



# Heroes Tunnel Project



**State Project No. 167-108**

## **Public Information Meeting**

**Route 15 Wilbur Cross Parkway  
Through West Rock Ridge**

**Town of Woodbridge, Town of Hamden  
& City of New Haven**

**October 18, 2017, 7:00 PM  
Hamden Memorial Town Hall, Auditorium  
2370 Whitney Avenue, Hamden, CT**

## Project Roles

### CTDOT Division of Bridges, Bridge Consultant Design Unit

- **Oversight/Liaison/Coordination of Design Consultant**
  - Theodore Nezames, Manager of Bridges
  - Timothy Fields, Principal Engineer
  - David Cutler, Supervising Engineer
  - Derick Lessard, Project Engineer

### CTDOT Office of Environmental Planning

- **Coordination/Review of Environmental Aspects**
  - Kevin Fleming, Planner
  - Amanda Saul, Planner
  - Chris Samorajczyk, Planner
  - Scott Speal, NRS Archaeologist

## Project Roles

### CTDOT Interchange 59 Project Team

- **Independent Utilities and Stand-Alone Projects**
- **Continual Coordination**
  - **Project No. 92-672**
    - **Scott Bushee, Supervising Engineer**
  - **Long-Term Improvements**
    - **Marissa Washburn, Supervising Engineer**

