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ARCHAEOLOGICAL SURVEY FOR A PROPOSED PEDESTRIAN BRIDGE AND TRAIL, AZTEC, SAN JUAN COUNTY, NEW MEXICO

Prepared for HDR Engineering



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Parametrix

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ABSTRACT

The City of Aztec (City), in cooperation with the New Mexico Department of Transportation (NMDOT) and other stakeholders, proposes to construct a pedestrian trail and bridge across the Animas River, which will connect the Aztec Trail System to Aztec Ruins National Monument (AZRU). The project area is located in Aztec, New Mexico, on the south side of Ruins Road (County Road 2900). The undertaking will involve the purchase and installation of a prefabricated pedestrian bridge and construction of abutments on both sides of the Animas River. The project area includes land administered by the City and AZRU. Funding for this project will be through the 2013 NMDOT Surface Transportation Program and will include federal funds from the Federal Highway Administration (FHWA). The project has been assigned NMDOT Control Number F100120. The City is the project proponent, and NMDOT (on behalf of FHWA) will serve as the lead reviewing agency. AZRU and the City will act as additional consulting parties.

HDR Engineering, Inc. (HDR) has been contracted by the City to design the pedestrian bridge. As the project involves the use of federal funds and takes place, in part, on federal land, it is considered an undertaking as defined in Section 106 of the National Historic Preservation Act (NHPA; P.L. 89-665, as amended). The NHPA requires the consideration of the effects that a proposed undertaking may have on historic properties as defined under this legislation. As a result, HDR contracted with Parametrix to conduct a cultural resource survey of the area of potential effects (APE) for the proposed project. The APE was defined, in consultation with the City, HDR, NMDOT, and the New Mexico Historic Preservation Division's (HPD's) guidelines, as the entire area of potential ground disturbance. Because the exact trail alignment has not yet been defined, the APE was broadly defined to include all possible configurations. On February 22 and 23, Parametrix conducted an intensive (100 percent) pedestrian cultural resource survey of the APE. In addition, a visual buffer was inspected for standing historic buildings, structures, or objects that may be affected by the proposed undertaking. The purpose of the survey was to locate, evaluate, and make recommendations regarding the cultural resources within the project area in accordance with Section 106 and to aid the City and NMDOT in complying with this and other applicable federal and state laws and regulations.

The project area is situated on both sites of the Animas River in Aztec, New Mexico. Physiographically, it is located in the San Juan Basin, within the Navajo Section of the Colorado Plateau Province, a large upland region that is characterized by erosional landscapes carved from sequences of sedimentary and volcanic rock (Hawley 1986). Native vegetation in the region is classified as Great Basin Desert Scrub within an area modified and impacted by human activities (e.g. farming and urban development) (Dick-Peddie 1993). Aztec Ruins is located less than 100 meters north of the project area. This is a large, well-known Pueblo II-III settlement cluster that includes at least three great houses and a surrounding community of residential sites. Aztec began as a Chacoan outlier and was a major population center throughout the A.D. 1100s and 1200s. In addition to Aztec Ruins, numerous other NRHP-listed properties dating to both the Pueblo II-III and historic periods demonstrate the rich cultural landscape surrounding the project area.

During the course of this investigation, three previously recorded sites (Laboratory of Anthropology [LA] 1674, LA 65325, and LA 69331) were updated, and one new archeological site (LA 169424) was documented. No isolated occurrences, acequias, or historic districts were identified. LA 65325 and 69331 are historic sites that were originally recommended as eligible to the NRHP, but they no longer have the potential to produce additional information on the history of the area, nor do they exhibit historical significance due to the lack of integrity of their remaining elements. Parametrix, therefore, recommends that these sites should no longer be considered eligible to the NRHP under any criteria.

LA 1674 was recently updated by AZRU, who noted that the prehistoric component of the site is potentially eligible under Criterion A since it is an integral part of Aztec Ruins, and Criterion D for its ability to provide important information on the prehistory of the region. Since AZRU is currently in

Parametrix will not make additional eligibility recommendations at this time. However, Parametrix generally concurs with AZRU's findings and recommends that the prehistoric component at LA 1674 be managed as if *eligible* until such determination is made. Current design plans call for the pedestrian trail to run immediately outside the southern site boundary before bisecting a small area of the western portion of the site. The area bisected is part of the historic component of the site, which does not contribute to the site's eligibility due to a general lack of integrity. In addition, Parametrix recommends that all trail construction should be above grade, and that no subsurface disturbance should take place within LA 1674 site boundaries. If these recommendations are followed, pending agency consultation and review, the proposed undertaking will have *no adverse effect* on the qualities that may make LA 1674 eligible for listing in the NRHP

LA 169424 is a medium-sized newly documented prehistoric site that includes artifacts (and possible features) eroding out of the Animas River cut bank, as well as a small artifact scatter along the terrace adjacent to the bank. The site is recommended as *eligible* to the NRHP under Criterion D and should be avoided by all project activity. Current design plans call for the pedestrian trail to pass to the east of the site; if avoidance is feasible, subject to consultation and comment, the proposed undertaking will have *no effect* on the site. If the site cannot be avoided, and if elements contributing to its eligibility will be affected by the proposed undertaking, the project proponent should prepare a data recovery plan per New Mexico Administrative Code (NMAC) 4.10.8 and to the standards within NMAC 4.10.16 to mitigate any potential impacts.

In addition to the site-specific management considerations discussed above, the entire trail route on the northwest side of the Animas River is through an area with a high potential for subsurface cultural deposits, based on its proximity to LA 1674 and Aztec Ruins. Per SHPO guidance (Michelle Ensey, personal communication, 2011), Parametrix recommends that all construction between these two sites be above grade and that fill material be introduced to protect existing subsurface deposits. This recommendation is consistent with the recent realignment of Ruins Road, which also bisects LA 1674 and was constructed on top of introduced fill material to protect potential subsurface cultural deposits. If minor subsurface disturbance is conducted in this area, Parametrix recommends that this activity be monitored by a permitted archaeologist; if intact cultural deposits are encountered, construction activity should cease and AZRU and the SHPO should be contacted immediately. In addition, fencing should be placed to assure that the intact portions of these sites are avoided by the project undertaking and that increased pedestrian traffic in the area does not result in cumulative impacts to these resources.

If the recommendations provided in this report are followed, subject to consultation and comment, the proposed undertaking will have *no adverse effect* on any historic properties listed on, or eligible to, the NRHP. However, if buried cultural deposits are discovered during project activities, work should cease immediately and the SHPO should be notified. This undertaking complies with the provisions of the NHPA of 1966, as amended through 1992, the New Mexico Cultural Properties Act (18-6-1 through 18-6-17 New Mexico Statutes Annotated [NMSA] 1978), the Prehistoric and Historic Sites Preservation Act (18-8-1 through 18-8-9 NMSA 1978), and applicable regulations. The report is consistent with federal and state standards for cultural resource management.

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ACRONYMS

APE	area of potential effects
ARMS	Archaeological Resource Management Section
AZRU	Aztec Ruins National Monument
CASA	Complete Archaeological Service Associates
City	City of Aztec
cm	centimeters
CRM	Cultural Resource Management
FHWA	Federal Highway Administration
HCPI	Historic Cultural Properties Inventory
HPD	New Mexico Historic Preservation Division
IOs	isolated occurrences
LA	Laboratory of Anthropology
N	North
NHPA	National Historic Preservation Act
NMCRIS	New Mexico Cultural Resource Information System
NMDOT	New Mexico Department of Transportation
NMSA	New Mexico Statutes Annotated
NMSRCP	New Mexico State Register of Cultural Properties
NPS	National Park Service
NRHP	the National Register of Historic Places
SJCCRMP	San Juan College Cultural Resource Management Program
SJCMA	San Juan County Museum Association
SR	New Mexico State Register Property
USGS	United States Geological Survey
W	West

1. INTRODUCTION

The City of Aztec (City), in cooperation with the New Mexico Department of Transportation (NMDOT) and other stakeholders, proposes to construct a pedestrian trail and bridge across the Animas River, which will connect the Aztec Trail System to Aztec Ruins National Monument (AZRU). The project is located in Aztec, New Mexico, on the south side of Ruins Road (County Road 2900). The bridge will provide pedestrian access to AZRU and encourage visitors to park on one side of the river and walk to events and facilities on the opposite side. The project area includes land administered by the City and AZRU. Funding for this project will be through the 2013 NMDOT Surface Transportation Program and will include federal funds from the Federal Highway Administration (FHWA). The project has been assigned NMDOT Control Number (No.) F100120. The City is the project proponent, and NMDOT (on behalf of FHWA) will serve as the lead reviewing agency. AZRU and the City will act as additional consulting parties.

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The APE was defined, in consultation with the City, HDR, NMDOT, AZRU and the New Mexico Historic Preservation Division's (HPD's) guidelines, as the entire area of potential ground disturbance. Because the exact trail alignment has not yet been defined, the APE was broadly defined to include all possible configurations. On February 22 and 23, Parametrix conducted an intensive (100 percent) pedestrian cultural resource survey of the APE. In addition, a visual buffer was inspected for standing historic buildings, structures, or objects that may be affected by the proposed undertaking. The purpose of this investigation was to locate and assess all cultural resources and historic properties within the APE. These types of properties may include, but are not limited to, historic districts, archaeological sites, isolated occurrences (IOs), and historic buildings, structures, objects, and acequias over 50 years old. An assessment was made for each resource as to its potential eligibility for nomination to the National Register of Historic Places (NRHP).

The APE is located within the north portion of Section 9, Township 30 North (N), Range 11 West (W) and appears on the *Aztec* and *Flora Vista*, New Mexico 7.5-minute United States Geological Survey (USGS) quadrangles (Figures 2 and 3). The survey was performed under New Mexico Archaeological Survey Permit No. NM-11-121-S and was assigned New Mexico Cultural Resource Information System (NMCRIS) Activity No. 120235 by the Archaeological Resource Management Section (ARMS) of the HPD. Adam Okun served as the principal investigator and field supervisor and authored this report. Ethan Kalosky served as crew member.

