
V. ENVIRONMENTAL IMPACTS AND MITIGATION

A. HISTORIC PROPERTIES

1. Impacts

Of the eight National Register or potentially eligible historic properties within the project area, four are located some distance from where the proposed Turnpike improvements and C-D roads will begin and, therefore, will not be affected by the proposed project. These four properties are:

- **Cooch's Bridge Historic District (N-190)** - This property was listed on the National Register in October 1972; the nomination was amended in September 1990.
- **Welsh Tract (Old School) Baptist Church (N-264)** - This property was listed on the National Register in March 1973.
- **180 Welsh Tract Road (N-12868)** - This property was surveyed in October 1991. It appears potentially eligible for listing on the National Register under Criterion C as defined in 36 CFR 60.4.
- **239 Chestnut Hill Road (N-12872)** - This property was surveyed in October 1991. It appears potentially eligible for listing on the National Register under Criteria A and C as defined in 36 CFR 60.4.

The following four properties are located within the portion of the project area that is scheduled for proposed road improvements.

Thomas Montgomery House, "Newery" (N-1601) - The project will have no effect on this historic property because the proposed improvements will not alter characteristics that would qualify the property for listing on the National Register (36 CFR 800.9 (a)).

The property contains a house and a barn. The house is a two-and-one-half-story, four-bay, Georgian-style dwelling, constructed circa 1750. The stone bank barn, located west of the house, also dates from circa 1750. The property is located south-southeast of the Turnpike, on the northeast corner of State Route 273 and Eagle Run Road. The property abuts the existing right-of-way for State Route 273, and is approximately 1,320 feet from the existing right-of-way for the Turnpike northbound lanes. The resource is approximately 760 feet from the nearest

proposed improvements, located in the southeast quadrant of the Turnpike/State Route 273 interchange.

The proposed improvements in the area of the Thomas Montgomery House will consist of realigning to the southeast of the State Route 273 northbound and southbound acceleration ramps and shoulders leading to the northbound lanes of the Turnpike. The realigned Route 273 northbound acceleration ramp will consist of one 15-foot lane with a 10-foot shoulder. The realigned Route 273 southbound acceleration ramp will consist of two 12-foot lanes with a 10-foot shoulder. Other proposed improvements will include Collector-Distributor (C-D) lanes parallel to the northbound and southbound lanes of the Turnpike. The C-D lanes will consist of two 12-foot lanes with a 12-foot shoulder. There will be other minor modifications where the acceleration and deceleration ramps of the interchange merge with State Route 273 and the Turnpike.

Adverse Effect Criterion 36 CFR 800.9 (b) (1) is not applicable because there will be no physical destruction, damage or alteration of all or any part of the property, since all proposed improvements will be located outside the historic boundaries of the property.

Adverse Effect Criterion 36 CFR 800.9 (b) (2) is not applicable because the proposed improvements will not isolate the property from, or alter the character of, the property's setting, which character contributes to its qualification for the National Register.

Adverse Effect Criterion 36 CFR 800.9 (b) (3) is not applicable because the proposed improvements will not introduce visual or audible elements that are out of character with the property or that will alter its setting. As noted above, the Thomas Montgomery House is situated well outside any area that will be physically affected by construction of the proposed improvements. Moreover, between the proposed area of construction and the historic property is an area containing dense tree growth and modern commercial development. The property is also situated directly on State Route 273 and is therefore already subject to the visual effects of the roadway. Because of the distance factor, the intervening area of trees and development, and the proximity of State Route 273, visual and audible effects due to the proposed improvements are precluded.

Adverse Effect Criterion 36 CFR 800.9 (b) (4) is not applicable because the proposed improvements will not reasonably lead to the deterioration or destruction of the property as a result of neglect.

Adverse Effect Criterion 36 CFR 800.9 (b) (5) is not applicable because the proposed improvements will not directly result in any transfer, lease or sale of the property.

Henry L. Churchman House (N-1603) - The proposed project will have no effect on this historic property because the proposed improvements will not alter characteristics that would qualify the property for listing on the National Register (36 CFR 800.9 (a)).

The house is a two-and-one-half-story, three-bay, brick dwelling, constructed circa 1856. The property is located south of the Turnpike, on the north side of Churchmans Road, approximately 1,400 feet from the intersection of the Turnpike and the Churchmans Road rights-of-way. The resource is located approximately 550 feet from the existing right-of-way for the Turnpike northbound lanes and approximately 650 feet from the nearest proposed improvements at the Turnpike (point of regrading work).

The proposed improvements in the area of the Henry L. Churchman House will consist of C-D lanes parallel to the northbound and southbound lanes of the Turnpike. Adjacent to the northbound Turnpike lanes will be two 13-foot C-D lanes with a 12-foot shoulder. Adjacent to the southbound Turnpike lanes will be three 12-foot C-D lanes with a 12-foot shoulder. Also proposed is a 12 1/2-foot outside lane to be added to the existing Turnpike northbound and southbound lanes. A 12-foot shoulder will be constructed adjacent to these two new outside lanes.

