



## Ch 5

Environmental issues  
and methodology

## 5 Environmental issues and methodology

### Introduction

5.1 This chapter explains the identification of the environmental issues considered and outlines the overall approach taken to the EIA. Specific methodologies for each of the specialist studies are given in the relevant topic chapters.

### The scope of the EIA

5.2 Scoping is the identification of the range of significant issues likely to arise as a result of the proposed development. Scoping also ensures that significant issues are addressed in detail, while those of lesser relevance are considered accordingly. This is an important exercise, undertaken at an early stage of the EIA process, which allows effort to be concentrated on significant issues and avoids unnecessarily complicated examination of minor ones.

5.3 Terence O'Rourke Ltd undertook an informal scoping exercise and produced an EIA scoping report in February 2019. This document provided a summary of the proposals, identified the potential main environmental effects to be addressed within the EIA and scoped out issues that did not require consideration.

5.4 The following factors influenced the breadth of the scoping exercise, and so the EIA:

- The scale and nature of the project
- The physical characteristics of the proposals
- Application site characteristics
- Neighbouring land uses
- Environmental designations

5.5 A copy of the EIA scoping report can be found in technical appendix A.

### Summary of the key issues identified during scoping

5.6 A summary of the key issues identified during the scoping process is provided in table 5.1. and these are set out in full in technical appendix A.

Topic	Key issues identified in the scoping report	Document
Air quality and climate*	<ul style="list-style-type: none"> <li>• Increased road traffic emissions during construction</li> <li>• Potential change in emissions from process plant</li> </ul>	<ul style="list-style-type: none"> <li>• Covered in chapter 6 of this ES</li> </ul>
Community and social effects	<ul style="list-style-type: none"> <li>• Effects on health post-construction</li> </ul>	<ul style="list-style-type: none"> <li>• Covered in chapter 7 of this ES</li> </ul>
Cultural heritage	<ul style="list-style-type: none"> <li>• Impact on archaeological remains on site during construction</li> <li>• Change to settings of listed buildings in the vicinity of the site during and post-construction</li> <li>• Change to settings of the conservation area in the vicinity of the site during and post-construction</li> </ul>	<ul style="list-style-type: none"> <li>• Covered in chapter 8 of this ES</li> </ul>

Topic	Key issues identified in the scoping report	Document
	<ul style="list-style-type: none"> <li>• Change to the site's historic landscape character</li> <li>• Impact on Richings Park during and post-construction</li> </ul>	
Ground conditions	<ul style="list-style-type: none"> <li>• Potential for human health effects from contact with contaminants during construction</li> <li>• Potential for human health effects from contact with ground gases post-construction</li> <li>• Potential for mobilisation of existing contaminants into the water environment during construction</li> <li>• Generation of contaminated waste during site preparation / construction</li> </ul>	<ul style="list-style-type: none"> <li>• Covered in chapter 9 of this ES (with the water environment)</li> </ul>
Land use and land take	<ul style="list-style-type: none"> <li>• It is proposed that land use and land take are not scoped into the EIA</li> </ul>	<ul style="list-style-type: none"> <li>• A planning supporting statement covering land use is submitted as part of the application suite of documents</li> </ul>
Landscape, townscape and visual effects	<ul style="list-style-type: none"> <li>• Change to site topography</li> <li>• Change to land cover of the site</li> <li>• Change to landscape / townscape character of the site</li> <li>• Effects on protected landscapes / townscapes</li> <li>• Change to sensitive views</li> </ul>	<ul style="list-style-type: none"> <li>• Covered in chapter 10 of this ES</li> </ul>
Major accidents / disasters	<ul style="list-style-type: none"> <li>• It is proposed that major accidents / disasters are not scoped into the EIA</li> </ul>	<ul style="list-style-type: none"> <li>• A safety case prepared by Heathrow Airport Limited was submitted to the CAA for final approval in April</li> </ul>
Natural heritage	<ul style="list-style-type: none"> <li>• Loss of existing habitats during construction and limited potential for creation of new habitat post-construction</li> <li>• Effects on protected and notable species from habitat loss, habitat fragmentation, and disturbance during construction</li> <li>• Effects on protected and priority species from habitat loss and disturbance post-construction</li> </ul>	<ul style="list-style-type: none"> <li>• Covered in chapter 11 of this ES</li> </ul>
Noise and vibration	<ul style="list-style-type: none"> <li>• It is proposed that noise and vibration are not scoped into the EIA</li> </ul>	<ul style="list-style-type: none"> <li>• A noise assessment is submitted as part of the application suite of documents</li> </ul>
Traffic and transport	<ul style="list-style-type: none"> <li>• It is proposed that traffic and transport are not scoped into the EIA</li> </ul>	<ul style="list-style-type: none"> <li>• A transport assessment is submitted as part of the application suite of documents</li> </ul>
Waste and natural resources	<ul style="list-style-type: none"> <li>• It is proposed that waste and natural resources are not scoped into the EIA</li> </ul>	<ul style="list-style-type: none"> <li>• While waste and natural resources are not considered specifically, they are indirectly addressed in the ground conditions and water environment chapter, the natural heritage chapter and the outline construction environment management plan</li> </ul>
Water environment	<ul style="list-style-type: none"> <li>• Pollution of surface water during and post-construction</li> <li>• Pollution of groundwater during and post-construction</li> <li>• Change in surface water hydrology during and post-construction</li> </ul>	<ul style="list-style-type: none"> <li>• Covered in chapter 9 of this ES (with ground conditions)</li> </ul>

