Introduction

“Population” is the first aspect of the environment listed in Schedule 4, Part 1(3) of the 2011 EIA Regulations. However, the Human Population chapter of Environmental Statements can often be limited to a summary of other impacts that also relate to humans, e.g. visual amenity, traffic & transport, but without a clear approach to assessing the significance on human beings in their own right.

A lack of clarity over what is being assessed can lead to confusion about the difference between, for example, assessing effects on operation of the transport network and assessing effects on human beings who live or work near to affected roads. It can also result in repetition and apparent inconsistency between ES chapters.

More importantly, a lack of clarity over how the assessment is carried out can mean that a key component of an EIA – to identify which effects could be significant and therefore need mitigating – is not carried out effectively. This means the significance of effects may either be exaggerated or down-played if the assessment is not based on a clear, objective approach.

This article uses the Environment Agency’s Northwich Town Centre Flood Risk Management Scheme as a case study of how a clear and objective Human Population effects assessment can be carried out.

Human Population and flood defence schemes

Flood Risk Management Schemes (FRMS) are designed to provide a benefit to the local population. However, FRMS are often within urban areas where construction work and the presence of flood defences can be intrusive. In addition, a river corridor through an urban area can provide an important community resource.

Receptors and receptor sensitivity

Defining receptors is an important stage in being able to identify potentially significant effects. A balance is needed between defining receptors as single points (e.g. single properties) which can lead to underestimation of total effects, and grouping too many together which can lead to individual sensitivities being missed.

For the Northwich Town Centre FRMS, receptors were grouped into four categories: residential areas; commercial areas; community facilities (e.g. medical centre); and, informal recreation areas (e.g. open space and paths). Individual receptors were identified, assigned a category, and marked on a map (see extract). This allowed effects on key elements of the human population baseline environment to be considered at the whole scheme level, whilst allowing the characteristics of individual receptors to be taken into account.

Although all human beings can be considered ‘sensitive’, for EIA an objective approach is needed to identify members of a population, and facilities used by a community, that are particularly sensitive. As an example, for the Northwich FRMS the sensitivity of residential areas was defined based on Census data, specifically the Index of Multiple Deprivation (IMD) and the proportion of vulnerable residents (elderly residents and residents with long-term health problems). Residential areas within a Lower Super Output Area (LSOA) that is amongst the 10% most deprived in England by rank, according to the IMD, were considered to be of ‘high’ sensitivity. Residential areas within a LSOA that is amongst the 10% to 20% most deprived in England by rank, and/or are within a LSOA that has over 20% vulnerable residents, were considered as ‘moderate’ sensitivity. This approach assumes that communities within LSOAs that are amongst the 20% most deprived in England are more sensitive to temporary and permanent changes than other communities.
Residents may be more susceptible to the effects of noise, dust, visual disturbance and changes to access during construction as they are more likely to be at home during the day. They are also more likely to have access, mobility or resource limitations that could affect their ability to cope with the stress of disturbance.

**Magnitude and significance**

Quantitative definitions of magnitude were also made. These were based on the number of properties, or the proportion of a particular type of amenity, affected by the scheme. Overall, this meant that for the Northwich Town Centre FRMS the assessment of significance (a combination of sensitivity and magnitude) was based on a clear and objective method, and that the findings of the assessment are auditable and can be readily justified. It also allows mitigation at the detailed design and construction stages to focus on the most vulnerable communities and most important facilities in order to minimise the impacts of delivering the scheme.

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