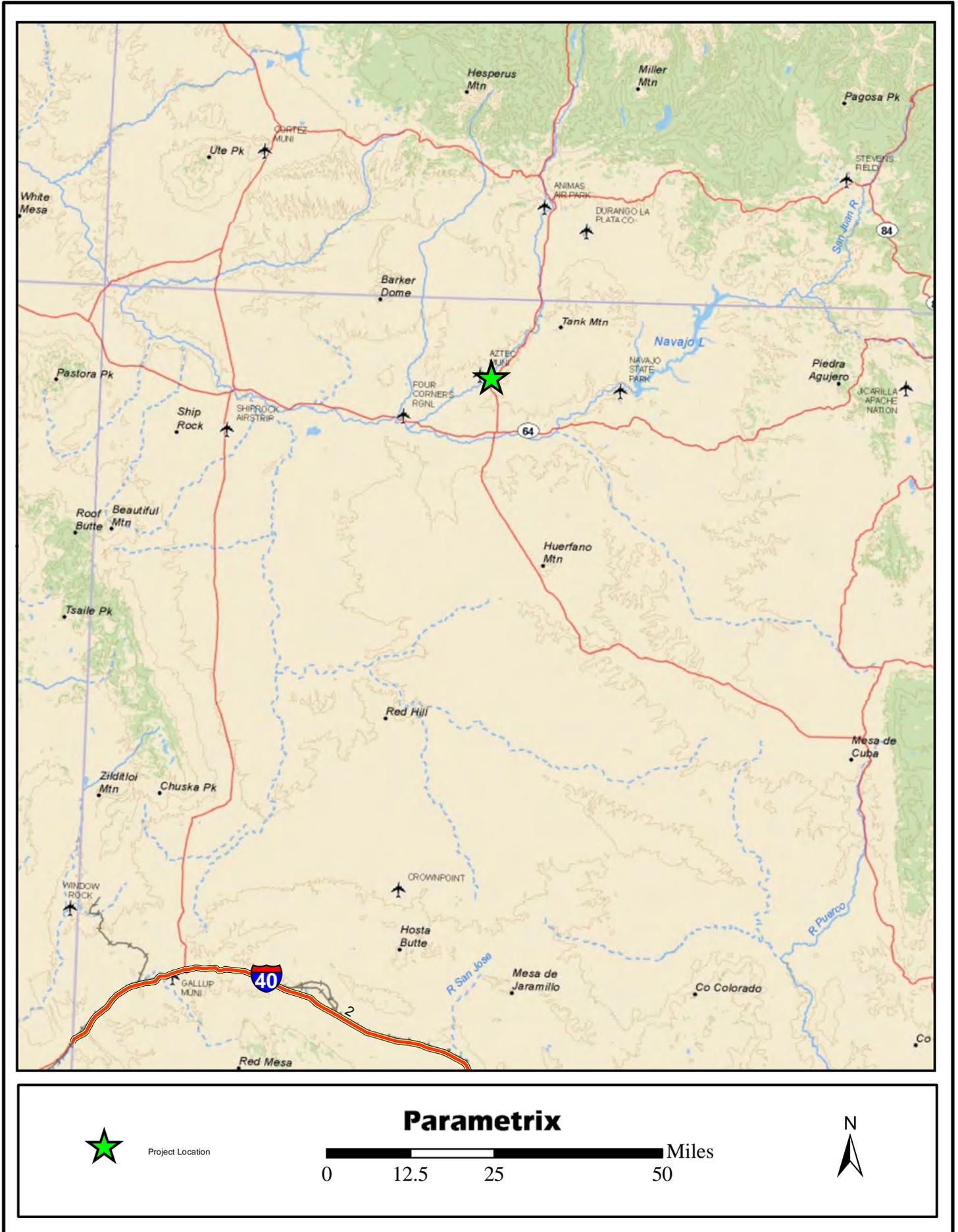


Figure 1: Project Vicinity Map

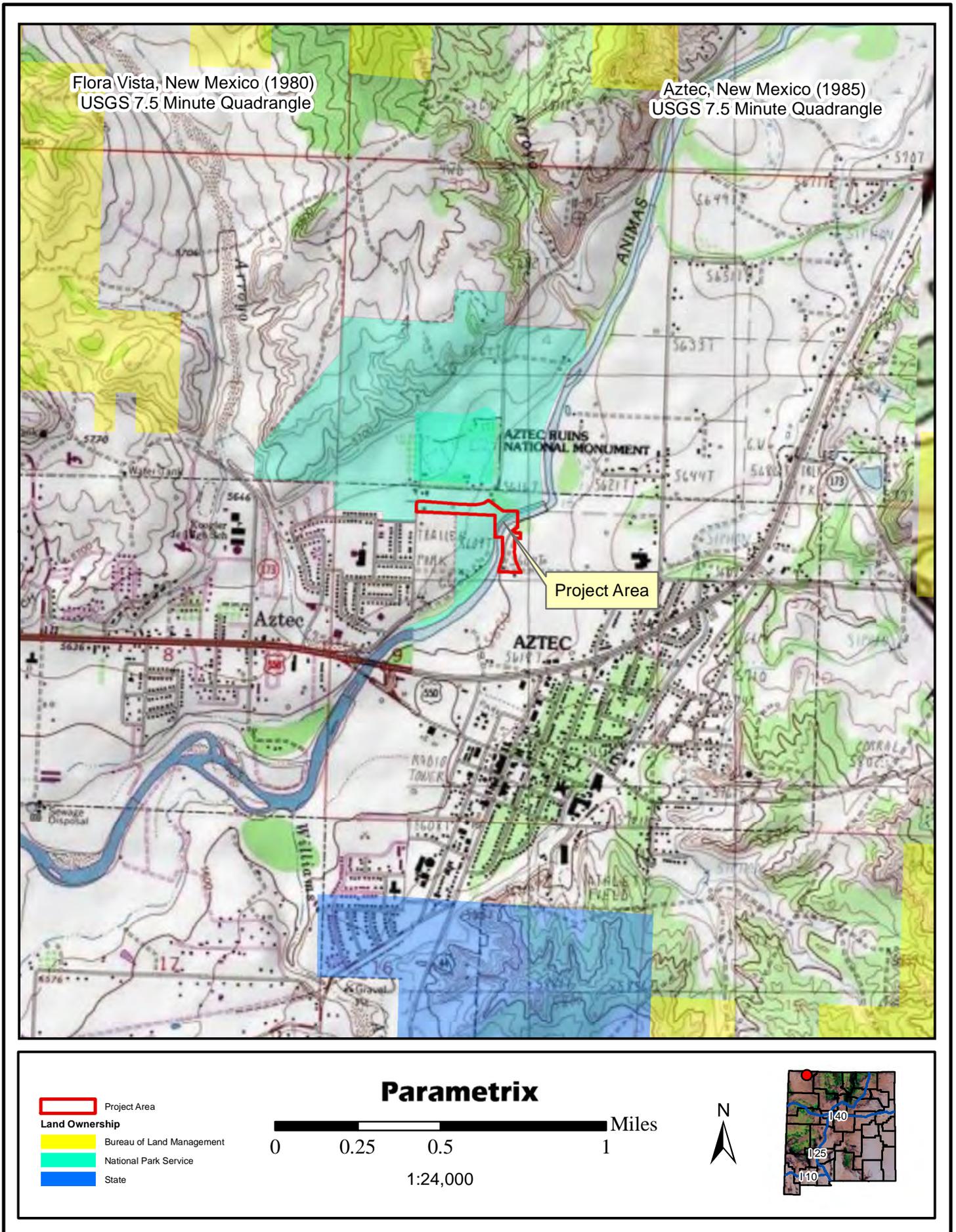


Figure 2: Project Area Map

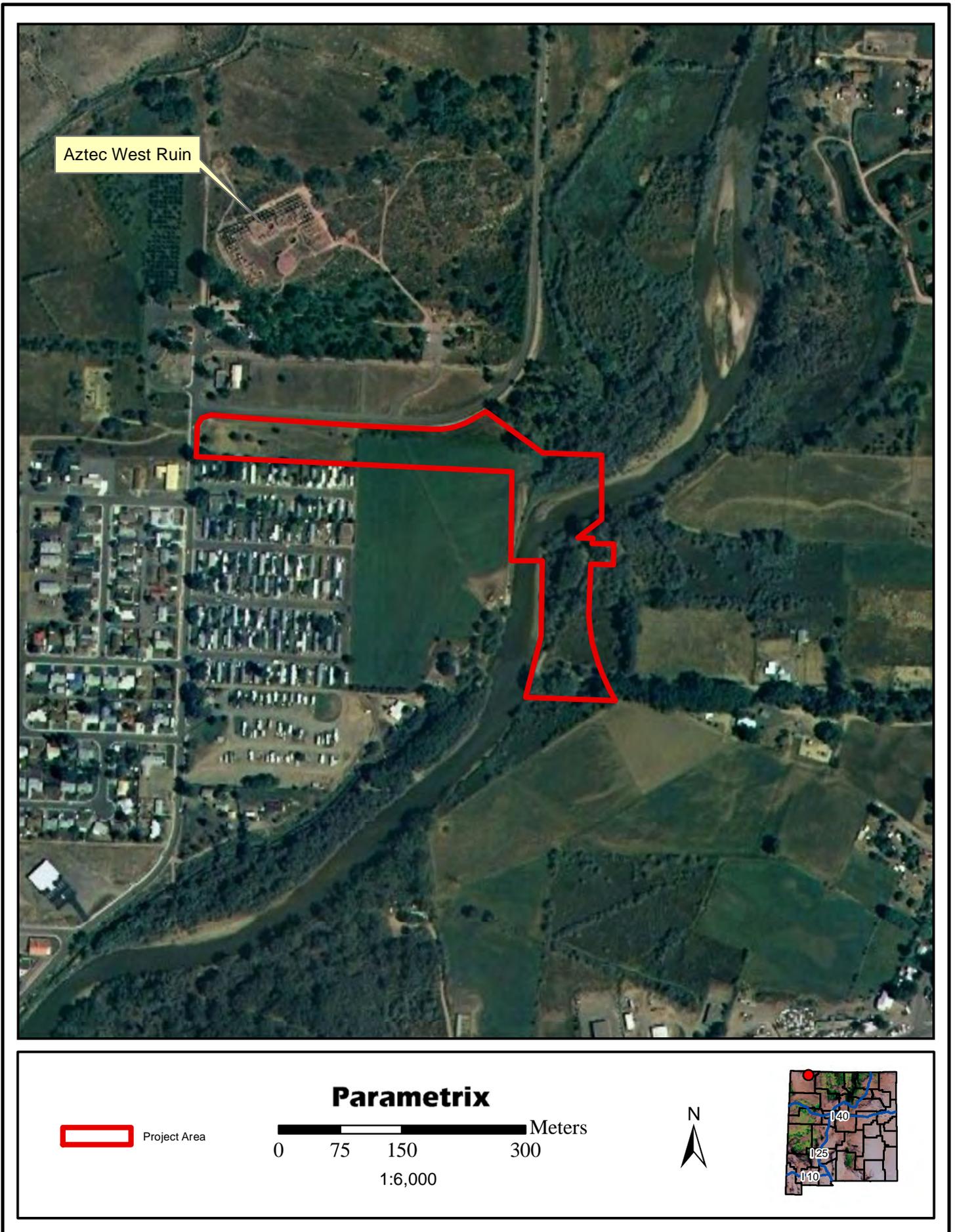


Figure 3: Aerial View of Project Area

2. PROJECT DESCRIPTION

As discussed above, the City proposes to construct a pedestrian trail and bridge across the Animas River, which would connect the Aztec Trail System to AZRU. The new bridge would provide pedestrian access to AZRU and encourage visitors to park on one side of the river and walk to events and facilities on the opposite side. The project will involve the purchase and installation of a prefabricated pedestrian bridge and construction of abutments on both sides of the Animas River channel. Bridge design and specification will be in accordance with the City of Aztec Flood Damage Prevention Code and will also attempt to create a minimal amount of visual impact to the surrounding area, which is already heavily developed. Although trail designs have not been finalized, it will be designed so that construction will involve minimal subsurface ground disturbance and visual impacts. Funding for this project will be through the 2013 NMDOT Surface Transportation Program (Control No. 5100200).

3. ENVIRONMENTAL SETTING

The project area is situated on both sides of the Animas River in Aztec, New Mexico. Physiographically, it is located within the Navajo Section of the Colorado Plateau Province, which is part of a large upland region of New Mexico, Arizona, Utah, and Colorado that is characterized by erosional landscapes carved from sequences of sedimentary and volcanic rock (Hawley 1986). The Navajo Section is dominated by the San Juan Basin, which is a low-lying drainage basin bordered by the Southern Rockies, the Four Corners Platform, and the Zuni-Defiance Uplift. In general, the Navajo Section contains hogback belts, broad rolling plains, cuetas and high tablelands, and escarpments of moderate relief (Hawley 1986). Major rivers, such as the San Juan and Animas, contain broad floodplains flanked by stepped sequences of Pleistocene-age fluvial terraces. The southwest part of the project area is located on the Animas River floodplain, while the northeast portion is located on the gently sloping first terrace above the river channel.

Most of the soils in the project vicinity are entisols, which occur in arid environments and have usually been exposed to soil-forming processes for only a short time, for example along floodplains or steep slopes (Maker and Daugherty 1986). As a result, this soil class usually lacks major soil horizons and expresses the properties of its parent material with little alteration. Northeast of the Animas River, the project area contains mostly Turly Clay Loams, which occur on alluvial fans with slopes of 1 to 3 percent. These soils tend to be deep (80+ centimeters [cm]) and well-drained, and they are made up of fan alluvium derived from sandstone and shale. A small strip of land along Ruins Road (4 percent of the project area) contain Fruitland Sandy Loams, which are similar in composition but normally occur higher on terraces. Southeast of the Animas River, the project area contains Riverwash and Walrees Loam deposits. These soil classifications occur on poorly drained floodplains with shallow water tables, and they consist of mixed alluvium.

The climate for the project area is classified as mild and semi-arid with an average of 130 frost-free days. Spring through early summer is the driest season, while over 40 percent of the annual precipitation occurs from July to October. Table 1 portrays historical monthly climate data for Aztec, New Mexico.

Table 1. Historic Monthly Climate Summary for the Aztec Ruins National Monument, New Mexico Weather Station from 1895 to 2010 (adapted from WRCC 2010)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max Temp	43.2	49.5	58.2	67.8	77.1	86.9	91.3	88.6	81.8	70.1	55.2	43.9	67.8
Average Min Temp	15.3	20.5	25.5	32.1	40.5	48.7	57.0	55.7	47.3	35.9	24.3	16.3	34.9
Average Total Precipitation	0.8	0.7	0.8	0.7	0.6	0.4	1.0	1.3	1.0	1.1	0.7	0.8	9.8

Native vegetation in the region is classified as Great Basin Desert Scrub within an area modified and impacted by human activities (e.g. farming and urban development) (Dick-Peddie 1993). Dominant shrubs of Great Basin Desert Scrub are big sagebrush (*Artemisia tridentata*), shadscale (*Atriplex confertifolia*), greasewood (*Sarcobatus vermiculatus*), and four-wing saltbush (*Atriplex canescens*). Big sagebrush is often the predominant shrub in Great Basin Desert Scrub communities since it increases in dominance through impacts such as overgrazing. The project area contains a combination of riparian habitat and land that is highly modified by human activity. Some of the predominant native species identified during survey include narrowleaf cottonwood (*Populus angustifolia*), Fremont cottonwood (*Populus deltoides* subsp. *wislizenii*), coyote willow (*Salix exigua*), and Western wheatgrass (*Elymus smithii*). Common non-native species (including noxious weeds) include Russian knapweed (*Acroptilon repens*), Canada thistle (*Cirsium arvense*), Russian olive (*Elaeagnus angustifolia*), and Siberian elm (*Ulmus pumila*).

Few wildlife species or their signs were observed during the biological survey, which is not surprising due to the developed setting. Observed wildlife included stick nests of ravens or crows (*Corvus* spp.), scat of rabbits (*Lepus* sp. and/or *Sylvilagus* sp.), mounds of pocket gophers (*Thomomys bottae*), and starlings (*Sturnus vulgaris*). A small flock of Canada geese (*Branta canadensis*) was observed along the river, likely making a brief stop in their springtime migration northwards.



Photograph 1. Southeast Portion of Project Area



Photograph 2. Riparian Setting along the Animas River

4. CULTURE HISTORY

By obtaining knowledge of the local culture history prior to conducting surveys, archaeologists are better able to identify and interpret findings. Understanding the material and spatial correlates of different culture groups through time ensures that discoveries are placed within and interpreted in the proper context. Furthermore, cultural overviews allow the reader to appreciate the complexity of the cultural record for a specific geographic area. The culture history of the Southwest, including northwest New Mexico, can be divided into five general cultural periods, including: Paleoindian, Archaic, Formative, Proto-Historic, and Historic. These periods are distinguished on the basis of changing settlement patterns, subsistence strategies, technology, and social structure and interaction. The region in the vicinity of the project has been a focus of human occupation for millennia, with evidence of use dating to each of the major cultural periods. The following cultural-historical overview may be supplemented with regional treatments by Cordell (1997), Kantner (2004), Stuart and Gauthier (1981), and Lekson (2006), among others.

4.1 PALEOINDIAN PERIOD (10,000 TO 6000 B.C.)

The archaeological evidence for Paleoindian remains documented in the Southwest is not unique to this region. Artifacts representative of the Clovis complex (10,000-9000 B.C.) have been found throughout portions of North America that were unglaciated during the Late Wisconsin (Fulgham 1988; Stuart and Gauthier 1981; White 1997; Wimberly and Eidenbach 1978). This period is characterized by climatic fluctuations, which resulted in localized environmental settings that were considerably different than those of today, being primarily wetter and cooler and supporting more grasslands. Mammoth, canelid, giant sloth, large extinct forms of bison, and other Pleistocene species are often associated with Paleoindian sites (Anderson and Faught 2000). In fact, it is common for Paleoindian sites to be associated with localities utilized specifically for the killing and butchering of numerous animals (kill sites). Although many of these species had become extinct around 6,000 B.C., Paleoindians continued to pursue a highly mobile hunting and gathering way of life until climatic shifts and other factors brought about a change in subsistence strategies that mark the beginning of the Archaic period.

The emphasis on big game hunting among these early native groups led to the development of a unique type of thrusting spear, the atlatl (or spearthrower), which provided Paleoindian hunters with the ability to kill Pleistocene megafauna with relative efficiency. The atlatl consisted of a flattened, narrow billet of wood (most common), bone, or ivory that measured about 0.6 meters (m) (2 feet [ft]) in length. A hand grip was carved into one end of the billet and a notch into the other end. The butt end of a short spear or dart was placed into the notch and the hunter cast the spear utilizing the hand grip. This tool served as a way to mechanically lengthen the arm of the hunter, thus increasing the thrust behind the spear. Although the Paleoindians reliance on big game hunting has been readily established (Judge 1982), it is still unclear to what extent other resources, such as plants and small animals, were exploited at this time. This is probably a direct result of the fact that most Paleoindian site assemblages contain relatively little cultural material and generally exhibit poor preservation.

Three distinct complexes have been identified for the Paleoindian period: Clovis, Folsom, and Late Paleoindian. The Clovis complex is generally considered to be the earliest manifestation of the Paleoindian lifeway and dates from 10,000 to 9000 B.C. Despite some evidence indicating a human presence in the New World before 10,000 B.C. (such as at Monte Verde, Chile and Meadowcroft Shelter, Pennsylvania), the Clovis complex is the first universally accepted and consistently documented human horizon in the New World (Anderson and Faught 2000). The Blackwater Draw Locality No. 1 site is the type-site for the Clovis complex, where artifacts characteristic of this time were found in association with the skeletal remains of mammoths and other Pleistocene megafauna. It is located in easternmost New Mexico near the Texas state line, on the south side of the Canadian River. Artifact assemblages associated with Clovis times consist of bifacially worked, fluted lanceolate projectile points

with concave bases (Clovis points), transverse end scrapers, side scrapers, bifacial knives, graters, perforators, and hammerstones (Wilmsen 1970).

The Folsom period dates to 9000 to 8200 B.C. and is marked by the arrival of a new diagnostic projectile point and a shift to a subsistence strategy based primarily on the hunting of *bison antiquus*. Folsom points are lanceolate, fluted on both sides for the length of the point, and basally concave; they normally have basal ears, exhibit grinding in their lower portion, and are smaller than Clovis points (Cordell 1979:12). Midland points are similar in size but are thinner and lack fluting; they are thought to be contemporaneous or temporally overlapping with Folsom. Climatically, the early part of the Folsom period corresponded with the Younger Dryas, during which numerous small playas may have contained water. However, around 10,000 B.P., the climate became warmer and dryer with the onset of the Holocene (Huckell 2002:5). The combination of a decrease in effective moisture and the apparent extinction of some megafauna species led Folsom groups to target migratory herd animals such as bison (Stuart and Gauthier 1981:31), which were now the dominant species on the grasslands of the Southwest. The Folsom Site, the type-site for the Folsom complex, is located in northeastern New Mexico, near the Colorado state line. It holds an important place in the history of American archaeology, as it provided the first incontrovertible evidence of humans in North America during the Pleistocene (Cordell 1997).

The late Paleoindian complexes form the terminal elements of the Paleoindian big game hunting tradition and include a number of artifact assemblages dating from 8200 to 5500 B.C. Each assemblage is distinguished by a series of large, lanceolate and unfluted projectile points including Plainview, Frederick, Agate Basin, Hell Gap, Firstview, Alberta, Eden, and Cody. Sometimes referred to collectively as the Plano Complex, sites with these point types reflect a continued focus on hunting, especially bison (Cordell 1997).

4.2 ARCHAIC PERIOD (6000 B.C. TO A.D. 400)

In Southwestern archaeology, the term Archaic is representative of both a long temporal span and a distinctive way of life. The Archaic period is characterized by a more generalized, broad-spectrum subsistence strategy than the Paleoindian period, with a greater reliance on small-bodied game and wild plants (Huckell 1996). The Sand Canyon postpluvial epoch coincides with the beginning of the Archaic period, and it was during this time that the cooler, wetter climate of the Pleistocene was replaced with conditions similar to that of present times. Certainly the extinction of the Pleistocene megafauna would have dictated a change in subsistence strategies, but mobility continued to be an important aspect of Archaic lifeways. However, this mobility appears to have been seasonal and more restricted in extent than that of the Paleoindian period. In fact, evidence suggests that productive site locations, once-established, were reused on a seasonal basis (Irwin-Williams 1973; Judge 1973).

