

Written Proof of Evidence:

Effects on Biodiversity

**Presented to the Public Inquiry
in relation to
Lancashire County Council Planning
Application Reference: 11/05/1584
Completion of the Heysham to M6 Link**

**Planning Inspectorate Reference:
APP/Q2371/V/07/1200928 &
APP/Q2371/V/07/1200929**

**Submitted by Michael Porter BSc. AIEMA
on behalf of:**

The Environmental and Sustainable Transport Alliance (ESTA)

Consisting of:

**The Campaign to Protect Rural England (CPRE)
Lancashire Branch and NW Regional Group
Friends of the Earth (FOE) North West
North West Transport Activists Roundtable (NWTAR)
Sustrans
Transport 2000**

1.0 Introduction

- 1.1 My name is Michael Porter and I am a local resident who strongly objects to the proposed Planning Application. The evidence that I present relates to the significant effects the scheme has on biodiversity. Over the past two years I have contributed to the interpretation of published documents associated with this Planning Application, and to the various written responses to them submitted by Transport Solutions for Lancaster and Morecambe.
- 1.2 My background and ability to discuss these issues is based on having been admitted to the Degree of Bachelor of Science in Ecology at the University of Lancaster. This is supported through having satisfied examination entry criteria leading to Associate Membership of the Institute of Environmental Management and Assessment. My current occupation is as a Safety, Health and Environmental Quality (SHEQ) Administrator.
- 1.3 Biodiversity data is taken from the LCC Planning Application Environmental Statement, with particular reference to the Non-Technical Summary and also Volume 3 Part B - Ecology and Nature Species Reports. Scope, content and accuracy of the individual reports submitted by ADAS are not contested as a reflection of the existing biodiversity status. However, the LCC summary and interpretation of significance against guidance and policy is questionable.
- 1.4 Not only must the Planning Application comply with Government guidance as found in PPS 9, it must also be in conformity with the Development Plan, as defined under Section 38(6) of the Planning and Compulsory Purchase Act 2004 (replacing Section 54A of the Town and Country Planning Act 1990). It should recognise the conservation guidance and policy statements contained in the current and emerging North West Regional Spatial Strategy, the Joint Lancashire Structure Plan and the current Lancaster District Local Plan.
- 1.5 All of these documents reflect the Government position that all conservation areas are important irrespective of statutory designation. Within this proof it will be demonstrated that the proposed scheme contradicts many elements of planning guidance, particularly with reference to PPS 9. Furthermore, it will be shown that the scheme contradicts or fails to support Development Plan environmental policy at regional, county and local level.
- 1.6 The evidence will also highlight areas where the scheme fails to comply with European Directives that are designed to protect important species and their habitats. The primary European references include the Council Directive on the Conservation of Wild Birds 1979 (79/409/EEC) (Birds Directive 1979), and the Council Directive on the Conservation of Habitats and Wild Fauna and Flora (92/43/EEC) (Habitats Directive 1992).
- 1.7 European Directives are enacted through UK legislation, and therefore the references will include The Wildlife and Countryside Act 1981 (as amended), The Conservation (Natural Habitats etc) Regulations 1994, The Countryside and Rights of Way Act 2000 and The Hedgerow Regulations 1997.

