AGRICULTURAL LAND CLASSIFICATION

Proposed Hemsworth Bypass

Northern and Southern Options

MAFF
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CONTENTS

1. Introduction and Route Characteristics

2. Agricultural Land Classification

2.1 Northern Route option

2.2 Southern Route option

3. Maps

Northern Route option

Southern Route option

AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED HEMSWORTH BYPASS:- NORTHERN AND SOUTHERN OPTIONS

1.1 Introduction

The proposed northern and southern options for the Hemsworth bypass were surveyed in early May 1990. Soils within a 100 m corridor along each route were examined by hand auger borings, and where appropriate, soil profile pits. A total of 90 soil observations were made at points equally spaced along the alternative routes.

1.2 Climate and Relief

Salient climatic parameters at Hemsworth are as follows:-

Average Annual Rainfall (mm)		650
Accumulated Temperature Above 0°C (Jan-June)		1356
Field Capacity Days		140
Moisture Deficit	wheat (mm)	101
	potatoes (mm)	91

These factors indicate that there is no overall climatic limitation on ALC grade although some light textured soils are likely to be droughty.

Most of the land along both routes is moderately, or gently sloping. Steep slopes are restricted to a few localised areas.

Altitude ranges from a maximum of 95 m a.o.d where the 2 routes meet south west of Hemsworth to a minimum of 45 m a.o.d near the sewage works east of the town. Average altitude is approximately 60 m a.o.d.

1.3 Geology, Soils and Drainage

Carboniferous Coal Measures consisting of interbedded shales and sandstones lie close to the surface in the Hemsworth area. Drift deposits are thin or absent and soils are formed largely on solid strata. The shales which are more widespread on lower ground and on the southern route have weathered to produce fine silty and clayey textured soils which are slowly permeable below the topsoil. These soils are generally poorly drained and fall within wetness Classes IV or III. Soils formed over sandstone are common on parts of the northern route. These are light textured, freely drained (wetness Class I) and often pass into weathering sandstone between 50 cm and 100 cm depth.

2.1 AGRICULTURAL LAND CLASSIFICATION

2.1.1 Northern Route

The ALC grades occurring along this route are as follows:-

Table 1: ALC grades on the Northern option of the proposed Hemsworth Bypass survey area (100 m wide corridor)

Grade	Hectares	Per cent of total survey area
3a	18.1	53.5
3b	10.8	31.8
Non agricultural	1.9	5.6
urban	3.1	9.1
TOTAL	33.9	100

Subgrade 3a

This subgrade is widespread in the Hollins Bank and Vissit quarry areas. Soils fall within wetness Class I and consist mainly of slightly stony medium sandy loam topsoils over similar or lighter subsoils which pass into weathering sandstone between 50 cm and 100 cm depths. Soils are light and easily worked, but are likely to be somewhat droughty and this is the main limitation on ALC grade.

Subgrade 3b

Subgrade 3b land is common near Church Field and to the north east of the railway, but has a patchy distribution elsewhere. Soils are generally heavy and, except in areas near sandstone outcrops, consist of heavy clay loam topsoils over slowly permeable clay or silty clay subsoils. Soils of this type fall mainly within wetness Class IV and are limited to subgrade 3b by wetness and workability problems.

Non Agricultural

Land in this category includes derelict farmland, woodlands and part of the Hemsworth cemetery.

Urban

This consists of the railway and adjoining hard standing and major roads crossed by the proposed route.

2.1.2 Southern Route

The ALC grades occurring along this route are as follows:-

Table 2: ALC grades on the southern option of the proposed Hemsworth Bypass Survey area (100 m wide corridor except where route traverses a disused railway).

Grade	Hectares	Per cent of total survey area
3a	14.6	26.2
3b	16.7	29.9
Non agricultural	22.8	40.9
Urban	1.7	3.0
TOTAL	55.8	100

Subgrade 3a

This subgrade has a patchy distribution along the route and occurs where the Coal Measure clays contain lenses of lighter material or have better drained loamy surface horizons. Most soils fall within wetness Class III and consist of medium clay loam topsoils over similar textured upper subsoils. The lower subsoil, below about 50 cm depth, is usually slowly permeable and formed of medium or heavy clay loam or silty clay.

Subgrade 3b

Land in this subgrade is slightly more widespread than subgrade 3a land with which it forms alternating patches along the route. soils are generally heavy and consist of heavy clay loam topsoils over slowly permeable silty clay or clay subsoils. These soils fall within wetness Class IV and are restricted to subgrade 3b by wetness and workability problems.

Non Agricultural

This consists mainly of the dismantled railway along with smaller areas of woodland.

Urban

The Leeds-Doncaster railway and roads crossed by the route are included in this category.

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