

Cultural Resources

▶ Discovering New Jersey's Transportation Past

A Publication of the New Jersey Department of Transportation

Digest

Governor Chris Christie

October 2015

Commissioner Jamie Fox

> location:

city of south amboy
middlesex county

> resource types:

railroad terminal
wharves

> action:

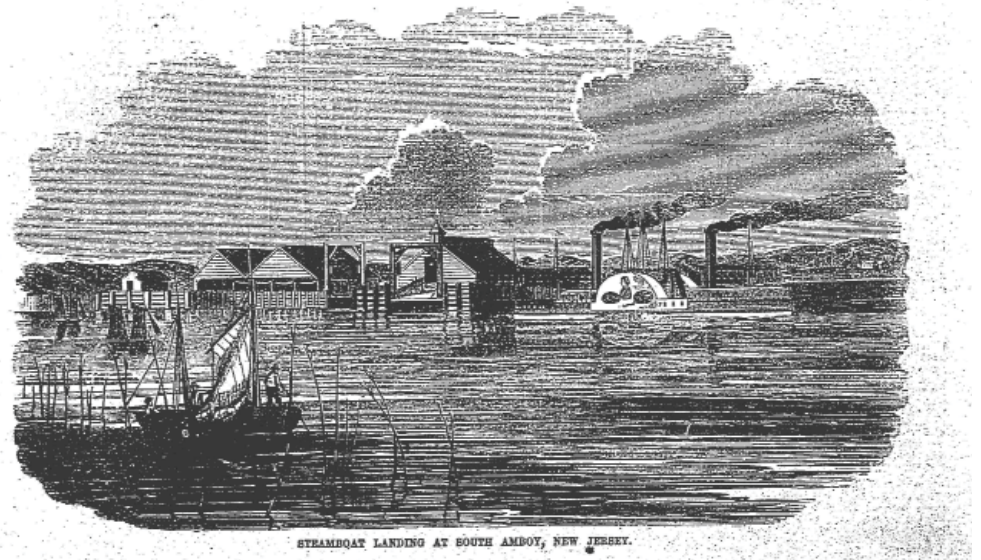
archaeological monitoring
remote sensing
historic narrative



City of South Amboy
Middlesex 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/overview.htm>.

The Intermodal Ferry Transportation Center New Jersey's First Tidewater Railroad Terminal



This 1854 engraving shows the steamboat landing at South Amboy. The gable-roof buildings are the Camden and Amboy Railroad ferry terminal on the T-wharf. The two timber-frame structures are transfer bridges that were used to transfer railcars and cargo on and off vessels. The bridges had hinged leaves that adjusted with the tide. [Source: "Gleason's Pictorial Drawing-Room Companion," April 1, 1854].

Beginning in 2000, historic architectural and archaeological studies were undertaken at the site of the proposed Intermodal Ferry Transportation Center, a combined bus, rail, ferry and pedestrian transportation center located on the site of the former ferry terminals and rail yard facilities of the Camden and Amboy Railroad/Pennsylvania Railroad in South Amboy, Middlesex County. The site is part of the Camden and Amboy Railroad (Main Line) Historic District. Architectural and archaeological studies were conducted to understand the condition and extent of historic rail yard buildings, wharves, ferry slips and related landscape fea-

tures. This work included archival research, mapping, photography, ground penetrating radar survey, excavation of test trenches and archaeological monitoring during construction.

Given the long history of the site and the large number of buildings and landscape features known to have been there, it was not surprising that archaeological trenching and monitoring encountered multiple subsurface remains. These included foundations of a machine shop and engine shop, tracks leading to a turntable, remains of an ash handling plant and a concrete floor that was probably related to a hose shed building constructed *circa* 1919.

Background

On November 12, 1831, the English-built locomotive *John Bull* pulled the first steam passenger train in New Jersey over slightly less than a mile of track in Bordentown. This section of track was the first on the Camden and Amboy Railroad's 61.28-mile-long line between Camden, on the Delaware River, and South Amboy, on Raritan Bay. South Amboy is located about 20 miles by ferry from Manhattan. The rail line from Bordentown north to South Amboy was completed in December 1832, and the line from Bordentown to Camden was completed in 1834.

The railroad was immediately popular with the traveling public and carried more than 100,000 passengers during its first full year of operation in 1833. In 1837, a branch was added from Bordentown to Trenton and in 1839 a branch from Trenton to New Brunswick was opened. The Trenton-New Brunswick line eventually came to carry the bulk of rail passengers traveling between Philadelphia and New York due to its connections with the Philadelphia and Trenton Railroad to the south (completed in 1837) and the New Jersey Railroad to the north (completed in 1839). The three lines together formed a nearly continuous all-rail route, which remains in operation today as Amtrak's Northeast Corridor.

Shortly after receiving its state charter in 1830, the Camden and Amboy Railroad joined with the Delaware and Raritan Canal as the "Joint Companies." The companies, by legislative authority, held a 35-year monopoly over the New York-Philadelphia route. This monopoly came to an end in 1866, but in 1867 the Joint Companies and the New Jersey Railroad merged into the United New Jersey Railroad and Canal Company. Four years later, the United New Jersey railroads were leased to the Pennsylvania Railroad. The Camden and Amboy Railroad's lines then became the Philadelphia to New York link in the Pennsylvania Railroad's vast rail empire, which stretched westward from Philadelphia through Pittsburgh and from there to Chicago and St. Louis.