2.0 Summary

- 2.1 21 veteran trees are affected by the scheme with significant permanent loss of regional importance. All veteran trees have significant ecological value but the scheme ignores ADAS cautionary notes that veteran trees found outside ancient woodland are particularly valuable and their loss should be avoided. The destruction contradicts guidance in PPS 9 and fails to support woodland targets identified in RSS Policy ER6.
- 2.2 Substantial hedgerows will be removed, 87% of which are protected under the 1997 Regulations, losing one of the most important known habitat types. PPS 9 states: **"Such networks should be protected from development, and, where possible, strengthened by or integrated within it"**. Policy 20 of the Joint Lancashire Structure Plan sets Target 20.1 specifying: **"No net loss of hedgerows through development, 2001 - 2016"**. LCCs Specialist Adviser ^[Appendix 1] questions whether the mitigation proposed is **"no net loss"**.
- 2.3 Six affected fungi species are listed in the Provisional British Red Data List or Provisional European Red Data List. Most notable is a species of Principal Importance, the Pink Wax Cap (*Hygrocybe calyptriformis*). Howgill Brook and Valley Meadows are species-rich sites also classified as UK BAP Habitats of Principal Importance. PPS 9 places an obligation on all Local Authorities to conserve these Species and Habitats of Principal Importance.
- 2.4 Proposals to use areas near Beaumont Junction or Folly lay-bys would place mitigation ponds in close proximity to SUDS ponds, both of which have no overspill capacity, putting them at risk from contaminated run-off. Proposals also show a loss of open channel, contrary to RSS requirements. Reports of partial compensation at Howgill Brook, and no detail on negative impacts to watercourses are cause for concern, raising Specialist Adviser comments of ~ **"...extremely limited and unsatisfactory compensation"**.
- 2.5 Bats have been recorded with moderate activity along the Lancaster Canal but the route would severely affect linear movement by severing access to feeding grounds. As European Protected Species, listed under Annex IIa and Annex IVa to the EU Habitats and Species Directive 1992, they require their conservation status to be restored and maintained. Planting of immature hedgerows decreases foraging opportunities rather than increases it.
- 2.6 English Nature Mitigation Guidelines note that Great Crested Newts may be found in refuge sites up to 500 metres from ponds. Surveys of these areas have not been carried out, leading the LCC Specialist Adviser to comment that this is not consistent with the methods advocated. Great Crested Newts are Strictly Protected Fauna in Appendix II of the Bern Convention 1979, Schedule 5 of The Wildlife and Countryside Act 1981, Annex II and IVa of the Habitats Directive 1992 and Schedule 2 of Habitats Regulations 1994.
- 2.7 Bryophytes *Syntrichia laevipila*, *Cryphaea heteromalla* and *Orthotrichum pulchellum* are recorded notable species and recognised as scarce or rare at County level. No mitigation is proposed to counter complete destruction of the two former species. *Syntrichia laevipila* is listed in the Biological Heritage Sites Guidelines for Site Selection 1998. Potential for species to expand when the base population in a district is destroyed has no logical basis.

- 2.8 Pillars will intrude into the bed of the river, disrupting the holding ponds for salmon and siltation beds for crayfish. Salmon are protected species under Annex II(a) and Annex V(a) of the EC Habitats Directive (92/43/EEC). ADAS suggests effects are of "major to critical" importance on one of the top 5 sporting rivers in the UK. This issue is contradictory to the Lancaster District Local Plan (LDLP) and Lancaster Local Development Framework (LDF) Development Control Policy statements.
- 2.9 River Corridor Surveys reveal that Lancashire Red Data List plants in 3 sites would be directly affected. Bee Orchid, Marsh Speedwell, Bog Pimpernel, plus nine other species defined as Notable or Uncommon see direct removal of habitat creating major negative impacts of permanent significance. PPS9 states that Local Authorities **"should aim to maintain networks by avoiding fragmentation and isolation of natural habitats"**.
- 2.10 The Lighting Assessment provided has actually verified concerns rather than allayed them. The adverse effects of artificial lighting on plant and animal diurnal rhythms that were being anticipated are supported by investigations. Street lighting calculations show that there will be significant light pollution across the environmentally sensitive river area. The option to provide limited light for pedestrians and cyclists (Option 10), which has no spillage to the eastern side and low spillage to the west, is ignored.

3.0 Mature Trees

- 3.1 21 veteran trees are noted as affected by the scheme, and 10 of those are predicted as permanently lost. This is significant permanent loss of regional importance, which cannot be mitigated for. All veteran trees have significant ecological value, are associated closely with hedgerows and valued as host to food sources for many higher species, some of which may be protected.
- 3.2 Major concerns are expressed about the approach towards mitigation for loss of mature trees. LCC comments refer back to original statements that other trees will be planted in greater numbers as replacement. This ignores ADAS cautionary notes that veteran trees found outside ancient woodland are particularly valuable for biodiversity and their loss should be avoided.
- 3.3 PPS 9 (Paragraph 10) states: **"Aged or 'veteran' trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided. Planning authorities should encourage the conservation of such trees as part of development proposals"**. LCCs planning application fails to take into account clear and unambiguous guidance. Similarly, by removing a substantial resource structure the scheme also fails to support woodland targets identified in RSS Policy ER6.
- 3.4 Young trees are veteran trees of the future and loss represents a significant impact. Proposals to plant four new trees for the loss of one veteran tree cannot be considered as adequate compensation. It is illogical for LCC to also identify a younger tree already in situ as the sole long-term replacement for a veteran as it cannot be assumed that any particular replacement would actually achieve veteran status.

