ensure that no portion of the site has been previously assigned an ASM site number before assigning a new ASM site number to the abandoned portion(s).
 - 2. If a linear in-use historical site has an existing ASM site number, and if it is partially abandoned, then the abandoned portion(s) of the site shall be assigned the existing ASM site number.
 - 3. Wholly abandoned non-linear historical sites shall be recorded following definitions and procedures in the ASM Archaeological Site Recording Manual.
- D. ASM recognizes that regulations of land managers and local, other state, and federal agencies may have reporting or other requirements for in-use historical sites and features as defined herein. However, ASM site numbers previously assigned to these property types shall not be used in association with those in the following:

1. Arizona Antiquities Act (AAA) Project-specific Permit Applications;
2. supporting documentation for AAA Project-specific Permit Applications;
3. reports of work conducted under AAA Project-specific Permits;
4. reports of work conducted under AAA Blanket Permits;
5. ASM Project Registration Forms or successor forms;
6. Data submissions for inclusion in AZSITE, which shall occur according to procedure issued by the AZSITE Board;
7. Memoranda of Agreement when ASM is a party;
8. Memoranda of Understanding when ASM is a party; and
9. Programmatic Agreements when ASM is a party

APPENDIX B RESOURCES FOR IDENTIFYING IN-USE STRUCTURES

The goal of archival research prior to and following an archaeological investigation is to establish the use history of the study area. This research will heighten the awareness of field archaeologists to the range of possible historical resources. Research into land use is required to identify historic contexts as well as potential property types. Guidance for accessing and using sources of archival information is provided in *Historical Archaeology in Arizona: A Research Guide*, which is available on the [SHPO website](#). Pre-field archival research should be conducted while scoping a project for the following reasons:

- The archaeologist will have a more accurate assessment of potential undocumented historic resources within the project area, including homesteads, ranches, mines and mining claims, as well as the presence of linear resources (e.g., roads and trails, canal systems, etc.).
- The archival record will aid in determining the temporal and thematic contexts for sites, structures, and associated features that may be documented in a Class III survey.
- Archival research will enable the archaeologist to more accurately assess the potential significance of documented sites, including waste resources.

Records that should be reviewed in the scoping phase of a project would include (but not be limited to) the following:

General Land Office Records (*Cadastral Plats and Master Title Plats*)

<https://glorerecords.blm.gov/default.aspx>

Archival sources utilized in the pre-field phase of a project will vary, depending on the project's location and size. Cadastral plats and Master Title Plats (MTP), which are maintained by the Bureau of Land Management (BLM), are useful sources of information in the assessment of land use of a particular area. Other plats on file at the BLM include Homestead Entry Surveys; Mining Surveys; Exchange Surveys; Farm Unit Maps (Salt River, Yuma, and Gila Projects only); Military and Reservation Boundaries; Mining District Maps; and Wilderness Areas. The MTPs in particular, are useful in this phase of the project for determining when a parcel was first settled, or homesteaded. It also provides an indication of how quickly the general area was settled.

USGS Topographic Maps

Topographic maps frequently exhibit potential cultural resources, particularly older 30-minute maps (1:125,000) and 15-minute maps (1:62,500)—the bulk of which were published in the early-to-mid twentieth century. Larger scale maps, notably the 7.5-minute maps (1:24,000), were published in Arizona in the post-World War II period (ca. post 1950). They are quite useful in the scoping phase of a project for identifying historical in-use resources (especially in-use linear resources) that may occur in the project area or APE. Limited collections of Arizona topography maps can be reviewed at the following websites:

- <https://legacy.lib.utexas.edu/maps/topo/arizona/index.html?p=print>
- http://alabamamaps.ua.edu/historicalmaps/us_states/arizona/topos/index.html

- https://geonames.usgs.gov/apex/f?p=262:18:0::NO:RP:P18_STATE%2CP18_SCALE%2CP18_MAP_NAME%2CP18_MAP_TYPE:AZ%2CALL%2C%5C%5C%2CHistorical

Online Resources

In recent years, a number of internet sites have become available to researchers looking for reliable archival information. These sites and their resources are maintained by a number of government and private entities. Online resources to investigate in the scoping phase of a project would include the following:

County Assessor, Recorder and GIS Services

Most county assessor and recorder offices in Arizona offer limited online searches, along with interactive GIS maps for viewing the information, such as parcel records, deed and subdivision plat records, etc. A review of parcels located within a project area or APE may be useful in determining what historical resources are present.