Topic	Key issues identified in the scoping report	Document
	<ul style="list-style-type: none"> <li>• Change in groundwater hydrology / recharge during and post-construction</li> <li>• Increased surface water runoff post-construction and associated increase in flood risk</li> </ul>	

**Table 5.1: Key issues identified during scoping**

\*Note that while climate is not considered in a separate ES chapter, information on measures to reduce the proposed development's greenhouse gas emissions and minimise its vulnerability to climate change is provided in chapter 3 and the effect of climate change on flood risk is addressed in chapter 9.

## Assessment methodology

### Introduction

- 5.7 An environmental effect is an alteration, positive or negative, to some aspect of the environment that occurs as a result of a proposed development. It is essential that the EIA methodology is comprehensive and focused. It must predict and measure the degree of effect and identify mitigation requirements. The method used should be objective, consistent and adaptable, and as free from analytical bias as possible.
- 5.8 It is important that the assessment methodology distinguishes between the sensitivity of the receptors and the type and size of the change that will affect them, either directly or indirectly. It is also important that the ES is clear and effective in communicating the results of the assessment to the determining planning authority, the general public and professionals involved with appraising the development proposals.

### Guidance and best practice

- 5.9 The methodologies used for the assessment of specific issues are discussed in the relevant chapters of this ES. Where appropriate, use has been made of published guidance and information on best practice, and the Ministry of Housing, Communities and Local Government's (MHCLG) web-based National Planning Practice Guidance: *Environmental Impact Assessment* (updated 2017). The guidance has been considered in conjunction with the EIA Regulations.

### Difficulties in compiling information

- 5.10 The EIA Regulations require that the ES should include an indication of any difficulties (technical deficiencies or lack of knowledge) encountered by the applicant in compiling the required information, together with the main uncertainties involved. Where such difficulties and uncertainties have been experienced, they are discussed in the relevant ES topic chapters and / or technical appendices.

### Assessment scenarios

- 5.11 The EIA considers a number of development phases, as set out below:

#### *Site preparation and construction phase*

- 5.12 Site preparation and construction of the replacement EfW and HTI facilities, including construction and use of the new access road off the A4, will take up to

three years and for the purposes of the assessment is assumed to take place between early 2020 to the end of 2022. During this time operations at the existing Lakeside Road EfW and HTI will continue as they are (and form part of the existing baseline).

*Replacement EfW and HTI commissioning phase*

- 5.13 The commissioning of the new replacement EfW and HTI facilities is estimated to take up to 12 months and will take place from the end of 2022 to the end of 2023. During this period, one line on the existing plant at Lakeside Road will be shut down while one line of the replacement facilities is commissioned, then the operations switch over, so the second line of the existing plant is shut down and the second line of the replacement facility is commissioned. Only two lines (out of the total four) will be running simultaneously. Commissioning of each new line will require running it to its maximum capacity for a specified period; however, it is important to note that in total no additional waste will be processed in excess of that currently being processed in the existing EfW and there will be no overall increase in operational waste vehicle movements. While in reality the amount of waste diverted to the replacement facilities during commissioning of each line will gradually increase and be dependent upon how the commissioning is going, for the purposes of the assessment, it is assumed from day one that this will be 50% of the existing waste tonnage and therefore 50% of the total existing vehicle movements.

