

**Section 4.4.3 removed to protect confidential locations of archeological resources.**

## 5.0 IMPACTS

The majority of the direct APE (see Figures E-1 through E-9, Appendix E) should be considered highly sensitive for the presence of historical resources, including both prehistoric and historic archaeological sites. Five previously recorded archaeological sites, all of historic age, are located within the Direct APE.

Sanborn maps indicate that most parcels within the direct APE were occupied by commercial or residential buildings by 1888. Additional historic maps indicate that the routes of seven zanjas (Zanja Madre and Zanjas 8-R, 8, 5, 4, 3, and 6-1) cross parts of the direct APE. Archaeological studies that have been undertaken in the project vicinity support the map data: subsurface archaeological deposits, including zanja segments, are commonly encountered during construction projects in downtown Los Angeles.

For the proposed project's cumulative impact analysis, the potentially affected cultural resources under consideration include those located within the indirect APE, which is generally bounded by US 101 to the north, Center Street to the east, 3<sup>rd</sup> Street to the south, and Figueroa Street to the west. The indirect APE, as well as adjacent areas in and around downtown Los Angeles, includes some of the oldest sections of the City of Los Angeles. In these areas there are numerous examples of historic properties and historical resources (including archaeological resources) that are significant on local, state, and/or national levels.

In support of this analysis, lists have been compiled of major projects that are anticipated to be completed within the general project area prior to the start of construction (2009 to 2014) and during the projected construction period (2014 to 2018). These include 20 major renovation projects, 66 new construction projects, and 14 large transportation projects. No major utility projects were identified.

Direct cumulative impacts to archaeological resources generally occur when the destruction or substantial modification of resources or their contexts result in the degradation of resource significance. Indirect cumulative impacts generally occur when the context of a resource is destroyed or modified. Projects that do not include substantial ground disturbance are unlikely to cause direct cumulative effects to archaeological resources. The primary cumulative impact concern in this evaluation is the systematic demolition or alteration of archaeological resources.

### 5.1 No Build Alternative

#### 5.1.1 Construction Impacts

The No Build Alternative, in which the project site would remain in its existing condition, would not result in construction impacts to archaeological resources because no ground disturbance would occur.

### 5.1.2 Operational Impacts

The No Build Alternative would not result in operational impacts to archaeological resources.

### 5.1.3 Cumulative and Indirect Impacts

The No Build Alternative would not result in impacts to archaeological resources. Therefore, the No Build Alternative would not contribute to a cumulative impact on these resources.

## 5.2 Transportation System Management (TSM) Alternative

### 5.2.1 Construction Impacts

The TSM Alternative has the potential to alter, remove, or destroy archaeological resources within the APE during ground disturbance related to construction of bus stops and shelters. These facilities will be constructed every two to three blocks, but their precise locations have not yet been established.

The TSM Alternative crosses the Los Angeles zanja system, including the Zanja Madre (CA-LAN-887H) and the approximate alignments of Zanjas 3, 4, 5, 8, and 8-R. These alignments have not been confirmed archaeologically within the direct APE, but zanja segments have been observed in the project vicinity as shallow as 0.45 m (1.5 feet) below current grade (Zanja 6-1; P-19-003352). The potential to affect previously unrecorded archaeological resources elsewhere in the direct APE is high. Such damage to archaeological resources would represent a significant effect that could be mitigated. Implementation of Mitigation Measures (MM) A-1 and MM-A-2 would reduce this potential effect to less-than-significant level.

### 5.2.2 Operational Impacts

The TSM Alternative would not result in operational impacts to archaeological resources.

### 5.2.3 Cumulative and Indirect Impacts

Construction of the TSM Alternative, as stated above, has the potential to directly affect archaeological resources within the APE, including previously unidentified archaeological resources and the Los Angeles zanja system. Implementation of MM-A-1 (see Section 6.1) would reduce direct impacts to previously unidentified archaeological resources to less-than-significant level. Therefore, the TSM Alternative would not contribute to a cumulative impact on these resources.

The zanja system is a large, linear resource that winds throughout downtown Los Angeles and may be found immediately below current street grade. It has been affected by at least five previous construction projects and is likely to be affected by numerous future projects.

The system as a whole has not been documented by historians, archaeologists, or architectural historians in the modern era because it has been obscured by pavement and buildings for more than a century. Consequently, the zanja system is particularly vulnerable to cumulative impacts that would not be adequately addressed with standard archaeological mitigation measures. By providing documentation and interpretation of the zanja system on a system-wide scale, implementing MM-A-2 (see Section 6.1) would reduce both direct and cumulative impacts to this resource to less-than-significant level.

## 5.3 At-grade Emphasis Light Rail Transit (LRT) Alternative

### 5.3.1 Construction Impacts

The At-Grade Emphasis LRT Alternative has the potential to alter, remove, or destroy archaeological resources within the APE. Site RC-1, a historic brick alignment (see Section 4.4.2), may be affected during ground disturbance from construction of a proposed pedestrian bridge at the intersection of Temple and Alameda Streets.

Site RC-1 appears to be not eligible for National Register or California Register listing. However, previously unrecorded parts of the site that retain substantial integrity may be present. This alternative also has the potential to affect previously unrecorded archaeological resources during ground disturbance from constructing new underground tunnel segments on Flower Street between 7<sup>th</sup> Street and Hope Street; new stations proposed at Main/1<sup>st</sup> Streets, Los Angeles/1<sup>st</sup> Streets, 2<sup>nd</sup>/Hope Streets, and Flower/6<sup>th</sup>/5<sup>th</sup> Streets; and an automobile underpass and pedestrian overpass on Alameda Street at Temple Street. Such damage to archaeological resources would represent a significant effect that could be mitigated. Implementing MM-A-1 (see Section 6.1) would reduce this effect to a less-than-significant level.

### 5.3.2 Operational Impacts

The At-Grade Emphasis LRT Alternative would not result in operational impacts to archaeological resources.

