

Cultural Resources



Discovering New Jersey's Transportation Past

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Digest

Governor Chris Christie

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Commissioner James S. Simpson

> location:

knowlton township
warren county

> resource types:

archaeological

> action:

survey/inventory
data recovery



Knowlton Township
Warren County

The *Cultural Resources Digest*, published by the New Jersey Department of Transportation, summarizes information from professional studies in archaeology, history and historic architecture conducted during the development of transportation projects. Visit us at <http://www.state.nj.us/transportation/works/environment/>

Way Station to Weigh Station: Truck Inspection Meets Archaeological Detection



This view looks south and downstream along the Delaware River just below the Water Gap. The Route I-80 truck weigh station and prehistoric site 28Wa290 are located within the red oval [Source: Bing Maps].

The Route I-80 corridor is one of the most heavily traveled east-west routes in the United States. Traffic heading east for New York City passes lengthwise through Pennsylvania and drops down into the Delaware Water Gap before crossing New Jersey and reaching the metropolitan area. Where better to check the weight of eastbound trucks than on the banks of the Delaware just downstream from the natural funnel of the Water Gap. Here in Knowlton Township, Warren County is the interstate pull-off known as the Route I-80 truck weigh station. Long bulging with vehicles and working at full capacity, this facility is currently under expansion by the New Jersey Department of Transportation.

Just as tractor-trailers today pull over at this spot for roadside inspection, so also did Native Americans formerly stop off here to fashion stone tools from local

rocks, to camp and hunt and fish, and prepare food. The deep alluvial soils beneath the truck weigh station contain ample evidence of this earlier, prehistoric occupation extending over a period of roughly 5,000 years. Mostly this takes the form of stone artifacts, lithic debris (from the manufacture of stone tools) and thermally altered rock (from cooking hearths), but small quantities of pottery, bone, charcoal and other organic materials are also sometimes found.

Native American archaeological remains all along the Delaware Valley are a significant expression of our country's cultural heritage. Expanding the truck weigh station will result in their destruction. This booklet explains how this Native American occupation site was found and documented, and provides a simple interpretation of the archaeological findings.

Finding and Evaluating the Native American Occupation

That Native Americans had once camped at the site of the Route I-80 truck weigh station first became apparent in the 1950s when local archaeologist Dayton Staats collected artifacts from the fields immediately prior to the construction of the interstate. In 1979, in advance of an earlier expansion of the truck weigh station, New Jersey Department of Transportation (NJDOT) archaeologists excavated 13 auger tests and a two-foot-square unit and identified two separate locations with prehistoric artifacts. Construction work in the following year avoided these locations.

A couple of decades later a much larger expansion of the facility began to be planned and led to a more comprehensive survey in 2004 by the archaeological firm of Hunter Research involving the excavation of 137 shovel tests and ten five-foot-square units. Detailed analysis of the soils was also undertaken by geomorphologist John Stiteler.

This work found evidence of several small overlapping loci of Native American occupation extending to depths of up to seven feet below the ground surface. These cultural deposits reflected multiple short-term camps. Most of the artifacts recovered were stone tools, lithic waste and thermally altered rock, with particular concentrations of black chert, a material that outcrops locally. Based on certain distinctive types of artifacts (chiefly projectile points or arrowheads), Native American occupation was judged to have occurred intermittently from the Late Archaic through the Late Woodland periods, between approximately 3,000 B.C. and A.D. 1600.

Following evaluation by archaeologists within the NJDOT and the New Jersey Historic Preservation Office, this archaeological resource was considered to meet the eligibility criteria for inclusion in the National Register of Historic Places. Assigned the designation 28Wa290, the site was determined to hold the potential for yielding important information about the prehistory of the Middle



In the early 20th century the Delaware Valley below the Water Gap contained roads, railroads, quarries, farms and fields, all squeezed into the narrow corridor along the river. Prehistoric site 28Wa290 is located on the riverbank at the lower left [Source: privately held postcard].



Midwinter excavation is in progress at Area 8 on the terrace directly below the weigh station. Archaeologists can be seen excavating five-foot-square units by hand, screening soils for artifacts, and documenting the location of critical finds [Source: Hunter Research, Inc.].

Delaware Valley. Because of the constraints of the highway and river, extensive redesign of the weigh station expansion was not possible and NJDOT undertook to mitigate the project's effect on the archaeological remains through a program of data recovery excavation.

