ST. LOUIS DISTRICT CULTURAL RESOURCE MANAGEMENT REPORT NUMBER 10

Cultural Resource Survey and Assessment of Proposed Valley Park Levee Alignment and Borrow Areas, St. Louis County, Missouri

Contract No. DACW43-83-M-2957

by
Kurt R. Moore and Jerry J. Moore
Principal Investigator, Kurt R. Moore
American Resources Group, LTD
Carbondale, Illinois

US Army Corps of Engineers
St. Louis District

FEBRUARY 1984

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER	2. GOVT ACCESSION NO. / 3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle): CULTURAL RESOURCE SURVEY AND ASSESSMENT OF PROPOSED VALLEY PARK LEVEE ALIGNMENT AND BORROW AREAS, ST. LOUIS COUNTY, MISSOURI	TYPE OF REPORT & PERIOD COVERED: Final
	6. PERFORMING ORG. REPORT NUMBER: SLD CRM Report 10
7. AUTHOR(s): Kurt R. Moore and Jerry J. Moore	8. CONTRACT OR GRANT NUMBER(s): DACW43-83-M-2957
9. PERFORMING ORGANIZATION NAME AND ADDRESS: American Resources Group, LTD. 127 N. Washington Carbondale, IL 62901	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS: U.S. ARMY ENGINEER DISTRICT, ST. LOUIS 1222 SPRUCE STREET ST. LOUIS, MISSOURI 63103-2833	12. REPORT DATE: February 1984
	13. NUMBER OF PAGES: 87
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report): unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

An archaeological and historical survey of 80 acres of proposed levee and borrow pit tracts was performed in Valley Park, Missouri. The shovel probe/pedestrian survey produced one previously unrecorded prehistoric archaeological site (23SL472) and two prehistoric isolated finds, one associated with a single historic Euro-American artifact. One previously recorded site (23SL230) was revisited and produced both prehistoric and nistoric Euro-American artifacts. Cultural/temporal affiliations could not be

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Block 20:

determined for the prehistoric components at 23SL230 and 23SL472. Cultural resources management recommendations advise limited subsurface testing of site 23SL230. While it appears that this site has suffered previous adverse impact because of nearby construction, emphasis is placed on ascertaining whether or not intact subsurface deposits exist.

FINAL REPORT

St. Louis District
Cultural Resource Management Report Number 10
DACW43-83-M-22957

Cultural Resources Survey and Assessment of Proposed Valley Park Levee Alignment and Borrow Areas St. Louis County, Missouri

by
Kurt R. Moore
and
Jerry J. Moore

Kurt R. Moore
Principal Investigator
American Resources Group, Ltd.
Carbondale, Illinois

February 1984

ABSTRACT

An archaeological and historical survey of 80 acres of proposed levee and borrow pit tracts was performed in Valley Park, Missouri. The shovel probe/pedestrian survey produced one previously unrecorded prehistoric archaeological site (23SL472) and two prehistoric isolated finds, one associated with a single historic Euro-American artifact. One previously recorded site (23SL230) was revisited and produced both prehistoric and historic Euro-American artifacts. Cultural/temporal affiliations could not be determined for the prehistoric components at 23SL230 and 23SL472.

Historical research produced a sketch of Valley Park's history with particular emphasis on the survey tracts. While most of the survey area never has been developed commercially or residentially, the foundations of the former St. Louis Plate Glass Company, a regionally important industrial business from 1902-1916, covers 20 acres adjacent to the survey area. Other topics of local historical interest discussed include the former Daugherty Ferry site, west of Valley Park, and extant architectural structures associated with the building of the St. Louis and San Francisco Railroad.

Cultural resources management recommendations advise limited subsurface testing of site 23SL230. While it appears that this site has suffered previous adverse impact because of nearby construction, emphasis is placed on ascertaining whether or not intact subsurface deposits exist.

(American Resources Group, Ltd.,
Cultural Resources Management
Report #74)

ACKNOWLEDGMENTS

The 1983 field survey of the proposed Valley Park levee and borrow pit alignments was supported by the U. S. Army, Corps of Engineers, St. Louis District, Missouri, under contract #DACW43-83-M-2957. American Resources Group, Ltd., wishes to acknowledge with thanks the assistance of Mr. Terry Norris, District Archaeologist, during the course of this project. Dr. Joseph M. Nixon, University of Missouri-St. Louis, allowed the authors access to background literature and site information from previous and on-going cultural resources management projects in the area; his efforts are appreciated greatly. Thanks are extended to the many people of Valley Park (municipal employees, landowners, and businessmen) who provided information and access permission which allowed us to conduct our field work.

Other people who contributed to this effort include Mr. Eric van Hartesveldt of the Archaeological Survey of Missouri for participating in the records search and assignment of site numbers; Mr. Michael S. Welchman of the Missouri Department of Natural Resources for reviewing the draft report; and Mr. Michael J. McNerney, President, American Resources Group, Ltd., for input throughout the project. The authors also wish to thank Ms. Sarah K. McNerney and Ms. Barbara J. Rester for preparation of maps and illustrations.

Kurt R. Moore
Principal Investigator

Table of Contents

List of Figures

List of Maps

List of Tables

INTRODUCTION

Project Description

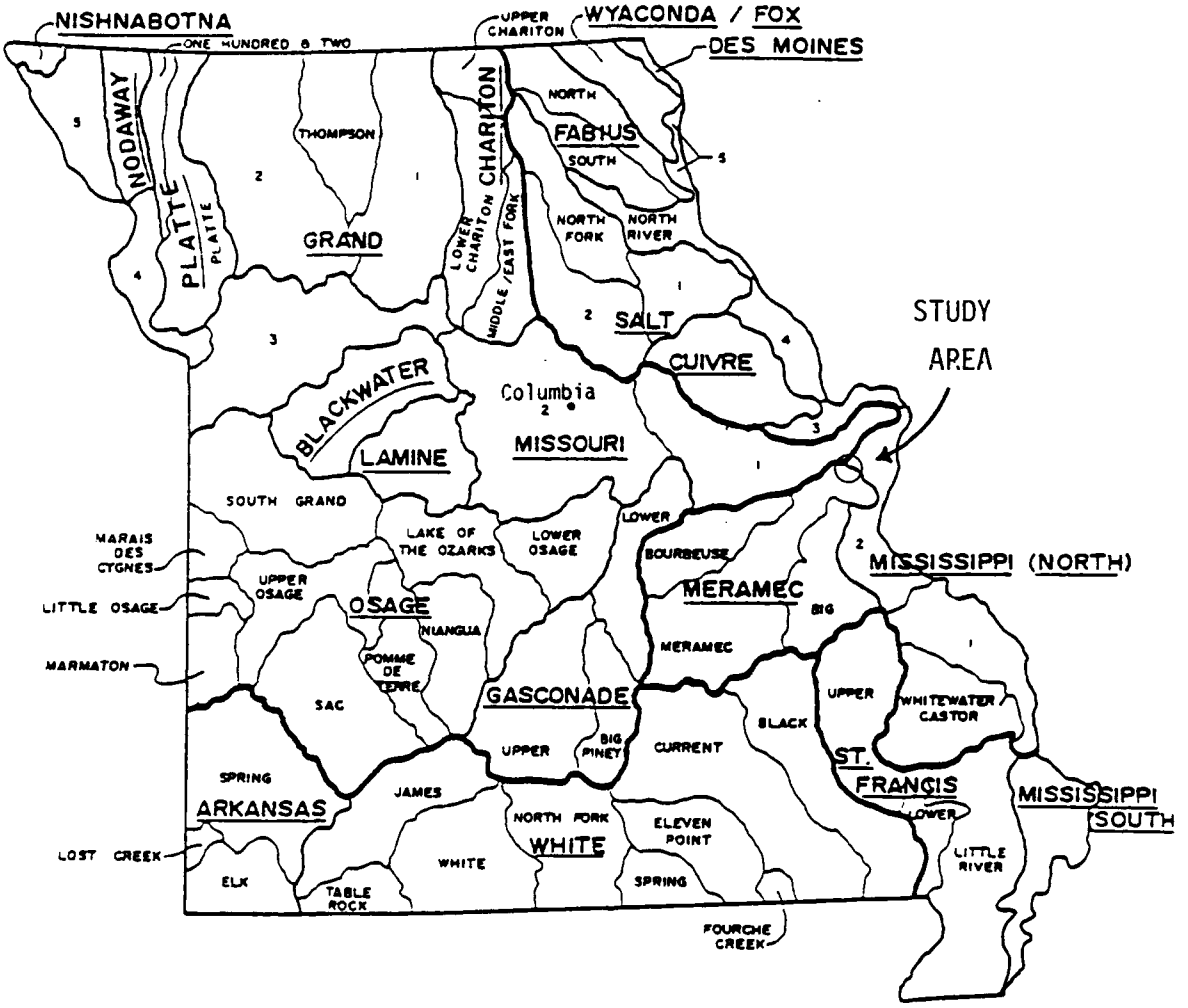
The following report presents results of a Phase I archaeological and historical survey of selected portions of the Valley Park Levee Alignment, St. Louis County, Missouri. These investigations were conducted for the U. S. Army, Corps of Engineers, St. Louis District, prior to proposed levee and borrow construction in the project area. The survey area encompasses 80 acres of selected levee and borrow areas within the corporate limits of Valley Park, Missouri, which is a portion of the Meramec drainage basin of the Missouri Watershed Management Plan (Map 1).

Justification

The location and assessment of archaeological resources are now required for any undertakings which require federal permits or licenses by authority of Public Law 93-291, sections 3 and 4, Archaeological and Historical Conservation Act, 1974. This recent expanded legislation is a continuation of earlier cultural resources statutes and regulations such as the National Historic Preservation Act of 1966 and Executive Order 11593.

Objectives

General project requirements consisted of a literature review summarizing known prehistoric and historic cultural resources within the



MAP 1

Project Location within
Missouri Watershed Management Plan

(Missouri State Historic Preservation Office)

project area, intensive pedestrian and shovel testing survey of designated land parcels, and preparation of a report of findings to the U. S. Army, Corps of Engineers, St. Louis District. As part of the literature review and incorporated into the report of findings is a brief history of Valley Park with emphasis on the immediate project area.

Field work was conducted during the period August 10-12, 1983. Principal investigator and supervising archaeologist was Kurt R. Moore; Jerry J. Moore was the field crew member and historical researcher. The Scope of Work is presented as Appendix A to this report.

ENVIRONMENTAL OVERVIEW

The variety and abundance of natural resources available for exploitation combined with topographic and hydrographic variables of an area are key factors in the human decision-making processes regarding how an area will be utilized. Coe and Flannery (1964:650) note that "primitive peoples rarely adapt to a whole environment zone" but rather exploit resources that may be found in several types of environments or microenvironments. Such resource utilization includes not only food procurement and processing but also includes plant, animal, and mineral resources for a variety of activities (i.e., tool production, ceremonial use, and shelter construction).

General Physiography

Physiographically, the study area is situated at the extreme northeast portion of the Ozark Plateau (Brown and Kerr 1979; cf. Chapman 1975:2-3). It occupies a bottomland microenvironment drained by Grand Glaize and Fishpot creeks, both southerly flowing tributaries of the Meramec River. Topographically, the immediate project area is very flat with elevations generally ranging between 410 ft and 420 ft. Extreme ranges in elevation are represented by the water's edge (396 ft) at Fishpot Creek and along part of a broad terrace (440.5 ft) in the extreme northwest portion of the project area. Most of the topographic relief is caused by dissection of former stream terraces, ephemeral drainages, and alluvial terrace formation in areas of higher elevation.

Most of the project area is prone to flooding, including severe floods such as those of August 1915, December1982, and May 1983. Watermarks from the most recent floods were witnessed by the field crew during the survey. A detailed flood history of the area is presented in the Environmental Statement prepared by the St. Louis District, Corps of Engineers (Ryckman et al. 1973) for the nearby Meramec Park Lake. The frequency (up to four or more floods per year) and severity of floods in the area may have been the major deterent to prehistoric settlement within the immediate project area.

Geology and Soils

The regional geologic structure consists of near-parallel sedimentary strata sloping 1° - 2° to the northeast (Brandt and Sieb 1979:8). Mississippian age formations of the Meramecian and Osagean series are the predominant surficial bedrock within this portion of the Meramec valley (Anderson 1979). Chert-bearing strata include the St. Louis, Salem, Burlington, Keokuk, Fern Glen, and Kimmswick limestones.

Burlington cherts, particularly those derived from the Crescent Hills locale (southwest of the study area), were the most important of prehistoric lithic resources in the region (see Ives 1975 for an overview of the Crescent Quarries). Chert from this area, often referred to as Crescent chert (cf. Struever 1973:64), was utilized extensively throughout the middle Mississippi drainage and is of great importance in regional trade and technological considerations (Chapman and Evans 1972; Fowke 1928). Burlington chert was observed in all the collections made by the field crew.

Pleistocene and Holocene deposits make up the overburden in the

project area. These deposits consist primarily of deep alluvial gravels overlain by alluvial silts and clays on the surface and colluvial deposits at slope bases on terraces. Aeolian loess deposits and colluvial deposits of loess and residuum are reported for the higher elevations near the project area within the Meramec valley (Brandt and Sieb 1979:10-11; Nixon et al. 1982:10-11). The alluvial deposits are the most predominant and extend to depths of 80 ft (25 m) in the Meramec valley (Ryckman et al. 1979:29). Former gravel operations conducted near the east end of the project area have revealed extensive deposits of gravel containing residual and redeposited Burlington chert.

The alluvial deposits are capped by Holocene soils. Although all soil types recorded for St. Louis County (Soil Conservation Service [SCS] 1976) are present within the lower Meramec valley (cf. Brandt and Sieb 1979:12), the immediate project area has a more restricted range of soil types. Fishpot-Urban land association soils occur in bottomland areas that have experienced considerable impact due to land development, such as the southeast part of the project area where site 23SL230 is located. Fishpot-Urban soils are the predominant soil type, covering over 75% of the study area (SCS 1982:Sheet 11). The other soils in and around the study area were formed under forest conditions and consist of poorly drained silt and clay loams: Blake-Haynie-Waldron, Belknap-Nodaway-Cedargap, and Ashton associations. The cherty Gasconde-Clarksville-Menfro soils are just west of the project area on both banks of the Meramec River (cf. Nixon et al. 1982:12).

Flora and Fauna

Flora and fauna in the project area are typical of floodplain

riverine ecosystems. Regionally, the area is dominated by the oak-hickory (Quercus-Carya) forests characteristic of the Missouri Ozarks. In addition, Geier (1975:5-19) has delineated five microenvironmental regimes throughout the region, including sugar maple-bitternut hickory seres in the floodplain. Although Nixon et al. (1982:8) define the lower Meramec area as an ecotone, perhaps Collier's (1953) position, denoting the area as the Northern Ozark Border region, is more appropriate. Bureau of Land Management studies (e.g., Brown and Kerr 1979) place the entire Meramec drainage within the Ozark Plateau physiographic zone. Further, ecotones are defined on the basis of species competition between distinct vegetative regimes (cf. Odum 1959). Evidence for such competition is absent in both soils (cf. SCS 1976) and and floral data (cf. Küchler 1975). Both studies indicate past and present predominance of forest regimes, and Schroeder's (1981) demarcation of presettlement prairie in Missouri indicates no prairie in the area. However, bluestem prairie areas (Andropogen-Panicum-Sorghastrum) do occur to the north (Schroeder 1981) in what Chapman (1975:3) terms as Missouri's "Northeast Prairie Region."

The bottomland forest environment hosts various game and other faunal resources in addition to edible floral resources. Acorns (Quercus spp.) and hickory nuts (Carya spp.) would have constituted the primary plant food, while white-tailed deer (Odocoileus virginianus) would have provided a major portion of edible game. Other edible and potentially usable plant resources common to floodplain environments in the middle Mississippi drainage include varieties of grapes (Vitus spp.), maple (Acer spp.), persimmon (Diospyros virginiana), Chenopodium spp., and berries (Sambucus spp., Celtis occidentalis). Important

faunal resources would have been squirrel (Clurus spp.), beaver (Castor canadensis), rabbit (Sylvilagus floridanus), and both migratory and local avian fauna (e.g., Anas spp., Meleagris gallopavo). In addition, aquatic resources from the river, streams, swamps, and backwater lakes in the region would have provided a diversity of other plants and animals for exploitation (cf. Steyermark 1963; Zawacki and Hausfater 1969). Detailed discussions of plant and animal communities in the lower Meramec have been compiled in the appendices of the draft environmental report for the nearby Meramec Park Lake (Ryckman et al. 1973).

Climatology

The contemporary climate of the study area is continental and characterized by warm, humid summers and variable winter weather, including both rain and snow. The climatic pattern is influenced by warm, moist tropical air masses from the Gulf of Mexico from late spring through summer and drier, cold continental arctic air during the winter. Mean annual precipitation is 35.89 in but ranges between 20.59 in and 68.83 in (Nixon et al. 1982:14). Temperatures range from extremes of -11°F in January to 106°F in July/August (Brandt and Sieb 1979:17). During the field survey, temperatures of 103°F were encountered. April 15 is the mean date of the last spring freeze and October 20 the mean for the first frost (Ryckman et al. 1979:17).

