

1.0 INTRODUCTION

This Draft Environmental Assessment/Section 4(f) Evaluation (EA/4(f)) identifies and evaluates the potential social, economic, and environmental impacts of the proposed project which consists of improvements to Route U.S. 1 and area roadways. The proposed Route U.S. 1/Penns Neck Area Improvements are the final component of an overall plan of regional improvements to Route U.S. 1 to improve traffic flow through this corridor. The project area is adjacent to the Route U.S. 1/Scudders Mill Road improvement project completed in 1995 to the north and the Route U.S. 1/Alexander Road interchange improvement project completed in 1997 to the south.

This EA/4(f) has been prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality (CEQ) Regulations, 40 CFR 1500, et seq., and the Federal Highway Administration (FHWA) Procedures, 23 CFR 771 and pursuant to 42 U.S.C. 4332(2)(c), 16 U.S.C. 470(f), and 49 U.S.C. 303. This EA/4(f) is supported by technical documents for air quality, hazardous waste, natural ecosystems, noise, socioeconomic and land use, and cultural resources, all of which have been prepared separately from this document during the early environmental screening process.

The proposed project is classified as a Class III action pursuant to 23 CFR 771.117, for which the level of significance of environmental impacts has not yet been determined, and for which further study is required. Early coordination documentation is provided in Section 7.0 and Appendix B.

The purpose of this EA/4(f) is:

To identify and resolve any uncertainty as to whether an Environmental Impact Statement (EIS) will be required for the proposed project (40 CFR 1508.9(a)(1)) and to determine the applicability of a Finding of No Significant Impact (FONSI)(23 CFR 771.119);

To provide sufficient information to serve as a record for all environmental approvals and consultations as required by law;

To identify the potential for environmental impacts to the natural and manmade environment as a result of the construction and operation of the proposed project;

To identify potential mitigation measures to minimize unavoidable impacts; and,

To present these findings for public input.

1.1 Existing Facility

Route U.S. 1 and Mercer County Route 571 are both roadways of regional significance (Figure 1-1). These roads are used daily by thousands of commuters and are critical to the economic vitality of the Route U.S. 1 corridor.

Route U.S. 1 is a major arterial on the Federal-Aid Primary (FAP) System which serves as a through route linking Philadelphia, Trenton, Newark, and New York City, as well as

providing local area access to offices, businesses, and residences. The Route U.S. 1 project corridor extends for approximately one mile from Plainsboro Road to the Dinky bridge over Route U.S. 1 just north of Alexander Road. Land uses along the project corridor are primarily research and business.

In the project area, existing Route U.S. 1 comprises three twelve-foot travel lanes in each direction. Discontinuous shoulders are present. A concrete median (Jersey) barrier divides the highway for the length of the project area. Three signalized intersections are located in the project area, Washington Road (County Route 571), Fisher Place, and Harrison Street. The Millstone River bridge is a point of constriction on Route U.S. 1, providing three travel lanes in each direction without shoulders. Structurally, the bridge is deficient and it is functionally obsolete.

Washington Road (Route 571) is an important east-west route in the Penns Neck Area. Route 571 connects Princeton and Hightstown Boroughs and is heavily used by commuters. It also connects Route U.S. 1 in the Princeton area to Hightstown and the New Jersey Turnpike, Interchange 8. West of Route U.S. 1, the two-lane road (40 feet wide) provides access to Princeton Borough and Princeton University. In the project area, land use along Washington Road is primarily single family residential in character. The Route U.S. 1/Washington Road intersection, known as the Penns Neck Circle, consists of an at-grade intersection providing for all turning movements through the use of traffic signals and a small circle configuration. East of Route U.S. 1, Washington Road extends through the community of Penns Neck to a point 500 feet west of the Northeast Corridor rail lines (Amtrak) where the roadway turns abruptly to the north. From this point the road crosses over the tracks. This small 0.3 mile segment of roadway/bridge is New Jersey State Route 64. East of the rail lines the roadway is named Princeton-Hightstown Road though it serves as a continuation of Route 571. The two-lane road widens to a four-lane undivided section east of Clarksville Road.