### 5.3.3 Cumulative and Indirect Impacts

Construction of the At-Grade Emphasis LRT Alternative has the potential to directly affect archaeological resources within the APE, including previously unidentified archaeological resources and previously undiscovered portions of site RC-1. However, implementing MM-A-1 would reduce this effect/impact to a less-than-significant level. Therefore, this alternative would not contribute to a cumulative impact on these resources.

## 5.4 Underground Emphasis LRT Alternative

### 5.4.1 Construction Impacts

The Underground Emphasis LRT Alternative involves substantial ground disturbance, and therefore has the potential to alter, remove, or destroy archaeological resources within the APE. It has the potential to affect archaeological resources during ground disturbance from constructing a new underground tunnel along its entire route; underground stations on 2<sup>nd</sup> Street (either at Broadway or at Los Angeles Street), 2<sup>nd</sup>/Hope Street, and Flower/5<sup>th</sup>/4<sup>th</sup> Streets; an automobile underpass on Alameda Street between 2<sup>nd</sup> and Temple Streets; and a potential pedestrian bridge at the intersection of Alameda and 1<sup>st</sup> Streets.

Potentially affected resources include site CA-LAN-3588 and the Los Angeles zanja system (specifically Zanjias 3, 4, 5, and 8; see Figure 4-1). Although the precise location and local integrity of the zanjias have not been established, the project's 2<sup>nd</sup> Street alignment likely crosses the system multiple times.

Archaeological remains associated with these sites may extend into the project area and be subject to direct alteration. This would result in a significant effect that could be mitigated. Construction of new stations would almost certainly affect any extant archaeological resources within their footprints. Construction of new tunnel segments through deep tunneling, as opposed to cut-and-cover techniques, could avoid effects to shallow archaeological resources, although the maximum depth of these resources and minimum depth of construction would both need to be established prior to reaching this conclusion. Implementing MM-A-1 and MM-A-2 (see Section 6.1) would reduce this effect to a less-than-significant level.

### 5.4.2 Operational Impacts

The Underground Emphasis LRT Alternative would not result in operational impacts to archaeological resources.

### 5.4.3 Cumulative and Indirect Impacts

Construction of the Underground Emphasis LRT Alternative has the potential to directly affect archaeological resources within the APE, including previously unidentified archaeological resources, the Los Angeles zanja system, and site CA-LAN-3588. Implementing MM-A-1 would reduce potential direct impacts to previously unidentified archaeological resources to a less-than-significant level. Therefore, the Underground Emphasis LRT Alternative would not contribute to a cumulative impact on unidentified archaeological resources. Implementing MM-A-2 would reduce both direct and cumulative potential impacts to the Los Angeles zanja system to a less-than-significant level.

## 5.5 Fully Underground LRT Alternative- Little Tokyo Variation 1

### 5.5.1 Construction Impacts

The Fully Underground LRT Alternative-Little Tokyo Variation 1 involves substantial ground disturbance, and therefore has the potential to alter, remove, or destroy archaeological resources within the APE. It has the potential to affect archaeological resources during ground disturbance from constructing a new underground tunnel along its entire route; underground stations at 2<sup>nd</sup> Street/Broadway, 2<sup>nd</sup>/Hope Street, Flower/5<sup>th</sup>/4<sup>th</sup> Streets, and 2<sup>nd</sup>/Central Avenue; and portals at 1<sup>st</sup> /Hewitt Streets and Alameda/Temple Streets.

Potentially affected resources include sites CA-LAN-3588, P-19-003338, and P-19-003339 and the Los Angeles zanja system (specifically Zanjias 3, 4, 5, and 8; see Figure 4-1). Although the precise location and local integrity of the zanjias have also not been established, the project's 2<sup>nd</sup> Street alignment likely crosses the system multiple times. Archaeological remains associated with these sites may extend into the project area and be subject to direct alteration. This would result in a significant effect that could be mitigated.

Construction of new stations would almost certainly affect any extant archaeological resources within their footprints. Construction of new tunnel segments through deep tunneling, as opposed to cut-and-cover techniques, could avoid effects on shallow archaeological resources, although the maximum depth of these resources and minimum depth of construction would both need to be established prior to reaching this conclusion. Implementing MM-A-1 and MM-A-2 (see Section 6.1) would reduce this effect to a less-than-significant level.

### 5.5.2 Operational Impacts

The Fully Underground LRT Alternative-Little Tokyo Variation 1 would not result in operational impacts to archaeological resources.

### 5.5.3 Cumulative and Indirect Impacts

Construction of the Fully Underground LRT Alternative-Little Tokyo Variation 1 has the potential to directly affect archaeological resources within the APE, including previously unidentified archaeological resources, the Los Angeles zanja system, and sites CA-LAN-3588, P-19-003338, and P-19-003339. Implementing MM-A-1 would reduce potential direct impacts to previously unidentified archaeological resources to a less-than-significant level. Therefore, the Fully Underground LRT Alternative-Little Tokyo Variation 1 would not contribute to a cumulative impact on unidentified archaeological resources. Implementing MM-A-2 would reduce both direct and cumulative potential impacts to the Los Angeles zanja system to a less-than-significant level.

## 5.6 Fully Underground LRT Alternative- Little Tokyo Variation 2

### 5.6.1 Construction Impacts

The Fully Underground LRT Alternative-Little Tokyo Variation 2 involves substantial ground disturbance, and therefore has the potential to alter, remove, or destroy archaeological resources within the APE. It has the potential to affect archaeological resources during ground disturbance from constructing a new underground tunnel along its entire route; underground stations at 2<sup>nd</sup> Street/Broadway, 2<sup>nd</sup>/Hope Street, Flower/5<sup>th</sup>/4<sup>th</sup> Streets, and 2<sup>nd</sup>/Central Avenue; and portals at 1<sup>st</sup> /Hewitt Streets, 1<sup>st</sup>/Garey Streets, and Alameda/Temple Streets.

