

Chapter Eight ♦ Human health

INTRODUCTION

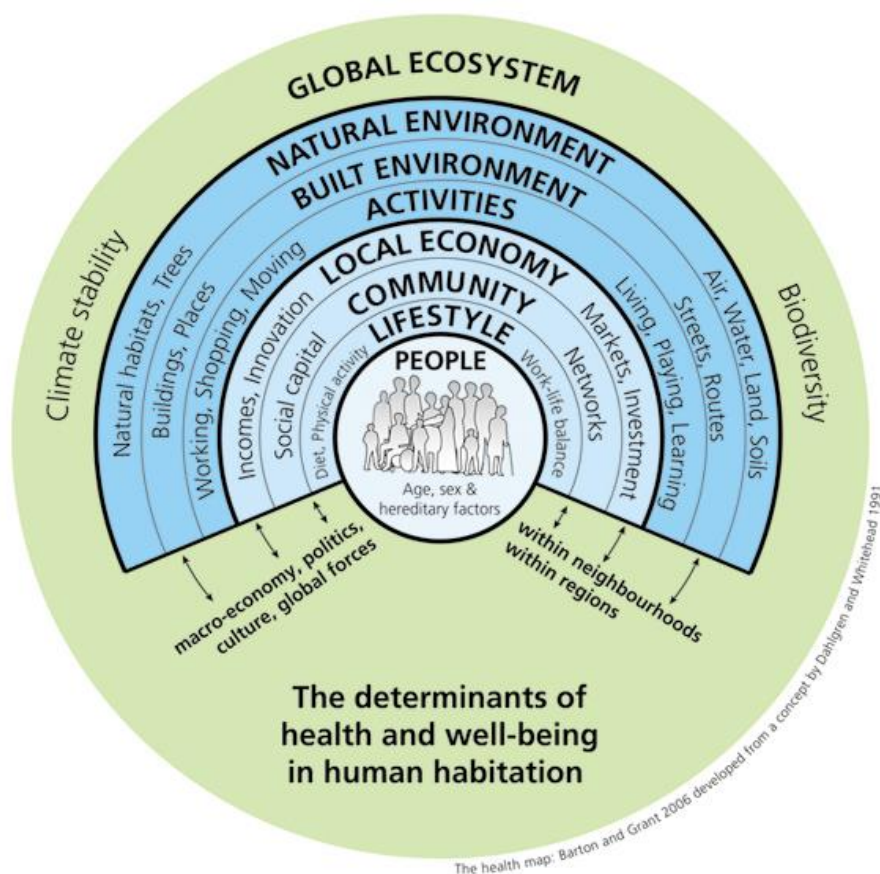
- 8.1 This chapter presents the preliminary results of the assessment of the range of human health effects that are likely to be generated by the construction and operation of the London Resort.
- 8.2 The requirement to consider human health in EIA was introduced in the 2017 EIA Regulations. However, there is no statutory guidance on assessing health impacts in the context of EIA. The assessment of human health effects relating to the London Resort is undertaken as a standalone human health chapter of the ES. The NHS Healthy Urban Development Unit states that health impact assessments (HIA) can be completed as standalone assessments or part of EIAs.¹ This chapter therefore has the dual role of being the HIA and reporting the likely significant human health effects for the EIA.
- 8.3 Factors that have the most significant influence on the health of a population are referred to as determinants of health. Across a broad scale, these include, at the lowest level, an individual's genetics and their lifestyle, and broadens out to include the surrounding environment, as well as policy, cultural and societal issues (**Figure 8.1**).
- 8.4 Development and planning can play a role within the wider determinants of health and well-being. This assessment considers the ways in which the London Resort may affect these determinants of health and wellbeing. It also considers health inequalities and how the London Resort may affect different groups in different ways.
- 8.5 This chapter describes which health determinants are relevant to the London Resort and sets out the health effects that will be assessed. The London Healthy Urban Development Unit Planning for Health Rapid Health Impact Assessment (HUDU Rapid HIA) Tool and checklist is used as a guide to identify the relevant health determinants and health effects associated with the London Resort, notwithstanding the fact that the Project Site is outside Greater London.
- 8.6 This PEIR chapter:
- defines the scope of the assessment and the data sources used;
 - sets out the assessment methodology;
 - discusses the relevant legislation and policies;
 - describes the existing environment;
 - discusses the potential effects and possible mitigation measures;

