

**Route 22 Bridge over Echo Lake
UPC 143300**

Current Phase and date on which the current phase started	Construction -Project Advertisement Date: 7/14/2022	
County(s)	Union	
Municipality(s)	Borough of Mountainside	
Legislative District	21	
Congressional District	7	
Date prepared or updated	July 28, 2022	
ERM & phone #	Chris Manz	(609) 963-1029
PM & phone #	Frozan Zamir Najem	(609) 963-1058
Office of Community Relations Mgr & phone #	Anthony Sytko	(609) 963-1992

Project Purpose and Need

The existing bridge (Structure No. 2003-157) was constructed in 1929 as a single-span, simply-supported bridge with concrete encased steel beams and a reinforced concrete deck. The 18th Cycle Bridge Reevaluation Report, dated October 2013, indicated that the deck is in poor condition, while the superstructure and substructure are both in fair condition. This structure is also listed as scour critical.

This project proposes to replace the existing bridge with a new pre-cast concrete 3-sided culvert on cast-in-place spread footings. The proposed footing elevation is set to resist the 100-year scour elevation. The existing wing walls will be replaced with new cast-in-place reinforced concrete wing walls. Once the bridge construction is complete, the existing pavement will be resurfaced. The median U-turn (Ramp OR) located immediately west of the bridge will be closed during construction. Furthermore, it is anticipated to be closed permanently due to substandard acceleration and deceleration lane lengths. In addition, this U-turn is located in an area with a crash rate that is 2.5 times greater than the statewide average.

Project Description

The New Jersey Department of Transportation (NJDOT) is proposing a bridge replacement for the structurally deficient existing bridge. The project is known as Route 22 Bridge over Echo Lake. The project is located in the Borough of Mountainside, Union County, New Jersey. The project limits on Route 22 are from MP. 50.65 to MP. 50.80.

The Route 22 Westbound alignment will match the existing alignment. The existing substandard 7' right shoulder on the bridge will be widened to 8' while the left shoulder will vary from the existing 1' to 12' to the west. The existing substandard superelevation will be improved to meet the standard for the horizontal curve. The Route 22 Eastbound alignment will be shifted approximately 2' to the north to minimize widening on the south side, required for an 8' right shoulder and to allow a minimum 4' sidewalk on the bridge.

Designer/Contractor

- Designer: Michael Baker International
- Contractor: Union Paving & Construction Co. Inc.

Project Schedule

- PS&E Submission: May 2022
- Construction Start: November 2022
- Substantial Completion: November 2024

Project

- Total Design: \$2.5M
- Construction Contract: \$10M
- Construction Engineering: \$3.5M
- Utilities: \$0.5M
- ROW: \$0.3M
- **Estimated Total Project Cost: \$16.8M**

Major project risks or issues

- There are two primary overhead electric lines (13kv each) running along Route 22 EB, that will need to be temporarily relocated during construction. The physical location of the poles, primarily along the west approach of the EB roadway, need to be relocated to allow for the temporary lane shifts and to clear the area for the bridge demo/construction. Trees will need to be cleared in the State ROW and in the park to accommodate this relocation. As a result of the Indiana Bat and northern long-eared bat present, tree removal is seasonally restricted from April 1-September 30th. Tree removal to be scheduled during bat inactive season.
- Temporary use of the park and mitigation shall be in accordance with terms of Use Agreement valid for 2 years. Coordinate with NJDEP Green Acres and Union County to determine access needs to the park during construction
- The project is proposing to place the utilities (gas, water and sewer) within the extra thick concrete sidewalks that will sit on top of the new culvert. CenturyLink communication conduits are buried under the WB shoulder under the existing bridge foundation, this fiber optic line, remain in place and since it clears the proposed footing care will be taken to protect the conduits during construction. These multiple utility accommodations will add to the cost of the project and additional time in the construction schedule.
- As a result of environmental sensitivities which includes the tributary of Echo Lake, a seasonal in-water timing restriction is present. The timing restriction is from May 1 until July 31, whereby fish passage is required, and in-water work will not be allowed. This requires installation of sandbags and or sheeting to be constructed prior to the seasonal restriction time, so that work can continue behind sandbags and or sheeting and allow fish passage.

Traffic Impacts/Mitigation strategies

- The overall staging scheme has been broken up into four major stages to accommodate the roadway and bridge construction and to minimize the traffic impact on Route 22. In order to maintain two 11 ft. wide lanes of traffic in each direction of travel, it is proposed to replace the bridge using three primary construction stages to build the new culvert.
- A fourth stage will be necessary to complete the median barrier, curbing, sidewalks, utility installation, milling and resurfacing, and paving and grading work.

- During all four stages of construction, the existing westbound to eastbound U-turn immediately west of the bridge will be closed due to the tapers required for the lane shifts. U-turn traffic will be directed to the next available U-turn (approximately 600' further west).
- Following are the approximate duration of each Stage.
 - Stage 1 – 6.5 Months (Including Pre-Stage work)
 - Stage 2 – 5 Months
 - Stage 3 - 7.5 Months
 - Stage 4A & 4B – 4 Months
- There are several commercial driveways within the limits of the project. There are driveways immediately outside of the limits of the project. These driveways are to be maintained at all times during the construction of the project.

Project location map