Potentially affected resources include sites CA-LAN-3588, P-19-003338, and P-19-003339 and the Los Angeles zanja system (specifically Zanjias 3, 4, 5, 8, and 6-1; see Figure 4-1). Although the precise location and local integrity of the zanjias have not been established, the project's 2<sup>nd</sup> Street alignment likely crosses the system multiple times.

Archaeological remains associated with these sites may extend into the project area and be subject to direct alteration. This would result in a significant effect that could be mitigated. Construction of new stations would almost certainly affect any extant archaeological resources within their footprints.

Construction of new tunnel segments through deep tunneling, as opposed to cut-and-cover techniques, could avoid effects on shallow archaeological resources, although the maximum depth of these resources and minimum depth of construction would both need to be established prior to reaching this conclusion. Implementing MM-A-1 and MM-A-2 (see Section 6.1) would reduce this effect to a less-than-significant level.

### 5.6.2 Operational Impacts

The Fully Underground LRT Alternative-Little Tokyo Variation 2 would not result in operational impacts to archaeological resources.

### 5.6.3 Cumulative and Indirect Impacts

Construction of the Fully Underground LRT Alternative-Little Tokyo Variation 2 has the potential to directly affect archaeological resources within the APE, including previously unidentified archaeological resources, the Los Angeles zanja system, and sites CA-LAN-3588, P-19-003338, and P-19-003339. Implementing MM-A-1 would reduce potential direct impacts to previously unidentified archaeological resources to a less-than-significant level. Therefore, the Fully Underground LRT Alternative-Little Tokyo Variation 2 would not contribute to a cumulative impact on unidentified archaeological resources. Implementing MM-A-2 would reduce both direct and cumulative potential impacts to the Los Angeles zanja system to a less-than-significant level.

## 6.0 POTENTIAL MITIGATION MEASURES

Direct impacts to archaeological resources are typically mitigated on a project-specific basis by construction monitoring, testing, and data recovery. This approach to mitigation is adequate for small archaeological sites, including many prehistoric sites and the historic sites that are commonly encountered within urban settings, such as building foundations, privies, and artifact deposits. However, it may not be adequate for large, linear resources such as water conveyance systems because most projects in established urban areas encounter and mitigate impacts only on small segments of these resources.

Even the most comprehensive investigation of a small segment of a large, linear resource may fail to provide adequate documentation and contextual information for the system as a whole. These linear resources are repeatedly affected by construction projects because of their large spatial extent, resulting in the loss of contributing segments and, ultimately, system integrity.

The successive destruction of multiple linear resource segments without adequate documentation of the broader system constitutes a significant and adverse impact to the system that could be cumulatively considerable. The Los Angeles zanja system is a large, linear resource that is vulnerable to such cumulative impacts because it is almost entirely buried beneath the City's streets. These potential impacts and corresponding mitigation measures are discussed below.

### 6.1 Construction Impact Mitigation Measures

**Portions of Section 6.1 removed to protect confidential locations of archeological resources.**

**Mitigation Measure 1 (MM-A-1): Treatment of Undiscovered Archaeological Resources**

A detailed Cultural Resources Monitoring and Mitigation Plan (CRMMP) would be prepared prior to implementing this project, similar in scope to the CRMMP that was prepared for Metro's Eastside Gold Line Transit Corridor (Glenn and Gust 2004). Implementing a CRMMP during ground disturbance in highly sensitive archaeological areas would ensure that cultural resources are identified and adequately protected.

If cultural resources are discovered or if previously identified resources are affected in an unexpected manner, the CRMMP would ensure that such resources receive mitigation to reduce the impact to a less-than-significant level. This plan would include, but not be limited to, the following elements:

- Worker training;
- Archaeological monitoring;
- The scientific evaluation and mitigation of archaeological discoveries;
- Native American participation, as needed;
- Appropriate treatment of human remains, if applicable; or
- Reporting of monitoring and mitigation results.

**Worker Training**

Prior to initiating ground-disturbing activities, a qualified archaeologist would conduct a short awareness training session for all construction workers and supervisory personnel. The session would explain the importance of and legal basis for protecting significant archaeological resources.

Each worker would also learn the proper procedures to follow in the event cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection and the immediate contact of their supervisor and the archaeological monitor.

This worker education session could include visual representations of artifacts (prehistoric and historic) that might be found in the project vicinity, and it could take place on-site immediately prior to the start of ground disturbance. Supervisory personnel may benefit from longer training sessions, while a brief training would suffice for non-supervisory workers. The

brief (approximate 30- to 45-minute) training session may be conducted on-site by video, PowerPoint presentation, or similar media.

### **Archaeological Monitoring, Evaluation, and Mitigation**

Due to poor surface visibility and high archaeological sensitivity of the direct APE an archaeological monitor would be present during ground-disturbing activities in archaeologically sensitive areas. This would reduce the potential level of impact to buried archaeological resources to a less-than-significant level. This work would be completed under the direction of an archaeologist (Principal Investigator) who meets the Secretary of the Interior's Standards for archaeologists. An adequate number of monitors would be present to ensure that all earth-moving activities are observed and would be on-site during all grading activities for areas to be monitored.

During the original excavation of previously undisturbed soils, the archaeological monitor(s) would be on-site at a frequency determined by the Principal Investigator. Inspection frequency may vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. Full-time monitoring is warranted within one-half block of potentially significant archaeological resources that are known or suspected to be present within the direct APE.

If potentially significant archaeological resources are exposed during ground-disturbing activities, the project manager would be notified immediately. Archaeological monitor(s) would have the authority to divert or temporarily halt ground-disturbing operations in the area of discovery to allow the resources to be evaluated. Construction activities may continue in other areas.

