

HOHOKAM IRRIGATION CANALS  
Pueblo Grande Museum  
Phoenix  
Maricopa County  
Arizona

HAER AZ-89  
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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD  
National Park Service  
U.S. Department of the Interior  
1849 C Street NW  
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# HISTORIC AMERICAN ENGINEERING RECORD

## HOHOKAM IRRIGATION CANALS

### HAER No. AZ-89

- Location:** Pueblo Grande Museum, Phoenix, Maricopa County, Arizona
- Dates of Construction:** Late twelfth through thirteenth centuries
- Original Owner, Use:** Hohokam, irrigation
- Present Owner, Use:** Pueblo Grande Museum, museum site
- Significance:** The Hohokam irrigation system in the Salt River Valley, which reached its peak between the years 1200 and 1400, was the largest prehistoric water supply system in the United States. Only a few sections of Hohokam canals are left in the Salt River Valley due to urban development. The canals at Pueblo Grande are among the best preserved sections remaining.
- Description:** The total length of the Hohokam canals in the Salt River Valley is estimated to be about 150 miles. Some canals were over 30' wide and 10' deep.<sup>1</sup> The canals have been abandoned since the fourteenth century, and today only two short sections have been preserved at the Pueblo Grande Museum. These sections are located near the Salt River where water was diverted into them by stones or brush diversion dams. A cross-sectional excavation of the two canals revealed the south canal to be older and V-shaped. From its lowest level to the present surface, the canal measured 15' and 22' to the top of the bank. The north canal was found to be three times wider than the south canal. It was lined with clay on its bottom and lower sides to prevent seepage in those areas where the canal cut across layers of sand and gravel.
- History:** Over time, the Hohokam developed an extensive network of canals extending over 150 miles in the Salt River Valley, resulting in the largest prehistoric irrigation project in North America. About twenty-two villages and many smaller communities were spread out over this network of canals, with Pueblo Grande as one of the large villages.
- Since the Hohokam did not have large earth-moving machinery, construction of these canals was done entirely by hand using stone and

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<sup>1</sup> Emil W. Haury, "Arizona's Ancient Irrigation Builders," *Natural History* LIV (September 1945): 300-310, 335.

wood tools. The Hohokam canal builders had a good understanding of the engineering principles involved in canal design. Sometimes they used sedimentation basins to prevent silting of canals. Proper grades were used to pass water through canals without causing erosion of the banks. The Hohokam also made use of storage reservoirs along their canals. Los Muertos, a prehistoric community south of the Salt River, was supplied with water from a reservoir that had a single canal for both its inlet and outlet.

The amount of land irrigated by the Hohokam during any period in their civilization is not known, but experts agree that the entire Salt River Valley system, built over a span of 500 to 700 years, was capable of irrigating 250,000 acres. Because of attacks from other American Indians, and the fact they had waterlogged their fields with irrigation, the Hohokam abandoned the Salt River Valley by C.E. 1400 in order to return to the Gila River.

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**Historians:** T. Lindsay Baker and Steve Rae, August 7 and October 22, 1971, January 3, 1972

**Project Information:** The Hohokam Irrigation Canals were inventoried for the Historic American Engineering Record as part of the Southwest Water Resources Project, a joint project with the Texas Tech Water Resources Center. The survey was subsequently published as *Water for the Southwest: Historical Survey and Guide to Historic Sites* by the American Society of Civil Engineers in September 1973.