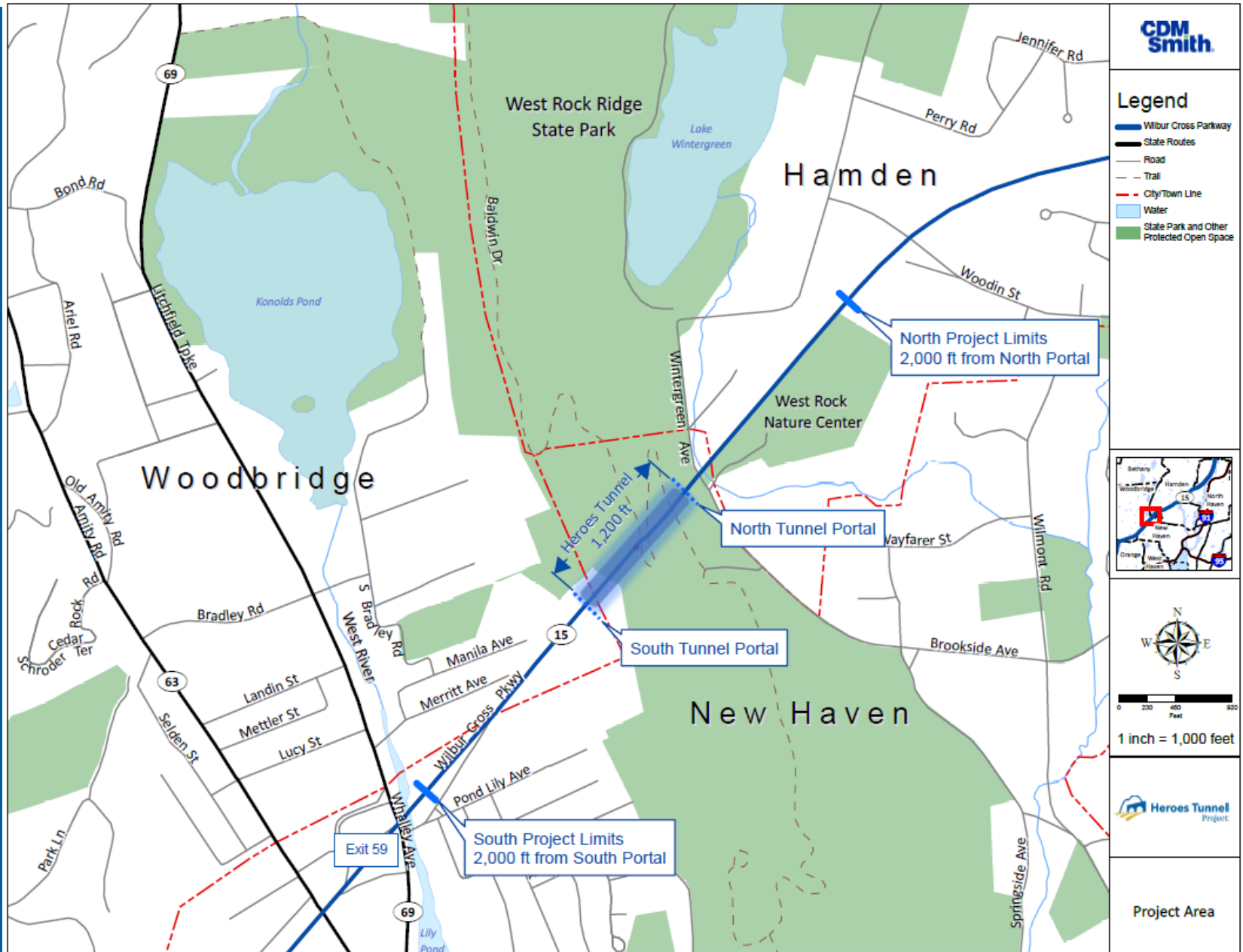
## Project Roles

### Federal Highway Administration (FHWA)

- **Federal Funding Anticipated**
- **Review of Environmental Assessment and Design Plans**
  - **Timothy Snyder, Area Engineer**
  - **Christopher Hansen, Environmental Protection Specialist**

### CDM Smith

- **Retained as Design Consultant Engineer**
- **Tunnel Inspection and Preliminary Engineering Report**
  - **Mike Egan, Principal, Project Manager**
  - **Becca Hall, Public Engagement**
  - **Dave Sousa, Transportation Planner**
  - **Mohammad Jafari, Tunnel Designer**