Mitigation through Archaeological Data Recovery

Beginning in the late fall of 2008 and continuing over the winter until the spring of 2009, archaeological data recovery excavations were carried out at prehistoric site 28Wa290. Field conditions were challenging to say the least, requiring protective shelters, extensive shoring to allow for deep excavation, and hay and tarpaulins to prevent the soils from freezing. A small crew of up to eight archaeologists braved the snow, wind and rain to gather field data and artifacts. In all, 1,250 square feet of the site area were excavated across five different loci (termed Areas 1-4 and 8). More than 7,000 Native American artifacts were recovered (99.9% of these were objects made of stone). Additional geomorphological

study was completed, allowing for analysis of a soil sequence extending to a depth of 17 feet below the ground surface. Eight radiocarbon dates were established for different layers within the site, helping to provide a clearer chronology for the alluvial deposition and cultural activity on the riverbank. The results of this work were presented in a technical report completed in the spring of 2010.

The full soil sequence documented by the archaeologists and geomorphologists covered a period of 8,000 years. Numerous episodes of rapid deposition and stream erosion during flood events produced a locally complex and intermittent geoarchaeological record that had accumulated over the underlying glacial outwash. Based on a combination of soils analysis, radiocarbon dates and diagnostic artifacts, it was apparent that a relatively stable ground surface existed on the riverbank for roughly 500 years from 2,400 to 1,900 B.C., coinciding with a concentration of occupation during the Late Archaic period. Some very limited evidence for Middle Archaic, Early Woodland and Late Woodland occupation was also recovered.



The excavations proceeded to a considerable depth in some locations, requiring protective shoring. Archaeologist Chris Connallon trowels clean a soil profile in Area 2 while standing some ten feet below the modern ground surface [Source: Hunter Research, Inc.].

The 2,400 to 1,900 B.C. date range for the site's primary period of occupation was supported by the types of projectile points that were found. Of the 31 points recovered, several distinctive Late Archaic types (Lamoka, Brewerton, Macpherson, Vosburg, Otter Creek, Kittatinny, Eshback, Poplar Island) were represented. A smaller number of Terminal Archaic and Early Woodland point types (Dry Brook Orient Fishtail, Perkiomen) were found in Area 2 and may indicate a slightly later episode of site use during the second millennium B.C.

The Late Archaic occupation is interpreted as a series of overlapping work stations where lithic reduction (the knapping or fashioning of stone tools and weapons) was being pursued, along with some limited cooking and food processing. The focus on lithic reduction was deduced from the fact that the majority of the stone artifacts consisted of "lithic debitage," waste material produced in the course of knapping. Excluding the fragments of thermally altered rock, debitage accounted for more than 95% of the stone artifacts gathered from each of the five loci within the site.

The bulk of the debitage consisted of black chert, leading archaeologists to conclude that the primary activity at the site involved the exploitation of river cobbles that would have been available close by in the riverbank and riverbed. Chert cobbles are therefore thought to have been worked on-site into biface "preforms" (blanks), which would then have been taken elsewhere for more formal shaping and finishing. This inference is based on the fact that, while 44 bifaces or biface fragments were recovered, relatively few finished tools were found.

Substantial quantities of thermally altered rock were found in three of the five areas of the site. This material, also termed "hearth rock" and usually indicative of cooking and processing of food, may indicate somewhat more extended periods of occupation, possibly by larger groups. Both the lithic reduction stations and the evidence for more extended camping activity may have been peripheral to a much larger, more stable camp situated slightly further from the river (in an area now covered by the Route I-80 corridor).

The paucity of occupation during the Middle and Late Woodland periods is noteworthy. This may be the result of a shift in the depositional character of the Delaware River, leading to a period of instability along this section of the riverbank. This may have affected accessibility to the river cobbles that were one of the principal reasons for the site's occupation. Alternatively, the source of cobbles may have become so depleted as to have rendered their exploitation uneconomic.

Aftermath

As of the fall of 2011, the expanded weigh station is under construction. The archaeological work described here was restricted to those portions of prehistoric site 28Wa290 that were directly affected by the expansion project. Much evidence of Native American occupation still lies below ground in the immediately surrounding area (and probably also beneath the highway). Soils at least seven to eight feet below the present ground surface may contain artifacts and traces of occupation. The artifacts and documentation from the survey of 2004 and data recovery of 2008-09 are held by the New Jersey State Museum.



