

General Historic Properties Treatment Plan for Archaeological Projects Within the Boundaries of the City of Phoenix, Arizona

Prepared for:

City of Phoenix



**Street Transportation Department
200 West Washington Street, 5th Floor
Phoenix, Arizona 85003-1611
(602) 262-6284**

**Pueblo Grande Museum Project No. 2007-95
City of Phoenix Project No. ST87350010
Street Transportation Department Tracking No. CB-003**

Project Report No. 2007-036

**Prepared by:
Laurene Montero, Michael Stubing, and Korri Turner**

**Submitted by:
Laurene Montero, M.A.
Manager, Archaeology/Cultural Resources Group**

**Carter & Burgess, Inc.
101 North 1st Avenue, Suite 3100
Phoenix, Arizona 85003-1902
(602) 253-1200**

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Table of Contents

Acknowledgements	iv
Abstract	v
Introduction.....	1
Project Setting	8
Environmental Setting	8
Cultural Context.....	9
Irrigation and Canals	11
Previous Research.....	13
Research Design	14
Research Domains.....	15
Settlement Patterns and Community Organization	15
Site Function.....	15
Site Boundary Definition	15
Subsistence and Land-Use Strategies.....	15
Interaction and Exchange	15
Chronology	16
Iconography and Religion	16
Research Domains for Historic Sites.....	16
Community Structure and Development (Land Use and the Development of Space)	16
Commodity Research.....	16
Ethnicity, Class, and Gender.....	16
Historic Irrigation in the Greater Phoenix Area.....	17
Research Questions for Canals	17
Traditional Cultural Properties	18
Field Strategies and Methods	19
A/NRHP Eligibility Testing.....	20
Phase I Data Recovery.....	21
Phase II Data Recovery.....	21
Field Methods.....	22
Recording	22
Mapping	23
Surface Collection.....	23
Horizontal and Vertical Control	23
Mechanical Trenching	24
Mechanical Stripping.....	26
Hand Excavation Units.....	26
Excavation of Individual Feature Types	27
Structures.....	27

Pits.....	28
Miscellaneous Features	28
Canal Investigation Methods.....	28
Sample Selection	29
Pollen	29
Flotation and Macrobotanical Samples	29
Chronometric Sampling.....	30
Human Remains	30
Laboratory Procedures	32
Human Remains	33
Curation.....	34
Consultation Protocol	34
Updates and Reports.....	36
Dissemination of Data	37
Public Involvement.....	37
Permits.....	38
Safety Plan	38
References Cited.....	40
Appendix A: Sample Project-Specific Addendum	50
Appendix B: Common City of Phoenix Project Types That May Result in Impacts to Cultural Resource Sites.....	55
Appendix C: List of Arizona State Historic Preservation Context Studies.....	58
Appendix D: City of Phoenix Burial Agreement.....	60

List of Figures

Figure 1. City of Phoenix boundaries and the location of the Phoenix Goodyear Airport.	2
Figure 2. Prehistoric cultural resource sites and canals in Phoenix.	3
Figure 3. Location of the Original Phoenix Townsite.	4
Figure 4. Designated historic districts within the City of Phoenix (Prepared by the City of Phoenix Historic Preservation Office).	5
Figure 5. City of Phoenix Historic Street Railway System 1887–1948. Map prepared for Arizona Street Railway Museum by Marc Pearsall, 2002.....	6
Figure 6. Examples of trenching patterns (not to scale).	25

Figure A.1. Example figure showing an APE / project area, existing and proposed buildings, sidewalks, utilities, and proposed backhoe trenches.54

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Abstract

City of Phoenix Project Number: No. ST87350010; Pueblo Grande Museum (PGM) No. 2007-95.

Report Title: General Historic Properties Treatment Plan for Archaeological Projects Within the Boundaries of the City of Phoenix, Arizona.

Report Date: June 2008.

Agencies and Applicable Historic Preservation Regulations: City of Phoenix (COP), inclusive of all departments; COP Parks and Recreation Department, Archaeology Section; COP Historic Preservation Office; Arizona State Historic Preservation Office; Revised Statutes § 41-841 through 847 (the Arizona Antiquities Act); 36 CFR Part 800, Section 106; COP 2006 Guidelines for Archaeology.

Project Description: Providing a general historic properties treatment plan for archaeological testing and data recovery projects that are located within or near cultural resource sites in Phoenix, Arizona.

Acreage and Land Jurisdiction: Acreage will vary by project. Jurisdiction is COP owned or controlled, including leased land, right-of-way, other city-owned land, and private projects that apply for Zoning changes and / or permits for Planning and Zoning and / or Development Services Department.

Location: The "area of potential effects" or project area is within Phoenix, Maricopa County, Arizona. It may also include land owned or controlled by the COP outside of the city boundaries. The specific location will be determined with each individual project.

Site Number(s): N/A.

Number of Sites: N/A.

Eligible Sites: N/A.

Ineligible Sites: N/A.

Unevaluated Sites: N/A.

Type of Archaeological Activity: Arizona / National Register of Historic Places eligibility testing; Phase I data recovery; Phase II data recovery. Investigations that will be conducted solely for prehistoric canals should utilize the treatment plan entitled

General Cultural Resources Testing Plan for City of Phoenix Projects that Involve Prehistoric Canals within the City of Phoenix, Maricopa County, Arizona (Stubing and Turner 2007) for treatment strategies. However, updated research questions for canals are also included in this plan.

Feature Types Excavated: N/A.

Burials: N/A.

Comments: This document presents a general plan of work to conduct cultural resource testing and data recovery for COP projects that are city-, state-, or federally funded, and are located within 250 feet (76.2 meters) of, or are within, one or more cultural resource sites, as indicated by the PGM database. The COP Archaeologist may authorize use of the General Treatment Plan by private parties conducting projects within the city. However, use of this plan by private parties will require a written application to the COP Archaeologist. The COP Archaeologist will determine whether the General Treatment Plan may be used for such projects on a case-by-case basis.

Recommendations: N/A.

Collections: N/A.

Repositories: PGM.

Introduction

This document presents a treatment plan to conduct Arizona / National Register of Historic Places (A/NRHP) eligibility testing, identification testing, extent testing, phase I data recovery, and phase II data recovery for City of Phoenix (COP) projects that are city- or federally funded and involve land within 250 feet (ft.) of the boundaries of cultural resource sites located within Phoenix, Maricopa County, Arizona, or within lands owned or controlled by COP that are beyond the city boundaries (Figures 1 and 2). For the purposes of this document, the term “cultural resources” refers to prehistoric or historic archaeological sites or objects. The treatment plan was prepared by Carter & Burgess (C&B) at the request of the COP Street Transportation Department (STD) under an existing on-call archaeological services agreement (Contract No. 120263) as COP Project No. ST87350010 (STD Tracking No. CB-003). This plan was developed in coordination with Dr. Todd Bostwick, COP Archaeologist, as Pueblo Grande Museum (PGM) Project No. 2007-95.

The purpose of the treatment plan is to provide a general guideline for small- to medium-sized cultural resource eligibility testing, identification testing, extent testing, and data recovery projects conducted within the COP. This treatment plan is designed to eliminate the need for preparing project-specific treatment plans for individual small- to medium-sized COP projects, and provides a standard to ensure that consistent methodologies are used for city projects. In lieu of a full length treatment plan, a project-specific addendum to this treatment plan will be prepared for each individual project (Appendix A).

The addendum will include a proposed work plan in letter format and a figure showing the proposed excavation plan, and will reference this document, hereafter referred to as the General Treatment Plan. The intent of preparing and utilizing this General Treatment Plan is to streamline and expedite the cultural resource review, investigation, and consultation process, and to eliminate the preparation of redundant treatment plans.

This plan is intended to guide investigations that are within or near cultural resource sites; investigations that will be conducted solely for prehistoric canals should utilize the treatment plan entitled *General Cultural Resources Testing Plan for City of Phoenix projects that Involve Prehistoric Canals within the City of Phoenix, Maricopa County, Arizona* (Stubing and Turner 2007), which was specifically prepared to guide such projects. Monitoring projects and discovery situations should utilize the plan entitled *Monitoring and Discovery Plan for the City of Phoenix* (Montero and Stubing 2004). However, updated research questions for canals are also included in this plan. Historical archaeological research is also an important component of this plan, as historic archaeological properties are abundant within Phoenix. Modern projects have uncovered historic features and artifacts, including among others a variety of features

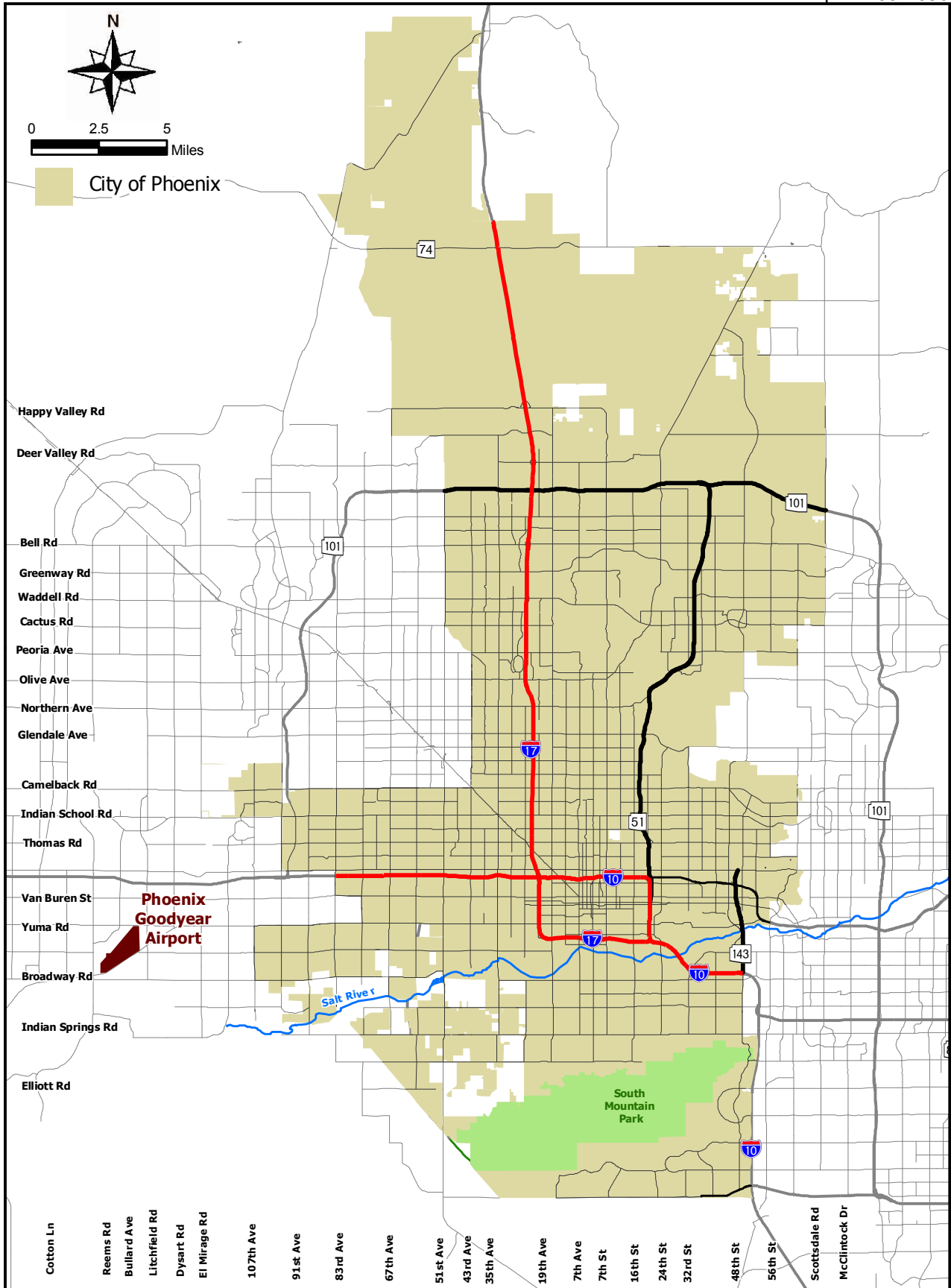


Figure 1. City of Phoenix boundaries and the location of the Phoenix Goodyear Airport.