# Aerial View



## Purpose & Need

### Purpose:

- The purpose of this project is to correct existing deficiencies, enhance safety, improve travel, and ease maintenance of the Heroes Tunnel.

### Need:

- To address the existing structural, mechanical, and electrical deficiencies.
- To improve the tunnel geometry and safety.
- To reduce the need for maintenance, improve reliability, and extend service life.

## Tunnel Description

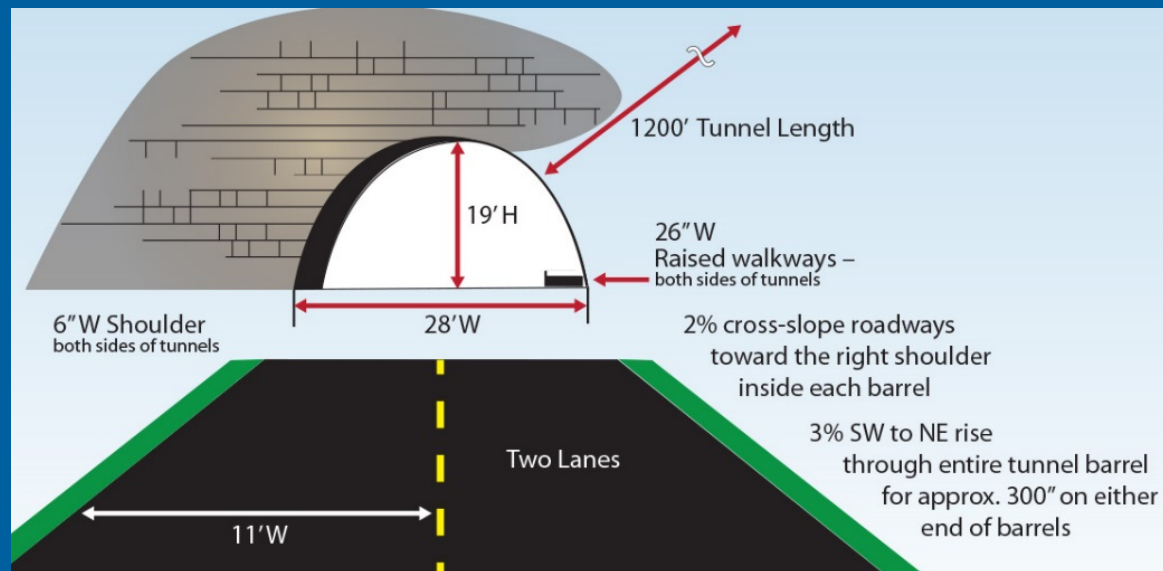
- **Opened in 1949 - Wilbur Cross Parkway**
- **Eligible for Listing on State/National Historic Register**
- **Only Highway Tunnel Through Natural Land Form in CT**
- **Key Connection to Cross State Travel**
- **1,200' Long Twin Barrels**