The South Amboy Terminal in the Camden and Amboy Railroad Period (1831-1871)

The significance of the Camden and Amboy Railroad in the development of railroad technology, notably in locomotive power and roadbed construction, and its influence on the politics and economy of New Jersey in the first half of the 19th century cannot be overstated. The same applies to the railroad's South Amboy terminal on Raritan Bay. Research undertaken for this project indicates that the terminal of 1832 was a very early example of a tidewater railroad terminal, perhaps without paral-

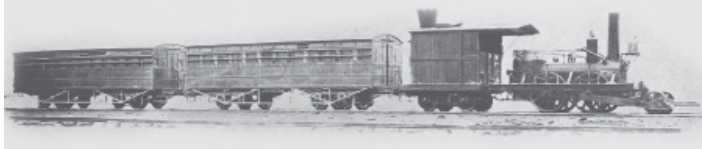
The Camden and Amboy Railroad

The railroad's first section, completed in 1832, was between Bordentown and South Amboy. The second section, completed in 1834, was between Camden and Bordentown. A more logical all-rail route lay between Trenton and Jersey City, so a branch was built from Bordentown to Trenton in 1837 and extended from Trenton to New Brunswick in 1839. The New Jersey Railroad, a separately chartered company that would not be merged with the Camden and Amboy until 1867, completed the route between New Brunswick and Jersey City.

Also shown are the routes of the Delaware and Raritan Canal, operated with the Camden and Amboy Railroad as the Joint Companies, and the Philadelphia and Trenton Railroad, which offered service between those two cities and was operated by the Camden and Amboy Railroad beginning in 1836.



Camden and Amboy Railroad track on stone sleepers near Jamesburg, New Jersey. Circa 1890. [Source: Smithsonian Institution].





This 2012 photograph shows the north side of the project area looking toward Perth Amboy. The pilings mark the approximate location of the original Camden and Amboy Railroad T-wharf. [Source: Hunter Research, Inc.].

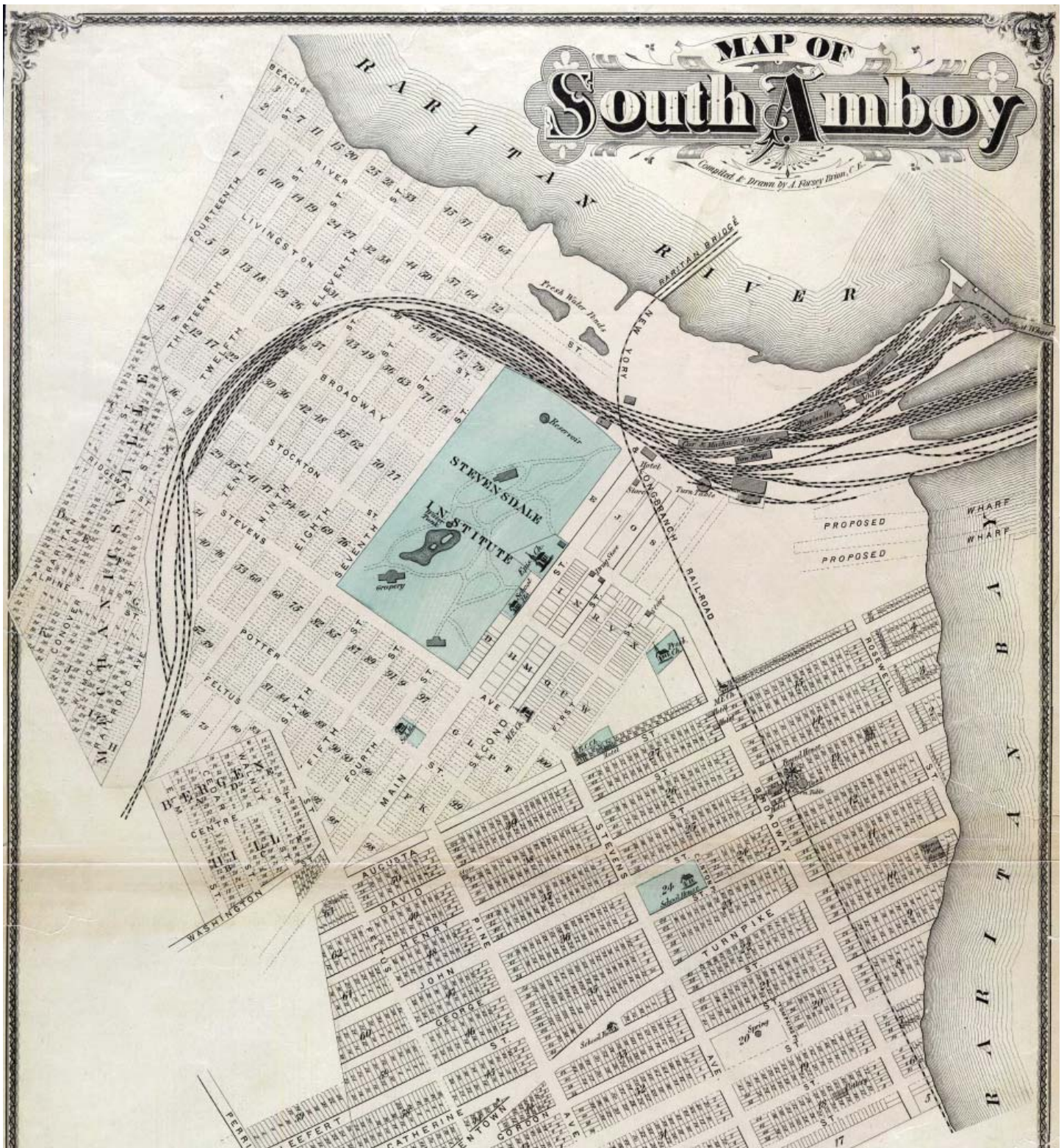
lel in the United States. During the 1820s and 1830s no tidewater terminals of comparable scope or purpose had been built specifically to transfer tens of thousands of passengers on a route between two major cities.

