

## **APPENDIX 5.1**

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### **NRA/TII Criteria for Rating the Magnitude and Significance of Soil / Geological Impacts at EIA Stage National Roads Authority**

**NRA/TII, 2009**

**Table 1 Criteria for rating site Attributes – Estimation of Importance of Soil and Geology Attributes (NRA)**

<b>Importance</b>	<b>Criteria</b>	<b>Typical Examples</b>
Very High	<p>Attribute has a high quality, significance or value on a regional or national scale</p> <p>Degree or extent of soil contamination is significant on a national or regional scale</p> <p>Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale*</p>	<p>Geological feature rare on a regional or national scale (NHA)</p> <p>Large existing quarry or pit Proven</p> <p>economically extractable mineral resource</p>
High	<p>Attribute has a high quality, significance or value on a local scale.</p> <p>Degree or extent of soil contamination is significant on a local scale.</p> <p>Volume of peat and/or soft organic soil underlying route is significant on a local scale. *</p>	<p>Contaminated soil on site with previous heavy industrial usage</p> <p>Large recent landfill site for mixed wastes</p> <p>Geological feature of high value on a local scale (County Geological Site)</p> <p>Well drained and/or high fertility soils</p> <p>Moderately sized existing quarry or pit</p> <p>Marginally economic extractable mineral resource</p>
Medium	<p>Attribute has a medium quality, significance or value on a local scale</p> <p>Degree or extent of soil contamination is moderate on a local scale</p> <p>Volume of peat and/or soft organic soil underlying route is moderate on a local scale*</p>	<p>Contaminated soil on site with previous light industrial usage</p> <p>Small recent landfill site for mixed wastes</p> <p>Moderately drained and/or moderate fertility soils</p> <p>Small existing quarry or pit</p> <p>Sub-economic extractable mineral resource</p>

<b>Importance</b>	<b>Criteria</b>	<b>Typical Examples</b>
Low	<p>Attribute has a low quality, significance or value on a local scale</p> <p>Degree or extent of soil contamination is minor on a local scale.</p> <p>Volume of peat and/or soft organic soil underlying route is small on a local scale*</p>	<p>Large historical and/or recent site for construction and demolition wastes.</p> <p>Small historical and/or recent landfill site for construction and demolition wastes.</p> <p>Poorly drained and/or low fertility soils.</p> <p>Uneconomically extractable mineral resource.</p>

\* **Relative to the total volume of inert soil disposed of and/or recovered**

Source: Box 4.1: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

**Table 2 Criteria for Rating Impact Significance at EIA Stage - Estimation Of Magnitude of Impact on Soil / Geology Attribute (NRA)**

<b>Magnitude of Impact</b>	<b>Criteria</b>	<b>Typical Examples</b>
Large Adverse	Results in loss of attribute	<p>Loss of high proportion of future quarry or pit reserves</p> <p>Irreversible loss of high proportion of local high fertility soils</p> <p>Removal of entirety of geological heritage feature</p> <p>Requirement to excavate / remediate entire waste site</p> <p>Requirement to excavate and replace high proportion of peat, organic soils and/or soft mineral soils beneath alignment</p>
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	<p>Loss of moderate proportion of future quarry or pit reserves</p> <p>Removal of part of geological heritage feature</p> <p>Irreversible loss of moderate proportion of local high fertility soils</p> <p>Requirement to excavate / remediate significant proportion of waste site</p> <p>Requirement to excavate and replace moderate proportion of peat, organic</p>

<b>Magnitude of Impact</b>	<b>Criteria</b>	<b>Typical Examples</b>
		soils and/or soft mineral soils beneath alignment
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	<p>Loss of small proportion of future quarry or pit reserves</p> <p>Removal of small part of geological heritage feature</p> <p>Irreversible loss of small proportion of local high fertility soils and/or high proportion of local low fertility soils</p> <p>Requirement to excavate / remediate small proportion of waste site</p> <p>Requirement to excavate and replace small proportion of peat, organic soils and/or soft mineral soils beneath alignment</p>
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	No measurable changes in attributes
Minor Beneficial	Results in minor improvement of attribute quality	Minor enhancement of geological heritage feature
Moderate Beneficial	Results in moderate improvement of attribute quality	Moderate enhancement of geological heritage feature
Major Beneficial	Results in major improvement of attribute quality	Major enhancement of geological heritage feature

Source: Box 5.1: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

**Table 5 Rating of Significant Environmental Impacts at EIA Stage (NRA)**

<b>Importance of Attribute</b>	<b>Magnitude of Importance</b>			
	<b>Negligible</b>	<b>Small Adverse</b>	<b>Moderate Adverse</b>	<b>Large Adverse</b>
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant/moderate	Profound/Significant	Profound
High	Imperceptible	Moderate/Slight	Significant/moderate	Profound/Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Slight/Moderate

Source: Box 5.4: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)