Evaluation of such resources is typically accomplished by a test-level excavation designed to determine the horizontal and vertical extent of the resource, and to characterize its contents. If the discovery proves to be potentially eligible for listing on the National Register or California Register, and project plans cannot be altered to avoid affecting the site, then an adverse effect would result. This adverse effect may be resolved by implementing a Memorandum of Agreement (MOA) between Metro and the State Historic Preservation Officer.

Before construction activities are allowed to resume in an affected area, artifacts would be recovered and features recorded using professional archaeological methods. The Principal Investigator operating under the direction of the MOA would determine the amount of material to be recovered for an adequate artifact sample for analysis.

All cultural material collected during the construction monitoring program would be processed using professional archaeological methods. An appropriate sample of recovered materials, selected by the Principal Investigator, would be curated at a curation facility that

meets federal standards per 36 Code of Federal Regulations [CFR] Part 79 and made available to other archaeologists and researchers for further study.

### **Native American Participation**

If Native American cultural resources (i.e., prehistoric or ethnohistoric-period artifacts, food remains, or features associated with Native Americans) are exposed during project-related ground disturbance, Metro would contact the Gabrielino/Tongva San Gabriel Band of Mission Indians and the Tongva Ancestral Territorial Tribal Nation. Both groups have expressed interest in the project. One or both of these groups would be asked to provide the services of a trained Native American consultant to monitor ground-disturbing work in the area containing the Native American cultural resources. This monitoring would occur on an as-needed basis, and would be intended to ensure that Native American concerns are taken into account during the construction process.

### **Human Remains**

The discovery of human remains is always a possibility during ground disturbance. An unmarked early Spanish period Native American cemetery was recently discovered less than 0.15 mile from the direct APE (Applied Earthworks 1999). Other historic period remains are known less than 0.3 mile from the direct APE as well.

The State of California Health and Safety Code Section 7050.5 addresses these findings. This code section states that when human remains are encountered, no further disturbance would occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. The County Coroner would be notified of the find immediately.

If the human remains are determined to be prehistoric, the Coroner would notify the Native American Heritage Commission, which would determine and notify a Most Likely Descendant (MLD). The MLD shall complete inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Impacts to human remains may remain significant even after mitigation.

### **Reporting**

If no cultural resources are discovered in the course of construction monitoring, a brief letter to that effect would be prepared by the consulting archaeologist, indicating that the monitoring activities have been satisfied. If previously unidentified cultural resources are discovered in the course of construction monitoring, a report would be prepared following Archaeological Resource Management Report (OHP 1990) guidelines that documents field and analysis results and interprets the data within an appropriate research context.

**Mitigation Measure 2 (MM-A-2): Treatment of Known Archaeological Resources**

Destruction of a resource that is eligible for listing in the National Register or California Register would be a significant adverse effect. This effect may be resolved through by implementing an MOA between FTA, Metro, and the SHPO, as well as other interested parties.

Four archaeological sites that are either within or immediately adjacent to the direct APE are presumed eligible for listing on both the National Register and the California Register. These include the Los Angeles zanja system (the Zanja Madre, CA-LAN-887H, and numerous unrecorded numbered zanjias) and sites CA-LAN-3588, P-19-003338, and P-19-003339.

Effects to the data potential of archaeological sites can be mitigated to a less than significant level by preparing and implementing a data recovery plan under Section 106 and CEQA. The actual measures agreed upon in the MOA may vary in substance and degree, but the MOA would include a process to resolve any adverse effects upon archaeological resources within the direct APE that are eligible for listing in the National Register or California Register. The treatment of sites CA-LAN-3588, P-19-003338, and P-19-003339 may include systematic and scientific exposure, evaluation, and if necessary, archaeological data recovery.

**Los Angeles Zanja System**

The Los Angeles zanja system was an extensive and integrated water conveyance network that served large areas of the City for multiple generations. Generally speaking, previous construction projects in downtown Los Angeles have unexpectedly encountered and documented limited exposures of a single zanja segment, often after the segment has been damaged by construction equipment. This incomplete approach does not permit the overall zanja system to be evaluated, given the requirements that the OHP clarified in its recent letter (Toffelmier 2009).

It is likely that other projects (such as emergency utility repair) have damaged segments of the zanja system without documentation. This repeated damage (both monitored and unmonitored construction impacts) constitutes a cumulative effect that should be mitigated. Construction monitoring alone is insufficient mitigation to address this effect, particularly given the likelihood of damaging the zanjias prior to discovery during project construction process.

Inadvertent project-related damage to the zanjias may constitute an adverse effect under the Criteria of Adverse Effect, “physical destruction or damage” (36 CFR Part 800.5(a) (2) and material impairment as defined in CEQA. This action would contribute to, rather than mitigate, these cumulative effects.

Both Section 106 of the National Historic Preservation Act (as amended) and the California Environmental Quality Act require identification, documentation, and evaluation of historic

properties/historic resources in a project area (or direct APE). For a poorly mapped and buried linear resource like the zanja system, identification alone is challenging.

Rather than a costly archaeological excavation program or a remote sensing (ground-penetrating radar, etc.) survey that is unlikely to produce clear-cut results, SWCA recommends a proactive identification and documentation program that would facilitate preservation or mitigation in a cost-effective manner. This would include using additional documentary research to identify, as accurately as possible, the precise alignments of the zanjias within the APE. Where these alignments are expected to be affected by the proposed project, particularly where cut-and-cover or other near-surface construction techniques (as opposed to tunneling 20 or more feet below the ground surface) are planned in the vicinity of mapped zanja segments, full-time archaeological monitoring would be instituted to ensure documentation. The archaeological monitors would work closely with equipment operators to ensure that every effort is made to avoid damaging zanja segments prior to their adequate documentation.

Documenting and evaluating the Los Angeles zanja system would be best accomplished with a system-wide approach that incorporates historical, archaeological, and engineering research and documentation. This systemic approach to documentation and evaluation is a particularly appropriate mitigation measure for the Regional Connector Transit Corridor project, which has the potential to impact multiple zanja segments. Documentation of the zanja segments' alignments and slopes would have the added benefit of enabling future projects to more accurately predict the location of zanja segments outside of the project area.