*Operational phase – Scenario 1: Heathrow expansion approved without delay*

- 5.14 In the event that HAL's expansion proposals proceed without delay, the replacement EfW and HTI facilities will continue operating and all waste will be processed at this site and all vehicle movements will be to this site. This phase is assumed to run from the end of 2023. HAL will be responsible for the demolition of the existing Lakeside Road facilities and any impacts associated with this will be addressed within their EIA.

*Operational phase - Scenario 2: Heathrow expansion approved following a delay*

- 5.15 In the event that there is a delay to the determination of the HAL expansion proposals, the replacement EfW / HTI facilities will be 'switched off' / temporarily decommissioned and all waste will be processed at the existing Lakeside Road facilities and all vehicle movements will be to this site. This phase is assumed to run from the end of 2023 to the point when a decision is made on the HAL expansion. Assuming the HAL expansion proposals are eventually approved by the Secretary of State (SoS) / Planning Inspectorate (PINS) and the replacement facilities are re-commissioned, the re-commissioning will take up to six months and both lines will be re-commissioned at the same time using waste diverted from the existing EfW and HTI facilities (i.e. no additional waste will be brought to the site). By the time re-commissioning is complete, all waste processing and all vehicle movements will have transferred to the replacement site.

*Operational phase – Scenario 3: Heathrow expansion refused following a delay*

- 5.16 In the event that the HAL expansion proposal is refused by the SoS / PINS following a similar delay as assumed above, the replacement facilities will require demolition and the site will be reinstated to rough grazing land. All waste

deliveries will continue to go to the existing Lakeside Road facility. For the purposes of the assessment, the number of vehicle movements estimated for the site preparation and construction phase has been assumed to apply to the demolition and site reinstatement phase as well.

- 5.17 For the purposes of assessment, operational phase scenarios 2 and 3 will assume that a decision is made on the HAL expansion proposals in 2025. This is a subjectively selected year, based on two years following completion of commissioning activities at the end of 2023. The Development Consent Order (DCO) process has strict limits on timescales for key elements of the process, such as the PINS acceptance of the application once made (maximum 28 days) examination (maximum 6 months) PINS report issue (maximum 3 months after examination close) and SoS decision (maximum 3 months after PINS report). There is also a 6-week judicial review period after the decision is issued.
- 5.18 Possible time variables are therefore the date of HAL's submission to PINS and the timescale for pre-examination representations (no statutory timescale, but PINS states a typical period of 3 months). The whole process from submission to decision could be concluded within 18 months. However, whilst it is possible that HAL may submit their DCO application in 2020, this could be later. It is also possible that the pre-examination period may be extended, or that the examination may reveal the need for further environmental information that could delay the decision beyond the statutory period. Evidence from other DCO projects indicates that it is possible for timescales to slip beyond the set programme. We have therefore had to make an estimate of what could be a reasonable total delay period to the DCO process and have elected to assume a two-year period.
- 5.19 It is important to note that not all the environmental topics will need to consider all of the aforementioned scenarios. Each topic chapter will set out what has been considered and, where appropriate, justification for what has not been included.

#### *Connection to the National Grid*

- 5.20 The replacement EfW and HTI facilities will export the majority of the power generated to the National Grid. The local distribution network operator will be responsible for connecting the EfW to the National Grid. It will be responsible for obtaining any permissions or permits required to develop the necessary connection infrastructure. As such the planning application boundary does not include the grid connection route from the replacement EfW and HTI site to the substation. However, consideration of the potential effects resulting from the construction of the connecting cablework have been considered in this ES (no effects are considered to arise during operation as the cables will be underground).
- 5.21 The existing Lakeside Road EfW currently connects to the Longford substation, which is approximately 630m to the south east of the existing site, off Galleymead Road. As this substation is situated in an area required for the expansion of Heathrow Airport, a new substation is likely to be provided in a similar area, near the edge of the airport's extended boundary. For the purposes of this assessment it is assumed that initially a cable route will run from the proposed replacement EfW and HTI site along the new access road to the A4

Colnbrook bypass, route eastwards along the A4 and connect to the existing high voltage substation at the existing Lakeside Road facilities, which already connect to the Longford substation. It is then assumed that when the new substation is constructed, new connecting cables will be laid from the A4, within existing or proposed new road / road verges, to the new substation.