Adverse Effect Criterion 36 CFR 800.9 (b) (1) is not applicable because there will be no physical destruction, damage or alteration of all or any part of the property, since all proposed improvements will be located outside the historic boundaries of the property.

Adverse Effect Criterion 36 CFR 800.9 (b) (2) is not applicable because the proposed improvements will not isolate the property from, or alter the character of, the property's setting, which character contributes to its qualification for the National Register.

Adverse Effect Criterion 36 CFR 800.9 (b) (3) is not applicable because the proposed improvements will not introduce visual or audible elements that are out of character with the property or that will alter its setting. Dense landscaping on the property and on surrounding parcels obscures the view of the Turnpike. In addition, the property is surrounded by commercial and residential development which acts as a buffer between the Turnpike and the resource. Because of the intervening area of development and vegetation, visual and audible effects due to the proposed project are precluded.

Adverse Effect Criterion 36 CFR 800.9 (b) (4) is not applicable because the proposed improvements will not reasonably lead to the deterioration or destruction of the property as a result of neglect.

Adverse Effect Criterion 36 CFR 800.9 (b) (5) is not applicable because the proposed improvements will not directly result in any transfer, lease or sale of the property.

191 Chapman Road (N-6775) - The proposed project will have no effect on this historic property because the proposed improvements will not alter characteristics that would qualify the property for listing on the National Register (36 CFR 800.9 (a)).

The farm complex contains a two-and-one-half-story, three-bay, frame, vernacular I-house, which appears to have been constructed during the mid-nineteenth century. The resource is located south of the Turnpike, approximately 560 feet south of Chapman Road. The property is approximately 1,000 feet from the existing right-of-way for the Turnpike northbound lanes and approximately 1,080 feet from the nearest proposed Turnpike improvements (point of regrading work).

The proposed improvements in the area of 191 Chapman Road will consist of two 12-foot C-D lanes with a 12-foot shoulder adjacent to the northbound lanes of the Turnpike. In addition, a 12-foot acceleration/deceleration lane is proposed, leading to and from the Delaware Department of Transportation (DelDOT) Maintenance Building on the north side of the Turnpike southbound lanes.

Adverse Effect Criterion 36 CFR 800.9 (b) (1) is not applicable because there will be no physical destruction, damage or alteration of all or any part of the property, since all proposed improvements will be located outside the historic boundaries of the property.

Adverse Effect Criterion 36 CFR 800.9 (b) (2) is not applicable because the proposed improvements will not isolate the property from, or alter the character of, the property's setting, which character contributes to its qualification for the National Register.

Adverse Effect Criterion 36 CFR 800.9 (b) (3) is not applicable because the proposed improvements will not introduce visual or audible elements that are out of character with the property or that will alter its setting. The 191 Chapman Road property is situated well outside any area that will be physically affected by proposed construction. Moreover, dense landscaping on the property and surrounding parcels obscures most views of the Turnpike. In addition, the property is surrounded by commercial and residential development which acts as a buffer between the Turnpike and the resource. Because of the distance factor and the intervening area of development and vegetation, visual and audible effects due to the proposed project are precluded.

Adverse Effect Criterion 36 CFR 800.9 (b) (4) is not applicable because the proposed improvements will not reasonably lead to the deterioration or destruction of the property as a result of neglect.

Adverse Effect Criterion 36 CFR 800.9 (b) (5) is not applicable because the proposed improvements will not directly result in any transfer, lease or sale of the property.

Lewis Weldin Farmhouse (Maple Springs Farm) (N-6783) - The proposed project will result in an adverse effect to this historic property, according to the criteria defined by 36 CFR 800.9 (b) (3).

The property contains a house, a garage, and various landscape features associated with the house. The house is a two-and-one-half-story, three-bay, L-shaped, brick, vernacular Italianate dwelling, constructed circa 1868. The house also contains several one- and two-story circa 1910 frame additions. The garage dates from circa 1950 and is a non-contributing resource. The property is located north of the Turnpike, in a triangular area bounded by State Route 7 (Stanton-Christiana Road), State Route 58 (Churchmans Road), and the Turnpike. The tax parcel boundary for the property abuts the existing right-of-way for the Turnpike southbound lanes as well as the existing southern right-of-way for Churchmans Road. At its closest point, the historic resource boundary is approximately 50 feet from the existing right-of-way of the Turnpike southbound lanes. The house, at its closest point, is approximately 180 feet from the existing right-of-way of the Turnpike southbound lanes. The improvements proposed for the Turnpike in the area of the resource will be constructed within the existing right-of-way; therefore, the distances from the historic resource boundary and the house to the proposed improvements will be the same as noted above. In two instances, however, additional right-of-way will be required in the vicinity of the historic resource to accommodate the proposed improvements (approximately .24 acres in total). One of these required areas will be located within the existing tax parcel boundary, but outside of the historic resource boundary (approximately 30 feet from the southeast corner of the historic boundary). The other area will be located on a separate tax parcel some 350 feet from the southwest corner of the historic resource tax parcel, adjacent to the northeastern ramp of the Turnpike/State Route 7 interchange.

