

PINS ref.
APP/U2235/A/09/2096565/NWF
LPA ref.
MA/07/2092
EA ref.
KT/2007/103853/02-L03

Description, site address
TOWN AND COUNTRY PLANNING ACT 1990

**OUTLINE PLANNING PERMISSION FOR THE CONSTRUCTION OF
HARDSTANDING AREAS TO FORM RAIL/ROAD FREIGHT INTERCHANGE
WITH FREIGHT HANDLING EQUIPMENT, NEW RAILWAY SIDINGS IN PART
WITH ACOUSTIC ENCLOSURE, EARTHWORKS AND RETAINING WALLS,
BUILDINGS FOR CLASS B8 WAREHOUSING AND CLASS B1 USES, ACCESS
WORKS, INTERNAL ROADS AND BRIDGES, LOADING AND MANOEUVRING
AREAS, CAR AND LORRY PARKING, ANCILLARY TRUCK-STOP AND
GATEHOUSE SECURITY FACILITIES, ELECTRICITY SUB STATION,
REALIGNMENT OF PUBLIC RIGHTS OF WAY AND WATERCOURSES,
DRAINAGE WORKS AND LANDSCAPING WITH ACCESS TO BE CONSIDERED
AT THIS STAGE AND ALL OTHER MATTERS RESERVED FOR FUTURE
CONSIDERATION.,**

**KENT INTERNATIONAL GATEWAY, LAND WEST OF JUNCTION 8, M20,
MAIDSTONE.**

ENVIRONMENT AGENCY PROOF OF EVIDENCE: HYDROLOGY

Date
24 September 2009

Statement headings

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1. Personal details

- 1.1 My name is Peter Neil Waring. I have a BSc (Hons) degree in Earth Science and an MSc degree in Environmental Water Management. I became a Chartered Member of the Geological Society in 2000.
- 1.2 I began my career as an Engineering Geologist but was employed by the Environment Agency and its predecessor (National Rivers Authority) between 1995 and 2001 as a hydrologist. I have been employed in the Development and Flood Risk team of the Environment Agency since 2001 and have been in my current role as Area Development and Flood Risk Engineer since 2003.

2. Introduction

- 2.1 The Environment Agency were first consulted on the appeal proposal by Maidstone Borough Council ("MBC") in October 2007. The Development and Flood Risk (previously Development Control) section of the Agency made an objection to the proposal in our letter dated 3rd December 2007 for the following reasons:
- a) the proposed means of surface drainage would increase the flood risk downstream and;
 - b) the proposed culvert beneath the Intermodal area is contrary to the Agency's policy on culverts.
- 2.2 Those objections formed the basis for the whole or part of MBC's deemed reasons for refusal nos. 14 and 15 adopted on 7 May 2008. Further information was provided by the Appellant in June 2008. The Agency responded by letter dated 4th September 2008 to confirm the objection to application MA/07/2092 would be maintained, for the reasons given above. The Agency later maintained its objection for the reasons set out in its further letter to MBC dated 6 February 2009.
- 2.3 Copies of the letters to MBC are at Annex 3 to the Environment Agency's Supplementary Statement of Case lodged on 16 September 2009.
- 2.4 As explained at paragraph 4.2.3 of the Supplementary Statement of Case, the Appellant submitted a proposed revised scheme to which the Environment Agency also objected in principle. Our responses dated 19 and 20 August 2009 to MBC's re-consultation on the revised proposals are at Annexes 5 and 6 to our Supplementary Statement of Case. The reasons for our objections to the revised proposals are outlined under six headings at paragraphs 4.2.4, 4.2.20, 4.2.23, 4.2.30, 4.2.32, 4.2.36 of the Supplementary Statement of Case. The Inspectorate has agreed that the revised proposals may be considered as part of the appeal. My understanding is that the Appellant seeks outline planning permission on the basis of the revised rather than the original proposals.
- 2.5 I led the discussions on behalf of the Environment Agency with Richard Fillingham, the Appellant's lead consultant on drainage, flood risk and hydraulic issues, during the course of which agreement was reached on a number of issues. The extent of that agreement is set out in the Statement of Common Ground on Foul and Surface Water Drainage and Flood

Risk/Watercourse Accommodation which has been lodged with the Inspectorate. As a result the Environment Agency has been able to withdraw its in-principle objection to the grant of outline planning permission for the revised proposals, subject to imposition of conditions and agreement of statutory terms as set out in the Supplementary Statement of Case.

