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Assembly areas for expected Istanbul Earthquake

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Among the natural hazards, earthquake is the most destructive disaster that causes huge loss of lives, heavily damage on infrastructures and great economical loses. According to the earthquake statistics, globe hosts more than a million earthquakes occur in every year, in other words, two earthquakes every minute. Natural disasters resulted in more than a million deaths and approximately 60% out of this loss is reported due to the earthquakes for the time period 2001–2018. Turkey is one of the seismically active regions in the Mediterranean Region as part of Alpine-Himalayan orogenic system. The North Anatolian Fault is the most active tectonic element in Turkey, which generated M>7.0 earthquakes every ∼8 years in the last century on average. As it has not yet completed its current cycle, it will probably generate one or more M>7.0 earthquakes in near future in the vicinity of the megacity Istanbul, along the “Marmara Seismic Gap”, which did not accommodate any destructive earthquake since 1894. Therefore, it is crucial to have a detailed database of assembly areas in Istanbul to be used in case of a large earthquake. In this study, possible assembly areas are detected by using very high spatial resolution satellite images as an emergency evacuation area in the existing settlements for post-earthquake stages. Using remote sensing approach, we investigate locations and size of potential assembly areas in Istanbul. In this frame, we also investigate the capacity of located assembly areas and their distance to the hospitals and main routes.