

**A PRELIMINARY EVALUATION OF THE CULTURAL
RESOURCES WITHIN THE WESTLAND SECTOR PLAN IN
BERNALILLO COUNTY, NEW MEXICO**

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1.0 ABSTRACT-INTRODUCTION

This report presents the results of a preliminary cultural resource study for the proposed Westland Sector Plan area in Bernalillo County, New Mexico. The study represents the first stage in the development of a cultural resource management plan for the Westland Sector. This preliminary evaluation involved a cultural resources records search and a random archaeological reconnaissance-sample survey of five physiographic-environmental zones that occur within the study area.

The records search revealed that only three archaeological sites have been previously identified in the Westland Sector and that no New Mexico State Cultural Properties or National Historic Register sites are present. The reconnaissance survey, which included about five percent of the sector plan area, resulted in the location and brief definition of an additional twenty-two cultural properties (see Figure 1 in pocket). Based on this sample, it is estimated that approximately 175 archeological-historical sites are present in the sector plan area, or about 17.5 sites per square mile. This overall density is comparable with that in studies completed elsewhere in the Llanos de Albuquerque area (Cella 1987, Hogan 1986, Rogers 1980, Rogers and Neal 1981, Marshall 1995) and contrasts to the much higher density of resources documented along the nearby West Mesa volcanic escarpment (Schmader and Hayes 1987).

Estimated site density within the Westland Sector Plan area varies significantly within the five environmental zones from an extraordinary low of three sites per square mile on the upper grassland plains to a rather high density of seventy sites per square mile in the middle to lower escarpment zone.

Most of the cultural resources that have been identified in the Westland Sector Plan area are artifact scatters and encampment sites of probable Late Archaic Period affinity. Many of these sites are small and deflated and have little research value. However, a few sites are large encampments with multiple hearths and cultural-stratigraphic deposits. These large encampment sites have considerable research value and justify preservation or mitigative treatment.

Some preliminary observations and recommendations with regard to the development of a cultural resource management plan for the Westland Sector Plan are presented in this report. The most sensitive archaeological area within the sector is the middle-lower escarpment zone, which represents only fifteen percent of the land surface. The other environmental zones represent the majority of the Westland Sector plan area and exhibit moderate to low site density. They should pose less of a problem in terms of cultural resource management.

2.0 PROJECT LOCATION AND ENVIRONMENT

The Westland Sector is an approximate ten-square-mile (6424-acre) area located on the western slope of the Rio Grande valley in the vicinity of the city of Albuquerque, Bernalillo County, New Mexico (Figure 1). The sector includes the entire western slope of the valley and extends onto the level grassland plains of La Ceja Mesa or Llanos de Albuquerque above the western escarpment rim.

The Westland Sector is bounded on the north by Petroglyph National Monument and the basaltic flow of the Albuquerque volcanoes. The south boundary is interstate 40. The east boundary borders the Las Lomas and Parkway Subdivisions, west of Unser Boulevard. The west boundary is approximately 0.3 mile west of the Paseo del Volcan-Double Eagle Airport Highway.

The upper-west grassland plains of the Westland Sector are on La Ceja Mesa, which is covered by a thin mantle of aeolian and alluvial fill. Along the western escarpment and upper rim of the valley are exposures of the Ceja Member of the Santa Fe formation, interbedded with caliche and gravel deposits (Kelley 1977). The lower eastern slopes of the sector are covered with a thick blanket of alluvium that surrounds a few low gravel hills. Elevation in the Westland Sector ranges from 5200 feet on the lower-east boundary to 5800 feet on the upper grassland plains of La Ceja Mesa.

The entire area is desert scrubland, and only scattered juniper trees occur along the escarpment rim and slopes. Occasional desert willow and clusters of Apache plume are found along many of the wide, sandy arroyos that dissect the western slopes of the valley. The upper plains are a level grassland, largely devoid of other vegetation. Vegetation on the escarpment slope and lower alluvial plains consists of saltbush, sand sage, ephedra, cholla, chamisa, wolfberry, snakeweed, purple sage, narrow-leaf yucca, prickly pear, opuntia calvata cactus, and other species.

Soils in the Westland Sector are predominately those of the Madurez-Wink, located on the upper grassland plains; Bluepoint-Kikan on the escarpment slope; and Pajarito Association on the lower alluvial plains.