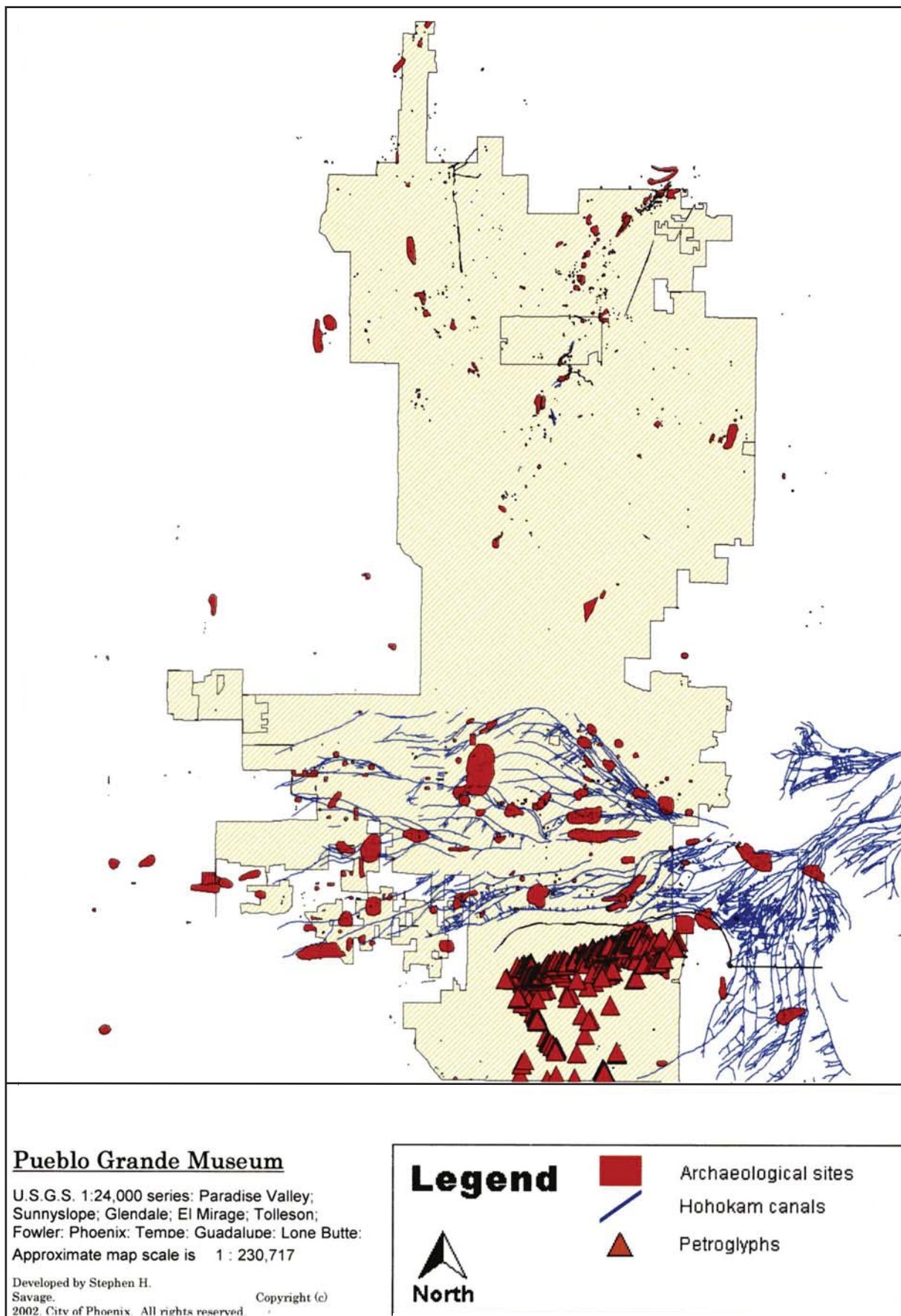
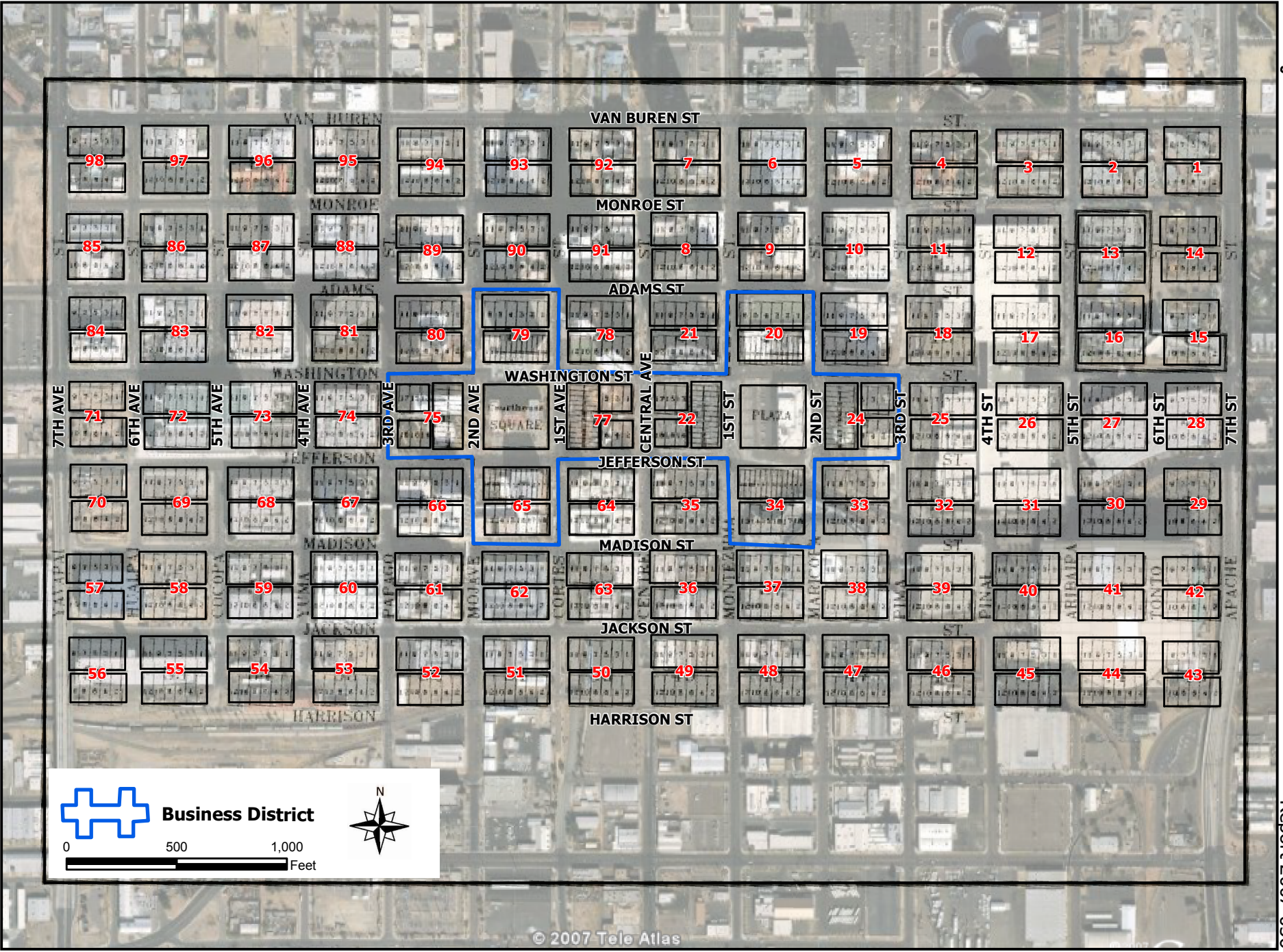


Figure 2. Prehistoric cultural resource sites and canals in Phoenix.

Figure 3. Location of the Original Phoenix Townsite.



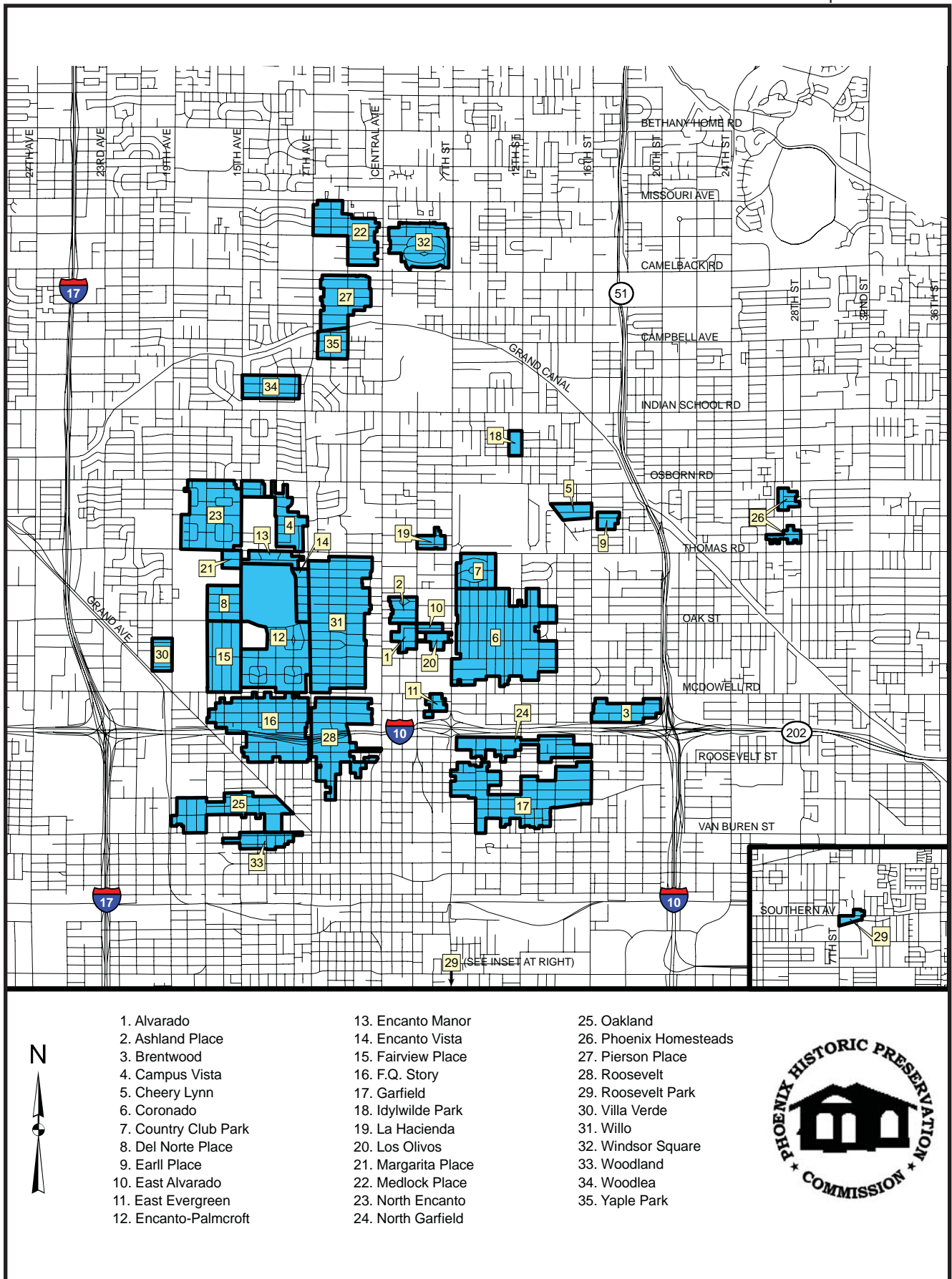


Figure 4. Designated historic districts within the City of Phoenix (Prepared by the City of Phoenix Historic Preservation Office).

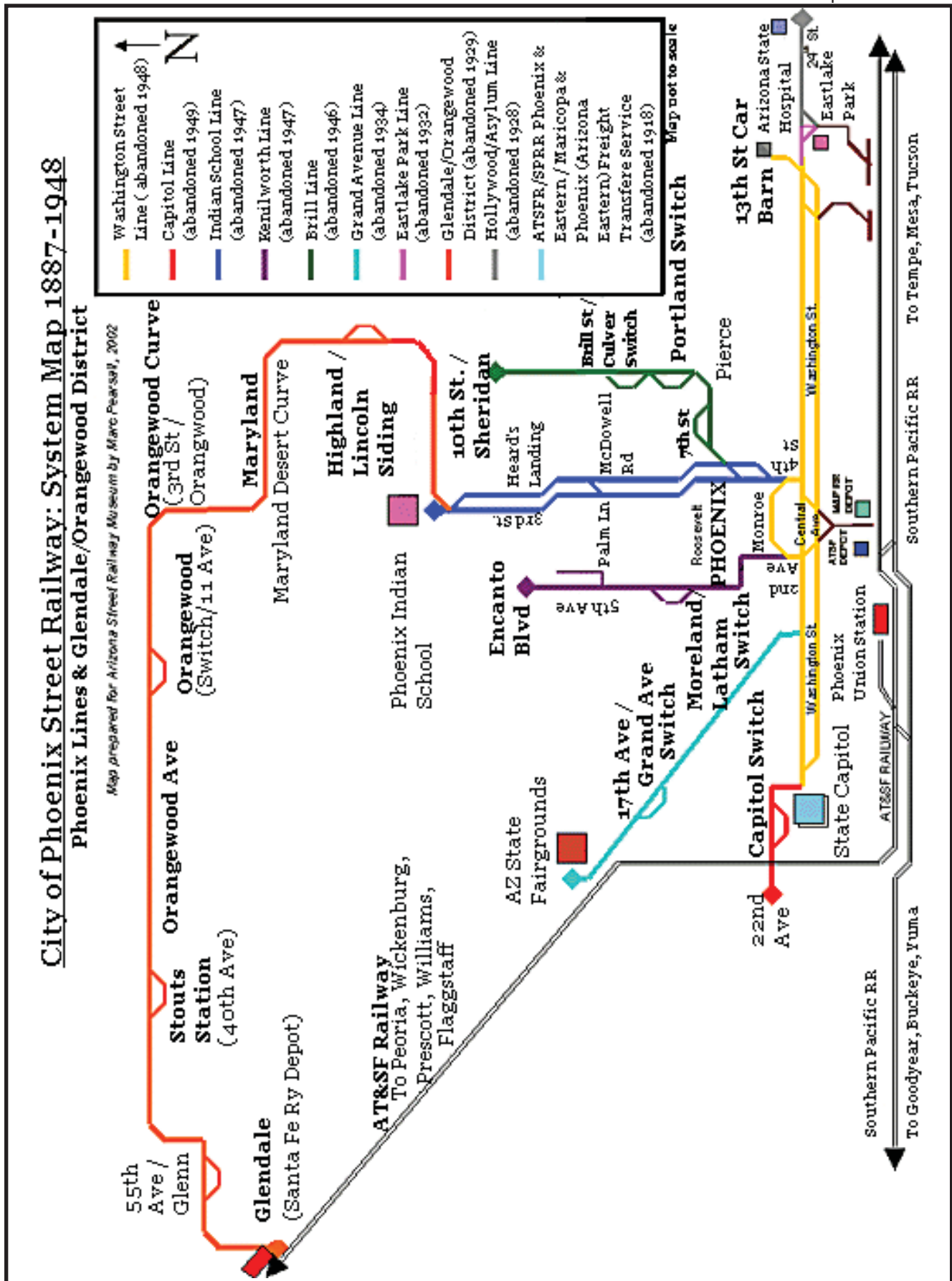


Figure 5. City of Phoenix Historic Street Railway System 1887-1948. Map prepared for Arizona Street Railway Museum by Marc Pearsall, 2002. 6

from the Original Phoenix Townsite and historic trolley tracks that are remnants of the historic street railway system beneath present-day streets (Figures 3, 4, and 5). The Original Phoenix Townsite, established in 1870 and encompassing the area between Van Buren and Harrison Streets, and 7th Street and 7th Avenue, became the center of growth for what was to become a major metropolitan city. Historic research should utilize the plan entitled *A Historical Archaeology Treatment Plan for the City of Phoenix Community Noise Reduction Program, Early Historic Settlement of the City of Phoenix: Euro-American, African-American and Hispanic Culture and Tradition in the Valley of the Sun* (Lindly 2005).

This General Treatment Plan is available for use by all COP departments. Larger, more complex cultural resource investigations may require separate treatment plans. The COP Archaeologist will determine if a specific project may utilize this plan, or if a separate treatment document is warranted. This plan is to be used for cultural resource investigations associated with all types of ground disturbing projects that may be conducted by various departments within the COP, and applies to both prehistoric and historic sites (Figures 2, 3, and 4). City projects that may require use of this plan include, but are not limited to: street widening, paving, and alignment (STD); repair, replacement, and / or new construction of water, sewer, and other utility lines (Water Services Department), shopping center construction, multiple-unit housing structures, building demolition (Neighborhood Services Department); and runway widening, retention basin installation, and building construction (Aviation Department). A list of potential ground disturbing projects that may be conducted by various City departments is presented in Appendix B.

The methods and procedures outlined within this document meet all COP standards and procedures including those in *The City of Phoenix Guidelines for Archaeology* (Bostwick 2006), the COP Burial Agreement (included in Bostwick 2006), and *The Pueblo Grande Museum Collections Repository Manual for Archaeologists* (Young 2004). The City of Phoenix Historic Preservation Office (CHPO) was also consulted as part of the preparation of this plan.