Prior to 1832, railroads in the Mid-Atlantic region were concentrated in the coal region of northeastern Pennsylvania. They were designed to carry coal from the mines to rivers or canals where it was dumped into barges for shipment downstream to tidewater. These early railroads did not usually make direct connections to ferries or harbor facilities, especially in major cities where waterfront property was expensive. By contrast, the Camden and Amboy Railroad did not have to contend with pre-existing urban development or high real estate costs in its efforts to build tidewater terminals in the towns of Bordentown, Camden or South Amboy. By 1830, the railroad company had acquired approximately 400 acres on the north side of the tiny village of South Amboy.

An estimated 109,000 passengers and 6,000 tons of merchandise passed through the South Amboy ferry terminal during its first full year of operation in 1833. Travel time on the route between New York City and

Philadelphia by way of South Amboy was from seven to ten hours, weather dependent. This was a reduction of several hours over the fastest times previously achieved by stagecoaches. The number of passengers passing through South Amboy peaked in 1838-39 at around 180,000 and then dropped significantly due to competition from the opening of the Trenton-New Brunswick section of the Camden and Amboy Railroad. By the mid-1850s, the New Brunswick line was carrying more than three-quarters of a million passengers a year. Meanwhile, passenger travel through South Amboy had stabilized at between 50,000 and 80,000 passengers per year, except in 1846 when a service interruption on the Trenton-New Brunswick main line diverted passengers to South Amboy.

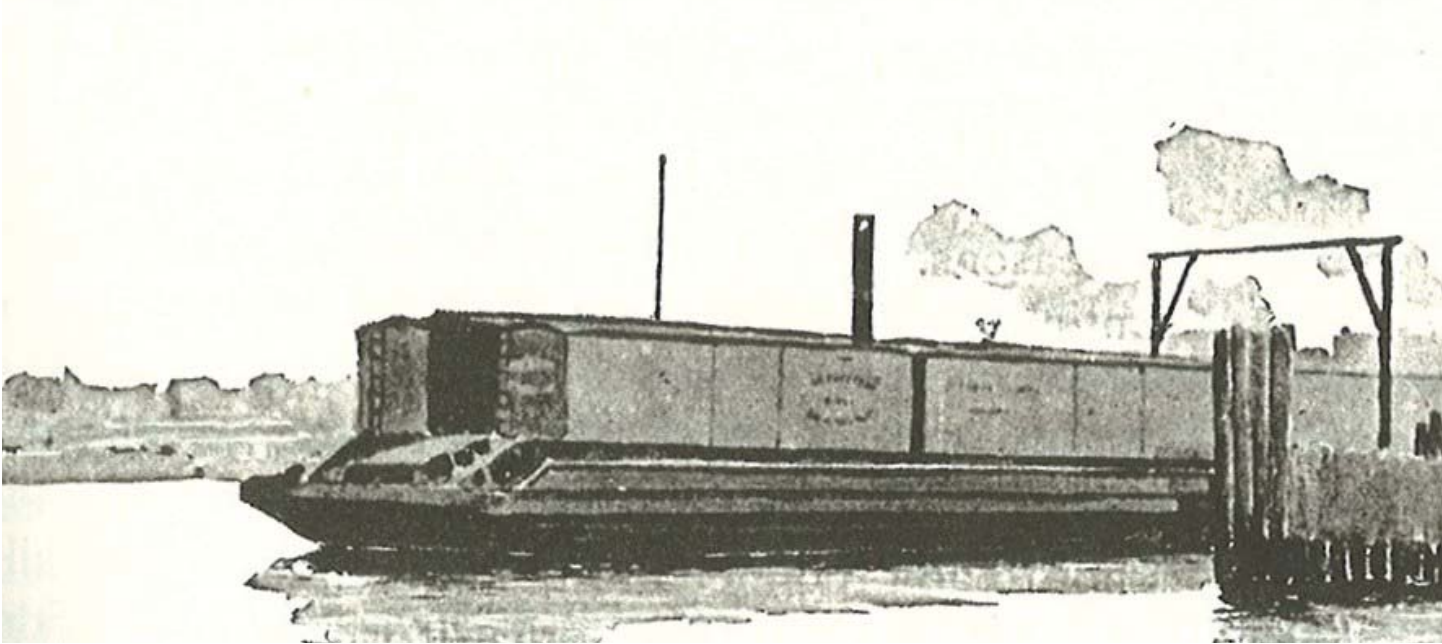
Operationally, the South Amboy terminal had two centers of activity about 2,000 feet apart. One was at the end of a wharf with a T-shape plan, where trains met ferries and the transfer of passengers and freight took place. The other was at the foot of Main Street, an area the Camden and Amboy Railroad came to call the “depot,” consisting of a station house, engine house and related buildings, and a workers’ village. In 1840,



This 1876 map shows the rail lines, buildings, and wharves of the South Amboy terminal. [Source: Everts and Stewart. "Combination Atlas Map of Middlesex County, New Jersey." 1876].

the number of buildings at the wharf was six and the number at the depot was about 30, with half of those dwellings for workers. By 1850, the wharf had grown to nine buildings, while the depot grew from about 30 to 50, with most of the new construction being workers' dwellings. The railroad also built a company-owned market, store and schoolhouse. As early as 1833, the *South Amboy Rail Terminal* — 4

Camden and Amboy Railroad had allowed Christ Episcopal Church, originally called St. Stephen's, to hold services on its property, and in 1858 a Gothic-style stone church and parsonage were built on Main Street.



This circa 1880 image shows a car float in New York Harbor. [Source: Thomas Curtis Clarke. "The American Railway: Its Construction, Development, Management and Trains." 1988].