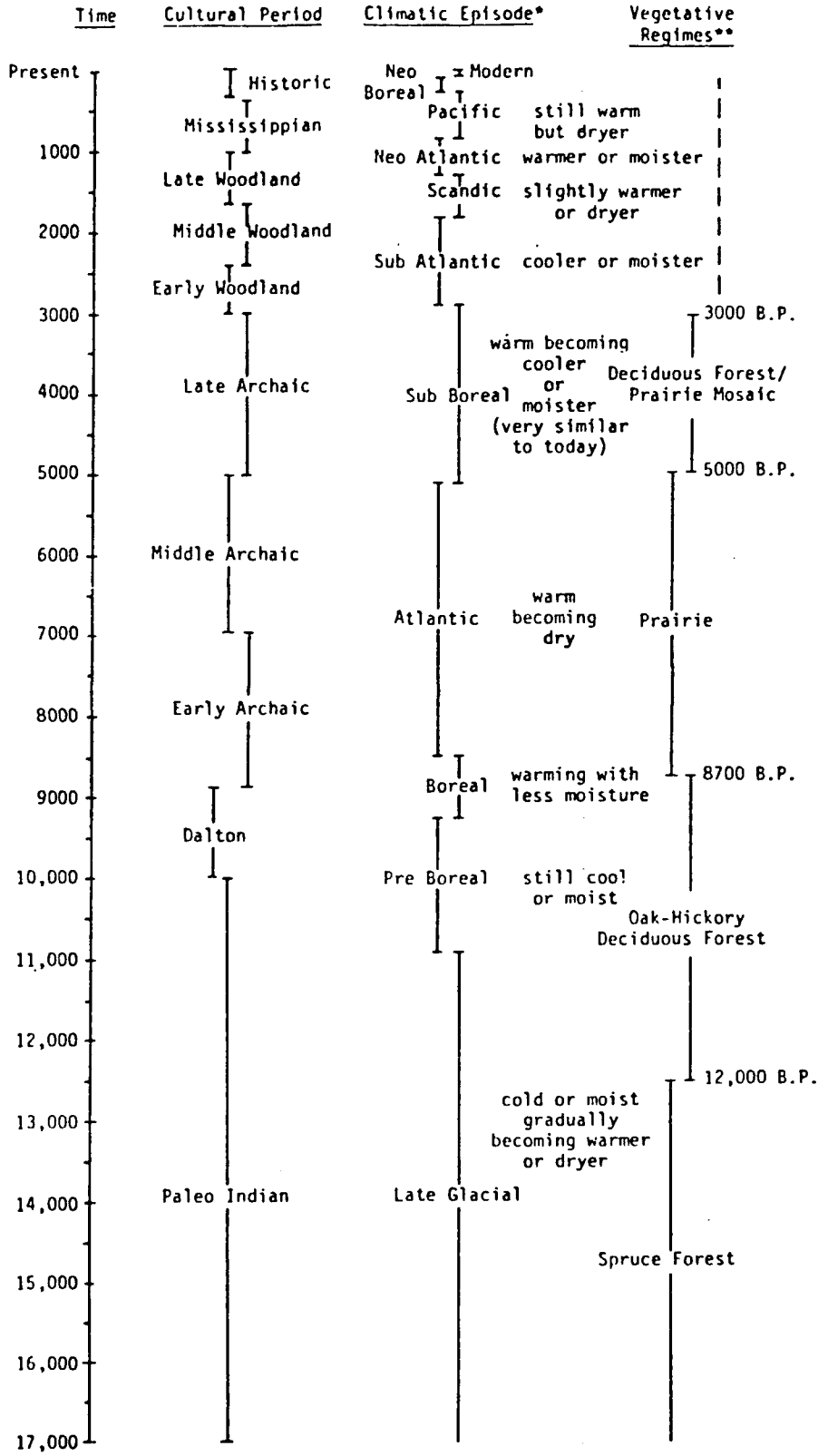
Paleoclimatic studies in recent years (Bryson et al. 1970; Wendland 1978) have indicated variability and sometimes dramatic shifts in the climatic pattern during the past 12,000 years in mid-continental North America. Climatic shifts affect both vegetative regimes (Wood 1976)

and, in consequence, have effects on aboriginal subsistence practices (King and Graham 1981; Wood and McMillan 1976). Figure 1 is a schematic chart of paleoclimatic periods and vegetative regimes in relation to archaeological cultural periods.

In brief, the data suggest a gradual warming period after the close of the last Wisconsinan glaciation, approximately 12,000 B.P. to about 9000 B.P. This climatic warming resulted in a succession of vegetative regimes. Late glacial spruce forests had disappeared from the Ozarks ca. 12,000 B.P. (King 1973), being replaced by oak-hickory deciduous forests which persisted until ca. 9000-8700 B.P. (King and Allen 1977:321).

Between nine and five thousand years ago, a warm, dry period called the Hypsithermal prevailed, during which prairie vegetation expanded across *Missouri and Illinois, creating the Prairie Peninsula* (Buchner 1980; Wright 1976). Evidence from Old Field, southeastern Missouri (King and Allen 1977), indicates drought conditions were reached by 8700 B.P., resulting in prairie species encroaching on the mesic deciduous forest and marking the beginning of the Hypsithermal (King 1981:59). This period of reduced effective precipitation persisted until ca. 5000 B.P. in Missouri, when increased moisture spurred the renewed development of deciduous forest coverage (King and Allen 1977:320-321). However, the return of moister conditions did not spur the disappearance of the prairie; it only reduced its margins, with interior grasslands remaining essentially unchanged. In forest/prairie border regions, the effect of the late Holocene increases in precipitation resulted only in the rearrangement of the forest/prairie mosaic rather than a succession from forest to prairie vegetative regimes.

Figure 1. Cultural and Environmental Sequences of Missouri



*After Wendland, 1978
**After King (1981), King and Allen (1977), King and Lindsay (1976)

ARCHAEOLOGICAL CONTEXT AND PREVIOUS RESEARCH

The subject of Missouri and midwestern archaeology has been the object of study by both amateur and professional archaeologists since the nineteenth century. Brandt and Sieb (1979:18) note that interest in the archaeology of the lower Meramec River basin first appeared in 1818 when William L. Long investigated cists (limestone box graves) on his farm in Fenton, Missouri. In the next year, the scientific expedition of Major Stephen H. Long mapped mound sites in St. Louis and also stopped at the Fenton, Missouri, sites (James 1972, cited in Brandt and Sieb 1979:18). David Bushnell, Jr., who coordinated investigations at Cahokia Mounds for the Smithsonian Institution (Bushnell 1922a), also conducted additional investigations in the Meramec drainage, recording additional limestone box graves (Bushnell 1914, 1922b). Additional survey and excavation work in the Meramec basin was performed in northeastern Jefferson County from 1938 to 1940 (Adams 1941; Adams and Magre 1939).

Archaeological salvage and cultural resources management studies have contributed significantly to knowledge of the prehistory of the Meramec basin. Such studies conducted near the present survey area included studies by Washington University in St. Louis and Jefferson counties (Browman 1976, 1977; Browman and Reidhead 1977; Browman et al. 1977; Diaz-Granados 1979), University of Missouri-Columbia (Reagan 1975), University of Missouri-St. Louis (Diaz-Granados 1981; Diaz-

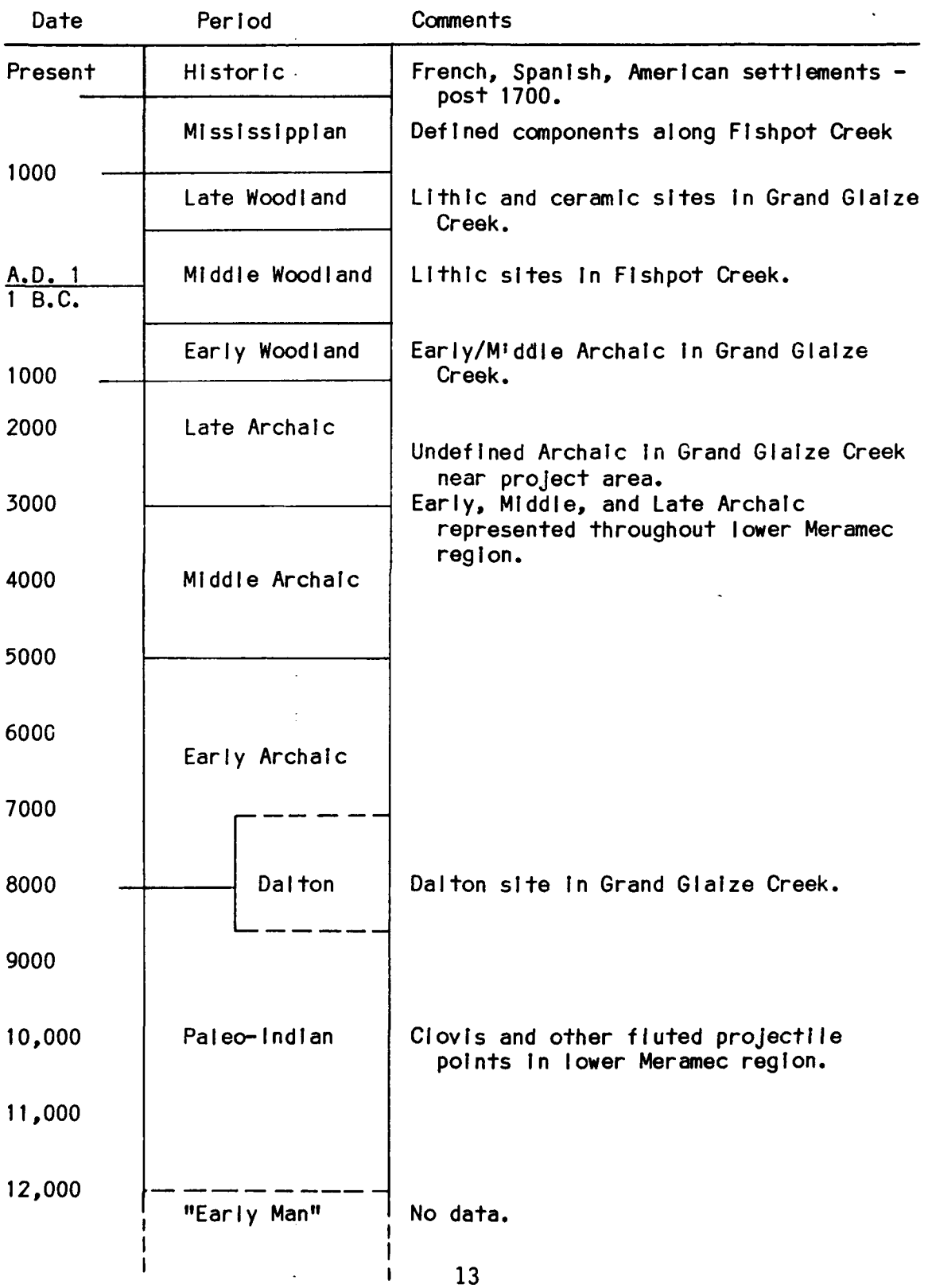
Granados et al. 1981; Nixon and Hamilton 1982; Nixon et al. 1982), and Southern Illinois University-Edwardsville (Brandt and Sieb 1979). Such studies range in scope from site specific testing and excavation (e.g., DeBarthe 1977; Nixon and Hamilton 1982) to regional surveys (Brandt and Sieb 1979) and overviews (Benchley 1975).

The result of extensive investigations in Missouri and elsewhere has been the development of a broad cultural/historical classificatory scheme with which to organize and describe the prehistory of the mid-western and eastern United States. The cultural periods, beginning with man's arrival in the New World, are: Paleo-Indian, Dalton, Early Archaic, Middle Archaic, Late Archaic, Early Woodland, Middle Woodland, Late Woodland, and Mississippian (Figure 2). These periods are established on the basis of cultural traits identified through archaeological research and are not to be confused with the historic tribal groups which were encountered by the first Europeans to arrive in the New World.

This long sequence of human interaction with the natural and social environment can be characterized by an increase in cultural complexity, beginning with small egalitarian hunting and hunting/foraging societies culminating many years (and cultures) later with socially stratified, agriculturally based societies. Prehistoric subsistence practices in eastern North America have traditionally revolved around the collection of native plant foods as an adjunct to hunting and fishing for making a living. "The archaeological and ethnological data indicate that the Indians had developed rather close ecological interrelationships with many plant species before the time of European contact" (Yarnell 1976:265). Many of these commonly exploited plant species that are

Figure 2

Cultural Sequence in the Lower Meramec Valley
(after Chapman 1975:231, 1980:26)



extant today are simply referred to as weeds. Of these, only sunflower, sumpweed, and chenopodium were ever domesticated. Plant husbandry is believed to have been initiated in the second or third millennium B.C. With later additions of the highly nutritional triumvirate of first squash, then corn, and finally beans from Mexico, an increased reliance on horticultural produce ensued.

The sociological effects of adopting an agriculturally based economy heralded some important changes for groups who became proficient farmers. Such changes included increased population densities and, eventually, urbanization (Yarnell 1976). Cultural manifestations of these events occurred twice in the middle and upper Mississippi River valley (i.e., during the Middle Woodland period [400 B.C. - A.D. 400]) with the Hopewell culture and again 500 years later with the Mississippian culture. Except for a few remnants of the Mississippians, both cultures had vanished before European contact.

Paleo-Indian Period (ca. 15,000-8000 B.C.)

The Paleo-Indian period is best known from the western United States where numerous archaeological sites have produced cultural material in association with a late Pleistocene fauna. These are the well-known Clovis and Folsom cultures associated with extinct mammoth and bison, respectively. Culturally, these people were not unlike the Old World Upper Paleolithic cultures occupying much of central Asia by 15,000 B.C.

Paleo-Indian peoples inhabited an environment undergoing dramatic changes as a result of the retreating glaciers (Haynes 1980:119). Although they are often referred to as big-game hunters because of the

association of their hunting tools with now extinct megafauna (e.g., New World horse, camel, mammoth, and bison), recent reconsiderations of Paleo-Indian subsistence patterns deemphasize the picture of sole reliance on post-Pleistocene megafauna as presented in earlier reconstructions. These large "protein packages" were only a minimal part of their total diet, the major portion probably comprised of modern-day fauna (e.g., caribou, elk, deer) and plant foods (Ford 1974; Griffin 1967).

Paleo-Indians most likely moved in small bands over a relatively large area and with undoubtedly low population densities (Ford 1974:388). Haynes (1980:119) depicts Clovis peoples as nomadic foragers exploiting mammoth and bison, yet relying heavily on locally available vegetation as a dietary source. Today, the sparse remains of Paleo-Indian camps are sometimes found on ridges or slopes overlooking ancient watering places where game was easy prey to ambush. Kill sites are found at cliffs and deep gulleys where game herds were stampeded to their death. Recent evidence from Kimmswick, Missouri (Graham et al. 1981), just south of the present study area, presents a picture of a varied subsistence base for Clovis culture, utilizing mammals ranging in size and type from squirrels to mastodons. As per mobility, recent studies of chert exploitation patterns (Gramly 1980; Haynes 1980:118) indicate that Paleo-Indian groups were far ranging, exploiting multiple source localities, over hundreds of kilometers. In addition, ongoing research at Kimmswick (Graham 1979) promises to shed new light on some of the earliest cultures utilizing this portion of the New World.

Comparatively little is known about the Paleo-Indian tradition in the eastern United States. The occurrence of fluted and lanceolate

projectile points (e.g., Clovis, Quad, Cumberland, and Agate Basin projectile points) are the most diagnostic remnants of Paleo-Indians. Recently, fluted projectile points were found in direct association with mastodon remains near Kimmswick (Graham 1979). This discovery is the only direct association of Paleo-Indian tools with extinct Pleistocene fauna in the Midwest.

Site evidence in the metropolitan St. Louis area and elsewhere indicates Paleo-Indian occupations in upland areas, away from major valley bottomlands but along secondary drainages. Both the fluted Clovis and Folsom complexes are represented in the Missouri-Mississippi confluence area, and the lower Meramec region has produced a relatively large quantity of Paleo-Indian projectile points (Chapman 1975:75). While no Paleo sites have been recorded previously for the immediate project area, Paleo-Indian sites other than Kimmswick are represented to the south along the Meramec River and Pomme Creek drainages (Brandt and Sieb 1979:26-27).

Dalton Period (ca. 8600-ca. 7000 B.C.)

The Dalton phase represents a transition from the late Paleo-Indian period to the Archaic, the nature of which is reflected in both subsistence and climatological change. Dates for Dalton occupations are not firm and are the subject of recent debate (see Goodyear 1982 for debate overview). The chronological placement of Dalton generally has been derived from cultural deposits exhibiting relative stratigraphic placement that is post Paleo-Indian and either prior to or contemporaneous with the earliest Archaic complexes (see Chapman 1975:96; Perino 1958:18; Stoltman 1978).

While there is disagreement on the temporal placement of the Dalton complex, the transitional nature of Dalton technology is agreed upon more widely. It has been noted repeatedly that the Dalton lithic industry and late Paleo-Indian assemblages "share a common blade and flake industry" (Goodyear 1982:384).

Paleoenvironmental studies also support the transitional nature of the Dalton complex. Ecologically, the Dalton period represents a change from oak-hickory forest to prairie encroachment in many parts of Missouri and the Midwest (King 1981). Dalton tool kits discussed by Chapman (1975:96) reflect exploitation of a more varied subsistence base, representing an adaptation to multiple resource exploitation during the forest to forest/prairie transition. Dalton culture and technology viewed in the context of the ecological transition during the Pleistocene-Holocene boundary by Chapman (1975:96) and Goodyear (1982) suggest a settlement shift from the nomadic hunter lifestyle of Paleo-Indian to a seminomadic hunter/forager economy. Dalton period components in Missouri have been defined by the presence of Dalton projectile points and tools in the collections from various sites. In the Meramec drainage, the period is represented by Dalton serrated points (Nixon et al. 1982:20), including a Dalton site (23SL144) upstream from the project area along Grand Glaize Creek (Brandt and Sieb 1979:21).

Archaic Tradition (ca. 8000-1000 B.C.)

The end of the Pleistocene period marked the retreat of glacial masses and the extinction of large cold-adapted animals as the climate continued to warm. The forests of the eastern United States began to

conform to their modern appearances as broadleaf deciduous species rapidly replaced coniferous forms.