The plan may also be used to guide state or federally funded projects that are conducted within the city boundaries, or projects located on land owned or controlled by the COP but located outside of the city boundaries. The methods presented herein are designed to comply with the Arizona State Historic Preservation Act (A.R.S. §§ 41-861 through 41-864), the Arizona Antiquities Act (A.R.S. §§ 41-841 through 41-847), and 36 CFR Part 800, the regulations implementing the National Historic Preservation Act (as amended). The methods and procedures outlined within this plan meet all state and federal standards and policies, including those stipulated in *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (National Park Service 1983), and the Arizona State Museum (ASM) *Site Recording Manual* (1993), as amended (Fish 1995). This General Treatment Plan is also suitable for compliance with Section 106 of the National Historic Preservation Act.

Each project-specific addendum prepared for future projects will be guided by this General Treatment Plan, and will follow the research design, field methods, laboratory and analytical procedures, and other methodologies and procedures set forth in this document. Project-specific addenda will reference this General Treatment Plan and will describe in detail the following:

- the area of potential effects (APE) for federal undertakings or the project area for city projects,
- the type of project and associated ground disturbance,
- the cultural resources that may be affected,
- the proposed excavation plan,
- an explanation of any deviations from the General Treatment Plan, and
- a proposed schedule.

The project-specific addendum will include a figure showing the proposed excavations; the figure will include a key, scale, and north arrow. An example of the required format for the project-specific addendum is provided in Appendix A. The project-specific addendum will be reviewed by the COP Archaeologist and appropriate individuals from the sponsoring COP department. Cultural resource investigations may not commence until approval has been received from all applicable parties.

The COP Archaeologist may authorize use of the General Treatment Plan by private parties conducting projects within the city. However, use of this plan by private parties will require a written application to the COP Archaeologist. The COP Archaeologist will determine whether the General Treatment Plan may be used for such projects on a case-by-case basis.

Project Setting

This General Treatment Plan applies to projects within the current COP boundaries and to land owned or controlled by COP that is located outside of the COP boundaries. These outlying lands include the Phoenix Goodyear Airport, the 91st Avenue Wastewater Treatment plant, various COP investment properties, and other parcels that are located beyond the city limits. The APE / project area for projects covered by this plan will generally consist of parcels of land proposed for construction, building or infrastructure repair / rehabilitation, or other ground-disturbing activities, and will vary in size and shape. As noted, the APE / project area for individual projects will be defined in the project-specific addendum to be submitted to COP prior to each project.

Environmental Setting

Projects covered by this General Treatment Plan will mostly be located in the Phoenix Basin, a broad, open valley along the lower reaches of the Salt River (Péwé 1978). Elevation ranges from approximately 950 ft. above mean sea level (amsl) at the

western portion of the city to approximately 2,700 ft. amsl at the peak of Camelback Mountain. The region is located in the Basin and Range physiographic province, which is characterized by linear mountain ranges oriented north-south or northwest-southeast, with shallow basins in between, and alluvial fans at the bases of the mountains (Chronic 1983).

This region is located within the Lower Colorado River subdivision of the Sonoran Desertscrub biotic community (Brown 1994). This series is characterized by creosote and bursage, with palo verde, saguaro, ironwood, hackberry, various wildflowers, and grasses also present. Additional cacti within this series include cholla, hedgehog, compass barrel, fishhook barrel, and pincushion.

Many projects that will use this plan will be situated in urban settings within Phoenix, and will be characterized by modern development, clearing, and grading. Portions of intact natural ground surface are still present within Phoenix; however, a large amount of the city surface consists of disturbed or developed lands.

Cultural Context

Cultural resources dating to the Paleo-Indian period (ca. 12,000–7,500 B.C.) are represented in Arizona by isolated fluted (“Clovis” and “Folsom”) projectile points and a few scattered archaeological sites (Faught and Freeman 1998; Huckell 1982). Paleo-Indians were highly mobile, following big game, as indicated by large kill sites of late Pleistocene megafauna associated with Clovis and Folsom projectile points. Within the Phoenix Basin, evidence of Paleo-Indian culture has been documented through isolated finds of projectile points (Crownover 1994; North et al. 2005).

The later Archaic period (ca. 7,500 B.C.–A.D. 1) is marked by an increase in the number of cultural resource sites in Arizona. These sites are characterized by ground stone tools used for processing wild seeds, slab-lined storage pits, “sleeping circles,” and a change in projectile point forms (Mabry and Faught 1998). Late Archaic and early Pioneer occupation has been documented in the Phoenix Basin (Hackbarth 1998). In the Tucson Basin, Archaic habitations have been excavated from beneath deep floodplain deposits (Gregory 1999, 2001; Mabry 1998; Mabry et al. 1997). These excavations indicate that plant cultivation and permanent settlements existed during the Archaic period.

The Hohokam culture emerged following the Archaic period in south-central Arizona. Archaeologists separate the Hohokam occupation into broad temporal periods, based on changes in material culture and / or developmental peaks. Each period is further subdivided into temporal phases, defined largely by ceramic and architecture styles (Haury 1976). Debate exists regarding the exact chronology of the Hohokam phases; the following temporal assignments are based on the generally accepted dates proposed by Dean (1991), with adjustments from recent work (e.g., Doyel et al. 2000).

The earliest period of Hohokam occupation is commonly referred to as the Pioneer Period (ca. A.D. 1–700). This period is broken down into five phases: Red Mountain (~A.D. 1–300), Vahki (A.D. 300–450), Estrella (A.D. 450–550), Sweetwater (A.D. 550–600), and Snaketown (A.D. 600–700). Habitations during the Pioneer Period consisted of discrete groups of shallow pit houses (Cable and Doyel 1987; Doyel and Fish 2000). Plain wares and the first decorated Hohokam ceramics were manufactured during this period, and by the end of the Pioneer Period, settled villages and large-scale irrigation, via canals, were typical (Abbott 2000; Cable and Doyel 1987; Doyel and Fish 2000).

The Colonial Period (ca. A.D. 700–900) is divided into two phases: Gila Butte (A.D. 700–800) and Santa Cruz (A.D. 800–900). As irrigation systems were expanded, population increased and the number and size of habitations expanded (Doyel and Fish 2000; Doyel 1991). Houses were organized into courtyard groups (Howard 1985), and ballcourts were introduced (Abbott 2000). These new types of architecture, plus the new practice of cremation burials, suggest the beginning of a regional system with religious, economic, and political functions (Wilcox and Sternberg 1983). During this time and subsequent periods, rock art attributed to the Hohokam was created in the canyons of local foothills and mountains, including the South Mountains (Bostwick and Krocek 2002).

Village size and canal systems expanded, and widespread trading became common during the Sedentary Period (A.D. 900–1150) (Abbott 2000; Doyel 1991). Platform mounds were constructed, and plazas and ballcourts became more numerous in larger villages (Doyel and Fish 2000). The Sacaton Phase is the one phase identified for the entire Sedentary Period.

The Classic Period (ca. A.D. 1150–1450+) saw the continuing construction of platform mounds, as well as above-ground dwellings with compound walls (Doyel 1975, 1981; Doyel and Fish 2000). Ballcourts ceased to be constructed (Abbott 2000). This reflects a significant change in Hohokam social, political, and economic organization from the Sedentary Period (Abbott 2000; Doyel 1991). This change has been attributed to the introduction of a new population to the area. Whereas individual villages were larger in size than during the Sedentary Period, the overall number of villages decreased.

Phases in the Classic Period include the Soho (A.D. 1150–1300), Civano (A.D. 1300–1350), and the Polvorón Phase (A.D. 1350–1450+). The latter is often termed “Post-Classic,” and is represented by small clusters of pit houses, and pit houses constructed on top of earlier platform mounds. Polvorón Phase sites also have large quantities of Salado polychrome ceramics and obsidian debitage (Chenault 1993; Sires 1983). For a more recent discussion of the Polvorón Phase, see Chenault (2000) and Henderson and Hackbarth (2000).

The O’odham (Pima and Papago) and Maricopa groups utilized the region during the Protohistoric Period (ca. A.D. 1450–1540), although less intensively than the Hohokam.

These groups and others such as the Yavapai and Apache continued to occupy the region through the Historic Period and into modern times.

The Historic Period in this region is traditionally defined as beginning with the advent of Spanish exploration, in the 16th century. The Franciscan Friar Marcos de Niza and the slave Esteban entered what is now Arizona in 1539, heading northward from the settled areas of Mexico in the south (Wilson 1995). Their quest prompted an expedition through the region, led by Francisco Vasquez de Coronado, in 1540-1542. Three hundred years later, at the time of the Mexican-American war, a push to acquire territory in the southwest brought Colonel Stephen Watts Kearney's "Army of the West" along the Gila River (Laird 1987; Lamar 2000). The Treaty of Guadalupe Hidalgo, signed on February 2, 1848, brought an end to the Mexican-American War, and ceded to the United States a large area of land between present-day California and Texas. Five years after the treaty, the Gadsden Purchase of 1853 resulted in the acquisition of a strip of territory south of the Gila River in what is now southwestern New Mexico and southern Arizona. In 1863, Arizona separated from the Territory of New Mexico to become an independent territory, and was granted statehood in 1912 (Walker and Bufkin 1986).

From the middle of the nineteenth century to the present, the development of the region was driven by ranching, farming, and homesteading. Mining also played a role in the growth of the Phoenix region, with activity predominantly centered on the Phoenix and South Mountains (Bain 2003; Bostwick 2001; Curtis 1989; Stone 1990). Mercury was mined in small quantities within the Phoenix Mountains, which was worked from at least 1925 to sometime after the second world war (Bain 2003). Gold, along with lesser amounts of silver and copper, were mined sporadically in portions of the South Mountains from the 1880s to the mid 1940s (Bostwick 2001).

Irrigation and Canals

Ancient canal systems, long since abandoned, were once again brought to life when early Hispanic and Euro-American farmers settled in the Phoenix Basin. Many of the major canals or ditches excavated in the latter half of the 1880s followed the trajectories of Hohokam canals. Irrigation once again brought growth and development to the region, this time drawing farmers from all over the Arizona territory and the United States in general.

H. Patrick's 1903 publication on the lands and irrigation between the Gila and Salt Rivers was based on General James E. Rusling's inspection and report of the area in 1867. Patrick's map suggests the presence of several hundred miles of canals, as well as large acequias and ruins of buildings. Turney (1929) later revised the estimate and updated the canal alignments.

Construction and maintenance of prehistoric irrigation systems required not only particular environmental conditions, but cultural adaptations as well. The most

extensive of these prehistoric canal systems in Arizona were created along the lower Salt River. The last 40 miles of the Salt River contains at least 16 Hohokam canal intakes, forming major irrigation systems (Dart 1989). Turney (1929) notes that 19th century settlers used at least seven of these systems.

Jack Swilling, along with several other Arizonans, raised enough capital to initiate one of the earliest commercial irrigation projects, and formed the Swilling Irrigation and Canal Company in 1867 (Lamar 2000; Sheridan 1995). Swilling Ditch was dug from an ancient Hohokam canal on the north bank of the Salt River, near Smith's Station. It was later named the Salt River Valley Canal, and ran through the center of Phoenix (Sheridan 1995).

In 1959, Richard Woodbury began a systematic investigation of canals at Park of the Four Waters at Pueblo Grande in Phoenix. Woodbury excavated two large Classic period canals and proposed an accretionary canal growth model for the Hohokam. Woodbury (1960, 1961) suggested topics for further research including the origins, extent, and reasons for the decline of Hohokam canals, as well as the social and economic implications of the canal systems; current research has expanded to include studies of paleohydraulics, retrodictions of streamflow, canal engineering, intra-canal mechanics, maintenance requirements, and temporal associations (e.g., Ackerly et al. 1987; Ackerly and Henderson 1989; Breternitz 1991; Greenwald 1988; Howard 1990, 1991, 2006; Howard and Huckleberry 1991; Masse 1976, 1981, 1991; Nials and Fish 1988; Serocki 2006).

Canal System 2, which is situated north of the Salt River, probably has received the most attention from researchers to date. Howard (1991, 1993) has provided a detailed model for the evolution of this irrigation system using new quantitative methods to explore system engineering and capacity. According to Howard (1991:5.2), the model of canal system accretional growth proposed by Woodbury (1960, 1961) and followed by others (e.g., Nicholas and Feinman 1989) is erroneous due to the necessary relationship between canal length and water discharge. Because an increase in canal length requires an increase in discharge at the canal head, any appreciable lengthening of a canal system would have required the complete rebuilding of the canal.

Other current research issues include the role of irrigation systems in Hohokam sociopolitical organization and intervillage cooperation (Abbott 1994, 2000; Greenwald and Ballagh 1996; Henderson 1995; Howard 2006; Wilcox 1979), as well as factors leading to the abandonment of the irrigation systems (Graybill 1989; Huckleberry 1991).

With regard to historic canals, more than 30 were constructed between 1886 and 1900, with 14 of them located on the north side of the Salt River (Ackerly 1989). By 1900, only 16 canals were in use, due to competition for river water. Upon completion of the construction of the Arizona Canal and Granite Reef Diversion Dam in 1885, all of the

north side canals were integrated into a single system. The integration of canals occurred primarily as a result of a series of lawsuits over water rights (e.g. 1892 Kibbey decision, 1910 Kent decree), rather than from an organized effort by the various landowners.

Today, the Salt River Project (SRP) operates and maintains the canal and lateral system and associated features and facilities for the Bureau of Reclamation (Reclamation). SRP obtained the contract for operation and maintenance of the canals in 1937; between 1917 and 1937, the Salt River Valley Waters Users Association was the responsible party.

Reclamation has recommended that the entire SRP system of canals is eligible for inclusion in the National Register of Historic Places. Within Phoenix, the main canals included in this system are: Grand Canal, North Highline Lateral, South Highline Lateral, Western Canal, Old Cross Cut Canal, and Arizona Canal. A Programmatic Agreement among Reclamation, SRP, the Advisory Council on Historic Preservation, and the Arizona State Historic Preservation Office (SHPO) regarding historic preservation treatment has been in effect since February 2001 in response to Reclamation's determination that modification and system upgrades to the SRP system of main canals, laterals, and associated features would have a continued effect on the system. SRP historians have completed Historic American Engineering Records documentation for the main canals in the SRP system (e.g., Anderson 1990a, 1990b; Dudley 1998).

Previous Research

A background literature review (site file search) will be conducted for all COP projects, including those using this treatment plan, unless the COP Archaeologist determines that this review is not necessary for a given project. If a literature review has been recently conducted for a project prior to testing or data recovery a new literature review may not be required; the need for an updated literature review will be at the discretion of the COP Archaeologist.

The literature review should document and list previously recorded cultural resource sites and historic properties, historic resources (homesteads, buildings, roads, etc.), and previous cultural resource investigations. Information to be presented in reports regarding previous sites includes the site number and name (if applicable), a brief description, the A/NRHP eligibility status, its proximity to the project APE / project area, and selected references. Information to be presented from previous investigations consists of a report reference, the proximity to the project APE / project area, the type of investigation, and the results of the investigation.