¹ NHS HUDU, [https://www.healthyurbandevelopment.nhs.uk/our-services/delivering-healthy-urban-development/health-impact-assessment/#:~:text=HUDU%20Rapid%20Health%20Impact%20Assessment%20\(HIA\)%20Tool&text=The%20tool%20does%20not%20identify,indirectly%20influenced%20by%20planning%20decisions.](https://www.healthyurbandevelopment.nhs.uk/our-services/delivering-healthy-urban-development/health-impact-assessment/#:~:text=HUDU%20Rapid%20Health%20Impact%20Assessment%20(HIA)%20Tool&text=The%20tool%20does%20not%20identify,indirectly%20influenced%20by%20planning%20decisions.)

- provides an initial cumulative effects assessment (CEA); and
- outlines further work to be undertaken for the Environmental Statement.

- 8.7 This assessment identifies temporary and permanent, beneficial and adverse, direct, indirect and induced effects on residents, workers, visitors and transport users, as well as vulnerable groups, as a result of the construction and operation of the London Resort.
- 8.8 Where significant effects arise, the assessment presents appropriate mitigation to minimise any adverse effects. It will also include measures to secure and enhance positive effects of the London Resort.
- 8.9 The conclusions of this chapter are preliminary. At this stage of the application process it has not been possible to assess the significance of all effects in the detail to which they will be assessed in the ES. Similarly, not all mitigation methods have been explored in detail. The conclusions of this chapter will be kept under review as more detail is available on the London Resort, its environmental effects, and any resulting health impacts.

Figure 8.1 General determinants of health



Source: Barton, H. and Grant, M. (2006) A health map for the local human habitat. *The Journal for the Royal Society for the Promotion of Health*, 126 (6). pp. 252-253.

METHODOLOGY AND DATA SOURCES

Scoping and engagement

The 2014 scoping opinion

8.10 The 2014 Scoping Opinion noted that:

'The Secretary of State considers that it is a matter for the applicant to decide whether or not to submit a stand-alone Health Impact Assessment (HIA). However, the applicant should have regard to the responses received from the relevant consultees regarding health, and in particular to the comments from the Health and Safety Executive and Public Health England.'

The methodology for the HIA, if prepared, should be agreed with the relevant statutory consultees and take into account mitigation measures for acute risks.'

8.11 An assessment of human health has been scoped into the EIA. The requirement to consider human health in EIA was introduced in the 2017 EIA Regulations and it was not required when the Scoping Report was submitted in 2014.

8.12 At the time, Public Health England and the Health and Safety Executive offered advice concerning the assessment of potential effects on human health. In addition to comments on the general approach and receptors, these comments relate to:

Public Health England

- Impacts arising from emissions due to construction and decommissioning;
- Emissions to air and water;
- Land quality;
- Waste;
- Electromagnetic fields;
- Liaison with other stakeholders (PHE lists several stakeholders); and
- Other aspects (responding to accidents with potential off-site emissions, consideration of the Control of Major Accident Hazards (COMAH) regulations and the major accident off-site emergency plan, consideration of perception of risk and the impact on health).

Health and Safety Executive

8.13 HSE noted that they do not comment on EIA Scoping Reports, though they do provide some land use planning advice. HSE notes that there are unlikely to be issues relating to

major hazard installations, hazardous substances or explosive sites. The response notes that the Applicant should consider issues relating to waste and electrical safety. As described in the matters to be scoped out section in the 2020 EIA Scoping, waste issues will be addressed in **chapter 19: waste and materials** and all the relevant health and safety requirements will be followed as per UK legislation. The safety requirements for electrical safety are the responsibility of the construction site team and management plans developed for the project will refer to all relevant health and safety legislation required. There is a site wide energy strategy being developed, which will engage closely with stakeholders on the existing generation, transmission and distribution required for the site area and the London Resort.