The Paleo-Indian hunting tradition likewise faded into the past to be replaced, ca. 8000 B.C., with the emerging Archaic tradition in the eastern Woodlands. This new tradition did not place heavy reliance on the pursuit of large game for subsistence needs; rather, it was firmly grounded on a much broader, more diversified subsistence base. Small-game hunting, fishing, and gathering of acorns and hickory nuts along with other wild vegetable foods constituted the Archaic subsistence strategy. The Archaic settlement pattern also differed from that of previous periods as people were becoming more sedentary, particularly during the Middle (ca. 5000-3000 B.C.) and Late (ca. 3000-1000 B.C.) Archaic; they lived in smaller territories; and they gradually settled to become increasingly familiar with their environment, effectively exploiting all of the food resources available to them (cf. Chapman 1975:127). Consequently, the Archaic tradition became more complex than the Paleo-Indian tradition.

Early Archaic Period (ca. 8000-5000 B.C.)

Ten thousand years ago, as the climate continued to warm, the forests of the eastern United States began to reach their modern form as broadleaf deciduous species rapidly replaced coniferous forms. Ecologically, the Early Archaic (ca. 8000-5000 B.C.) period is still a period of transition. The mesic deciduous forests that replaced the boreal spruce forests during the Late Glacial gave way to predominantly oak-hickory forests (King 1981) such as those found in Missouri's Ozark Highland. Towards the middle of the Early Archaic (ca. 6500 B.C.), increasing aridity signalled the beginning of the formation of the

present-day Prairie Peninsula during the Hypsithermal Interval (cf. King and Allen 1977).

The Early Archaic can be regarded as a period of initial adaptation and change to this environment. As new subsistence items became available and abundant, they were added to procurement strategies. Acorns, various types of nuts, fish, and mussels all became more abundant with the changing conditions. This broadening of the subsistence base and successful adaptations to varied environments is reflected in the establishment of archaeologically distinguishable regional traditions.

Middle Archaic Period (5000-3000 B.C.)

By 5000 B.C., the environment was essentially modern, and the Middle Archaic (5000-3000 B.C.) can be described as continuing a trend toward broad spectrum resource utilization and toward more efficient adaptation to local environments (Caldwell 1958; Fowler 1959). This is evidenced in Missouri and the midwestern United States by a diversification of tool kits, noticeably the appearance of full grooved axes (Griffin 1955). Other new artifact types include stone pendants and bannerstones and the emergence of a well-developed bone tool industry, including various awls, antler projectile points, atlatls, bone fishhooks and beads, tortoise shell cups, and necklaces of mammal teeth (Griffin 1968:133). Population densities gradually increased but still remained relatively low. Available evidence indicates only limited use of upland zones during the Middle Archaic period.

Late Archaic Period (3000-1000 B.C.)

The Late Archaic period is marked by a considerable growth in population, distinct regional adaptations, and interregional exchange

systems. A more sedentary way of life is indicated, although seasonal movements were still necessary. Because of larger population densities, these movements became more restricted spatially. Archaeological data point to an expanded resource base with a marked increase in the exploitation of plant resources. This broad spectrum resource utilization is thought to be an important preadaptation to the development of agriculture in eastern North America (Brown 1977:168;

The Late Archaic period marked the end of a long and successful cultural tradition which witnessed many changes in Indian lifeways. A few of the earliest important innovations that were to have great affect on subsequent cultures, such as the use of pottery and tropical cultigens, were first introduced by Archaic peoples and later adapted and developed during the Woodland tradition that followed after 1000 B.C.

Previous research near the study area by Brandt and Sieb (1979) and Nixon et al. (1982) indicates that the Archaic tradition is well represented in the lower Meramec basin. Nixon et al. (1982:21) noted 53 previously recorded Archaic period sites (7 Early Archaic, 6 Middle Archaic, 19 Late Archaic, and 21 general Archaic). Their field research produced additional Archaic components, although none along Fishpot Creek and only one general Archaic site (23SL405) adjacent to the study area along Grand Glaize Creek (Nixon et al. 1982:55).

Woodland Tradition (1000 B.C.-A.D. 900)

The Woodland tradition, although firmly rooted in the traditional Archaic lifeway, entailed not only a change in the ideology of the Indians but yet another change in their subsistence patterns. As in the

past, hunting and gathering continued to be important in their overall subsistence strategy. However, refinements were made in ways of more efficiently exploiting particular foods of their local region which tended to culturally differentiate many groups. In a word, the Indians were moving toward a "focal" as opposed to a "diffused" economy (Cleland 1976). Extensive trade networks also were developed over the eastern and middle western United States.

Although Woodland peoples continued to move about, exploiting their environment in seasonal cycles, collecting alternately ripening wild plant foods, and following game, they became increasingly congregated in small settlements which were more permanent than before. Storage facilities such as underground pits for nuts and seeds served to bank food and may have helped allow this trend toward increased sedentism. Archaeological evidence indicates that it was early in the Woodland tradition that relatively permanent house structures were constructed.

The Woodland peoples are noted for their widespread use of grit tempered, often decorated, pottery and their introduction of rudimentary agricultural practices. Archaeologically, it is known that native plants such as sunflower, sumpweed, chenopodium, pigweed, knotweed or smartgrass, giant ragweed, and maygrass or canary grass were exploited for their seeds; of these, only the first three are believed to actually have been cultivated. Like bottle gourds and squash during the Archaic tradition, corn was introduced into Woodland diets from Mexico. This was a small-eared "tropical flint" corn with 10 to 16 rows of kernels.

It was also during the Woodland tradition that elaborate mortuary or burial customs became commonplace. Most impressive of these customs was the construction of numerous monumental earthworks, some of

tremendous size. While many of the mounds covered single and sometimes multiple human burials, others were linear geometric earthen enclosures surrounding other mounds, and some were piled in the shapes of animal effigies -- a basketfull at a time. Loosely piled stones, rather than earth, was a periodic variation on this custom.

Early Woodland Period (1000-500 B.C.)

The appearance of pottery generally is considered the marker for the Woodland period. Also, with the advent of Early Woodland (1000-500 B.C.) comes the first evidence for agriculture. Cultigens included squash and various indigenous seedy plants. However, these were only a minimal part of the total diet, and Early Woodland populations continued an essentially Late Archaic way of life (Ford 1974:401). Very little is known about the Early Woodland period in this part of Missouri. Chapman (1980:6, 9) noted that the Early Woodland and associated cultural traits were late in coming to parts of Missouri, and Nixon et al. (1982:22) suggested that the Early Woodland may be much like the Late Archaic in the Ozark Highland.

Because little is known of Early Woodland lifeways in Missouri, settlement, subsistence, and chronological questions assume importance in archaeological research. Of particular interest, Nixon et al. (1982:24) noted that of three previously recorded Early Woodland sites in the lower Meramec region all three occurred in bottomlands, contrary to expectations of upland prairie contexts. Two additional Early Woodland sites found by Nixon et al. (1982) were also in bottomland areas, including one Early-Middle Woodland site (23SL396), just north of the project area in Grand Glaize Creek. Interestingly, Early Woodland sites are found in bottomland contexts in other parts of the greater

middle Mississippi drainage area, such as the lower Illinois River valley (Farnsworth 1973; Struever 1968) and the American Bottom (Dwyer et al. 1981).

Middle Woodland Period (500 B.C.-A.D.400)

During the Middle Woodland period, local and regional cultural complexes were linked by the set of socioreligious and economic traits known as Hopewell (Caldwell 1964). This cultural manifestation is characterized by regional interaction, burial in mounds, and a variety of distinctive ceramic motifs (Chapman 1980:21). Trade in exotic goods, both raw material and finished items, was extensive. Regional social and religious centers occurred throughout the midwestern, eastern, and southeastern United States and served as focal points for trade, elaborate ceremonialism, and social interaction approximately 2,000 years ago.

In the St. Louis area, the Middle Woodland is represented by Havana sites, which tend to occur in bottomland contexts (Benchley 1975:21; Chapman 1980:23). Previous research in the lower Meramec also indicates emphasis on bottomland occupations (Nixon et al. 1982:24). One Middle Woodland lithic site (23SL259c) has been recorded in the bottomland of Fishpot Creek to the west of the project area by Southern Illinois University-Edwardsville (Brandt and Sieb 1979:50).

Late Woodland Period (A.D. 400-900)

The end of the Middle Woodland/Hopewell period at approximately A.D. 400 is marked by an extensive reduction in interregional trade, a decrease in the complexity of ceremonial/mortuary practices, and a replacement of certain elaborate and exotic ceramic styles with more utilitarian regional forms. Late Woodland was characterized by an

intensive exploitation of local resources, supplemented by a variety of cultigens, including corn and squash (Benchley 1975:22; Ford 1974:403). During this time, social groups became more sedentary, and habitation sites became larger and more intensively occupied. Maize agriculture appears to be firmly entrenched by A.D. 600 (Benchley 1975:23).

Of particular note is that although Late Woodland sites occur throughout the Midwest, including the Ozark Rim area (cf. Nixon et al. 1982:25), few studies deal with Late Woodland settlement patterns. Studies from the upper Mississippi drainage (Dudzik 1974) and middle Mississippi drainage (Munson 1971) indicate utilization of bottomlands, terraces, and uplands, representing a major shift in settlement patterns from the preceding Middle Woodland. This varied settlement patterning is reflected also in the lower Meramec region. A possible single component Late Woodland site (23SL394) occurs north of the study area in the bottomlands of Grand Glaize Creek (Nixon et al. 1982:88), and a Late Woodland ceramic site (23SL27) occurs on a bluff a bit further upstream (Brandt and Sieb 1979:51).

As Late Woodland populations continued to grow, evolutionary momentum led to the appearance of large urban centers, long distance trade, and a return to a religious and socioeconomic interaction throughout the midwestern and eastern United States during the following Mississippian period. Although the Woodland tradition never really faded in some parts of the midwestern United States, it was largely displaced by an emerging Mississippian that initially took shape between A.D. 700 and A.D. 900 along the middle Mississippi River, focused in what is now the St. Louis metropolitan area.

Mississippian Period (A.D. 900-ca. A.D. 1600)

Mississippian culture represents the culmination of social, economic, political, and technological trends begun in the Late Woodland period. The period is marked by an increased dependency upon agriculture as a subsistence base and increased social stratification and complexity. Settlement patterns are characterized by large regional population centers surrounded by a radiating network of agricultural and special purpose sites. The large regional centers most often contained flat-topped mounds, plazas, and fortifications and are interpreted as functioning in both ceremonial and economic activities.

Artifacts indicative of Mississippian material culture include shell-tempered pottery, finely-made Madison and Cahokia projectile points, and farming implements (e.g., hoes and hoe chips). Usually, the presence on a site of hoe chips and ceramic wares is indicative of agricultural activities; and, generally, small artifact scatters including such materials are interpreted as farmsteads (Harn 1971:36).

Cahokia, near East St. Louis, was the site of the most spectacular prehistoric center to develop in all of North America. The social, political, and economic dominance of Cahokia was most prevalent during Early Mississippian times. This dominance tends to disappear by the beginning of the Late Mississippian cultures, ca. A.D. 1300 (Harn 1980:22). In all, the Cahokia site covers 5 mi^2 of the Mississippi River floodplain, containing approximately 120 mounds, the largest of which (Monk's Mound) stands 100 ft high (Fowler 1974).

In addition to a highly active and far-reaching trade network, the Mississippians had an expansive agricultural economy based on corn, beans, and squash that helped spread their complex society along

principal river systems of the southeast, particularly after A.D. 1200. This tradition witnessed impressive increases in population as towns sprang up that were far larger, more permanent, and more secularized than any of the large ceremonial centers of the Middle Woodland period. Eventually, a stratified society emerged that was characterized by large regional urban centers and their itinerant farming hamlets.

Mississippian settlements varied greatly in size and function from large villages and ceremonial centers to peripheral hamlets consisting of multiple house clusters (2-3 houses per cluster) with gardens, small farmsteads composed of one or two house clusters, and temporary special activities sites. Their main agricultural implements included a short-handled hoe with a blade made of chipped flint or a large animal scapula and digging sticks. Mississippian projectiles were usually small and triangular in shape for hafting to darts or arrows.

The most impressive feature of the Mississippian tradition was the construction of enormous, flat-topped pyramidal earthen mounds. Often such mounds served as foundations upon which were built temples, mortuaries, chieftan houses, or other important buildings. Other Mississippian mounds were long and ridge shaped, and some had circular ground plans not unlike those of the Woodland tradition. Cahokia had roughly 120 known earthen mounds.

Mississippian sites occur most frequently as bottomland occupations in the lower Meramec basin. Twenty-five Mississippian components have been defined, 21 in bottomland or terrace areas and only 4 in bluff contexts. Of these 25 sites, 10 represent Late Mississippian developments. Mississippian sites have not been recorded for Grand Glaize Creek, but components have been reported for four previously

recorded sites along Fishpot Creek: 23SL21, 23SL63, 23SL89, and 23SL139. Although a Mississippian component had been reported many years earlier for 23SL215, recent test excavations at this site have failed to produce evidence of a Mississippian occupation (Nixon 1984).

Following the decline of Cahokia, Late Mississippian culture represents a period of regional differentiation (ca. A.D. 1300-1600). The manufacture of characteristic Mississippian artifacts persists, and mound construction, although of diminished relative social importance, continues. Temporally, the Late Mississippian cultures overlap with what Fowler and Hall (1975:7-9) refer to as the Sand Prairie phase (A.D. 1250-A.D. 1500). Willey (1966:309-310), among others, believes that the terminal prehistoric Fort Ancient and protohistoric Oneota cultures have their geneses in the upper (e.g., Late) Mississippian culture.

HISTORICAL OVERVIEW OF THE LOWER BASIN AND VALLEY PARK

Several accounts of the history of the Meramec valley have been prepared, focusing on both the lower Meramec regional area and the local environs of the project area. Historical sketches pertaining to cultural resources management considerations have been assembled by Brandt and Sieb (1979), Browman (1976, 1979, 1980), Diaz-Granados et al. (1981), and Nixon et ai. (1982) and address the lower Meramec valley, with occasional reference to the Valley Park area (e.g., Nixon et al. 1982:32-33). Local histories of Valley Park proper are contained in Browning and Carlson (n.d.), Sherrill (1981), and Thomas (1911). The reader is referred to these accounts for detailed historical overviews, while the following from Diaz-Granados (1981:passim) provides a short regional overview of early history.

1700 French Canadians began moving into the Mississippi Valley for mineral exploitation.

1749 Jean Baptiste D'Gomache accepted land grant and in compliance to grant opened the first ferry across the Meramec. The ferry was located approximately one mile upstream from the mouth of the river. His sons operated it until 1896.

1763 The Treaty of Paris transferred Kaskaskia to British rule (for mining and for trade).

1764 By secret treaty of Fountainbleau, France ceded the western territory of the Mississippi valley to Spain.

1774 John Hildebrand settled on the Saline Creek area called Meramec Settlement.

1776 Kings Trace Road built under authority of the King of Spain. Road extended from St. Louis via D'Gomache's lower ferry to Ste. Genevieve.

1777 Lieutenant Governor Cruzat devised plan to offer land, provisions, and tools as an incentive to increase population.

1784 Benita Vasquez received grant on Meramec (7,056 arpents), near saltworks, probably built by Luis Catalan.

1785 Benita Vasquez was operating a large saltworks at Salt Spring near Saline Creek.

1787 An ordinance was passed against slavery in the Northwest Territory. Many enlisted French slave owners crossed the Mississippi River and settled in Missouri.

1787 Black Hawk and his band of Sioux Indians fought battles against Cherokees. Pyesa, Black Hawk's father was killed in combat and buried near Meramec River.