To mitigate potential impacts to the Los Angeles zanja system, the project MOA would provide that the system be adequately documented under the direction of an experienced archaeologist and an experienced historical architect, architectural historian, or historian, both meeting the Secretary of the Interior's qualification standards. This documentation would include a combination of historical research, archaeological testing, and architectural documentation, and would be followed by a formal evaluation of National Register and California Register eligibility.

It should be noted that substantial documentation already exists for the zanja system in the form of maps and engineering records, published books and articles, unpublished technical reports, and site records. The collation of available data for the system as a whole would accomplish much of the documentation effort that is proposed here, while intensive, original research would be restricted to the zanja segments that cross the direct APE.

Such research and documentation may include such specific measures as:

- Historical research using historical maps, photographs, and other written sources to document creation, maintenance, modification, and abandonment of the system.

- Archaeological research to establish the physical condition, presence of associated features and artifacts, and precise location of each zanja segment within the project's direct APE by using physical exposure through controlled excavation following its discovery during construction monitoring. Resources would be documented using DPR series 523 primary and detail forms, maps, and photographs. The results would be presented in a detailed technical report following Archaeological Resource Management Report (OHP 1990) guidelines. The report would address research questions and assess the National Register and California Register eligibility of the system.
- Architectural documentation of exposed zanja segments by producing narrative records, measured drawings, and photographs in conformance with Historic American Engineering Record (HAER) standards prior to any alteration or demolition activity.
- Preserving the results of the historical, archaeological, and historic architectural studies in repositories such as the local main library branch, the lead agency headquarters library, and with identified non-profit historic groups interested in the subject matter.
- Interpretation of the Los Angeles zanja system for the public through signage along the project alignment, visual representations of zanja alignments using colored pavement, or other appropriate means such as a dedicated internet website.

## 6.2 Operational Impacts Mitigation Measures

Because operational impacts to archaeological resources, including both previously recorded and as-yet-undiscovered resources, are not expected for any of the project alternatives, no mitigation is required.



## 7.0 CONCLUSIONS

This evaluation included a review of relevant historic maps and archaeological records, a Native American coordination program, and an intensive archaeological survey of the project direct APE. The background study indicates that subsurface archaeological deposits are commonly encountered during construction projects in downtown Los Angeles.

The direct APE was found to contain five previously recorded (CA-LAN-887H, CA-LAN-3588, P-19-003097, P-19-003338, and P-19-003339) and one newly recorded (site RC-1) archaeological resources. Of these, P-19-003097 has been destroyed, RC-1 is recommended not eligible for listing in the National Register and California Register, and CA-LAN-887H, CA-LAN-3588, P-19-003338, and P-19-003339 are presumed eligible for listing in the National Register and California Register.

None of the alternatives will have operational impacts to archaeological resources, and the No Build Alternative will have no construction or cumulative impacts on archaeological resources. Construction of each of the other alternatives has the potential to alter, remove, or destroy archaeological resources within the APE, including both known and previously undiscovered archaeological resources.

Physical destruction of an archaeological resource eligible for listing in the National Register and California Register would result in an adverse effect under Section 106 regulations and a significant impact under CEQA. Potential destruction of portions of the Los Angeles zanja system could also contribute to a cumulative impact to this resource.

To address potential impacts to previously undiscovered archaeological resources, the project would include producing and implementing a detailed Cultural Resources Monitoring and Mitigation Plan (CRMMP) (MM-A-1). To address potential impacts to known archaeological resources that are eligible for listing in the National Register and California Register, the project would be implemented by treating these known resources under an MOA (MM-A-2). After mitigation, potential construction and cumulative impacts would not be significant under NEPA or CEQA.



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by Applied EarthWorks for Myra L. Frank and Associates. On file at South Central Coastal Information Center, California State University, Fullerton.

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Workman, Boyle. 1935. *The City that Grew*. Southland Publication Co., Los Angeles.



## APPENDIX A

# RECORDS SEARCH RESULTS



# SCCIC Bibliography: Regional Connector LA Quadrangle

**IC ID#:** LA4742                      **DATE:** 1999                      **PAGES** 14  
**AUTHOR** Lapin, Philippe  
**FIRM:** LSA Associates  
**TITLE:** Cultural Resource Assessment for Pacific Bell Mobile Services Facility LA 263-01,  
County of Los Angeles, California  
**AREA:** < 1 ac  
**SITES:** none

**QUADNAME:** Los Angeles  
**MEMO:**

**IC ID#:** LA483                      **DATE:** 1978                      **PAGES** 175  
**AUTHOR** Greenwood, Roberta  
**FIRM:** Greenwood and Associates  
**TITLE:** Archaeological Resources Survey the Proposed Downtown People Mover Project  
**AREA:**  
**SITES:** none

**QUADNAME:** Hollywood  
Los Angeles  
**MEMO:**

**IC ID#:** LA5200                      **DATE:** 2001                      **PAGES** 159  
**AUTHOR** Warren, Keith M; Hamilton, Colleen; Robinson, Mark  
**FIRM:** Applied earth Works, Inc.  
**TITLE:** Assessment of Archaeological and Paleontological Sensitivity on the Proposed California  
Department of Transportation District 7 Headquarters Replacement Project  
**AREA:** <2.5 ac  
**SITES:** none

**QUADNAME:** Los Angeles  
**MEMO:**

# SCCIC Bibliography: Regional Connector LA Quadrangle

IC ID#: LA5203

DATE: 2001

PAGES 9

AUTHOR Foster, John M.

FIRM: Greenwood And Associates

TITLE: Archaeological Monitoring Report: Soil Test Pit Excavation for the Siqueiros Mural Project, El Pueblo de Los Angeles

AREA: <5 ac

SITES: none

QUADNAME: Los Angeles

MEMO:

IC ID#: LA5282

DATE: 2001

PAGES 6

AUTHOR Schmidt, James J.