This selection of projectile points from prehistoric site 28Wa290 mostly comprises Late Archaic spear tips datable from circa 2,500 to 1,900 B.C. [Source: Hunter Research, Inc.].



At the left of this view are the remains of a fox found above and adjacent to an unrelated cluster of hearth rock in Area 1 [Source: Hunter Research, Inc.].

Project: Route I-80 Truck Weigh Station Expansion Project
Location: Knowlton Township, Warren County
Date: 2004-2010
Consultant: Hunter Research, Inc., 120 West State Street, Trenton, NJ 08608

For More Information...

Hunter Research, Inc.

2005 *Phase I and II Archaeological Survey, Route I-80 Truck Weigh Station Project, Knowlton Township, Warren County, New Jersey.* Report prepared for New Jersey Department of Transportation. On file, New Jersey Historic Preservation Office (NJDEP), Trenton, New Jersey.

2010 *Phase III Archaeological Data Recovery, Site 28Wa290, Route I-80 Truck Weigh Station Project, Knowlton Township, Warren County, New Jersey.* Report prepared for New Jersey Department of Transportation. On file, New Jersey Historic Preservation Office (NJDEP), Trenton, New Jersey.

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1972 *Archaeology in the Upper Delaware Valley. Anthropological Series of the Pennsylvania Historical and Museum Commission, Number 2.* Pennsylvania Historical and Museum Commission, Harrisburg, Pennsylvania.

Kraft, Herbert C.

2001 *The Lenape-Delaware Indian Heritage: 10,000 B.C. to A.D. 2000.* Lenape Books, Elizabeth, New Jersey.

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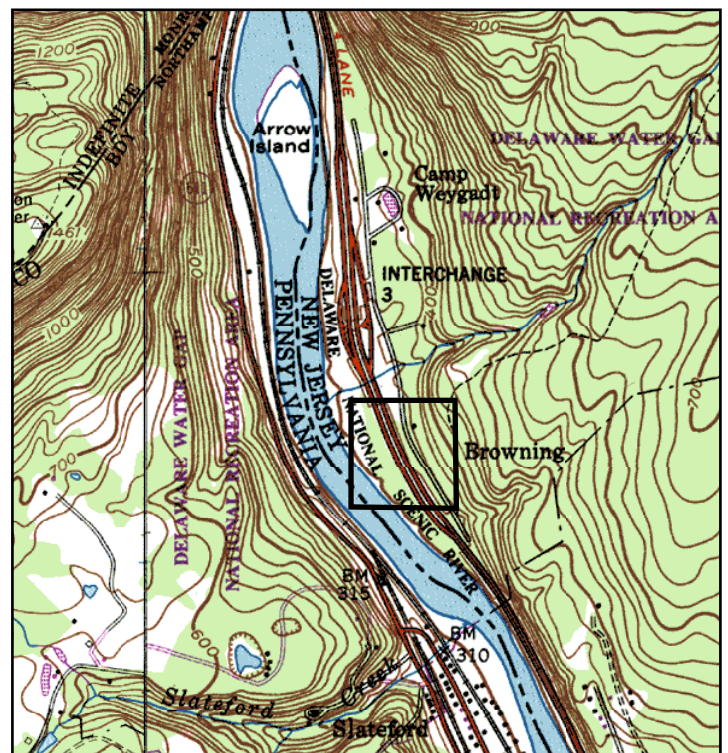
2001 *Indian Artifacts Salvaged Near the Delaware Water Gap During Construction of Interstate Highway No. 80.* Bulletin of the Archaeological Society of New Jersey 56:91-92.

Additional information on transportation projects and historic preservation is available from the Division of Environmental Resources, New Jersey Department of Transportation (<http://www.state.nj.us/transportation/works/environment/overview.htm>), the Federal Highway Administration (<http://www.fhwa.dot.gov/environment/archaeology/index.htm>), the New Jersey Historic Preservation Office (<http://www.state.nj.us/dep/hpo/2protection/njrreview.htm>), and the Advisory Council on Historic Preservation (<http://www.achp.gov/work106.html>).

New Jersey Travel and Tourism, Commerce & Economic Growth Commission



Project vicinity map



Area of detail

United States Geological Survey 1:24 000