Projects that are COP-funded require that the literature search document the APE or project area and a surrounding one half-mile radius. Projects that are state or federally

funded, or that may involve review from state or federal agencies, require a one-mile search radius.

Records at the following sources should be reviewed for previous research conducted for all COP-funded projects:

- PGM
- ASM / AZSITE, Arizona's computerized cultural resource database

Records at the following sources should be reviewed for previous research conducted for state or federally funded projects:

- PGM
- ASM / AZSITE, Arizona's computerized cultural resource database
- SHPO
- Bureau of Land Management (BLM), Phoenix Information Access Center

Results of the literature review must be provided in the final results (testing or data recovery) report.

Research Design

The primary objective for archaeological research that is conducted under the guidance of this General Treatment Plan will vary according to the A/NRHP status of the specific cultural resources. Eligibility testing will focus on evaluating the research potential and significance of cultural resources with the goal of providing a sound recommendation as to their eligibility for the A/NRHP. Phase I data recovery will evaluate the nature and extent of cultural resources within register-eligible sites. The purpose of phase II data recovery is to recover significant data from register-eligible sites. The overarching theme of all research undertaken during these investigations should be to inform on the distribution, growth, and development of archaeological sites and canals in the Phoenix Basin. Based on this general theme, a series of research domains and related questions are presented below.

SHPO has prepared a set of context studies on a variety of research themes for Arizona. These studies have compiled research on specific topics of Arizona history and prehistory, and provide contexts in which to frame subsequent research. A list of these context studies is provided in Appendix C. All projects conducted under the guidance of this plan should incorporate these contexts when summarizing the results of any investigations. The general research domains and questions presented below were formulated to work within the specific SHPO historic and prehistoric contexts.

Research Domains

General research domains for COP projects are outlined below, along with associated research questions. As is common with such domains, there is a significant amount of crossover between the research themes, with many aspects of one domain also relevant to others. These general domains apply to both prehistoric and historic sites; however, domains specific to historic sites are included in a following section.

Settlement Patterns and Community Organization

What roles does the site(s) play in the regional system? What were the associations among features and open space, and how did these associations change through time? If water control features are present, what do they inform about agricultural practices, community organization, and environmental conditions? To what extent does the ceramic assemblage inform about social relationships, both internally and externally? Historic context studies for African-American, Asian-American, and Hispanic groups have been prepared for the CHPO (Dean and Reynolds 2004, 2006; Murray and Solliday 2007), and should be consulted when conducting research pertaining to these groups.

Site Function

What features are present and what activities do they represent? What evidence exists for specific residential and / or activity areas? What is the relationship between specialized tool assemblages and site function? Can any formal or informal tool kits be identified in each site's assemblage? Does the assemblage indicate seasonality of use or continuous occupation?

Site Boundary Definition

Is it possible to establish site boundaries or refine existing site boundaries? If so, how do the boundaries determined during fieldwork compare with those that were previously recorded?

Subsistence and Land-Use Strategies

What resources were exploited at the site? What is the frequency and distribution of agricultural, floral, and faunal remains at the site? What raw materials were available locally, and what is the ratio of local to non-local materials? What evidence, if any, is there of resource exchange? How did subsistence strategies and land-use practices change over time? To what extent if any, did the subsistence base change over time? Was mining part of the land use involved at the site?

Interaction and Exchange

Which artifact types or classes indicate interaction and / or exchange within the same cultural group and / or other cultural groups? What is the temporal and spatial association of non-local raw materials and craft objects? How did long-distance relationships change through time?

Chronology

What are the ages of the features? What evidence, if any, is there of a transitional period of occupation or use? What is the evidence for the duration of occupation or use?

Iconography and Religion

The iconography and religion of the cultural group or groups that utilized an area can inform on many subjects. Research questions associated with this domain include: Are ritual objects and / or images present that can provide information about religious activities? Are certain feature types associated with different images or designs? Do different images or objects have patterned spatial distributions at a site or across the landscape?

Research Domains for Historic Sites

Previous treatment plans prepared for the COP have developed research domains suitable for historic sites and resources within the city (Henderson et al. 2007; Lindly 2005). In particular, Lindly (2005:12-23) defined four research domains to guide research at historic sites within Phoenix; these domains are listed below.

Community Structure and Development (Land Use and the Development of Space)

The investigation of land use, from activity areas to households, neighborhoods, and communities, is the focus of this research domain. Research questions associated with this domain include: What spatial units are included in an APE / project area? How did they evolve over time? How did economic factors affect community structure and land use? Was mining part of the land use involved at the site?

Commodity Research

This domain is concerned with the investigation of marketing, distribution, and exchange of mass-produced objects (Lindly 2005:13). Determining the material goods that were used in historic times not only provides insight into everyday activities, but also provides data on distribution networks in place. Questions that are associated with commodity research include: What types of activities are indicated by the objects / artifacts? Were the objects / artifacts produced locally, nationally, or internationally?

Ethnicity, Class, and Gender

Determining the ethnicity, class, and gender of the populations within a study area is of paramount importance when conducting historic research. The historic settlement of Phoenix is marked by several ethnic groups, including Euro-American, African-American, Chinese, and Hispanics, among others. Identifying the ethnic group or groups that utilized an area allows that area to be placed in a cultural context. Basic questions associated with this research domain include: What ethnic group or groups are represented in the APE / project area? Did the ethnicity of the area change over

time? Can class and gender also be determined? As previously noted, historic context studies for African–American, Asian–American, and Hispanic groups have been prepared for the CHPO (Dean and Reynolds 2004, 2006; Murray and Solliday 2007), and should be consulted when conducting research pertaining to these groups.

Historic Irrigation in the Greater Phoenix Area

Irrigation has played a pivotal role throughout the history of the Phoenix Basin; this role was as important in the historic period as during the prehistoric or modern eras. Research questions for both prehistoric and historic canals are discussed in a separate section below.

Research Questions for Canals

Whereas the intent of this plan is to structure testing and data recovery investigations of cultural resource sites, it is possible that prehistoric or historic canals may be found during archaeological work in or near sites. Therefore, a set of research questions is presented below for canals and other irrigation features. Projects that will be conducted within or near known prehistoric canals should utilize Stubing and Turner (2007), which was specifically prepared to guide such projects.

In addition to the research questions posed below, any investigations of canals should include the completion of open channel hydraulic equations, regardless of whether the canal was anticipated or not. These equations, and the data derived from their completion, can provide information on the following canal components:

- Discharge (overall volume of water)
- Wetted Perimeter
- Maximum Channel Velocity
- Hydraulic Radius
- Cross Sectional Radius
- Predicted Cross Sectional Radius

Once values for these components have been calculated, they can be compared to those from other locations along the same canal, and to what the expected values should be for the same canal. If significant differences are found, further investigation may be in order to determine why the values are not constant (including canal blowout, the presence of turn-outs, or other features that may affect the components listed above). Further information regarding the equations can be found in Chow (1959), Howard (1990), and Serocki (2006).

Research questions for canals are presented below.

- For canals that were previously plotted, is the canal(s) present in its plotted location? For canals that were not previously recorded and are encountered

during archaeological investigations, can the canal(s) be associated with a previously recorded feature; i.e., is it a segment of a known canal?

- What are the morphological characteristics of the canal(s)? The size and shape of the canal, combined with stratigraphic evidence from its fill, can be used to determine if it is a main canal or a smaller lateral waterway. The characteristics of any canal segments found will be compared to previously investigated segments of these canals found in other locations. The COP Archaeology Section maintains an extensive database of canal attributes as reported in recent investigations to aid in canal comparisons (Serocki 2006).
- Is it possible to determine the age of the canal(s)?
- Are internal or associated canal features present?
- What was the role of the canal(s) within the larger irrigation system in place in the area?

Traditional Cultural Properties

National Park Service (NPS) Bulletin No. 38 (NPS 1998) generally defines a traditional cultural property (TCP) as being eligible for inclusion in the NRHP "...because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (NPS 1998:1). NPS Bulletin No. 38 cites the following examples of TCPs (NPS 1998:1):

- A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings, and structure, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

Archaeologists conducting projects within the COP, or on lands controlled by the city, need to be aware of the potential for TCPs to be located within their APEs / project

areas and be able to identify these resources. TCPs are more likely to be located within areas that have undisturbed ground surface or have not been heavily developed; however, they can occur in a variety of locations, and their potential presence needs to be evaluated for all APEs / project areas. NPS Bulletin No. 38 provides detailed information on identifying and evaluating TCPs. TCPs are often associated with locations that have special meaning to Native Americans. These cultural landscapes include areas that have religious significance, have been or are currently used to collect resources or facilitate social activities, or are of other cultural importance.

Within the COP, the Gila River Indian Community (GRIC) and the Salt River Pima-Maricopa Indian Community (SRPMIC) have issued proclamations that the South Mountains are considered sacred. The Hopi Tribe has also indicated that this range is culturally significant to tribal members (Swanson and Bostwick 2007). Due to their importance to Native American groups, the South Mountains should be preserved and treated as a TCP. Certain site types including trails, rock piles and circles, cleared areas, and rock art are often associated with TCPs by GRIC, especially when located in foothills or mountains. TCP consultation should be done for all federal projects, and for all other types of projects that include the South Mountains and / or the site types and features described above. Archaeologists will need to confer with the COP Archaeologist, GRIC, SRPMIC, the Hopi Tribe, and the Fort McDowell Yavapai Nation to determine if TCPs are located within an APE / project area, and for evaluating cultural resource sites that have been identified in the APE / project area. As TCPs can range greatly in form and type, all potential culturally significant properties should be treated with respect.

Field Strategies and Methods

General field strategies for eligibility testing, phase I data recovery, and phase II data recovery are presented in this section. Following the general strategies is a section detailing specific field methods that are applicable to testing and data recovery investigations. The field methods presented are intended to cover the investigation of cultural resource sites; projects that involve prehistoric canals within the COP should use the methods presented in Stubing and Turner (2007), which was specifically prepared to guide such projects. It is possible that prehistoric and / or historic canals may be found as a result of investigations guided by this plan; therefore, field methods for these feature types are also included in this plan.

Traditional subsurface exploratory methods such as trenching and hand-excavation units have proven effective for obtaining data expeditiously; therefore, they are the primary field techniques that will be used for most testing and data recovery investigations. New and innovative methods, if applicable, should also be considered and submitted for review in project-specific addenda.

Monitoring is considered a viable alternative to testing and data recovery in certain situations where project ground disturbance would be less destructive to cultural resources than archaeological excavations. If monitoring is determined appropriate instead of testing or data recovery, any specialized techniques that may be necessary for documenting and evaluating subsurface features within large-scale trenching projects, including stepping, shoring, filling in of the trench to adequate safety levels, etc. need to be discussed and cleared with the appropriate COP department and construction companies prior to fieldwork. Any ongoing monitoring program should be periodically evaluated to determine whether results warrant continued monitoring. Results such as feature presence or absence, amount of previous disturbance, ability to observe cultural features with the construction techniques being used, and other factors should be taken into account when determining if it is prudent to continue monitoring. The *Monitoring and Discovery Plan for the City of Phoenix* (Montero and Stubing 2004) should be consulted for such activities.

All field methods used must conform to applicable professional standards and policies. These include the *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (National Park Service 1983), the *ASM Site Recording Manual* (1993) as amended (Fish 1995), and the *City of Phoenix Guidelines for Archaeology* (Bostwick 2006). Per COP regulations, a copy of the latter document should be kept on-site during all fieldwork. The CHPO must be notified of any projects involving cemeteries or areas within historic overlay zoning.

A/NRHP Eligibility Testing

The purpose of this phase of investigation is to evaluate the eligibility of cultural resource sites for inclusion in the A/NRHP and, if they are found eligible, to obtain information that will assist with the development of a data recovery plan. This information may include the condition, integrity, type, distribution, and density of subsurface features, and the age of the sites. Eligibility testing methods are designed to determine if significant cultural resources are present that would allow for the evaluation of eligibility based on the criteria presented below. A/NRHP eligibility testing is only applicable for state and federal projects; it does not apply to city or private projects. However, some city- or privately funded projects may involve A/NRHP evaluations at the discretion of the project sponsor and / or the COP.

According to standards issued by the NPS (NPS 1991), cultural resource properties are eligible for inclusion in the NRHP if the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or

- (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) that have yielded, or may be likely to yield, information important in prehistory or history.

ARHP criteria match those of the NRHP, but are applied at the state level. SHPO has stated their position on the role of eligibility testing, and the extent to which any site subjected to eligibility testing should be disturbed (Bilsbarrow 2003). In this position statement, SHPO maintains that the lowest possible effective percentage of the site area be disturbed when conducting eligibility testing. Therefore, all eligibility testing conducted under this plan should be structured to result in the most minimal disturbance, while obtaining the information necessary to assess the eligibility of the site(s).

Within the COP, eligibility testing typically involves the excavation of backhoe trenches. Trench patterns for testing projects within the COP should sample between 1.5 and 3.0 percent of the site area; the trenching pattern should not exceed a 3 percent sample. However, exceptions may be made for small parcels and lots in which the inclusion of a single trench or trenches may exceed the 3 percent maximum.

Phase I Data Recovery

The purpose of phase I data recovery, sometimes referred to as “data testing,” is to provide detailed information on the nature, extent, and distribution of features and artifacts at A/NRHP eligible sites so that accurate phase II data recovery plans can be developed. By gathering such information, archaeologists can focus on portions of the site that are most likely to yield data pertinent to the research design guiding the project. Phase I investigations within the COP typically involve more extensive trenching patterns than eligibility testing, examining a greater portion of the site area. If eligibility testing has previously occurred at the site, data from those investigations can be used to augment that of the phase I, and in some cases lessen the amount of work that is required during phase I.

Phase I investigations can result in a finding that no further data that contribute to the A/NRHP eligibility of the site is present, or is likely to be obtained through further work. Such a finding, if concurred with by the COP and SHPO, will usually result in a recommendation that no further work be conducted at the site. Data recovery will follow eligibility testing if necessary.

Phase II Data Recovery

Phase II data recovery is a mitigation measure; its purpose is to recover significant data from an A/NRHP eligible site that will inform on the research domains and questions

presented previously in this plan. Phase II data recovery will follow eligibility testing and / or phase I data recovery, using the information obtained through those previous investigations to prepare a detailed strategy focusing on areas and feature types that have the most potential to contribute to the relevant research domains.

Phase II data recovery within the COP generally consists of limited trenching or reopening of previous trenches, mechanical stripping to remove overburden and expose features in plan view, and hand excavation of a sample of features. The sample size will vary by site and feature type, and will be addressed in the project-specific addendum outlining the strategy for COP approval.

Field Methods

Specific field methods for testing and data recovery are described below. The methods may need to be revised to meet specific conditions at various sites; any such revisions should be clearly detailed in the project-specific addendum to the COP.