### ***Determining the significance of effects***

- 5.22 The evaluation of effect significance is fundamental to the EIA process. The degree of an effect determines the resources that should be deployed in avoiding or mitigating an adverse effect and identifies the actual value of a beneficial effect. As far as possible, standard words have been used to define degrees of effect (i.e. 'very substantial', 'substantial', 'moderate', 'slight' and 'negligible'), but not so rigorously as to stifle flexibility or particular individual requirements.
- 5.23 The degree of an effect is determined by the interaction of two factors: the magnitude, scale or severity of the impact or change, and the value, importance or sensitivity of the environmental resource being affected. This is then used to determine whether an effect is significant. If the degree of effect is moderate or above (including slight to moderate effects, as these contain elements of both slight and moderate and are therefore considered to be significant on a precautionary basis), then the effect is considered to be significant in EIA terms. Slight or negligible effects are not considered to be significant for the purposes of the EIA.
- 5.24 Sensitivity and magnitude categories have been developed for the environmental topics, based on a combination of best practice guidance and expert judgement. These are provided in the specialist topic chapters. Assumptions made during the assessment process have been reported in the text. Figure 5.1 shows the general matrix used to determine the degree of each identified effect, and thus whether it is significant. This matrix has been developed by Terence O'Rourke Ltd and is used in the assessment of the various environmental impacts to enable meaningful comparisons to be made. Where assessments depart from this methodology to accord with other best practice requirements, the revised methodologies are fully explained in the relevant chapters.
- 5.25 The assessment of the potential effects also takes account of timescale, permanence and whether the effects are adverse or beneficial, as appropriate (for example, 'a long term but reversible, substantial, significant adverse effect').

### ***Identification of mitigation measures, monitoring and residual effects***

- 5.26 The results of the assessment of significance have helped to guide the mitigation measures proposed. At the end of each of the environmental assessments, where relevant, there is a 'residual effects' table, which summarises the significant environmental effects remaining after mitigation. This includes a measure of the confidence placed in the prediction of each potential residual effect, such as 'absolute', 'reasonable' or 'limited'. Where appropriate, measures to monitor significant adverse residual effects have been identified.

### Cumulative effects

- 5.27 The potential for cumulative effects with other existing and / or approved developments in the vicinity of the site has been assessed for each environmental topic where relevant (see individual topic chapters) as required under the 2017 EIA Regulations. The projects in table 5.2 have been included in the cumulative effects assessment and their locations are shown on figure 5.2. Not all projects are relevant to all of the environmental topics; the projects that have been considered are clarified in each assessment.
- 5.28 For the purposes of the cumulative effects assessment, information on the construction and operational timescales has been sought for the projects in table 5.2 and compared with the proposed construction and operational timescale for the replaced EfW and HTI facility. Publicly available information for each project was sought and utilised for the assessment.
- 5.29 The assessment of cumulative effects has involved the consideration of any residual effects (i.e. those that remain following effective design and mitigation) identified during the main assessment (i.e. the assessment of the construction and post-construction effects of the replaced EfW and HTI facility on the existing baseline). For the main assessment, only those effects graded 'moderate' and above are considered to be significant. For the purposes of the cumulative effects assessment, those residual effects graded 'slight', 'moderate', 'substantial' and 'very substantial' were included. Residual effects graded as 'negligible' were not considered to have the potential to lead to significant cumulative effects and were therefore excluded.
- 5.30 In addition to the consideration of other schemes, the temporary cumulative effects associated with the operation of the existing Lakeside EfW and HTI during the commissioning activities associated with the replacement EfW and HTI facilities have been assessed. Details on commissioning activities and their likely duration are set out in the proposals chapter.