The future of the South Amboy terminal lay mainly in freight, not passengers. As rail service improved in speed and reliability on the all-rail route from Jersey City to Philadelphia, via New Brunswick and Trenton, the original South Amboy-Camden main line became less popular. This led to an effort to concentrate general freight service at South Amboy, keeping it separate from the fast passenger and express service. Heavier crates, barrels and cargoes that were less time sensitive and generally slower moving thus passed through South Amboy. In 1836, the railroad started running a popular train known as the "Pea Line." This service picked up fresh vegetables and fruits in season from farming communities between Camden and South Amboy for delivery to markets in New York City. In 1840, the Pea Line ran daily in season with up to 16 cars carrying peas, peaches, potatoes, asparagus, cabbages, livestock and corn.

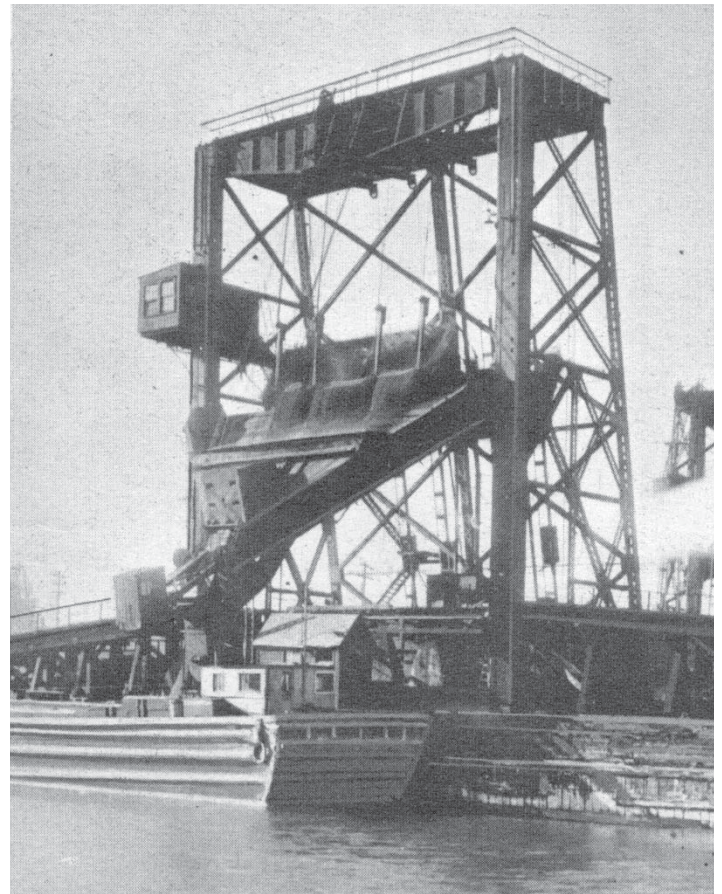
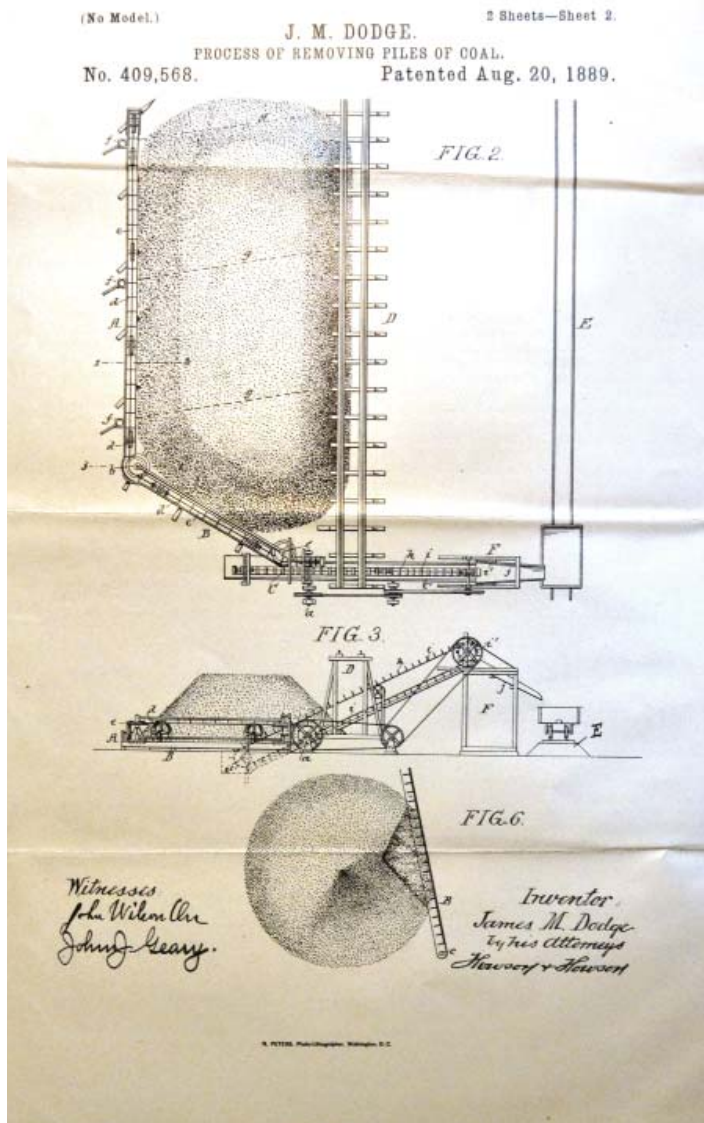
The handling of a higher volume of general freight necessitated the expansion and rebuilding of the wharf at South Amboy in 1844-45. The wharf was expanded from its original T-plan to a more triangular plan with the infilling of the downstream corner of the T to accom-

modate the approach of at least three tracks. The town itself had grown remarkably in the 1830s and 1840s, no doubt as a result of the railroad and the establishment of a thriving pottery industry. By 1861, the railroad's approach to the wharf had been double-tracked for increased capacity and safety. The maintenance and repair shops were moved from their original location, and the rail yard had two spurs on its south side. To the west of the rail yard, the railroad workers' village had grown to its fullest historical extent with its axis on Main Street and a secondary row of housing on Second Street.