2.6 However, for reasons I explain below, the withdrawal of our objection on an issue of particular importance – the extent of the proposed diversion and culverting of the watercourse known as W2 – was based on a further modification of the appeal scheme reflected in Drawing No. 9T4125-FRA-12 TEMP (rev A) prepared by Mr. Fillingham. That drawing can be found at Appendix B to the Statement of Common Ground. It shows an alteration in the indicative layout of building IND-E which enables a lesser degree of diversion and culverting of W2.

2.7 I am informed by the Environment Agency's legal representatives that the Inspector intends to rule early in the inquiry on whether the modification shown by Drawing No. 9T4125-FRA-12 TEMP (rev.A) can be accepted as part of the appeal, and that meanwhile it is acceptable for the Environment Agency to lodge holding proofs. If that drawing is excluded from the appeal, we will have an opportunity to lodge supplemental proofs in support of what would then be our remaining areas of objection to the appeal scheme.

2.8 So in this holding proof, I will just:

2.8.01 Outline the outstanding objection to the appeal scheme if Drawing No. 9T4125-FRA-12 TEMP (rev.A) cannot be considered in the appeal, and

2.8.02 Briefly comment on conditions and related matters that arise whether or not that drawing is considered in the appeal.

3. **Key Issue: diversion and culverting of W2**

3.1 Under the original appeal scheme, W2 was to have been diverted approximately 100metres further west downstream from the existing railway, which will involve constructing two sharp, near ninety degree bends in the channel, to accommodate a commercial building labelled Ind-F on DRG. 2005-180A-C7.15-03 E.

3.2 Under the revised scheme, following revisions included within the Supplementary Environmental Statement, the existing railway culvert is to be extended a further 14metres downstream but owing to the proposed diversion of watercourse W2, the culvert extension will be aligned at approximately 120 degrees to the alignment of the existing railway culvert, as shown on DWG 9T4125-FRA-11 dated 12th June 2009.

3.3 Construction of a sharp bend in a channel immediately downstream from a culvert is not considered good practice (CIRIA report 168) for a number of reasons. These problems can be exacerbated if the bend is incorporated into a culvert. These works are proposed by the appellant to facilitate the increase in surface area of building Ind-E and deletion of building Ind-F, as shown on the illustrative Master Plan ref 107.N.

- 3.4 The proposed diversion of watercourse W2 may not be feasible owing to the risk of potential slope instability, resulting in blockage of the channel.
- 3.5 The above matters are within my own expertise. I am aware that officers in the Environment Agency ecology team also raise objections to the revised proposal on the ground that the culverting proposed to W2 would result in the destruction of watercourse and bankside habitat, interrupt wildlife corridors and act as a barrier to wildlife. That objection is summarised at paragraph 4.3.32 of our Supplementary Statement of Case. The revised appeal scheme would therefore be contrary to policy in PPS9.
- 3.6 For all these reasons the revised appeal proposal would be contrary to policies in the development plan and government advice, as well the Environment Agency's Policy Regarding Culverts.
- 3.7 In the event the modification shown in Drawing No. 9T4125-FRA-12 TEMP (rev.A) is excluded from the appeal, these conflicts with policy remains, and the Agency would be bound to maintain this aspect of its objection to the grant of outline planning permission. However, other issues would remain the subject of agreement as set out in the Statement of Common Ground and Supplementary Statement of Case.

4. The Environment Agency's outline case on that issue

- 4.1 Section 4.1.7 of the CIRIA Report No. 168: Culvert Design Manual recommends a number of design criteria for new culverts, one of which is to avoid bends within a culvert or immediately downstream from a culvert outlet.
- 4.2 It is not considered good engineering practise to construct bends in culverts because it increases the risk of blockage and results in energy loss, causing deposition of bed load material within the culvert. The greater the angle of bend will result in greater rates of sedimentation within the culvert. The proposed bend immediately downstream from the existing railway culvert appears to represent a change of channel direction of approximately 120 degrees and therefore, the risk of sedimentation upstream within the existing 1000mm diameter railway culvert will be significantly increased.
- 4.3 It is acknowledged an access chamber will be provided in the culvert at the culvert bend (para 51 Statement of Common Ground), to enable personnel to inspect and maintain the culvert. However, the culvert extension remains a poor hydraulic design and the Agency does not consider the proposed design of the culvert extension and diversion of watercourse W2 to be essential for the viability of the scheme. It will also result in an unnecessary risk to personnel undertaking maintenance of the culvert as it will likely involve entering a confined space.
- 4.4 It may not be feasible to divert the watercourse with associated landscaping as shown in DWG 9T4125-FRA-11.
- 4.5 Section 9 of the original Environmental Statement (ES) describes the ground conditions encountered on site, following an initial intrusive ground investigation and desk study, prepared by White Young Green Environmental (WYG). Section 9.4.28 describes a previous slope failure in a Gault Clay

cutting through Longham Wood, as part of the M20 construction. This lead to consideration of slope stability across the application site and various recommendations of slope gradients and heights are made in this chapter of the ES.