3.5 Additional response proposals are limited to suggesting mitigation may be afforded by the Environmental Stewardship scheme. This presents further issues whereby actual responsibility for management of biodiversity impacts is delegated to others, losing control of probably planning conditions. The scheme severs farmland, and therefore may jeopardise the future of the very farms that would have to deliver the Environmental Stewardship schemes?

4.0 Hedgerows

4.1 Over 11 kilometres of hedgerows will be removed by the scheme, 87% of which are protected under Hedgerow Regulations 1997 and losing what is recognised as one of the most important habitat types for numerous flora and fauna. Hedgerows will have no acceptable mitigation habitat for about 15 years, probably more, and the ultimate ecological structure of hedgerow replacement may be considerably different from the original.

4.2 PPS 9 (Paragraph 12) states: "**Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development, and, where possible, strengthened by or integrated within it**". The Joint Lancashire Structure Plan interprets this further in Policy 20 with Target 20.1 specifying: "**No net loss of hedgerows through development, 2001 - 2016**".

4.3 While the Environmental Statement proposes replacing the hedgerow lost, the LCC Specialist Adviser suggests that it is debatable whether this could be considered as "**no net loss**". (*Ecological Response to Consultation. Dr Sarah J Manchester, April 2006*). The ADAS Non-Technical Summary also comments that the proposed creation of an equivalent length of hedgerow cannot be assumed to adequately compensate for the connections severed.

4.4 Translocation methodology is described in detail, but there are no comments with regard to subsequent management of these fragile habitats. Similarly, there is no consideration to questions posed by the Specialist Adviser about "**other adverse impacts**" described in the application, or recommendations for a considered planting regime on embankments and roundabouts.

4.5 Networks of natural habitat and navigation corridors are recognised as very important wildlife resources. The scheme has an abundance of hedgerows and trees considered Habitats of Principal Importance (defined in response to Section 74(2) of the Countryside and Rights of Way Act 2000) that merit material consideration beyond that normally afforded. The scheme severs important ecological areas and creates a barrier to wildlife movement.

5.0 Fungi

5.1 Six species are listed in the Provisional British Red Data List or Provisional European Red Data List. Most notable is a species of Principal Importance, the Pink Wax Cap (*Hygrocybe calyptriformis*), as defined under Section 74(2) of the Countryside and Rights of Way Act 2000 and in PPS 9. Howgill Brook and Valley Meadows are species-rich sites classified as UK BAP Habitats of Principal Importance. Fungi are important components in the diversity of Valley Meadow, where permanent negative impacts occur.

- 5.2 PPS 9 (Paragraph 11) places an obligation on Local Authorities to conserve these Species and Habitats of Principal Importance and identify opportunities to enhance and add to them. Guidance also says authorities should refuse permission where harm to Principal Species or Habitats would result. This is lacking in the LCC proposals, which fail to investigate alternatives.
- 5.3 The Ecological Response advice given is for much more detailed surveys of the site including species composition, biology and ecology, and hydrology before developing the final approach. Transferring turf from existing fungi-rich meadow to an adjacent location is an unproven and speculative species management concept, shown by the need to undertake additional surveys. The geological, hydrological and ecological surveys that were requested are not presented. Assessment of likely success, details on complexity of site preparation, or the extensive future monitoring likely to be necessary is not available.
- 5.4 Concerns were expressed in the Ecological Response regarding destruction of habitat in Valley Meadow, Howgill Brook Meadow and Powder House Lane field. The LCC response offers no mitigation for Powder House Lane field, despite reminders that there should be no net loss, and merely states there is no statutory designation associated with such Principal Habitats.
- 5.5 Purchase of 7 ha additional land is required for the revised mitigation but there is no indication of the changing effects on farm viability. Additional land purchase costs are not presented and coupled to uncertainties in the actual mitigation process this means LCC are unable to adequately quantify the additional costs incurred.