FIRM: Compass Rose Archaeological, Inc.

TITLE: Negative Archaeological Survey Report: 29660 Harvester Rd., Malibu, CA

AREA: <1 ac

SITES: 19-001121

QUADNAME: Point Dume

MEMO:

IC ID#: LA5410

DATE: 1978

PAGES 35

AUTHOR Reinoenl, Gary

FIRM: Department of Parks and Recreation

TITLE: El Pueblo de Los Angeles State Historic Park Resource Management Plan

AREA: 10 ac

SITES: none

QUADNAME: Los Angeles

MEMO:

# SCCIC Bibliography: Regional Connector LA Quadrangle

IC ID#: LA1770

DATE: 1989

PAGES 37

AUTHOR Salls, Roy A.

FIRM: Northridge Center for Public Archaeology

TITLE: Report of Archaeological Reconnaissance Survey of:ESA Project 7217B, City of Los Angeles, Los Angeles County, Ca

AREA: 8 ac

SITES: None

QUADNAME: Los Angeles

MEMO:

IC ID#: LA2486

DATE: 1991

PAGES 17

AUTHOR Kaptain, Neal

FIRM: Greenwood and Associates

TITLE: Monitoring and Mapping: Union Station Utility Upgrade, CA-LAN-1575H

AREA:

SITES: 19-001575

QUADNAME: Los Angeles

MEMO:

IC ID#: LA292

DATE: 1978

PAGES 8

AUTHOR D'Altroy, Terence N.

FIRM: University of California Los Angeles Archaeological Surveyt

TITLE: Environmental Impact Statement: Assessment of the Impact on Archaeological Resources of Proposed Constructi of School Facilities and Parking Facilities at the Intersection of Sunset Boulevard and North Figueroa Street, Los Angeles, California

AREA:

SITES: None

QUADNAME: Los Angeles

MEMO:

# SCCIC Bibliography: Regional Connector LA Quadrangle

**IC ID#:** LA3377                      **DATE:** 1996                      **PAGES** 3  
**AUTHOR** FOSTER, JOHN  
**FIRM:** Greenwood and Associates  
**TITLE:**  
**AREA:** 1 ac  
**SITES:** CA-LAN-1103

**QUADNAME:** Los Angeles  
**MEMO:**

**IC ID#:** LA3501                      **DATE:** 1990                      **PAGES** 67  
**AUTHOR** Dillon, Brian D.  
**FIRM:**  
**TITLE:** Archaeological Record Search and Impact Evaluation for the Los Angeles Wastewater Program Management (NOS-NCOS) Project Los Angeles, California  
**AREA:** 57,600 ac  
**SITES:** 19-000053,19-000055,19-000056,19-000057,19-000068,19-000007,19-000097,19-000069,19-000070,19-000071,19-000072,19-000073,19-000074,19-000080,19-000171,19-000172,19-0001336,19-001399,19-000159,19-001261,19-000181,19-001112,19-001595,19-000887,19-000132,  
19-000067

**QUADNAME:** Los Angeles, Pasadena, Venice, Beverly Hills, Burbank, Hollywood, Inglewood  
**MEMO:**

**IC ID#:** LA3515                      **DATE:** 1996                      **PAGES** 8  
**AUTHOR** Maki, Mary K.  
**FIRM:** Fugro West, Inc.  
**TITLE:** Negative Phase I Archaeological Survey of 0.84 Acre at 14751 and 14755 Garfield Ave and 7339 Petrol Street, City of Paramount, Los Angeles County, California  
**AREA:** 0.84 ac  
**SITES:** None

**QUADNAME:** South Gate  
**MEMO:**

# SCCIC Bibliography: Regional Connector LA Quadrangle

IC ID#: LA3587

DATE: 1994

PAGES 415

AUTHOR King, Chester

FIRM: Topanga Anthropological Consultants

TITLE: Prehistoric Native American Cultural Sites in the Santa Monica Mountains

AREA: 13,337 ac

SITES: 19-000229,19-000267,19-000690,56-000003,19-000227,19-000776,56-000110,56-000010,56-000024,56-000089,56-000174,19-000052,19-000384,19-000114,19-000207,19-000264,56-000071,56-000865,56-000261,56-000737,56-000179,56-000095,56-000096,56-000341,56-000342,  
19-000186,19-000242,19-000243,19-000413,19-000043,19-000059,19-000060,19-19-002200,56-000204,56-000538,56-001157,19-000002,19-000373,19-000324,56-000294,56-000606,19-000669,19-000466,56-000535,19-000807,56-000100,56-000070,56-000065,56-000001,56-000640,56-001154,56-000881,56-000880,56-000879,56-000878,56-000877,56-000876,  
56-000875,56-000874,56-000873,56-000872,56-000871,56-000869,56-000145,56-000870,19-002154,19-002201,19-002202,56-000146,56-000145,19-001248,19-001341,56-000853,56-000536,56-000271,56-000045,56-000044,56-000124,56-000123,56-000221,56-000222,56-000705,  
56-000706,56-000707,19-001352,19-000111,19-001326,19-001327,56-000884,56-000885,56-000883,56-000882,56-000886,19-002160,19-002153m19-002167,19-002168,19-001117,19-002165,19-002164,19-002162,19-002161,19-002159,19-002158,19-002157,19-002163,+more,see memo

QUADNAME: Point Dume, Triunfo Pass, Malibu Beach, Topanga, Beverly Hills, Hollywood, Burbank, Van

MEMO: Same as VN1462. Space did not permit the entry of all sites referenced within this

IC ID#: LA3645

DATE: 1995

PAGES 73

AUTHOR Whitley, David S.

