

**39.1 INTRODUCTION**

39.1.1 This chapter addresses the potential impacts on air quality and the methods used to assess these impacts, which are specific to the Compensation Site. The air quality baseline of the Humber Estuary is covered in *Chapter 17*.

39.1.2 The construction of the Compensation Site has the potential to result in impacts on air quality to sensitive human or ecological receptors. The key issues relating to air quality are construction dust and road traffic.

39.1.3 Cumulative impacts on air quality associated with the project as a whole are discussed in *Chapter 17*.

**39.2 LEGISLATION, POLICY AND GUIDANCE**

39.2.1 The majority of legislation, policy and guidance on air quality is common to both the AMEP and the Compensation Site and is covered in *Chapter 17*. There are no specific plans or policies with respect to air quality within the ERYC Local Plan.

**39.3 ASSESSMENT METHODOLOGY AND CRITERIA**

*Overview*

*Construction Phase*

39.3.1 Impacts on air quality at the Compensation Site will be limited to the use of mobile and non-mobile machinery on site during the construction phase. Thus any impact will be temporary in nature; limited to the duration of the construction activity. Therefore, this assessment of effects on air quality as a result of the development of the Compensation Site does not include air dispersion modelling but will instead be determined qualitatively based upon the sensitivity of the local air quality and the likely scale of plant and vehicle movements.

39.3.2 Impacts from dust arising through construction have been assessed qualitatively through a risk evaluation matrix as for the AMEP Site. The impact of emissions from the exhausts of the construction traffic to air quality along roadsides near the site has been addressed in the same manner as for the AMEP site, using the DMRB screening methodology.

39.3.3 For the purposes of this assessment, it has been assumed that all plant and equipment utilised for construction of the Compensation Site will comply with the relevant legislation and standards relating to air emissions. For example, the *Road Vehicles (Construction and Use) Regulations, 1986, as amended*, sets strict exhaust standards for the release of pollutants such as carbon monoxide, hydrocarbons, nitrogen oxides, carbon dioxide and particulates. The impact assessment uses indicative construction methodologies and experience from similar projects.

#### *Operational Phase*

39.3.4 Once construction works are complete, it is anticipated that the Compensation Site will have no impact on air quality. Therefore the impacts from operation of the site on air quality will not be considered as part of the assessment.

#### *Sensitive Receptors*

39.3.5 The sensitive receptors to any changes in air quality are local residents, recreational users of the public rights of way and ecological receptors including local wildlife, birds and vegetation.

#### *Significance Criteria*

39.3.6 Given the limited scale of anticipated air quality impacts for the Compensation Site, no specific significance criteria have been developed. Instead, significance of impacts will be determined using the general significance assessment method outlined in *Chapter 2*.

### **39.4**      **CONSULTATION**

39.4.1 No comments have been received from consultees in relation to air quality at the Compensation Site.

39.4.2 A meeting was held with ERYC on 17 November 2010 to discuss the general impacts of the Compensation Site, including issues associated with air quality during construction.

### **39.5**      **BASELINE**

39.5.1 Cherry Cobb Sands and the area at Old Little Humber Farm are situated on the north side of the Humber in a rural area dominated by agriculture with only a few scattered residential properties. These properties are the primary receptors, along with the users of the

footpath that runs along the crest of the flood embankment adjacent to the proposed intertidal site at Cherry Cobb Sands. Directly across the estuary lies the heavily industrialised south bank, where the AMEP will be situated. Existing factors influencing air quality in the area include emissions from power stations and other industries on the south bank as well as vessel movements in the estuary.

39.5.2 ERYC has not designated any AQMAs; however it does monitor air quality throughout the district. The Council operates six automatic air quality monitoring stations in urban areas and on kerbsides and the closest of these to the Compensation Site is at Preston, approximately 8km from Cherry Cobb Sands Road (ERYC, 2010).

39.5.3 In the East Riding of Yorkshire, it is predicted that the objectives set out in the National Air Quality Strategy will be met (ERYC, 2010).

## **39.6 IMPACTS**

### ***Construction Phase***

39.6.1 This section considers the potential for air quality impacts on local residents and recreational users of public rights of way from construction of the intertidal site at Cherry Cobb Sands. Impacts associated with works at Old Little Humber Farm are discussed at the end of this section. Air quality impacts arising from construction on ecological receptors including local wildlife, birds and vegetation are addressed in *Chapter 35*.

39.6.2 Construction plant and material transportation vehicles have the potential to impact on air quality at receptors in close proximity to roads used to access the Compensation Site. The key pollutants of interest will be NO<sub>2</sub> and PM<sub>10</sub>. The number of plant on site at Cherry Cobb Sands will be approximately 17 including excavators and dump trucks. Material deliveries will be made by 38 tonne HGVs and it is predicted that there will be an average of six deliveries a day over a six month period. Given the small number of plant and deliveries and the open area where plant will be working the impact on air quality from vehicle emissions is assessed as being negligible.