## Existing Conditions

- **Non-Compliant with Tunnel Standards/Requirements**
  - Geometrics, Ventilation & Emergency Systems
  - Each Barrel: 11' Lanes, 6" Shoulders, 26" Walkways
    - Standards: 12' Lanes, 8' Left & 10' Right Shoulder
- **Emergency Response Constraint**
- **Peak Hour Congestion**
  - Recurring Bottlenecks



## Existing Conditions

- **Poor Condition**
  - CTDOT Inspection Reports - Yearly
  - 2009 CDM Smith Inspection/Study
  - Not a Serious Safety Issue
- **Ground Water Infiltration**
  - Walls/Ceiling – Stalactites
  - Freeze/Thaw Conditions Contribute to Concrete Spalling
  - Falling Icicles
- **Frequent Maintenance Requires Tunnel Closures and Shifting Traffic**



## Tunnel Walls

- **Concrete Spalls Percent Increase per Year**
  - **2011-2015 NB 20% & SB 8%**

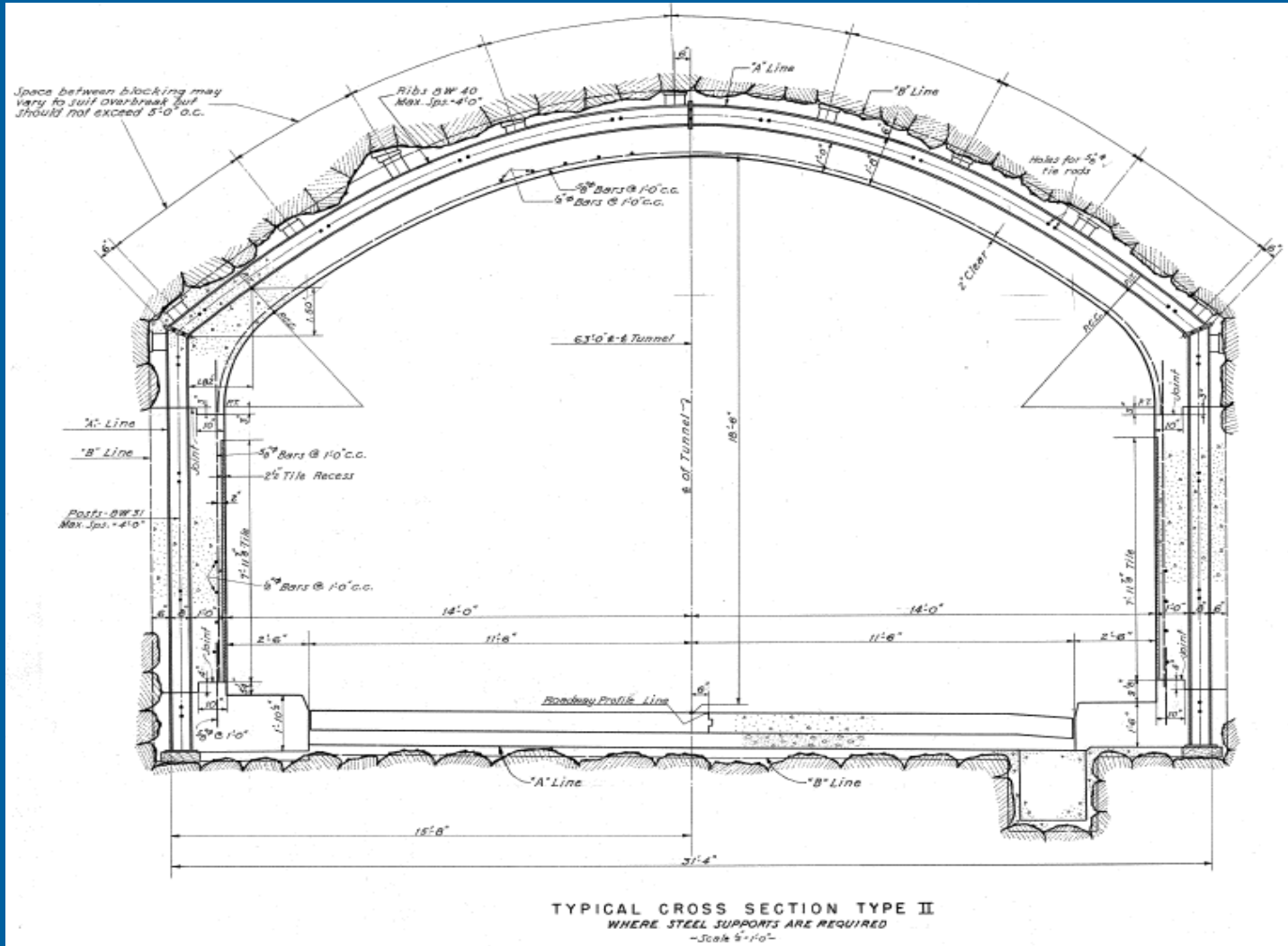


## Tunnel Ceilings

- **Concrete Spalls Percent Increase per Year**
  - **2011-2015 NB 18% & SB 9%**