Harrison Street is a two-lane county road which connects Route U.S. 1 with Princeton Borough to the west. Land use along Harrison Street is primarily single family residential in character. The Harrison Street intersection with Route U.S. 1 is located approximately 2,300 feet north of Fisher Place and provides for all turning movements. A jughandle on the northbound side of Route U.S. 1 allows for left turns, Uturns and access to the David Sarnoff Research Center. Harrison Street has eleven-foot travel lanes without paved shoulders.

Fisher Place is a two-lane, twenty-four foot wide residential street with a jughandle along the southbound side of Route U.S. 1, approximately 550 feet north of the Penns Neck Circle. This intersection provides for all movements between Route U.S. 1 and Fisher Place. The jughandle provides access to Fisher Place and allows U-turns to Route U.S. 1 northbound. Traffic from the David Sarnoff Research Center and some diversionary traffic from Washington Road use Fisher Place.

The Dinky railroad bridge, which carries NJ Transit's Princeton Line, passes over Route U.S. 1 just north of Alexander Road approximately 1,100 feet south of the Penns Neck Circle. Improvements to this bridge were just recently completed and included extending the length of the bridge over Route U.S. 1 to accommodate the addition of auxiliary lanes and the alignment shift on Route U.S. 1.

The proposed Route U.S. 1/Penns Neck Area Improvements are the final component of an overall plan of regional improvements to Route U.S. 1 to improve traffic flow through this corridor. The project area is adjacent to the Route U.S. 1/Scudders Mill Road improvement project completed in 1995 to the north and the Route U.S. 1/Alexander Road interchange improvement project completed in 1997 to the south.

The Route U.S. 1/Scudders Mill Road improvements involved replacement of the at-grade intersection of Route U.S. 1 and Scudders Mill Road with a grade-separated interchange. Route U.S. 1 was widened to six lanes with auxiliary lanes and/or shoulders from the Plainsboro Road intersection north to the previously widened section at the College Road interchange. Traffic signals were eliminated at the intersections of Route U.S. 1 with Scudders Mill Road and with Plainsboro-Mapleton Road.

The intersection of Alexander Road and Route U.S. 1 was recently replaced by a grade-separated interchange, eliminating the traffic signal and providing improved access to and from Route U.S. 1. The project included widening Route U.S. 1 to three through lanes and an auxiliary lane in each direction.

1.2 Proposed Project

1.2.1 Project History

The following discussion provides a summary of actions taken by the NJDOT since the early 1980's to identify and develop the proposed project. Included is a discussion of coordination efforts with public officials, regulatory agencies, stakeholders, and the public. As a supplement to this discussion of project history, the reader is referred to Section 7.0 which presents a project chronology.

The need for improvements to Route U.S. 1 in the Penns Neck area was identified by the *Route 1 Corridor Transportation Study*, (Final Report, December 1986). The study was undertaken in 1983 in anticipation of the intense development along the Route U.S. 1 corridor, predominantly centered on the Princeton area, expected to continue through the 1980's. The corridor encompassed a 19 mile stretch of Route U.S. 1 extending from Trenton to New Brunswick. The primary study area included seven municipalities (Lawrence Township, West Windsor Township, Princeton Borough, Princeton Township in Mercer County, and Plainsboro Township, South Brunswick Township, and North Brunswick Township in Middlesex County).

The study outlined a strategy whereby the NJDOT, working with county and local officials, would seek to meet the transportation demands of the on-going development. At the heart of this strategy is a commitment to maintain the ability of Route U.S. 1 to function as a primary arterial roadway. To that end, it was recommended that Route U.S. 1 be widened to provide three lanes with shoulders in each direction, and that signalized intersections be removed and replaced with grade-separated interchanges at major regional cross streets.

In March 1991, an Environmental Assessment (EA) was prepared for Route U.S. 1 from Quaker Bridge Road in Lawrenceville Township to North of Sayre Drive in South Brunswick Township. The proposed actions evaluated in the EA were:

Route U.S. 1 widening from Quaker Bridge Road to Alexander Road.

Alexander Road Interchange.

TSM/Interim Improvements from Alexander Road to Princeton-Plainsboro Road.

Dinky Railroad Bridge Replacement.

Scudders Mill Road Interchange.

Long-term improvements in the Penns Neck Area: realigning Route U.S. 1 from the Dinky Bridge to north of Fisher Place, and construction of a grade-separated interchange north of Washington Road.