Recording

A consistent, city-wide approach to recording sites and features should be utilized throughout all types of investigation conducted within Phoenix. All sites and features should be individually recorded using standardized forms and notes. The use of standardized forms will aid in providing a consistent level of recordation. All features should be drawn to scale in plan and cross section, and specific information concerning dimensions, shape, fill sequence, and artifact and spatial associations must be recorded.

Rock art will be recorded in a consistent manner, following the methods outlined in Swanson and Bostwick (2007). This recordation strategy, developed for use within the South Mountains, utilizes four levels of documentation, each level building upon the previous one. Level 1 consists of reconnaissance survey of the study area, recording all features with global positioning system (GPS) units, and downloading the data. Individual features are designated as loci, and features within 50 m of each other are grouped into a single locus; information about each locus including types / number of features, artifacts, landscape data, and presence of historic or modern disturbance is recorded. Level 2 consists of analyzing the spatial data from Level 1, determining clusters of loci, and designating sites as appropriate based on the loci boundaries. Standard site recording is part of this level. Level 3 consists of the recordation of subfeatures at each site. Level 4 recordation "... is conceptualized as specialized studies that either transcend 'site-feature-subfeature' levels of analysis or focus on specific research questions that require in-field analysis." (Swanson and Bostwick 2007:19-21).

Features found in trenches excavated for testing or phase I data recovery will only be examined from the profile that is exposed within a trench wall or walls; no excavation beyond the backhoe trench will be conducted during these types of investigations; the exception is human burial features, which would require excavation. In addition to the

recording of features, representative profile drawings will be made from non-feature portions of selected trenches to document the soil stratigraphy within the project area.

In addition to noting the cultural attributes of the site and features, descriptions of any modern disturbances should be part of the recording process. Each site and its features should be thoroughly documented with black-and-white film and digital photographs. The photographs should include general overviews, individual features, excavations, and any unique artifacts. The exception is human remains, which may not be photographed under any circumstances.

Mapping

As part of the treatment of each site that is subject to testing and / or data recovery under this plan, detailed mapping will be conducted using an electronic total station, GPS unit, hand tapes, or a combination of these methods. A detailed map of each site will be prepared showing site boundaries, cultural features, artifact concentrations, and unique or diagnostic artifacts. The maps will also show the locations of all backhoe trenches, excavation units, and stripping areas, as well as topographic features, modern features such as roads, buildings, utility poles and lines, and areas of disturbance.

Surface Collection

Surface collection should be conducted at all sites that have surface artifacts and intact portions of natural ground surface. As previously noted, many of the projects conducted within the COP will be in areas where the surface has been disturbed by modern development, obviating the necessity of collecting surface artifacts. The decision to conduct surface collection should be made on a case-by-case basis, based on the presence of intact natural ground surface and the artifact assemblage present. Surface collection should not be conducted if it appears that modern fill material from beyond the site area has been deposited on the surface.

Surface collection methods will vary, depending on the specific site, but should be designed to provide horizontal data on artifact distribution and density at each site. At smaller sites and at sites with low-density artifact scatters, all surface artifacts should be collected and provenienced to the site. Collections at sites with distinct loci may be provenienced to each locus. If determined to be appropriate due to site size or artifact complexity, collections may be provenienced to halves or quarters of the site, or the site may be divided into sample collection units (5 x 5 m or 10 x 10 m) and provenienced in this manner. Unique and diagnostic artifacts at all sites should be collected and point-provenienced.

Horizontal and Vertical Control

It is recommended that a city-wide horizontal control system using Universal Transverse Mercator (UTM) coordinates be utilized for all projects conducted under this plan. Use of a consistent, standardized coordinate system will facilitate efficient and accurate site and feature comparisons. The horizontal provenience of all features, collection units,

excavation units, etc., should be recorded to the nearest centimeter using the coordinate system.

It is recommended that all vertical measurements be conducted in a meters-below-datum (mbd) format. Hand tapes and line levels should be used for detailed excavation measurements.

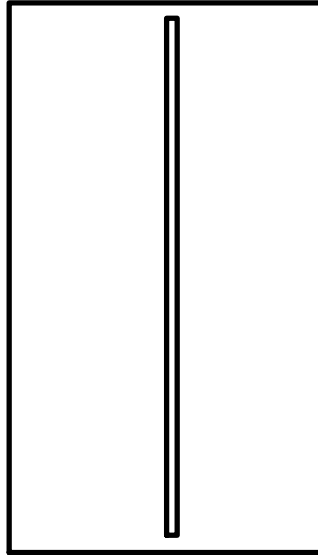
Mechanical Trenching

A combination of systematic and judgmental trenches should be used for eligibility testing, phase I, and phase II data recovery at sites within the COP. Specific trenching strategies will be developed for each project, and will be outlined in the project-specific addendum for review by the COP Archaeologist and the appropriate COP department(s). These strategies will use single or multiple trenches that are situated within and / or near the plotted site locations. Staged trenching, wherein different intervals of trench spacing are utilized to provide different sampling levels, may be used where appropriate. Staged trenching is an effective and cost-efficient means of varying the sampling intensity to correspond to areas of higher or lower artifact and feature densities that are present within sites.

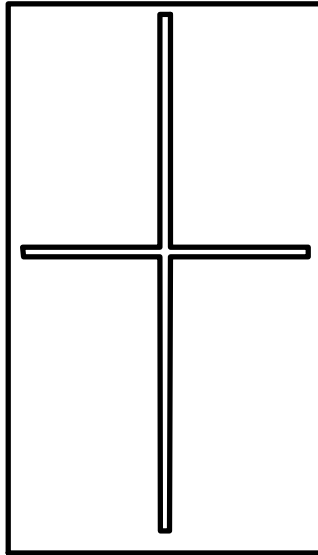
Systematic and judgmental trenches will vary in length. The orientation, patterning, and spacing of systematic trenches will vary at each site, and will be dependent on the site size, shape, and feature / artifact density. Trenches should be located to provide the highest probability of intersecting features, including canals, based on surface indications, previous trenching results, and other factors. Trenching patterns may include single trenches, single trenches with a segment omitted to account for an existing structure or other obstruction, multiple trenches in a single row parallel to each other, multiple rows of trenches parallel to each other, and multiple rows in a staggered pattern (Figure 6).

Judgmental trenches should be excavated to define the location, depth, and stratigraphy of canals, to provide additional subsurface data on other selected features, and to provide general stratigraphic and geomorphological information. The location and orientation of the judgmental trenches should be determined in the field. These trenches will vary in length, depending on the features to be investigated. The use and location of judgmental trenches must be approved by the COP Archaeologist, and will be assessed on a case-by-case basis.

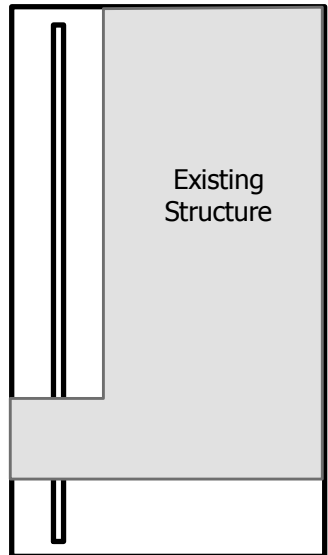
All trenches should be excavated using a backhoe with a 0.75-m (2.5 ft.) wide bucket to a depth no greater than 1.52 m (5 ft.) to conform with Occupational Safety and Health Administration (OSHA) standards. If a depth greater than 1.52 m (5 ft.) is required to investigate cultural resources, provisions such as stepping or shoring should be used to ensure the safety of workers and to comply with OSHA standards.



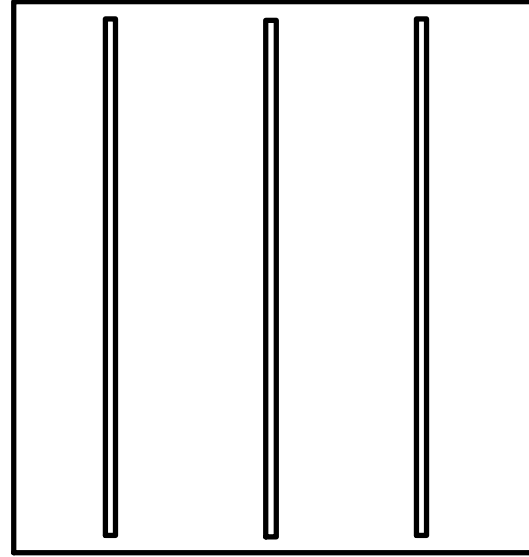
Single Trench



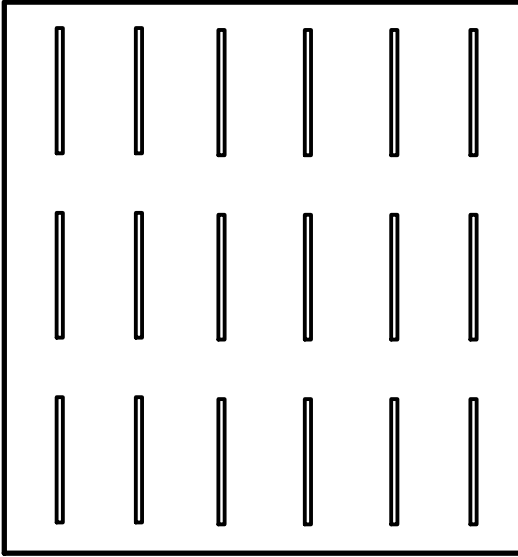
Cross Pattern



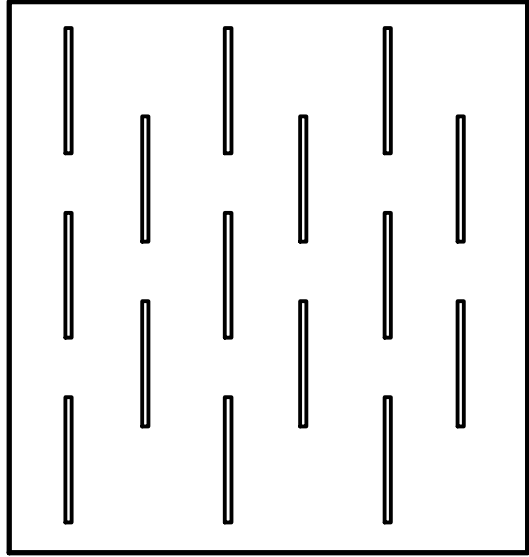
Single Trench Adapted to Existing Structure or Other Obstruction



Parallel Single Row Pattern



Parallel Multiple Row Pattern



Staggered Multiple Row Pattern

Figure 6. Examples of trenching patterns (not to scale).

Once a trench has been excavated, archaeologists will “clean” or “face” the sides and ends of the trench by scraping them with square-nosed shovels and trowels. Brushes and gas-powered blowers may also be used in cleaning the sides of the trenches. These measures will provide an unobstructed view of the trench walls and allow for the identification of subsurface prehistoric and historic features, as well as natural soil stratigraphy. After facing, each trench should be carefully examined by a supervisory archaeologist to determine if cultural deposits are present.

All features identified in excavated backhoe trenches should be assigned a separate feature number and should be illustrated in profile, to scale. Detailed records should be made of each backhoe trench and any identified features. Photographic documentation generally does not work well in the confines of backhoe trenches, but should be used when appropriate conditions allow. If temporally diagnostic ceramics are identified in trench walls, especially within cultural features, they should be noted and collected for analysis.

Mechanical Stripping

Mechanical stripping will be used during phase II investigations where appropriate to remove overburden and expose underlying cultural deposits and features in an expedient manner. Stripping should be conducted to expose features identified in trenches or hand-excavation units. Areas surrounding structures or other features should also be stripped mechanically in order to search for associated features. Stripping may also be used to expose portions of canals, and related irrigation features such as headgates, turn-outs, etc., in plan view.

Stripping will also be used to identify any additional human remains if such remains are found within a site. Additional information regarding stripping and human remains is presented in the *Human Remains* section of this plan.

Backhoe trenching may be used to determine the depth of the overburden across the general area of the site. Once that has been established, a backhoe specially equipped with a toothless, wide bucket can strip away the overburden to the level of cultural deposits. Project archaeologists must monitor the stripping operations at all times. The stripped area should be scraped with a shovel and possibly cleared with a blower to provide an unobstructed view of the exposed surface. Potential features and deposits should be marked with pin flags or by other means, and mapped.

Hand Excavation Units

Hand-excavation units may be used to supplement mechanical excavations in order to investigate subsurface deposits at sites during eligibility testing, phase I, and phase II data recovery. Primarily, they will be used within previously identified surface and subsurface features and artifact concentrations to provide detailed data on the nature and extent of any subsurface deposits that may be present, and to expose features.

The general location of these units within features and artifact concentrations should be outlined in site-specific treatment plans; however, their exact locations will be determined in the field. Units to investigate surface features should be located in areas that appear to have the highest potential for subsurface deposits and the least amount of ground disturbance. In addition, hand-excavation units may be used during data recovery to fully expose selected features found in trenches and stripping blocks. The units may vary in size, and may include 0.50-x-0.50 m, 1-x-1 m, 1-x-2 m, or 2-x-2 m blocks.

It is recommended that hand-excavation units be excavated in arbitrary 10- to 20-centimeter (cm) levels, unless cultural stratigraphy is identified. If cultural stratigraphy is identified, excavation levels should correspond to these strata. All excavated material, with the exception of flotation and pollen samples, should be screened through ¼-in. mesh, and all recovered artifacts should be collected. The artifacts should be provenienced to the appropriate horizontal and vertical contexts, and entered into a specimen log. Soil samples should be collected from selected contexts containing cultural remains for pollen and flotation analysis. Other significant material, including charcoal and macrobotanical remains, may also be collected for analysis.

Excavation of Individual Feature Types

This section outlines the specific strategies for excavating feature types that may be encountered during projects conducted within the COP. All excavated features should be documented with the completion of standardized forms, scaled plan and profile illustrations, and color and black-and-white photographs. For features containing multiple excavated levels, separate forms may be completed to document each level.

Structures

To excavate structures during phase II data recovery, archaeologists will first expose the features in plan view through mechanical stripping. The archaeologists may then excavate a 1-x-1 m unit by hand in the fill of each structure down to the floor. This will serve as a control unit, and provide information on the depth of the cultural fill within the structure, the level and composition of the floor, and stratigraphy within the structure. These units may be excavated in 20-cm levels, and the fill screened through ¼-in. mesh to provide volumetric information concerning the frequencies and types of materials within the fill deposits.