The Archaic artifact assemblage consists of a wide variety of tool forms, but it is an increased emphasis on grinding implements that indicates the change in adaptive strategies during this period. Archaic projectile points are generally shorter than those of the Paleoindian period, yet larger than the arrow points utilized during late prehistoric times. Points of this period are generally stemmed or corner-notched and exhibit more extensive morphological variability and less precision in quality of manufacture than those of the Paleoindian period (Sebastian and Larralde 1989). On the other hand, Archaic assemblages contain a higher percentage of formal tools and bifacial flaking debris than later assemblages.

Based on Irwin-Williams' (1973) Arroyo Cuervo project in the Puerco Valley, the Oshara Tradition is the most applicable cultural-historical sequence for northwestern New Mexico and provides a framework

for continuous, in-place cultural evolution through the Archaic. Despite its wide acceptance, however, the Arroyo Cuervo data has never been fully published, and many of the phases lack reliable dates. Therefore, Huckell's (1996) more generalized framework of Early, Middle, and Late Archaic is used here, with discussion of Irwin-Williams' phases included when applicable.

4.2.1 Early Archaic (6000 – 3500 B.C.)

Huckell (1996) uses the appearance of ground stone technology around 6000 B.C. to define the beginning of the Early Archaic period. In general, this period is characterized by slow increases in the use of plant resources, site frequency, and an elaboration and enlargement of base camps through time (Cordell 1997). The Early Archaic includes most of the Jay (5500 to 4800 B.C.) and Bajada (4800 to 3200 B.C.) phases, as defined by Irwin-Williams (1973). Jay sites consist of small seasonal base camps and limited-activity sites in upland settings, which reflect a highly mobile hunter-gatherer adaptation. Jay lithic technology includes large, shouldered projectile points, lanceolate bifacial knives, and side scrapers. The Bajada Phase is characterized by smaller, concave-base projectile points, side scrapers, bifacial knives, and larger chopping tools. Sites became larger and more numerous during the Bajada Phase, with increased diversity in ground stone technology and roasting features. Canyon heads and other upland areas continued to be used, but settlement locations became more diverse overall. Early Archaic sites have been found throughout northwestern New Mexico and the San Juan Basin (Huckell 1996), including near the current project area.

4.2.2 Middle Archaic (3500 – 1500 B.C.)

During the Middle Archaic, the number of projectile point styles increased rapidly, base camps became larger and more intensively used, a wider variety of resources were exploited, settlement patterns became more complex, and the number of sites increased (Huckell 1996). Near the end of the Middle Archaic, cultigens were introduced into the subsistence base for the first time, in a limited number of locations across the Southwest. Simple pit structures came into use around 4000 B.C., and sites often include a variety of feature types, including roasting pits, storage pits, fire-cracked rock features, basin-shaped hearths, and ground-stone caches (Huckell 1996). Common projectile point types include San Jose, Pinto, Elko, and Armijo.

The Middle Archaic includes portions of Irwin-Williams' San Jose (3200 to 1800 B.C.) and Armijo (1800 to 800 B.C.) phases, although the San Jose Phase is generally used to define the Middle Archaic in northern New Mexico, while Armijo is generally considered to be a Late Archaic adaptation. The beginning of the San Jose phase corresponded with the end of the Altithermal and an onset of more favorable environmental conditions, which likely led to greater predictability in plant and animal resources and more reliable water sources. This period appears to be associated with population increase, as sites continued to become more numerous and larger in size. Greater artifact density and increased number of features suggests larger group size and a more formalized use of space (Vint and Cook 1999). The San Jose projectile point had an expanding stem and concave base and often exhibits lateral grinding and serrated margins. Choppers, poorly made side scrapers, and expedient tools became more common, while bifacial knives and well-made side scrapers were less common than during the Bajada Phase.

4.2.3 Late Archaic (1500 B.C. – A.D. 400)

The Late Archaic period in northwestern New Mexico includes most of the Armijo phase (1800 to 800 B.C.) and all of the En Medio phase (800 B.C. to A.D. 200) and also corresponds to the Basketmaker II designation under the Pecos Classification. Agriculture became more widespread during this period, and Huckell (1996) argues that the term "Early Agricultural" should be applied to these sites, while "Late Archaic" should be retained only for sites with no evidence of cultigens. At the survey level, however, the continued use of the term "Late Archaic" for all sites from this period seems prudent. In general, this period is characterized by significant changes in land use patterns, widespread (although sporadic)

adoption of cultigens, patterns of seasonal sedentism and aggregation, and the presence of more formalized structures, features, and activity areas.

Irwin-Williams (1973) describes changes in land use patterns during the Armijo phase as the most significant of the entire Archaic sequence. These changes include adoption of cultigens and increases in seasonal aggregation. The Armijo projectile point is similar to the preceding San Jose, but it is smaller and has a shorter stem. The type is somewhat controversial, and some consider it to simply be a smaller variant of the San Jose (Huckell 1996; Justice 2002). A wider variety of ground stone tools appear in the Armijo tool kit, indicating an increased reliance on gathered seeds, as well as maize.

The En Medio phase (800 B.C.-A.D. 400) is associated with a continuation of many of the trends seen throughout the Middle and Late Archaic periods. Irwin-Williams (1973) saw this phase as exhibiting clear continuity with subsequent Pueblo adaptations, particularly the increased presence of structures and agricultural villages. Upland locations were largely abandoned, and sites became concentrated on terraces, valley bottoms, and dune ridges. The En Medio projectile point is larger than previous types and has deep corner notches and prominent barbs. A wider variety of tool types, including many expedient tools, entered the tool kit, possibly due to greater sedentism. Bifacial knives, drills, flake scrapers, choppers, and pounders complete the flaked-stone assemblage. Groundstone tools include abundant deep-basin grinding slabs and cobble handstones (Irwin-Williams 1973).

4.3 ANCESTRAL PUEBLO TRADITION

The Pecos Classification (Kidder 1927) has provided a general framework to categorize Ancestral Pueblo developments in Southwestern prehistory for nearly a century. Despite criticism of this scheme over the years, it was originally formulated (see Kidder 1927) to promote effective communication and the avoidance of terminological confusion among field practitioners, and this original goal remains a strong argument for its continued use. Therefore, the cultural setting outlined below follows the Pecos Classification to facilitate effective communication and provide some gross historical review of cultural developments. Parametrix archaeologists acknowledge that the classification units are imposed on the empirical reality of the archaeological record, and, as such, they are strictly viewed as an archaeological construct.

The beginning of the Ancestral Pueblo Tradition is characterized by the culmination of several trends that first emerged during the En Medio phase of the Late Archaic period. Ancestral Pueblo populations continued to grow dramatically, and this accelerated population growth may have fueled the further development of these earlier trends. Thus, the Ancestral Pueblo tradition is distinguished by greater sedentism and attendant architectural and sociopolitical developments, the emergence of ceramic technology, and an increasing dependence on agriculture and the storage of agricultural products. The proliferation and stylistic evolution of Ancestral Pueblo ceramics has furthered the chronological placement of these sites. The Basketmaker period is thought to have developed directly from the San Jose, Armijo, and En Medio phases (Irwin-William 1973) and represents a transition from a mobile hunter-gathering subsistence strategy to a reliance on horticulture and increased sedentism in areas of potentially arable land.

The project area is located immediately adjacent to Aztec Ruins, the largest Chacoan great house outside of Chaco Canyon and not only one of the most important sites in the prehistory of the Southwest but also a vital location for the historical development of Southwestern archaeology. Aztec Ruins was excavated by Early Morris in the 1920s, leading to the establishment of the national historic monument and large-scale research projects that continue today (Reed 2008). The surrounding sub-region is often referred to

archaeologically as the “Totah,” a Navajo name for the area surrounding the confluence of the San Juan, Animas, and La Plata rivers (Toll 2008). Reed (2008) prefers the term “Middle San Juan” and defines it slightly more broadly, but both terms acknowledge the importance of this region prehistorically, which became an important population center late in the Chaco Period and continued to be an important locus of population and sociopolitical complexity alongside Mesa Verde after Chaco declined in importance.

4.3.1 Basketmaker III (A.D. 500 to 700)

The Basketmaker III period is defined by the development of formalized pit houses and a suite of new technologies, including ceramics, the bow-and-arrow, and two-hand manos and slab metates (Reed 2000). Although ceramics have now been identified at a limited number of Basketmaker II/Late Archaic sites, the adoption of ceramic technology is traditionally used to mark the onset of the Basketmaker III period. Climactically, the period was marked by drought and substantial erosion, which may account for the shift from cultivation in narrow canyon floodplains to broad valley bottoms (Irwin-Williams 1973). These developments are associated with an increased reliance on agriculture. Sites dating to this time period are highly variable in their assemblage composition and features. Sebastian (1983) argues that despite an increased reliance on horticulture, numerous limited activity sites from this time period attest to continued exploitation of wild food resources. Basketmaker III sites are common in the La Plata Valley north of Aztec, where large pit structures were dated to the late A.D. 600s during the La Plata Highway project (Toll and Wilson 2000).

Ceramics appeared in northwestern New Mexico between A.D. 200 and 400, with the first types being plain brownwares that were similar to Mogollon varieties to the south. Reed et al. (2000) argue that early types were part of a pan-southwestern, self-tempered, brownware tradition and that potters did not begin experimenting with the low-iron, shale-based clays that produce gray paste ceramics until around A.D. 500. Therefore, Basketmaker sites sometimes contain Sambrito Brownware, although they are often defined by Lino Gray or Chapin Gray, the first grayware varieties. These types are generally unpolished and contain coarse sand temper. Early whiteware types, such as La Plata Black-on-white, appear towards the end of Basketmaker III and extend into the Pueblo I period. Gray wares were present in the La Plata Valley and adjacent areas of southeastern Colorado by A.D. 575 (Toll and Wilson 2000).

4.3.2 Pueblo I Period (A.D. 700 to 900)

The Pueblo I period is defined by the shift from pithouses to above-ground masonry roomblocks, development of new ceramic styles, and changes in settlement patterns (Cordell 1997). Gilman (1983, 1987) associates this shift in settlement patterns and architecture to a greater dependence on agriculture, although the reasons for the pithouse-pueblo transition are the subject of much debate and other factors such as changes in time allocation and an increase in ceramic production clearly played a role (Wills 2001). While most residential sites across the region remained small agricultural hamlets containing one-to-seven structures, the first large Pueblo I villages in the northern Southwest occurred in the Four Corners area in the late A.D. 700s. These villages usually had one large roomblock that housed 10 to 30 households, smaller surrounding roomblocks, and at least one large integrative/ceremonial structure (Wilshusen and Van Dyke 2006). McPhee Village along the Dolores River in southwestern Colorado is perhaps the best-known example of Pueblo I village aggregation. By A.D. 850, over one-third of the known population in the Anasazi world lived in the San Juan/Four Corners region, and no other area in the Southwest contained comparable site sizes or population densities (Wilshusen and Ortman 1999). Despite this striking example of early aggregation, research suggests that periods of aggregation were interspersed with periods of settlement dispersion and that most villages were occupied for short periods of time (Varien 1999).

By the late 800s, the first structures appeared at the Chaco Canyon sites of Pueblo Bonito, Una Vida, and Penasco Blanco, marking the origin of the “Chaco Phenomenon” (Kantner and Kintigh 2006). During the Pueblo I period, these sites remained small roomblocks that were not substantially different from

sites in surrounding areas, but they would later be remodeled into the largest great houses of the Chaco System. Wilshusen and Van Dyke (2006) argue that Chaco's origins are likely associated with the abandonment of large Pueblo I sites in the Four Corners region in the late 800s and apparent migration into the southern portions of the San Juan Basin.

The area around Aztec Ruins contained small farmsteads but lacked larger villages throughout this period, and the Totah area in general seems to have been sparsely populated during Pueblo I. However, large Pueblo I communities have been documented in the Cedar Hill area further up the Animas River near the Colorado state line, and in the La Plata Valley (Morris 1939; Toll and Wilson 2000). Along the La Plata, early Pueblo I pit structures were identified near the confluence with Barker Arroyo, northwest of Aztec (Dykemann and Langenfeld 1987). Toll and Wilson (2000:32-33) note that Late Basketmaker III and early Pueblo I sites in the La Plata Valley are found on the second terrace west of the river, on fans at the base of the slope, and adjacent to arable bottomlands, and they argue that some of these sites may be as large as Shabik'eshchee Village in Chaco Canyon. Further to the north, over 100 Pueblo I pit structures were identified in Ridges Basin and on Blue Mesa, adjacent to the Animas River south of Durango (Potter 2010). These studies suggest that while only sparse Pueblo I settlements occurred around Aztec, larger communities were present further up arable river valleys. Toll (2008) attributes this pattern to a broader trend of population movement to higher and wetter locations during this period.

New whiteware ceramic types from this period include White Mound Black-on-white (A.D. 750-900) and Kiatuthlana Black-on-white (A.D. 850-900), which contain a white slip and sparse black decorations in mineral paint (Hurst 2003). Neck-banded grayware (Kan'a Gray) made its appearance late in the Pueblo I period and is often used to identify the Pueblo I/Pueblo II transition. In the San Juan area, Chapin Black on White and Piedra Black-on-white (the first decorated ceramics in the area) appeared at this time.

4.3.3 Pueblo II Period (A.D. 900 to 1100)

The Pueblo II period incorporates the Classic Bonito Phase, during which large-scale construction episodes in Chaco Canyon and elsewhere resulted in multi-story masonry great houses at the center of large aggregated communities. Chaco Canyon emerged at the center of a regional economic and ideological system that stretched across the San Juan Basin, although researchers debate the degree to which "outlier" communities participated in and were influenced by the system (Kantner and Mahoney 2000). In general, the Chaco System is usually defined by the presence of multistory great houses and roads. Chacoan communities were usually located near fertile floodplains or at the confluence of major drainages, where water control systems were easier to construct.

Population appears to have been fairly low in the Four Corners, Mesa Verde, and Totah regions in the 900s and early 1000s, as population and aggregation were beginning to increase at Chaco Canyon and other areas in the southern San Juan Basin. In fact, as Chaco emerged as a center, population appears to have declined in these northern areas before increasing again after A.D. 1050 (Lipe 2006). Chacoan influence arrived later here than areas to the south, but when it did, it involved construction of the two largest great houses outside of Chaco Canyon proper – Salmon and Aztec Ruins (Lipe 2006). Salmon Ruin was constructed in a series of construction episodes between A.D. 1090 and 1094, while Aztec West (the excavated ruin) was built in two distinct construction episodes around A.D. 1112 and 1125. Population increased across the Totah, Mesa Verde, and Four Corners area in the A.D. 1050-1100 period. The area around Aztec Ruins became a major population center at this time.

Cibola Whiteware types that are characteristic of the period include Red Mesa Black-on-white (A.D. 900–1050), Gallup Black-on-white (A.D. 1030–1125), Puerco Black-on-white (A.D. 1030–1150), Escavada Black-on-white (A.D. 1000–1130), and late in the period, Chaco Black-on-white (A.D. 1075–1150; see Hays-Gilpin and van Hartesveldt 1998). Grayware types include Kana’a Gray (A.D. 865–1050; see Hays-Gilpin and van Hartesveldt 1998:135)—a neck-banded type—and Indented Corrugated, which became the dominant utility ware during this period.

4.3.4 Pueblo III Period (A.D. 1100 to 1300)

In general, the Pueblo III period was a time of migration and reorganization throughout the Southwest (Adler 1996). The beginning of the period corresponds with the last great construction episode in Chaco Canyon – the construction of the McElmo great houses, which occurred from A.D. 1100 to 1130. This was followed by the collapse of the Chaco regional system and the nearly complete abandonment of the canyon between A.D. 1130 and 1150, a process that corresponds with a severe regional drought (Dean et al. 1994). The Pueblo III period witnessed a significant restructuring of economic networks, periodic abandonment of pueblos including most Chacoan great houses, a general move to upland settings or perennial river valleys, and an increased emphasis on defense in the location of settlements. By A.D. 1300, the entire Mesa Verde, Four Corners, and San Juan Basin areas had been completely depopulated.