"The interfacing of rail and waterborne commerce at South Amboy in the 1830s to 1860s period was arguably as important and new a phenomenon on the American landscape as were the rail beds and locomotives themselves."

Near the end of the Camden and Amboy Railroad period in 1867, the railroad's management described the operations on the South Amboy line as "especially calculated" for ordinary merchandise. By this time, the railroad

had adopted the use of "car floats," large-decked barges that eliminated the step of unloading the contents of the cars at South Amboy since the entire car was transferred via barge-like car floats. At South Amboy there were at least two transfer bridges at the east end of the wharf for moving the cars between the car floats and the wharf. Once docked in Manhattan, the car floats operated like temporary wharves onto which teamsters



(TOP) A circa 1949 photograph of Coal Dumper No. 1 in operation at South Amboy. [Source: "Pennsylvania Railroad Harbor Facilities," 1949, Hagley Library and Archives].

(LEFT) J. M. Dodge contracted with the Pennsylvania Railroad to install his patented machinery at the South Amboy terminal in 1892. This 1889 patent drawing (U.S. Patent No. 409,568) shows how the conveyors and loading machines shaped and screened the coal. [Source: Pennsylvania Railroad Company, Engineering Department Records, 1889].

drove their wagons and carts to receive and deliver loads. The interfacing of rail and waterborne commerce at South Amboy in the 1830s to 1860s was arguably as important and new a phenomenon on the American landscape as were the rail beds and locomotives themselves. Tidewater terminals were unique places where structures were needed for the movement and comfort of passengers transferring between ferry and railroad car, the loading and unloading of freight cars, and the temporary storage of goods on an expanding scale.

The South Amboy Terminal in the Pennsylvania Railroad Period (1871-1965)

In 1871, the Pennsylvania Railroad leased the United New Jersey railroads, which included the Camden and Amboy Railroad. This strategic acquisition gave

the Pennsylvania Railroad, which had previously terminated in Philadelphia, a direct line to the north and the Port of New York, solidifying its control over the regional transportation network. It brought the South Amboy terminal under the control of the largest railroad corporation in the United States. Shortly after leasing the Camden and Amboy Railroad, the Pennsylvania Railroad constructed coal docks at South Amboy. The docks were built to the south of the original Camden and Amboy Railroad wharf, which for the time being remained in use as a general freight wharf.

The original coal-handling piers of the 1870s were a gravity-feeding type making use of bottom-dumping coal hopper cars that dumped coal into chutes and directly into barges. This system was relatively simple, but it relied on close coordination of train

and barge movements. Loaded coal cars were held in the yards waiting to be moved to the dock, requiring the Pennsylvania Railroad to expand the number of sidings. Storage space was also needed in the yards for the empties returning from the dock to await formation into trains for the return to coal country. The opening of a new rail line in 1875 from Perth Amboy, traveling south across the mouth of the Raritan River, through South Amboy and continuing to Bay Head soon brought an end to the need for passenger ferry and general freight service at the South Amboy terminal wharf.

Between 1888 and 1893, the Pennsylvania Railroad undertook a major construction campaign to expand the capacity of its coal storing and handling facilities at South Amboy. This campaign included the reconstruction of the coal piers, the construction of timber bulkheads along the shore line, filling behind the bulkheads to create fast land, dredging of shipways around the coal piers, reconstruction of the former Camden and Amboy freight pier, and the installation of Dodge Coal Storage Company conveyors and loading machines. This latter innovative system involved chain or rope driven conveyors and elevators, powered by steam engines, that shaped and screened the coal into large piles

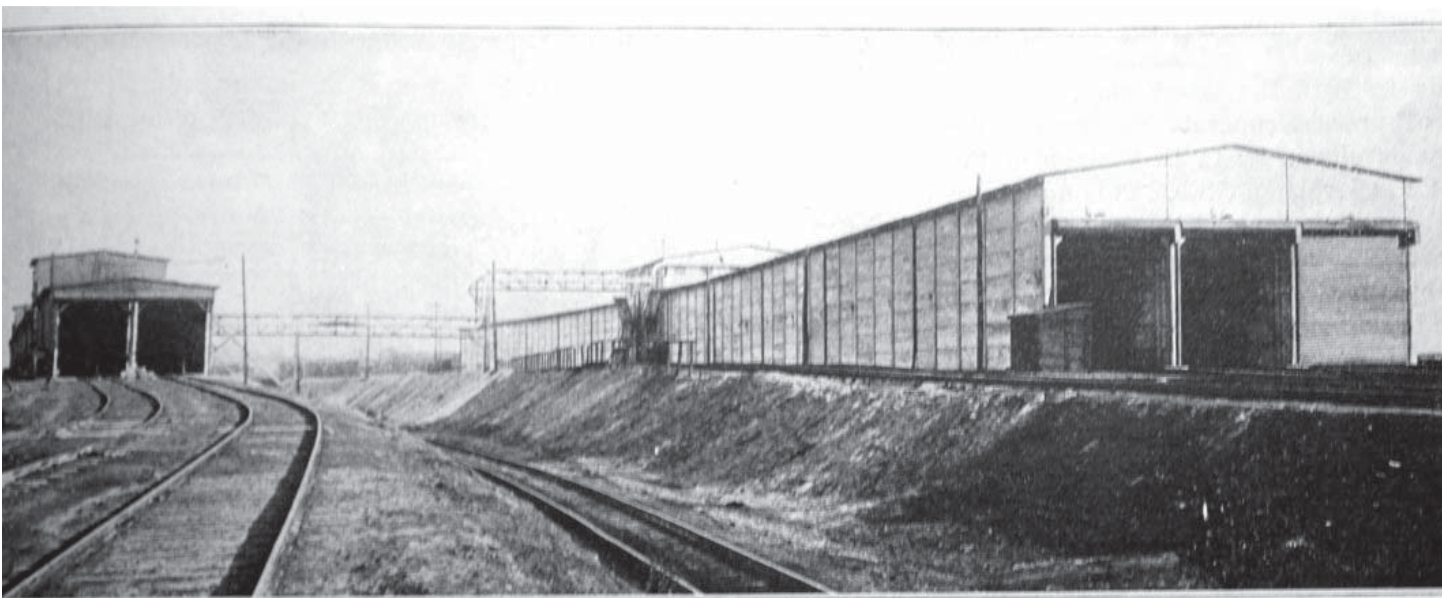
of uniform grade and then moved the coal from the piles for delivery into rail cars or barges. The machinery installed by the Dodge Coal Storage Company added 90,000 tons of coal storage capacity to the terminal.