3.0 RECORDS SEARCH

A review of the New Mexico Cultural Resources Information System (NMCRIS) file in Santa Fe reveals that previous archaeological investigations within the sector are limited and that few cultural resources have been identified. Indeed, only three archaeological sites (LA 8678, LA 26999, and LA 103051) have been documented within the sector. Previous archaeological surveys in the Westland Sector are limited to a corridor study for the proposed Paseo del Volcan extension area (Marshall 1995), a limited inspection of areas marginal to interstate 40 (Dittert and Allen 1966), and the 98th Street overpass-extension (Maxwell and Lancaster 1984). Some archaeological reconnaissance of the area was probably made in 1969 as part of a Middle Rio Grande Paleoindian survey (Judge 1973), but specific site locations from the study, if any were found in the sector, are unavailable. Other transect surveys may have been completed for power line corridors that cross the sector, but if so, they have not resulted in the location of archaeological or historical sites.

The most extensive archaeological survey that has been completed in the vicinity of the Westland Sector is within the adjacent Petroglyph National Monument. Numerous sites were recorded on the West Mesa volcanic escarpment (Schmader and Hays 1987), and the entire area within the national monument has been recently subject to archaeological survey (National Park Service). The National Park survey resulted in the documentation of numerous cultural resources. The database for this survey is on file at the Petroglyph National Monument. The escarpment and national monument studies, while important to an understanding of prehistoric and historic land use in the area, are outside the boundaries of the present sector plan.

A review of the New Mexico State Inventory of Cultural Properties and the National Register of Historic Places indicates that no nominated properties are located within the boundaries of the Westland Sector.

4.0 WESTLAND SECTOR ARCHEOLOGICAL RECONNAISSANCE AND SAMPLE SURVEY

An archeological reconnaissance and sample survey of the Westland Sector Plan area was conducted by Cibola Research Consultants in February and March 1995 in order to determine the type, density, nature, and location of the cultural resources within the sector. This sample survey was completed in an effort to gain an insight into the general character of the cultural antiquities in the Westland Sector Plan area. The study represents the preliminary phase of the Westland Sector cultural resource management plan. Only a preliminary definition of the cultural resources encountered within the sector was made, since the purpose of the reconnaissance was to gain an overall perspective of the type and location of cultural resources. A systematic Class III type inventory of the sites found in the study is clearly beyond the scope of this preliminary evaluation.

The Westland Sector was subdivided into a series of environmental zones based on the physiographic structure of the landform (see Table 1). Each of these environmental zones was subject to an archaeological reconnaissance-sample survey and the cultural resources encountered in each zone were located and briefly identified. An effort was made to provide an adequate sample of each of the environmental zones. It is estimated that approximately five percent of the Westland Sector was subject to archaeological reconnaissance.

TABLE 1
Estimated Size of the Environmental Zones
within the Westland Sector

Environmental Zone	Estimated Size (square miles)	% of Sector
Upper grassland plain	4.5	45
Escarpment edge	0.5	5
Upper escarpment slope	1.0	10
Middle-lower escarpment slope	1.5	15
Lower plains	2.5	25

In most cases, only a small percentage of land surface in each zone was inspected. The reconnaissance areas were randomly selected. The overall sample area is small, but it is statistically adequate to define the general nature and location of the cultural resources, as was required to address the objectives of this preliminary study.

The cultural resources that were found were located on aerial and topographic maps and briefly described according to cultural-temporal affinity, size, and content (see Table 2 and Appendix A). The sites were also marked in the field with field number identification tags for continued reference.

Most of the cultural resources that occur in the study area are a-ceramic encampments of probable Late Archaic Period affinity. Anasazi sites in the study area are apparently rare, as none were found in the reconnaissance. Historic localities including such features as abandoned roads and livestock-related features also occur. The density of cultural resources within the various environmental zones varies significantly. A description of these zones and the results of the reconnaissance is provided in the following discussion.

TABLE 2			
Estimated Size of the Environmental Zones within the Westland Sector			
Environmental Zone	Square Miles	Sites per Square Mile	Estimated Total Sites
Upper grassland plain	4.5	3.0	13.5
Escarpment edge	0.5	30.0	15.0
Upper escarpment slope	1.0	10.0	10.0
Middle-lower escarpment	1.5	70.0	105.0
Lower plains	2.5	12.5	31.3
Total of estimated sites: 174.8			

NOTE: This estimate is based on an approximately five percent reconnaissance of the sector and should be considered to have only approximate value.