FIRM: W & S Consultants

TITLE: Phase I Archaeological Survey and Cultural Resources Assessment of the Metropolitan Water District Headquarters Study Area, Los Angeles, California

AREA: 4 ac

SITES: 19-001575H

QUADNAME: Los Angeles

MEMO:

# SCCIC Bibliography: Regional Connector LA Quadrangle

**IC ID#:** LA3668                      **DATE:** 1997                      **PAGES** 182  
**AUTHOR** Dillon, Brian D.  
**FIRM:**  
**TITLE:** St. Vibiana's Cathedral Los Angeles, California  
**AREA:** 2.5 ac  
**SITES:** 19-150330

**QUADNAME:** Los Angeles  
**MEMO:** Missing Report Updated: 11/6/02

**IC ID#:** LA3783                      **DATE:** 1993                      **PAGES** 19  
**AUTHOR** White, Robert S. and White, Laurie E.  
**FIRM:** Archaeological Associates  
**TITLE:** Archaeological Element of the Metropolitan Water District of Southern California  
Headquarters Facility Site Study Analysis  
**AREA:** 101 ac  
**SITES:** None

**QUADNAME:** Los Angeles  
San Dimas  
**MEMO:** 92 ac. Area on the San Dimas Quad was surveyed. Areas on Los Angeles Quad were not

**IC ID#:** LA3786                      **DATE:** 1997                      **PAGES** 173  
**AUTHOR** Dillon, Brian D.  
**FIRM:**  
**TITLE:** Cathedral of Our Lady of the Angles Los Angeles, California Cultural Resources Evaluation  
**AREA:** Unknown  
**SITES:** 19-000007,19-000887,19-00112,19-001575,19-120013

**QUADNAME:** Los Angeles  
**MEMO:**

# SCCIC Bibliography: Regional Connector LA Quadrangle

IC ID#: LA3812

DATE: 1982

PAGES 20

AUTHOR Chace, Paul G.

FIRM: Paul G. Chace & Associates

TITLE: Archaeological Monitoring of the W-7 Ramp Project, Olvera St, El Pueblo de Los Angeles State Historic Park

AREA:

SITES: Palomares-Jones Property

QUADNAME: Los Angeles

MEMO:

IC ID#: LA3813

DATE: 1992

PAGES 47

AUTHOR Anonymous

FIRM: Peak & Associates, Inc.

TITLE: An Archival Study of a Segment of the Proposed Pacific Pipeline, City of Los Angeles, California

AREA: 6.5 li mi

SITES: None

QUADNAME: Los Angeles

MEMO:

IC ID#: LA3814

DATE: 1981

PAGES 45

AUTHOR Singer, Clay A.

FIRM: Northridge Archaeological Research Center, Ca. St. University

TITLE: Preliminary Historic Archaeological Investigations at the Los Angeles Plaza Church

AREA:

SITES: The Plaza Church

QUADNAME: Los Angeles

MEMO:

# SCCIC Bibliography: Regional Connector LA Quadrangle

**IC ID#:** LA3906                      **DATE:**                      **PAGES** 239  
**AUTHOR** Costello, Julia G., Wilcoxon, Larry R.  
**FIRM:** Julia G. Costello, Larry R. Wilcoxon  
**TITLE:** An Archaeological Assessment of Cultural Resources in Urban Los Angeles, California La  
Placita de Dolores – Lan-887  
**AREA:** 8 ac  
**SITES:** 19-000887H

**QUADNAME:** Los Angeles  
**MEMO:**

**IC ID#:** LA3910                      **DATE:** 1983                      **PAGES** 62  
**AUTHOR** Frierman, Jay D.  
**FIRM:** Jay D. Frierman, Consulting Archaeologist  
**TITLE:** Monitoring the Restoration and Rehabilitation of the Sepulveda Block 622-624 North  
Main Street El Pueblo de Los Angeles State Historic Park  
**AREA:** 8 ac  
**SITES:** 19-000887H

**QUADNAME:** Los Angeles  
**MEMO:**

**IC ID#:** LA3946                      **DATE:** 1998                      **PAGES** 26  
**AUTHOR** McLean Deborah  
**FIRM:** LSA Associates, Inc.  
**TITLE:** Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility  
LA 057-03, 433 East Temple Street, City and County of Los Angeles, California  
**AREA:** less than 1 ac  
**SITES:** None

**QUADNAME:** Los Angeles  
**MEMO:**

# SCCIC Bibliography: Regional Connector LA Quadrangle

IC ID#: LA3986

DATE: 1981

PAGES 38

AUTHOR Chace, Paul G.

FIRM: Paul G. Chace & Associates

TITLE: A Cultural Resources Assessment of the Plaza El Pueblo de Los Angeles State Historic Park

AREA: None

SITES: 19-000007H

QUADNAME: Los Angeles

MEMO:

IC ID#: LA4080

DATE: 1996

PAGES 110

AUTHOR Goldberg, Susan K.

FIRM: Applied Earth Works, Inc.

TITLE: Archaeological Research Design and Treatment Plan: the Metropolitan Water District of Southern California Headquarters Facility Project

AREA: 4.3 ac

SITES: None

QUADNAME: Los Angeles

MEMO:

IC ID#: LA4214

DATE: 1998

PAGES 3

AUTHOR Conkling, Steve

FIRM: LSA Associates, Inc.

TITLE: Results of Cultural Resources Monitoring, L.A. Cellular Cell Site R106, near West Fourth Street and South Hill Street, City and County of Los Angeles

AREA: 1 ac

SITES: None

QUADNAME: Los Angeles

MEMO:

# SCCIC Bibliography: Regional Connector LA Quadrangle

IC ID#: LA4215

DATE: 1998

PAGES 3

AUTHOR Conkling, Steve

FIRM: LSA Associates, Inc.