1796 Adam House, bought out James Head, obtaining Land Grant #666, now known as House Springs.

1800 Adam House and his son Jacob massacred by Osage Indians.

1803 U. S. purchased Louisiana Territory.

1804 Captain Stoddard raised first American flag in St. Louis.

1821 Missouri Territory became a state.

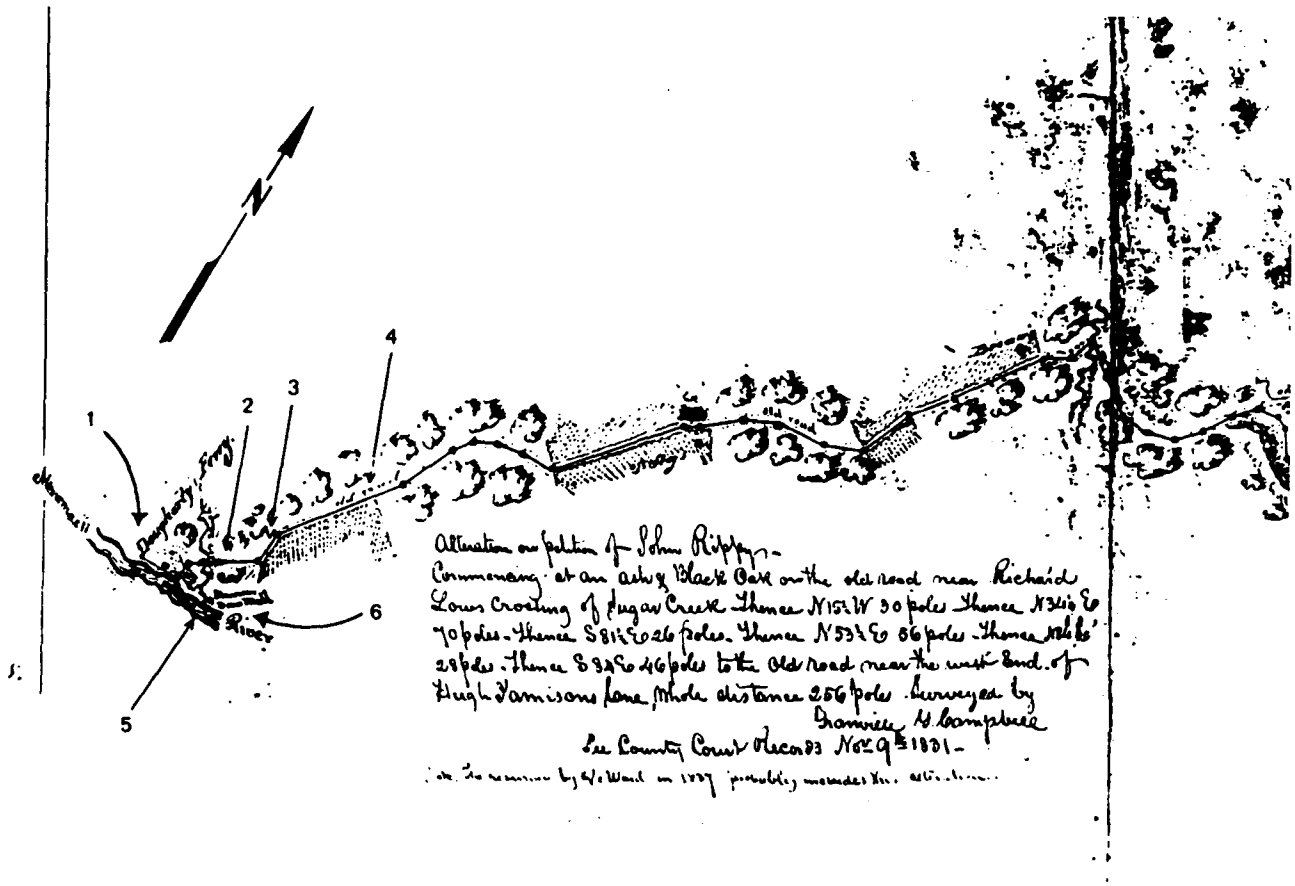
1840 Sulphur Springs Road built from Manchester south to old fur trading station next to the Meramec. Road alleviated transportation problems faced by people in the settlements of House Springs, Sulphur Springs, and the Williams Creek Area. Settlement of Fern Glen arose at the southern end of Sulphur Springs Road.

1857 Iron Mountain railroad completed.

1861 G. H. Timmerman, businessman and landowner of Valley Park, bought Lot #13 from Captain Taylor. In late 1800s, erected a sanitorium and an adjoining hall. It is an early example of poured concrete architecture. The main building was torn down in 1973 but the hall remains.

Some of the pertinent facts of the regional history overlap with the history of Valley Park. The following historical sketch focuses directly upon the project area as specified in the Scope of Work.

John Daugherty's ferry operated in the vicinity of the project area from ca. 1830 to 1900. It is said to have crossed the Meramec at the confluence of the river with Fishpot Creek (Browning and Carlson n.d.:5; Jones 1933:4). It has been reported erroneously in a previous cultural resources management report (Brandt and Sieb 1979:71) that the ferry had crossed Fishpot Creek at the Meramec rather than across the Meramec (Map 2); this error has been perpetuated in later reports (e.g., Diaz-Granados et al. 1981:19).



MAP 2

Daugherty Ferry Map (1845)
(after Brandt and Sieb 1979:70)

Showing Locations of

1. Daugherty Ferry
2. Present-day Arnold Lane
3. Present-day Meramec Station Road (Missouri Highway 144)
4. Present-day Forest Avenue
5. Confluence of Fishpot Creek and Meramec River
6. Sawmill

Daugherty Ferry Road is now named Forest Avenue (cf. Jones 1933:4). The 1845 Daugherty Ferry map (in Brandt and Sieb 1979:72, Plate 2) indicates a "dog leg" in the road turning south and then east towards the confluence of Fishpot Creek and the Meramec River. This route corresponds with a line drawn southwest along present-day Forest Avenue, turning south on Meramec Station Road (Missouri Highway 144), and then west along Arnold Lane (Map 2).

It is unlikely that much remains of the ferry's site. A previous cultural resources survey (Brandt and Sieb 1979), near this part of the project area, yielded no physical remains or traces of the Daugherty Ferry. The 1845 Daugherty Ferry map indicates that the ferry was located immediately west of the confluence of Fishpot Creek and the Meramec River and outside the present project area. Further, the ferry had been put out of business years earlier when a bridge was built across the Meramec, ca. 1900 (Browning and Carlson n.d.:5). Much of the former route of Daugherty Ferry Road is now paved.

South of Valley Park, John Smizer built a distillery, sawmill, flourmill, and mercantile center (ca. 1850) in an area now called Spring Hill. Spring Hill soon became the commercial hub for that area of the Meramec River.

The area now known as Valley Park began to be settled about 1855 when the Missouri Pacific Railroad was built along the north bank of the Meramec River, immediately north of the ferry. The railroad paralleled the Daugherty Ferry Road through the area. The settlement became known as Meramec, although for a short while (ca. 1852-1858) the post office was known as Nasby, later returning to the name of Meramec Station (cf.

Jones 1933:4). The area received its present name of Valley Park in 1888 (Sherrill 1982:36).

The change in the community's name has been attributed to Gerhardt H. Timmerman, a German immigrant to the area (cf. Browning and Carlson n.d.:6). Timmerman bought land in Valley Park along Fishpot Creek and throughout the community in 1861 (Diaz-Granados et al. 1981:20). As Valley Park's earliest developer, he was responsible for construction of some of the earliest houses and businesses in the area (ca. 1874) and of a health spa (sanitorium) for area residents in 1881 (Sherrill 1982:41). The spa later became the well known Paddle and Saddle Club of the 1920s and 1930s as Valley Park and other Meramec River communities became booming resort areas from the late 1800s through the 1930s. The main hall, formerly located adjacent to the southwest corner of the project area, was razed in 1973, although the adjoining hall remains as an early example of poured concrete architecture.

In 1881, the St. Louis and San Francisco Railroad (present-day Burlington-Northern Railroad, referred to as the Frisco Railroad) was completed through Valley Park (Jones 1933:4). It crosses the Meramec River about 200 m east of Missouri 144. The Frisco Inn was built soon after for railroad workers, and three houses were constructed for management personnel (Jackson 1982). These structures are still standing today along Front Street in Valley Park.

Although Valley Park was an increasingly popular resort area, its population remained relatively small until the turn of the century. In 1900, the population was about 300 people. Within the next few years, Valley Park enjoyed an industrial boom due to new industry locating in the town.

In 1902, eastern industrialists invested $2,000,000 and established the St. Louis Plate Glass Company in Valley Park along the Meramec River, east of Highway 144. The facility covered 20 acres, including the 7-acre factory building, and represented one of the most modern and preeminent glassworks in the county (Anonymous 1909; Thomas 1911:7). Although still unincorporated, Valley Park boomed as a "late factory town" (Sherrill 1981:10), attracting workers from the St. Louis area and recent immigrants. The company, working in conjunction with the Valley Park Land Company, laid out much of what is now Valley Park, then referred to as "New Town" (Browning and Carlson n.d.:7). In addition to building approximately 250 houses, a new sewer system, school (1909), hotel (1904), waterworks, and electric plant (ca. 1902) were built with company assistance. The St. Louis Plate Glass Company employed about 450 personnel as the town boomed to over 2,100 people by 1909 (Anonymous 1909) to about 2,500 by 1915 (cf. Wippold 1976). This area also became the industrial center of the town, with new business locating nearby, including the Wilson Stove Company (1907), which produced approximately 1,000 stoves a day, employing 75 men (Thomas 1911:11-12), and the nearby West St. Louis Glass Company, which produced mirrors and other glass specialty items. The tourist business also boomed, attracting over 50,000 visitors a year and supporting two canoe clubs (Anonymous 1909:3).

In August 1915, Valley Park was devastated by the flooding Meramec River. The glass company was nearly destroyed (Jones 1933:4), and over 80% of the population (approximately 2,000 people) were left homeless (Browning and Carlson n.d.:8). Although the St. Louis Plate Glass Company soon rebuilt and was back in business, a fire in February 1916

destroyed the plant, which today remains only in overgrown concrete and brick ruins. Valley Park was reduced to a small resort town of approximately 500 people.

Although its industrial base was nearly destroyed (Anonymous 1915), Valley Park still thrived as a resort town. The population returned to about 2,000 by the early 1930s (Jones 1933), and the famed Paddle and Saddle Club reached its zenith in the 1920s and 1930s. The Frisco and Missouri-Pacific railroads brought tourists to the town's hotels and resorts until the late 1930s, when the tourism industry waned as more people took advantage of new mobility offered by the automobile (Wippold 1976).

Since 1915, the growth of Valley Park has been slow. The town has had repeated floods, including significant floods in 1945 and 1956 (Ryckman *et al. 1973:Appendix A). Two recent floods, including record* high water in December 1982 and a May 1983 flood, have caused serious damage in the town. Several historic buildings have been razed in the last year, and part of a previously recorded prehistoric site (23SL230) appears to have been impacted in conjunction with nearby land-leveling activities. Flood damage is evident everywhere, particularly in wooded areas which are scattered with flood-deposited debris.

METHODS

Background and Literature Search

The Scope of Work called for a background and literature search of the project area, summarizing the known prehistoric and historic cultural resources. Further, this was to include a brief history of Valley Park, with emphasis on the levee alignment area (presented earlier).

Prior to initiating field work, the following sources were consulted: site files of (1) Archaeological Survey of Missouri (ASM), Columbia, (2) Missouri Department of Natural Resources, Jefferson City, and (3) University of Missouri-St. Louis, Archaeological Survey, St. Louis; professional authorities of (1) Dr. Joseph M. Nixon, University of Missouri-St. Louis, and (2) Mr. Terry Norris, U. S. Army Corps of Engineers, St. Louis District; and pertinent reports of investigations (e.g., Brandt and Sieb [1979], Diaz-Granados et al. [1981], and Nixon et al. [1982]).

During the course of investigations, numerous other sources were consulted regarding both prehistoric and historic cultural resources in the study area. These included, but were not restricted to, cultural sources management reports from nearby areas (e.g., Browman n.d.; DeBarthe 1977; Diaz-Granados 1979) and regional overviews (e.g., Benchley 1975), historical materials on file at the Valley Park Library (e.g., Browning and Carlson n.d.; Sherrill 1981, 1982), professional

texts and articles (e.g., Chapman 1975; Mills 1949), and local individuals and property owners.

The results of the records and literature search revealed five previously recorded (ASM) prehistoric archaeological sites within the project area. Five other prehistoric sites are located within close proximity of the project area (Table 1). No historic archaeological sites other than historic Euro-American components associated with three of the sites are recorded for the project area. In addition, recent archaeological investigations along Fishpot Creek, Grand Glaize Creek, other nearby creeks, and along the lower Meramec River (Brandt and Sieb 1979; Browman n.d.; Diaz-Granados 1979; Nixon and Hamilton 1982) have yielded numerous sites spanning the Paleo-Indian through Mississippian periods.

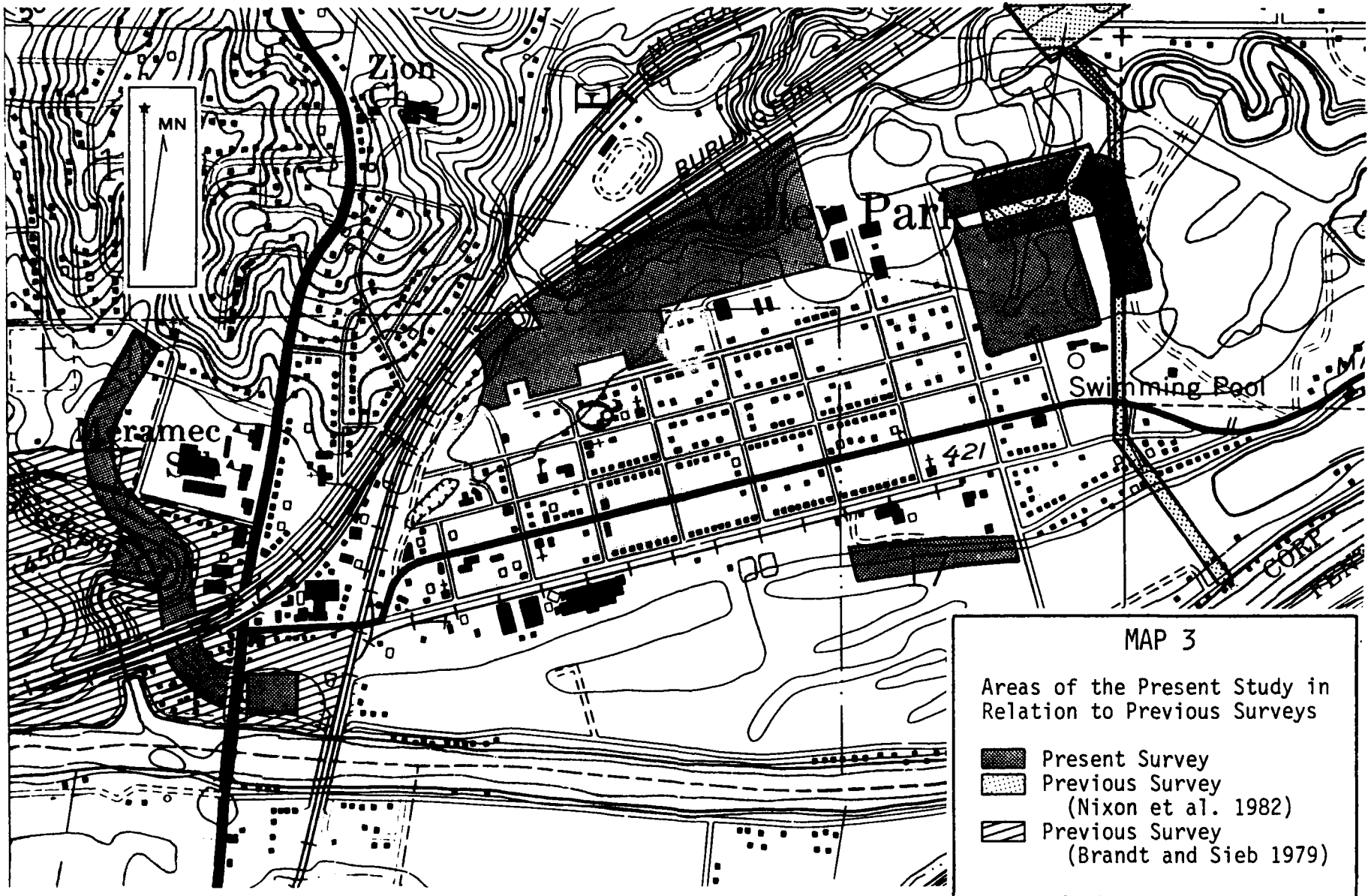
The records and literature search revealed that two previous cultural resources surveys in the area had overlapped with the present survey, accounting for the five sites previously recorded for the area. A survey for the proposed Metropolitan Sewer District (Brandt and Sieb 1979) overlapped with much of the western portion of the study area (Map 3), including the portion of the study area occupied by residential and commercial structures. Brandt and Sieb's (1979) architectural and archaeological survey resulted in no eligible historic properties for the National Register of Historic Places (NRHP) and discovered only one prehistoric site (23SL230). A more recent survey by Nixon et al. (1982) overlapped with a large part of the northeastern portion of the project area (Map 3) and resulted in the discovery of four nonsignificant (re: NRHP) prehistoric sites (23SL406-409).

Table 1

Previously Recorded Sites in or Near Project Area

Site No.	Affiliation	Materials	Topography	Size	Disturbance
23SL48a	unknown prehistoric		bottomland		
23SL48b	unknown prehistoric		bottomland		
23SL230	unknown prehistoric	1 ovate scraper 1 retouched flake 10 unworked chert	bottomland	60 x 60 m^2 (est.)	
23SL260	unknown prehistoric	9 unworked chert	colluvial slope		
23SL261	unknown prehistoric	2 retouched flakes 7 unworked chert	bluff slope		
23SL397	unknown prehistoric	4 chert, 1 biface, 1 heat chert, 1 glass, 1 resin	ridge on bottomland	20 x 20 m^2	"highly disturbed" by dumping - Nixon et al. (1982:55)
23SL405	Archaic, historic Euro-American	1 flake, 1 unworked chert, 1 point, 1 glass	hill top, bottomland	undetermined	
23SL406	unknown prehistoric	1 flake	slope - bottomland	isolated find	possibly redeposited Nixon et al. (1982:56)
23SL407	unknown prehistoric	2 chert waste flakes	slope - bottomland	isolated find	possibly disturbed Nixon et al. (1982:57)
23SL408	unknown prehistoric historic Euro-American	1 chert, 7 historic ceramics	slope - hill top, bottomland	isolated find	close to bulldozed and dump areas - Nixon et al. (1982:59)
23SL409	unknown prehistoric historic Euro-American	4 flakes, 2 historic ceramics, 1 glass	slope - bottomland	10 x 10 m^2	disturbed - Nixon et al. (1982:57) and Diaz-Granados (1981:35)

Within project area.
Data not available (ASM files incomplete).
Data not available.


MN
Zion
Park
Swimming Pool
421
MAP 3
Areas of the Present Study in Relation to Previous Surveys
Present Survey
Previous Survey (Nixon et al. 1982)
Previous Survey (Brandt and Sieb 1979)
Scale 1:12,000

Site Definition

In order to operationalize field methods and achieve project goals per the Scope of Work, archaeological cultural resources were defined (1) as isolated finds and (2) as sites. Isolated finds are those single items of cultural material unassociated with any other cultural materials. Previous investigations in the research area (Nixon et al. 1982) indicated that isolated finds could be expected, particularly in the northwest portion of the present study area. Drawing upon Binford (1972), a site was defined as a spatial clustering of cultural materials (e.g., lithic artifacts) and/or features. As to site type, such determinations were made in consideration of Binford's (1980:8-10) distinction between site types.