5.0 PHYSIOGRAPHIC-ENVIRONMENTAL ZONES AND CULTURAL RESOURCES

A number of general physiographic-environmental zones can be identified within the Westland Sector Plan area, including the upper grassland plains, the western escarpment rim, the upper escarpment slopes, the middle to lower escarpment slopes, and the lower alluvial plains. An archaeological reconnaissance and sample survey was completed for each of these zones in an effort to determine distribution, nature, and density of the cultural resources in the Westland Sector. This reconnaissance resulted in the definition of significant variation in site density within the various environmental zones.

5.1 Upper Grassland Plains

The upper grassland plains are situated west of the escarpment rim on La Ceja Mesa. Approximately 4.5 square miles, or forty-five percent, of the Westland Sector is located in this environmental zone. The area ranges in elevation from 5750 to 5800 feet above sea level. It is a level plain with occasional small playa features and low, stabilized dune ridges. The area is predominately a grassland. However, widely scattered juniper trees and occasional cholla cactus dot the plain. The area is very stable and has seen little change, other than marginal erosion along the escarpment edge, since the Pleistocene.

A transect survey across the plain for the Paseo del Volcan cultural resource planning project (Marshall 1995) and a reconnaissance completed for the Westland Sector study indicate that site density in this zone is extremely low and probably is less than three sites per square mile. It is estimated that there is a total of about 13.5 sites in this zone. One prehistoric encampment site (LA 103051) has been located in a low dune area near the southern edge of the Westland Sector, adjacent to interstate 40 (Marshall 1995). Paleoindian cultural remains have been identified in the grassland of the Ceja Mesa (Judge 1973:63), but the specific locations of these sites or their presence in the Westland Sector Plan area remains unknown. A number of abandoned historic roads cross the upper plains as part of the Rio Grande-Rio Puerco transportation system, and some of these may date to as early as the 18th century. Also a number of recent features (e.g., water tanks, fences, and feeders) associated with the livestock industry occur in this zone.

5.2 Escarpment Edge

The western edge of the Rio Grande valley escarpment is a very distinct transitional zone between the upper valley slopes and upper grassland plains. The escarpment extends north-south across the Westland Sector Plan area and tends to be steeper in the south sector area. The escarpment edge centers along the 5700-foot contour and includes a zone about 500 feet in width encompassing approximately 0.5 square mile, or about five percent of the sector. The

escarpment edge provides an elevated view of the adjacent valley, which may have conditioned the location of prehistoric sites.

Archaeological reconnaissance along the immediate edge of the escarpment over the entire sector resulted in the location of eight sites of probable Late Archaic Period affinity. Most of these sites are small encampments. All are located in dune areas along the escarpment edge. The discrete and limited extent of the escarpment edge allowed for a rather extensive sample of the zone during the reconnaissance. It is estimated that approximately half of the sites in this zone have been located. Some of the camps appear to contain hearths. However, the escarpment edge encampments are much smaller and less frequent than those found within the middle-lower escarpment zone.

5.3 Upper Escarpment Zone (Upper Atrisco Terrace)

The upper escarpment zone is located immediately east of the escarpment edge, along the upper slopes of the valley in the 5600 to 5700 contour level. This zone tends to be rather steep and contains highly eroded ridges and hills. The ridges are paved with pebbles and cobbles. Outcrops of a caliche substrata occur just below the escarpment rim. Areas along the major arroyos are very sandy and filled with alluvium. Most of the juniper trees in the Westland Sector Plan area occur on the upper escarpment slopes.

It is estimated that approximately one square mile, or about ten percent of the Westland Sector, occurs within this zone. Archaeological reconnaissance survey in three areas of the upper escarpment slope failed to identify any cultural remains other than occasional chipped stone quarry debris associated with gravel deposits in the zone. While only a small area of the zone was subject to reconnaissance, it is clear that cultural resource density in this zone is low. It is estimated that a total of ten sites are within this zone. Further exploration of the zone will probably reveal a number of primary reduction-quarry areas, but few if any encampment sites.

5.4 Middle to Lower Escarpment Zone (Lower Atrisco Terrace)

This zone is situated along the middle and lower escarpment slopes, or Lower Atrisco Terrace, mostly between the 5450- and 5600-foot contour level. It is estimated that approximately 1.5 square miles, or fifteen percent of the Westland Sector, occurs within this physiographic zone. The zone includes the lower ridge slopes of the escarpment and a number of wide, sandy arroyos, which dissect the slope. Occasional juniper trees, growths of Apache plume, and desert willow occur along the major drainages. Most significant to the cultural resources is the presence of sand dunes, which occur along the ridges and extend from the base of the escarpment to the middle escarpment area.