TITLE: Results of Cultural Resources Monitoring, L.A. Cellular Cell Site R104, near West Third Street and South Grand Avenue, City and County of Los Angeles

AREA: 1 ac

SITES: None

QUADNAME: Los Angeles, Hollywood

MEMO:

IC ID#: LA4237

DATE: 1998

PAGES 9

AUTHOR Conkling, Steve

FIRM: LSA Associates, Inc.

TITLE: Results of Cultural Resources Monitoring, L.A. Cellular Cell Site r105, at the Intersection of West Third Street and South Spring Street, City and County of Los Angeles

AREA: <1ac

SITES: 19-002741

QUADNAME: Los Angeles

MEMO:

IC ID#: LA4263

DATE: 1986

PAGES 203

AUTHOR Padon, Beth

FIRM: LSA Associates, Inc.

TITLE: General Services Administration Federal Center: Archaeological Assessment Report Phase

AREA: 4.8 ac

SITES: 19-000887

QUADNAME: Los Angeles

MEMO:

# SCCIC Bibliography: Regional Connector LA Quadrangle

IC ID#: LA4448                      DATE: 1994                      PAGES 357

AUTHOR Anonymous

FIRM: Myra L. Frank & Associates

TITLE: Section 106 Documentation for the Metro Rail Red Line East Extension in the City and County of Los Angeles, California

AREA: 20 li mi

SITES: 19-174979,19-174978,19-174977,19-174976,19-174975,19-174974,19-167081,19-174973,19-174972,19-174971,19-174970,19-174968,19-172755,19-174964,19-176624,19-174941,19-174940,19-174235,19-174955,19-174954,19-174951,19-174957,19-174943,19-174958,19-174956

19-1748952,19-174953,19-174950,19-174949,19-174948,19-174947,19-174946,19-

QUADNAME: Los Angeles

MEMO:

IC ID#: LA4452                      DATE: 1982                      PAGES 141

AUTHOR Hatheway, Roger G.

FIRM: Roger G. Hatheway & Associates

TITLE: Determination of Eligibility Report Chinatown

AREA: 200 ac

SITES: 19-173391,19-173392,19-170950,19-173393,19-170951,19-173394,19-170952,19-173395,19-170953,19-173396,19-170954,19-173397,19-170995,19-173398,19-170961,19-170962,19-170960,19-173399,19-170956,19-173400,19-170957,19-170958,19-170965,19-170963,19-173402

19-170959

QUADNAME: Los Angeles

MEMO:

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IC ID#: LA5437                      DATE: 1980                      PAGES 20

AUTHOR Chace, Paul G.

FIRM: Paul G. Chace & Associates

TITLE: An Archaeological Review and tests for the Tree Planting Program, El Pueblo de Los Angeles State Historic Park

AREA: 10 ac

SITES: none

QUADNAME: Los Angeles

MEMO:

IC ID#: LA5446                      DATE: 2001                      PAGES 3

AUTHOR Savastio, Scott

FIRM: Greenwood & Associates

TITLE: Report for Monitoring: Sewer pipe Repair at Alameda and Arcadia Streets, Los Angeles

AREA: 2 ac

SITES: none

QUADNAME: Los Angeles

MEMO:

IC ID#: LA5447                      DATE: 1999                      PAGES 10

AUTHOR Schmidt, James J.

FIRM: Greenwood & Associates

TITLE: Archaeological monitoring Report: 911 Dispatch Center First and Los Angeles Streets  
Los Angeles, California

AREA: 2 ac

SITES: none

QUADNAME: Los Angeles

MEMO:

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**IC ID#:** LA5448                      **DATE:** 2000                      **PAGES** 9  
**AUTHOR** Duke, Curt  
**FIRM:** LSA Associates, Inc.  
**TITLE:** Cultural Resource Assessment for AT&T Wireless Services Facility Number R299.1,  
County of Los Angeles, CA  
**AREA:** <1 ac  
**SITES:** none

**QUADNAME:** Los Angeles  
**MEMO:**

**IC ID#:** LA5451                      **DATE:** ?                      **PAGES** 84  
**AUTHOR** Padon, Beth  
**FIRM:** LSA Associates, Inc.  
**TITLE:** the VA Outpatient Clinic Project  
**AREA:** 1.85 ac  
**SITES:** 19-000007

**QUADNAME:** Los Angeles  
**MEMO:**

**IC ID#:** LA850                      **DATE:** 1978                      **PAGES** 215  
**AUTHOR** Costello, Julia G., and Larry R. Wilcoxon  
**FIRM:**  
**TITLE:** An ARHCAEOLOGICAL Assessment of Cultural Resources in Urban  
LOS ANGELES, CALIforNIA -- LA PLACITA DE DOLORS -- LAN-887  
**AREA:**  
**SITES:** 19-000887

**QUADNAME:** Los Angeles  
**MEMO:**

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IC ID#: LA982                      DATE: 1977                      PAGES 5

AUTHOR Bove, Frederick J.

FIRM: UCLA Archaeological Survey

TITLE: Archaeological Resource Survey and Impact Assessment of A  
PROPOSED PARKinG LOT, LOS ANGELES, CALIForNIA

AREA:

SITES: none

QUADNAME: Los Angeles

MEMO:

IC ID#: LA6359                      DATE: 2001                      PAGES 32

AUTHOR Hale, Alice

FIRM: Greenwood and Associates

TITLE: Archaeological Monitor Report The Los Angeles Gas Works 513 North Main Street

AREA: 1 ac

SITES: 19-002891

QUADNAME: Los Angeles

MEMO: NPS72000231

IC ID#: LA6085                      DATE: 2003                      PAGES 35

AUTHOR Wlodarski, Robert J.

FIRM: Historical Environmental Archaeological Research Team

TITLE: A Phase I Archaeological Study For The Proposed Eugene Obregon Congressional Medal  
of Honor Memorial Within Father Serra Park and El Pueblo de Los Angeles State  
Historic Park, City of Los Angeles, Los Angeles County, California

AREA: .25 ac

SITES: none

QUADNAME: Los Angeles

MEMO: 19-000007