8.14 The health issues outlined in the 2014 Scoping Opinion have therefore been addressed.

The 2020 scoping Opinion

8.15 An EIA Scoping Report was submitted to the Planning Inspectorate on 15 June 2020. This explains the approach proposed for considering the potential range of health effects that are likely to be generated by the London Resort. At this point, in the development of the PEIR (July 2020) the Secretary of State's Scoping Opinion has not yet been received.

External engagement

8.16 External engagement in relation to health is ongoing. A summary of the engagement that has been undertaken up to the finalisation of this chapter is provided below.

8.17 In 2014/15, London Resort carried out several stages of public consultation. Engagement with local authorities and the Ebbsfleet Development Corporation (EDC) took place on a range of matters including health impacts during construction and once operational, with a focus on health provision on site and engagement with the NHS and Clinical Commissioning Groups (CCG). Further engagement was then also carried out with the NHS/CCGs where the approach to assessing health impact was explained.

8.18 General feedback was that the health providers would like to be pro-actively involved more closely in the plans for onsite health provision and any emergency services. The Applicant was also encouraged to be innovative with regards to how health could be incorporated into the proposals in an interactive and fun way, rather than solely a focus on accidents and emergencies.

Scope of this chapter

8.19 This section summarises the receptors, the potential effects and the spatial and temporal scope over which these effects are assessed. This scope is preliminary and may be refined following receipt of the Scoping Opinion and in light of consultation feedback.

Relationship with the PEIR

8.20 This health assessment seeks to understand whether significant effects, identified in other

relevant technical assessments, would result in health effects for the population, including for groups likely to experience a heightened effect which are collectively termed vulnerable groups. This chapter is informed by the following technical assessments, though other planning documents are also considered:

- Chapter 7: Land use and socio-economic effects
- Chapter 9: Transport
- Chapter 10: River transport
- Chapter 15: Noise and vibration
- Chapter 16: Air quality
- Chapter 17: Water resources and flood risk

8.21 The health assessment considers the *residual* effects of other EIA technical assessments – i.e. it only considers the effects post-mitigation.

Receptors

8.22 The receptors that could experience likely significant health effects are outlined in **Table 8.1**. Receptor groups include the general population and vulnerable groups, as described in the methodology section below.

8.23 This document uses the following definitions:

- **Health receptors:** the population of receptors identified by technical assessments; and
- **Receptor population:** the make-up of the study area (defined below) which could include the groups listed in **Table 8.1**.

Table 8.1 Receptor populations

Receptor population group	Receptor population
General population	Residents
	Workers in the area and on-site
	Visitors to the area (including those visiting the London Resort)
	Road and public transport users, rail drivers, pedestrians and cyclists (transport users)
Vulnerable groups	Children and young people (including pregnant women)
	Older people
	Low-income groups and the unemployed
	Ethnic minority groups

Receptor population group	Receptor population
	People with disabilities, neuro-cognitive conditions, long-term illness, or who experience mental ill health (including neuro-cognitive conditions, mental health issues and dementia, autism and epilepsy)
	Lesbian, gay, bisexual, transgender and queer and others (LGBTQ+) people

8.24 The receptors identified above have changed since the 2020 Scoping Report was published, to provide a more detailed breakdown of the receptors that are likely to be affected by the London Resort. Road and public transport users, rail drivers, pedestrians, and cyclists (transport users) have been added as a receptor in the general population. Pregnant women and LGBTQ+ people have been added as further vulnerable groups considered in this assessment. The list in the table above is under review and may change for the ES.