6.0 Ponds and Watercourses

- 6.1 British Waterways' concerns over Lancaster Canal Biological Heritage Site are about impacts to the important habitat associated within this linear feature, and the dramatic visual intrusion in what is essentially a rural setting. Guidance in PPS 9 (Paragraph 12) states that such linear networks should not be isolated or fragmented and continues on to specifically mention canals and rivers.
- 6.2 Both the Planning Application and Response to Objections and Comments by LCC fail to consider impacts of drainage systems near the canal. No technical assessment regarding any impacts to the canal structure or its integrity from the drainage conduit placed under the canal to reach SUDS ponds located at the western end of the scheme is provided.
- 6.3 Mitigation for ponds and watercourse concerns is mentioned in the text of the LCC Highways Dept. Response to Objections, but does not correspond to comment in the revised Planning Application Plan. Pond PN6 is now not directly at risk of removal but may be dramatically affected by hydrological changes due to the cutting. Discussion then goes on to suggest that any change in viability would be compensated by 2 ponds elsewhere.

- 6.4 Proposals to use landscape areas near Beaumont Junction or Folly lay-bys would place the ponds in close proximity to SUDS ponds, both of which are singular ponds with no overspill capacity. Pond mitigation would be at risk of pollution from contaminated run-off, and would be unsuitable compensation. Proposals also show a loss of open channel, contrary to RSS requirements. Reports of partial compensation at Howgill Brook, and no detail on negative impacts to watercourses are cause for concern, raising Specialist Adviser comments of ~ **"...extremely limited and unsatisfactory compensation"**.
- 6.5 The Response to Objections from LCC Highways fails to mention any of the concerns presented regarding open watercourses. LCC's Specialist Adviser discusses this aspect at length due to inadequate mitigation offered in the original application. No attempt to amend mitigation measures has been made, leaving unanswered questions about several streams and ditches.
- 6.6 The Revised Planning Application Report states that four new ponds form part of the ecological compensation. These replace SUDS retention ponds, previously deemed to be of little ecological value. Only 3 ponds are shown on the maps provided, with the Torrisholme reference missing.
- 6.7 Using them in this way dramatically changes the capacity of the system to cope with surface runoff, especially the eastern sections of the scheme at Shefferlands and Croskells. The revision also provides an extremely complicated series of slopes, culverts, pumps and outfalls to maintain the supplies to Carus Lodge pond.
- 6.8 There is no effective compensation to maintain this singular flow from a severed source should the pumps fail, and the pond would then have to rely on a severely reduced natural catchment area. Storm water overflows must be incorporated in the road system to cater for pump failure, and this would then have to be fed circa 600m to the east, an outfall at Shefferlands pond.
- 6.9 Outfalls to the River Lune carrying contaminated runoff are now designed to pass through "interceptors" before reaching the River Lune. The revision dismisses this element as being submitted for approval "during the detailed design stage". This is inadequate for a scheme that generates so much ecological damage and threatens environmental resources of great value.
- 6.10 The final Planning Application produced some attempt at mitigation after continued pressure. However, proposals remove two SUDS ponds at the 3000 metres chainage mark with no effective alternative to controlling contaminated runoff. The application states that **"retention within pipes"** and **"agreeing outfall rates to Howgill Brook"** will suffice.
- 6.11 This fails to provide proper filtration or settling out of contaminants before releasing into watercourses. There is no indication of any retention pipes on the map WD301 provided. It also contradicts the recommendation in later correspondence, dated October 2006 between EA and LCC, that SUDS ponds are the preferred method of attenuating surface water discharge.

