Seismic hazard characterization is the foremost module for earthquake risk management in a seismically vulnerable region. The mega city Dhaka in Bangladesh is considered by many researchers as one of the riskiest cities in the world due to many non-engineered construction practices and poorly studied tectonic boundary conditions. The city is built on a Plio-Pleistocene terrace located within the subsiding Bengal basin. The records of historical earthquakes indicate that three large magnitude earthquakes occurred during the last 150 years within and in close proximity to Bangladesh. Magnitudes of these earthquakes ranged from 6.9 to 8.7 occurring between 1885 and 1918. These events caused moderate damage to buildings and other infrastructures in Bangladesh, but the damage in Dhaka City was negligible. It is believed that the 6.9 magnitude Bengal earthquake occurred approximately 50 km from the city, although there are multiple controversies about the location of the epicenter. Many consider that the epicenter of this earthquake was 170 km away from Dhaka City and others inferred the epicenter to be somewhere along Madhupur fault, approximately 50 km away. The 1885 Bengal, 1897 Great Indian, and 1918 Srimangal Earthquakes are considered as the seismic sources for site-specific seismic hazard characterization. The peak ground acceleration (PGA), peak ground velocity (PGV), spectral accelerations (SA) of different periods have been calculated at the ground surface based on recently developed ground motion prediction equations and site amplification factors. The amplification factors are predicted from the average shear wave velocity to a depth of 30 m (Vs30), which are estimated using various geophysical and geotechnical investigations. The study reveals that the city is built on very firm ground where seismic risks are manageable provided the engineering structures adhere to the norms of seismic regulations and building codes.

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