In 1910, the Pennsylvania Railroad installed the first of two giant McMyler car-dumping machines at South Am-

boy to replace the Dodge conveyor system. The car-dumper picked up entire coal cars with a cradle, tipped the car over and dumped its contents onto an apron, which directed the coal into the hold of a waiting barge or ship. In 1911, the railroad installed a second McMyler car-dumping machine. These machines allowed the Pennsylvania Railroad to reorganize handling of coal at South Amboy by making

use of higher tonnage coal cars and eliminating the coal storage yard previously handled by the Dodge conveyors. The new system required a continuous flow of full cars approaching the dumpers. After being tipped and emptied, the empties were rolled by gravity to a kickback at the end of the pier onto a siding where they were formed into a train to be pulled back to the yard and returned to service. The elimination of the coal storage yard meant that the South Amboy terminal required standing room to accommodate a sufficient quantity of

“During the winter heating season, the terminal was transferring from rail to barge on average a half a million tons of coal per month.”



A circa 1918 photograph of the two coal-thawing plants at South Amboy. The two-track plant at left was built in 1910-11; the three-track plant at right was added in 1916. [Source: *Engineering News-Record*, Volume 80, Number 5, 1918].



This 2001 photograph shows the western end of the 1916 coal thawing shed. It was torn down prior to 2012. [Source: Hunter Research, Inc.].

coal cars to fulfill the demands of their customers in New York City. In the mid-1910s, the yard was expanded to have space for 3,500 coal cars each with a 40-ton capacity. Thus at maximum capacity, the South Amboy terminal could house 140,000 tons of coal. During the winter heating season, the terminal was transferring from rail to barge on average a half a million tons of coal per month. The Pennsylvania Railroad's Coal Freight Agent H. C. Clevenger made note in April 1915 that the South Amboy terminal was earning the railroad about six million dollars per year, making it the most profitable freight tonnage handled by their system.

Cold weather presented challenges to railroads shipping coal. The railroads delivered coal year round, but long freezes could bring their operations to a halt because the coal would freeze in the cars, making it almost impossible to release from the car when it arrived at the

port. Frozen coal was particularly troublesome at terminals that adopted car-dumpers since the process of unloading was designed to be continuous. To solve this problem, terminals with coal dumpers often installed thawing plants. In 1911, contemporaneous with the installation of the McMyler car-dumpers, the Pennsylvania Railroad built a coal-car thawing plant at South Amboy, located over the tracks to the west of the coal piers in the area previously occupied by the coal yard.

The 1910-11 South Amboy coal-thawing plant was a 500-foot-long wooden building capable of thawing twenty cars at a time. Coal was thawed with hot steam that was injected in intervals into the coal cars. After the first year it was determined that this system was awkward and inefficient, as well as dangerous to the workers, and left the coal very wet. The following year they installed a system that blew hot

air (250 degrees F) into the building and upward into the bottom of the cars. The coal would generally be thawed in two hours. This system proved so satisfactory that a second coal-thawing plant was installed at South Amboy to increase capacity. The second plant had a 42-car capacity and was among the earlier pre-cast reinforced-concrete buildings in the United States.

Perhaps the most significant change at the South Amboy terminal between the two world wars was its integration into the Pennsylvania Railroad's electrification program. The railroad began experimenting with electrification in 1895, but it was not until 1904-05 that it was successfully applied to the Long Island Railroad. Electricity had several advantages over steam, not the least of which was the elimination of choking smoke, but it was also considered ideal for commuter trains because it provided quicker acceleration and deceleration responsiveness than steam operations between the closely spaced stations. Early electrification projects all relied on direct-current, third-rail systems, but the Pennsylvania Railroad preferred using alternating-current, overhead catenary systems.

Electrification was first introduced to South Amboy in 1935 via an overhead catenary system. The primary support structures were steel H-section poles and bents that maintained the electrification wire at 22 feet above the rail. Pantographs mounted atop the locomotives maintained connection with the wire to complete the circuit and deliver power. The intervention of World War II, the introduction of diesel-electric locomotives, and worsening economic conditions for the railroads in competition with automobiles prevented the Pennsylvania Railroad from implementing any further expansion of its electrification program.

