The Mianus River Bridge on Interstate 95 in the Cos Cob section of Greenwich, Connecticut had a 100-foot (30.5 m) section of its deck of its northbound span collapse on June 28, 1983. Three people were killed when their vehicles fell with the bridge into the Mianus River 70 feet (21.3 m) below, and three were seriously injured.[1] Casualties from the collapse were few because the disaster occurred at 1:30 a.m., when traffic was low on the often crowded highway.[2]

The replacement span is officially named the Michael L. Morano Bridge, after a state senator who represented Greenwich.

Causes

The collapse was caused by the failure of two pin and hanger assemblies that held the deck in place on the outer side of the bridge. The hanger on the inside part of the expansion joint at the southeast corner was forced from the pin that was holding it, and the load was shifted to the only other pin in the joint. The problem was caused by rust formation within the bearing on the pin, exerting a tremendous force on the hanger. The extra load on the remaining pin started a fatigue crack at a sharp corner on the pin. When it failed catastrophically, the deck was supported at just three corners. When two heavy trucks and a car entered the section, the remaining expansion joint failed, and the deck crashed into the river below.

The ensuing investigation cited corrosion from water buildup due to inadequate drainage as a cause. During road mending some 10 years before, the highway drains had been deliberately blocked and the crew failed to unblock them when the road work was completed. Rainwater leaked down through the pin bearings, causing them to rust. The outer bearings were safety-critical and non-redundant, a design flaw of this particular type of structure. The bearings were difficult to inspect close-up, although traces of rust could be seen near the affected bearings.

The incident was also blamed on inadequate inspection resources in the state of Connecticut. At the time of the disaster, the state had just 12 engineers, working in pairs, assigned to inspect 3,425 bridges. The collapse came despite the nationwide inspection procedures brought about by the collapse of the Silver Bridge in West Virginia in December 1967.

Reaction

The interstate was not fully reopened for six months, and then only with a temporary truss. In total, final repairs cost over US$20 million. During the rebuilding, traffic was diverted onto US-1 and local streets in Greenwich, causing the worst traffic problems the town had ever seen.[2] The Mianus River Bridge was completely reconstructed in the late 1980s. Work included replacing all of the structural steel, rebuilding and expanding the bridge deck to accommodate a wider roadway, and repairing the bridge piers to extend their service life. The replacement span was completed in 1992. It eliminated the pin-and-hanger assemblies that caused the collapse of the original bridge.

Governor William O'Neill afterward proposed a US$5.5 billion transportation spending package to pay for rehabilitation and replacement of bridges and other transportation projects in Connecticut.[2]