7.0 Bats

- 7.1 Bats have been recorded with moderate activity predominantly in the western section and along the Lancaster Canal. The route would severely affect linear movement by severing access to feeding grounds. They are European Protected Species, listed under Annex IIa and Annex IVa to the EU Habitats and Species Directive 1992, which require conservation status to be restored and maintained. They are strictly protected under UK law.
- 7.2 Sections 5.19.2 and 5.19.3 of the Response to Objections shows continued reliance on original mitigation measures, "provision of bat boxes" and the "maintenance of habitat connectivity". The LCC statement says, "...these measures would be sufficient to at least maintain the current population in a favourable conservation status". This is assumed to match the requirements of Local Authorities that they have regard to the Conservation (Natural Habitats etc.) Regulations 1994, but is inadequate in my opinion.
- 7.3 Proposed hedgerow planting in the scheme corridor merely replaces the extent that would be lost with immature resource and does not augment the existing provision of hedgerow. Coupled to the fact that the scheme will be permanently lit, with substantial projected levels of HGV traffic, it decreases foraging opportunities rather than increases it.
- 7.4 LCC response suggests that construction of SUDS ponds is likely to lead to an increase in bat foraging opportunities. Section 9.14 of the Non-Technical Summary states, **"balancing ponds would be created which, if properly managed, may contribute to the aquatic wildlife resource associated with the route, although evidence suggests that these often become too polluted to be suitable for wildlife"**. This suggests that favourable conservation status of a protected species will not be maintained.

8.0 Great Crested Newts

- 8.1 Methodology described in the response document does indeed outline precise protocols used for "bottle trapping" studies of newt populations in ponds within the scheme corridor. The response fails to address concerns that using this method alone does not reflect an adequate investigation as described in the English Nature Mitigation Guidelines.
- 8.2 Great Crested Newts breed in ponds but spend a great deal of time on land, sometimes venturing several hundred metres from the breeding zone. General survey points found in Section 5.2 of the Mitigation Guidelines note that Great Crested Newts may be found in refuge sites up to 500 metres from ponds, and may be in grassland, scrub, woodland or hedgerows.
- 8.3 Considering the general landscape of the scheme, a strong possibility exists that individuals may be found out of the ponds, and Guidelines suggested refuge searches. These have not been carried out, leading the Development Control Specialist Adviser to generate the comments that the singular method of "bottle trapping" does not appear consistent with the methods advocated in the English Nature guidelines.

8.4 Great Crested Newts are afforded protection as Strictly Protected Fauna in Appendix II of the Bern Convention 1979, Schedule 5 of The Wildlife and Countryside Act 1981, Annex II and IVa of the Habitats Directive 1992 and Schedule 2 of the Habitats Regulations 1994. By not addressing the Specialist Advisor comments regarding a European protected species, LCC become vulnerable to legal opinion similar to the ill-fated Western Route.

9.0 Bryophytes

9.1 Bryophyte species (mosses) are also affected. ADAS reports that 3 examples that are rare at County level are at risk. Removal of the supporting trees to 2 examples results in major negative impacts that are permanent. Freshwater macro-invertebrates also have examples of important species that will be affected, 16 of which are classified as rare.

9.2 Bryophytes *Syntrichia laevipila*, *Cryphaea heteromalla* and *Orthotrichum pulchellum* are recorded notable species, and whilst not protected under the Wildlife and Countryside Act, are recognised as scarce or rare at County level. No mitigation is proposed to counter the complete destruction of the two former species, even though it clearly contradicts Regional Spatial Strategy requirements that there is no net loss of resource.

9.3 Comments regarding the Ormskirk bypass suggest that the two prime species concerned are increasing, but this is not shown in Lancaster district, where the single record of *Syntrichia* would be removed completely. With ADAS commentary already pointing out that one previous site has already disappeared, only 4 recorded sites remain in the county.

9.4 *Syntrichia laevipila* is listed under species Guideline Br3 in the Biological Heritage Sites Guidelines for Site Selection 1998, where "species recorded at more than 3 sites, but which could be at risk because of small populations, recent rapid decline, or habitat loss or change is eligible as a Biological Heritage Site". Negative impacts fail to be addressed.

9.5 LCC comments about favourable chances of colonisation in the Lancaster area are very speculative. The potential for species to expand when the base population in a district is destroyed has no logical basis. Similarly, suggestions that Biological Heritage status may be reviewed is misleading because ADAS and LCC then speculate wildly about future colonisation by mosses and lichens without any evidence this would be so.

