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## Transmittal Letter

**To:** Mr. Darren Nielson  
Myra L. Frank & Associates  
811 West 7<sup>th</sup> Street, Suite 800  
Los Angeles, CA 90017

**Date:** 12 September 2000  
**Project:** Los Angeles to  
Pasadena Metro Blue Line

**Re:** Information Regarding the Zanja Madre

Dear Darren:

Attached, please find the information you requested regarding the Zanja Madre for use in the Project Addendum that Myra L. Frank & Associates is preparing. If you have any questions, please do not hesitate to call me at (909) 766-2000.

Best Regards,  
Melinda C. Horne  
Senior Archaeologist  
Applied EarthWorks, Inc.

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## ZANJA MADRE

### 1 Background

The zanja system was the original Los Angeles irrigation system, begun simultaneously with the establishment of El Pueblo de la Reina de Los Angeles in 1781. The original zanja, the Zanja Madre, or mother ditch, was first constructed as an open, gravity-flow ditch, measuring approximately 3 feet wide and 1 foot deep, with water running about 5 miles an hour. The Zanja Madre ran from a dam along the western bank of the Los Angeles River westward to irrigate the agricultural fields of the pueblo. By the second half of the nineteenth century, when the city of Los Angeles became incorporated as an American city, population growth necessitated the creation of at least seven branch ditches of the Zanja Madre, beginning in the 1850s and continuing through the 1860s. This system of open irrigation ditches remained in place until the 1870s, when flooding prompted a series of improvements to enclose the ditches. After 1877, the city began to enclose the Zanja Madre, first in wooden flumes and then, in 1885, in a brick conduit. By the 1880s, however, subdivision of former agricultural lands in Los Angeles rendered the zanja irrigation system obsolete, and by 1904 the zanjas had been shut down by the city water department (Costello and Wilcoxon 1977:75-87).

Few archaeological investigations of the Zanja Madre System have been conducted, but these demonstrate that intact portions of the Zanja Madre and its branch zanjas still remain in certain areas of Los Angeles (Costello and Wilcoxon 1978; Hotopp et al. 1986; Maese 2000; Romani 1997). Preliminary archival research also suggests that a portion of the Zanja Madre may still exist within the Los Angeles to Pasadena Metro Blue Line (LAPBL) project's Area of Direct Impact (ADI). Specifically, the known original route of the Zanja Madre passes in and out of the ADI at the north end of the project area between Elysian Park Road and Bernard Street in the area known as the Cornfield Yard. The route of the Zanja Madre as it courses through the Cornfield Yard forms a principal part of a legal description of the railroad property as verified on the historic document, "Map and Description of Land Owned and Occupied by Southern Pacific Railroad Company" (January 1892). A field visit to the Cornfield Yard in June 2000 verified the presence of an intact portion of the Zanja Madre located approximately 75 feet north of the LAPBL's northern construction limits in the southwestern corner of the Cornfield Yard. However, it appears that much of the Zanja Madre located farther to the north and east towards the Los Angeles River already was affected and possibly destroyed by the construction, use, and continued maintenance of the Southern Pacific's Cornfield Yard.

Additional portions of the Zanja Madre may also still exist in the project ADI north of the junction of Alameda, North Spring, and North Main Streets as recorded by cartographer H. J. Stevenson in 1876. The Stevenson map also shows a branch of the Zanja Madre (Zanja No. 6) passing through or very near the project ADI as it approaches Union Station.

## **2 Significance Evaluation**

When a project may affect an archaeological site, California law and the Lead Agency determines whether the site is a historical resource. To qualify, a site must be historically or archaeologically significant, or significant in the architectural, educational, social, political, military, or cultural annals of California; and must meet any of the following criteria:

- A. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- B. is associated with the lives of persons important in our past;
- C. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- D. has yielded, or may be likely to yield, information important in prehistory or history [14 CCR 4800 et seq.].

Sites that meet these criteria qualify as historical resources eligible for the California Register of Historical Resources (CRHR). With regard to the overall Zanja Madre system, this historical resource is clearly eligible for the CRHR under Criteria A, C, and D but is not currently listed.

## **3 Potential Impacts to the Zanja Madre System**

Construction of the LAPBL could affect portions of the Zanja Madre System that may still exist within the project's ADI by altering or destroying the historical resource in such a way that the important qualities of the Zanja Madre System are diminished. Incorporation of the mitigation measures identified in this report would ensure that potential impacts are reduced to a less than significant level.