The NJDOT has since completed all of the above actions with the exception of the long-term improvements in the Penns Neck area.

The signalized intersection at College Road, north of the limits of the 1991 EA, was replaced with a grade-separated interchange as part of the development of Forrestal Village, constructed by Princeton University. The interchanges at Meadow Road, Route 571 and Route 130 are currently under design and are expected to be under construction beginning in 2000, 2003, and 2003, respectively. The existing traffic signal at Nassau Park Boulevard is also being investigated to establish the circumstances of its removal.

The community outreach process for the proposed improvements in the Penns Neck area began in the early 1980's with a series of informal meetings with local officials and members of the community. A chronology of these meetings is summarized in Section 7.0. It was through this community involvement process that an agreement was reached that a grade separation would not be constructed at the existing intersection of Route U.S. 1 and County Route 571. Based on preliminary environmental sensitivity studies, the NJDOT developed three conceptual alignment schemes, A, C, and F, for the proposed improvements. These conceptual schemes and their potential impacts were presented and discussed with local officials and members of the public.

Subsequently, in 1987, West Windsor Township provided the NJDOT with a report identifying specific improvements along the stretch of Route U.S. 1 in West Windsor (including Alexander Road, Penns Neck, and Meadow Road) (Section 7.0). The report was a self-described, culmination of several meetings with representatives of West Windsor Township, Princeton Township, Princeton Borough, Plainsboro Township, Princeton University, and the David Sarnoff Research Center. The report opposed NJDOT conceptual schemes A, C, and F. The report stated, "A bypass to Route 571 should follow an alignment that, to the extent feasible, parallels the Millstone River. With proper design, environmental constraints encountered on portions of this alignment can be overcome." Two concept plans for improvements at Meadow Road, Alexander Road, and through Penns Neck were identified in the report. Concept 1 was noted as the preferred alternative. The alignment for Relocated Route 571 was subsequently adopted by the NJDOT as the preferred alternative, Scheme D1.1C, with minor modifications.

Technical environmental studies were performed for each alternative to more firmly determine the potential impacts of each. Those studies are referenced throughout the remainder of this EA/4(f). The design of the conceptual alternatives was developed in sufficient detail to support preparation of the environmental studies. In 1994, the NJDOT began presenting the more detailed alignment schemes to representatives of the Princetons, West Windsor Township, Plainsboro Township and Mercer County. Input was solicited from the property owners directly affected by the proposed alignments:

Princeton University, the David Sarnoff Research Center and the Delaware and Raritan Canal Commission. Early coordination meetings with the New Jersey Department of Environmental Protection were instrumental in the location of the Relocated Route 571 crossing of Little Bear Brook. These meetings resulted in the choice of the preferred alternative, Scheme D1.1C, with minor modifications.

1.2.2 Proposed Project Description

As proposed, the Route U.S. 1/Penns Neck Area Improvements would involve the widening of Route U.S. 1 to provide auxiliary lanes and/or shoulders in both directions of travel through the Penns Neck area and the elimination of traffic signals along Route U.S. 1 at Washington Road, Fisher Place, and Harrison Street. Figure 1-2 shows the general configuration of the proposed improvements. Conceptual photographs showing the proposed improvements are provided in Appendix F. In the southern portion of the project area, widening would occur to the west to avoid impacts to the historic Penns Neck Baptist Church and the Penns Neck community on the east side of Route U.S. 1. These improvements would extend southward to meet the new roadway section at the Dinky bridge. The existing centerline and lane configuration would be shifted to the west to provide a continuous shoulder on the northbound side of Route U.S. 1. North of this alignment shift, widening would occur on both the northbound and southbound sides of Route U.S. 1. These improvements would extend northward to meet the new roadway section at Plainsboro Road. The existing structurally deficient Route U.S. 1 bridge over the Millstone River would be replaced to accommodate three travel lanes and one new auxiliary lane in each direction of travel.

