HEROES TUNNEL PROJECT
ROUTE 15 WILBUR CROSS PARKWAY
STATE PROJECT NO. 167-108

PURPOSE AND NEED STATEMENT (Revised 7/3/18)

PROJECT CONTEXT

The Heroes Tunnel is located along the Wilbur Cross Parkway (Route 15) in the Town of Woodbridge and the City of New Haven, near the Town of Hamden border. The Heroes Tunnel is a 1,200-foot long tunnel, which passes through West Rock Ridge in New Haven and Woodbridge. The existing tunnel was constructed between spring 1948 and fall 1949 and consists of two 28-foot wide by 19-foot high barrels with horseshoe cross-sections. The northbound and southbound barrels of the tunnel consist of two 11-foot wide travel lanes with 6-inch shoulders and a 2-foot 6-inch wide raised maintenance walk on each side. The centerlines of the barrels are approximately 63 feet apart. It is the only tunnel to pass beneath a natural land feature in the State of Connecticut and is eligible for listing on both the National and State Registers of Historic Places.

The Heroes Tunnel Project limits encompass the 1,200-foot tunnel and extend approximately 2,000 feet from the tunnel portals, in both the northbound and southbound directions, as illustrated in Figure 1 attached.

EXISTING TRANSPORTATION NETWORK

The Wilbur Cross Parkway is a limited access highway, classified as an urban principal arterial – other expressway, comprising a portion of Route 15 between Milford and Meriden where commercial vehicles, trailers, towed vehicles and buses are prohibited. As a continuation of the Merritt Parkway in Fairfield County, Route 15 is an important route between the New York City metropolitan area and central Connecticut. Route 15 carries approximately 77,300 vehicles daily in the vicinity of the tunnel and serves as an alternate expressway route to Interstate 95 and 91. Moreover, Route 15 serves as an important commuter route to the greater New Haven region due to the lack of east-west routes through West Rock Ridge.

Leading to the tunnel, Route 15 is a four-lane, divided highway with a posted speed limit of 55 miles per hour that runs east-northeast through the Town of Woodbridge, City of New Haven, and Town of Hamden. Northbound and southbound lanes approaching the tunnel are separated by a wide, grassy median and guiderail. Paved emergency access cross-overs exist between the northbound and southbound lanes approximately 465 feet to the north (east) and 600 feet to the south (west) of the tunnel portals.

PROJECT PURPOSE

The purpose of this project is to address existing structural and geometric deficiencies, enhance safety, and ease maintenance of the Heroes Tunnel.

PROJECT NEED

The Federal Highway Administration (FHWA) and the Connecticut Department of Transportation (CTDOT) are undertaking this project to address the needs and deficiencies of the existing Heroes Tunnel as listed below.

A. Deficiencies

Groundwater infiltration and seepage have caused the cast-in-place concrete tunnel liners to deteriorate, exhibiting spalled, delaminated, and cracked concrete with exposed reinforcement bars throughout. Continual maintenance repairs and special inspections due to the deteriorated tunnel liner have necessitated tunnel closures, which has contributed to significant traffic congestion and delays in recent years.

B. Tunnel Geometry

The travel lanes and shoulder widths within the tunnel barrels are 11-feet and 6-inches, respectively, which contribute to congestion and create constraints to emergency response effectiveness. The Wilbur Cross Parkway is classified as an urban principal arterial – other expressway; current design standards for this classification of roadway require 12-foot travel lanes with a 10-foot right shoulder and an 8-foot left shoulder. The existing minimum vertical clearance is 14-feet, where the design standards are 14-feet 3-inches and 16-feet 3-inches for existing conditions and new construction, respectively.

C. Tunnel Safety

The tunnel fire detection, fire protection, emergency, and ventilation systems are non-existent, which does not satisfy the National Fire Protection Agency (NFPA) 502 requirements.