Traditionally, establishment of Salmon and Aztec has been viewed as the result of distinct colonization from Chaco Canyon, with these events followed by abandonment when the Chaco system collapsed around A.D. 1130. Early researchers such as Earl Morris argued that Aztec was then reoccupied by a larger “Mesa Verdean” population around A. D. 1200. Lekson (1999) extends the colonization hypothesis to argue that Aztec’s location due north of Chaco Canyon was meant to symbolically establish it as the new capital and that leaders may have literally followed the “Chaco Meridian” north to establish their new center. Following the establishment of Salmon and Aztec, a number of other Chacoan Great Houses were constructed in the Totah area, as well as in southwestern Colorado and southeastern Utah. Reed (2008) accepts the colonization argument but notes that it would have required cooperation from local residents resulting in a mixed (local and non-local) population at the Salmon and Aztec communities. There is general agreement, then, that Salmon and Aztec were “Chacoan” in their architectural style, general layout, and symbology and that they were most likely sponsored at least loosely by residents or leaders within Chaco Canyon. While some construction may have occurred earlier, a major construction episode between A.D. 1110 and 1113 resulted in the establishment of the Chacoan core of Aztec West (Brown et al. 2008). Many of the sites in the Aztec North community along the terrace edge also appear to have been constructed at this time (Stein and McKenna 1988).

While a lack of tree ring dates between approximately A.D. 1130 and 1180 led earlier researchers to argue that Aztec was abandoned during this time, Brown et al. (2008) believe that other lines of archaeological evidence suggest that a significant population remained at Aztec throughout this “intermediate” (between the Chaco and Mesa Verde occupations) period. A large portion of the Aztec East Ruin may have been constructed during this time. Construction increased again around A.D. 1200, when additional portions of Aztec East were constructed, and additions and remodeling occurred within Aztec West. However, the site was clearly no longer “Chacoan,” and both ceramic and masonry styles suggest influence (and possibly migration) from the Mesa Verde area. Periodic construction episodes continued until at least A.D. 1269, after which Aztec Ruins and the entire Four Corners area was abandoned. Aztec Ruins is further discussed in the *Previous Research* section.

4.3.5 Pueblo IV Period (A.D. 1300 to 1600)

The San Juan Basin and Mesa Verde areas were abandoned by the beginning of the Pueblo IV period, as Pueblo groups coalesced along the Rio Grande, on the Hopi Mesas, and in the areas around Zuni and Acoma. Large Pueblo IV settlements were also present on the Little Colorado, along the Mogollon Rim, and in southern New Mexico, but these areas were abandoned in the 1400s (Adams and Duff 2004).

Although the territory occupied by Pueblo groups contracted, villages became much larger. Space became more restricted, with plazas often enclosed, and a variety of new ceramic traditions developed, the most significant being the spread of the Salado Polychrome tradition and the development of glazeware technology. Because most modern pueblos were established at this time, the Pueblo IV period tends to more closely mirror modern pueblo society in terms of village location and social relationships and practices.

4.4 NAVAJO PROTO-HISTORY/HISTORY

According to Spanish documents, the Navajo people (or Diné) were living in the Four Corners area of the American Southwest shortly after Spanish contact. Navajos speak an Athabaskan language, and there is general consensus that Athabaskan groups emigrated from northern Canada and Alaska and arrived in the American Southwest sometime between A.D. 1300 and 1600 (Towner and Dean 1996). The Navajo homeland in the southwest (the “Dinetah”) is the area surrounding Largo and Gobernador canyons, east of Aztec. The name “Navajo” derives from the Spanish name Apaches de Nabajó, which distinguishes the Navajos from other Apachean groups on the basis of their agricultural tradition and was used by Spanish explorers as early as the late sixteenth or early seventeenth century. In addition to practicing agriculture, the Navajo were known to be hunters and gatherers who retained a moderate degree of residential mobility.

There is much debate regarding Navajo origins and their relationship with Ancestral Pueblo (Anasazi) populations. Information on Navajo origins is derived from three main sources: archaeological data, historic documents (particularly Spanish accounts), and Navajo oral history. Oral traditions recognize the economic, social, and ceremonial interrelationships of ancestral Navajo and Anasazi and acknowledge intermarriage between these ancestral groups (Warburton and Begay 2005:534). Several clans are said to be descended from ancestral Navajo and Anasazi roots, and it has been noted that “the two major roots of traditional Navajo culture, Athapaskan-Apachean and Anasazi-Puebloan, were joined” during the Reconquest period following the Pueblo Revolt of 1680 (Brugge 1983:493). At this time, Pueblo refugees may have joined the Navajos in their homelands in Dinetah and along the upper Chinle drainage, leading to a commingling of cultural traits, such as masonry pueblitos.

Archaeologists studying Navajo origins generally fall into two schools. Brugge (1983) and others argue for an early entrance into the southwest (ca. A.D. 1300-1400) through the mountain valleys of Colorado and Utah. Under this model, the Navajo may have been present in the Four Corners area shortly after (or even during) the Ancestral Pueblo abandonment of the region. On the other hand, the “Querecho Model” holds that all Athabaskan groups arrived in the southwest via an eastern route on the high plains (Shaafsma 1996). According to this model, Navajos were part of the buffalo hunters noted by Coronado on the plains and did not split off and begin immigrating to the Dinetah area until the late A.D. 1500s. Much of the debate surrounds the validity of tree-ring dates at potential Navajo sites in the A.D. 1400s and 1500s and the cultural affiliation of gray ware ceramics during this period in northwestern New Mexico. Sites containing these ceramics are traditionally viewed as Dinetah-phase Navajo occupations, although Shaafsma believes they may be Ute and questions the validity of the Dinetah Phase altogether. Brown (1996) notes that even if the earliest tree-ring dates are attributed to “old wood” and discarded, there seems to be abundant evidence of a Navajo presence along the San Juan by around A.D. 1500, and he believes that what we refer to as “Navajo Culture” likely developed in this area, regardless of the route of entry.

During the early period, the Navajo generally resided in forked-pole dwellings that were circular in plan and conical in cross-section. The forked-pole hogan may represent a semi-permanent residence. Masonry, cribbed-log, and later milled-lumber hogans were also built. Other architecture included ramadas, sweat lodges, and corrals. Navajo pottery types include Dineta utility wares and Gobernador Polychrome. After Spanish contact, animal husbandry played an increasingly important role in the Navajo economy. Navajo settlement was dispersed and they remained relatively mobile, which allowed them to access resources in different environmental settings (Brugge 1983:495). However, this mobile settlement strategy also brought them into conflict with Spanish settlers, and there are Spanish references to conflict with Navajo groups throughout the 1700s (Brugge 1983:495). In the early half of the 1800s, the Navajos were a “major target” for the captive slave trade in New Mexico (Brugge 1983:495).

A pattern of broken treaties and punitive military campaigns was established early in the American period. American troops established Fort Defiance on Navajo homelands in 1851, and in 1860, Navajos attacked and nearly captured the fort (Roessel 1983:510). In 1863, a military campaign led by Colonel Christopher (Kit) Carson was charged with subjugating the Navajos. The “Long Walk” to the confinement camp at Bosque Redondo near Fort Sumner, New Mexico began in 1864, and a year later, a census showed that there were 9,022 Navajos at the camp (Roessel 1983:513). Eventually, a treaty in 1868 allowed the Navajo people to return to northwest New Mexico and established a reservation, although their numbers were greatly reduced by this time (Roessel 1983:518–519).

4.5 HISTORIC PERIOD

European contact occurred in central New Mexico in the mid-sixteenth century with the arrival of the Spanish conquistadors of the Coronado expedition, and permanent settlements were established following Onate’s expedition in 1598. However, Spanish settlement remained confined to the Rio Grande valley and its major tributaries until the 1700s. In the 1760s, the Spanish conducted mineral expeditions in the Four Corners area. Fray de Posada and Don Juan Maria de Rivera encountered nomadic Navajo, Apache, Piute, and Ute Indians during a foray up the San Juan River into Colorado in search of gold and silver (Smith 2001). However, permanent Euroamerican settlement of what became San Juan County did not begin until after the subjugation of the Navajo in the 1860s.

Anglo settlers began arriving in the San Juan Valley in the 1870s. The town of Aztec – the first settlement in the area – received its name from the mistaken belief among the early settlers that the prominent ruins had been built by a northern branch of the Aztecs from Mexico. Further to the west, the settlement of Junction City was established near the confluence of the San Juan and Animas rivers. When San Juan County was created in 1887, a battle ensued between Aztec and Junction City over which town would become the county seat. After much dispute, Aztec prevailed in 1890 and remains the county seat today (Julyan 1996). After losing out, Junction City faded into obscurity, and settlement shifted to the growing town of Farmington on the north side of the San Juan River. Cattlemen had been visiting this location to buy vegetables for years and referred to it as “farming town”; when the town was officially laid out and a post office was established, the name was shortened to “Farmington” (Julyan 1996). Farmington grew into a regional economic center and is today the largest town in the area.

Trade with the Navajo has remained an important part of the San Juan County economy. Several trading posts were in operation within the vicinity of the project area during the early part of the twentieth century. The first was known as the Chico Trading Post and was mentioned in the June 6, 1902 edition of the Farmington Times newspaper. This post was established by the Hyde Exploring Expedition and was in operation during the summer of 1902 in close proximity to the present-day Carson Trading Post, but was in operation for just a few years. Numerous other trading posts were established throughout the twentieth century. However, early settlers to the region soon realized that San Juan County’s greatest asset was its immense water supply, which led to an estimate that four-fifths of the county was suitable to cultivation (NMOSH 2004-2009). With such a water supply, it is easy to understand why farming districts in San Juan County were among the most-favored irrigated districts in the United States

(NMOOSH 2004-2009). Alfalfa and apples stand out as some of the more profitable crops; additional crops well suited to the County's environment include other fruits, grains, vegetables, and nuts.

The 1950s brought a new industry to the area, with the development of oil and gas production. Ultimately, the oil and gas industry brought thousands of new residents to the region, causing the population of cities such as Farmington to increase over 700 percent in the span of 10 years. Today, agriculture is no longer the most profitable industry, but a significant number of residents continue to farm land irrigated by the Animas River. Farming and ranching, the oil and gas industry, and tourism have allowed for continued economic growth within San Juan County.

5. METHODS

Parametrix archaeologists conducted a 100-percent (Class III) pedestrian cultural resource survey of the APE for the proposed undertaking. The following sections summarize the methods used during pre-field preparations, field efforts, and post-field processing.

5.1 PRE-FIELD PREPARATION

Parametrix personnel completed a pre-field records review of ARMS for previously recorded archaeological sites, buildings, structures, and surveys in the project area and vicinity prior to conducting the survey. In addition, current listings of the NRHP and the New Mexico State Register of Cultural Properties (NMSRCP) were consulted to determine the presence of any cultural properties or districts within, and in the vicinity of, the project area. Details of these searches are provided below in Section 6: *Previous Research*. The purpose of the pre-field records review was to determine the location of known cultural properties that might be affected by the proposed undertaking and to derive expectations as to the nature and frequency of resources that might be encountered during the field survey.

Prior to entering the field, maps were produced in ArGIS showing the project area and all previously recorded sites in the project vicinity. The project area and Universal Trans Mercator (UTM) coordinates using the North American Datum (NAD) 83 coordinate system were overlaid on the *Aztec and Flora Vista, New Mexico* USGS quadrangles and aerial photographs to aid in accurate identification of project boundaries during field recording.

5.2 FIELD METHODS

Parametrix personnel completed the 100 percent pedestrian survey by walking transects no more than 15 m apart across the entire project area. Throughout this process, UTM coordinates were obtained using the NAD 83 projection on a Trimble GeoXM GPS unit with a positional accuracy of less than 1 m (3.28 ft). Transects were walked at a north-south orientation. The Trimble GeoXM GPS unit and project area maps were consistently consulted to assure full coverage of the project area. Notes on topographic features, hydrology, geology, vegetation patterns, ground surface visibility, and sources of disturbance and recent use were recorded during survey.

GPS-derived locations for resources were obtained using a Trimble GeoXM GPS unit and were verified by reference to landscape features and landmarks shown on USGS quadrangles and aerial photographs. Following generally accepted guidelines for cultural resource management, sites were defined as the remains of purposeful loci of human activity more than 50 years in age. Activities are considered to have

been purposeful if they resulted in a deposit of cultural material beyond the level of one or a few accidentally lost artifacts. Cultural resources that qualify as sites exhibit at least one of the following:

1. One or more features
2. One formal tool if associated with other cultural materials
3. An occurrence of artifacts (such as pottery sherds, chipped stone, or historic items) that contains one of the following: (a) three or more types of artifacts or materials; (b) two types of artifacts or material in a density of at least 10 items per 100 square meters; (c) a single type of artifact or material in a density of at least 25 items per 100 square meters.

Cultural manifestations that are more than 50 years old but do not meet any of the above criteria were recorded as IOs, which usually consist of a location with fewer than 10 artifacts. Information commonly recorded for IOs include the area (for IOs consisting of more than one artifact), artifact type and frequency, and sketches of diagnostic artifacts.

All newly discovered sites were recorded on Laboratory of Anthropology (LA) Site Record forms and identified using their temporary field number. A datum consisting of a metal rebar stake and an aluminum site tag was placed on each newly discovered site. Supplemental in-field-analysis forms were used to record prehistoric and historic artifacts, provide adequate descriptive information for each assemblage, and assign cultural/temporal affiliations when possible. Cultural and temporal affiliations were assigned to sites with diagnostic artifacts and/or features on the basis of accepted type descriptions. All features were fully described and photographed. Drawings of features and individual diagnostic artifacts are also produced when applicable. To facilitate relocation, each site was plotted on the appropriate USGS 7.5-minute quadrangle. All sites were mapped using a Trimble GeoXM GPS unit. Each site map included the LA site number, site boundary, datum location, north arrow, scale, and legend. Maps also portray the location of features, artifact concentrations, diagnostic or other important artifacts, areas of disturbance, topographic data, and any other relevant features.

The same attributes were recorded on artifacts regardless of whether they part of a site or IO. Complete projectile points and point fragments are sketched in the field for later typological classification, although no projectile points were identified in the current investigation. Other tools or significant artifacts are photographed or illustrated in the field when necessary. Attributes recorded for flaked-stone artifacts include dimensions, cortex, completeness, and platform characteristics. Recorded attributes for ground-stone artifacts include form (mano, metate, etc.), dimensions, condition, morphology, and grinding intensity/direction. Parametrix personnel do not sketch all diagnostic ceramics in the field unless the ware and type cannot be determined. Because typological classification of these artifacts is based on numerous technological attributes—such as paste color and texture, temper type and size, surface smoothing or polish, use of mineral or carbon paint—that cannot be efficiently represented in a field sketch or photograph (in contrast to the primarily morphological attributes of projectile point types), Parametrix relies instead on professional experience to conduct in-field analysis of ceramics. Parametrix field crews utilize field manuals that provide ceramic type descriptions and completed ceramic analysis forms that include entries for typological classification and for various technological and design attributes for artifacts that cannot be confidently classified as to type. No artifacts were collected during this inventory.

In addition to archaeological sites and IOs, Parametrix evaluated the APE for built environment resources, including historic buildings and potential districts and/or cultural landscapes prior to, during, and after fieldwork using the standards outlined in *New Mexico Register Volume XVI Issue Number 15* and *National Park Service (NPS) National Register Bulletin 30* (McClelland et al. 1999). Other materials used to guide identification of districts and landscapes include *NPS Preservation Brief 36* (Birnbau 1993) and the Historic Transportation Corridor's thematic issue of *Cultural Resource Management (CRM)* (National Park Service 1993). These documents, developed primarily by the NPS, discuss and use the term landscape rather than terms related to eligibility for the NRHP, where an NPS "landscape" would be defined as a site or a district (36 CFR 60.2). As suggested by the NPS in *Bulletin 30* (1999),

researchers define any potential landscape through their choices of historic contexts, period or periods of significance, potential boundaries, and contributing or non-contributing elements. In-use historic buildings, structures, and objects are recorded using the New Mexico Historic Cultural Properties Inventory (HCPI) form. When encountered, each building or structure is photographed and its location is recorded with the GPS receiver. However, no built environment resources were identified in the current investigation.

5.3 POST-FIELD PROCESSING

Following field investigations, all GPS data were differentially corrected to ensure sub-meter accuracy. Shapefiles were then exported to ArcGIS so that project area and site maps could be created. Additions and/or edits to shape files were made as necessary, based on notes taken during fieldwork. All field notes and artifact forms were checked for accuracy and completeness prior to the completion of site narratives and electronic forms. Digital photographs were downloaded and edited using appropriate software.