10.0 Birds

10.1 All wild birds are protected at various levels to some degree, but some are afforded special protection. Species recorded along the route with National or Local BAP status include Lapwing, Skylark, Linnet, Song Thrush and Bullfinch. Hawfinch is included in Schedule 1 of the Wildlife and Countryside Act 1981, and Kingfisher receives added European Protected status under the Birds Directive 1979.

10.2 If the construction work of the proposed road takes place during the nesting season, usually between March to August inclusive, there will be a risk of damage to birds and their nests. This is particularly important if removing vegetation, such as hedgerows, trees or other scrub, during this time. Damaging a bird's nest or its contents whilst the nest is occupied or being built is an offence under the Wildlife and Countryside Act (1981).

11.0 River Lune

11.1 Pillars will intrude into the bed of the river with disruption to Salmon and Crayfish from a change to flow pattern and riverbed erosion. Holding ponds for the salmon, and siltation beds for the crayfish will be especially vulnerable. Salmon are protected species under Annex II(a) and Annex V(a) of the EC Habitats Directive (92/43/EEC). ADAS suggests effects are of "major to critical" importance on one of the top 5 sporting rivers in the UK.

11.2 This issue is contradictory to LDLP and Local Development Framework Development Control Policy statements. Of particular concern are policies E7 relating to Water Resources, E8 relating to Groundwater, E11 relating to Areas of Flood Risk and E18 relating to Protected Species. Each Policy Statements is compromised to varying degrees of significance.

11.3 The Environment Agency specifically highlighted potential for damage to the riverbank, caused by poor design and intrusion, supported by comment from Sarah Manchester, who provided Ecological Response from Specialist Advisory Services. That says: "**... as much bank-side habitat should be retained as possible to maintain habitat connectivity along the river banks and beneath the bridge**".

11.4 Rather than producing scour, the new pier design directly destroys actual bank on both sides of the Lune. Figure 4.5.1.1 in Section 2 of the Revised Planning Application documents shows that it will extend for almost 33 metres along the bank and intrude into it by 6.5 metres excluding bank protection work. The coffer-dam will intrude significantly beyond that.

11.5 EA stated that removal of their objections was dependent on no piers being in the watercourse, but this has not been achieved by the redesign. Final design choice is for three individual columns, which is noted as having the least hydrodynamic efficiency (Revised Planning Application Report. Lune Bridge. Second Paragraph.) The disturbance of flow around columns will be accentuated with higher winter water levels and other flood events.

11.7 Volume 3 Part A of the Planning Application contains the ADAS Fisheries Environmental Impact Study, recognises that construction impacts may release silts into the water, stir up sediment that could smother the fluvial reaches and have a de-oxygenating affect. It also notes that vibration damage resulting from piling for bridge construction has been recorded at Carquinez Straits in San Francisco Bay, California resulting from the use of hydraulic hammers. A study by the Department of Fish and Game discovered that salmon were being killed up to half a mile from the site.

11.8 Construction times for the Lune Bridge were expected to be:

Granular Fill causeways as working platforms - 1 month
Coffer dams of steel sheet piling driven through the causeway - 1 month
Concrete piers built within coffer dams, deck construction - 8 months
Surfacing and finishing works, causeway removal - 2 months

ADAS comments regarding the construction phase conclude: "***The total time for construction would be 12 months with "in river" works time being 11 months. It follows that sheet piling driving and extraction will be taking place during the majority of the salmonid migratory periods***".

11.9 Long term impacts would include pollution from road salt during the winter periods with possible fish mortalities. Motor vehicle accidents could release oil and other pollutants with potentially devastating results. Stream diversions and culverts could obstruct local migrations of fish seeking refuge or feeding, spawning or nursery areas. These impacts would have significant adverse effects on a European protected species.

12.0 River Ecology

12.1 River Corridor Surveys reveal that although there are no nationally important species, 3 of the vascular plants recorded are found in the Lancashire Red Data List. Impacts are primarily concentrated at the Lune crossing. ADAS River Habitat Surveys place the Lune in a high classification. The 3 plants of note were Bee Orchid, Marsh Speedwell and Bog Pimpernel. Nine other species are defined as Notable or Uncommon with direct removal of habitat creating major negative impacts of permanent significance.

