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FOREWORD

Earthquakes are multifaceted - causing death, destruction and loss of property in a wide variety of ways, from building collapse to conflagration, tsunamis and landslides. All the earthquakes occurring globally have caused fatalities irrespective of whether they are in the Trans-Alpide belt or the Circum-Pacific Ring of Fire. Earthquake disasters are inevitable but it is possible to minimize the aftermath of an earthquake if the zones that are more susceptible to undergo maximum ground motion are identified. Urban safety has gained importance in recent years with rapid increase in construction activities and growth in urban population all over the world. India, with its unique geological setting and socio-economic conditions, is highly vulnerable to earthquake inflicted disasters. A large number of cities in India have a population of one million or more in urban centers falling under seismic zones V, IV and III. In this context, seismic microzonation seems to be an answer to the need for mitigation against the seismic hazards as it gives a realistic answer in terms of ground motion at a higher resolution and has been recognized as a priority area of seismic mitigation programme in India.

Studies related to Microzonation were initiated by Ministry of Earth Sciences some time back and a few cities like, Guwahati, Delhi, Bangalore, Jabalpur etc. have already been microzoned. Further, it is planned to undertake microzonation of 30 selected cities in the current Five Year Plan.

The Kolkata metropolis, the second largest urban agglomeration in India is located about 150 km north of the Bay of Bengal, right over the Ganges delta, and is one of the most urbanized and densely populated regions in the world, necessitating an in-depth seismic hazard and risk analysis of the state vis-à-vis its capital city for developing an effective disaster mitigation programme. A multi-institutional project to undertake the seismic microzonation of Kolkata city was sanctioned by the Ministry of Earth Sciences to IIT-Kharagpur, Indian Institute of Engineering Science and Technology (IIEST)- Shibpur, West Bengal State Council of Science & Technology (WBSCST), Jadavpur University (JU), Centre for Ground Water Studies (CGWS). The team of investigators was led by Prof. Shankar Kumar Nath, a Senior Professor and an eminent Seismologist from IIT, Kharagpur. The team has now brought out the requisite multilayered Seismic Microzonation Maps on 1:25,000 scales.

"**Seismic Hazard, Vulnerability and Risk Microzonation Atlas of Kolkata**" encapsulates the results of their consorted endeavors. The knowledge of both Seismic Hazard and Risk in the city gathered from the detailed analyses based on existing urban built-up environment is expected to immensely benefit the disaster mitigation and management endeavors for the State of West Bengal in general and the city of Kolkata in particular. I hereby congratulate Prof. Nath and his team of scientists for this commendable achievement.

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