6. PREVIOUS RESEARCH

On February 20, 2010, Parametrix personnel conducted a pre-field records search of the NMCRIS database to obtain information on all previously recorded sites and investigations located within 500 m (1640 ft) of the project area. Current listings of the NRHP and NMSRCP were consulted to determine the presence of any historic properties or districts within this buffer. In addition, AZRU staff were consulted in order to gain information on investigations conducted at AZRU. The purpose of the record searches was to determine the location of known cultural resources that might be affected by the proposed undertaking and to derive expectations as to the nature and frequency of resources that might be encountered during the field survey.

The NMCRIS database shows one previous cultural resource survey within the project area and four additional investigations within the 500-m (1640-ft) buffer (Table 2). The San Juan College Cultural Resource Management Program (SJCCRMP) surveyed a portion of the project area in 1987 for a proposed road extension connecting US 550 to AZRU, a project that was never completed. Although listed as a single project, it received two separate NMCRIS numbers (19771 and 23336) and reports (Moore and Bunker 1987). In 1996, Complete Archaeological Service Associates (CASA) surveyed a small parcel for construction of a new post office, and in 1998, Moore Anthropological Research (MAR) surveyed US 550 for a NMDOT sidewalk project; both of these projects are located south of the current project area. Finally, the San Juan County Museum Association (SJCMA) has recently conducted two investigations for a housing development and two well locations immediately west of the project area. In addition, AZRU has conducted a complete inventory of the monument (this project is not yet registered within NMCRIS) and resource-specific investigations for register nominations (discussed in greater detail below).

Table 2. Previous Investigations Within 500 m (1640 ft) of the Project Area

NMCRIS	Performing Agency	Date	Acres	Location
19771	SJCCRMP	1987	43.5	Within project area
23336	SJCCRMP	1988	43.5	Within project area

53114	CASA	1996	2.25	425 m south of project area
61736	MAR	1998	12	500 m south of project area
77805	SSJCMA	2002	4.5	Immediately adjacent to western project boundary
87676	SJCMA	2004	13.5	85 m west of project area

Twenty-one previously recorded archaeological sites and six register-listed properties occur within 500 m (1640 ft) of the project area (Table 3). Three of these sites are located within the current APE. LA 1674 (Animas River Ruins) is a multi-component site that includes the remains of a historic homestead and a Pueblo II-III component that is mostly buried and has been investigated through a variety of subsurface methods. LA 65323 and LA 69331 are historic sites located on the floodplain on the southeast side of the Animas River. These three sites are discussed in greater detail in the *Survey Results* section of this report.

Table 3. Previously Recorded Archaeological Sites Within 500 m (1640 ft) of APE

LA No.	Site Type	Cultural Temporal Affiliation	Location
45 (Aztec Ruins)	Structural	Pueblo II-III (A.D. 1100 to A.D. 1300)	60 m N of project area
1674 (Animas Ruin)	Structural	Pueblo III/NM Statehood-WWII	Within project area
5622	Structural	Unknown	110 m SE of project area
60005	Structural	Pueblo II-III (A.D. 900-1300)	400 m NW of project area
60009	Structural	Pueblo III/Unspecified Prehistoric	400 m NW of project area
60010	Structural	Pueblo II-III	400 m NW of project area
60016	Structural	Pueblo II-III	450 m NW of project area
65323	Structural	NM Statehood-Modern	Within project area
69331	Structural	NM Statehood-Modern	Within project area
73559	Non-structural	Pueblo II-III	320 m N of project area
85115	Structural	Pueblo II-III	400 m W of project area
161017	Structural	Pueblo II-III	375 m NW of project area
161018	Structural	Unspecified Prehistoric	300 m NW of project area
161019	Structural	Unspecified Prehistoric	375 m NW of project area
161020	Non-structural	Unspecified Prehistoric	350 m NW of project area
161021	Structural	Unspecified Prehistoric	250 m W of project area
161022	Non-structural	Unspecified Prehistoric	75 m N of project area
161023	Structural	Unspecified Historic	275 m N of project area
161024	Non-structural	Unspecified Prehistoric	275 m N of project area
161025	Non-structural	Unspecified Prehistoric	425 m NW of project area
161027	Structural	Prehistoric/Historic	425 m N of project area

Aztec Ruins (New Mexico State Register Property [SR] 55; LA 45) is located less than 100 m north of the project area. This is a large, well-known Pueblo II-III settlement cluster that contains three or four great houses (East Ruin, West Ruin, North Ruin, and Earl Morris Ruin) totaling nearly 1000 rooms and a surrounding landscape comprised of smaller residential sites and other contemporaneous architectural features. This community became an important center of population in the Chaco period prior to A.D. 1100, continued to be occupied throughout the A.D. 1100s, and witnessed a second period of monumental construction and florescence in the A.D. 1200s after the Chaco decline. AZRU was created in 1923, and the monument's original 27 acres were listed on the NRHP in 1966 and the NMSRCP in 1971. The register-listed property encompasses only the core area that was administered by

the federal government at that time; included in this listing are West Ruin, East Ruin, Earl Morris Ruin, two tri-walled structures (the Hubbell Site and Mound F), and seven additional mounds. The best-known of these is West Ruin, a 400-room great house that was fully excavated by Earl Morris between 1919 and 1927 and currently forms the core of the monument's public interpretation and visitor experience. Aside from some limited testing, the East Ruin has not been excavated, although it is thought to date primarily to the A.D. 1200s. The Hubbard Site was fully excavated in the 1950s, during which a central kiva, two rows of concentric rooms, and a tri-wall structure were identified (Vivian 1959). Other mounds have not been excavated but are thought to contain residential roomblocks and/or ceremonial architecture. Aztec Ruins is discussed in greater detail within the *Culture History* section of this report.

The Aztec North Mesa Archaeological District (SR 1857) contains a dense concentration of residential sites, roadways, and other features on the upper terrace in the north portion of AZRU (Brown and Nickels 2003). The importance of this area and its relationship with the larger West Ruin and East Ruin was originally identified during a reconnaissance survey of the upper terrace in 1987 (Stein and McKenna 1988). Although only a small portion of this district is located within 500 m (1640 ft) of the current project area, it is summarized to provide a more comprehensive view of the cultural landscape surrounding Aztec Ruins. This archaeological district includes the area often referred to as the "Terrace Community," which was divided into the Aztec North Site Cluster and the Residence West Cluster during documentation (Brown and Nickels 2003). The Aztec North Cluster includes the North Ruin (LA 5603), which contains more than 100 rooms, as well as two additional residential complexes, an isolated great kiva, and roadway segments. The North Ruin is thought to date to the Late Bonito Phase (A.D. 1080 to 1140). The Residence West Cluster contains more sites (n=19) but less evidence of ceremonial architecture. Sites in this area range from single-room structures to large room blocks of 30-40 rooms, although most seem to be small single-family "unit pueblos" (Brown and Nickels 2003). Together, these two clusters contain a wide variety of site types dating from A.D. 1075 to 1300, which appear to have formed a substantial residential/ceremonial landscape surrounding the main ruins. Aztec Ruins (SR 55), the Aztec North Mesa Archaeological District (SR 1857), and other contemporaneous sites in the surrounding area comprise the Ancient Aztec Community, which would likely be eligible for listing in the NRHP as a cultural landscape (Gary Brown, personal communication 2011).

Sixteen sites either included in the Aztec North Mesa Archaeological District or recorded by AZRU are within 500 m (1640 ft) of the APE. With the exception of LA 161023, which is historic, these sites are either Pueblo II-III or Unspecified Prehistoric in cultural/temporal affiliation. Although the unspecified sites lack information in the ARMS database, many are included in the district nomination and clearly date to the Pueblo II-III period. Some of these sites (such as LA 60005 and LA 60016) contain roomblocks and kivas and are, therefore, an important part of the Pueblo II-III community surrounding Aztec Ruins.

Four historic-period register-listed properties are located within 500 m (1640 ft) of the APE. These include the AZRU Administrative Building/Museum (SR 1713), which also serves as the Visitors Center, as well as the McCoy-Maddox House (SR 1096), the Harvey McCoy House (SR 1098), and the James McGee House (SR 1100) in the town of Aztec south of the project area. The three properties to the south are historic homes that are representative of the early development of the town of Aztec. Together, the sites, districts, and register-listed properties surrounding the project area are testament to the rich cultural heritage – both historic and prehistoric – of the area.

7. SURVEY RESULTS

The following sections provide a description of the results of the cultural resource survey as well as NRHP eligibility evaluations and management recommendations for each recorded resource. During the course of this investigation, Parametrix updated three previously identified archaeological sites and documented one new archaeological site. No IOs, acequias, historic districts, or cultural landscapes were identified. A map showing the location of all the documented cultural resources is provided in Appendix A, and UTM coordinates are included in Appendix B. Photographs of the resources are provided in Appendix C. LA forms are included as separate attachments to this report.

7.1 PREVIOUSLY RECORDED SITES

LA 1674

Site Category: Prehistoric/Historic, Structural
Land Ownership: AZRU
Site Dimensions: 310 by 120 m

LA 1674 is a large, previously recorded multi-component site that contains buried prehistoric structural remains associated with Aztec Ruins, as well as an overlying historic/modern homestead. The site is situated along the first terrace above the Animas River floodplain, at an elevation of approximately 5620 feet above mean sea level (amsl). It stretches along both sides of Ruins Road in the north portion of the project area. The site area slopes gently south towards the Animas River. Vegetative cover is highly variable across the site. The eastern portion of the site contains the remnant of an orchard with fruit trees interspersed with cottonwoods. However, the western portion of the site is devoid of tree cover and consists of highway right-of-way, disturbed space, and open pastureland. The site has been heavily impacted by historic and modern farming pursuits, recent development, and the construction of Ruins Road.

Much of the following discussion is summarized from the LA site form (Wharton et al. 2006) completed following AZRU's recent reevaluation of the site. The site may have been recorded by Kidder in 1934, although the first formal recording was conducted by SJCCRMP during survey for a proposed extension of State Road 44, which was never completed (Mathews 1989; Moore and Bunker 1987). During that investigation, Mathews (1989) identified three features buried approximately 20 cm below the modern ground surface near the northern edge of the site: Feature 1 (a basin-shaped pit), Feature 2 (a possible storage cist), and Feature 3 (a possible buried structure). Finally, MAR conducted archaeological testing, including shovel tests, auger tests, and backhoe trenching in 2001 as part of a project that rerouted Ruins Road to the south (Moore and Nathan 2001). Seven features were identified during subsurface investigations. During backhoe trench excavations in 2001, MAR identified a cobble lined feature (Feature 4), a possible pit structure (Feature 5), a bell-shaped storage pit (Feature 6), and a cobble wall alignment (Feature 7) in the northeast portion of the site and possible midden deposits in the center of the site. Following these investigations, D'Appolonia Environmental Services conducted a geophysical survey across the site (D'Appolonia 2003). Three possible anomalies were ground-truthed with test excavations, and one contained a cobble-walled structure (Feature 8).

A fairly substantial artifact assemblage has been analyzed as a result of these investigations. Decorated ceramic types have been primarily McElmo and Mesa Verde Black-on-white, with smaller amounts of Mancos Black-on-white, Chaco Black-on-white, and St. Johns Polychrome, with corrugated grayware, plain grayware, and undecorated whiteware also forming large portions of the assemblage (Barrett 2003; Mathews 1989). Based on these investigations, AZRU researchers calculated a mean ceramic date of A.D. 1208 and a date range of A.D. 1163 to 1253 for the site, placing it within the Pueblo III period

(Wharton et al. 2006). Other analyzed artifacts include choppers, cores, a possible knife, manos, flaked-stone debitage, a jet/hematite bead, and corn cob fragments.

The historic component has been divided into two loci. Locus 1 is in the western portion of the site and contains a concrete foundation from a two-room structure (Feature 9), the remains of a fence (Feature 10), and a series of three contiguous irrigation laterals (Feature 11). The irrigation laterals appear recent in age, and the temporal affiliation of the remaining two features in this locus is unknown. Locus 2 contains the remains of the Cox/Randack homestead, which was first occupied around 1910. This locus is found in the southeast part of the site within a dense grove of cottonwoods, and it includes an outhouse/cistern depression (Feature 12), an irrigation ditch (Feature 13), the remains of a possible animal pen (Feature 14), and an apple orchard (Feature 15). The original house and other associated features have been removed, a process that began in 1957 when the house was replaced with a mobile home (Wharton et al. 2006). The mobile home and other structures and features were deemed to be health hazards in 2001 and were removed at this time.

Because AZRU's reevaluation of LA 1674 was conducted recently and is extremely thorough, Parametrix has chosen not to provide alterations to the currently defined site boundary, which is based primarily on the distribution of features identified during subsurface testing. Furthermore, because the majority of the prehistoric component is subsurface and most of the historic component has been removed, additional surface investigation is not likely to substantially expand on the current knowledge of the site. While AZRU acknowledges that the southern boundary has been arbitrarily defined by a fence line that forms the boundary of an irrigated pasture (Wharton et al. 2006), there is no clear evidence that the site continues further to the south. No additional artifacts were identified on the modern ground surface or within a north-south oriented acequia during the current investigation, although additional buried deposits could be present.

Eligibility and Management Recommendations

AZRU notes that the prehistoric component of the site is potentially eligible under Criterion A since it is an integral part of the Chacoan outlier of Aztec Ruins, Criterion B if additional information can be found substantiating that Alfred V. Kidder worked at the site, and Criterion D for its ability to provide important information on the prehistory of the region. However, various forms of disturbance (including the complete removal of structures and features) have left the historic component with little or no integrity, and it no longer has the potential to provide additional information on the history of the area. Furthermore, the Aztec Ruins Historical Vernacular Landscape that surrounds the prehistoric ruins was determined not eligible by the SHPO in 2005 for its lack of integrity, and the historic component of LA 1674 displays a lack of integrity similar to the broader findings that led to this determination. It should be noted that AZRU is currently in consultations with the SHPO regarding these recommendations, and Parametrix will not, therefore, make additional eligibility recommendations at this time. However, Parametrix agrees that the prehistoric component is potentially eligible and that the historic component no longer exhibits the integrity required for listing. Furthermore, Parametrix notes that the site should be managed as if it is *eligible* for the purposes of the current undertaking until such determination is made.

Current design plans call for the pedestrian trail to run immediately outside the southern site boundary before bisecting a small area of the western portion of the site. The area that may be bisected is part of the historic component of the site, which does not contribute to the site's eligibility due to a general lack of integrity. Parametrix recommends that all trail construction should be above grade, and that no subsurface disturbance should take place within LA 1674 site boundaries, in order to protect potential prehistoric subsurface deposits. If these recommendations are followed, pending agency consultation and

review, the proposed undertaking will have *no adverse effect* on the qualities that may make LA 1674 eligible for listing in the NRHP

LA 65325

Site Category: Historic, Structural
Land Ownership: City of Aztec
Site Dimensions: 46 by 39 m

LA 65325 is a previously recorded historic site marking the location of the Aztec pump station constructed in 1924. The site is located on the Animas River floodplain, southeast of a prominent bend in the river, at an elevation of approximately 5600 feet amsl. The location is heavily wooded and contains cottonwood, Russian olive, and coyote willow, as well as an understory of Russian knapweed, thistle, and various grasses. Areas of open pastureland are present to the east, where the site may continue outside the project area onto private property. The site is extremely disturbed, and many of the previously recorded features are no longer present.

The site was originally recorded in the 1980s by the San Juan College Cultural Resource Management Program for a proposed extension of State Road 44 that was never completed (Moore and Bunker 1987). At that time, the site contained the remains of a cement cistern and pump house, which was constructed in 1924 and used until 1949 (Figure 4). Moore and Bunker (1987) noted that alterations and additions occurred on the property between 1952 and 1957. Most importantly, the pump house was converted to a single family residence, and the cistern was modified and subsequently used as a root cellar by the Burrows family. A new well and second well house, a large shed, a property fence, and a sand bag and earthen berm were also added to the location at this time. At the time of recording, the residence/pump house remained intact, and although it was partially filled with water, much of the cistern was intact, including the wooden stairway that was added when it was converted to a root cellar. The newer wood-frame well house and the large three-sided shed constructed of juniper logs and milled lumber were also intact.