# Typical Cross Section at Steel Framing



## Steel Framing



## Rehabilitation Report Summary

- **November 2014 Alternative Construction Options Study and September 2016 Supplement**
  - **Identified Needs & Deficiencies and Reconstruction & Rehabilitation Alternatives**
  - **Several Criteria Evaluated:**
    - **Construction Methods**
    - **Construction Duration**
    - **Construction Schedule (Staging)**
    - **Cost**
    - **Traffic Impacts**
    - **Construction Complexity**
    - **Anticipated Useful Life**



# Reconstruction Options

Construct a New One Lane Barrel,  
Rehabilitate Existing Barrels



Construct a New Two Lane Barrel,  
Rehabilitate Existing Barrels



Construct a New Two Lane Barrel,  
Rehabilitate One Existing Barrel,  
Abandon Other Existing Barrel







Construct a Temporary Bypass Barrel,  
Enlarge Existing Barrels



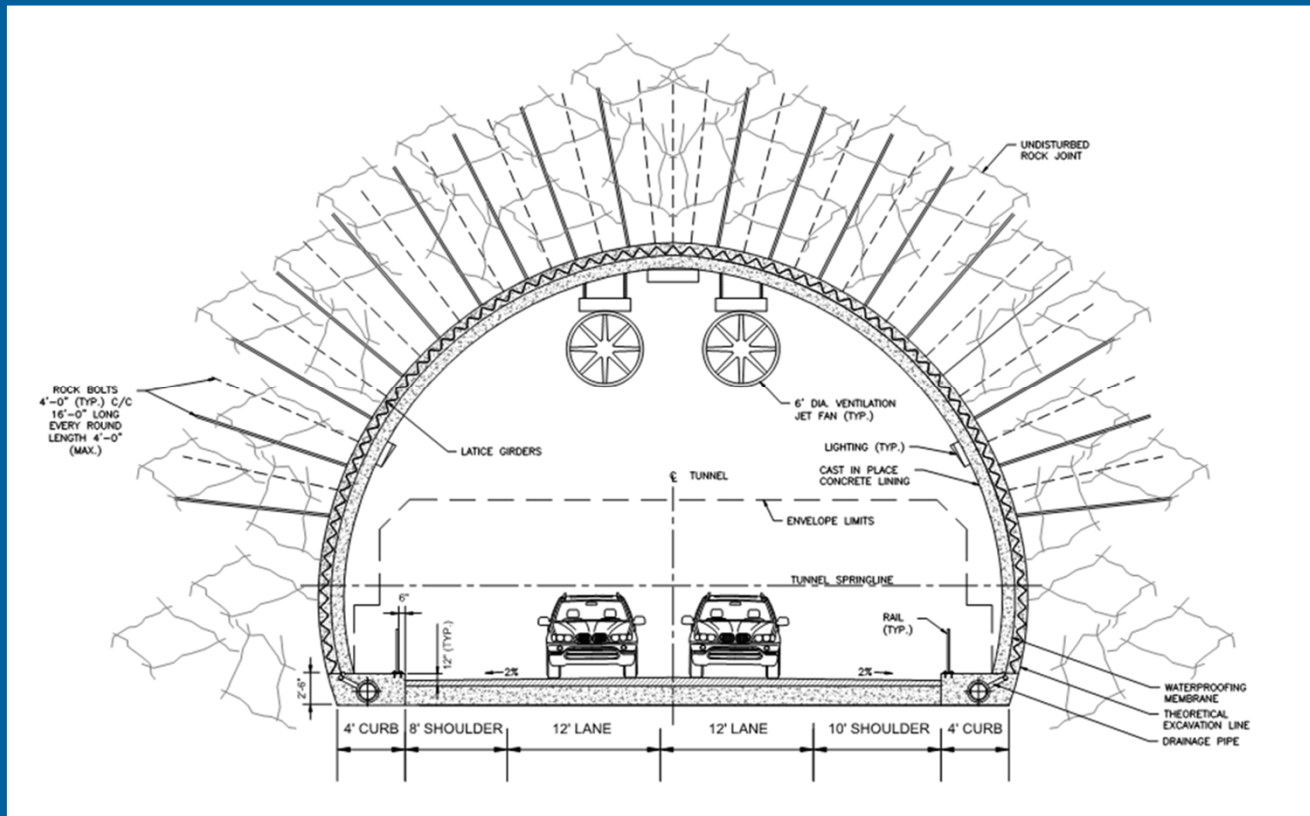
Enlarge Existing Barrels, while Maintaining  
Traffic, using Protective Shield