The proposed improvements in the area of the Lewis Weldin Farmhouse will include two C-D roads--each consisting of two 12-foot lanes with a 12-foot shoulder--located adjacent to the existing Turnpike northbound and southbound lanes. The existing outside shoulder along the Turnpike northbound and southbound lanes will be converted to a 12-foot outside lane. In the area of the historic resource, this new lane on the southbound side will diverge from the Turnpike to become a deceleration lane, eventually merging into an acceleration ramp for State Route 7. Near the intersection of the Turnpike and Churchmans Road rights-of-way, the southbound C-D road will widen to three lanes. The outside C-D lane will diverge from the other two to join with the deceleration lane off of the southbound lanes of the Turnpike. These two deceleration lanes--one from the Turnpike and the other from the C-D road--will merge in the area of the historic resource to form a two-lane acceleration ramp leading to State Route 7 (noted as Ramp A on the project engineering plans).

To accommodate the two deceleration lanes leading to the State Route 7 acceleration ramp, it is proposed that the southbound C-D road be elevated approximately 30 feet above the existing Turnpike grade and some 20 feet above the historic resource grade. A bridge will be constructed at the point where the C-D road passes over the deceleration lane coming off of the southbound Turnpike. At this point, the C-D road will consist of two 12-foot lanes with an interior shoulder of 4 feet and an exterior shoulder of 14 feet. For the length of its expanse above the Turnpike grade, the C-D road will be flanked by retaining walls. The State Route 7 acceleration ramp (including the two deceleration lanes leading to it) will run north of the C-D road at the existing historic resource grade. A retaining wall will be constructed along the north side of the ramp. Within the existing southbound right-of-way, three outbuildings associated

with the Weldin Farmhouse will be demolished to make way for the proposed improvements. These three resources are not historic or have lost their context and are not included within the historic resource boundary.

Adverse Effect Criterion 36 CFR 800.9 (b) (3) is applicable because the proposed improvements will introduce visual and audible elements that are out of character with the property and that will alter its setting. The historic resource is currently surrounded by the Turnpike, Churchmans Road, and recent commercial development, which all serve to create visual and audible effects on the resource. The proposed Turnpike improvements will introduce new adverse visual effects on the resource; however, no additional audible impacts will be introduced. At 20 feet above the existing grade of the resource, the elevated C-D road, including the bridge and the retaining walls, will introduce new visual elements that are out of character with the property and its setting. In addition, the State Route 7 acceleration ramp, although on grade with the historic resource, will create an adverse visual effect on the property due to its proximity to the resource and due to the planned removal for the ramp of vegetation in the existing right-of-way that currently screens the historic resource from the Turnpike. It would appear that the proposed improvements for the northbound and southbound lanes of the Turnpike and for the northbound C-D road will not have an adverse visual effect on the property because they will be obscured from view by the elevated southbound C-D road and the on-grade State Route 7 acceleration ramp.

Adverse Effect Criterion 36 CFR 800.9 (b) (1) is not applicable because there will be no physical destruction, damage or alteration of all or any part of the property, since all proposed improvements will be located outside the historic boundaries of the property.

Adverse Effect Criterion 36 CFR 800.9 (b) (2) is not applicable because the proposed improvements will not isolate the property from, or alter the character of, the property's setting, which character contributes to its qualification for the National Register.

Adverse Effect Criterion 36 CFR 800.9 (b) (4) is not applicable because the proposed improvements will not reasonably lead to the deterioration or destruction of the property as a result of neglect.

Adverse Effect Criterion 36 CFR 800.9 (b) (5) is not applicable because the proposed improvements will not directly result in any transfer, lease or sale of the property.

2. Mitigation Measures

Thomas Montgomery House, "Newery" (N-1601) - No mitigation measures are necessary because there will be no adverse effect to the Thomas Montgomery House under 36 CFR 800.9 (b).

Henry L. Churchman House (N-1603) - No mitigation measures are necessary because there will be no adverse effect to the Henry L. Churchman House under 36 CFR 800.9 (b).

191 Chapman Road (N-6775) - No mitigation measures are necessary because there will be no adverse effect to the 191 Chapman Road property under 36 CFR 800.9 (b).