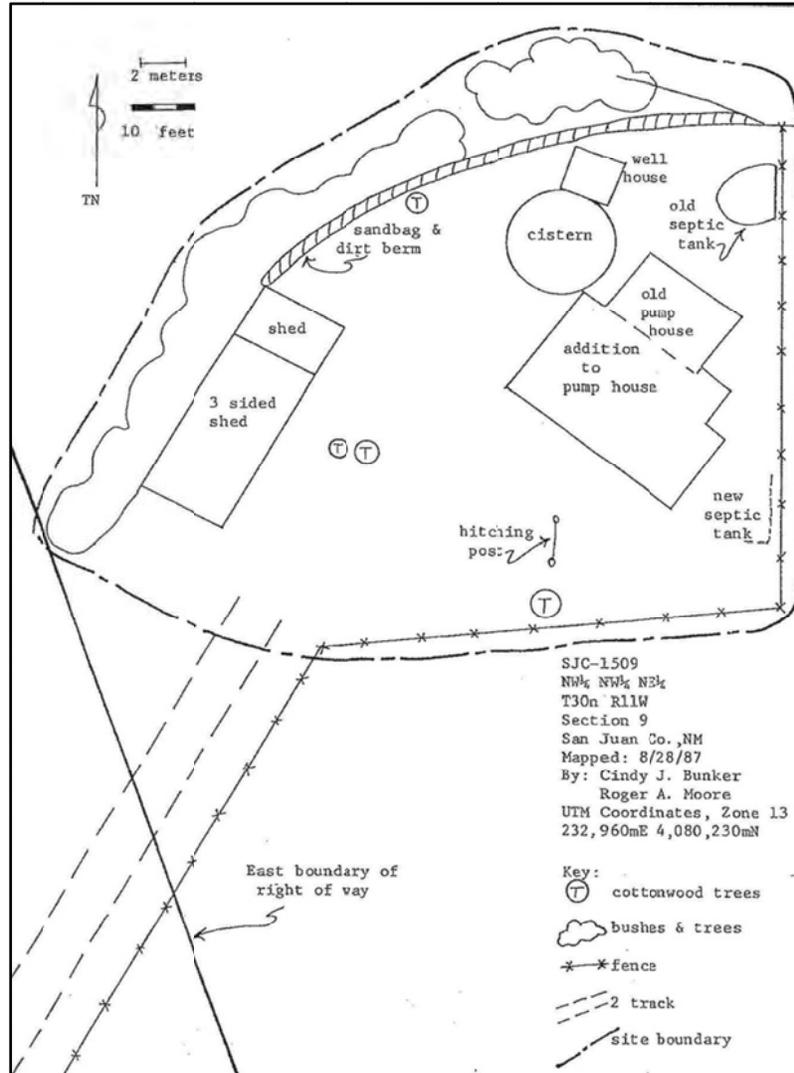


Figure 4. Previous LA 65325 Site Map (from Moore and Bunker [1987])

None of the standing structures currently remain on the site. A large area of mechanically bladed fill material is present at the former house location, suggesting that the cistern was filled and the entire area was leveled after the pump house/single family residence was removed (Photograph 3). All that remains in this area are a well and spigot and a small concrete slab fragment, which is likely either the corner of an addition to the pump house or is associated with a septic tank that was added in the 1970s. A large structural concrete fragment near the south edge of the site may be a fragment of the pump house, but it is clearly not in its original context. To the north, a metal well casing remains intact, likely marking the location of the well and well house that were added in the early 1950s. The shed has been removed, and no evidence of a structure remains in this part of the site. The earthen berm is present, with the previously noted sand bags still visible. No historic artifacts were noted at the site location.



Photograph 3. LA 65325 site location showing recent blading and lack of standing structures

Eligibility and Management Recommendations

LA 65325 was recommended as eligible to the NRHP by SJCCRMP in 1987. However, since that time, all standing structures on the site have been removed, and the entire area has been mechanically bladed. The cistern appears to have been filled in, and other features have either been removed or badly damaged. There is no evidence that subsurface cultural deposits are present at the site. Only the original well casings, an earthen berm, a fragment of a concrete slab, and a small number of miscellaneous items lacking in context or association remain on the site. The function and occupational history of the site is well understood due to the detail of previous recordings. However, the site no longer has the potential to produce additional information on the history of the area, nor does it retain historical significance due to the lack of integrity of its remaining elements. Parametrix, therefore, recommends that the site should no longer be considered eligible to the NRHP under any criteria. No further management considerations are warranted for this location.

At the time of its original recording, the house was constructed of wood frame, with a stucco exterior on the west side and a gabled roof with rolled asphalt roofing (Moore and Bunker 1987). The original structure likely contained just two rooms, with two eastern rooms added at a later date. A cobble flower bed and concrete walkway were located immediately outside the structure, and a wooden row boat was immediately to the southeast. Northeast of the house was a small wood-frame shed (Shed 1) and a claw-foot bathtub. Further to the northeast, a small wooden foot bridge crossed Hampton Arroyo, providing the only access to the site, both at the time of recording and when the homestead was occupied. The bridge was constructed of milled lumber and two metal pipes. A trash concentration was eroding into the south bank of the arroyo, and several abandoned cars were buried within the north bank.

To the west of the house, Moore and Bunker (1987) report a large trash concentration, a second shed (Shed 2), a depression that may have been the remains of a dug out, and an outhouse. The shed was of wood-frame construction, with a single-panel wooden door, and no windows; chicken droppings and feathers suggested to site recorders that the structure was likely used as a chicken coop. The trash scatter included additional automobiles, appliances, and structural debris. Northwest of the dense trash concentration – along the south bank of Hampton Arroyo – were two wooden rabbit hutches, two animal pens separated by a fence, and a possible second dugout, the roof of which appeared to have burned and collapsed. The remains of two additional collapse structures of unknown function were identified further to the west in an area that also contained miscellaneous debris including bed springs, two trailers, and an automobile frame. Additional car bodies were also noted in the arroyo bottom in this area. Finally, a flat-bed trailer and two additional automobiles (a Roadmaster and a 1956 Buick Special) were located at the far western edge of the site, at the edge of the Animas River.

Very few of the features noted in the 1980s recording and summarized above are currently present on the site. Most of those that are present have been gathered into a large debris pile near the previous location of Shed 2 and the outhouse. The 1987 site map (see Figure 5) indicates that the house was located within the proposed right-of-way. This area is now a large bladed area that contains no evidence of a structure or any of the surrounding objects or features. To the northeast, a portion of Shed 1 remains intact, although the structure no longer contains a roof and is missing large portions of the walls. Fragments of the wooden foot bridge are visible in the bottom of Hampton Arroyo, although the bridge is not intact. A large culvert has been placed along the bladed right-of-way, and a dirt two-track now allows access to the site.

In the center of the site, a large debris pile now covers the previous location of an existing trash scatter, shed, outhouse, and possible dugout (Photograph 4). No evidence of these structures remains, and it is impossible to determine what parts of the debris pile were present within the existing trash scatter noted by Moore and Bunker (1987). The trash pile currently contains various appliances, sinks and bathtubs, a trailer, car and bicycle parts, bed springs, metal piping, corrugated metal, concrete, and other debris. As some of these objects match items noted as previously being scattered across the site, the debris pile appears to contain the remains of structures and objects gathered from across the site since the time of recording. To the northwest, no evidence remains of the animal pens, second dugout depression, or other possible structures. In fact, it appears that all of the miscellaneous items previously located in the eastern part of the site – automobiles, trailers, bed springs, etc. – have either been gathered into the large trash pile or removed from the site altogether. All that remains in this area are automobile bodies in the arroyo and fence line segments. In addition, an old road bed bisects the site and is associated with a concrete-lined crossing of Hampton Arroyo. The temporal association of this road is somewhat enigmatic due to its old appearance and the fact that site recorders made no mention of the road or crossing in 1987.



Photograph 4. Large debris pile at LA 69331

Eligibility and Management Recommendations

Although they officially recommended LA 69331 as undetermined, Moore and Bunker (1987) stated that “information gathered through the field inspection and phone interviews suggests that this site may [be] potentially eligible for National Register inclusion.” At the time of recording, the site most likely retained the potential to provide additional information on homesteading in the area and the early history of the town of Aztec. However, the above discussion demonstrates that the site has been significantly altered since that time. All standing structures have been removed, and every feature has been extensively damaged, displaced, or removed from the site entirely. The location of the house has been mechanically bladed, and no evidence remains of the other residential features (dugouts) on the site. The majority of items that remain on the site have been gathered into a large pile and no longer retain integrity of context or association. As a result, LA 69331 no longer has the potential to provide additional information on the history of the area and does not retain historical significance due to the lack of integrity of its remaining elements. Therefore, it should no longer be considered eligible to the NRHP under any criteria. No further management considerations are warranted for this location.

7.2 NEWLY DOCUMENTED SITES

LA 169424

Site Category: Prehistoric, Non-structural
Land Ownership: AZRU
Site Dimensions: 150 x 21 m

LA 169424 is a medium-sized newly documented prehistoric site that includes artifacts (and possible features) eroding out of the Animas River cut bank, as well as a small artifact scatter along the terrace adjacent to the bank. The site is located on the northwest side of a prominent bend in the Animas River. The cut bank is 6 m high from the river bed to the top of the first terrace and is being actively eroded. LA 1674 is located approximately 30 m to the north, with the two sites separated by a faint swale in the terrace. Vegetation within the stream bed at the base of the cut bank includes Russian olive, coyote willow, tamarisk, and Russian thistle; the terrace contains Russian thistle and various grasses and low forbs. The area has been heavily developed throughout the historic and modern periods and is currently used as pastureland. However, the most important source of disturbance to the site is ongoing erosion of the cut bank. The site extends outside the APE to the southwest, along the Animas River cut bank. AZRU believes the site includes a potential prehistoric mound underlying a modern shed at the southwest end of the monument and may continue further southwest among private residences (Gary Brown, personal communication, 2011). Due to access difficulties, this area was not inspected during the current investigation, and the area around the shed was subjected only to basic reconnaissance rather than formal analysis (which was restricted to the northeast portion of the site within the APE). However, the southwest extension was included in the site boundary to reflect what is likely a continuous archaeological manifestation and to remain consistent with previous inspections of the area by AZRU.

Artifacts and possible features are currently eroding out of the Animas River cut bank. AZRU park archaeologist Gary Brown (personal communication, 2011) reports observing a possible adobe wall and caliche floor in the cut bank profile in recent years and also notes that local residents report removing “whole pots” and other objects from the cut bank as children (although the location of such activity is not known and may be downstream to the southwest). Currently, the cut bank contains a layer of alluvium that ranges from 50 to 100 cm in thickness, which overlays older terrace deposits consisting almost entirely of river cobbles. Cultural material is confined to the upper layer of alluvium. During the current site visit, nine prehistoric artifacts, two possible features, and two posts were observed. The position of the posts near the surface immediately beneath an existing fence line – and their excellent condition – suggests they are likely historic or modern in age.

Feature 1 is a charcoal stain that is 10 cm below the modern ground surface and a maximum of 20 cm thick. A burned nail is included in the fill, suggesting it is historic or modern in age, an inference that is corroborated by its shallow stratigraphic position. Feature 2 is a thin (2 to 4 cm) clay layer located 10 cm below the base of Feature 1. While it is possible that this feature is prehistoric and may correspond to the previously observed floor feature, it is more likely natural based on its slightly sloping and undulating profile. If so, no evidence of the floor or adobe wall currently exists, although this is not surprising given the dynamic erosional characteristics of the cut bank, nor does it mean that additional buried deposits will not be exposed in the future.

The nine artifacts observed in the cut bank profile include a unifacial granite mano, two chert flake fragments, and six ceramics. Five of the sherds are indented corrugated jar fragments and one is an undecorated whiteware bowl fragment.

In addition, 23 ceramic and 10 lithic artifacts are located along the edge of the cut bank to the north and within a small artifact concentration on the edge of the terrace. Ceramic types include indented corrugated (n=14), plain whiteware (n=3), unidentified Black-on-white (n=3), Gallup Black-on-white (n=1), Puerco/Escavada Black-on-white (n=3), and McElmo Black-on-white (n=1). Both jars and bowls are represented in the decorated assemblage. Lithic artifacts include one chopper/hammerstone, one mano, and eight pieces of lithic debitage. The mano is granite and measures 12 cm in size. The chopper is a quartzite cobble with heavy battering/flaking on one margin. Debitage includes chert (n=3), quartzite (n=2), rhyolite (n=2), and basalt (n=1). The presence of this artifact concentration immediately adjacent to an area where cultural material is eroding out of the cut bank suggests that additional cultural material may be buried in this area.

Eligibility and Management Recommendations

LA 169424 is a medium-sized newly documented prehistoric site that includes artifacts eroding out of the Animas River cut bank, as well as a small artifact scatter along the terrace adjacent to the bank. Because this site contains intact subsurface cultural material, it has the potential to address a number of important research topics associated with the Pueblo III period in the Aztec area, including subsistence, land use practices, technology, and temporal relationships between Aztec Ruins and surrounding small sites. LA 169424 is most likely also a contributing element of the Ancient Aztec Community, a potentially eligible cultural landscape. The site is therefore recommended as *eligible* to the NRHP under Criterion D and should be avoided by all project activity. Current design plans call for the pedestrian trail to pass to the east of the site; if avoidance is feasible, subject to consultation and comment, the proposed undertaking will have *no effect* on the site. If the site cannot be avoided, and if elements contributing to its eligibility will be affected by the proposed undertaking, the project proponent should prepare a data recovery plan per New Mexico Administrative Code (NMAC) 4.10.8 and to the standards within NMAC 4.10.16 to mitigate any potential impacts.

8. INTERPRETIVE SUMMARY

One newly documented (LA 169424) and three previously discovered sites (LA 1674, LA 65325, and LA 69331) were recorded during this investigation. Two periods important to the prehistory and history of Aztec are represented in the cultural resources documented for this project: the rapid development of a large Ancestral Pueblo community surrounding Aztec Ruins in the early Pueblo III period and the early historic settlement of the area in the late nineteenth and early twentieth century. While limited in its spatial scale and research scope, this project adds to the growing list of small sites that surround Aztec Ruins. Sites such as LA 1674, LA 169424, and locations within the Aztec North Archaeological District (see *Previous Research* for a more complete discussion) indicate that Aztec Ruins was the focal point of a large community that stretched from the Animas River floodplain to the hills and low mesas in the north portion of AZRU. Additional sites and potential great houses are reported up and down the Animas River from Aztec Ruins, and these sites may have formed a broader community (Stein and McKenna 1988). Within the current project area, LA 1674 and LA 169424 form one small part of this larger landscape and may be associated with agricultural pursuits along the Animas River. As such, these sites are likely contributing elements of the Ancient Aztec Community, a potentially eligible cultural landscape (Gary Brown, personal communication, 2011). Subsurface deposits at both sites also provide ge archaeological information by indicating that the Pueblo III occupation surface remains buried by as much as 50 cm of historic sediment. This finding is significant for future research in the area – both academic and compliance-based – and provides some caution in relying on surface expressions as an indicator of subsurface archaeological potential.

LA 65325 and LA 69331 date to the early twentieth century. While these sites no longer retain integrity – and therefore no longer evoke their historic significance – record searches indicate that numerous other surrounding historic properties also date to this period. These properties include historic homes within Aztec and the Curio Store, which is representative of early commercial capitalization of tourist interest in Aztec Ruins.

9. MANAGEMENT RECOMMENDATIONS

On February 20, 2011, Parametrix personnel conducted a records search of the NMCRIS database to obtain information on all prior surveys and previously recorded properties located within 500 m (1640 ft) of the proposed project area. Current listings of the NRHP and NMSRCP were also consulted. The record searches revealed that three previously recorded sites (LA 1674, LA 65323, and LA 69331) are located within the project area, while 21 previously recorded archaeological sites and six register-listed properties occur within 500 m (1640 ft). An intensive (100 percent) pedestrian cultural resource survey was conducted on February 22 and 23, 2011. A visual buffer was inspected for standing historic buildings, structures, or objects that may be affected by the proposed. During the course of this investigation, the three previously recorded sites were updated, and one new archeological site (LA 169424) was discovered and documented. No IOs, acequias, historic districts, or cultural landscapes were identified.

LA 65325 and 69331 were recommended as eligible to the NRHP by Moore and Bunker (1987). These sites are associated with early homesteading in the Aztec area and the early development of the town of Aztec. Since that time, however, all standing structures on both sites have been removed, and every feature has been extensively damaged, displaced, or removed from the sites entirely. These sites no longer have the potential to produce additional information on the history of the area, nor do they exhibit historical significance due to the lack of integrity of their remaining elements. Parametrix, therefore, recommends that these sites should no longer be considered eligible to the NRHP under any criteria. No further management considerations are warranted for these locations.