Archaeological reconnaissance survey of two dune-capped ridges within the zone resulted in the location of eleven a-ceramic encampment sites. This indicates that prehistoric site density in the area is quite high, with an estimated seventy sites per square mile. It is clear that most of the archeological sites in the Westland Sector are located in the dune fields of the middle to lower escarpment zone. Indeed, this zone, which covers only about fifteen percent of the sector's land surface, is estimated to have about sixty-one percent of the cultural resources.

It is also estimated that about 105 sites may occur in the zone. The sites that were located in the zone are all a-ceramic encampments of Late Archaic Period affinity. Many are rather large and contain multiple hearths and stratified hearth middens.

5.5 Lower Plains

This zone includes all of the lower alluvial plains and low hills in the eastern area of the Westland Sector. The zone is estimated to contain about 2.5 square miles and is about twenty-five percent of the sector area. Most of the area is covered by a deep blanket of alluvium, which is traversed by wide, sandy arroyos. There are a number of subzones in the area, which include arroyo drainages, plains, low hills, and a high, sandy ridge along the northern edge of the sector. An attempt was made to complete a survey sample of these subzones and to make a general inspection of the area.

The archaeological reconnaissance of the lower plains zone included only a small percentage of the estimated 1600 acres. However, the sample suggests that cultural resources in the zone are infrequent. Only one site was found on a low hill in the east sector area. It is a primary reduction station of prehistoric affinity. Two other small prehistoric artifact scatters have been identified in the lower plains adjacent to interstate 40 (Dittert and Allen 1966, Maxwell and Lancaster 1984).

It is estimated that cultural resource density in the lower plains is moderate to low (estimated 12.5 sites per square mile). Some of the cultural remains in the area are, no doubt, concealed by alluvium, which is common in the zone. There may also be some areas with somewhat higher site density, especially along the north and northwest edges of the lower plains near the volcanic escarpment.

6.0 PRELIMINARY CULTURAL RESOURCE MANAGEMENT CONCEPTS

The archeological reconnaissance-sample survey of the Westland Sector area represents the first stage in the development of a cultural resource management plan. This preliminary study was requested by Westland Development Corporation in order to determine the general nature, distribution, and significance of the cultural resources in the sector.

The sector plan is located on private property. Consequently the requirements of Section 106 of the federal National Historic Preservation Act (36 CFR 800), the New Mexico State Prehistoric and Historic Sites Preservation Act, and other related historic preservation legislation apply only within certain limits. Full compliance with these laws is required for activities that have state or federal involvement or funding. The management concepts of the Westland Sector Plan are intended to ensure compliance with these laws where applicable.

The determination of the importance of cultural resources and any necessary mitigative treatment should be established for those sites that would be impacted by development or activities with state or federal involvement. These site evaluations and treatments would probably be made on a stage-by-stage basis as the development proceeds under the guidelines of the applicable legislation. The specifics of this treatment would require continued consultation with the state, federal, and local agencies involved in cultural resource preservation.

The specifics of the management plan await further data collection and consideration, but certain aspects of cultural resource management can be discussed at this time. Most of the significant cultural resources in the sector are located in the middle to lower escarpment zone between the 5450- and 5600-foot contours. This zone, which represents approximately fifteen percent of the sector's land surface, is the most important archaeological area. Most of the planning effort should be directed toward the resources in this zone.

A cultural resource survey of the high site density, middle to lower escarpment zone should be completed only for those areas that will be incorporated into the development plan. All areas devoted to open space in this zone would represent, in effect, archaeological protection areas and would not require analysis or mitigative treatment.

A cultural resource survey of large areas within environmental zones of low site density should also be considered as part of the early management effort. In this manner, a large percentage of the Westland Sector Plan area could be subject to archaeological investigation and the few cultural resources in the area can be identified. This would allow for the inventory of a large percentage of the sector without considerable expenditures in cultural resource analysis.

The determination of National Register eligibility of the cultural resources and their mitigative treatment should be determined, as required, for those sites that will be impacted by development and that, according to law, require such treatment.