-  Rehabilitate
-  New Construction
-  Temporary
-  Abandon



# New / Reconstructed Tunnel Barrel



**Two Lane Tunnel Cross Section**

## Rehabilitation Options

Rehabilitate Existing Tunnel by Complete  
Shutdown of One Barrel



Rehabilitate

New Construction

Rehabilitate Existing Tunnel by Partial  
Shutdown of One Barrel



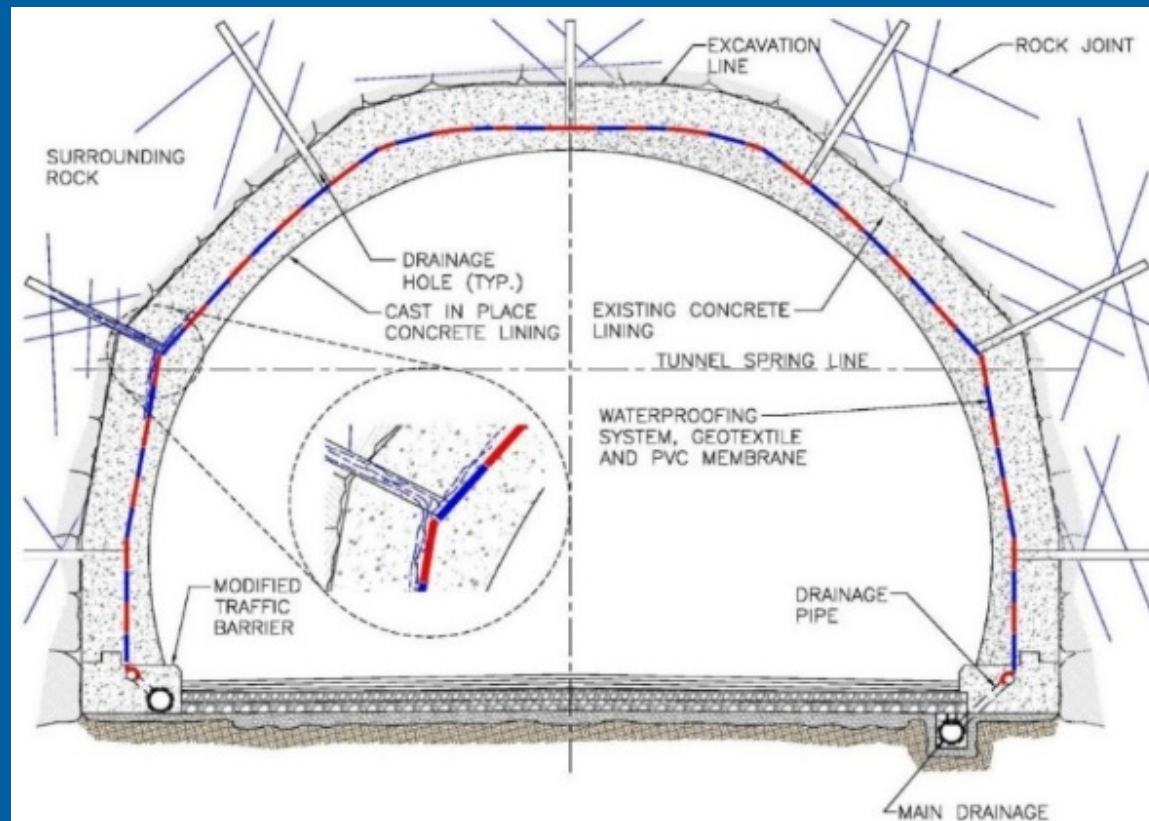
Temporary

Abandon

### Assessment Criteria:

- Significant Traffic Impacts During Lane Closures
- Geometrics Not Correctable Within Existing Tunnel Widths
- Structural Integrity of Tunnels
- Address Ground Water Infiltration

# Rehabilitated Tunnel Barrel



**Two Lane Tunnel Cross Section**

## Environmental Documentation


- **NEPA/CEPA\* Process**
- **Prepare Environmental Document**
  - Establish Purpose and Need Statement
  - Alternative Analysis
  - Evaluate Potential Environmental Impacts (Construction/Post-Construction )
  - Develop Mitigation Measures
  - Public Outreach
- **Preliminary Design of Preferred Alternative**

\*National Environmental Policy Act /  
Connecticut Environmental Policy Act



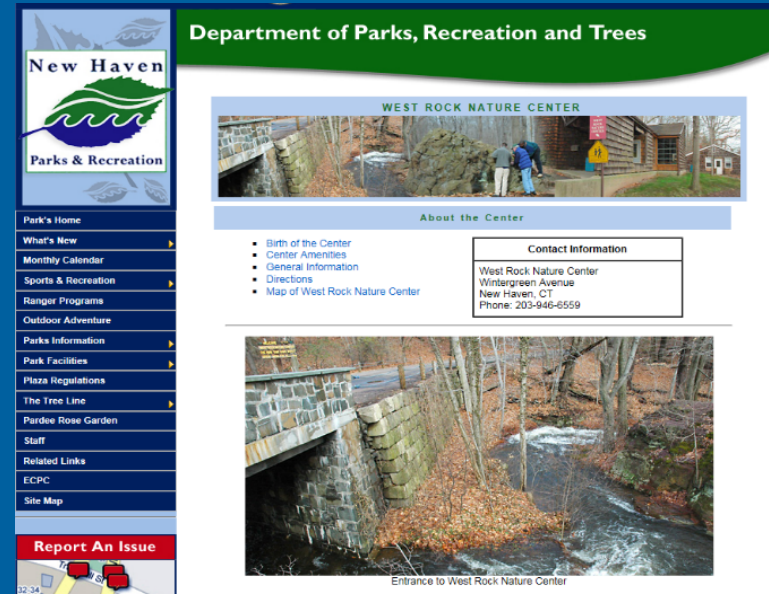
# Environmental NEPA/CEPA Tasks

- **Prepare Environmental Assessment (EA)/  
Environmental Impact Evaluation (EIE)**
  - **Establish Purpose and Need Statement**
  - **Conduct Field Studies**
  - **Evaluate Alternatives**
  - **Consider Construction/  
Post-Construction Impacts**



**West Rock Ridge  
State Park**  
Hamden/New Haven

Take in the views of New Haven Harbor and Long Island Sound from the top of West Rock.



