

# Development of Vs30 Maps for Karachi

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The objective of the research is to develop Vs30 (shear wave velocity at a depth of 30m) map for Karachi City by conducting geophysical (MASW- Multichannel Analysis of Surface Waves) and geotechnical (Using empirical relations through SPT-N value) surveys. The map will be utilized to conduct soil amplification study for Karachi and obtaining the data by two different methods would also help to recommend any one method for future studies on the basis of its accuracy. The methodology of the project includes collecting borehole information and subsequent computation of Vs30. A cross check can be applied while experimentation is performed on same locations as that of boreholes by using conducting MASW survey to obtain shear wave velocity profile and Vs30. These values enable the division of Karachi City on the basis of its capability to amplify ground motions. The future perspective of the research would facilitate deterministic and probabilistic seismic hazard assessment. Furthermore, it will help engineers to carry out assessment and design of existing and new structures respectively.