LA 1674 was recently updated by AZRU, who noted that the prehistoric component of the site is potentially eligible under Criterion A since it is an integral part of the Chacoan outlier of Aztec Ruins and Criterion D for its ability to provide important information on the prehistory of the region. However, various forms of disturbance (including the complete removal of structures and features) have left the historic component with little or no integrity, and it no longer has the potential to provide additional information on the history of the area. It should be noted that AZRU is currently in consultations with the SHPO regarding these recommendations, and Parametrix will not, therefore, make additional eligibility recommendations at this time. Based on AZRU's findings and recommendations, however, the prehistoric component at LA 1674 should be managed as if *eligible* until such determination is made.

Current design plans call for the pedestrian trail to run immediately outside the southern site boundary before bisecting a small area of the western portion of the site. The area that may be bisected is part of the historic component of the site, which does not contribute to the site's eligibility due to a general lack of integrity. Parametrix recommends that all trail construction should be above grade, and that no subsurface disturbance should take place within LA 1674 site boundaries, in order to protect potential prehistoric subsurface deposits. If these recommendations are followed, pending agency consultation and review, the proposed undertaking will have *no adverse effect* on the qualities that may make LA 1674 eligible for listing in the NRHP

LA 169424 is a medium-sized newly documented prehistoric site that includes artifacts eroding out of the Animas River cut bank, as well as a small artifact scatter along the terrace adjacent to the bank. Because this site contains intact subsurface cultural material, it has the potential to address a number of important research topics associated with the Pueblo III period in the Aztec area, including subsistence, land use practices, technology, and temporal relationships between Aztec Ruins and surrounding small sites. The site is therefore recommended as *eligible* to the NRHP under Criterion D and should be avoided by all project activity. Current design plans call for the pedestrian trail to pass to the east of the site; if avoidance is feasible, subject to consultation and comment, the proposed undertaking will have *no effect* on the site. If the site cannot be avoided, and if elements contributing to its eligibility will be affected by the proposed undertaking, the project proponent should prepare a data recovery plan per NMAC 4.10.8 and to the standards within NMAC 4.10.16 to mitigate any potential impacts. Both LA

1674 and LA 169424 may be contributing elements of the Ancient Aztec Community, a potentially eligible cultural landscape

In addition to the site-specific management considerations discussed above, the entire trail route on the northwest side of the Animas River is through an area with a high potential for subsurface cultural deposits based on its proximity to LA 1674 and Aztec Ruins, as well as the fact that subsurface deposits have been identified at both LA 1674 and LA 169424 in areas with little or no corresponding surface expressions. Per SHPO guidance (Michelle Ensey, personal communication, 2011), Parametrix recommends that all construction between these two sites be above grade and that fill material be introduced to protect existing subsurface deposits. This recommendation is consistent with the recent realignment of Ruins Road, which also bisects LA 1674 and was constructed on top of introduced fill material to protect potential subsurface cultural deposits. If minor subsurface disturbance is conducted in this area, Parametrix recommends that this activity be monitored by a permitted archaeologist; if intact cultural deposits are encountered, construction activity should cease and AZRU and the SHPO should be contacted immediately. In addition, fencing should be placed to assure that the intact portions of these sites are avoided by the project undertaking and that increased pedestrian traffic in the area does not result in cumulative impacts to these resources.

If the recommendations provided in this report are followed, subject to consultation and comment, the proposed undertaking will have *no adverse effect* on any historic properties listed on, or eligible to, the NRHP. However, if buried cultural deposits are discovered during project activities, work should cease immediately and the SHPO should be notified. This undertaking complies with the provisions of the NHPA of 1966, as amended through 1992, the New Mexico Cultural Properties Act (18-6-1 through 18-6-17 New Mexico Statutes Annotated [NMSA] 1978), the Prehistoric and Historic Sites Preservation Act (18-8-1 through 18-8-9 NMSA 1978), and applicable regulations. The report is consistent with federal and state standards for cultural resource management.

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APPENDIX A

Maps

FOR OFFICIAL USE ONLY–

The public disclosure of the location of archaeological sites on state and private lands is prohibited by Section 18-6-11.1 NMSA 1978. Public disclosure of archaeological site locations is federally prohibited by 16 USC 470hh (CFR 296.18)

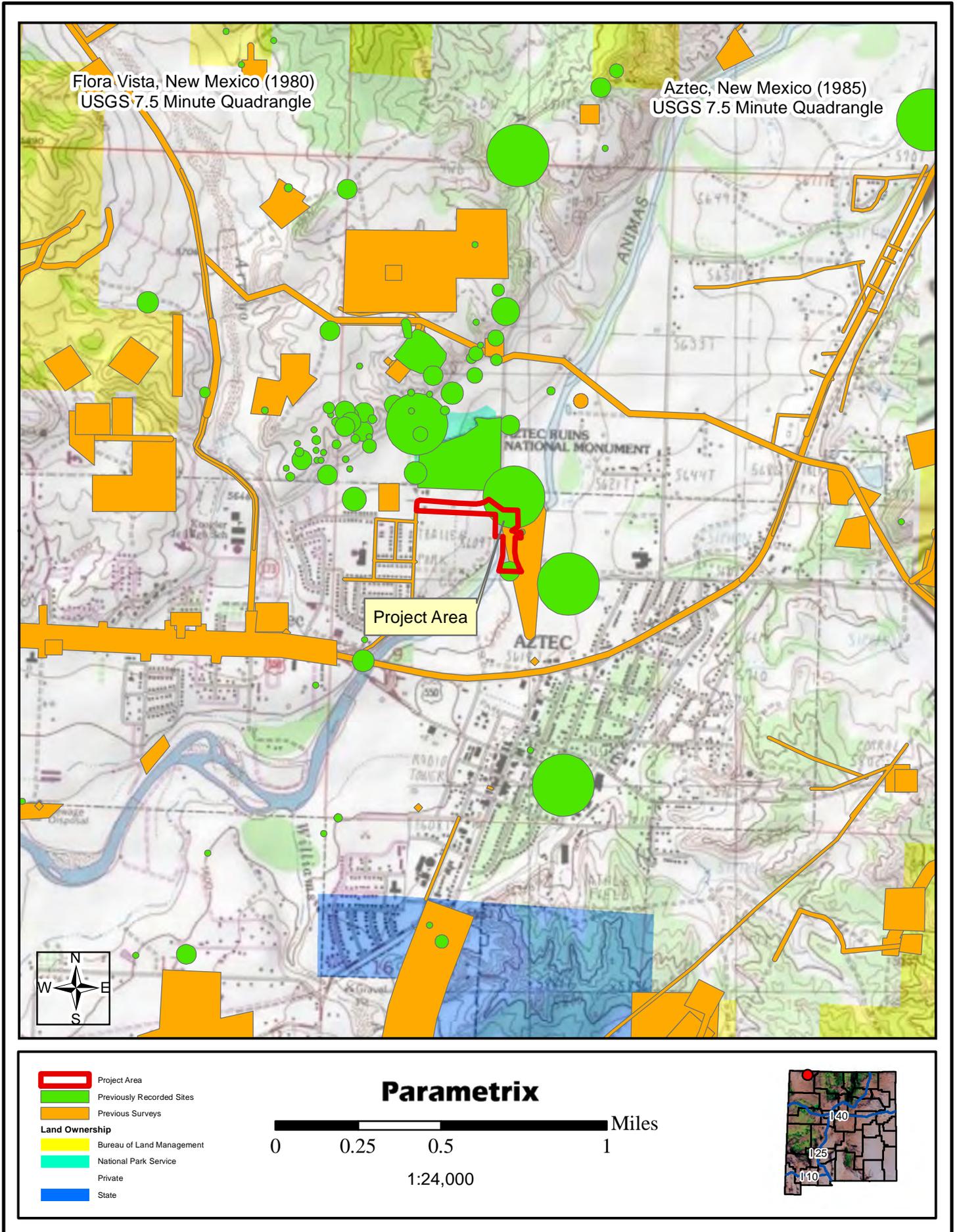


Figure A1: Previously Recorded Cultural Resources and Previous Investigations in the Project Vicinity

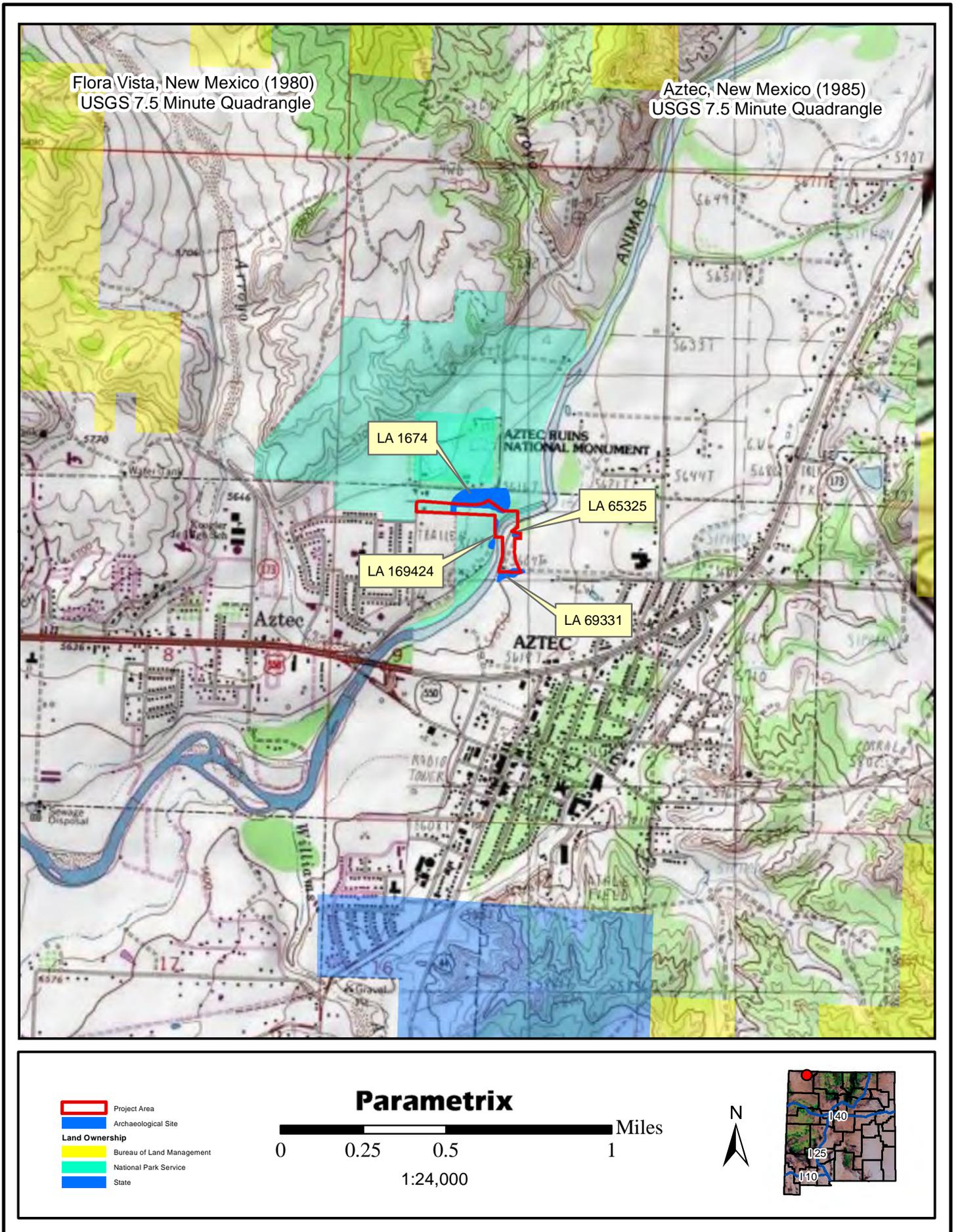


Figure A2: Summary of Updated and Newly Discovered Cultural Resources Within the APE

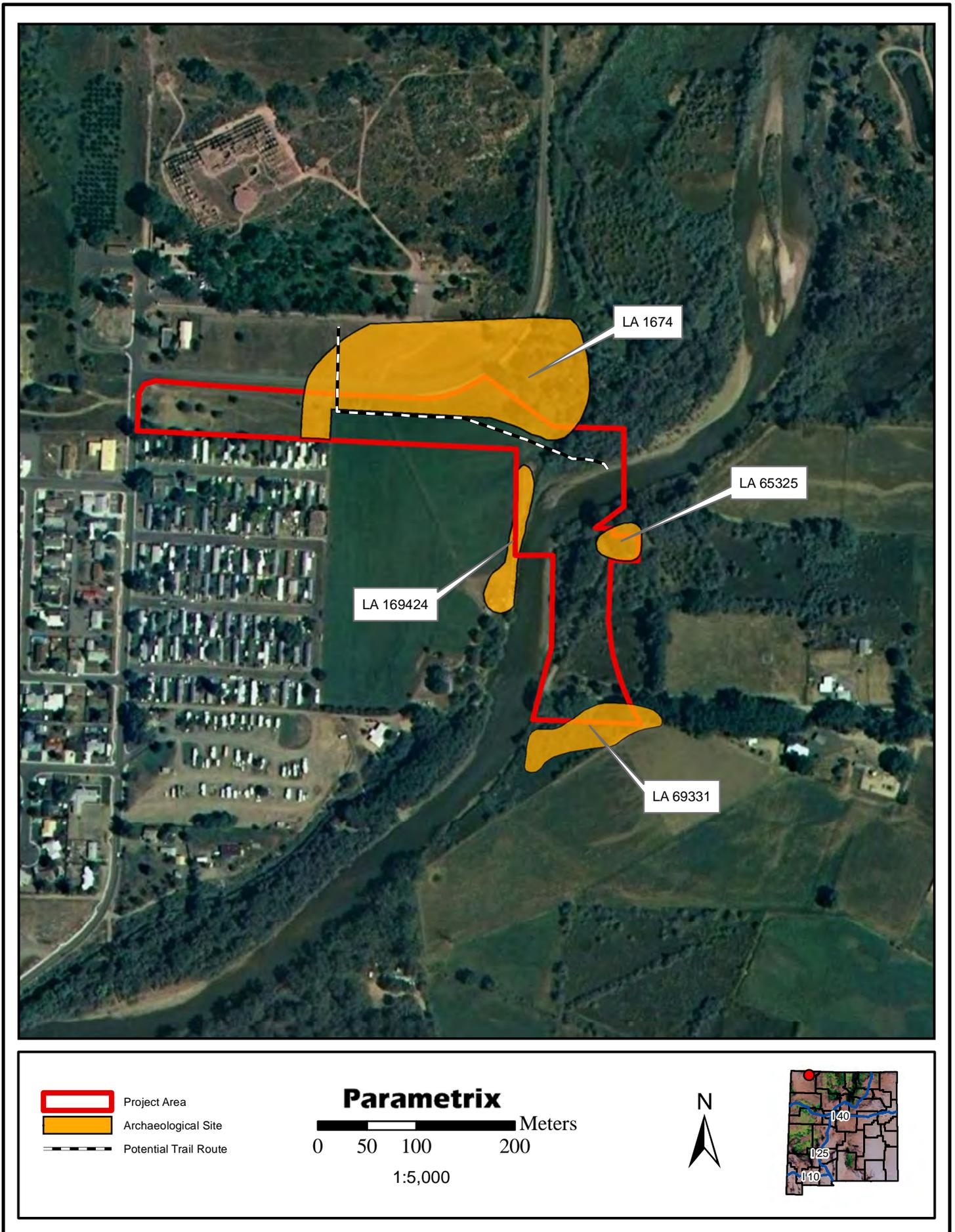


Figure A3: Aerial View of Updated and Newly Discovered Cultural Resources within the Project Area

Archaeological Survey for a Proposed Pedestrian Trail in Aztec, San Juan County, New Mexico