**New Haven  
Parks & Recreation**

**Department of Parks, Recreation and Trees**

**WEST ROCK NATURE CENTER**

**About the Center**

- Birth of the Center
- Center Amenities
- General Information
- Directions
- Map of West Rock Nature Center

Contact Information
West Rock Nature Center Wintergreen Avenue New Haven, CT Phone: 203-946-5559

**Report An Issue**

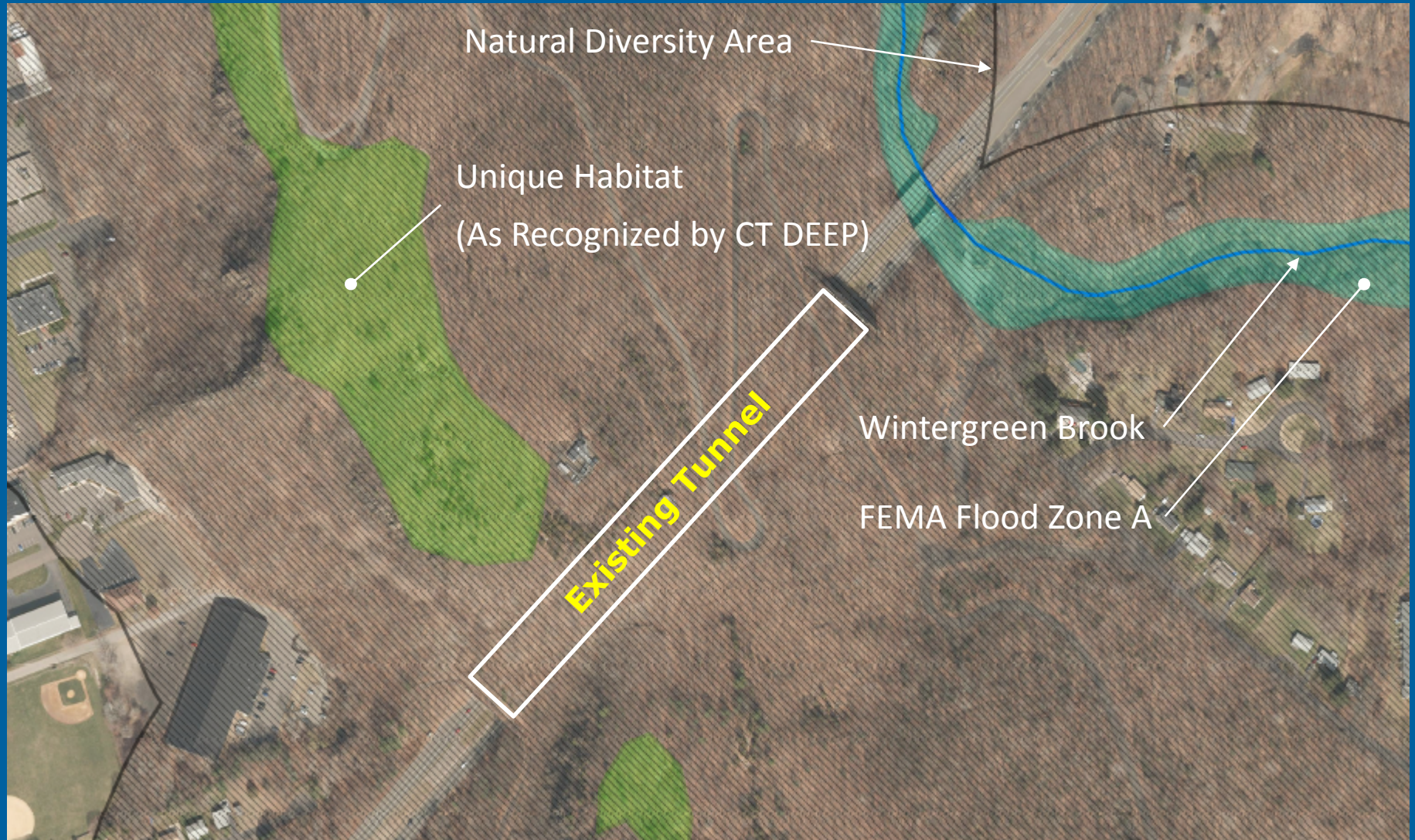
Entrance to West Rock Nature Center

## Consider Sensitive Resources

- **Consult with State Agencies, Environmental Partners, Property Owners, Special Interest Groups and the Public:**
  - Air and Water Quality
  - Groundwater, Wetlands, Water Bodies and Floodplains (Wintergreen Brook, West River)
  - Historic, Archaeological/ Cultural Resources (West Rock Nature Center)
  - Recreational Resources (West Rock Ridge State Park)
  - Natural Communities, Threatened and Endangered Species
  - Aesthetics
  - Traffic
  - Noise