Identifying relevant sensitive health receptors and receptor populations

8.25 Other technical disciplines identify specific receptor locations in the respective assessments. It is not the physical receptors themselves which are relevant for human health, but the individuals who live, work in or visit these receptors. The receptors identified in each individual technical assessment will vary but often include residential and commercial properties, as well as community facilities, and any areas where significant populations congregate or are present.

8.26 Technical assessments will consider the locations where impacts are expected and conclude on locations where the most adverse effects are expected. On this basis, the effects described at these health receptors will be suitable for describing the potential effects experienced at other, similar, health receptors which are further away from the site or the road network, as effects will be no larger than those identified at the worst-case health receptor locations. This assessment therefore considers the health effects on the population at these receptors because they reflect a worst-case health effect for similar health receptors located further away.

8.27 There are also sensitive health receptors – i.e. community uses such as community centres, aged care homes and childcare/education centres – which may contain populations particularly vulnerable to health impacts. These sensitive health receptors are expected to be particularly vulnerable to potential effects relating to air quality, noise and vibration, and transport. **Appendix 8.2: Detailed baseline** maps the existing community facilities within a 500m radius of the Project Site (or just beyond) as these are the facilities that are considered most likely to be affected by the activities of the London Resort.

8.28 The ES will identify community facilities where significant effects are anticipated based on conclusions from other technical assessments. For example, in advance of the DCO, the transport, noise and air quality assessments will identify community facilities (including,

for example: amenity spaces, hospitals, care homes and schools) as receptors. These assessments will conclude on the effects to the community facilities in the ES and these conclusions will be applied to understand the scale of the effect at the sensitive health receptors.

- 8.29 The receptor population needs to be assessed to understand the extent to which vulnerable groups are present in the study area. **Appendix 8.2: Detailed baseline** also summarises (where possible) the prevalence of vulnerable groups in each study area. This is an indicative assessment because it is not always possible to know the extent to which vulnerable groups are prevalent in receptor populations due to data limitations, particularly among non-resident receptors, such as visitors and workers. For example, it is not possible to know the number of people with mental health issues who might visit the London Resort, but it is possible to collect data from the 2011 census on the extent to which the local population has any long-term illness or disability that affects their day to day life. In identifying vulnerable groups, this assessment makes it clear where data are available and used, and where assumptions have had to be made in order to carry out a preliminary assessment of the anticipated health effects.
- 8.30 The recorded data are only available for the resident population, so the presence of vulnerable groups among residents is estimated based upon this. The presence of vulnerable groups among other receptors, such as workers, visitors and transport users, is not available from the data and hence has to be assumed, through the application of a precautionary approach.
- 8.31 Whilst detailed statistics are not available for the exact receptor population within, or associated with, each of the receptors identified by other technical assessments, many of them have information which make it possible to make a simplistic assumption about the prevalence of these groups – most obviously that care homes will have an older population, and that younger people attend schools and children’s centres. Where data are not available at the appropriate geography to understand the presence of vulnerable groups, the assessment comments on the likelihood of vulnerable groups being present in that group, again applying a conservative approach.

Identification of potential effects

- 8.32 Table 8.2 summarises the identified potential health effects as a result of the London Resort, as well as receptor populations which would experience the health effects. One health effect, the potential health effect from displacement of residential dwellings, was not scoped into the 2020 Scoping Report but has since been added for completeness.
- 8.33 The most appropriate receptor population group is identified as the impacted receptor for each effect, but clearly individuals can fall into more than one receptor group. For example, at the extreme, a local resident would be a resident, could also be a worker, may also be a visitor at some stage, and will also be a transport user. In each instance the group most appropriate to the impact being considered is identified – in the example of health effects arising from transport and traffic changes, transport users will be the most directly

impacted, as will residents in the local area. Whilst workers and visitors may also be affected, this would occur through their use of the transport system and so they would be captured in this instance as transport users. The assessment has aimed to take a practical and proportionate approach.