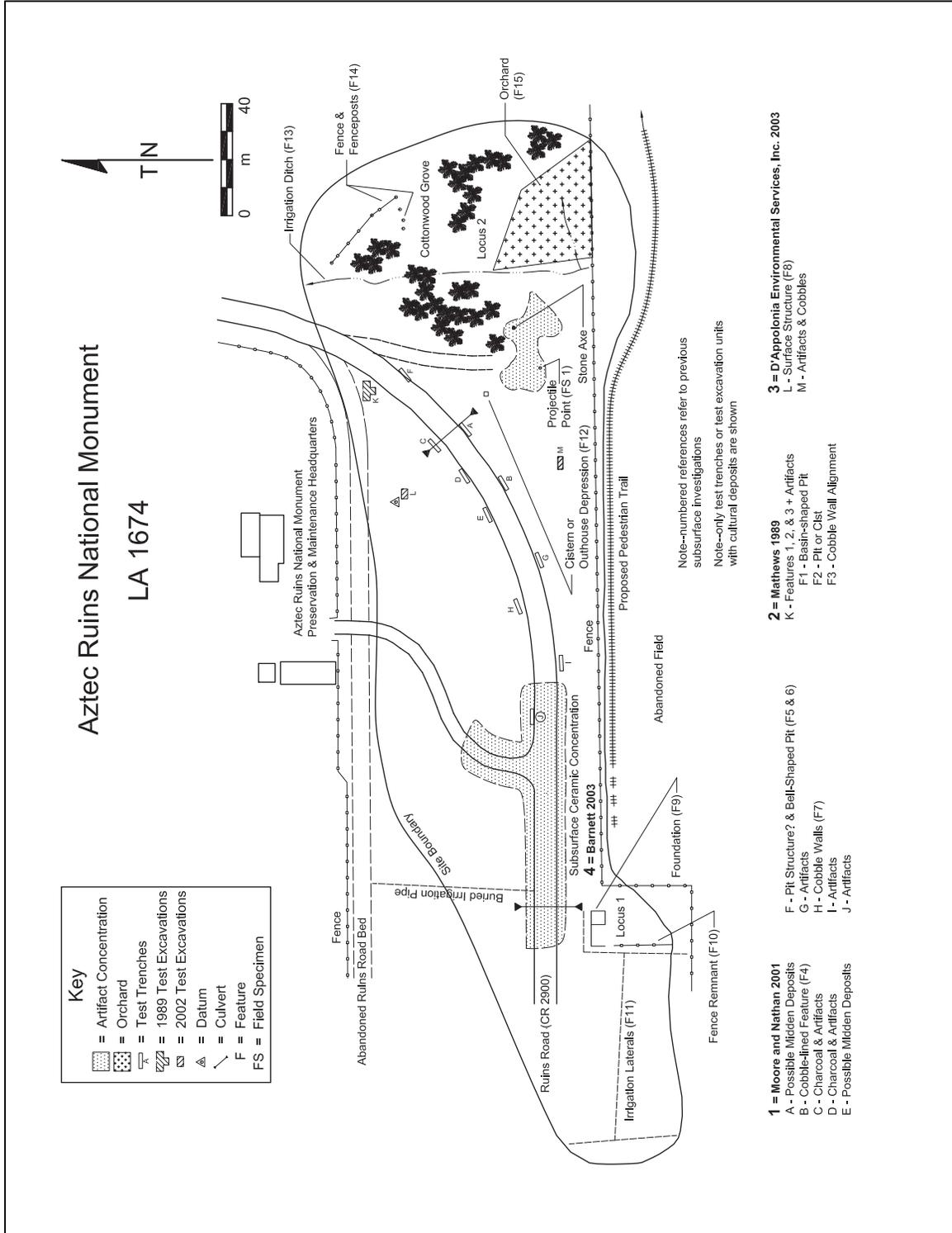


Figure A4: LA 1674 Site Map (courtesy of National Park Service, Aztec Ruins National Monument)

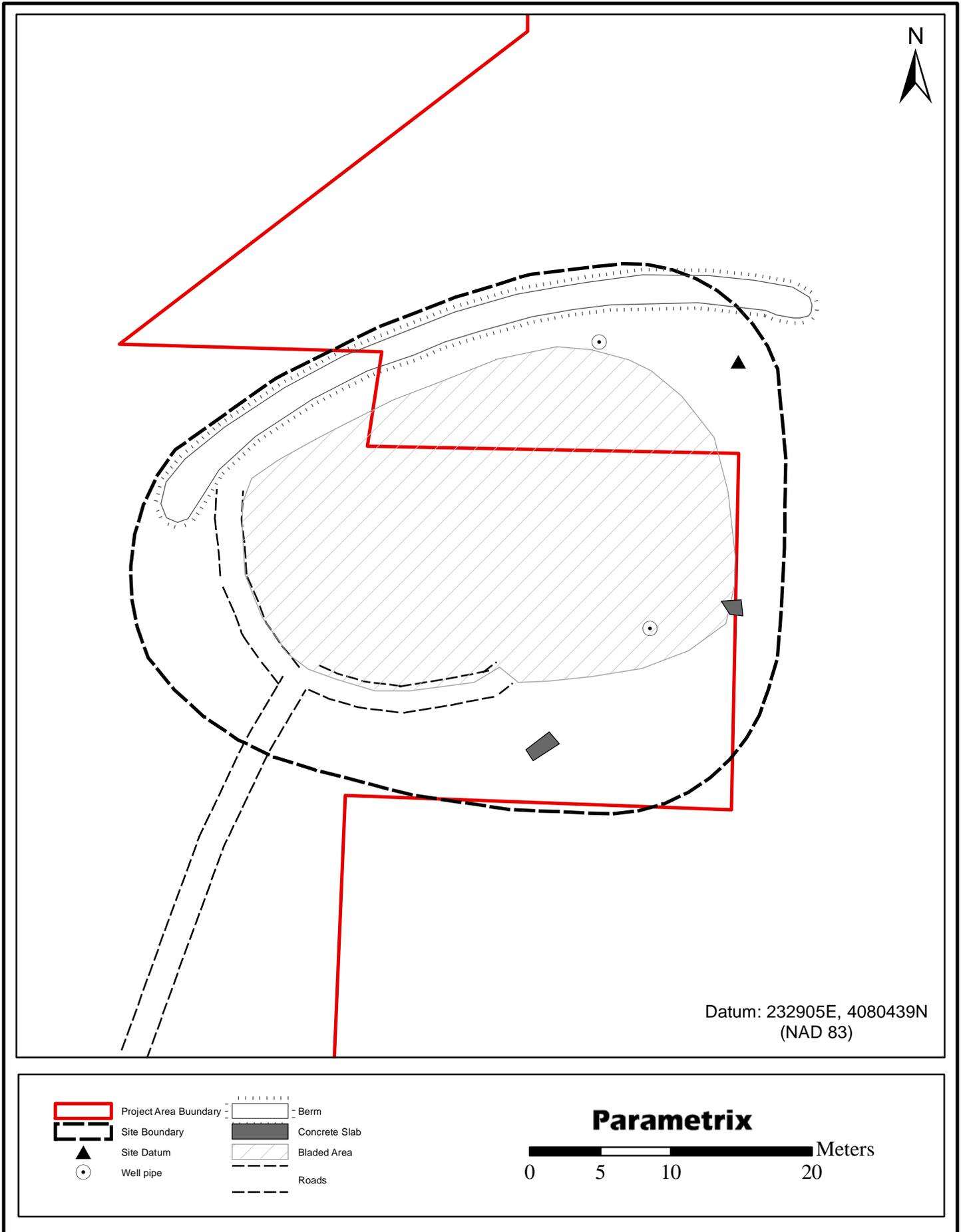


Figure A5: Updated LA 65325 Site Map (not features shown in Figure 4 are missing)

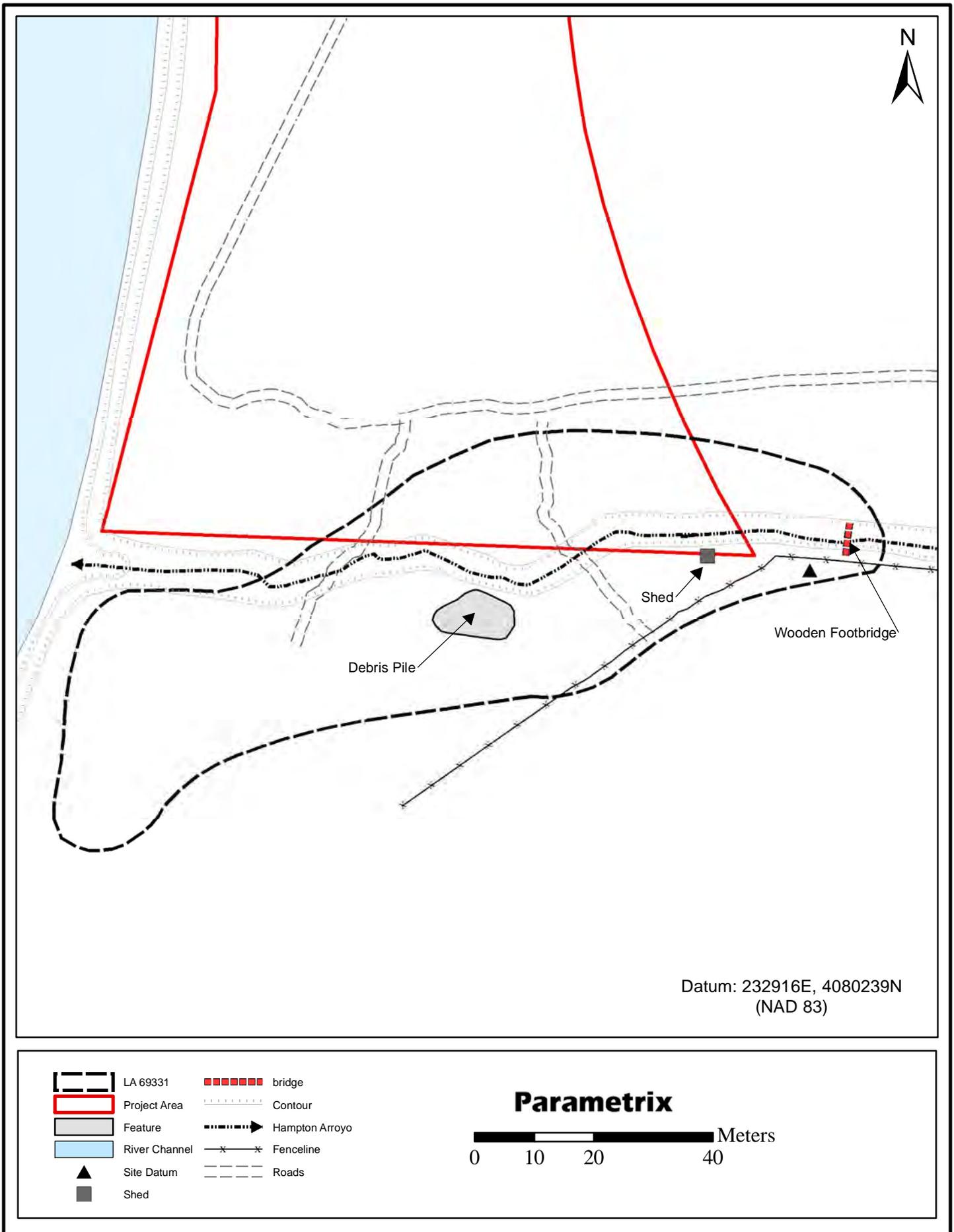


Figure A6: Updated LA 69331 Site Map

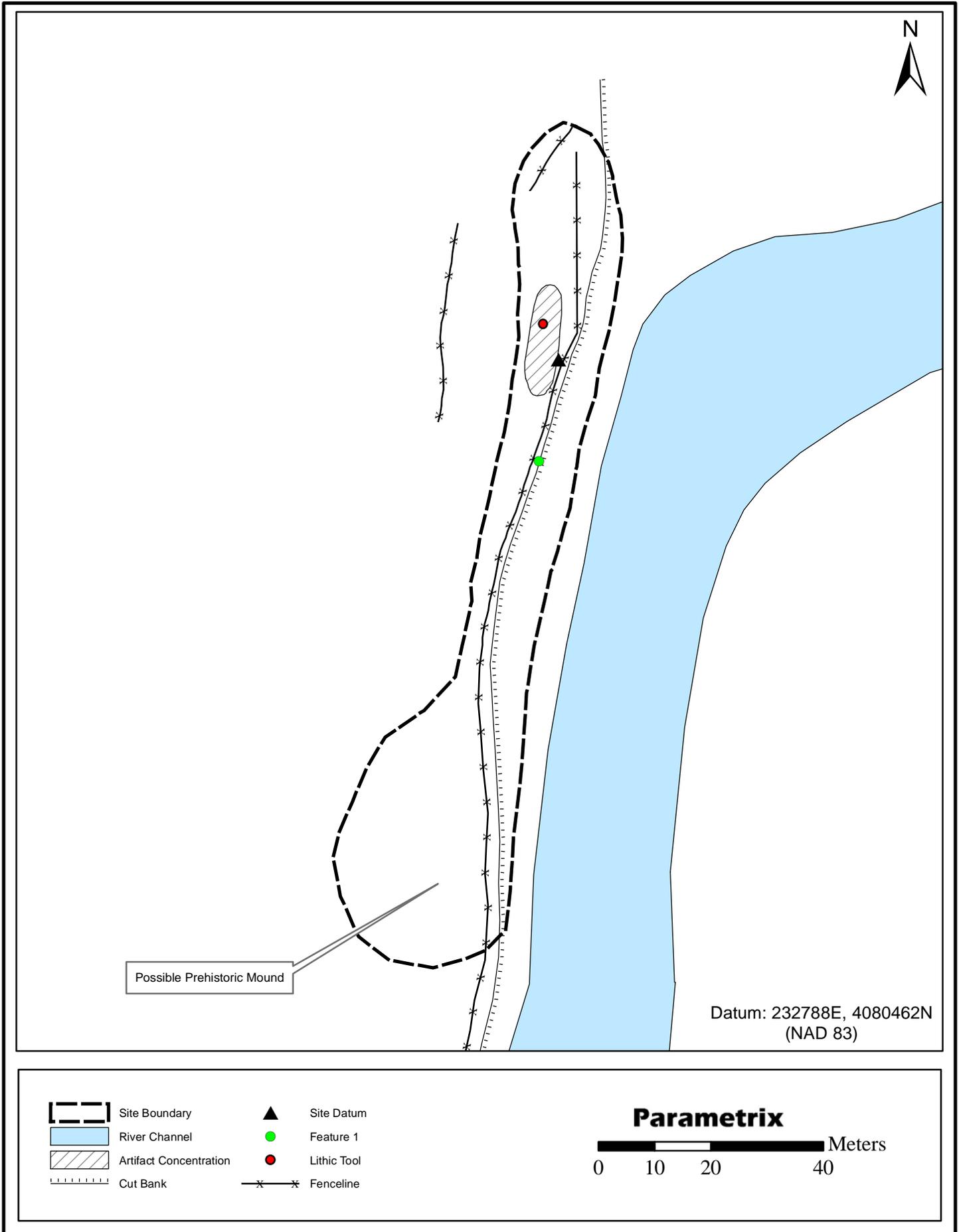


Figure A7: LA 169424 Site Map

APPENDIX B

Locational Data for Archaeological Sites Documented within the APE

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Table B1: Location of Archaeological Sites Documented during Current Investigation

Site No.	UTM Coordinates (NAD 83, Zone 13)
LA 1674	E 232739 N 4080626
LA 65325	E 232905 N 4080439
LA 69331	E 232916 N 4080239
LA 169424	E 232788 N 4080462

APPENDIX C

Photographs

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Photograph 1: Two-track road in SE portion of project area



Photograph 2: Animas River near proposed pedestrian bridge



Photograph 3: Animas River near proposed pedestrian bridge



Photograph 4: Animas River at proposed pedestrian bridge crossing



Photograph 5: Western portion of project area south of Ruins Road



Photograph 6: Aztec Ruins (north of project area)



Photograph 7: View of proposed pedestrian bridge location from Aztec Ruins



Photograph 8: LA 1674 along Ruins Road



Photograph 9: South portion of LA 1674



Photograph 10: Overview of LA 65325 site location



Photograph 11: Displaced Concrete Fragment at LA 65325



Photograph 12: Concrete Slab Fragment (possible remains of pump house) at LA 65325



Photograph 13: Hampton Arroyo as it Biseects LA 69331



Photograph 14: Large Debris Pile at LA 69331



Photograph 15: Buried Automobiles along Hampton Arroyo at LA 69331



Photograph 16: Remains of Displaced Shed at LA 69331



Photograph 17: Cut Bank Containing Buried Cultural Deposits at LA 169424



Photograph 18: Feature 1 (Historic Charcoal Stain) in Cut Bank Profile at LA 169424