After the excavation of the control unit, structures may be excavated in quarters, halves, or as whole features. The remaining fill in the structures should be removed mechanically or by hand, down to a level of 10 cm above the floor, or to an identifiable roof-fall level. In the absence of other evidence, the 10-cm floor-fill level conceptually serves as the estimated thickness for the accumulation of sediments on the structure occupation surface prior to the collapse of a casually abandoned structure. The floor-fill layer should contain artifact assemblages and botanical remains associated with the use of the structure. The floor-fill should be excavated by hand and screened through ¼-in.

mesh. Cultural materials recovered from this layer should be collected separately from those recovered in contact with the floor. Artifacts on structure floors should be point-provenienced, and the characteristics of the floors (plastered, unplastered, etc.) documented. Floor features may be assigned subfeature numbers and excavated in their entirety. Soil samples should be collected from all levels with significant cultural fill. Charcoal remains, macrobotanical samples, and other items of significance should also be collected as appropriate.

Pits

Pits may include a variety of types, such as informal trash pits, prepared surface pits, roasting pits, thermal pits, and miscellaneous pits. Pits should be excavated as whole features. Soil samples should be collected for flotation and pollen analysis.

Extramural pits found in backhoe trenches should be cross-sectioned, and profile drawings produced. The fill within these features may be excavated in either cultural or arbitrary levels, as appropriate, and a plan map of the excavated feature prepared. Pits found outside of trenches may be dug by first excavating one half of the feature, which will expose the stratigraphy of the fill in profile. The remaining fill may be excavated in cultural or arbitrary levels, and a plan map prepared after excavations are complete. In the case of particularly large pits, a control unit may be excavated rather than the entire feature. All excavated fill, with the exception of materials collected for soil samples, should be screened through ¼-in. mesh.

Miscellaneous Features

Other feature types that may be encountered include extramural structures such as ramadas, trash mounds, and use surfaces. These features, and any feature type not outlined in the previous sections, should be investigated in a systematic fashion that includes plan and profile mapping and excavation through control units or as a whole feature. Excavation techniques should be consistent with those previously described, as should the methods used for feature recording.

Canal Investigation Methods

There is a possibility of identifying canal alignments during cultural resource investigations within sites. Canal investigation methods are also included in Stubing and Turner (2007), and are summarized below. Several methods of investigation may be applied if such features are encountered to provide information on overall canal patterning, as well as operation and maintenance of the individual channels. A qualified geomorphologist should have a prominent role in documenting and analyzing any canal features.

If a canal alignment is found within a systematic trench, judgmental trenching may be conducted in addition to the systematic trenching proposed in the project-specific addendum. Attempts should be made to trace the routes of all identified canals using trenches excavated along the projected path of the canal within site (or project)

boundaries. These judgmental trenches should be perpendicular to the canal alignment, if possible. Additional information to be gained from the multiple canal exposures includes data on the gradient of the canal and associated flow rate, changes in the canal structure along its path, and the possibility of locating canal junctions and structures such as water control dams.

Individual profiles should be drawn of all canal features found. Selected canals may be analyzed by taking soil samples in a vertical column pattern from strata throughout the canal, or from 10-cm intervals in canals with homogeneous fill. The samples may be subjected to flotation, pollen, and particle size analysis, which may yield information on canal use, filling episodes, and chronology. The project geomorphologist should oversee the sampling of canal features.

Any features related to canal use, including headgates, junctions, bunds, and dams, that are located in the project area should be intensively investigated through excavation and sampling similar to that employed for other feature types. As noted previously, mechanical stripping should be utilized to expose portions of canals and canal features in plan view. If suitable contexts are found within canal sediments, radiocarbon, archaeomagnetic, or photoluminescence samples may be collected and analyzed for chronological data. Stratigraphic association may also be used for dating. All canal profiles should be examined for evidence of floods and for evidence that might help date flood episodes.

Sample Selection

Botanical and chronometric samples should be collected as part of testing and data recovery efforts. Most samples will be collected during phase II data recovery; however, if opportunities to collect samples arise during eligibility testing or phase I data recovery, the samples should be taken (particularly with regard to chronometric samples such as charcoal). Individual sample types are discussed below.

Pollen

All attempts should be made to collect pollen samples from contexts of high integrity, such as from beneath floor-contact artifacts, from features that exhibit rapid fill sequences, and from the interiors of vessels. Samples may also be recovered from structure surfaces, pits, and other appropriate locations. Approximately 50 cubic centimeters should be collected for pollen samples. These should be placed in sealed envelopes with taped edges to prevent contamination. The use of paper envelopes and taping may also prevent rupturing and mildew growth.

Flotation and Macrobotanical Samples

Bulk soil samples should be collected from features and other high-integrity contexts for flotation analysis. Ideally, flotation samples should be taken as complementary collections with pollen samples, but may also be collected from areas in which pollen samples have not been taken. The flotation analysis will be used to identify organic

remains that are present within the samples, and will aid in determining what plant types were utilized at sites. The analysis can also help identify feature function. Flotation samples should generally be taken in areas of burning, as charred material tends to preserve well. Samples should be between 2 and 4 liters of sediment, although some features with smaller amounts may also be collected, especially if they appear to contain undisturbed organic remains. Large organic remains should be collected as macrobotanical samples, carefully bagged, and labeled with the appropriate provenience information.

Chronometric Sampling

All suitable radiocarbon, archaeomagnetic, and dendrochronological samples should be recovered during fieldwork. At the completion of the fieldwork, samples from contexts deemed to have the most integrity and data potential should be selected for analysis. Chronometric samples should be submitted to appropriate research facilities for analysis. Chronometric methods, including archaeomagnetic and optically stimulated luminescence (OSL), have been previously used to date canal sediments (Berger et al. 2004; Huntley et al. 1985; Stokes 1999). If appropriate canal contexts are identified, samples for these dating methods should be collected.

Human Remains

Per the COP Guidelines for Archaeology, all human remains and associated funerary objects must be located within an APE / project area and, if possible, disinterred following instructions from the SRPMIC or GRIC (Bostwick 2006:14). If human remains are encountered during the course of any testing or data recovery investigation, all work in the vicinity of the discovery should cease immediately. Pursuant to Arizona state law (A.R.S. § 41-844), and the COP general Burial Agreement (included in Bostwick 2006, and as Appendix D to this plan), the COP Archaeology Office must be contacted immediately if any human remains are discovered. The COP Archaeology Office will then initiate further consultation by contacting ASM and the appropriate Tribe(s) in order to determine the proper course of action with regard to the disposition of the human remains (Bostwick 2006:16). All human remains will be treated with respect and dignity, and in full accordance with the Burial Agreement that currently exists between the COP and ASM. Permission to use the Burial Agreement must be requested from the COP Archaeology Office.

If human remains are encountered during either trenching or stripping operations, stripping must be continued for a distance of 10 m (33 ft.) in all directions from the remains. This is done to search for additional remains, as burials are often interred in groups.

Excavation, removal, and analysis of any human remains will be done in a sensitive and professional manner. Burials and other features that include prehistoric human remains will be excavated by archaeologists trained in human osteology and supervised by a

bioarchaeologist or physical anthropologist. Data recovery will follow standard professional excavation practices according to the protocol outlined in the Burial Agreement. The consulting archaeologist will provide a field manual to all project archaeologists; the manual will include a section on instructions for burial excavation and a copy of the COP Burial Agreement.

All bone discovered during fieldwork will undergo an initial in-field examination. Any bone thought to be human or possibly human will be treated according to the COP Burial Agreement pending further investigation and identification.

In brief, once a potential burial feature is identified, an effort will be made to expose any pit outline or other burial preparation. This will be done prior to excavation of the remains themselves. The fill will then be removed in one or more levels, depending on the presence of burial architecture and the distribution of mortuary objects and human remains. All feature fill will be screened. All *in situ* artifacts above the burial base (e.g., vessels resting on a bench) will be documented and removed by level provenience.

Cremation burials often include vessels containing calcined human bone, small artifacts, and fill. If possible, these vessels will be removed with the fill intact for careful excavation and processing in the laboratory. If the vessel is cracked or otherwise incomplete, and a clear demarcation is visible between cremation fill and surrounding fill, the cremation fill will be bagged and labeled in association with a particular vessel(s). Careful excavation and detailed documentation will be done for all cremation burial features and crematoria.

Other archaeological contexts for human remains may occur. A field supervisor, in conjunction with the bioarchaeologist or physical anthropologist, will determine an appropriate excavation and removal strategy for such deposits. Isolated fragments or pieces of bone that represent or possibly represent human remains will be placed in paper bags and labeled accordingly.

Unburned osseous material needs to be protected from direct sunlight to prevent the rapid drying that can accelerate cracking and exfoliation. Portable shade structures will be used during inhumation excavation and removal. Rapid drying can also be prevented by lightly dampening the surrounding matrix with an application of distilled water from a mist spray bottle. Clean water will be gently applied to bone, as needed. No preservatives or fixatives will be used on any human remains, either in the field or the laboratory.

When working near bone within a feature, excavators will use hand tools consisting of trowels, brushes, wood and bamboo tools and picks, and other fine and easily maneuverable implements. If possible, all *in situ* bone and artifacts will be pedestalled and left in place until the entire feature is exposed. Exceptions to this practice would be in instances of site security concerns, the delicate nature of any exposed burial

contents, or safety issues. Prior to the removal of any burial inclusions (bone or artifact), the feature will be documented as fully as possible. Documentation will include drawing a scaled plan view map (and cross sections after removal), recording vertical elevations, making osteological observations, completing all necessary field forms, and taking thorough notes. Detailed sketches will be made of any remarkable artifacts or osteological conditions. A skeletal inventory form will be filled out at this time, indicating which elements are present and to what extent and condition. Overall stature measurements will be taken using a flexible (cloth or plastic) metric measuring tape.

Upon removal, all human remains and possible human remains will first be wrapped in plain tissue paper, or cotton cloth if additional stabilization is necessary, and then placed in paper bags. Element name, side, and feature provenience information will be written on the bags, which will then be put in labeled cardboard boxes. All efforts will be made to keep the boxes containing human remains and associated artifacts together. Burial assemblages will be taken to a secure laboratory facility as soon as the feature is completely excavated. Respect and security will be accorded the remains at all times.

No photographs will be taken of human remains under any circumstances. Any exposed human remains will be shielded from public viewing by temporary walls, and no unauthorized project personnel will be allowed to view the remains. Uncovered human remains will not be on display during any public tours of the archaeological sites or laboratory facilities.

Laboratory Procedures

Laboratory and collections management procedures should follow standard professional practices and adhere to relevant guidelines, including the *Pueblo Grande Museum Collections Repository Manual for Archaeologists* (Young 2004) and the COP Burial Agreement. All materials from projects conducted under this General Treatment Plan will be curated at PGM. A memorandum of understanding (MOU) between COP, PGM, and the consulting archaeologist, stipulating that PGM will provide repository services must be obtained prior to each project; it is the responsibility of the consulting archaeologist to apply for this MOU from PGM. Additionally, a copy of the COP Archaeology Guidelines (Bostwick 2006), the PGM repository manual (Young 2004), the ASM manual (1993) as amended (Fish 1995), and the ASM repository manual (Griset et al. 2004) will be kept in the laboratory, per COP guidelines.

The combined functions of the laboratory should include:

- providing logistical support for the field, maintaining equipment and supplies;
- assigning blocks of specimen numbers to field crews;

- verifying accuracy of field and specimen information;
- maintaining inventory control of collected materials, including tracking their status and location during all stages of the project;
- overseeing the project database;
- processing artifacts and samples in preparation for analysis, cleaning, packaging, labeling, and data entry;
- coordinating stabilization / conservation treatments for fragile artifacts;
- conducting preliminary analyses / artifact sorts;
- coordinating and facilitating artifact transfers to outside analysts;
- organizing the collections and documentation, and providing secure and appropriate temporary storage; and
- preparing collections for permanent curation.

The laboratory facility should contain a sink, shelves for artifact storage, a secure, locked area for sensitive objects such as human remains, work tables, a computer for data entry, and associated lab supplies and equipment.

Field specimen logs and provenience information recorded on bags will be checked by laboratory personnel. Once the samples or artifacts are checked in at the laboratory and inventoried, they will be organized for analysis. Artifacts sent to subconsultants will be accompanied by a standard *Collections Released Form*, which authorizes the analysis and identifies the specific material delivered and received. At the completion of analysis, all remaining materials will be catalogued for curation following PGM guidelines, and will be submitted to PGM along with relevant documentation.

Human Remains

The stipulations of the COP Burial Agreement will override the routine laboratory processing and handling, accessioning, and curation procedures where they are incompatible or mutually exclusive, as pertaining to any samples or artifacts that are recovered in direct association with human mortuary remains.

Human remains and associated objects from a given burial feature should be transferred to the laboratory as a unit and, to the extent possible, should be kept continuously in direct association throughout all laboratory procedures. Field notes, item checklists, and laboratory skeletal inventory forms should be designed to facilitate

the tracking of all associated burial feature items, including human remains, and to confirm their arrival at the laboratory. Laboratory tasks should include tracking, cleaning, inventory, analysis, and repatriation preparation for human remains and associated funerary items.

Human remains and mortuary-related artifacts and samples will receive the highest security priority at the lab facilities, and must be stored in a secure environment. They should be segregated from the general collections, and to the extent possible, all items from a given burial feature—human remains and artifacts—should be retained as a unit throughout the stages of cleaning, inventorying, and analysis. Special care should be taken to ensure that they are handled minimally, and only by trained personnel who are aware of the sensitivities and the special requirements of the Burial Agreement. Transportation of human remains should be kept to a minimal yet practical degree.

All laboratory staff should be provided with training so as to ensure that any human remains (or tentatively identified human remains) and associated objects are treated, in all aspects of laboratory activity, with the utmost sensitivity, respect, and dignity, and in accordance with the principles, stipulations, conditions, and specific procedures set forth in the COP Burial Agreement.

In order to reduce handling of the human remains, osteological data collection will be conducted in conjunction with the laboratory cleaning and inventory. All analysis should conform to the stipulations of the COP Burial Agreement.

Data collection from human remains must be completely nondestructive. It should consist of recording standard metric and nonmetric observations, and noting unusual or diagnostic characteristics. These data can be used to derive an understanding of past demographics, health status, biological affinity, and cultural-related behaviors, information which can, in turn, contribute to some of the broader research issues of the project. Upon completion of analyses, all human remains and associated funerary objects will be submitted to PGM (unless otherwise requested by the Tribe[s]), where they will be temporarily housed in a secured area until they are repatriated according to Tribal scheduling requirements.

Curation

All project-related materials will be submitted to PGM unless otherwise stated for curation under a project-specific MOU obtained by the consulting archaeologist prior to fieldwork. Materials anticipated to be curated include notes, field maps, photographs, electronic and paper copies of the project report, and artifacts.