Application reference	Date of approval	Description
CEMEX Langley site CM/51/16 Buckinghamshire CC	August 2017	<p>Land north of North Park Road, Richings Park, Langley, Buckinghamshire, SL0 9DJ</p> <p>Temporary closure of public footpath IVE/15/1, followed by the laying out of a site entrance, erection of new processing and concrete plants and related infrastructure, extraction of two million tonnes of sand and gravel, backfilling with inert waste and progressive restoration of the land to agriculture over a period of up to nine years.</p> <p>The application documents indicate that after a year setting up the site, extraction will take place in five phases over five years (years 2 - 6) at a rate of 400,000 tpa. Land restoration will follow directly behind each phase, commencing in year two at an initial inert infill rate of approximately 200,000 tpa until extraction of phase five ends, when filling would increase to approximately 500,000 tpa for a further three to four years.</p> <p>Hours of operation are Mon-Fri 07:00-18:00 and Saturday 07:00-13:00 (no working on Sundays or Bank Holidays).</p> <p>The development is likely to generate in the region of 242 vehicle movements per day (inbound 121 and outbound 121 vehicles). The site will be accessed from North Park Road and all HGVs will turn out of the site to the west, travel along</p>

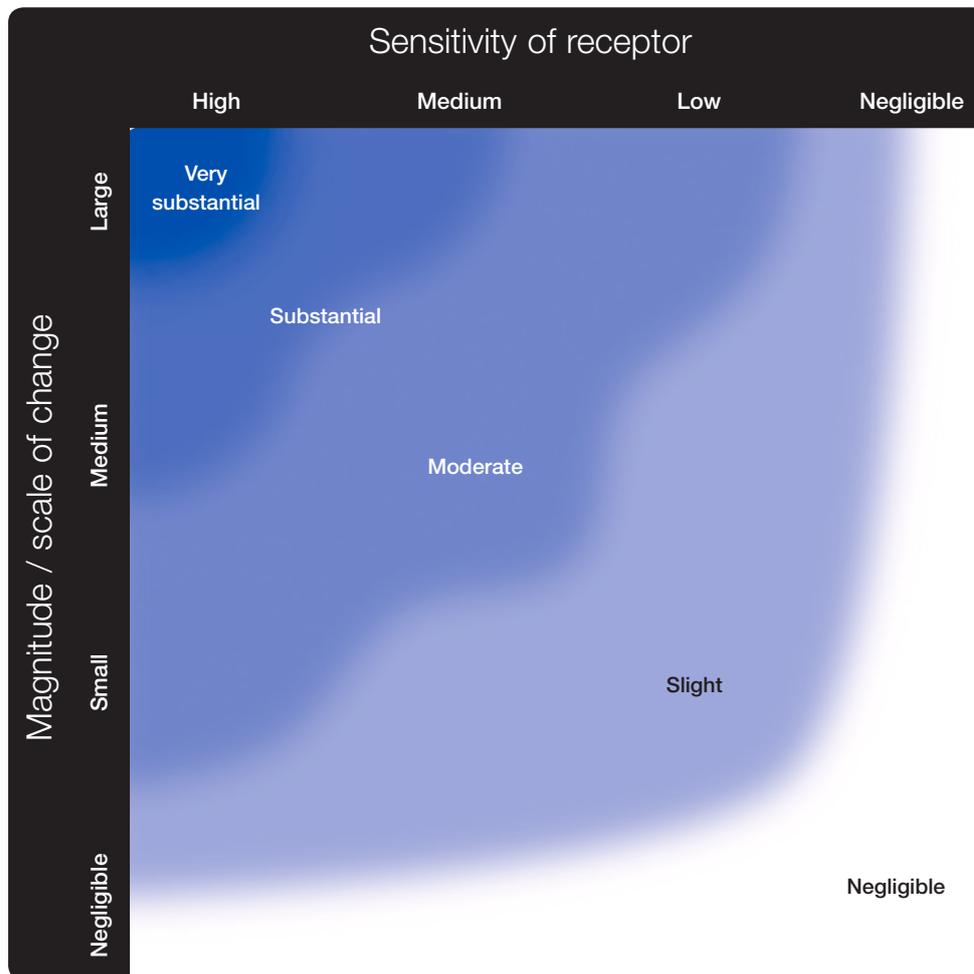
Application reference	Date of approval	Description
		North Park Road as far as Sutton Lane, travel down Sutton Lane and join the A4. For further information go to: <a href="http://www.cemexcommunities.co.uk/northpark.aspx">www.cemexcommunities.co.uk/northpark.aspx</a>
M4 Smart Motorway	September 2016	Development Consent Order was made in 2016 for M4 Junctions 3 to 12 to become a smart motorway. Elements of the scheme in the vicinity of the site include activities associated with works between junctions 5 and 4 (inclusive of 4b). The proposals for this section of the upgrades are: <ul style="list-style-type: none"> <li>• Hard shoulder to be converted into a traffic lane creating a minimum of 4 lanes (5 between junctions 4 and 4b)</li> <li>• Central reservation barrier replaced with new concrete barrier</li> <li>• Through junction running of lanes at junctions 4 and 5</li> <li>• New high visibility emergency areas every 1.12 miles (average with a maximum distance