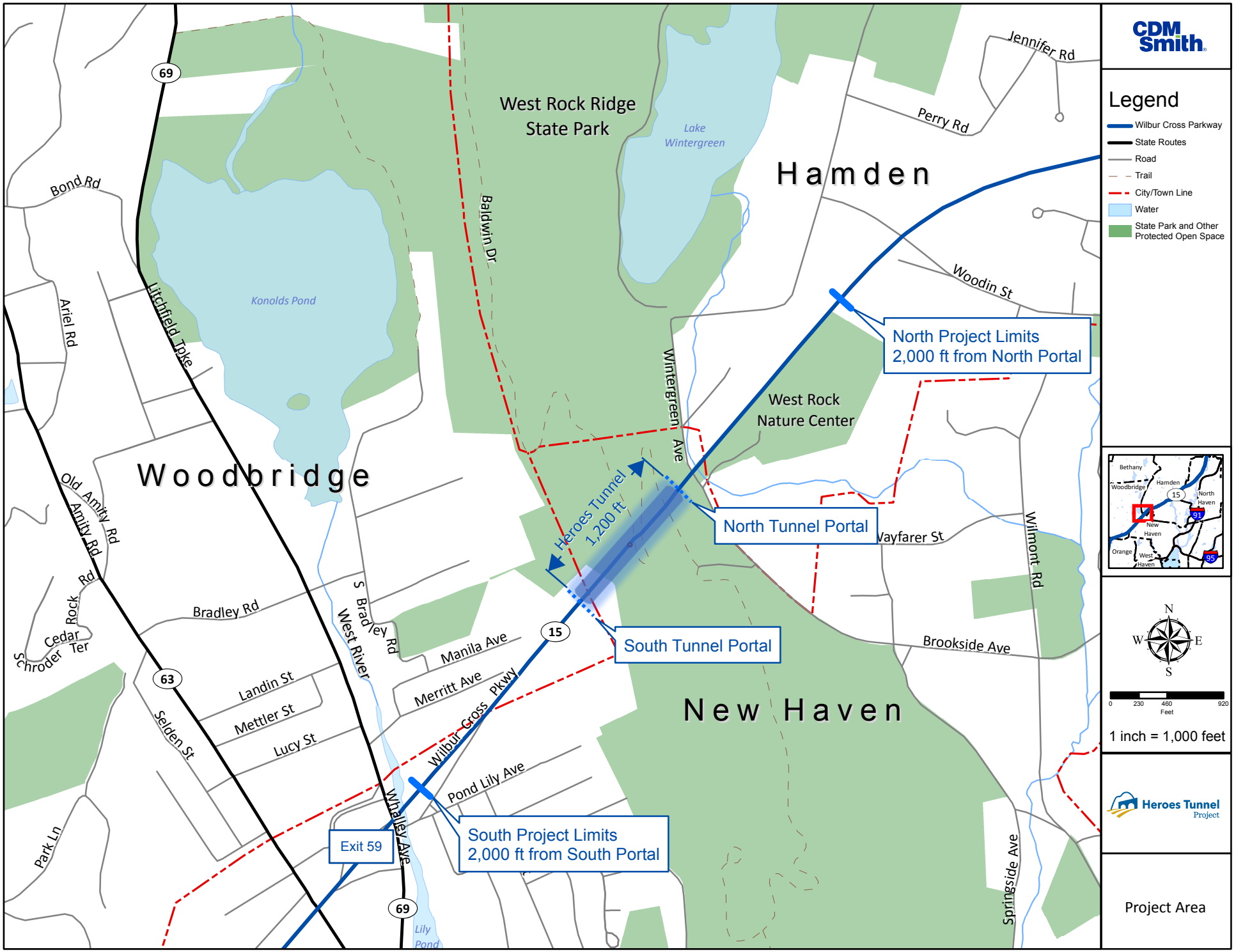
Groundwater seepage during the winter months results in ice build-up on the walls and ceiling of the tunnel barrels causing hazards.

Additionally, the non-conforming lane widths and lack of shoulders limit maintenance operations to off peak hours.

PROJECT GOALS AND OBJECTIVES

Ancillary goals and objectives that would be considered in the alternatives evaluation/screening process include:

1. Avoid, Minimize or Mitigate Short-term and Long-term Environmental Impacts, including:
    a. Potential impacts to West Rock Ridge State Park and threatened and endangered species within the park.
    b. Potential impacts to water quality.
    c. Potential noise and vibration impacts.
    d. Potential impacts to historic, cultural, and archaeological resources.
2. Minimize Traffic and Community Impacts during and after Construction
    a. Maintain reasonable access and alternatives for people traveling in and around the region during construction.
    b. Coordinate planning and construction with the Interchange 59 improvement project.
3. Maximize Value of Public Investment from the Project
    a. Employ cost-effective solutions that maximize capital investment over the lifespan of the project.
    b. Reduce tunnel maintenance costs and corresponding logistical constraints that prevent workers from performing their duties in a safe and efficient manner.
    c. Reduce impacts to travelers caused by delays through the tunnel.
    d. Enhance traveler safety by upgrading the mechanical, electrical, ventilation and emergency systems.


West Rock Ridge State Park
Lake Wintergreen
Konolds Pond
Hamden
Woodbridge
New Haven
West Rock Nature Center
Jennifer Rd
Perry Rd
Bond Rd
Baldwin Dr
Wintergreen Ave
Woodin St
Ariel Rd
Litchfield Tpke
Old Amity Rd
Amity Rd
Cedar Rock Rd
Schroder Ter
Bradley Rd
S Bradley Rd
West River
Manila Ave
Merritt Ave
Landin St
Mettler St
Lucy St
Selden St
Park Ln
Wilbur Cross Pkwy
Pond Lily Ave
Whalley Ave
Lily Pond
Heroes Tunnel 1,200 ft
North Project Limits 2,000 ft from North Portal
North Tunnel Portal
South Tunnel Portal
South Project Limits 2,000 ft from South Portal
Exit 59
Wayfarer St
Wilmont Rd
Brookside Ave
Springside Ave
69
63
15
91
95
CDM Smith
Legend
Wilbur Cross Parkway
State Routes
Road
Trail
City/Town Line
Water
State Park and Other Protected Open Space
Bethany
Woodbridge
Hamden
North Haven
New Haven
Orange
West Haven
N
W
E
S
0
230
460
920
Feet
1 inch = 1,000 feet
Heroes Tunnel Project
Project Area