Consultation Protocol

As previously noted, this General Treatment Plan is designed to meet the requirements for various types of projects that may occur within the city boundaries or on land

owned or controlled by the COP. The project types that may be covered by this plan are state- or federally funded projects, COP-funded projects, and privately funded projects receiving permits from the COP. The plan may be used as part of compliance with the following:

- the Arizona State Historic Preservation Act (A.R.S. §§ 41-861 through 41-864),
- the Arizona Antiquities Act (A.R.S. §§ 41-841 through 41-847),
- 36 CFR Part 800, the regulations implementing the National Historic Preservation Act (as amended),
- COP Historic Preservation Ordinance, Section 802(A.1), and
- COP 2006 Guidelines for Archaeology.

For federal projects (those that have federal funding, permitting, or other involvement), the General Treatment Plan and the project-specific addendum would be used for Section 106 consultation (36 CFR Part 800, Subpart B). The consultation process would proceed as follows. First, a determination must be made if the project will result in an adverse effect to an eligible property. If it is determined that an adverse effect will result, a MOA between the SHPO and the lead federal agency would be required; the COP Archaeology Office would be an invited signatory to this MOA. The COP Archaeology Office would then review and possibly request revisions to any documents for consultation. After these documents are accepted by the COP Archaeology Office, consultation may then commence, beginning with a meeting with SHPO. After this meeting, the Advisory Council on Historic Preservation (Council) must be consulted to determine their level of involvement; the Council then has 15 days in which to respond. After this 15-day period has passed, SHPO, the Tribes, and other parties are then consulted about the project, and given 30 days in which to respond.

For state-funded projects, the General Treatment Plan and the project-specific addendum would be used for compliance under the Arizona State Historic Preservation Act. The appropriate state agency would initiate consultation with the SHPO to determine the adequacy of the project-specific addendum and the General Treatment Plan for the proposed cultural resource investigations.

City-funded or privately funded projects do not require consultation with the SHPO unless they have some other state or federal involvement. For these types of projects, the project-specific addendum would need to be reviewed and approved by the sponsoring COP department and the COP Archaeologist. There is no required time limit for the duration of the review period for city- or privately funded projects, although the COP Archaeology Office staff generally completes reviews within a 30-day consultation period as well.

Updates and Reports

The consulting archaeologist will provide COP with weekly updates via electronic mail during fieldwork. The updates will be sent to the COP Archaeologist, and to the appropriate person(s) within the sponsoring department(s). The update will include a summary of the field activities, and results of the work. If critical discoveries arise during the fieldwork, including human remains, all ground-disturbing activities will cease in the vicinity of the discovery and the COP Archaeologist will be contacted immediately and allowed time to properly assess the discovery. Quarterly reports will be sent to COP during analyses and report preparation; these reports should give updates on the status of the project, any problems encountered, and any significant findings.

If requested, a preliminary report will be prepared following the completion of fieldwork. The purpose of the preliminary report is to allow construction to proceed in the APE / project area if no significant cultural resources are found, or to allow additional cultural resource work to proceed if warranted by findings. The preliminary report will document the results of the fieldwork and provide recommendations, but will not include detailed analytical results. Preliminary reports may be submitted in letter format. A map showing the work area, excavation units, and features (if any) must accompany the preliminary report. Any preliminary report produced would be in addition to a final technical report; submittal of a preliminary report will not eliminate the need for a comprehensive technical report.

Draft and final technical reports must meet the requirements of the *City of Phoenix Guidelines for Archaeology* (Bostwick 2006) as well as all applicable professional standards such as those issued by SHPO and ASM. Reports should follow the style and formats outlined in the Society for American Archaeology style guide (Society for American Archaeology 2003) and the *Chicago Manual of Style* (University of Chicago 2003).

A draft technical report summarizing the methods used during the investigation, the results of the literature review and fieldwork, analysis of artifacts and collected samples, and a summary of conclusions will be prepared following the completion of fieldwork. The report will incorporate the results of the investigation to address the previously identified research domains and questions. Additionally, the report will use the results of the investigation to provide recommendations regarding further work within the APE / project area. If the investigation results in a recommendation for further work, it may be requested that a plan for such work be included within the technical report; this will be determined by the COP Archaeologist.

After reviewing the draft report, the COP Archaeologist and the appropriate COP departments will issue comments. A final report, incorporating any revisions requested by the COP Archaeologist and appropriate departments will be prepared. At a minimum, technical reports will include:

Report Cover
Title Page
Abstract in COP Format
Acknowledgments
Table of Contents
Introduction
Project Setting
Environmental Overview
Cultural Overview
Previous Research (Site File and Records Search)
Description / Background of Site (if applicable)
Research Domains and Questions
Field Methods
Feature Descriptions
Results of Analyses
Data Interpretation and Discussion
Summary and Recommendations
References

Dissemination of Data

One copy of the draft report summarizing the testing will be sent to the COP Archaeologist, and one copy will be sent to the sponsoring COP department(s), for review. The number of final reports and the reviewing parties will be determined by the COP Archaeologist and the COP department(s), as stipulated in the COP Guidelines (Bostwick 2006). Multiple copies (at least 15 or more) may be required for final reports on significant findings. Schedules for report submittals vary by report type, and are included in the COP Guidelines (Bostwick 2006:25-26).

Public Involvement

The amount and type of public involvement that should be conducted will depend on the size, complexity, and interest factor of the individual project. Small projects of short duration, particularly those that utilize trenching as the sole subsurface exploratory method, should emphasize conducting fieldwork expeditiously and safely, and public involvement is not anticipated to be a component of such projects. Testing and phase I data recovery investigations will typically be within this category of projects. More complex projects involving the excavation of features, such as phase II data recovery investigations, may be more suited to public involvement. The decision to include public involvement will be made by COP, and will be at their direction; all such efforts must be approved by and coordinated through the COP Archaeologist and sponsoring department(s). Federally funded projects would require public involvement per Subpart A-Purposes and Participants § 800.2(6)(d)(1 & 2), and would be determined by the lead federal agency.

Measures for public involvement are varied, and should complement the size of the project. These may include but are not limited to: hosting a website detailing the project; preparing informational brochures or booklets; and conducting site tours. Information-sharing meetings with members of the professional community should also be strongly considered for investigations of significant sites or findings.

Permits

The consulting archaeologist must obtain all necessary permits required for investigations conducted under this General Treatment Plan. If the project is being conducted on COP owned or controlled land and is within the recorded boundaries of a site, or is within the recorded path of a prehistoric or historic canal, then an ASM project-specific permit will be required. A project-specific permit is not required if the project is located within the 250 ft. buffer zone surrounding a site or within the 50 ft. buffer zone surrounding a canal. However, if a site or canal is found during the latter scenario, then an ASM project-specific permit would need to be applied for immediately. Any cultural resource survey conducted for the COP will require a project-specific permit from ASM, which will allow project materials to be curated at PGM.

All project-related materials from investigations conducted under the guidance of this General Treatment Plan must be curated at PGM. A MOU stating that PGM will provide repository services must be issued by PGM prior to the start of the project.

All projects conducted under this plan must adhere to the requirements of the Maricopa County Dust Control Plan (Maricopa County 2008). Depending on the size of the ground disturbance incurred by the project, a Maricopa County Dust Control Permit may be required, and appropriate dust control measures must be taken.

If a project will disturb more than one acre of land, an Arizona Pollutant Discharge Elimination System (AZPDES) or National Pollutant Discharge Elimination System (NPDES) permit will need to be obtained. For all land jurisdictions other than tribal, an AZPDES permit would be issued by the Arizona Department of Environmental Quality (ADEQ); for tribal land a NPDES permit would be issued by the United States Environmental Protection Agency (EPA). To obtain either permit, a Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) must be submitted to the appropriate agency for review and approval. An AZPDES or NPDES permit is not required for projects that disturb less than one acre of land.

Safety Plan

A dedicated Safety Officer should be identified by all organizations conducting fieldwork under this General Treatment Plan, and a safety plan that addresses fieldwork, transportation, and public safety issues should be prepared prior to fieldwork. The

Safety Officer should review OSHA regulations, particularly 29 CFR 1926.650, 29 CFR 1926.651, and 29 CFR 1926.652, which pertain to trench excavation, with all senior archaeology staff members prior to the start of fieldwork. OSHA standards will be followed for all work activities, including trench depths, and Blue Stake should be contacted to identify underground utilities prior to any excavation. One or more senior level field personnel should be designated as the “competent” person as specified by OSHA, responsible for providing safe working conditions in the field, in the interest of employees, the public, and the cultural materials uncovered. First aid equipment should be readily available to all employees in the field, and regional hospitals should be identified in advance of the project.

Where practical, fencing may be erected around cultural resource sites while archaeological work is in progress. Where upright fencing is not practical, individual fence panels may be laid horizontally over open trenches to form a barrier. Lath may also be installed around the perimeter of each site, and connected with yellow caution tape to form a visible barrier to the open excavations while fieldwork is underway. In addition, at the end of each field day, trenches and other open excavations should be marked with barricades to ensure that they are visible. If deemed necessary, a qualified security guard may patrol the accessible portions of the APE / project area during non-work hours when field crews are absent from the sites. In addition, the local police department and county sheriff’s office should be informed of the project prior to fieldwork, and a request made for additional patrolling of the project area.

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Appendix A: Sample Project-Specific Addendum

The project-specific addendum to the general historic properties treatment plan consists of a proposed scope of work in letter format and an accompanying figure that shows the APE / project area, site boundaries (if applicable), and proposed excavations.

The red font denotes the types of information that should be included in the paragraph. These statements are meant as guidelines, and should be omitted from addenda.

The blue font denotes sample project information. It should be replaced with specific project information.

Please note that the term "area of potential effects (APE)" would be used for Federal projects, and the term "project area" would be used for non-Federal projects.

Date

Todd W. Bostwick, Ph.D.
City Archaeologist
City of Phoenix Parks and Recreation Department
Pueblo Grande Museum
4619 East Washington Street
Phoenix, Arizona 85034

RE: On-Call Contract No. [012345](#)
Project Name: [Smith School Expansion](#)
City of Phoenix Cost Center No.: [ST90500200](#)
City of Phoenix Department: [Street Transportation](#)
City of Phoenix Tracking No.: [CB 001](#)
Pueblo Grande Museum Project No.: [2008-00](#)

Dear Dr. Bostwick:

Type of Archaeological Activity, Project Sponsor, Project Location, Land Jurisdiction, Acreage

At the *insert date* request of [Chris Turner-Noteware, City of Phoenix \(COP\) Street Transportation Department \(STD\)](#), [Consultant X](#) is providing the following proposed scope of work for conducting [phase I data recovery within a 0.55-acre parcel of COP-owned land](#). This is an addendum to the *General Historic Properties Treatment Plan for City of Phoenix Projects* (General Treatment Plan) (Montero, Stubing, and Turner 2007), following its guidelines and requirements; it provides a site-specific work plan to address the proposed [archaeological activity](#). This work plan has been prepared following discussions and meetings with Dr. Todd Bostwick [and Chris Turner-Noteware, Project Manager for the COP STD](#).

Project Description, Agencies, Applicable Historic Preservation Regulations, Applicable Permits, Description of Area of Potential Effects or Project Area

The project consists of [the proposed construction of a modular building and associated utilities](#), and will be financed by [the United States Department of Health and Human Services through an Infrastructure Improvement Grant](#). As such, it is considered a federal undertaking as defined by 36 CFR § 800.16 (y), the regulations implementing the National Historic Preservation Act. *(If not federally funded, cite applicable laws & regulations)*. It also follows applicable COP policies and requirements as stated in the General Treatment Plan. A project-specific permit from the Arizona State Museum will be required to complete this project. [A memorandum of understanding was received from the Pueblo Grande Museum \(PGM\)](#), and all project-related materials will be curated at PGM. The area of potential effects (APE) / project area is a rectangular parcel of land that is 140 feet (ft.) x 170 ft. in size.

Applicable Cultural Resources Site Number, Name, Brief Description, Eligibility status, Project Location and Legal Description

According to the Pueblo Grande Museum archaeological database, the APE / project area is situated within the boundaries of AZ T:12:10 (ASM) / Las Colinas, a previously recorded prehistoric Hohokam habitation site that is eligible for inclusion in the Arizona and National Registers of Historic Places (A/NRHP). The APE / project area is located at the southwest corner of Thomas Road and 23rd Avenue, in Phoenix, Maricopa County, Arizona. The legal description for this project is the northeast quarter (1/4) of the northwest 1/4 of Section 36, Township 2 North, Range 2 East, Gila and Salt River Baseline and Meridian (USGS Phoenix [1952/ revised 1982] 7.5' map).

Proposed Scope of Work, Type of Investigation, Sampling Strategy, Trenching or Stripping Plan, Surface Collection Strategy / Reference to General Treatment Plan and any Deviations from General Treatment Plan

To determine if significant cultural resources are present in the APE / project area, Consultant X proposes to conduct archaeological phase I data recovery investigations beginning with a general reconnaissance of the project area to assess surface conditions. Systematic surface artifact collection will not be conducted due to the lack of intact ground surface within the APE; however any diagnostic artifacts found on the surface would be point-provenienced and surface collected. Phase I investigations would consist of the excavation of five parallel 95-foot (ft.) (29-meter [m]) long backhoe trenches as shown on the enclosed plan illustration. Trenches would be placed at the proposed modular building location. This represents fifteen percent of the area of disturbance that will be created by the installation of the building. In addition, one trench measuring approximately 70 ft. (21.3 m) long and oriented east-west and one 40-ft.- (12.2 m) long trench oriented north-south will be excavated in the proposed locations of a sidewalk and a utility line, respectively. As these trenches will be located in the exact locations of the proposed sidewalk and utility line, they will provide 100 percent coverage of these areas. Trenches and any identified features or diagnostic artifacts would be mapped with a Total Station or Global Positioning System Unit. This site-specific scope of work assumes that the fieldwork will be completed in two field days. The General Treatment Plan outlines the research objectives, field methods, laboratory procedures, analyses, administrative and safety protocol, curation, and reporting criteria that would be used for this project.

Potential Results and Next Steps

Should phase I data recovery investigations identify any intact cultural resources, a proposed scope of work for phase II data recovery would be developed and submitted to the COP Archaeologist in letter format; the phase II scope of work would follow the guidelines outlined in the General Treatment Plan. If phase I data recovery excavations do not locate cultural resources, a preliminary letter report will be prepared and submitted to the COP Archaeologist for review and comment. The proposed phase II scope of work or the preliminary letter report will be submitted to the COP Archaeologist and COP STD within two weeks of the completion of fieldwork.

Closing / Contact Information

We look forward to working with you on this project. If you have any questions or comments regarding this proposed scope of work please contact me at (555) 555-5555 or electronically at jsmith@cox.net.