- 8.34 The 2020 Scoping Report identified visitors as a receptor population for the effect: potential health effect of displacement or change in access to open space, resulting from the activity of displacement to land and property as a result of the land take. It did not however identify this receptor population for the similar effect once the Resort is in operation. Having reviewed the assessment of the use of existing open space undertaken by the project team, it is evident that the current site open space uses and routes are predominantly used by local people. These users would therefore be captured within the residents receptor population. The literature review (see **Appendix 8.3**) finds that in order for any direct health effects to be felt by individuals as a result of open space, the use of that open space is required to be frequent. It is therefore deemed appropriate that the health effect from open space is assessed to occur on residents (during construction) and residents and workers (once operational).

Table 8.2 Potential health effects and receptors

Activity	Health effect	Receptor populations(s)
CONSTRUCTION EFFECTS		
Displacement to land and property as a result of the land take	Potential health effect of displacement or change in access affecting public services and community facilities	Residents
	Potential health effect of displacement or change in access to open spaces	Residents
	Potential health effects from displacement of commercial uses	Residents Workers
	Potential health effects from displacement of residential dwellings	Residents
	Potential health effect of changes to local traffic and transport and changes in use of active travel modes	Residents Transport users
	Potential health effect of increased flooding	Residents Visitors Workers
Construction activity	Potential health effect of construction resulting in changes in noise and vibration	Residents
	Potential health effect of construction resulting in changes in air quality	Residents
	Potential health effects of the presence of the construction workforce	Residents

Activity	Health effect	Receptor populations(s)
	Potential health effect of work and training opportunities created	Residents
OPERATIONAL EFFECTS		
Noise exposure	Any potential health effects associated with changes in noise and vibration	Residents Visitors Workers
Air quality	Potential health effects associated with changes in air quality	Residents Visitors Workers
Traffic and transport	Potential health effects from a change in local traffic and active travel	Residents Transport users
Electromagnetic field exposure	Potential health effects associated with changes in electromagnetic field exposure	Residents Visitors Workers
Inclusive design	Potential health effects associated with the inclusive design, site access and facilities in and around the London Resort	Residents Visitors Workers
Existence of the London Resort	Potential health effects relating to changes in access to work and skills	Residents Workers
	Potential health effects from a change in the demand for health services	Residents Visitors Workers
	Potential health effects from a change in the demand for public services and community facilities	Residents Workers
	Potential health effects associated with open space provision and amenity space	Residents Workers
	Potential health effects from changes in community cohesion	Residents
	Potential health effects from changes in crime and community safety (including fear of crime)	Residents Visitors

Study areas

- 8.35 The Project Site includes land on both sides of the river in both Dartford and Gravesham boroughs in north Kent, and Thurrock in Essex.
- 8.36 Health effects are considered at varying spatial levels according to the nature of the effect and the aspect of the London Resort that gives rise to that effect. The relevant technical assessments of the EIA influence the study area for health impacts relating to each relevant technical area. For example, where noise and vibration impacts are defined within a given radius of the Project Site, the health impacts associated with those noise

and vibration impacts are considered at the same radius.

- 8.37 Some technical assessments – including noise, air quality, flooding and transport – do not define specific study areas for a given radius of the Project Site. Instead they identify receptors which are expected to be subject to worst-case effects (either because they are nearest to the site or near activity associated with the London Resort, e.g. adjacent to the road network). The effects identified in these assessments are all close to the Project Site and similar, so this assessment has defined a geography (see Neighbourhood Study Area in Table 8.3) to identify the receptor population that could be affected by the London Resort. Based on discussions with technical leads, the NSA covers all the expected significant effects within these assessments. Electromagnetic field (EMF) effects are also expected to be covered within this area. All study areas will be reviewed in advance of the DCO following updates to technical assessments.
- 8.38 Study areas have been informed by the geographic extent to which potentially significant health effects may be reasonably expected to occur as a result of the London Resort. The study area does not necessarily capture where the receptor population originates from, rather it indicates where the health effect is expected to occur. For example, the displaced businesses would be within the study area (the PSB as listed below) but the workers at these businesses and the residents who use them are unlikely to live in the study area. This is particularly relevant for the visitor receptor – visitors are expected to come from a wide area, but the study area for health effects on visitors is generally closer to the Project Site, as that is where the health effect is expected to happen. For example, visitors might come from other parts of the UK and abroad, but the health effect due to provision of inclusive design is nearer the site.