7.0 SIGNIFICANCE OF THE CULTURAL RESOURCES WITHIN THE WESTLAND SECTOR

A definition of the significance of the cultural resources located within the Westland Sector Plan area will require a Class III type survey and inventory. This documentation, in many cases, would also require archaeological testing of the resources. The determination of significance of specific cultural resources and their potential eligibility in the National Register is made by the New Mexico State Historic Preservation Division, following their review of the site documentation. However, some preliminary observations in regard to the significance of the cultural resources in the Westland Sector can be made at this time.

It is estimated that approximately 175 archeological-historical sites occur within the ten-square-mile area of the Westland Sector. The majority of the known sites in the study area are small activity areas or encampments of Late Archaic and Early Formative Period affinity (ca. 1500 B.C. to A.D. 500). A few small Anasazi and historic sites are also present, and there is a potential for Paleoindian cultural remains in the upper plains environmental zone.

Most of the Late Archaic-Early Formative Period sites in the Westland Sector are devoid of structural features or cultural stratigraphic deposits. The research value of these sites is minor, and it is probable that survey documentation and limited testing would determine that they are not eligible for National Register nomination.

However, there are a number of sites in the Westland Sector that have multiple hearth structures and intact cultural-stratigraphic sediments. Five of these sites, or about twenty percent of those found in the recent archeological reconnaissance, have considerable research value. The sites (Nos. 11, 15, 16, 17, 21) are all located in the dune fields in the middle to lower escarpment zone. These sites appear to contain cultural-stratigraphic deposits that have the potential to yield date samples, cultural-biological subsistence remains, and extensive artifact materials.

A preliminary definition of the research value of the known sites in the Westland Sector Plan area is rated in Table 3. Ratings of 0 to 2, if verified by archaeological testing, are probably not of such significance as to be eligible for National Register Nomination, whereas research values of from 3 to 5 clearly indicate eligibility for Register Nomination. Most of the sites that have been located in the Westland Sector Plan area are rated in the lower range of from 1 to 2. However, several sites are in the midrange, with a rating of 3. None of the sites known in the study area have been rated in the 4 to 5, or excellent to exceptional range.

TABLE 3
Preliminary Evaluation of Research Value and Significance of Known Cultural Resources in the Westland Sector

Site No.	Size	Hearths	Middens	Locus	Research Value
WLR #1	100 M2	1	—	EE	1
WLR #2	100 M2	?		EE	1
WLR #3	100 M2	?		EE	2
WLR #4	600 M2	?		EE	2
WLR #5	2000 M2	?		EE	2
WLR #6	800 M2	?		EE	2
WLR #7	800 M2	?		EE	2
WLR #8	100 M2	No		EE	1
WLR #9	10 M2	No		EE	1
WLR #10	100 M2	No		EE	1
WLR #11	2500 M2	5+		LE	3
WLR #12	2500 M2	2+		LE	2
WLR #13	100 M2	?		LE	1
WLR #14	1200 M2	2+		LE	2
WLR #15	3600 M2	Yes	1 (10 m)	LE	3
WLR #16	255 M2	?	1 (15 m)	LE	3
WLR #17	1000 M2	Yes	1 (10 m)	LE	3
WLR #18	400 M2	1		LE	2
WLR #19	400 M2	?		LE	1
WLR #20	400 M2	No		LP	1
WLR #21	900 M2	6+	2 (5 m)	LE	3
WLR #22	1600 M2	2+		LE	2
LA 103051	3000 M2	2		UP	2
LA 8678	900 M2	No		LP	Status unknown
LA 26999	2500 M2	No		LP	Mitigated

Location-Environmental Zone: EE = escarpment edge, UP = upper plains, LE = middle to lower escarpment, LP = Lower Plains

Research values: 0 = none, 1 = minor, 2 = fair, 3 = good to very good, 4 = excellent, 5 = exceptional

8.0 CONCLUSIONS

The archeological sample survey of the Westland Sector Plan area represents only a preliminary evaluation. However, a number of observations with regard to the location and nature of cultural resources in the sector can be made. The reconnaissance survey indicates that the overall site density in the sector is low to moderate. An estimate of approximately 17.5 sites per square mile in the Westland Sector Plan area is indicated. This estimate is similar to densities determined elsewhere in the Llanos de Albuquerque area (Marshall 1995) but contrasts to the higher densities and concentration of important cultural resources along the West Mesa volcanic escarpment within the nearby Petroglyph National Monument (Schmader and Hays 1987 and NPS Survey Records).