of 1.6 miles apart)</li> <li>• Bridge works – junction 5 interchange and Old Slade Lane bridge</li> </ul> Information available on the Highways England (accessed January 2019) indicates that works between junction 5 and 4b will be run from October 2019 to March 2022, and between 4b and 3 from January 2020 to March 2022. For further information go to: <a href="https://highwaysengland.co.uk/projects/m4-junctions-3-12-smart-motorway/">https://highwaysengland.co.uk/projects/m4-junctions-3-12-smart-motorway/</a>
CEMEX, Riding Court Farm site 13/01667 and 18/00840/VAR RBWM	January 2019	CEMEX operations at Datchet Quarry (RBWM original application ref 13/01667, with a number of subsequent variations), most recently a Section 73 application (ref: 18/00840/VAR) to vary condition 18 (export / import tonnage), condition 19 (traffic movements), condition 22 (external materials of buildings) of application 15/02886/VAR. This was permitted in January 2019. The variations were sought as the infilling rate assumed in the original consent had not been achieved due to a delayed start resulting from permitting issues. As such, CEMEX wanted to increase the total imported material during the latter part of the original consent period, during which time 36 HGVs and two staff vehicle movements related to infilling were permitted daily. The approved variation will see an increase in up to a maximum of 56 HGV movements daily for infilling. Whilst the variation represents an increase in traffic movements during the infilling element of the operations, the total HGV movements during this period will only be half of that already permitted to occur during peak site operations. This operational CEMEX site is approximately 3.8 km to the west of the replacement EfW / HTI site and vehicles linked to the quarry activities access the wider network via junction 5 of the M4. For further information go to the Royal Borough of Windsor and Maidenhead website, planning applications: <a href="http://www.RBWM.gov.uk">www.RBWM.gov.uk</a>
Thorney Mill / Link Park Heathrow 17/02353/FUL South Bucks DC	Recommendation for approval subject to conditions	Former site of Aggregate Industries UK on Thorney Mill Road (consent BD/1111/79 storage of aggregates). 17/02353/FUL: Application to SBDC for use of the site for B8 and two ancillary buildings and retrospective application for