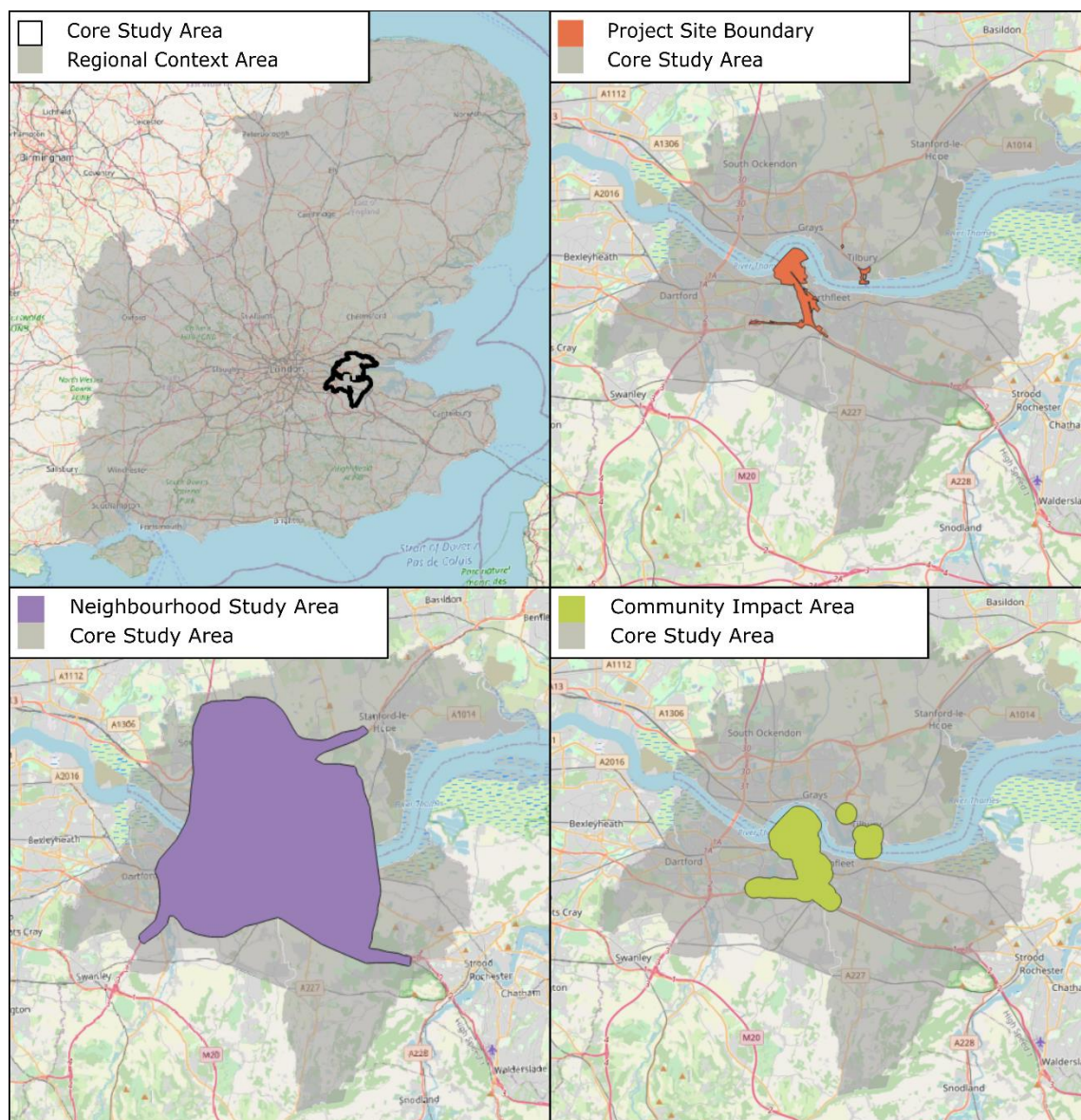
Table 8.3 Geographical study areas

Geographical Study Area	Definition	Rationale
The Project Site Boundary (PSB)	The DCO Order Limits. Refer to Figure 8.2 for a map of the Project Site Boundary	The Project Site Boundary study area is used for effects which are at the Project Site level. It is used for the assessment of displacement / loss of businesses.
Community Impact Area (CIA)	A 500m radius around the Project Site Boundary	The Community Impact Area is used to assess the displacement / loss of community uses, such as open spaces, public rights of way and other recreational or community facilities as the community uses affected will be on or near the Project Site.
Neighbourhood Study Area (NSA)	Area defined as the transport modelling area, with a 100m buffer applied. Refer to Figure 8.2 for a map of the Neighbourhood Study Area. This study area aims to capture all significant	The Neighbourhood Study Area is used to assess effects relating to local traffic, flooding, air quality, noise and vibration, and electromagnetic field exposure.

Geographical Study Area	Definition	Rationale
	effects relating to traffic, flooding, air quality, noise and vibration and electromagnetic field exposure, informing the health baseline for those effects. The NSA remains under review.	
Core Study Area (CSA)	Dartford, Gravesham and Thurrock (local authorities)	The three local authorities that the Project Site falls within. Many of the effects are expected to be experienced at the Core Study Area.
Sub-Regional Context Area ² (SRCA)	Kent and Medway, Essex, Thurrock (combination of districts)	These study areas are presented in the baseline for context but are not used to assess the significance of any health effects. They are included for context such that the health baseline and receptor population characteristics can be placed in the context of appropriate wider areas.
Regional Context Area (RCA)	South East, East and London	
National Context Area	England, GB, UK (depending on data source availability)	

8.39 The PSB, CIA, NSA, and CSA, as well as the RCA are shown in Figure 8.2. For the purposes of data collection, for the PSB, CIA and NSA statistical areas which overlap these areas have been chosen and are presented in **Appendix 8.2: detailed baseline**.