## **4 Sources of Potential Impacts**

Direct impacts to the Zanja Madre System are those that would occur during project construction, operation, and maintenance that directly impinge on or destroy portions of this resource. Primary direct impacts of this sort include, but are not limited to, clearing and grading, trench excavation and utility installations, and construction and use of access roads. Among the potential secondary impacts on cultural resources related to Project construction are erosion caused by regrading slopes and clearing vegetation in the Cornfield Yard, as well as earthmoving during re-landscaping activities. Certain operational impacts related to long term operation of the LAPBL may also be direct. These impacts, however, would be similar to those experienced during construction, such as long-term use of service access roads and repair and/or maintenance of the facilities, and should not affect portions of the Zanja Madre that were not affected during the initial construction activities.

## **5 Level of Significance after Mitigation Related to the Zanja Madre System**

The potential significant adverse impacts of the project on the Zanja Madre System would be reduced to below the level of significance with implementation of the mitigation measures described below. These measures are consistent with the general mitigation measures previously adopted as part of the approved project.

## **6 Mitigation Related to the Zanja Madre System**

The Los Angeles to Pasadena Metro Blue Line Construction Authority (hereafter, the Authority) will implement the following mitigation measures for portions of the Zanja Madre System that still exist within the projects ADI:

1. The Authority's Project Archaeologist shall conduct archival research for the Zanja Madre System, and will compile available historical maps, drawings, and photographs for the main Zanja Madre. The data compiled during the archival research shall be included in a final report of findings as described in Mitigation Measure 4, below.
2. Utilizing information gathered from archival research, the Project Archaeologist shall excavate approximately 10 backhoe trench locations along the suspected route of the Zanja Madre in the Cornfield Yard. Because it is suspected that much of the Zanja Madre within the Cornfield Yard was adversely affected previously during the development of the rail yard, it is likely that trench depth will not exceed approximately 3 feet, and that the length of the trenches will be approximately 8 to 10 feet. Backhoe excavation shall be closely monitored by the Project Archaeologist. Prior to backhoe excavation, informal consultation with the State Historic Preservation Officer (SHPO) will be made by the Project Archaeologist to discuss the proposed treatment of the Zanja.
3. If the Zanja Madre is encountered in one or more of the backhoe trenches, detailed documentation of the feature shall be undertaken by the Project Archaeologist. Documentation shall include locational maps, detailed and scaled plan and profile drawings, and photographs taken with a digital camera. A thorough description of the feature shall also be noted, as will the condition and integrity of any portions of the feature exposed. Once documentation has been completed, the backhoe trench will then be backfilled.
4. At the conclusion of the field investigations at the Zanja Madre, the Project Archaeologist shall prepare a report of findings. This report shall include the results of the archival research, a description of the methods employed and the findings, as well as an integrity assessment of the portion of the Zanja Madre examined. The report shall also offer preliminary significance evaluations and recommendations for further archaeological management for the portion of the Zanja Madre located in the Cornfield Yard. This report shall be forwarded to the SHPO for review and comment prior to construction.

5. The Project Archaeologist shall monitor project-related ground disturbing activities during construction in areas suspected to contain portions of the Zanja Madre or its secondary, branch zanjas. If additional segments of the Zanja Madre System are encountered during construction, the Project Archaeologist shall document these features using the methods described in Mitigation Measures 3 and 4, above.

6. For the intact portion of the Zanja Madre that has been identified outside of the Project's construction zone but in the immediate vicinity of construction activity in the Cornfield Yard, the Authority shall flag this segment of the Zanja prior to the beginning of any grading or project-related construction activities in the vicinity of this segment. In addition, project plans shall be clearly marked to indicate that the flagged areas are to be fully avoided and are not to be used as construction staging areas, storage areas, access routes, equipment parking, or employee parking.

7. If intact portions of the Zanja Madre System that would not be substantially affected or destroyed during project development are encountered during project-related activities, the Authority will preserve those portions intact wherever feasible. If intact portions of the Zanja Madre are found and can be avoided, interpretive displays of the intact portions of the Zanja Madre System should be developed for the historical benefit of the Los Angeles community, if their locations and circumstances permit in-place interpretation.

## 7 References Cited

Costelleo, J. C., and L. R. Wilcoxon

1978 *An Archaeological Assessment of Cultural Resources in Urban Los Angeles*. Prepared for the City of Los Angeles in connection with construction project ALa Placita de Dolores, LAN-887.

Hotopp, J. A., P. Friedman, M. Rodeffer, B. Tucher, and J. R. Bowie

1986 *Historic American Engineering Records No. CA-CA-5053, Zanja No. 3: Brick Culvert*. Prepared by Lewis Berger & Associates, East Orange, NJ. Submitted to the Federal Bureau of Prisons.

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2000 Hitting the Mother Load: Activists Hope to Secure Landmark Status for Irrigation Ditch. *Los Angeles Downtown News*, page 6, May 8, 2000.

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