Interactive parcel maps can be viewed online for most counties in Arizona, including:

- Apache County: <https://www.co.apache.az.us/engineering/county-gis-department/>
- Cochise County: <https://www.cochise.az.gov/information-technology/gis>
- Coconino County: <http://www.coconino.az.gov/219/Geographic-Information-Systems-GIS>
- Gila County: <http://gilacountyaz.maps.arcgis.com/home/index.html>
- Graham County: <https://grahamco.maps.arcgis.com/home/index.html>
- Greenlee County (not complete):
<https://greenleeco.maps.arcgis.com/apps/MapAndAppGallery/index.html?appid=7a1992ea6cb9420e91cbb20a6b813cf6>
- La Paz County: <http://www.co.la-paz.az.us/150/Assessor>
- Mohave County:
<https://mcgis2.mohavecounty.us/html5/?viewer=moh>
<https://mohave.maps.arcgis.com/home/index.html>
- Navajo County: <http://www.navajocountyaz.gov/Departments/Treasurer/Property-Taxes/Property-Tax-Map-Search>
- Pinal County: <http://www.pinalcountyaz.gov/InformationTechnology/Pages/GIS.aspx>
- Santa Cruz County: [http://www.co.santa-cruz.ca.us/Departments/GeographicInformationSystems\(GIS\).aspx](http://www.co.santa-cruz.ca.us/Departments/GeographicInformationSystems(GIS).aspx)
- Yavapai County: <http://www.yavapai.us/gis/gis-mapping-applications>
- Yuma County: <https://www.yumacountyaz.gov/government/information-technology-services/geographic-information-systems>

Maricopa County GIS Portal

<https://www.maricopa.gov/3942/GIS-Mapping-Applications>

This website contains the collection of all GIS maps maintained by Maricopa County (including the interactive map from the Maricopa County Assessor website). The GIS portal provides a link to other important maps, notably *Historical Aerials*, which documents landscape and regional change over time across Maricopa County. Urban areas across the county will offer a lengthy temporal range for viewing of aerials from 1930–2017.

Pima County GIS Maps

<http://webcms.pima.gov/cms/one.aspx?portalId=169&pageId=22235>

This website contains the collection of all GIS maps maintained by Pima County (including the interactive map from the Pima County Assessor website). The website provides a link to other maps, including cadastral plat maps and topography maps that occur in the county.

Arizona Memory

<http://azmemory.azlibrary.gov/cdm/>

This website, maintained by the Arizona State Library, Archives, and Public Records was established to offer residents access to valuable historical data, including:

- State and local government documents;
- Secondary material relating to the history of Arizona;
- County, City, and regional maps, as well as photographs; and,
- Oral histories

Sharlot Hall Museum Library and Archives

<https://www.sharlot.org/library-archive/>

This website provides an inventory of materials available at the museum, some of which are viewable online, such as maps, photographs, and articles relating to Yavapai County and Northern Arizona. Some materials may also be viewed online at Arizona Memory (above).

Northern Arizona University (NAU) Special Collections and Archives

<https://nau.edu/special-collections/>

NAU's Special Collections also offers a digital collections archive, very similar in design and content to Arizona Memory, but with an emphasis on Northern Arizona.

Aerial Photographs

Aerial photographs of areas outside of Maricopa County and well-populated areas can be reviewed at two online locations, including EarthExplorer (<https://earthexplorer.usgs.gov/>) and HistoricalAerials.com (<https://www.historicaerials.com/>). Many of these aerials originate from the USGS, although HistoricAerials.com also provides aerial images recovered from private collections. These aerials may provide some insight into how a specific area or region developed over time.

Please note that registration (no cost) to EarthExplorer is mandatory for downloading maps.

Arizona State Land Department (ASLD) Interactive Map

<http://gis.azland.gov/webapps/parcel/>

This interactive map covers the entire state and provides information, such as land jurisdiction, ASLD grazing allotment boundaries, state trust parcels, as well as mineral and oil/gas parcels.