² Defined as county / unitary authorities to be consistent with ONS statistical data releases.

Figure 8.2 Relevant study areas

8.40 Table 8.4 shows the study area for each effect.

Table 8.4 Study area by effect

Activity	Effect	Study area
CONSTRUCTION EFFECTS		
Displacement to land and property as a result of the land take	Potential effect of displacement or change in access affecting public services and community facilities	CIA
	Potential effect of displacement or change in access to open spaces	CIA
	Potential effects from displacement of commercial uses	PSB
	Potential health effects from displacement of residential dwellings	PSB

Activity	Effect	Study area
	Potential changes to local traffic and transport and changes in use of active travel modes	NSA
	Potential effect of increased flooding	NSA
Construction activity	Potential effect of construction resulting in changes in noise and vibration	NSA
	Potential effect of construction resulting in changes in air quality	NSA
	Potential effects of the presence of the construction workforce	CSA
	Potential effect of work and training opportunities created	CSA
OPERATIONAL EFFECTS		
Noise exposure	Potential health effects associated with changes in noise and vibration	NSA
Air quality	Potential health effects associated with changes in air quality	NSA
Traffic and transport	Potential health effects from a change in local traffic and active travel	NSA
Electromagnetic field exposure	Potential health effects associated with changes in electromagnetic field exposure	NSA
Inclusive design	Potential health effects associated with the inclusive design, site access and facilities of the London Resort	CIA
Existence of the London Resort	Potential health effects relating to changes in access to work and skills	CSA
	Potential effects from a change in the demand for health services	CIA
	Potential effects from a change in the demand for public services and community facilities	CIA
	Potential effects associated with open space provision and amenity space	CIA
	Potential effects from changes in community cohesion	CIA
	Potential effects from changes in crime and community safety (including fear of crime)	CSA