Field Methods

Archaeological field methods that are appropriate for any site survey project are contingent upon two considerations: (1) the particular objectives of the survey and (2) the physiographic diversity of the survey area. In order to operationalize the objectives of the Scope of Work and fulfill considerations of the research design, several complementary field methodologies were employed to address these considerations. The field methods included (1) informant interviews, (2) ground surface reconnaissance, (3) shovel testing, and (4) cutbank planing.

Informant Interviews

In the course of obtaining right of entry into and through areas of the levee alignment, numerous tenants and landowners were interviewed concerning cultural resources that might be present within or near a

particular tract. Individuals were asked if either prehistoric or historic cultural debris ever had been encountered on their or neighbors' lands and to what extent earth moving or other subsurface impacts, if any, had occurred. While none of the conversations produced evidence of cultural resources within the project area, several informants indicated knowledge of prehistoric cultural remains found in areas outside the survey tract. Such knowledge included reports of debitage and lithic tools found during earth moving activities at the Sacred Heart Catholic Church in Valley Park, existence of sites in the upland areas of Fishpot Creek, and awareness of the Crescent Hills area as a regionally important archaeological area. One individual recalled finding a projectile point in the 1940s while digging a septic tank on a parcel of land along Fishpot Creek immediately adjacent to the survey area. The artifact was reportedly recovered at a depth of 3 1/2 to 4 ft in a terrace context.

Ground Surface Reconnaissance

This was a selectively used technique, being restricted to areas of high surface visibility, not encountered often during the survey; only one plowed area (<1 acre) was encountered. Ground surface reconnaissance also was used in areas of erosion (e.g., banks, gulleys), dessicated or sparse ground cover, or bare spots in areas where shovel testing was not feasible or permitted (e.g., tilled gardens in peoples' yards, baseball diamonds). The technique was used whenever possible to augment shovel test surveying.

Shovel Probing

Shovel probing was the primary technique used during the survey since the majority of the project area was overgrown in brush or forest

cover. The shovel probe/transect interval was maintained by pacing at 15 m intervals. Shovel probes were approximately 40 cm in diameter and were excavated to a depth of approximately 50 cm unless compacted subsoil limited the depth of excavation; profiles were inspected and all backdirt troweled before being replaced.

Intervals between shovel probe units were reduced upon discovery of cultural materials and concentrated around the find spot. Shovel probes were placed at 5 m intervals along the transects and on additional short transects perpendicular to the main transects (Figure 3). This method is similar to that used by Chartkoff (1978) and has been evaluated favorably in the field (Dwyer and Harn 1978).

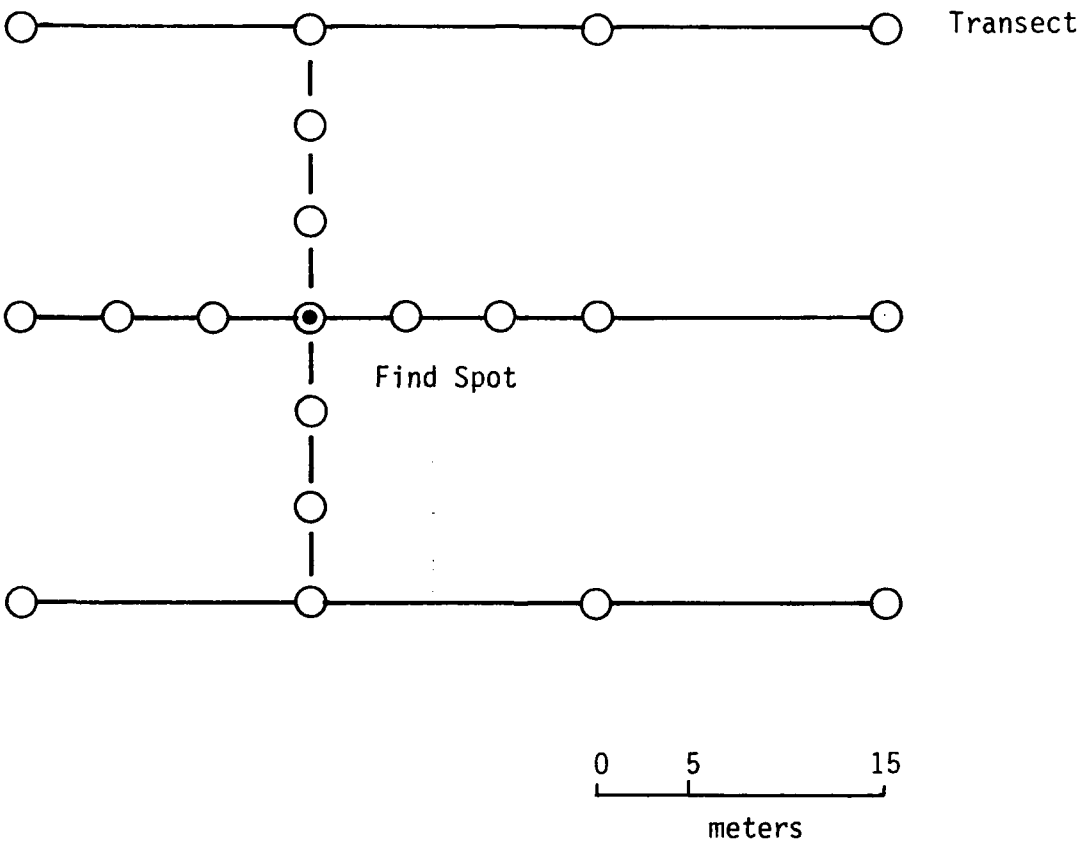
Cutbank Planing

Planing of erosional banks was done by utilizing a trowel and/or shovel blade. This procedure (Roetzel et al. 1982:15) is effective in observing subsurface soil attributes and augmenting shovel tests, particularly in areas of dissected stream terraces, by increasing the intensity of coverage while maintaining systematic intervals in shovel test transects. Cutbank planing was substituted for shovel tests only in spots where a shovel test interval coincided with a steep stream or erosional bank. As with shovel tests, all back dirt was troweled, and soil profiles were inspected for cultural debris.

Laboratory Analysis

All materials recovered through either surface or subsurface investigations were washed, sorted, labeled, and cataloged. An artifact inventory employing the following classifications (adapted from Moore 1983) was compiled for all materials. Only a flaked stone lithic

Figure 3. Shovel Probe/Transect Intervals



typology is presented for prehistoric materials since no aboriginal ceramic or groundstone tools were recovered. Explicit definitions are presented only for artifact classes encountered, although other potential classifactory taxa are enumerated. These definitions represent modifications of those employed by Crabtree (1972) following interpretive concerns expressed by Wilmsen (1972) and Burton (1980). Extensive review of historic Euro-American artifact nomenclature is not presented since only two pieces of historic material were recovered. As with prehistoric materials, only definitions of those types recovered are presented. Upon completion of the project, artifacts recovered during field work were curated at the American Archaeology Division, University of Missouri-Columbia.

Prehistoric Materials

Debitage

Primary flakes

Secondary flakes: These flakes are often relatively thick (though not necessarily large), lack a significant amount of cortex or patina, and exhibit negative flake scars which produce a dorsal ridge. Such flakes may also lack evidence of platform preparation and have diffuse bulbs of applied force. These specimens are thought to represent an intermediate stage of flaked stone tool production. Specimens exhibiting use-wear or retouch are placed in the appropriate categories.

Tertiary flakes: Flakes which are often relatively small and thin in comparison with primary and secondary flakes may be defined as tertiary flakes. They often exhibit evidence of platform preparation, minute cones, numerous negative flake scars on their dorsal surfaces, and reduced bulbs of force on their ventral surfaces. This category also includes flakes produced during bifacial thinning, retouching, or reshaping procedures.

Shatter: This category includes unidentifiable portions of primary, secondary, or tertiary flakes (often the medial fragments) and the subcategories of eraillure flakes (Crabtree 1972:60-61), chunks or spalls (East and

Alexandrowicz 1980:23), potlids (Crabtree 1972:84-85), and minute flakes resulting from the breakage or attrition of modified or unmodified siliceous lithic materials.

Blades

Utilized flakes: This category includes any flake without post-detachment modification/retouch, which exhibits evidence of utilization by the presence of edge-wear -- e.g., attrition scars, sheen -- along one or more margins. Flakes that exhibit intentional retouch are placed in the appropriate worked tool subcategory.

Utilized blades

Core

Projectile point

Drill

Graver

Spokeshave

Multifunctional tool

Other uniface: A flaked stone implement other than a graver, spokeshave, or multifunctional tool exhibiting secondary flake scars on only one surface of any given edge may be defined as a uniface. A uniface may have negative flake scars on either surface, but they must be on different edges. Artifacts traditionally classified as scrapers are included in this category.

Other biface: A flaked stone implement other than a projectile point, graver, spokeshave, or multifunctional tool exhibiting flake scars on both surfaces of any edge may be included in this subcategory. This group also includes preforms or blanks which constitute a stage in the production of bifacially flaked tools or weapons, scrapers, choppers, "knives," etc.

Other

Historic Materials

Yellowware

> The same type of clay used in stoneware [containing iron oxides and other fluxes] is used in yellowware. The difference is that the clay used in the latter is washed

to remove sand and foreign matter, leaving a smooth, even-textured buff clay, which is easily pressed into molds. Yellowware is first fired at 1150°C (2100°F), then glazed and fired a second time at 925°C (1700°F). (Moore 1983:51-80)

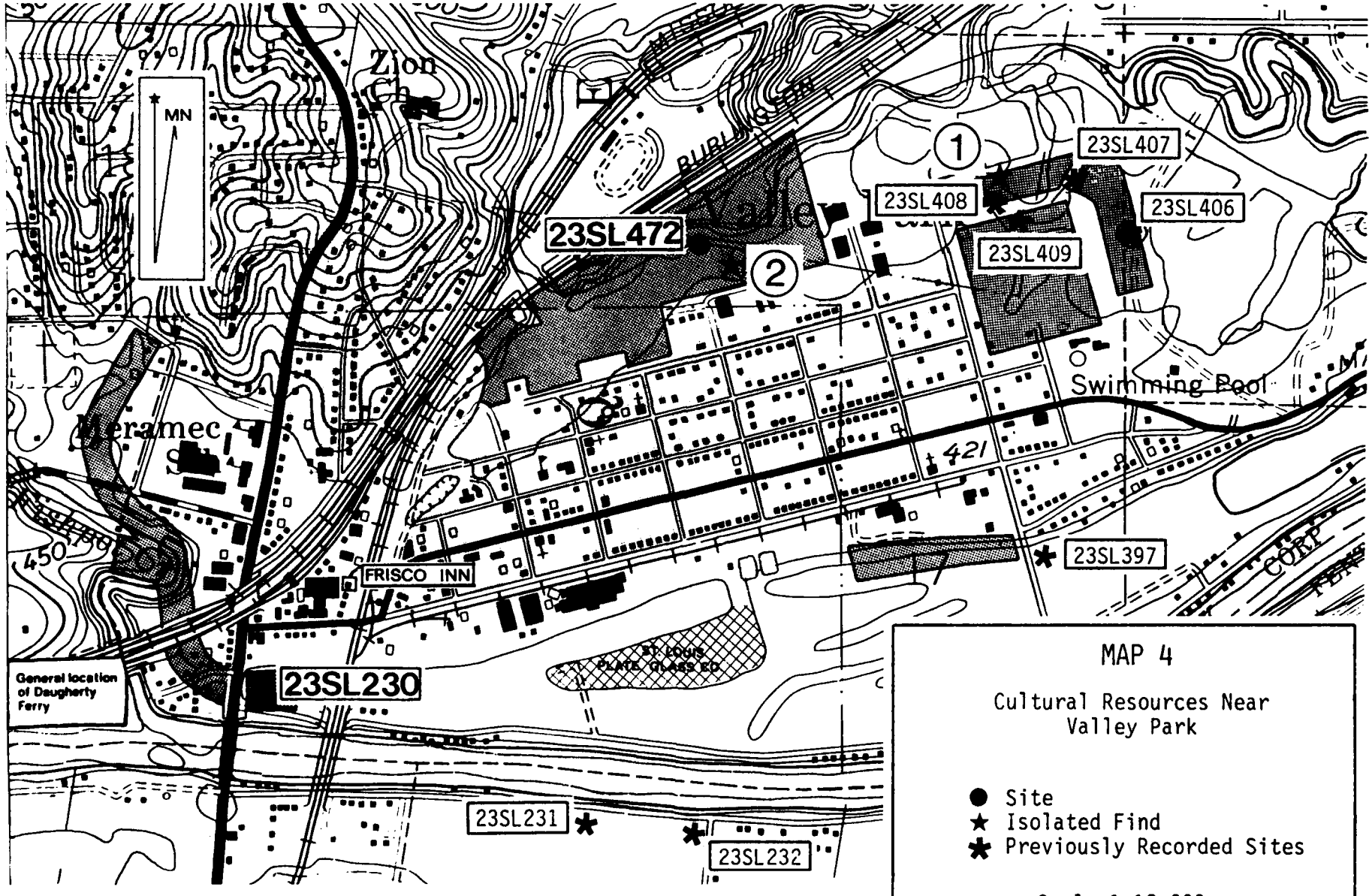
RESULTS OF INVESTIGATIONS

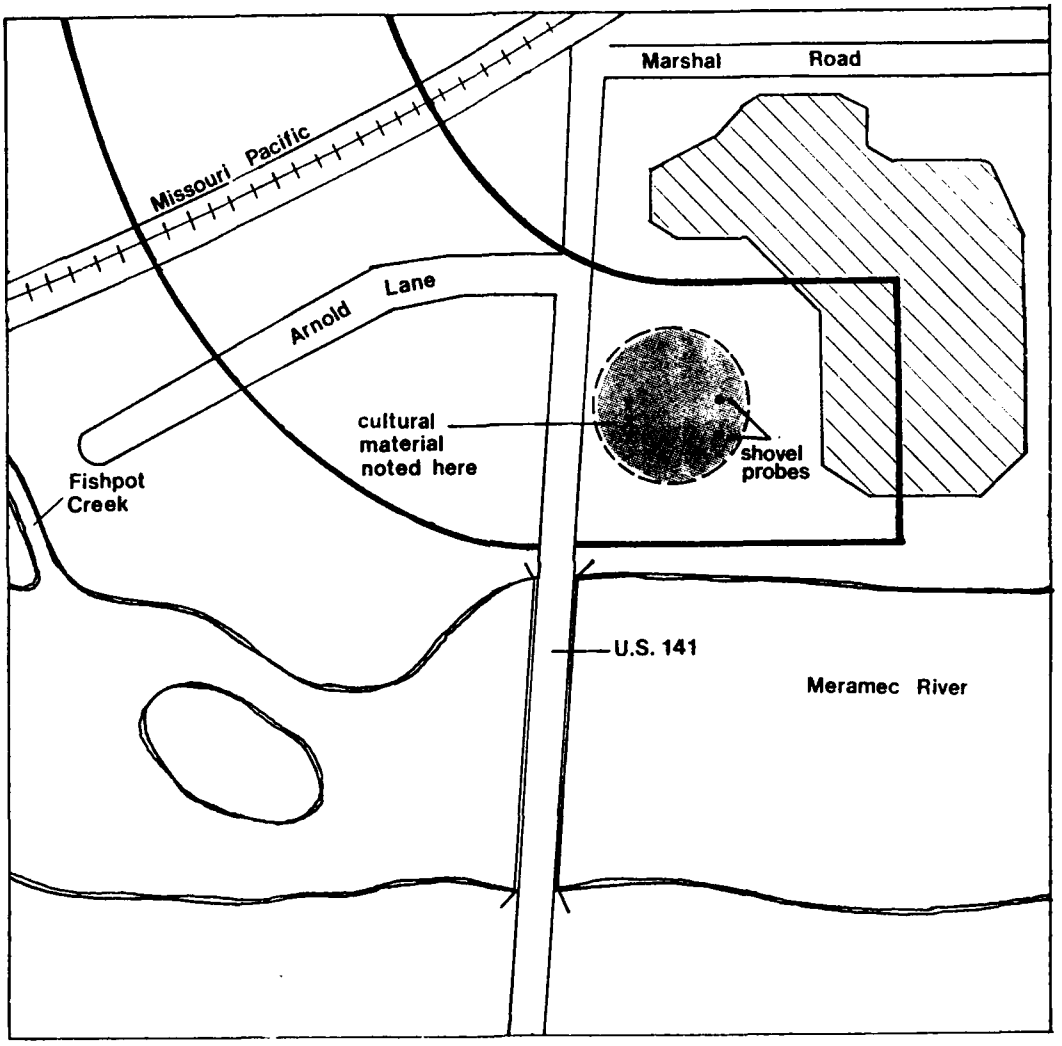
Archaeological investigations conducted for this project in Valley Park yielded one previously unrecorded archaeological site (23SL472), two isolated find spots (#1 and #2), and revisitation of one previously recorded site (23SL230) (Map 4).

Site 23SL230

Site 23SL230 was recorded previously during a survey by Southern Illinois University-Edwardsville in an area that overlapped with the present survey (Brandt and Sieb 1979). This work was conducted in conjunction with the then proposed Metropolitan Sewer District. Materials recovered from the site in 1978 consisted of 1 ovate scraper, 1 retouched flake, and 10 pieces of unworked chert (Brandt and Sieb 1979:51). Enumeration of the types of debitage encountered was not made by Brandt and Sieb nor was cultural affiliation assigned to the site other than prehistoric aboriginal status. Detailed site dimensions were not provided for this site by Brand and Sieb. Based upon information provided by a portion of a USGS quad map supplied by Brandt and Sieb with ASM site forms, site dimensions do not appear to exceed 60 m in diameter.