During World War I, the Pennsylvania Railroad expanded the volume of munitions and explosives transfers at the South Amboy terminal. They built a new explosives pier immediately south of the old Camden and

Amboy Railroad freight pier and north of the coal piers. The explosives pier had two tracks and space for three or four barges to tie up along its south side. Unlike the coal piers with their mechanical McMyler dumpers, the transfer of explosives between boats and railcars was a manual process with teams of stevedores handling the crates and barrels. The dangers became immediately apparent on September 6, 1923, when a fire broke out on the explosives pier in a rail car loaded with smokeless powder. The fire spread to an adjacent barge, which was cut adrift but still caused considerable damage to the wharf and several nearby boats. The burning train was pulled away from the pier in an attempt to position the burning cars under a water tank to control the spread of the fire, but the train stalled on the Main Street overpass. Two of the five cars exploded, killing five onlookers and seriously burning another 28. Nevertheless, explosives continued to be handled in large quantities at South Amboy, and during World War II it was among the most important munitions transfer points in the Port of New York. South Amboy's busiest year on record for munitions was 1943 when it handled 1,627 cars carrying over 107 million pounds of explosives.

Another explosion rocked the terminal on May 19, 1950. On that day the terminal was handling a 12-car train holding about 825,000 pounds of gelatin dynamite, anti-tank mines and anti-personnel mines. At about 7:26 p.m. a violent explosion shook the pier. The blast instantly killed 26 dock handlers and five barge captains. The wharves, buildings and equipment at the terminal sustained serious structural damage with many of the railroad service buildings leveled. Buildings over half a mile away met with shattered windows and structural damage, and the force of the explosion was heard over 25 miles away. The Pennsylvania Railroad estimated its damages at four million dollars, but spent only half that in repairing the terminal. The oil pier and coal pier were repaired, but the explosives pier was not rebuilt. Later that year, the Pennsylvania Railroad closed down its coal-handling operations at the Greenville

“...explosives continued to be handled in large quantities at South Amboy, and during World War II it was among the most important munitions transfer points in the Port of New York. South Amboy's busiest year on record for munitions was 1943 when it handled 1,627 cars carrying over 107 million pounds of explosives.”



This photograph, looking west, shows the damage to the machine shop on the coal-dumper pier from the explosion of May 19, 1950. [Source: Pennsylvania Railroad Photographs Collection, Hagley Library and Archives].

Pier in Jersey City and consolidated them at South Amboy. The coal business, however, was on the decline, and South Amboy was increasingly relegated to a customer base of public utilities operating coal-fired generating plants.

During the 1950s and 1960s, the Pennsylvania Railroad suffered a period of general decline as costs rose and increasing competition from airlines, automobiles and long-haul trucking cut into its market share. In 1968, the railroad completed a merger with the New York Central, but the company, now called the Penn Central, failed

and declared bankruptcy two years later. No major developments or changes in service occurred at the South Amboy terminal during this period of declining investment in the railroad's infrastructure.

“...the Pennsylvania Railroad suffered a period of general decline as costs rose and increasing competition ... cut into its market share.”

Coal handling operations continued at South Amboy until 1976, when Congress created Conrail to take over Penn Central and five other bankrupt railroads in the Northeast. In 1979, Conrail sold the South Amboy property to the Mod-

ern Transportation Company, later known as Spectraserve, which used the facility mainly for the stor-

age of bulk materials and for tying up barges at the piers. In the 1990s, the City of South Amboy, along with the New Jersey Department of Transportation and the Federal Highway Administration, began looking at alternatives for redeveloping the site as a transportation center adjacent to a marina planned by the city

Archaeological Investigations

The first archaeological field testing, including a remote sensing survey, was undertaken in the spring and summer of 2001, followed by additional testing in 2002. Seventeen archaeological trenches were excavated with a backhoe, and 13 transects were subjected to geophysical survey. The trenches were placed to intercept the predicted locations of major buildings and the geophysical survey was subsequently undertaken to obtain a more general impression of below-ground conditions in undisturbed parts of the project area. Although foundations were encountered at several points in the archaeological trenches, none were considered to contribute to the significance of the Camden and Amboy Railroad Historic District.

Archaeological monitoring of the construction of Radford Ferry Road was undertaken in 2012. Monitors observed the contractor as they excavated test pits, graded and filled in the roadbed, and removed contaminated soils. Although a number of structural remains, including those of a well house, brick tank and concrete pier were recorded by the archaeological monitors, they were not considered eligible archaeological resources. On the other hand, a wooden trestle structure constructed of pine logs and massive square beams was determined to contribute to the significance of the Camden and Amboy

Archaeological Monitoring

Archaeological remains are sometimes suspected to survive in a construction zone but in locations that are inaccessible until construction is underway. They are also sometimes encountered unexpectedly during the early stages of construction. In such cases, archaeologists are on site during construction to observe, inspect, investigate and record archaeological discoveries. The goal is to recover information with minimal disruption of construction schedules.

Observational monitoring is the rapid recording of buried features uncovered during the contractor's operations (with brief work stoppage, measured in hours, not days, if necessary). The monitors inspect backdirt piles and trenches, map soil profiles and collect soil samples and take photographs. Documentary monitoring is the more detailed investigation of an archaeological discovery, similar to that usually done in advance of construction; the archaeologist may halt the contractor's operations up to a predefined time limit, such as two days.

Successful monitoring is integrated into the larger transportation project early in the development of contract documents. The responsibilities of the monitor, contractor, and resident engineer are spelled out in the construction specifications, along with the procedures to be followed by each party. Monitoring locations are written into the specifications and shown on the plans, and provision is also made for unanticipated discoveries in other locations.

Railroad Historic District. The documentation during monitoring was considered sufficient and no further excavation or documentation of the trestle was undertaken.

In the inter-tidal and near-offshore area of the north-eastern end of the project area a number of vertical posts and horizontal timbers were observed extending into Raritan Bay. The oldest and most complex of these probably incorporate features from the Camden and Amboy ferry terminal and possibly from the pre-railroad era ferry pier, but a detailed survey of all the timberwork was beyond the scope of the current project.