# Sensitive Environmental Resources



## Public Involvement

- Identification and Engagement of Stakeholders
- Project Website and Social Media
  - [www.heroestunnelproject.com](http://www.heroestunnelproject.com)
- Email Bulletins to Interested Citizens and Community Groups





## Public Involvement

### Meetings:

- Outreach Events (Pop-Ups)
- Informational Meetings or Open Houses
- Formal Public Meeting(s)
- Focus Groups



## Sample Stakeholders

### **Employers/Business Orgs**

- Southern CT State University
- Yale University
- Greater New Haven Chamber of Commerce
- Economic Development Corp. of New Haven/REX
- Yale-New Haven Hospital

### **Governmental:**

- South Central Council of Gov'ts
- CT Dept. of Energy & Environmental Protection
- Federal Highway Administration
- U.S. Environmental Protection Agency
- State Historic Preservation Office

### **Non-Profit Orgs:**

- AAA of Southern New England
- CT Coalition for Environmental Justice
- New Haven Urban Design League
- Elm City Cycling
- CT Business & Industry Association
- Friends of Connecticut State Parks

### **Municipalities:**

- Woodbridge
- Hamden
- New Haven

### **Transportation Providers:**

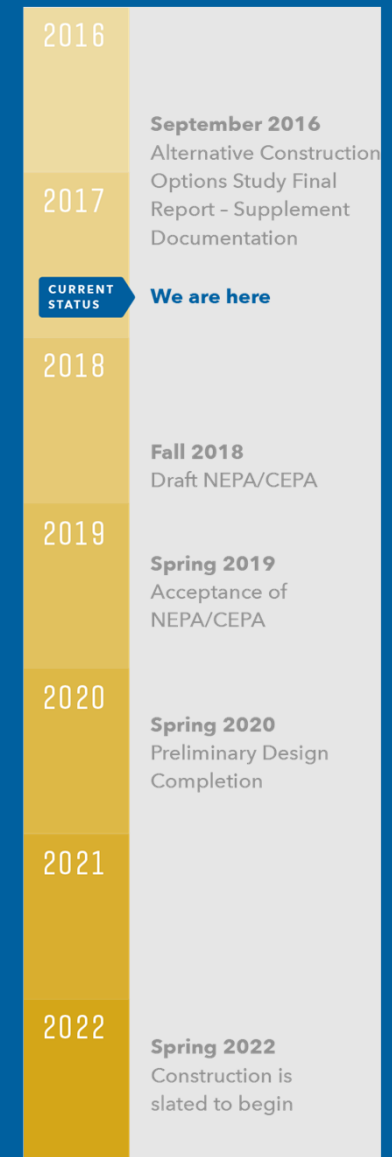
- CT Transit
- Gr. New Haven Transit District
- CT Rides

### **Key Property Owners/Environmental Interests:**

- West River Watershed Coalition
- West Rock Ridge State Park Advisory Council
- West Rock Nature Center
- CT Fund for the Environment
- Area Historic Preservation Organizations

## Next Steps

- **Geotechnical Exploration: April 2018**
  - Night Time Traffic Crossover
  - Single Lane of Traffic in Each Direction
- **Early Field Work: Next 6-9 months**
  - Topographical Survey
  - Endangered Species Survey
  - Archaeological Survey
- **NEPA/CEPA Document Studies: Next 18 months**
  - Alternative Analysis
  - Environmental Assessment/Environmental Impact Evaluation
- **Preliminary Design: After NEPA/CEPA**
  - Advance preferred alternative to 30% Design



**THANK YOU!**

**Project Contact Information:**

**Mr. David A. Cutler, P.E.  
Transportation Supervising Engineer  
Connecticut Department of Transportation  
Bureau of Engineering and Construction  
2800 Berlin Turnpike, Newington, CT 06131  
860-594-3210  
David.Cutler@ct.gov**

**Project Website:**

**[www.heroestunnelproject.com](http://www.heroestunnelproject.com)**