12.3 The construction and operation phases have a strong potential to severely compromise the "Good" water quality classification of Howgill Brook, Long Bank Brook, Cote Beck and ultimately the River Lune. Despite the very high importance allocated to the River Lune there is a subjective assessment of impacts as only slightly adverse. This subjective assessment appears to be in direct contrast to the ADAS Fisheries Study, which highlights the dramatic long-term impacts.

12.4 LCC's own Specialist Advisory Service Ecological Response gives greater emphasis to investigating such impacts. The advice given is for much more detailed surveys of the site including the species composition, biology and ecology, and hydrology before developing the final approach to the issue. The response to objections merely states that there is no statutory designation associated with these Principal Habitats and Species.

12.5 PPS9 (Paragraph 12), concerned with networks of natural habitats, states that Local Authorities "***should aim to maintain networks by avoiding fragmentation and isolation of natural habitats***". EA concerns regarding destruction of riverbank are not addressed by placing the bridge piers on the very riverbanks that are corridor habitats for wildlife.

13.0 Lune Lighting

- 13.1 The Lighting Assessment provided in Section 6.1 of the Response to Objections and Comments has actually verified EA concerns rather than allayed them. The adverse effects of artificial lighting on plant and animal diurnal rhythms that were being anticipated are fully supported by the investigations. The response therefore does not address this aspect of the EA requirements and actually exacerbates fears expressed.
- 13.2 Street lighting calculations show that there will be significant light pollution across the environmentally sensitive river area. This crucial element was clearly identified in the Lighting Assessment but offered no mitigation measures. The Revised Planning Application Report concludes that the only feasible way to reduce lighting spillage on the river surface is to have no lighting at all. On safety grounds, the proposal then adopts Option 1, which is exactly the opposite and produces intense lighting spillage with no mitigation.
- 13.3 The option to provide limited light for pedestrians and cyclists (Option 10), which has no spillage to the eastern side and low spillage to the west, is ignored. This contradicts the EA "Agency Informatives", which state: ***"The developers should prepare a scheme for the artificial lighting of the bridge across the Lune and this lighting should be designed so that it will have the minimum possible impact on the watercourse"***.

14.0 Management Plans

- 14.1 LCC response to the Specialist Advisor comments regarding Management Plans is constrained to saying that the environmental management plan is a working document, expected to be ***"reviewed and updated as the project proceeds"***. Questions then arise about how reviews would take place, and by whom, with what critical appraisal, and how they (and any management plans) are accommodated in the financial budgeting of the scheme.
- 14.2 The Specialist Advisor submitted comment and objection on 23 individual Management Plan points of concern. By responding in a dismissive manner that suggests future reviews will be sufficient, LCC Highways show how they are continuing to go against both expert advice and guidelines at national, regional and district level. All of these points merit more detailed appraisal before any further progression of the scheme.
- 14.3 Principal causes for concern are that there is insufficient attempt to provide adequate environmental replacement or compensation in many areas. Suggestions for poorly researched compensatory measures (such as with fungi meadows, bryophytes and Howgill Brook) and missing background data (hydrological surveys) cannot be considered adequate compensation for the scale of environmental impacts indicated.

15.0 Conclusions

15.1 The conclusions that can be drawn from this assessment of biodiversity impacts from the proposed scheme are:

- a) Veteran trees suffer significant permanent loss.
- b) Protected hedgerows will be removed, losing key habitats
- c) Affected fungi include a species of Principal Importance.
- d) Loss of open water channel is contrary to RSS requirements.
- e) Bats have severely affected linear access to feeding grounds.
- f) Great Crested Newt surveys fail to apply the methods advocated.
- g) Bryophytes recognised as scarce or rare suffer complete destruction.
- h) Bridge pillar construction will disrupt holding ponds for Salmon.
- i) Lancashire Red Data List plants in 3 sites would be directly affected.
- j) The option to provide limited light spillage is ignored.
- k) Species protected under the Habitats Directive 1992 are affected.
- l) PPS 9 guidance for biodiversity is contravened.
- m) RSS, JLSP and LDLP environmental policy is contradicted.

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