Sincerely,

Name of Consultant

Title

Name of Firm

Enclosure: Figure showing excavation plan

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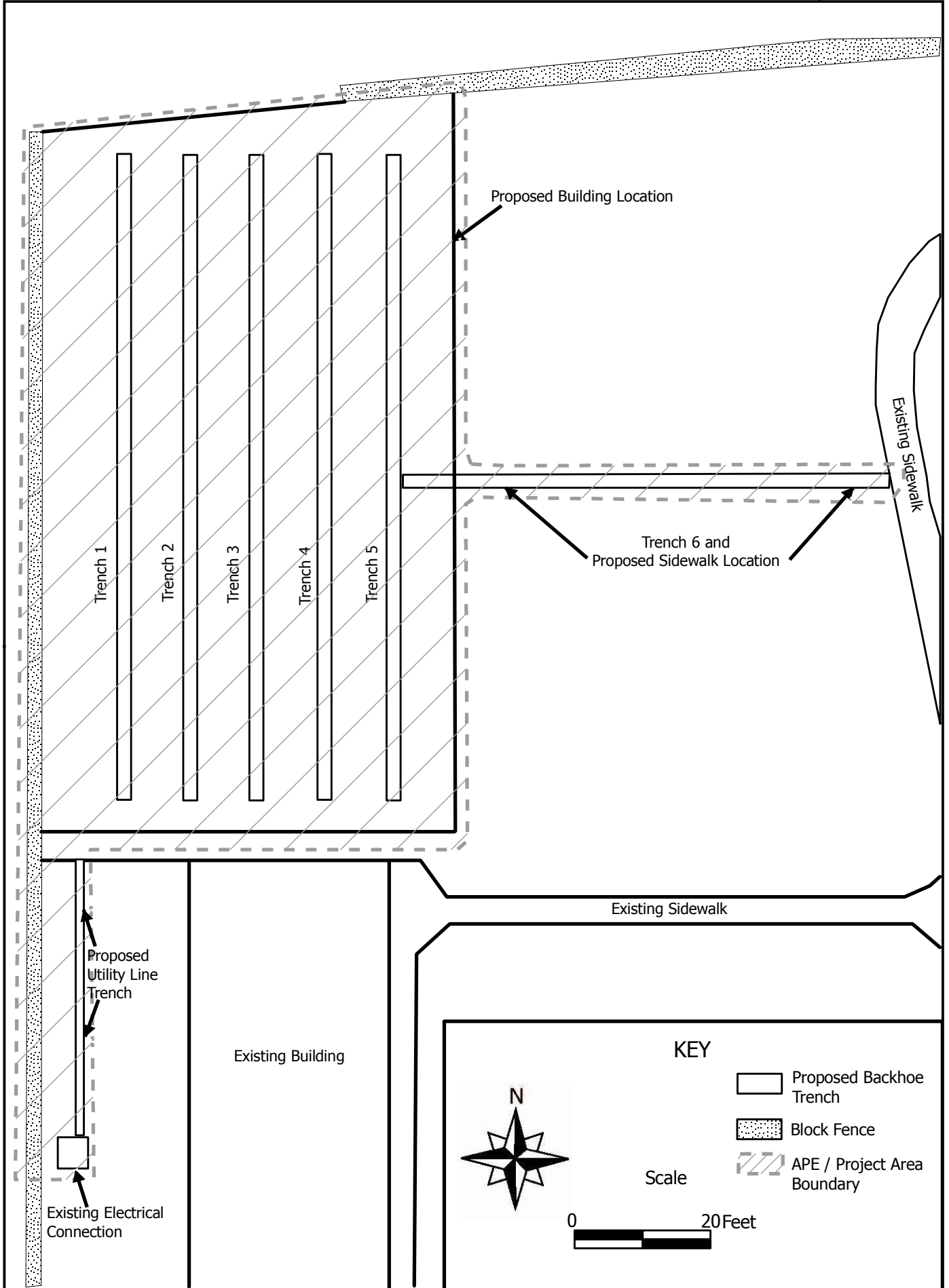


Figure A.1. Example figure showing an APE / project area, existing and proposed buildings, sidewalks, utilities, and proposed backhoe trenches.

Appendix B: Common City of Phoenix Project Types That May Result in Impacts to Cultural Resource Sites

The following is a list of potential projects for which this General Treatment Plan may be used. This list is not comprehensive; rather, it is a sample of the types of projects for which the plan may be applied. Not all COP projects that will require the use of the General Treatment Plan are included in this list, and the plan will pertain to other types of ground-disturbing activities in addition to those listed here.

Street Transportation Department Projects:

- Street Widening
- Street Paving
- New Roadway Alignment
- Traffic Lights
- Traffic Calming Measures (medians, roundabouts, ball bouts, etc.)
- Bus Bays
- Bridges
- Sidewalk Installations / Repair
- Curb and Gutter Work
- Cross Walks
- Landscaping
- Street Lights
- Multi-use Paths
- Potable Waterlines
- Storm Drains
- Catch Basins
- Fire Hydrants
- Outfalls

Aviation Department Projects:

- Street Widening
- Street Paving
- New Roadway Alignment
- Traffic Lights
- Landscaping
- Curbs
- Fencing
- Signage
- Utility Infrastructure
- Technology Infrastructure
- Runway / Taxiway / Apron
 - Paving / Repaving / Widening
 - New Runway Development
 - Lighting and Signage
 - Fencing

- Conduit Installation
- Fuel Hydrants
- Excavation / Fill
- Storm Drains
- Retention Basins
- Culvert / Wells
- Fire Hydrants
- Building Construction-
 - Fencing
 - Physical Built Structures
 - Excavation
 - Demolition
- Blading / Grading Safety Areas

Neighborhood Services Department Projects:

- Shopping Center Construction
- Multiple-Unit Housing Construction
- Infrastructure
- Commercial Construction
- Modular Building Installation
- Park Improvements / Development
- Public Housing Improvement
- Building Demolition
- Parking Lot Installation
- Church Improvement

Water Services Department Projects:

- Water Mains
- Gravity Sewer Mains
- Force Sewage mains
- Wastewater Lift (pump) Stations
- Water Booster Stations
- Water Reservoirs
- Water Treatment Plants
- Wastewater Treatment Plants
- Water Wells
- Water Pressure Reducing Valve Stations
- Reclaimed Water Mains
- Reclaimed Water Pump Stations
- Arsenic Treatment

Appendix C: List of Arizona State Historic Preservation Context Studies

The following is a list of context studies sponsored by SHPO. When appropriate, testing and data recovery investigations conducted within or for the COP should be incorporated within these contexts:

Historic Context Studies

- Homesteading in Arizona
- Commerce in Phoenix, 1870-1942
- Gold and Silver Mining in Arizona, 1848-1945
- The Chinese in Arizona, 1870-1950
- The United States Military in Arizona, 1846-1945
- Transcontinental Railroading in Arizona, 1878-1940
- Historic Trails in Arizona from Coronado to 1940
- Cattle Ranching in Arizona
- Automotive Transportation in Arizona, 1900-1940

Prehistoric and Transitional Context Studies

- Paleoindian and Archaic Sites in Arizona
- Prehistoric Non-Irrigated Agriculture in Arizona
- Prehistoric Rock Art in Arizona
- Making and Using Stone Artifacts: Lithic Sites in Arizona
- Prehistoric Water Utilization and Technology in Arizona
- Prehistoric to Historic Transition Period in Arizona, circa AD 1519 to 1692

Appendix D: City of Phoenix Burial Agreement

City of Phoenix Burial Agreement

BURIAL DISCOVERIES ON CITY OF PHOENIX LANDS FOR PROJECTS CONDUCTED BY THE CITY OF PHOENIX

This agreement is intended to facilitate compliance with A.R.S. §41-844 and A.R.S. §41-865 on projects initiated and conducted by the City of Phoenix, and on property held by the City of Phoenix. The terms of this agreement will be interpreted and implemented in a manner consistent with terms, definitions, and principles provided in A.R.S. §41-844 and 41-865, Rules revised November 20, 1991, and current Guidelines issued by the Coordinator, ASM.

Tribes claiming affinity with native cultural traditions in the City of Phoenix are the Gila River Indian Community (GRIC), the Ak-Chin Indian Community (Ak-Chin), the Salt River Pima-Maricopa Indian Community (SRPMIC), the Tohono O'odham Nation (TON), Zuni Pueblo (Zuni), the Hopi Tribe (Hopi), and the Fort McDowell Mohave-Apache Indian Community (Fort McDowell). These groups will be referred to collectively in this document as the Tribes. The SRPMIC represents these tribes, with the exception of the Apache, in cases north of Baseline Road and the GRIC represents them south of that line. Fort McDowell is responsible for consultations regarding Apache Remains.

I. DISCOVERY OF REMAINS

A. Projects Expected to Discover Remains

1. The Coordinator, ASM; the Tribes; and the City of Phoenix agree that when the City of Phoenix plans archaeological or other undertakings believed likely to discover Remains, the Coordinator will be notified.

The Coordinator will consult the SRPMIC or GRIC, Fort McDowell, and the City of Phoenix to assess whether a project-specific agreement is needed, or whether work should proceed under the terms of this general agreement. Fort McDowell will determine whether the project area is known to them as one likely to contain Remains associated with the Apache cultural tradition. If the Coordinator considers this likely, further consultation will include Fort McDowell.

2. If it is decided that a project will be administered under this agreement, the City of Phoenix will notify the Coordinator prior to initiating fieldwork (in individual phases, if appropriate), and will notify the Coordinator that the agreement has been activated by an initial discovery. After that initial discovery, individual burials will not require notice to the Coordinator. Instead, a letter indicating total numbers of burials and confirming compliance with the terms of the agreement will be submitted to the Coordinator within 30 days of completing compliance

with the terms of the agreement (normally, the time at which remains are repatriated to the appropriate tribe).

The coordinator will be notified and will initiate consultation regarding individual cases in which cultural association is uncertain or is known to be of a tradition not claimed by the Tribes.

B. Unexpected Discoveries

The coordinator, ASM; the Tribes; and the City of Phoenix agree that the following provisions and procedures will apply in any case of inadvertent and unexpected discovery of Remains as a consequence of a City of Phoenix undertaking or on City of Phoenix property:

1. When remains or objects that may be subject to A.R.S. §41-844 or 41-865 are discovered, the City of Phoenix is authorized to undertake limited additional excavation and examination to assess whether the materials are within the protected classes of remains and objects, prior to notification of the Coordinator and claimants.
2. If the City of Phoenix and its contractors are unable to determine whether materials are Remains protected under the statutes, the Coordinator will be notified and will make this determination, with the assistance of specialists as needed.
3. The City of Phoenix will notify the Coordinator (if not already consulted) and the SRPMIC or GRIC of the discovery within 24 hours of confirmation that the discovery falls within the protected classes. If the Remains are of Apache origin, or are not clearly identifiable as belonging to a cultural tradition other than Apache, Fort McDowell will also be notified by the City of Phoenix.
4. If it is determined that the Remains represent a cultural tradition not claimed by the SRPMIC or GRIC or Fort McDowell, the Coordinator will undertake notification and consultation of appropriate parties.
5. If efforts to contact the SRPMIC or GRIC, Fort McDowell, and the Coordinator are unsuccessful, and Remains are endangered by human or natural action, the City of Phoenix is authorized to proceed with removal of the Remains to a local laboratory for their protection. Written notice of this action must be provided to the SRPMIC or GRIC, and to Fort McDowell when there is reason to believe that the remains may be Apache in origin, and to the Coordinator within 3 days of removal.

II. TREATMENT AND DISPOSITION OF REMAINS

The following provisions for the treatment and disposition of Remains reference the SRPMIC or GRIC. However, when Remains are of Apache origin "Fort McDowell" will be substituted for "SRPMIC or GRIC" in all provisions below.

Unless otherwise agreed between the City of Phoenix, the Tribes, and the ASM Coordinator, the treatment and disposition of Human Remains shall be as follows:

1. All discovered Remains shall be treated with respect and dignity in order to avoid any unnecessary disturbance of Remains, separation of Human Remains from their Associated Funerary Objects, or physical modification of Human Remains.
2. Whenever possible, Remains will be protected in place. The SRPMIC or GRIC will be consulted regarding whether the security of the location is adequate.
3. If avoidance and protection of Remains is not possible, removal will proceed according to the following provisions:
 - a. Representatives of the SRPMIC or GRIC shall have the opportunity to be present during the excavation of the Remains. The City of Phoenix will provide to the SRPMIC or GRIC an opportunity to examine the Remains prior to removal and to conduct traditional activities, if this is feasible without delay that would endanger those Remains.
 - b. Remains will be excavated in accordance with the provisions and standards of the Arizona Antiquities Act and implementing Rules, and of Guidelines current at the time of the discovery.
 - c. Remains and associated objects may be transported to an archaeological laboratory within the Phoenix metropolitan area (including incorporated cities adjacent to Phoenix) for archaeological inventory and description. Under no circumstance will Remains or associated Objects be taken out of the State of Arizona. Transport of Remains will be minimized.
 - d. No destructive analysis of Human Remains shall be permitted except with written authorization of all claimant Tribes, with a copy of their authorizations to the Coordinator.
 - e. **Photographs of human remains may not be taken** under any circumstances. Photographs of burial locations and of Associated Objects can be taken and can be used in publications with permission so long as no human remains are visible in the photograph. However, SRPMIC and GRIC

-
- prefer that sketches of Associated Objects be used instead of photographs. No human remains may be used in public displays.
4. Representatives of the claimant Tribes shall be afforded the opportunity to review all artifact collections and records resulting from activities of the City of Phoenix and their contractors in order to identify funerary or Sacred Objects. If such objects are identified, the Coordinator will be notified by the Tribes and consultation regarding their treatment and disposition will be initiated.
 5. Copies of all publications arising from archaeological activities in the project area shall be provided to the Coordinator, ASM, and to the Tribes by the City of Phoenix. An inventory of all Remains repatriated shall be submitted to the Coordinator within 30 days of repatriation.
 6. The location of the discovery of Remains that are to be protected in place will be protected to the extent allowed by law, and will not be included in any public or professional publications having an unrestricted distribution.
 7. All Tribes reserve the right to participate in further planning and implementation of activities, including reburial, under this agreement, after notice to the SRPMIC or GRIC, or Fort McDowell when the Remains may be Apache in origin.
 8. The City of Phoenix will turn over to the SRPMIC or GRIC all Remains of relevant cultural affiliation that are removed from the project area. Remains may be temporarily inventoried and stored in local archaeological laboratory facilities, but will be made available to the SRPMIC or GRIC for repatriation within a specified period after completion of fieldwork, to be negotiated between the SRPMIC or GRIC and the City of Phoenix in each case.
 9. An inventory and report of Remains encountered and their disposition (including inventory of remains and associate objects and maps and photographs, as specified in the Rules implementing A.R.S. §41-844 and 41-865) will be submitted to the Coordinator and to the Tribes by the City of Phoenix.

III. DISPUTE RESOLUTION

All disputes shall be resolved in accordance with ARS §41-844 and 41-865 and the procedures set forth in the Rules implementing that statute and Guidelines current at the time of the dispute. Such disputes shall not interfere with or delay ongoing archaeological or construction work in the project area. If the nature of

the dispute does not involve issues of cultural affiliation, the dispute will not delay repatriation of Remains.