Site 23SL230 is located in a vacant lot in the southeast corner of the City of Valley Park (Map 5). It is situated on the floodplain, approximately 50 m north of the Meramec River at an elevation of 420 ft. The site was relocated during this survey by visual means aided by


Zion Ch
MN
23SL472
23SL407
23SL408
23SL406
23SL409
1
2
Swimming Pool
421
Meramec
450
FRISCO INN
23SL397
23SL230
General location of Daugherty Ferry
23SL231
23SL232
MAP 4
Cultural Resources Near Valley Park
Site
Isolated Find
Previously Recorded Sites
Scale 1:12,000



MAP 5

Location of Site 23SL230

Survey Limits

Approximate Area Impacted by Heavy Machinery

Approximate Site Area (after Brandt & Sieb 1979)

Scale 1:3000

cartographic information. The area of the site appears to have been impacted by heavy machinery during the present year. An interview with a local businessman confirmed that heavy machinery had been used to raze an old building north of the site, which had been damaged by the 1982 and 1983 floods. The area around the site was shovel probed in areas of weed growth. The area described as 23SL230 by Brandt and Sieb (1979) was barren except for occasional patches of weeds, with very dry and compacted soil conditions. Only a few cultural materials were noted along the western half of the site and collected; two shovel probes were placed within the eastern half of the recorded site area but produced negative results. No artifacts were encountered in the shovel probes. Soil conditions revealed a very hard yellowish soil either at the surface or within 10 cm of the surface. The soil type for this part of the project area consists of the Fishpot-Urban land complex (20B) of the Urban land-Harvester-Fishpot association. Permeability is slow in Fishpot soils and impervious in Urban soils (SCS 1982:29), explaining the compactness and hardness of the soil under normal conditions; at the time of survey this situation was aggravated further by arid conditions caused by +100°F temperatures.

Artifacts recovered from the locality consist of one tertiary flake, one piece of shatter, and one historic Euro-American piece of ceramic. Both of the prehistoric artifacts were made of Burlington chert.

The historic ceramic artifact is a piece of blue glazed yellowware. The artifact appears to be a rim sherd from a lid (perhaps from a cookie jar or similar vessel) and has part of a bas-relief design that looks like grapes. The relief is highlighted by use of cobalt blue glaze with

a lighter blue overcoat. Extensive use of cobalt blue designs on both stoneware and yellowware is generally restricted to the nineteenth century and parts of the early twentieth century (Stewart and Cosentino 1976:26).

Site 23SL230 is located on what used to be the property of the Paddle and Saddle Club. A copy of a 1909 map (in Sherrill 1981) indicates six structures in the vicinity. This artifact possibly may be attributed to historic use of the site between ca. 1855 and ca. 1940, when the area was known to have been occupied (cf. Browning and Carlson n.d.:6). The nature of the Urban soil's matrix is somewhat unique, being formed by historic use of the land, resulting in the inclusion of various soils, "soil-like materials" (SCS 1982:19), and in some areas "more than 20 percent fragments of brick, glass, concrete and other man-made materials" (SCS 1982:29). It is most likely that the presence of Urban soils in the immediate vicinity is related to historic use of the area beginning in 1855. No prehistoric cultural/temporal affiliation has been made of the site nor any specific functional attributes inferred for the site. At present, the prehistoric component of site 23SL230 may be interpreted as a location, "a place where extractive tasks are exlusively carried out" (Binford 1980:9-10). The presence of prehistoric flaked lithics, particularly the biface found by Brandt and Sieb (1979), suggests the possibility of some resource exploitation task carried out at the site.

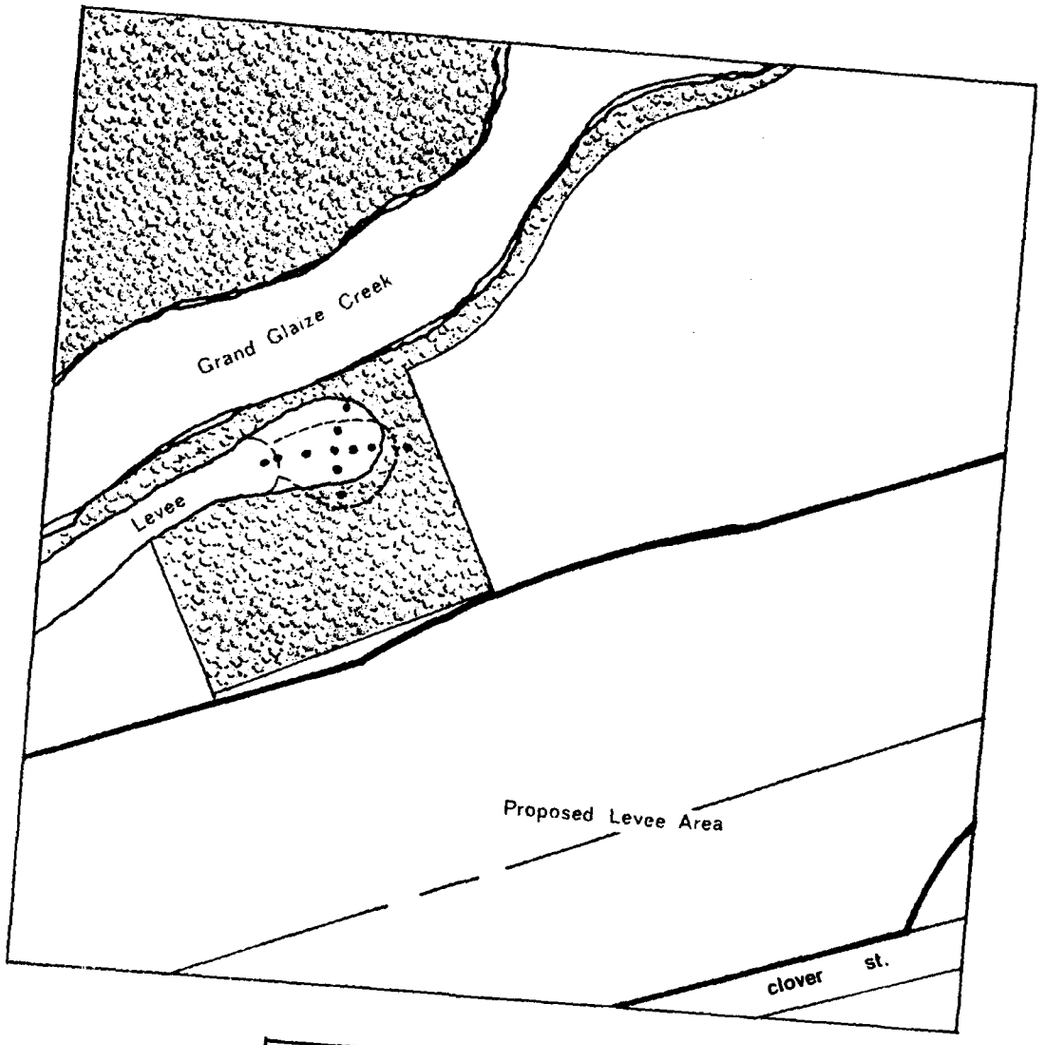
Site 23SL472

Site 23SL472 was discovered by personnel of the Corps of Engineers, St. Louis District, and reported to the survey crew. The site was

visited and collected during the survey. Site 23SL472 is located adjacent to the east terminus of an old man-made levee on the south bank of Grand Glaize Creek in a wooded area (Map 6). The levee appears to have been built on what was perhaps a natural levee and the site located on what initially seemed to be an elevated natural land formation. Subsequent investigations by COE personnel indicated that this suspected rise represents an erosion of what was once "a private levee" (Appendix B). The site is less than 10 m from Grand Glaize Creek at an elevation of 420 ft.

The area soils are classified as belonging to the Fishpot-Urban land complex (SCS 1982:Sheet 11). Historic cultural debris was not noted in this area, although it is characteristic of Urban soils (see discussion of site 23SL230; also SCS 1982:19). From the high degree of soil compaction noted in the field and from information supplied by the COE, it appears that the entire site may have been redeposited from a nearby area. Based upon the position of the levee and Grand Glaize Creek, it is inferred that the prehistoric materials may have originated south of its present location. The area immediately south of the levee and site has been lowered and graded for a baseball field. It is possible that the materials represented at 23SL472 were displaced anywhere from about 15 m to 100 m.

The site was located by pedestrian survey from the visible artifacts on the ground surface. The area of the site was shovel probed at 5 m intervals (seven probes east/west, four probes north/south), but shovel probes yielded no artifacts. All artifacts were found on the surface and represent prehistoric aboriginal materials of undetermined cultural and temporal affiliation (Table 2). The area of scatter is



MAP 6

Location of Site 23SL472

---- Area of Scatter

••• Shovel Probes

Wooded Area

Scale 1:1200

roughly ovoid, estimated to be 25 m east-west by 15 m north-south, or approximately 294 m^2 (Map 6).

Table 2

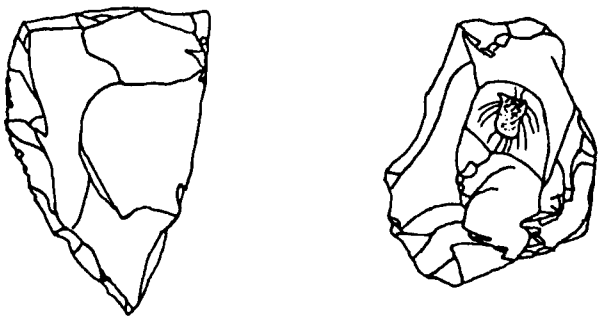
Artifacts Recovered from Site 23SL472

	Artifact	Weight in Grams
3	secondary flakes	2.5
5	tertiary flakes	1.6
10	shatter	27.0
7	utilized flakes	28.5
1	uniface	10.1
1	biface	11.5
1	bone	1.0
28		82.2

The high percentage of tools in the collection (Table 2), comprising 33% of all lithic materials, suggests that some resource extractive task was performed in the site area. The lack of hammerstones and decortication flakes indicates that specific tool types most likely were not made at the site. Rather, lithic waste was utilized efficiently, particularly since all the tools, except perhaps the crude biface (Figure 4A), are derived from larger waste flakes. It is recognized that this interpretation is based upon the assumption that most, if not all, of 23SL472 has been displaced and that the materials are somewhat representative of materials originally associated with the site.

All of the lithic artifacts are made of Burlington chert, and some exhibited characteristics of thermal alteration such as potlids and color changes. The ivory, tan-orange, and pink hues, due to thermal alteration, suggest that at least some of the chert on the site may be

Figure 4. Biface from 23SL472



A B

derived from the nearby Crescent Hills west of the project area (cf. Struever 1973:64). The one piece of bone appears to be modern.

Isolated Find #1

Isolated find #1 was encountered in a shovel probe in the northeast portion of the study area in a wooded parcel of land (Map 4). It consisted of one secondary flake (2.9 gr) of Burlington chert at a depth of less than 10 cm below ground surface. The shovel probe was expanded to approximately 1 m in diameter at that depth. No other prehistoric lithic material was encountered; however, one piece of historic Euro-American ceramic was found. It was a piece of broken yellowware tile(?), with a white glazed surface; it, too, was retrieved from less than 10 cm below the surface. The center of the shovel probe was extended 30 cm more in depth, and no other material was recovered.

Additional shovel probes were placed around this find spot at 5 m intervals in the manner described in the Methods section. No other materials were encountered in these pits. Inspection of the soil profiles in the pits revealed a relatively homogeneous, dark gray silt loam and no indication of cultural features or deposition.

Isolated find #1 is located in the general vicinity of sites 23SL405-409. Sites 23SL406 and 23SL408 each produced a single waste flake, site 23SL407 produced two flakes, and site 23SL409 yielded four flakes. Sites 23SL408 and 23SL409 also produced historic debris. Since the entire area of these sites was strewn with flood debris, it is possible that the sites represent flood-redeposited material from a site upstream; or these sites may have been created by past bulldozing and gravel dredging operations immediately to the east of the project area (cf. Nixon et al. 1982:56-58). Portions of this land were owned at one time by the Simpson Sand and Gravel Company of Valley Park, Missouri.

Isolated Find #2

Isolated find #2 was encountered on the surface along a shovel probe transect in a grassy lawn in the north-central portion of the project area (Map 4). It consisted of a single heat-treated piece of shatter (0.6 gr) from Burlington chert. The find spot is located on the south bank of Grand Glaize Creek, 60 m from the water, at an elevation of 419 ft.

A shovel probe was placed at the find spot, and additional probes were placed at 5 m intervals for 15 m along the transect and perpendicular to it. No other artifacts were encountered. The soil was extremely compacted, allowing for variable probing between 15-30 cm below surface. Conversations with the landowner (Valley Park Storage) indicated that the area had been leveled somewhat about 5 to 7 years previously; areas of gravel and dirt fill were noted about 45 m north of the find spot.

The flake at find spot #2 may be flood-redeposited material from site 23SL472. This inference is drawn from the fact that site 23SL472 also produced heat-treated Burlington chert and is located approximately 100 m upstream along Grand Glaize Creek from the find spot.

CONCLUSIONS

Statement of Significance

The cultural resources discussed above have varying potential to contribute to the understanding of local and regional prehistory in both Missouri and the greater middle Mississippi River drainage system. The potential for significance of these resources range from mere site locational and/or contextual data to the possibility of contributing to questions regarding intrasite function or role within areal syntheses of settlement modeling within the Ozark region.

Estimating the significance of any site may be difficult when only surface data have been obtained, even when both survey tracts and site areas have been shovel probed at systematic intervals. This problem is aggravated further when such materials are found under poor survey conditions such as grassy, weed choked, or wooded areas, as encountered in this project, and when shovel probing on known sites produces negative results. Under such conditions, even the delineation of the areal extent of a site becomes difficult, and relative artifact density becomes obfuscated. Only in cases where no subsurface deposits can be demonstrated to exist from survey data, as in the instance of isolated finds and redeposited sites not in association with any other surface or subsurface materials, can one ascertain that a particular resource is nonsignificant.

The evaluations of sites and recommendations which follow are based

upon multiple considerations, including potential contribution to local and regional prehistory, NRHP criteria (Federal Register 1976:1595), State of Missouri guidelines governing NHRP eligibility (Welchman (1979), and knowledge of the nature and extent of both past and proposed impacts to cultural resources. Recommendations follow the discussion of anticipated impact within the project area.

Statement of Impact

For the purposes of making recommendations, it is assumed that all areas delineated for the survey will be subjected to either levee construction or borrow pit activity as presently proposed. Therefore, direct impact through levee construction and associated activities will have a destructive affect on cultural resources present in the project area. The following site evaluations and recommendations have been formulated on the basis of potential significance and anticipated direct impact to sites in the project area.

Recommendations

The recommendations below are derived from the evaluation of cultural resources present in the study area against NRHP criteria.

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, nd 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 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 history or prehistory. (Federal Register 1976:1595)

Further, recommendations concerning previously recorded sites take into consideration the conclusions and recommendations offered by previous investigators.

Previously Recorded Sites

Previous investigations into parts of the present project area by Brandt and Sieb (1979) and by Nixon et al. (1982) yielded five prehistoric archaeological sites: 23SL230, 23SL406, 23SL407, 23SL408, and 23SL409. Four of these, sites 23SL406-409, were not recommended for further investigations. This conclusion follows that of Nixon et al. in that the "sites are not thought to be locally unique or archaeologically significant and no further evaluative or mitigative activity is recommended" (1982:85). Nixon et al. (1982:84-85) note that these sites represent isolated finds and are of questionable cultural origin. Further, the present investigation amounted to a resurvey of those areas where the sites were located, and the sites were not detected through shovel probing, which supports their previous interpretations as isolated finds.

Site 23SL230 is recommended for limited subsurface testing. Although Brandt and Sieb originally recorded the site, they did not propose site specific recommendations but, rather, made general recommendations (1979:92-93). In reference to the then proposed Metropolitan Sewer District, Brandt and Sieb recommended "testing of all sites to be directly impacted in order to more fully assess their

potential to yield significant data" (1979:93). To date, this site has not been tested. Further, it appears from the present survey that this site may have suffered adverse indirect impact from building razing immediately to the north, perhaps some direct impact from former construction in the immediate area, and recent use of heavy machinery after the December 1982 and May 1983 floods. Specific emphases for the recommended Phase II testing should include the following:

1. Definition of the nature and the extent of previous impacts to the site area.

2. Delineation of vertical extent of cultural deposits. In particular reference to site 23SL230, the nature of the Fishpot-Urban soils complex should be taken into consideration.

Obtaining this information for site 23SL230 may be accomplished through a series of soil cores (augering) placed along north-south and east-west axes across the site area. If these probes are placed systematically at 5 m intervals and cored to a depth of 2 m, such methods should be adequate to define the horizontal and vertical character of soils at the site, as well as delineating the extent of suspected previous impact. A depth of 2 m is recommended only as a guideline and, in part, from an interview with an informant who reported finding an "arrowhead" at a depth of approximately 3 1/2 to 4 ft in a spot adjacent to the western part of the study area. It is unlikely that coring or augering will produce many cultural artifacts unless a dense level of artifacts is identified. Consultation with a geomorphologist concerning soil deposition is recommended.

If necessary, further intensification of testing should be coordinated with archaeologists of the U. S. Army Corps of Engineers

(COE), St. Louis District, and the Missouri Historic Preservation Program, Jefferson City, Missouri. If warranted, emphases of further testing should include the following:

3. Identification of prehistoric cultural/temporal affiliation of the component(s) represented at the site, if such data are present.