The distribution and density of cultural resources within the sector varies significantly according to environmental zone. The reconnaissance study indicates that most of the sites in the Westland Sector are located in the dune fields along the middle to lower escarpment zone. The survey sample in this zone indicates a probable density of seventy sites per square mile and an estimated total of approximately 105 sites (sixty-one percent of the estimated total) within the Westland Sector Plan area.

Site densities on the upper grassland plains are extremely low (estimated three sites per square mile). The low density of cultural resources in this zone has been verified by archaeological surveys within the zone (Rogers 1980 and Marshall 1995). Site density on the lower escarpment slopes and the lower alluvial plains is also moderate to low (ca. ten sites per square mile). Site density on the escarpment edge is moderately high (ca. 30 sites per square mile), but the total land surface of this zone is only five percent of the sector (see Table 1).

Most of the twenty-five sites that have been identified to date in the Westland Sector are a-ceramic components of probable Late Archaic Period affinity. There is a curious infrequency of Anasazi components, as only one site (LA 8678) of Puebloan affinity has been found. This suggests that the Westland Sector Plan area was for the most part outside of the primary Anasazi hunting-gathering sphere associated with the valley edge pueblos and hamlets.

Most of the a-ceramic sites are small encampments or limited activity areas, with or without hearth structures. These sites have low to moderate research value and are unlikely to contain cultural stratigraphic deposits. However, there are a few sites (Nos. 11, 15, 16, 17, and 21) that have multiple hearths and hearth middens and contain stratigraphic deposits. These sites have considerable research value and if subject to the Section 106 compliance, they should be either avoided or subject to mitigative treatment.

It is clear that most of the cultural resource management efforts will need to be directed to the archaeological sites in the middle to lower escarpment zone. The avoidance and long-term preservation of sites in this zone could be affected by dedication of certain areas to open space.

Other areas within the Westland Sector Plan area, such as the upper grassland plains and lower plains, exhibit low to very low site density and should pose few management problems. A Class III archaeological survey of these zones would allow for the clearance of a large percent of the sector without considerable expenditures in cultural resource analysis.

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**APPENDIX A
WESTLAND SECTOR RECONNAISSANCE SAMPLE SURVEY
PRELIMINARY SITE INVENTORY**

**WLR No. 1, Small Encampment Site
Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 337300 Easting by 3881780 Northing

This a-ceramic encampment site is located on the escarpment edge near interstate 40. It consists of a single hearth stain and light scatter of chipped stone artifacts and firecracked rock in a 5- to 10-meter area.

**WLR No. 2, Probable Encampment
Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338050 Easting by 3883500 Northing

This a-ceramic site is located on the escarpment edge in a low dune area. It is exposed in a dune blowout in a 5- to 10-meter area. It consists of a light scatter of chipped stone and firecracked rock. Most of the chipped stone material is Santa Fe chalcedony. No hearths are visible, but the site is mostly buried in the dunes.

WLR No. 3, Probable Encampment and Old Road

Cultural-Temporal Affinity: A-ceramic, Unknown. Traces of prehistoric and historic ceramics were found nearby but do not appear to be associated with the chipped stone artifact concentration. Road is of possible 18th-19th century affinity

UTM Locus: Zone 13, 338080 Easting by 3883820 Northing

This site is also located on a dune area on the edge of the escarpment edge. The site consists of a scatter of chipped stone artifacts and firecracked rock exposed in a dune blowout. Most of the site is buried. It is exposed in a 5-meter area. Chipped stone materials of fine brown and tan cherts are present. No diagnostic artifacts were seen, but the site is of probable Archaic Period affinity. An old two-track road climbs onto the escarpment in the site area. It is well reduced and appears to have considerable antiquity. It is probably one of the old wagon roads between Atrisco and the Rio Puerco. A historic-period Carnue Plainware sherd and two unidentified whiteware sherds were also seen in the area.

WLR No. 4, Probable Encampment**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338050 Easting by 3883900 Northing

This site is located in a dune area on the escarpment edge, about 100 meters northwest of WLR No. 3. It consists of a scatter of chipped stone artifacts and firecracked rock in a 15-by-40-meter area. Most of the site is buried in the dunes.

WLR No. 5, Probable Encampment**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 337640 Easting by 3885160 Northing

This site is located on a sandy ridge crest, just below the escarpment edge. It is defined by a diffuse scatter of chipped stone artifacts and firecracked rock extending over an area 20 by 100 meters in size. Much of this apparent discontinuous site is buried in the dunes.

