



A5 Western Transport Corridor (A5 WTC)

Appendix TNI – Theme Report: Design Hierarchy

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1. The processes for design development and environmental impact assessment within the Design Manual for Roads and Bridges (DMRB) and the associated best practice guidance establish various hierarchies within disciplines by which constraints can be quantified. For example in considering ecological sites (Environmental Statement para 11.4.7) states:-

Each of the identified sites, habitat types and associated species / populations has been attributed a value reflecting their geographic significance as indicated below:

- International e.g. biodiversity feature that warrants designation of an area as a SPA, SAC or Ramsar site;
 - National (i.e. Northern Ireland), e.g. biodiversity feature that warrants designation of an area as an Area of Special Scientific Interest (ASSI);
 - County, e.g. biodiversity features valuable at a county (e.g. County Tyrone) level;
 - District, e.g. biodiversity features of value at the district (e.g. Omagh) level;
 - Local, e.g. biodiversity features of value in a local (i.e. within ~2km of the scheme extent) context; and
 - Biodiversity features of value within the immediate vicinity of the Proposed Scheme only.
2. Internationally designated sites are designated as the highest level of constraint (ideally to be avoided) followed by the national level with the lowest level of constraint being those in the immediate vicinity of the corridor, route option or proposed scheme depending on the stage of the assessment.
 3. Similar hierarchies apply to all disciplines in categorising the constraints and how they should be recognised and the assessment process takes these into account in establishing the importance of constraints during all stages of the process; whether at route corridor, route option or preferred route/proposed scheme stage.
 4. The various discipline constraints are generally geographically located and when considering the route selection process, different discipline constraints are affected depending on the location of the corridor/route. As such, two or more high level constraints may be affected and the resultant decision or choice of route will also take into account the legislative requirements for mitigating impacts. An example of this is at Newtown Stewart where the Proposed Scheme passes close to Harry Avery's Castle because the SAC status of the Strule River carries a higher protection status under the legislation.

Corridor Development in Preliminary Options Report (Sept 2008)

5. During the early stages the high level constraints were identified for all disciplines as appropriate for the scheme. A number of the major constraints identified and against which the corridor links were assessed during the evaluation process included:
 - International and national nature conservation designations. Unacceptable environmental impact.
 - Requirements for extensive property demolition. Unacceptable social impact and land cost
 - Areas of very high / steep ground. Unfeasible alignment and earthwork.
 - Areas of extensive peat. Very expensive to engineer and unacceptable ecological impact.
 - Areas of nationally designated landscapes. Unacceptable environmental impact.
 - Major impact upon river flood plain. Unacceptable flooding impact.
 - Major impact on sites with cultural heritage value. Unacceptable environmental impact

Preferred Route Stage

6. The development of the preferred corridor took account of these and other constraints. However as the route options were developed within the preferred corridor, the high level aims of the project became of greater importance and were additional criteria against which route options were evaluated. These aims are recorded in the Preferred Option Report (Stage 2 Scheme Assessment Report) and summarised in evidence given at the public inquiries in 2011.

7. Paragraph 5.20 from the Submission on Scheme Development up to Publication of Draft Orders (Ref: 718736-0000-R-021) states:-

5.20 Other specific aims and considerations when developing routes include:

- Connectivity to future A5/A6 Link;
- Connectivity to the main towns and communities including Strabane, Sion Mills, Newtownstewart, Omagh, Fintona, Ballygawley and Aughnacloy;
- Consideration of links to the N14 and N15 in County Donegal;
- Consideration of links to the N2 in County Monaghan;
- Consideration of the local road network required as roads are crossed by the route options;
- Minimization of loss of residential and commercial properties and community facilities;
- Avoidance, where possible of significant statutory undertakers' apparatus; and
- Avoidance of key Environmental constraints

8. When these were taken into consideration, a number of options clearly did not meet these aims despite avoiding all the high level constraints and these were not taken forward through the process.

Summary

9. The natural and human environments contain numerous constraints and without a design hierarchy decision making would be extremely difficult and time consuming. The use of a design hierarchy enables the time available to be focussed on addressing the possible effects on the higher category and more sensitive constraints; providing better value for money whilst maintaining high levels of protection to those sites which are highly sensitive to traffic related impacts.
10. It does not mean that constraints are totally protected either and some direct impacts are unavoidable at certain locations when constraints are clustered together.