



## **Land Capability Assessment includes Salinity, Contamination & Geotechnical**

### **Scope of Work**

The scope of works for this study will generally comprise:

- The preparation of an initial scoping paper;
- Land capability, or geotechnical assessment;
- Soil salinity assessment;
- Preliminary site contamination and groundwater assessment;
- Review of draft Indicative Layout Plan (ILP);
- A contribution towards the preparation of relevant provisions in the draft Development Control Plan (DCP) and draft Indicative Layout Plan (ILP); and
- The preparation of draft and final reports summarising the above.

### **Initial scoping paper**

The initial scoping stage will require the successful contractor to:

- Meet with the PWG to discuss the gap analysis being undertaken by the PWG and understanding of the brief as part of the project inception meeting;
- Review the completed gap analysis report and provide comment, as required;
- Undertake a desktop review of relevant background material and raise issues and concerns with the PWG, as necessary;
- Discuss and agree with the PWG variations to the scope of works and approach, as necessary; and
- Prepare a brief discussion paper confirming the proposed approach and summary of existing information and potential issues/concerns.

### **Land capability assessment**

The Specialist Contractor is required to categorise the development capability of the soils and identify any constraints in respect to urban development in accordance with current industry practice. The Office of Environment and Heritage (OEH) soil landscape mapping for the region, which includes salinity hazard and urban capability assessment, should be used as a baseline for the site investigations.

The land capability assessment should:

- Identify and map soil landscapes within the study area and the limitations of the land including erosion and sedimentation hazards, and shrink swell hazards (volume expansion);
- Verify hazards through the analysis of soil samples;
- Assess slope stability across the site, identifying areas which are, or are likely to be, prone to stability problems;
- Map the suitability of the land for future urban development; and
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- Provide recommendations on slope stability which recognise the range of potential land uses on the site, including conservation land, accessible open space and residential development.

The Specialist Contractor will be required to develop objectives and criteria for controlling erosion and sedimentation for inclusion within the precinct planning documents, particularly the Development Control Plan (DCP). This will include reference to 'Managing Urban Stormwater – Soils and Construction' produced by the NSW Department of Housing 3rd Edition (1998) ('The Blue Book').

### **Soil salinity assessment**

An investigation into potential salinity issues is required. This will include an analysis of the likely presence of soil and ground water salinity within the study area.

The impact of regional conditions in the areas surrounding the site should also be considered. The potential extent, degree and location of actual or potential saline soils should be mapped.

In addition to a review of available mapping data and resource material, a comprehensive soil and groundwater sampling program is required to be undertaken consistent with the requirements of DLWC booklet No. 3 'Site Investigations for Urban Salinity'.

This investigation should include:

- soil and groundwater sampling;
- location of possible groundwater monitoring bores;
- laboratory analysis;
- results interpretation; and
- the preparation of a Salinity Management Plan (if required) that incorporates appropriate development controls for the management of salinity and related issues.

As outlined above, the recommendations should include the identification of locations for permanent ground water piezometers and a monitoring program to assess the impact of development on the environment over the development timeframe.

The identification of any saline environments must be incorporated into the overall planning process by way of advising other Specialist Contractors whose areas of investigation and recommendations are potentially affected by salinity issues.

### **Site contamination assessment**

In order to address the requirements of *State Environmental Planning Policy 55 – Remediation of Land* (SEPP 55) and the Development Code, the assessment and remediation of soil and groundwater contamination may include but is not necessarily limited to the following stages:

- Stage 1 – Preliminary Environmental Site Assessment (PESA); and
- Stage 2 – Detailed Environmental Site Assessment (DESA).

This brief relates specifically to Stage 1, which is to be completed prior to the exhibition of the Precinct Planning documents. Further investigations may be



required prior to the approval of development applications for the land (i.e. Stage 2-DESA, Remedial Action Plan (RAP), Validation Assessment, and Site Audit Statement (SAS)).

The key objective of the PESA is to ensure the proposed rezoning adequately addresses the requirements of SEPP 55 and that the land is generally suitable for the proposed land use.

#### Stage 1: Preliminary Environmental Site Assessment (PESA)

The objective of the PESA is to identify any past or present potentially contaminating activities and to provide a preliminary assessment of site contamination. The preliminary investigation typically contains a detailed appraisal of the site history and a report based on visual site inspection and assessment.

The Stage 1 assessment shall be carried out in accordance with the requirements of the relevant EPA/OEH guidelines.

The preliminary investigation typically contains:

- A detailed appraisal of the site history and a report based on visual site inspection (walk over) and assessment;
- A review of historical aerial photography archives (NSW Surveyor General's Department), and previous site ownership land titles;
- A search through the EPA Land Information records to confirm that there are no statutory notices on any parts of the study area under the Contaminated Land Management Act (1997); and
- A list of Areas of Environmental Concern (AEC) and an assessment of the need for further investigations, using a risk approach (high, medium and low) with respect to its contamination potential.

If the consent authority is satisfied that the PESA concludes that the site is suitable for the proposed use, then no further investigations will be required.

However, where contaminating activities are suspected to have impacted the land (refer point 4 above), limited/preliminary sampling and analysis will be required to confirm and support any conclusion reached from the site history appraisal. The PESA may recommend that further investigations are required and that a detailed assessment is to be carried out prior to development, including whether a remedial action plan is likely to be required.

The Specialist Contractor will be required to provide a report detailing the results of site investigations sampling and analysis, and the recommendations for further investigations.

#### Groundwater

Where contaminating activities are suspected to have impacted groundwater, limited/preliminary sampling and analysis will also be required.

The Specialist Contractor will be required to undertake groundwater sampling and analysis in accordance with the NSW EPA Sampling Design Guidelines, 1995 and the Australian Standards (AS/NZS 5667.11:1998: Water quality – Sampling – Guidance on sampling of groundwater and AS/NZS 5667.1998: Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples) and at all times utilise sound operational health and safety, decontamination and QA/QC procedures.



This analysis should be used to assist in reporting on water quality, contamination and salinity issues. Sampling locations should be mapped and recorded and results logged accordingly. Advice should include guidelines on the application of groundwater protection levels related to the vulnerability of groundwater in the precinct.

*Note on sampling:*

Where sampling of ground conditions is required in the brief, advice should be provided on the conditions at the time of testing and how they relate to average or typical conditions at that time of year. Significant variations from typical seasonal conditions should be noted.