WLR No. 6, Probable Encampment**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 337700 Easting by 3885550 Northing

This site is located on a sandy ridge crest near the escarpment edge. A survey marker (TRM-91002, PP-27) is located at the site. The site consists of a scatter of chipped stone artifacts and firecracked rock extending over an area 20 by 40 meters in size. Most of the chipped stone is Santa Fe chalcedony.

WLR No. 7, Probable Encampment**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 337940 Easting by 3885900 Northing

This site is located on a north-south trending ridge that forms the broken edge of the escarpment rim in the north sector area. It is a sandy area on a south slope of the ridge. A two-track road crosses the south edge of the site. The site consists of a diffuse scatter of chipped stone artifacts and firecracked rock that extends over an area 20 by 40 meters in size.

WLR No. 8, Primary Reduction Station**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 337680 Easting by 3884800 Northing

This is another escarpment edge site. It is located at the end of a flat sandy point on the escarpment edge. The site consists of a diffuse scatter of chipped stone artifacts that extends over a 10-meter area. The artifacts are mostly cores and large decortication flakes. No firecracked rock or other evidence of hearth use was noted. Most of the site is exposed on the eroded upper slopes of the escarpment.

WLR No. 9, Rock Cairn and Small Artifact Scatter**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338000 Easting by 3886040 Northing

This site is located on the broken escarpment edge of a gravel ridge in the north sector area. It consists of a pile of cobblestones 3.0 meters in diameter and a few cores and flakes of Santa Fe chalcedony.

WLR No. 10, Tool Manufacturing Area**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 337700 Easting by 3886050 Northing

This site is in a low dune area on the crest of a ridge that forms the escarpment edge. It is located in the north sector area where various ridges form the broken edge of the escarpment. It consists of a scatter of chipped stone artifacts in a 10-meter area. The site appears to be partially buried. No firecracked rock is present. A few bifacial thinning flakes were noted.

WLR No. 11, Large Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 339300 Easting by 3884960 Northing

This site is located on a dune-capped ridge on the middle-lower escarpment slope. It is about 50 meters south and above a major arroyo. It is situated between the arroyo and a power line. The power line is 20 meters south of the site. Most of the site is buried in the dunes, but it is exposed over a 50-by-50-meter area. Five visible hearth were noted and others are probably

present. Three of the hearths are charcoal stains and two are concentrations of firecracked rock. Most of the chipped stone is Santa Fe chalcedony and brown chert.

WLR No. 12, Large Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338920 Easting by 3884940 Northing

This site is also situated on the middle-lower escarpment slope on the same dune-capped ridge as WLR No. 11. It is about 50 meters north of the power line and 200 meters south of a large wash. Scattered artifacts and firecracked rock extend over an area about 50 by 50 meters in size. Part of the site is buried in the dunes. Two hearths, defined by concentrations of firecracked rock, are visible.

WLR No. 13, Probable Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338880 Easting by 3884840 Northing

This site is located in a sand dune on the crest of a ridge in the middle escarpment zone. It is about 125 meters north of the power line. It is exposed in dune blowouts, but most of the site is buried. The exposed area is defined by a small scatter of artifacts in a 10-meter area. Traces of firecracked rock were seen, but no hearths were noted. One biface blade of purple chert was found at the site. Many small flakes of various materials are present, indicating that tools were manufactured at this location.

WLR No. 14, Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338780 Easting by 3884750 Northing

This site is located on a dune-covered ridge crest in the middle escarpment zone. It is near the upper limits of the dunes on the escarpment. The site is approximately 100 meters north of a power line. It consists of scattered chipped stone artifacts and firecracked rock in a 30-by-40-meter area. Two hearth structures are visible and others are probably buried at the site.

WLR No. 15, Large Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338860 Easting by 3884650 Northing

This site is located in a dune area in the middle escarpment zone. It is placed on the crest and southeast slope of a dune-covered ridge. It is about 125 meters north of the power line, between the power line and a large arroyo. The site is a large encampment defined by a scatter of artifacts and hearth debris over an area about 60 by 60 meters in size. A large quantity of hearth debris was found in a 10-meter area where charcoal-stained soil is present. A slab metate fragment was found. There is a variety of chipped stone material, and many of the flakes are quite large. An obsidian blade fragment was found at the site. The diversity of artifacts and superior reduction evident at this site suggests probable Archaic period affinity.