Remote Sensing

Under certain conditions, archaeological information is gathered from a distance, without putting a shovel in the ground. This is remote sensing, where scientific techniques such as radar, sonar and infrared photography are used to locate archaeological features. Remote sensing is considered appropriate for use on shipwrecks, in very large survey areas, in dense vegetation or where hazardous materials are a concern.

Aerial photography was the earliest form of remote sensing. Originally based on black-and-white photographs taken from airplanes, it now includes color and infrared imagery, compiled from satellites. Buried drainage systems (natural and man-made), roads and earthworks have been detected by this method.

At ground level, techniques like magnetic survey, metal detecting, ground-penetrating radar (GPR) and other devices are used to locate buried objects, structural remains and soil anomalies. For instance, by detecting differences in reflectivity between an object and its surroundings, GPR can reveal the depth, size, shape, and orientation of a buried target. GPR also makes possible the creation of computer-generated cross-sectional subsurface images, showing objects and features in relation to each other, the surface and the survey transect or grid.

Project: Archaeological Investigations at the South Amboy Rail Terminal
Location: City of South Amboy, Middlesex County
Date: 2001-2012
Consultant: Hunter Research, Inc., 120 West State Street, Trenton, NJ 08608

For More Information...

Baer, Christopher T.

1981 *Canals and Railroads of the Mid-Atlantic States, 1800-1860*. Glen Porter and William H. Mulligan Jr., editors. Regional Economic Historic Research Center, Eleutherian Mills - Hagley Foundation, Inc., Greenville, Delaware.

Cunningham, John T.

1997 *Railroading in New Jersey: The Formative Years*. Afton Publishing Co., Inc., Andover, New Jersey.

Lane, Wheaton J.

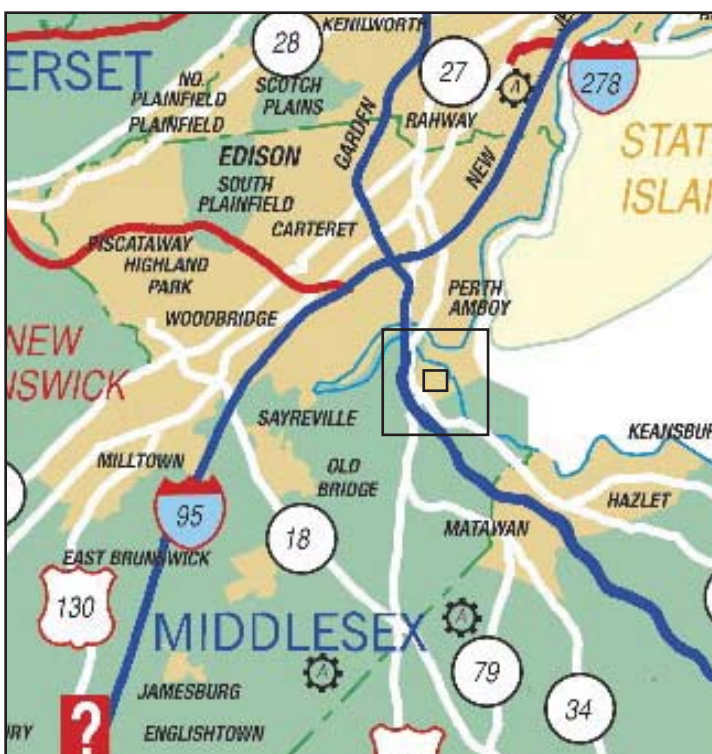
1939 *From Indian Trail to Iron Horse: Travel and Transportation in New Jersey, 1620-1860*. Princeton University Press, Princeton, New Jersey.

Stover, John F.

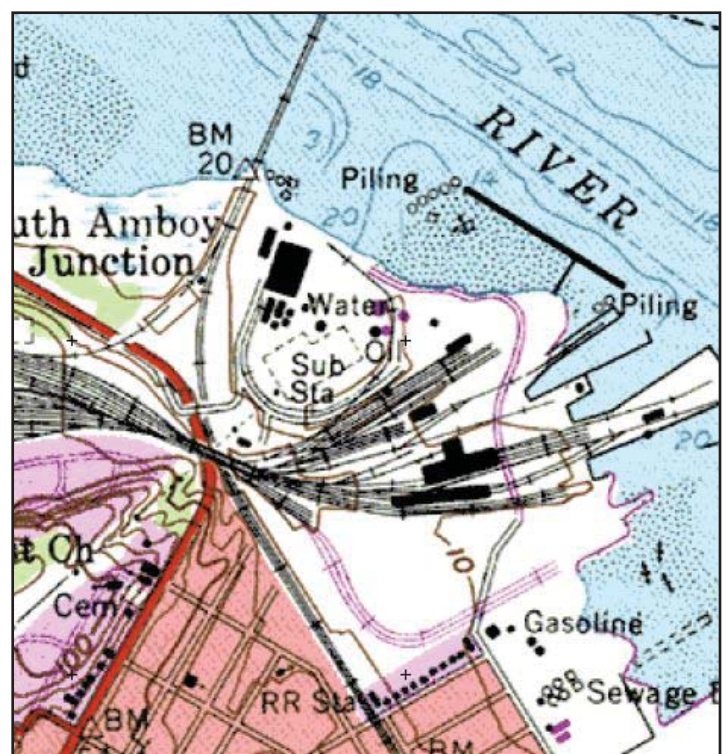
1997 *American Railroads*. Chicago History of American Civilization. University of Chicago Press, Chicago, Illinois.

Additional information on transportation projects and historic preservation is available from the 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