Relocated Route 571 would begin at Washington Road (existing Route 571) west of Route U.S. 1 approximately 650 feet east of the Washington Road bridge over the Delaware and Raritan Canal (D&R Canal), and would extend northeast through Princeton University property. The Washington Road/Relocated Route 571 intersection would consist of a smooth connection of Relocated Route 571 to Washington Road. This design would provide a continuous, uninterrupted flow of traffic in both directions between Princeton Borough and the State Highway 64 bridge over Amtrak. The portion of Washington Road between this connection and Route U.S. 1 would intersect the connection at a stop sign-controlled "T"-intersection.

Relocated Route 571 would include construction of a connector road to Harrison Street. The intersection of Relocated Route 571 and the connector road would be located 450 feet east of the D&R Canal Park, and would be signalized. The intersection would provide a double left turn lane on the connector road approach to adequately accommodate evening peak traffic demand.

Beyond the connector road intersection, Relocated Route 571 would turn toward the east and pass north of the Public Service Electric & Gas Company (PSE&G) substation, cross Route U.S. 1, and continue eastward through the northern portion of the David Sarnoff Research Center property. Relocated Route 571 would cross Little Bear Brook, and join existing State Route 64 (County Route 571) at the bridge over Amtrak.

A grade-separated interchange would be constructed to carry Relocated Route 571 over Route U.S. 1, approximately 200 feet south of the existing Route U.S. 1/Harrison Street intersection. The interchange would allow for all turning movements on Route U.S. 1, replacing the existing signals at the Washington Road, Fisher Place, and Harrison Street

intersections. Property acquisitions to construct the interchange would include the Sunoco Service Station, and portions of properties held by Princeton University and Sarnoff Research Center.

Relocated Route 571 would generally consist of two, twelve-foot travel lanes with eight-foot shoulders. Near the interchange, auxiliary lanes would be provided for weaving movements. Traffic signals are proposed at the following three intersections:

- 1) Relocated Route 571/Route U.S. 1 Northbound Ramps
- 2) Relocated Route 571/Harrison Street Connector Road
- 3) Relocated Route 571/David Sarnoff Research Center Entrance

Where signals would be required, exclusive left turn lanes would be provided at intersection approaches. The posted speed for Relocated Route 571 would be 35 miles per hour (mph).

On the west side of Route U.S. 1, existing Washington Road would remain open to local traffic. The intersection with Route U.S. 1 would provide right turn movements only. East of Route U.S. 1, the Route U.S. 1/Washington Road intersection would be modified to a T-intersection, providing right turns only. The relocation of Route 571 would eliminate through traffic movements on Washington Road such that Washington Road would revert to a local collector road for the Penns Neck community.

The intersection of Route U.S. 1 and Harrison Street would be eliminated by the construction of a cul-de-sac at the eastern terminus of Harrison Street. Access to Harrison Street would be provided from a proposed connector road between Relocated Route 571 and Harrison Street. The sharp horizontal curve east of the Harrison Street bridge over the D&R Canal Park would be eased by this connector road. Elimination of the Route U.S. 1 intersection would provide relief to residents on the portion of Harrison Street between Route U.S. 1 and the canal from east-west through-traffic and would expedite north-south traffic on Route U.S. 1 by eliminating the signalized intersection.

At the eastern end of Relocated Route 571 near the Amtrak right-of-way, the new roadway would merge directly with existing Route 571. Turning movements and connections between Relocated Route 571, Washington Road, and the Princeton Junction train station would be provided by minor modifications to existing ramps as well as new ramps.

Existing D&R Canal Park parking areas on Washington Road and Harrison Street would be relocated as part of the project. The Washington Road parking area, currently located on Princeton University property east of the Canal Park on the north side of Washington Road, would be relocated to the south side of Washington Road. The existing Harrison Street parking area, located on the south side of Harrison Street just east of the Canal Park, would be relocated to the north side of Harrison Street within a portion of the Harrison Street right-of-way that would be vacated consequent to the proposed realignment. These relocations would improve accessibility as well as pedestrian and motorist mobility.

A landscaping program would involve the planting of street trees along the Relocated Route 571 corridor, and tree and shrub plantings at the interchange. In addition, NJDOT is negotiating with Princeton University and Sarnoff Research Center to provide

supplemental plantings of trees and shrubs on the north side of Relocated 571 near the Canal Park as well as along the south side of Relocated 571 in the vicinity of Little Bear Brook. These supplemental plantings are intended to provide visual buffering for the Canal Park and Penns Neck residential community.