WLR No. 16, Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338950 Easting by 3884700 Northing

This site is located in the middle escarpment zone. It is on the southwest slope of a low dune and below a small earth bank escarpment. It is about 50 meters east and across a small arroyo from site No. 15. Artifacts are concentrated in a 25-meter area and there is an abundance of firecracked rock. Charcoal-stained soil is present in a 15-meter area.

WLR No. 17, Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 339060 Easting by 3884780 Northing

This site is located in the lower escarpment zone. It is placed on an open sagebrush and grassland slope that is exposed to the southeast. The area is sandy, but not within the dunes. The site consists of a scatter of chipped stone artifacts and abundance of firecracked rock extending over an area 20 by 50 meters in size. There are two concentrations of charcoal-laden soil, each 10 meters across, which are probable hearth middens.

WLR No. 18, Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 339540 Easting by 3884850 Northing

This site is located in the lower escarpment zone. It is in a sandy area on a low ridge crest. It is about 100 meters south of a major arroyo, about 200 meters south of the power line and arroyo crossing. Dunes in the area are low. Much of the site is buried in the dune. Artifacts are scattered over a 20-meter area. One hearth, 3 meters in diameter, is visible.

WLR No. 19, Possible Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 339520 Easting by 3884880 Northing

This site is also located on a low sandy ridge crest in the lower escarpment zone. It consists of a scatter of chipped stone artifacts and firecracked rock in a 20-meter area. Much of the site is buried in the dunes.

WLR No. 20, Primary Reduction Station**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 341060 Easting by 3885380 Northing

This site is situated in the lower plains zone in the northeastern area of the Westland Sector. The site is located near the summit and on the southeast slope of a low hill. It is on a small pebble-paved bench on the hill slope. The site consists of a scatter of primary reduction debris that extends over an area 20 meters in diameter. No firecracked rock is present, and there is no evidence of hearth use.

WLR No. 21, Large Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338620 Easting by 3884340 Northing

This site is located in the middle escarpment zone. It is on the crest of a narrow dune-covered ridge, between two major arroyos. It is at the upper end of the dunes, just below the gravel benches of the upper-middle escarpment zone. Artifacts and firecracked rocks are scattered over an area about 30 by 30 meters in size. There are at least six hearths. Two are defined by dark charcoal stains 3.0 and 5.0 meters across. Lithic artifact density is moderately high. Charcoal-

laden cultural sediments were visible in a rodent burrow to a depth of 50 centimeters. This site appears to have stratified cultural deposits and, as such, is an important archaeological property.

WLR No. 22, Encampment Site**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 338740 Easting by 3884200 Northing

This site is also located in the middle escarpment zone. It is on a dune-covered ridge crest, just below the gravel bench of the upper escarpment zone. The site consists of a scatter of chipped stone artifacts and firecracked rock over a 40-meter area. Hearth debris is common.

LA 8678, Artifact Scatter**Cultural-Temporal Affinity: Anasazi, Pueblo II-III**

UTM Locus: Zone 13, 339953 Easting by 3883265 Northing

This site is located along the north edge of interstate 40 in the lower plains environmental zone. It was defined (Dittert and Allen 1966) as an artifact scatter 30 by 30 meters in size.

LA 26999, Artifact Scatter**Cultural-Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 340620 Easting by 3883860 Northing

This site is located in the lower plains near the 98th Street overpass. The site consists of a scatter of lithic artifacts and a rock alignment that occur in a 50-by-50-meter area. The site was tested (Maxwell and Lancaster 1984) and found to contain no significant cultural remains.

LA 103051 , Encampment Site**Cultural Temporal Affinity: A-ceramic, Unknown**

UTM Locus: Zone 13, 336680 Easting by 3881400 Northing

This site was documented as part of the Paseo del Volcan corridor study (Marshall 1995). It is located in the southwest sector area in the upper grassland zone. The site is situated on a low dune, directly adjacent to interstate 40. It consists of two visible hearths and an artifact scatter that occur in an area 30 by 100 meters.

Appendix A: Westland Sector Reconnaissance Sample Survey Preliminary Site Inventory

Figure 1: Westland Sector and Location of Known Cultural Resources

Table 1: Estimated Size of the Environmental Zones within the Westland Sector

Table 2: Estimated Site Densities within the Westland Sector's Environmental Zones

Table 3: Preliminary Evaluation of Research Value and Significance of the Known Cultural Resources in the Westland Sector