- 4.6 Ground conditions between unit Ind-E and Barty Farm are not known but if Gault Clay, section 9.4.29 of the desk study by WYG recommends cut slopes in excess of 5m high, will require a maximum slope gradient of 1:4 (vertical : horizontal) combined with slope drainage. However, the proposed cut slope immediately east from Barty Farm is shown with a crest at 54mOD and base at 47.66mOD and slope gradient of 1:3, on DWG 9T4125-FRA-11. The height of slope exceeds 6m and therefore presents a risk of slope instability which could block the watercourse and cause structural damage to the existing farm building. Section 9.4.32 of the desk study does acknowledge slopes of 1:3 may be acceptable where existing ground is Folkestone Sands, provided the slope height does not exceed 5m. As the slope exceeds 5m in places, additional slope stabilisation measures will be required regardless of whether underlying material is Gault Clay or Sandstone from the Folkestone Formation.
- 4.7 Therefore, the proposed diversion of watercourse W2 may not be feasible based on the constraints described in section 9 of the original Environmental Statement.
- 4.8 As I have explained, biodiversity impacts are not within my own area of expertise. However, I am informed by the relevant officers that the extent of culverting of W2 proposed by the revised appeal scheme is considered to create impacts on habitat which could not be adequately mitigated or compensated by the creation of additional watercourses or ponds.
5. **Proposed modification shown in drawing No. 9T4125-FRA-12 TEMP (rev A)**
- 5.1 DWG 9T4125-FRA-12 TEMP [Rev A], submitted as Appendix B to the Statement of Common Ground, illustrates a proposed reduction in the built footprint of unit IND-E such that, the 120 metre reach of watercourse W2 between the existing railway and the Barty Farm track, no longer requires diversion. Consequently, there is no longer the requirement to extend the existing railway culvert by 14 metres downstream, construct a 120 degree bend either in open channel or culvert immediately downstream from the existing culvert or remove the existing riparian corridor of deciduous trees.
- 5.2 In addition, it reduces the need to reprofile the land between the watercourse and Barty Farm, thereby reducing the risk of slope instability and the need for slope reinforcement in this location. There may still be a requirement for minor slope stabilisation works between the Barty Farm track and the downstream boundary of the site but this will most likely be considerably less than required under previously submitted proposals.
- 5.3 I am informed by officers with the relevant expertise that the modified proposal would be acceptable in biodiversity terms provided sufficient habitat maintenance and enhancement through the provision of new aquatic features can be secured by appropriate condition or obligation. Paragraphs 4.2.33 to 4.2.35 of our Supplemental Statement of Case explain the point. On balance,

the revised appeal scheme currently before the inquiry would not be acceptable in this respect because of the greater extent of culverting proposed.

- 5.4 For those reasons, if the proposed revision is to be accepted, the Agency would be willing to withdraw from the Inquiry subject to agreement of appropriate planning conditions and obligations, as stated in para 53 of the agreed Statement of Common Ground.

6. Conditions and obligations if the appeal is allowed

- 6.1 The Environment Agency's Supplemental Statement of Case proposes a number of planning conditions as well as points to be agreed as planning obligations or as part of a statutory agreement with the Appellant. It also indicates a number of areas where the Agency would expect the agreement reflected in the Statement of Common Ground to be reflected in the details submitted for approval as reserved matters if outline planning permission is granted. The Supplemental Statement of Case explains the main reasons why we have put forward these conditions and other points.
- 6.2 So far as those reasons relate to matters within my own expertise I confirm I fully support them. I refer in particular to the matters identified at paragraphs 4.2.15 and 4.2.16 (configuration of upstream end of culvert, and culvert maintenance arrangements); 4.2.19 (access points to be detailed at reserved matters stage); flood risk elements of 4.2.22; 4.2.29 (design detail and long-term maintenance of surface water drainage system); and 4.2.31 (engineering scheme to ensure slope stability, etc.).
- 6.3 Most of the proposed conditions and terms are relevant to matters that are now agreed whether or not drawing No. 9T4125-FRA-2 TEMP is accepted in the appeal. If the drawing is accepted, I do not propose to give evidence at the inquiry. But I will in any event be happy to attend the inquiry for the discussion of conditions.

DECLARATION AND SIGNATURE

PETER NEIL WARING

24th September 2009