Application reference	Date of approval	Description
		<p>the construction of two ancillary buildings, an electrical substation, nine lighting columns and replacement boundary fence and gate at the Link Park Heathrow site. SBDC originally advised that the authorised use of the site, part is for B8 and part is B2 (both authorised under BD/111/79) but subsequently queried this. The applicant is seeking to confirm that the site can be used for B8.</p> <p>The application suggests that the former aggregates and asphalt processing depot was in use until 2014 and was characterised by significant daily HGV movements. The site is currently in partial use for vehicle storage.</p> <p>The TA includes details on HGV movements associated with previous uses and those associated with proposed uses. Vehicle routing for HGVs is Thorney Mill Road / North Park / Sutton Lane / London Road / Junction 5 of the M4.</p> <p>For further information go to the South Bucks District Council website, planning applications:  <a href="http://www.SBDC.gov.uk">www.SBDC.gov.uk</a></p>

**Table 5.2: Projects considered in the cumulative effects assessment**

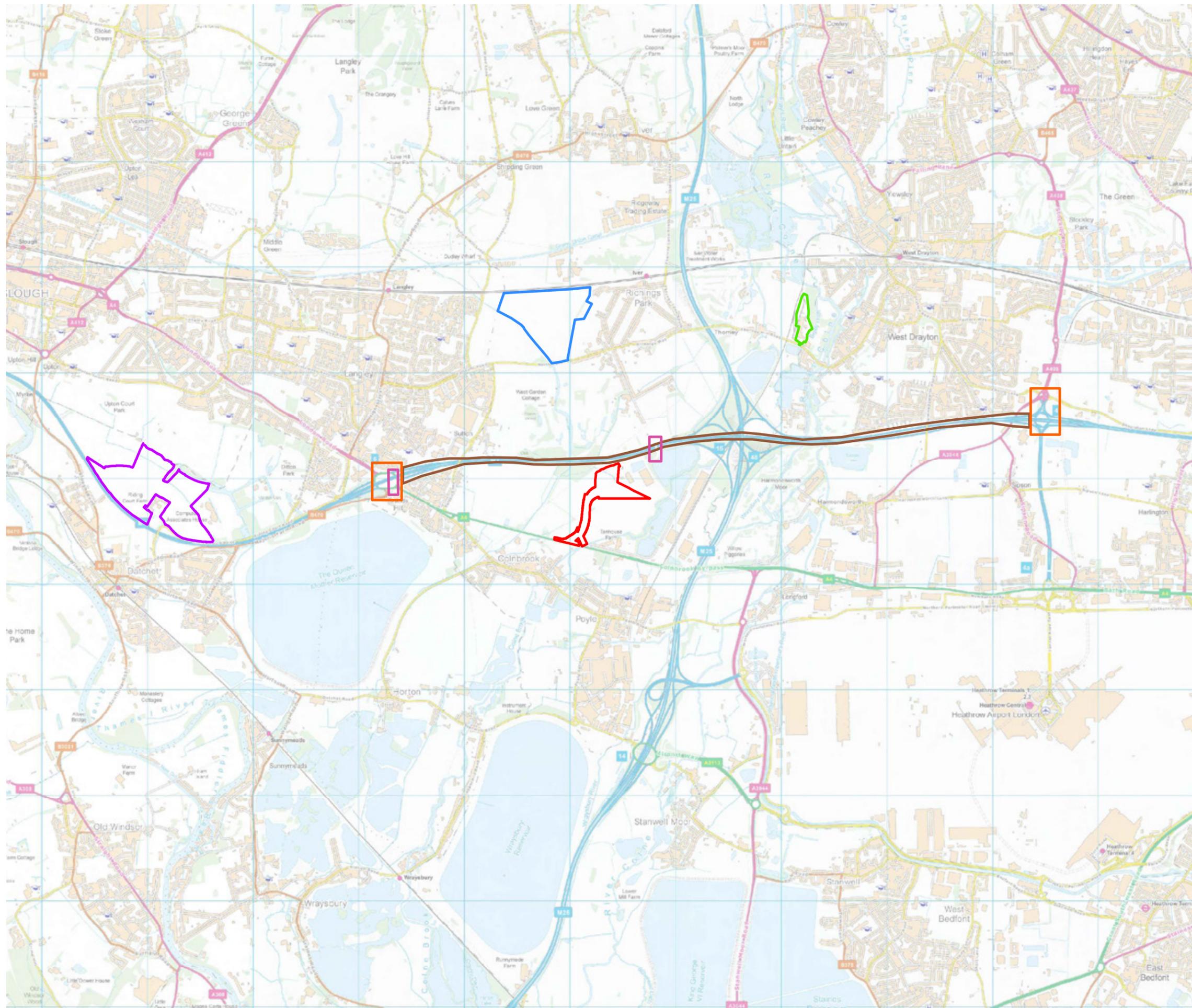
5.31 The 2017 EIA Regulations require the consideration of the potential for cumulative effects with other existing and / or approved projects. Given that neither HAL's DCO application for its expansion proposal nor Network Rail's DCO application for its Western Rail Link to Heathrow proposal are approved (or even submitted) projects it is not appropriate, or required by the law, for this EIA to take these projects into consideration cumulatively. Assuming planning permission is granted for the replacement EfW and HTI facilities before Network Rail and HAL receive permission for their rail link and expansion proposals respectively, it will be the EIAs / ESs associated with the rail link and airport expansion that will subsequently need updating to take into consideration the cumulative effects of their projects with the approved replacement EfW and HTI facilities.

## Determination of significance matrix



### Significance

If the degree of effect is moderate or above, then the effect is considered to be significant.



- Planning application boundary
- Cumulative schemes
- CEMEX - Langley site
- CEMEX - Datchett Quarry site
- Thorney Mill Road / Link Park Heathrow
- M4 - Smart Motorway
- Hard shoulder converted to additional traffic lane
- Through junction running of lanes
- Bridge works

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