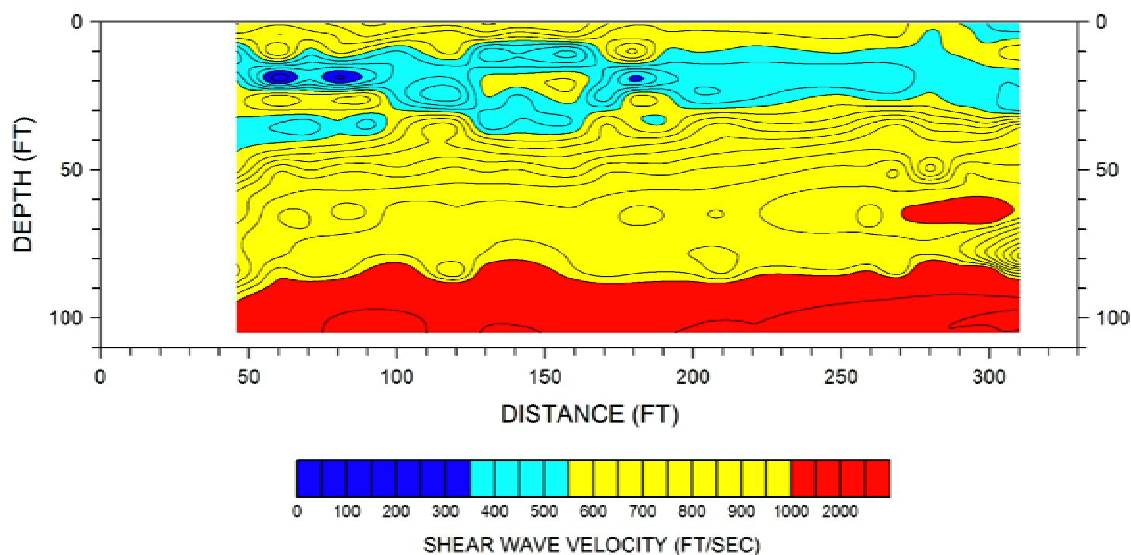


SHEAR WAVE VELOCITY DETERMINATION USING MASW



Multi-channel Analysis of Surface Waves (MASW) is a surface geophysical method used to determine the variability of subsurface shear wave velocities. Unlike conventional Crosshole and Downhole techniques, the drilling of boreholes is not required. Instead, surface waves are recorded similarly to seismic reflection surveys. Since surface waves are dispersive, different wave lengths propagate at different velocities, and penetration depth is directly proportional to their wavelength. By analyzing the dispersion of surface waves, the variations in shear wave velocity with depth and distance along a profile can be assessed. The shear wave velocity provides a direct indication of the variation of stiffness (or rigidity) of subsurface materials.



MASW can be useful for foundation investigations since it can characterize anomalous subsurface conditions such as:

- Soft or compressible materials such as Bay Mud
- Levees
- Weak zones overlying former underground mined areas
- Landslides and fault zones
- Voids or cavities
- Highly variable fill over sediments/bedrock