Lewis Weldin Farmhouse (Maple Springs Farm) (N-6783) - Mitigation of the adverse effects to the Lewis Weldin Farmhouse (Maple Springs Farm) under 36 CFR 800.9 (b) (3) will be accomplished by implementation of the following measure:

Due to the complex nature of the proposed Turnpike improvements in the area of this resource, a mitigation plan will be developed in consultation with the SHPO to mitigate the adverse visual effects created by the proposed project.

B. ARCHAEOLOGICAL RESOURCES

1. Impacts

There are five previously recorded archaeological sites in the vicinity of the Turnpike (Table V-1). None of these sites is listed on the National Register of Historic Places. However, the W. M. Hawthorn Site (N-6264, 7NC-E-46), which contains prehistoric and historic components, was determined eligible for inclusion on the National Register in 1982 (O'Connor et al. 1983). The site is an early nineteenth-century farm complex with a prehistoric component that has been described as a Woodland I staging-processing site. Data recovery excavations were conducted at this site to mitigate impacts related to the dualization of New Churchmans Road (Coleman et al. 1984; Custer and Bachman 1984).

Site N-3719 (7NC-E-1) which contains evidence of Archaic, Woodland I, and Woodland II occupations, is located within the northwest quadrant of the intersection between the Turnpike and Route 141. Previous investigations at this site recovered aboriginal ceramics, groundstone tools, soapstone, and flaked stone tools. At least 245 projectile points, almost 100 ceramic sherds, and over 152 bifacial tools from this site are curated by the State of Delaware. Described as a series of sites within a large area surrounded by swamps, the prehistoric occupation was identified through surface collections and no excavations were performed. Local informants have reported additional potential prehistoric archaeological sites within this area (Faye Stocum, personal communication).

Site N-3734 (7NC-D-15) is located on a small knoll north of a stream dividing Iron and Chestnut Hills, near the Turnpike Administration facility. This site was collected by avocational archaeologists during the early twentieth century and may have been destroyed by earlier construction for the Turnpike.

Site N-3741 (7NC-D-40) is a prehistoric site of undetermined cultural period located at the intersection of two creeks just above the mill pond seated north of Cooch's Bridge. The site was found in a plowed field and wooded area immediately north of the Cooch's Bridge National Register District.

TABLE V-1

ARCHAEOLOGICAL SITES NEAR TURNPIKE IMPROVEMENTS CORRIDOR

Site #	USGS Quadrangle and UTM's	Site Description	Impacts and Mitigation Measures
N-3719 (7NC-E-1)	Wilmington South N 4,394,770 E 447,740	Archaic, Woodland I and Woodland II scatter	Potential impacts; Testing required to refine site boundaries
N-3734 (7NC-D-15)	Newark West N 4,388,250 E 434,525	Paleoindian site	No Impacts
N-3741 (7NC-D-40)	Newark East N 4,388,390 E 436,635	Nondiagnostic prehistoric site	No Impacts
N-6264 (7NC-E-46)	Newark East N 4,393,200 E 443,400	W. M. Hawthorne site; early 19th-century farm complex with Woodland I component	No Impacts
N-9356 (7NC-E-58)	Newark East N 4,393,385 E 445,255	Prehistoric cobble reduction site	Potential impacts; Testing required to refine site boundaries

SOURCE: Louis Berger & Associates, Inc.

Site N-9356 (7NC-E-58) is located immediately north of the existing Turnpike on a gravel knoll overlooking the western shore of Churchmans Marsh. The site is described as a temporally nondiagnostic cobble reduction site (Custer 1980).

Of these five archaeological sites, three are located some distance west of where the proposed Turnpike improvements begin and, therefore, will not be adversely affected by the undertaking (see Table V-1). The remaining two archaeological sites may be impacted by proposed Turnpike improvements. These are N-3719 (7NC-E-1) and N-9356 (7NC-E-58). Improvements in the vicinity of Churchmans Marsh and the Christina River may adversely affect unrecorded prehistoric sites.

It is recommended that archaeological testing should be conducted along the Turnpike corridor from Churchmans Road east to the Churchmans Marsh causeway and between the Christina River and the Route 141 interchange to determine the presence and integrity of archaeological sites. The other area of prehistoric archaeological sensitivity that will be impacted are the

locations of several stream crossings between the Turnpike service area and the Route 7 interchange.

In addition, Turnpike improvements may impact unrecorded archaeological components associated with the Lewis Weldin Farmhouse (N-6783) near the Turnpike/State Route 7 interchange and Churchmans Road.

2. Mitigation Measures

Measures to mitigate adverse impacts to archaeological sites and components cannot be addressed until testing is conducted to complete the inventory of archaeological sites in the area of proposed Turnpike improvements and to assess site boundaries and significance. If significant archaeological resources are encountered within the proposed project area, mitigation measures would include data recovery excavations that follow state and federal guidelines.