Project: **M5 EAST MOTORWAY**
Groundwater Drainage and Subsidence Assessment

Location: **Proposed M5 East Motorway, Sydney, NSW**
Client: **Evans & Peck Management**

Highlights

- Detailed geological and hydrogeological mapping and interpretation
- Integration of geotechnical data and broad concepts
- Assessment of subsidence vulnerability.

Background

Planning and design for the proposed M5 East Motorway highlighted the need for further assessment of geological and groundwater conditions in the vicinity of stretches of the motorway development where cuttings and tunnels were proposed.

C. M. Jewell & Associates Pty Ltd was engaged by Evans & Peck Management to make the assessment of conditions, and to report on the geology, hydrogeology and risk of subsidence resulting from drainage of the shallow groundwater.

Hydrogeological Environment

The motorway alignment crosses areas of mixed surficial, deeper alluvial and basement sediments of the Hawkesbury group. The western section cuts through shale and residual shale soils. The central section crosses areas of Hawkesbury Sandstone and alluvial sands and clays. Alluvium, in places, occupies incised channels in the underlying sandstone. The eastern section crosses clay-rich estuarine sediments. All sediments mapped were saturated to some extent. Perched water tables are encountered in sandstone ridges and rises.

Scope

The investigation comprised compilation of geological and water level data, and the drawing of cross-sections across the motorway alignment. Review of previous geotechnical determinations also formed part of the assessment. Conditions were assessed in this manner over sections of the proposed motorway alignment totalling approximately 10 kilometres. The assessment included consideration of structures potentially affected by vulnerable sediment, such as the South Western Ocean Outfall Sewer.