39.6.3 Changes to air quality from emissions may impact sensitive receptors including local residents located on Cherry Cobb Sands Road approximately 100 m from the site boundary, and recreational users of the diverted public right of way. The impacts will be experienced throughout the construction period of approximately six months, and

then the air quality will no longer be affected by emissions from construction plant and material transportation vehicles. This temporary impact has therefore been assessed as minor negative effect.

39.6.4 Nuisance caused by dust emissions can arise from general construction activities including the stripping and levelling of ground, stockpiling of materials, movement of vehicles over exposed ground and the mixing of lime into the soil. There is also the potential for dust resulting from wind erosion of exposed soil or stockpiles, such as may arise following excavation works.

39.6.5 The nature of dust generating activities and the prevailing weather conditions will determine the scale of any dust impacts. Typically dust emissions are negligible when precipitation is greater than 0.2 mm/hour and will depend on the frequency and direction of wind speed (MPS2, 2005). The soils within the Compensation Site have a high moisture content, which has necessitated the requirement for lime in order to make the soil suitable for construction of the new embankment. Therefore the potential for dust generation is low, although there is still the potential for impacts on receptors during periods of particularly warm, dry weather and during the mixing of the lime, which may be dispersed in the wind.

39.6.6 In dry and windy conditions, concerns about dust impacts are most likely to be experienced within 100 m of the source; although receptors, such as local residents, can under certain conditions be affected by dust up to 1 km from the source. The properties on Cherry Cobb Sands Road, including Fair View, Sands House, Sands Farm and Stone Creek House are all within 1 km of the site. The assessment of impacts is based on *Chapter 17, Table 17.1*. As the duration of the dust generating activity will be less than six months, the activities at each location will only last for a small proportion of the construction period and the distance from the majority of properties is over 50 m, dust will have a minor significant impact on local residents.

39.6.7 Site deliveries, for example of plant and imported lime, will be made by road. As a result there is also a risk of dust from materials being transported within delivery vehicles, as well as dusty materials that may become affixed to the wheels of vehicles before leaving the site.

#### ***Old Little Humber Farm***

39.6.8 The works at Old Little Humber Farm to create wet grassland are anticipated to last approximately two months. As the duration of the dust generating activity will only be for two months, but in each part of

the site for only a small proportion of this time and only one property, Little Humber Cottage, is within 50 m of the proposed works, dust will have only a minor significant impact on local residents.

39.6.9 Construction vehicle movements will be relatively limited at Old Little Humber Farm in comparison to those at the Cherry Cobb Sands site. Dust from vehicle movements is therefore unlikely to pose a risk to local residents.

### **39.7** *CUMULATIVE IMPACTS*

39.7.1 The Humber Gateway onshore cable route runs from east to west to the north of Cherry Cobb Sands (approximately 1 km north at its closest point) and through the proposed wet grassland site at Old Little Humber Farm. No date has been set for construction of the Humber Gateway scheme, but if the cable route is to be constructed at the same time as the intertidal site at Cherry Cobb Sands there may be cumulative minor significant impacts of dust emissions from delivery vehicles for both schemes using similar local roads.

39.7.2 There are no other proposed developments in proximity to Cherry Cobb Sands or Old Little Humber Farm that have the potential to cause cumulative impacts upon air quality during either construction or operation of the Compensation Site.

### **39.8** *MITIGATION MEASURES*

#### *Construction Phase*

39.8.1 In order to prevent any impacts from dust and vehicle emissions during the construction activities, the following measures are recommended.

39.8.2 Best practice measures will be employed during construction in accordance with guidance provided by CIRIA (2010) and the Environment Agency (2010) in order to minimise the impacts of dust on sensitive receptors; this will include the following:

- All vehicles used for the works will be kept in a well-maintained and serviced state and comply with emissions standards at all times;
- Engines will be switched-off when not in use, for example during unloading;

- A high level of housekeeping will be maintained at the construction site;
- Mixing of the lime with the soil should be avoided in particularly windy conditions; and
- During periods of particularly warm, dry weather dust suppression through damping down with water will be used where appropriate. Care will be taken to ensure that no excess surface water is generated, in order to minimise risk of mobilising dust and mud.

When working with the lime, the following measures must be carried out to limit the release of lime into the environment:

- Careful choice of storage systems / area;
- The connection of the silos' air vents to filters must be maintained in good condition;
- The spreading of lime must be avoided in strong winds; and
- The lime spreading machines must be fitted with dust valances.

## **39.9**      *RESIDUAL IMPACTS*

### *Construction Phase*

- 39.9.1      Providing that the above mitigation measures are adhered to throughout the construction process, the temporary impact of localised reduction in air quality during construction and material transportation will be reduced to negligible significance.