4. Identification of site function or task specific activities that may have occurred in prehistoric times, if such data are present.

5. Integration of the results of all previous work and synthesis into the archaeological overview of the lower Meramec drainage.

6. Assessment of site significance in terms of NRHP criteria.

Cultural Resources Recorded on this Survey

Two isolated finds were recorded during the present project; however, they were not defined as sites. Intensive shovel probing at 5 m intervals around the find spots failed to produce additional cultural materials. These locales are of indeterminate prehistoric cultural/temporal affiliation and, at best, are of questionable cultural origin. Further, the finds are not locally unique nor archaeologically significant. Therefore, no recommendations for further archaeological investigations are made for the isolated finds.

Site 23SL472 is not recommended for further investigation. Presently the site is defined as a redeposited prehistoric camp site of undetermined cultural/temporal affiliation. Tools recovered from the site indicate some task specific activities, and the proximity to Grand Glaize Creek suggests that such activities may be related to exploitation of aquatic resources; however, this inference is problematical.

Both survey and data supplied by COE personnel indicate that materials representing site 23SL472 are not in their original

archaeological context, having been redeposited through private levee construction. Although there is the possibility of yielding a temporally diagnostic artifact, site 23SL472 does not have any potential to provide "information important in history or prehistory" (Federal Register 1976:1595), whether or not such an artifact is found. Therefore, site 23SL472 does not meet criteria for nomination to the NRHP, and no further action is recommended.

Summary

Table 3

Recommendations for Sites Within the Valley Park Study Area

Site	Further Work Recommended	Source
23SL406	no	Nixon et al. 1982
23SL407	no	Nixon et al. 1982
23SL408	no	Nixon et al. 1982
23SL409	no	Nixon et al. 1982
23SL230	yes, limited	Brandt and Sieb 1979; this report
23SL472	no	this report

REFERENCES

Adams, Robert M.
1941 Archaeological Investigations in Jefferson County, Missouri, 1930-40. Transactions of the Academy of Science of St. Louis XXX(5).

Adams, Robert McCormick, and Frank Magre
1939 Archaeological Surface Survey of Jefferson County, Missouri. The Missouri Archaeologist 5(2).

Anderson, K. H.
1979 Geologic Map of Missouri. Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla.

Anonymous
1909 Valley Park Sun, Special Edition 3(23).

1915 All Valley Park Offered for Sale. Post-Dispatch, November 15.

Benchley, Elizabeth
1975 An Overview of the Prehistoric Resources of the Metropolitan St. Louis Area. Report submitted to the National Park Service by Illinois State Museum Society, Springfield.

Binford, Lewis R.
1972 A Consideration of Archaeological Research Design. In An Archaeological Perspective, edited by Lewis R. Binford, pp. 135-161. Seminar Press, New York.

1980 Willow Smoke and Dogs' Tails: Hunter-gatherer Settlement Systems and Archaeological Site Formation. American Antiquity 45(1):4-20.

Brandt, Keith, and Rebecca Sieb
1979 A Reconnaissance Survey of the Cultural Resource Base within the Lower Meramec Basin, St. Louis and Jefferson Counties. Prepared for Ryckman, Edgerly, Tomlinson, and Associates, Inc., by Southern Illinois University-Edwardsville.

Browman, David L.
n.d. Municipal Destruction of ASM SL206 in Fenton City Park, 1978-1979. Ms. on file, Missouri Department of Natural Resources, Jefferson City.

1976 Cultural Resources Survey of the Proposed Treatment Plant Improvements, City of Manchester, St. Louis County, Missouri.

1977 Cultural Resource Survey of the Proposed Elementary School Site, House Springs R-1, Northwest District, Jefferson County, Missouri: Phase 1. Ms. on file, Archaeological Survey of Missouri, Columbia.

1979 Cultural Resource Survey of the Proposed Housing Development, San Luis Trails, Plat #6, Rock Township, Jefferson County, Missouri, Preliminary Survey.

1980 Cultural Resource Survey of the 36.63 Acre Flamm Tract for the City of Arnold, Jefferson County, Missouri.

Browman, David L., Niki R. Clark, Peter R. Prohlvein, and Van A. Reidhead
1977 23JE388: Hill 732, A Generalized Hunting Site. Ms. on file, Archaeological Survey of Missouri, Columbia.

Browman, David L., and Van A. Reidhead
1977 Interim Report, Phase II, Cultural Resource Assessment of the Proposed Elementary School Site, House Springs R-1, Northwest School District, Jefferson County. Ms. on file, Archaeological Survey of Missouri, Columbia.

Brown, J. A.
1977 Current Directions in Midwestern Archaeology. Annual Review of Anthropology 6:161-179.

Brown, Kenneth F., and Richard M. Kerr
1979 Physiographic Regions. Bureau of Land Management, Washington, D. C.

Browning, Nina, and Diane Carlson
n.d. Valley Park, Missouri: Community Assessment. Ms. on file, Valley Park Library, Valley Park, Missouri.

Bryson, Reid A., David A. Baerreis, and Wayne M. Wendland
1970 The Character of Late-glacial and Post-glacial Climatic Changes. In Pleistocene and Recent Environments of the Central Great Plains, edited by Wakefield Dort, Jr., and J. Knox Jones, Jr. Special Publications No. 3, Department of Geology, Lawrence, Kansas.

Buchner, Anthony P.
1980 Cultural Responses to Altithermal (Atlantic) Climate Along the Eastern Margins of the North American Grasslands, 5500 to 3000 B.C. Archaeological Survey of Canada, Paper 97. National Museums of Man, Ottawa.

Burton, John
1980 Making Sense of Waste Flakes: New Methods for Investigating the Technology and Economics Behind Chipped Stone Assemblages. Journal of Archaeological Science 7:131-148.

Bushnell, David I., Jr.
1914 Archaeological Investigations in Ste. Genevieve, Mo. Proceedings of the United States National Museum 46:641-668.

1922a Archaeological Reconnaissance of the Cahokia and Related Mound Groups. In Explorations and Fieldwork of the Smithsonian Institution in 1921. Smithsonian Miscellaneous Collections 17(15):93-105.

1922b Villages of the Algonquian, Siouan, and Caddoan Tribes West of the Mississippi. Bureau of American Ethnology Bulletin 77.

Caldwell, Joseph R.
1958 Trend and Tradition in the Prehistory of the Eastern United States. American Anthropological Association Memoir 88. Washington, D. C.

1964 Interaction Spheres in Prehistory. In Hopewellian Studies, edited by Joseph R. Caldwell and Robert L. Hall. Illinois State Museum Scientific Papers 12(2):133-143.

Chapman, Carl H.
1975 The Archaeology of Missouri, I. University of Missouri Press, Columbia.

1980 The Archaeology of Missouri, II. University of Missouri Press, Columbia.

Chapman, Carl H., and David R. Evans
1972 Archaeological-physiographic Regions and Localities of Missouri. Missouri Archaeological Society Newsletter 263:1-4.

Chartkoff, Joseph L.
1978 Transect Interval Sampling in Forests. American Antiquity 43(1):46-53.

Cleland, Charles E.
1976 The Focal-diffuse Model: An Evolutionary Perspective on the Prehistoric Cultural Adaptations of the Eastern United States. Mid-Continental Journal of Archaeology 1(1):59-76.

Coe, Joffre, and Kent Flannery
1964 Microenvironments and Meso-American Prehistory. Science 43:650-654.

Collier, James E.
1953 Geography of the Northern Ozark Border Region in

Missouri. University of Missouri Studies 26(1), Columbia.

Crabtree, Don E.
1972 An Introduction to Flintworking. Occasional Papers of the Idaho State University Museum, No. 28, Pocatello.

DeBarthe, Paul N.
1977 An Intensive Archaeological Reconnaissance Survey of Castlewood State Park, St. Louis County, Missouri. Ms. on file, Missouri Department of Natural Resources, Jefferson City.

Diaz-Granados, Carol
1979 Cultural Resource Survey of Land Bordered on the North, South, and East by the Meramec River, Located in St. Louis and Jefferson Counties, Missouri, for the Purpose of Extension of Dredging Permit #P-1073.

1981 Cultural Resource Survey of 65.685 Acres of Land on the Left Bank of the Meramec River Extending Either Side of Bauer Road, St. Louis County, Missouri. Washington University, St. Louis.

Diaz-Granados, Carol, Joseph L. Harl, and Ben A. Nelson
1981 Interim Report of Phase I Archaeological and Historic Survey for the Lower Meramec Basin Pollution Abatement Project, St. Louis County, Missouri.

Dudzik, Mark J.
1974 Aboriginal Subsistence-settlement Systems in the Upper Mississippi River Valley. Unpublished M.A. thesis, Department of Anthropology, University of Wisconsin-Milwaukee.

Dwyer, James P., and Alan Harn
1978 An Archaeological Reconnaissance of the Proposed FAP-405 Corridor Between Mossville and Peoria, Illinois. Report submitted by the Illinois State Museum Society to the Illinois Department of Transportation, Springfield.

Dwyer, James P., Jerome Jacobson, Jerry J. Moore, Kurt R. Moore, and James M. Peterson
1981 A Cultural Resource Survey of the Proposed St. Louis Harbor Site Locations, Madison County, Illinois. Prepared for U. S. Army, Corps of Engineers, St. Louis District, by Illinois State Museum Society, Springfield.

East, Thomas C., and J. Stephen Alexandrowicz
1980 Recent Archaeological Investigations at the Greater Peoria and Effingham County Airports. Report submitted by the Illinois Statue Museum Society to the Illinois Department of Transportation, Springfield.

Farnsworth, K. B.
1973 An Archaeological Survey of the Macoupin valley. Illinois State Museum, Reports of Investigations, No. 26, Springfield.

Federal Register
1976 Rules and Regulations. Federal Register 41(6):1595.

Ford, Richard I.
1974 Northeastern Archaeology: Past and Future Direction. Annual Review of Anthropology 3:385-413.

Fowke, Gerard
1928 Archaeological Investigations. Bureau of American Ethnology, 44th Annual Report (1926):505-540. Washington, D.C.

Fowler, Melvin L.
1959 Summary Report of Modoc Rock Shelter 1952, 1953, 1955, 1956. Illinois State Museum, Report of Investigations No. 8, Springfield.

1974 Cahokia: Ancient Capital of the Midwest. Addison-Wesley Module in Anthropology, 48. Reading, Massachusetts.

Fowler, Melvin, and Robert Hall
1975 Archeological Phases at Cahokia. In Perspectives in Cahokia Archaeology, edited by James Brown. Illinois Archaeological Survey Bulletin 10:1-14.

Geier, Clarence R., Jr.
1975 The Kimberlin Site: The Ecology of a Late Woodland Population. Missouri Archeological Society Research Series No. 12.

Goodyear, Albert C.
1982 The Chronological Position of the Dalton Horizon in the Southeastern United States. American Antiquity 47(2):382-395.

Graham, R. W.
1979 Archaeology and Paleontology of the Kimmswick Clovis-Mastodon site. Abstract, Thirty-seventh Plains Anthropology Conference, Kansas City, Missouri, National Park Service, Lincoln.

Graham, Russell, C. Vance Haynes, Donald Lee Johnson, and Marvin Kay
1981 Kimmswick: a Clovis-Mastodon Association in Eastern Missouri. Science 2113:1115-1117.

Gramly, Richard Michael
1980 Raw Materials Source Areas and "Curated" Tool Assemblages. American Antiquity 45(4):823-833.

Griffin, James B.
1955 Observations on the Grooved Axe in North America. Pennsylvania Archaeologist 25(1):31-43.

1967 Eastern North American Archaeology: A Summary. Science 156:175-191.

1968 Observation on Illinois Prehistory in Late Pleistocene and Early Recent Times. In The Quaternary of Illinois, University of Illinois, College of Agriculture, Special Publications 14, Urbana.

Harn, Alan D.
1971 An Archaeological Survey of the American Bottom and Wood River Terrace (Part 2). Illinois State Museum, Reports of Investigations No. 21, Springfield.

1980 Comments on the Spatial Distribution of Late Woodland and Mississippian Ceramics in the General Cahokia Sphere (vol. 1). Rediscovery 2:17-26.

Haynes, C. Vance
1980 The Ice-free Corridor and Peopling of the New World. Proceedings of the Fifth Biennial Conference of the American Quaternary Association 1(1):115-121. Edmonton.

Ives, David J.
1975 The Crescent Hills Prehistoric Quarrying Area. University of Missouri Museum Brief 22.

Jackson, Jarl
1982 Resurrected Railroad Hotel Brings Out Past. Globe Democrat.

Jones, Connie
1933 History of Valley Park. Valley Breeze, February.

King, Frances B., and Russell W. Graham
1981 Effects of Ecological and Paleoecological Patterns on Subsistence and Paleoenvironmental Reconstructions. American Antiquity 46(1):128-142.

King, James E.
1973 Late Pleistocene Palynology and Biography of the Western Missouri Ozarks. Ecological Monographs 43:539-565.

1981 Late Quaternary Vegetational History of Illinois. Ecological Monographs 51(1):43-62.

King, James E., and William H. Allen, Jr.
1977 A Holocene Vegetation Record from the Mississippi River Valley, Southeastern Missouri. Quaternary Research 8:307-323.

King, James E., and Everett H. Lindsay
1976 Late Quaternary Biotic Records from Spring Deposits in Western Missouri. In Prehistoric Man and His Environments: A Case Study in the Ozark Highlands, edited by W. Raymond Wood and R. Bruce McMillan, pp. 63-78. Academic Press, New York.

Küchler, A. W.
1975 Potential Natural Vegetation of the Conterminous United States, Special Publication #36. American Geographic Society, New York.

Mills, Edwin W.
1949 Some Prehistoric Sites Along the Meramec River as They Appeared Fifty Years Ago. Missouri Archaeologist 11(1):3-10.

Moore, Kurt R.
1983 The Archaeology of Cedar Creek: Final Report of Investigations in the FAP-404 Corridor, Knox and Warren Counties, Illinois. Illinois State Museum Society, Springfield.

Munson, Patrick J.
1971 An Archaeological Survey of the Wood River Terrace and Adjacent Bottoms in Madison County, Illinois. Illinois Reports of Investigations 21(1):3-17.

Nixon, Joseph M.
1984 Personal communication. Director, Center for Archaeological Research, University of Missouri-St. Louis, February 17.

Nixon, Joseph M., Laura E. Kling, and M. Colleen Hamilton
1982 An Intensive Cultural Resource Survey and Assessment of Potential Impact Areas Associated with Pollution Abatement Programs Along the Meramec River in Southern St. Louis County, Missouri. Research Report #3, Archaeological Survey, University of Missouri-St. Louis.

Nixon, Joseph M., and M. Colleen Hamilton
1982 Phase II Level Archaeological and Geomorphological Testing at Site 23SL140a, St. Louis County, Missouri. Metropolitan Sewer District, St. Louis.

Odum, Eugene
1959 Fundamentals of Ecology. Saunders, Philadelphia.

Perino, Gregory
1958 Guide to the Identification of Certain American Projectile Points. Oklahoma Anthropological Society Special Bulletin No. 1, Norman.

Reagan, Michael J.
1975 Archaeological Reconnaissance of Route 141, St. Louis-Jefferson County, Missouri. Ms. on file, Archaeological Survey of Missouri, Columbia.

Roetzel, Kathleen A., Richard A. Strachan, Patricia M. Emerson, and Wanda A. Watson
1982 Intensive Archaeological Survey and Site Testing for the National Register of Historic Places, Harlan County Lake, Harlan County, Nebraska. Impact Services, Inc., Mankato, Minnesota.

Ryckman, Edgerly, Tomlinson, and Associates, Inc.
1973 Meramec Park Lake: Upper Mississippi River Basin, Meramec River. (Draft) Environmental Statement, U. S. Army, Corps of Engineers, St. Louis District.

1979 Final Environmental Impact Statement for the Proposed Lower Meramec River Basin Wastewater Treatment Facilities. U. S. Environmental Protection Agency, Kansas City.

Schroeder, Walter A.
1981 Presettlement Prairie of Missouri. Natural History Series, No. 2. Missouri Department of Conservation, Jefferson City.

Sherrill, Eileen (ed.)
1981 Valley Park, Missouri, In 1909. Eileen Sherrill, Valley Park, Missouri.

1982 Valley Park: 100 Years Ago and More. Meramec Station Historical Society.

Soil Conservation Service
1976 Interim Soil Survey for St. Louis County and St. Louis City, Missouri (vols. I, II). U. S. Department of Agriculture, Washington, D. C.

1982 Soil Survey of St. Louis County and St. Louis City, Missouri. U. S. Department of Agriculture, Washington, D. C.

Stewart, Regina, and Geraldine Cosentino
1976 Bottles: a Guide for the Beginning Collector. Golden Press, New York.

Steyermark, J. A.
1963 Flora of Missouri. Iowa State University Press, Ames.

Stoltman, James B.
1978 Temporal Models in Prehistory: An Example from Eastern North America. Current Anthropology 19:703-746.

Struever, Stuart
1968 Woodland Subsistence-settlement Systems in the Lower Illinois Valley. In New Perspectives in Archaeology, edited by Sally R. Binford and Lewis R. Binford, pp. 285-312. Aldine, Chicago.

1973 Chert Utilization in Lower Illinois Valley Prehistory. In Variation in Anthropology: Essays in Honor of John C. McGregor, edited by Donald W. Lathrap and Jody Douglas, pp. 61-73. Illinois Archaeological Survey, Urbana.

Thomas, William L.
1911 Valley Park: [excerpt] History of St. Louis County, Missouri (vol. 1). S. J. Clark Publishing Company, St. Louis.

