



RETROFITTING OF BRIDGES IN İSTANBUL

Nurdan MEMISOGLU APAYDIN ¹

This study describes the seismic retrofit and structural strengthening campaign for large scale bridges in Istanbul. Istanbul is the largest city in Turkey, with a history and cultural heritage that extends over twenty-six centuries. The two main motorways namely O-1 and O-2 motorways connect Europe and Asia continents each other and these motorways are the main transportation arteries of the city. There are two suspension bridges and several large scale steel and concrete bridges on the motorways. Istanbul is located on high seismic zone and investigations show that a major earthquake may occur with a high probability in the near future. These bridges are the critical nodes of this highway network and any broken link due to the bridges failure during a destructive earthquake may totally paralyze the whole transportation system in the city. Therefore to avoid negative condition and provide transportation continuity, serious studies have been started after 1999 Marmara earthquake. In this study, the methodology to determine the seismic performance and retrofitting requirements were elaborated and retrofit analysis and retrofit design criteria of the bridges were presented.