Weichman, Michael S.
1979 Guidelines for Reporting Phase II Testing of Archaeological Site Significance and Evaluation of National Register Eligibility. Office of Historic Preservation, Department of Natural Resources, Jefferson City, Missouri.

Wendland, Wayne M.
1978 Holocene Man in North America: The Ecological Setting and Climatic Background. Plains Anthropologist 23(82):273-287.

Willey, Gordon R.
1966 An Introduction to American Archaeology: North and Middle America (vol. 1). Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Wilmsen, Edwin N.
1972 Lithic Analysis in Paleoanthropology. In Contemporary Archaeology, edited by Mark P. Leone, pp. 195-205. Southern Illinois University Press, Carbondale.

Wippold, Barney
1976 Valley Park -- Booming Industrial Center Before Big Flood in 1915. Globe-Democrat, March 31.

Wood, W. Raymond
1976 Vegetational Reconstruction and Climatic Episodes. American Antiquity 41(2):206-208.

Wood, W. Raymond, and R. Bruce McMillan
1976 Prehistoric Man and His Environment: A Case Study in the Ozark Highland. Academic Press, New York.

Wright, H. E., Jr.
1976 The Dynamic Nature of Holocene Vegetation: A Problem in Paleoclimatology, Biogeography, and Stratigraphic Nomenclature. Quaternary Research 6:581:596.

Yarnell, Richard A.
1976 Early Plant Husbandry in Eastern North America. In Cultural Change and Continuity: Essays in Honor of James Bennett Griffin, edited by Charles Cleland, pp. 265-274. Academic Press, New York.

Zawacki, April A., and Glen Hausfater
1969 Early Vegetation of the Lower Illinois Valley. Illinois State Museum Reports of Investigations #17, Springfield.

APPENDIX A

Scope of Work

SCOPE OF WORK

A Cultural Resource Survey of Selected Portions of the Valley Park Levee Alignment

1. Statement of Work. The work to be accomplished by the Contractor consists of furnishing all labor, supplies, materials, plant, and equipment necessary to perform a Cultural Resource Survey of selected portions of the Valley Park levee alignment, St. Louis County, Missouri, and furnish a written report thereon, as set forth in this Scope of Work.

2. Location and Description of the Study Area. The project area is situated within the corporate limits of the city of Valley Park, St. Louis County, Missouri. The study area is restricted to selected parcels of land along a 300 foot wide levee alignment and adjacent borrow areas (Attachment 1). The total area to be physically surveyed consists of approximately 80 acres of designated locations.

3. Study Plan.

3.1 General. The Contractor is responsible for the formulation, justification, and conduct of the study to include the design and execution of all survey methods and procedures as well as the presentation of the study results, unless otherwise set forth in the Scope of Work, all to be included in a written report as set forth herein. Unless otherwise specified, all applicable procedures in the following publication will be considered standard procedure: Center for American Archaeology, Laboratory and Fieldwork Procedures Manual, FIA, Kampsville, Illinois, 1980. Any deviation from this SOP will be requested in writing.

3.2 Literature Review. A literature review will be conducted which will summarize the prehistoric and historic cultural resources known within the project area, identifying any known archaeological sites. A brief history of Valley Park, with emphasis on the levee alignment area (e.g. the old plate glass company) will be presented in the final report. The main source of this information will be the Valley Park Public Library.

3.3 Shovel Testing. Designated survey parcels (A thru L, Attachment 1) will be shovel tested unless surface exposure allows for pedestrian survey. However, pedestrian survey is not anticipated. A series of subsurface shovel tests will be excavated at a 15-meter grid interval across the area under consideration in order to determine the presence or absence of any cultural materials. Dimensions of each unit will be approximately 30cm-by-30cm in width and will be excavated down to the subsoil (approximately 50cm deep). The bottoms of each unit will be trowel scraped and visually examined, and backdirt will be inspected for artifacts.

3.4 Pedestrian Survey. Only on a minor percentage of designated survey acreage, if any, will pedestrian survey activities be conducted. The Pedestrian Survey will entail an intensive on-the-ground evaluation of an

area sufficient to determine the number and extent of resources present within that area. This survey method will be used only in areas of cultivation or other areas with surface exposure. A random surface collection will be conducted on each site identified during this process.

3.5 Laboratory Analysis. Artifacts collected during survey activities will be washed, permanently labeled and catalogued according to standard lab procedures. These collections will be analyzed in an attempt to determine each site's temporal affiliation and horizontal surface distribution. All artifacts will be separated into various general categories, then subdivided into smaller, functional and stylistic categories. These distributions will be quantitatively assessed in a professional, concise manner.

3.5.1 Curation of Material. Artifacts collected during these activities will be boxed and marked: Property of U.S. Government, St. Louis District, Corps of Engineers. Location and access procedures will be stated in the Final Report. Documentation of location will include at a minimum, the name and address of the building, the storage room number, and the rack, shelf or cabinet number where the material is stored. Representative samples of artifacts recovered during these investigations may be utilized by the St. Louis District.

4. Method of Operation. The Contractor will complete the attached Method of Operation form (Attachment 2) that will be submitted as an appendix to the request for quotation and conduct a cultural resource survey in the study area as defined in paragraph 2 above. The method of operation shall identify the techniques to be used to address the various requirements of the Scope of Work. Detailed vitae attachments outlining the work histories and academic backgrounds of all individuals scheduled to be directly involved in the supervision of laboratory/fieldwork and report preparation will also be submitted with the request for quotation. One completed copy of the Contractor's proposal, including the method of operation form and price is to be postmarked for return to the Contracting Officer for review within 7 calendar days of receipt of the request for quotation.

5. Definitions.

5.1 Principal Investigator. The principal investigator is required to spend 10 percent of the total field time directly involved in the fieldwork. Adequate time will be devoted to the contract to accomplish the work in an expedient manner. He will be responsible for the validity of the material presented in the cultural resource report and will sign the final report. If authored by someone other than the principal investigator, he will prepare a forward in the final report. In the event of controversy or court challenge, the principal investigator will testify on behalf of the Government in support of the report findings. Persons in charge of an archaeological project or research investigation contract, in addition to meeting the appropriate standards for an archaeologist, should have recognized expertise in this field and must have a doctorate or an equivalent level of professional experience as evidenced by a publication record that

demonstrates experience in field project formulation, execution, and technical monograph reporting. Suitable professional references may also be made available to obtain estimates regarding adequacy of prior work. If prior projects were of a sort not ordinarily resulting in a publishable report, a narrative should be included detailing the proposed project to the director's previous experience, along with references suitable to obtain opinions regarding the adequacy of this earlier work.

5.2 Archaeologist. The minimum formal qualifications for individuals practicing archaeology as a profession are a B.A. or B.S. degree from an accredited college or university, followed by two years of graduate study with concentration in anthropology and specialization in archaeology during one of these programs, and at least two summer field schools or their equivalent, under the supervision of archaeologists of recognized competence. A master's thesis or its equivalent in research and publication is highly recommended as is the Ph.D degree. Individuals lacking such formal qualifications may present evidence of a publication record and references from archaeologists who do meet these qualifications.

5.3 Consultants. Personnel hired or subcontracted for this special knowledge and expertise must carry academic and experiential qualifications in their own field of competence. Such qualifications are to be documented by means of vitae attachments to the proposal or at a later time if the consultant has not been retained at the time of the proposal.

5.4 Institution or Contract Firm. Any institution, organization, etc., obtaining this delivery order and sponsoring the principal investigator or project director meeting the previously given requirements must also provide or demonstrate access to the following capabilities:

(1) Adequate field and laboratory equipment necessary to conduct whatever operations are defined in the Scope of Work.

(2) The institution will provide for storage and retrieval facilities for perpetual curation for all artifacts, specimens, records, and other documents of the cultural resource survey performed under this delivery order. The location of these materials will be stated in the report of this work, and the Contractor will indicate how such materials and records can be made available to other professionals who may have a need for data derived from work conducted under this delivery order.

6. Final Report. The Contractor will prepare a written report which describes in detail, data collection techniques used as well as an explanation for the rationale for their use. A photographic log of annotated slides of each phase of work will be included in the Final Report. 35mm slides are required for this documentation and should include photographs of work in progress, both lab and field. U.T.M. coordinates of each site identified will be presented as part of the overall site description. Detailed site-specific descriptions, locational data, maps, or U.T.M. coordinates will be attached as an appendix to the Final Report. The report

will be bound and will include maps which accurately define site locations, site numbers, areas surveyed, and ground cover conditions as well as any other data pertinent to this resource. Survey information such as ground cover, areas surveyed, and surface distribution should be clearly illustrated on appropriate U.S.G.S. quadrangle maps, scale 1:24,000, and appropriate Corps topo sheets to be provided. Hand lettering will not be acceptable in the body of this report other than that necessary to record data on base maps. Oversized maps will be folded and included in a pocket in the back of the appropriate section of the report or appendix thereof. A full set of reproducible copies of all maps, plates and drawings will be included in the Final Report. Black and white prints (8 x 10 inch) of diagnostic artifacts will be attached to the Final Report as an appendix. The report will also contain an abstract not to exceed one typewritten page. Archaeological Survey of Missouri (ASM) site forms will be completed and submitted for each site identified during these activities.

The Final Report will also contain:

a. A general description of the survey results in light of current anthropological discussions.

b. A comparison of the survey results with data derived from previous archaeological investigations in the Meramec Basin area.

c. An analysis of artifacts recovered during these investigations consisting of, at a minimum, a complete description and categorization of specimens (e.g. ceramics by weight, temper, surface treatment, type).

7. Protection of Natural and Historic Features. The Contractor will be responsible for all damages to persons and property which occur in connection with the work and services under this contract without recourse against the Government. The Contractor will provide the maximum protection, take every reasonable means, and exercise care to prevent damage to existing historic structures, roads, utilities, and other public or private facilities.

8. Property Damage. The Contractor will restore to the satisfaction of the Government representative, at no additional cost to the Government, any damage to any Government or private property.

9. Publicity. The Contractor will not release any materials for publicity without the prior written approval of the Government representative. This provision will not be construed so as to restrict in any way the Contractor's right to publish in scholarly or academic journals. Students and other archaeologists are likewise free to use information developed under this delivery order in theses and dissertations or in publications in scholarly or academic journals.

10. Right of Entry. The Contractor is required to secure the right of entry upon the worksite for performance of work under this delivery order. The Contractor will obtain the necessary approval to enter on any private

property and to permanently remove any artifacts recovered during subsequent survey activities. Should access to certain portions of the project area referenced in paragraph 2 above be denied, the actual amount of the purchase order will be decreased in an amount equal to the percentage of difference between the original required acreage and that acreage actually surveyed.

11. Investigation of Field Conditions. Representatives of the Contractor are urged to visit the areas where work is being performed and by their own investigation satisfy themselves as to the existing conditions affecting the work to be done. Any prospective contractors (including subcontractors) who choose not to visit the area will nevertheless be charged with knowledge of conditions which a reasonable inspection would have disclosed. The Contractor will assume all responsibility for deductions and conclusions as to the difficulties in performing the work under this delivery order.

12. Inspection and Coordination. Government representatives may at any reasonable time inspect and evaluate the work being performed hereunder and the property on which it is being performed. If any inspection or evaluation is made by the Government on the property of the Contractor or any subcontractor, the Contractor will provide and will require his subcontractor to provide all reasonable facilities and assistance for the safety and convenience of the Government representatives. All inspections and evaluations will be performed in such a manner as will not unduly delay the work. Close coordination will be maintained between the Contractor's principal investigator and the Government representative to insure that the Government's best interest is served.

13. Responsibility for Materials and Related Data. Except as otherwise provided in this delivery order, the Contractor will be responsible for all written materials and related data generated by this contract until they are delivered to the Government at the designated delivery point and prior to acceptance by the Government. The designated delivery point is 210 Tucker Boulevard, North, Room 841, St. Louis, Missouri 63101, ATTN: Mr. Terry Norris (PD-A).

14. Schedule of Work.

14.1 Fieldwork. All fieldwork related to this item will be completed on or before 15 July 1983.

14.2 Draft Report. Five copies of the Draft Report will be submitted by the Contractor to the Government representative on or about 1 September 1983. Government representatives will review the report for compliance with the requirements of the contract and will return the preliminary report, together with any written comments thereon, which may require changes in the report, to the Contractor within 20 calendar day after its receipt. The title page will be organized in a manner consistent with the St. Louis District title page format guidelines (Attachment3), and the report's format will conform with St. Louis District report format guidelines (Attachment 4).

14.3 Final Cover. While the St. Louis District is reviewing the Contractor's Draft Report, the St. Louis District will prepare report covers for the Final Report and will forward these to the Contractor with draft comments. The Contractor will be responsible for binding the Final Report in these covers, using plastic spiral binding.

14.4 Final Report. The Contractor will submit 20 bound copies of the Final Report, including the original copies signed by the principle investigator, to the Government on or before 1 November 1983. A set of reproducibles of all drawings, plates and other graphics, including site forms, will be furnished at the time of submission of the Final Report.

15. Delays. In the event these schedules are exceeded due to causes beyond the control and without the fault or negligence of the Contractor, this work order will be modified in writing, and the completion date will be extended one calendar day for each calendar day of delay.

4 Attachments

1. Project Map
2. Method of Operation Form
3. SLD Title Page Format Guidelines
4. SLD Report Format Guidelines

APPENDIX B

Correspondence

January 20, 1984

Mr. Jack F. Rasmussen, P.E.
Chief, Planning Division
St. Louis District Corps of Engineers
210 Tucker Blvd., North
St. Louis, Missouri 63101

Re: Proposed Valley Park Alignment Project, St. Louis County, Missouri (COE)

Dear Mr. Rasmussen:

The Historic Preservation Program has reviewed the December 1983 draft report entitled "Cultural Resource Survey and Assessment of Proposed Valley Park Levee Alignment and Borrow Areas, St. Louis County, Missouri" by Kurt R. Moore and Jerry J. Moore. Based on this review we have the following comments:

1. Please provide vitae for the authors of this report.
2. There is no scale on the 7.5 minute U.S.G.S. topographic map should be identified.
3. At least 4 relevant references are missing from the previous investigations review, i.e., Ives (1975) Crescent Hills report; Harris (1982) report on the Minke tract; DeBarthe's (1977) Castlewood survey; and Nixon's (1982) Phase II testing at 23SL140a.
4. Page 45, correct reference is site 23SL472, not 23SL4720.
5. The discussion of soil morphology should address the potential disturbance of the sites in more detail.
6. Site specific maps should be provided where appropriate indicating boundaries, material concentrations, and any other relevant information.
7. Page 57 and 58, recommendations, further testing of 23SL230 and 23SL472 should also be coordinated with the Missouri Historic Preservation Program.
8. Summary form should list all sites in the project area, previously recorded as well as new ones; and Archchaeological Survey of Missouri (ASM) site forms must be submitted to this office for the new sites and updated forms for the previously recorded sites.

Until the above comments have been addressed and a revised report submitted to this office for further review, no action should be taken on project activities initiated which might impact the cultural resources in the project area.

If I can be of further assistance, please call 314/751-4096 or write.

Sincerely,

DIVISION OF PARKS AND HISTORIC PRESERVATION

Michael S. Weichman
Chief, Review & Compliance

MSW:jdc

cc: Michael McNerney

MISSOURI DEPARTMENT OF NATURAL RESOURCES
P.O. Box 176 Jefferson City, Missouri 65102 (314) 751-2479

Christopher S. Bond Governor
Fred A. Lafser Director

Division of Parks and Historic Preservation
John Karel Director

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
210 TUCKER BOULEVARD, NORTH
ST. LOUIS, MISSOURI 63101

REPLY TO ATTENTION OF

February 14, 1984

Environmental Analysis Branch
Planning Division

Mr. Michael J. McNerney
American Resources Group Limited
127 North Washington
Carbondale, Illinois 62901

Dear Mr. McNerney:

The St. Louis District has completed its review of the draft cultural resource report entitled "Cultural Resource Survey and Assessment of Proposed Valley Park Levee Alignment and Borrow Areas, St. Louis County, Missouri" by Kurt R. Moore and Jerry J. Moore. Included for your information are the review comments of the Missouri Department of Natural Resources. Based upon this review, please address the following comments:

a. The title page should read CULTURAL RESOURCES MANAGEMENT REPORT NUMBER 10, not 74.

b. Provide vitae for the authors of this report.

c. Provide a scale for the USGS topographic maps presented in the text.

d. Page 1, substitute areas for items in the first paragraph, third sentence.

e. Page 12, Figure 2, check with Dr. Nixon, UMSL, regarding possible Mississippian components at a site now being excavated on Fish Pot Creek.

f. Page 25, last paragraph, delete 100 feet tall. Only one Mississippian mound in the eastern United States is this tall.

g. Page 26, paragraph 1, see comment e above.

h. Page 45, 23SL4720 should read 23SL472.

i. Page 45, please provide more discussion regarding the heavy machinery damage to 23SL230.

j. It has now been confirmed that the "ridge" upon which 23SL472 was located represents the remains of a private levee. This should be stated in the report. The Recommendations section of the report should also be changed accordingly.

k. The Recommendations section of the report recommends intensive shovel testing across 23SL230. Earlier in the Survey Methods section the author states that this site was shovel tested at a 5m interval as prescribed in the Scope of Work. The author's rationale for additional shovel testing should be more clearly explained.

l. The specific location of the curated artifacts must be stated in the final report.

m. One annotated set of 35 millimeter slides of the fieldwork must be submitted with the final report.

n. Using black plastic spiral binding, affix the enclosed Title pages to the required number of reports and submit same with your request for final payment.

My staff has informed me that your efforts on this project were both timely and cost effective. Please accept my thanks for a job well done.

Sincerely,

Jack F. Rasmussen, P.E.
Chief, Planning Division

Enclosures

Copy Furnished:

Mr. Michael Weichman
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102