Assessment years

8.41 There will be a phased approach to development, known as Gate One and Gate Two. There are several complexities in the temporal analysis of effects. For example, the construction period of Gate Two will overlap with the operation of Gate One. The assessment will therefore consider several core assessment years to account for the lengthy nature of the construction period and the phased approach to opening. The core assessment year will vary depending on the nature of the effect. The assessment establishes parameters that are likely to result in the maximum adverse effect (the worst-case scenario). For example, displacement of businesses and community uses is expected to occur during the construction phase (2022 – 2024) and therefore 2022 is considered

worst case for this effect as that is the earliest they could be displaced. The assessment year could also be a specific point in time when something relevant occurs which it is important to consider within the assessment.

- 8.42 The London Resort will be delivered over two phases of construction, with an operational phase of Gate One starting five years before the end the construction activities for Gate Two. The proposed timescales are shown in Table 8.5.

Table 8.5 The London Resort indicative timescales

Phase	Construction phase	Operational phase
Gate One	2022 – 2024	2024 onwards
Gate Two	2026/2027 – 2029	2029 onwards

- 8.43 If the anticipated construction and delivery programme evolves prior to the DCO application, the ES would reflect the up-to-date programme.

Construction phases (2022 – 2024 and 2026 – 2029)

- 8.44 The construction phases for Gates One and Two will be continuous so there is effectively one construction phase for the purposes of the assessment. The core assessment years considered during the construction phase include:

- **2022:** the assessment year for effects relating to the displacement/loss of businesses and community uses. This represents a worst-case assessment as it is the earliest year in the construction phase; and
- **2023:** the peak number of construction workers is expected to be broadly constant from mid-2022 to mid-2024. This year is used to assess effects related to the construction workforce as this is the year in which the highest number of construction workers are anticipated to be on site;

Operational phases (2024 onwards and 2029 onwards)

- 8.45 Gate One is expected to be operational in 2024 and Gate Two is expected to be operational in 2029. For the purposes of this assessment, the operational phase will be defined as a single phase, with several core assessment years:

- **2025:** the first full calendar year of Gate One operations;
- **2030:** the first full calendar year of Gate Two operations; and
- **2038:** maturity – the London Resort will be fully operational and established.

Table 8.6 Assessment years for health effects

Potential effect	Assessment year(s)
CONSTRUCTION EFFECTS	
Potential effect of displacement or change in access affecting public services and community facilities	2022: start of construction phase
Potential effect of displacement or change in access to open spaces	2022: start of construction phase
Potential effects from displacement of commercial uses	2022: start of construction phase
Potential health effects from displacement of residential dwellings	2022: start of construction phase
Potential changes to local traffic and transport and changes in use of active travel modes	2022: start of construction phase 2023: construction peak
Potential effect of increased flooding	Not applicable, refer to Chapter 17: water resources and flood risk for more information
Potential effect of construction resulting in changes in noise and vibration	2022: start of construction phase
Potential effect of construction resulting in changes in air quality	2022: start of construction phase 2023: construction peak
Potential effects of the presence of the construction workforce	2023: peak construction workforce
Potential effect of work and training opportunities created	2023: peak construction workforce
OPERATIONAL EFFECTS	
Any potential health effects associated with changes in noise and vibration	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Any potential health effects associated with changes in air quality	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Potential health effects from a change in local traffic and active travel	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Potential health effects associated with changes in electromagnetic field exposure	2022: start of construction phase 2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Potential health effects associated with the inclusive design, site access and facilities of the London Resort	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Potential health effects relating to changes in access to work and skills	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Potential effects from a change in the demand for health services	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity

Potential effect	Assessment year(s)
Potential effects from a change in the demand for public services and community facilities	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Potential effects associated with open space provision and amenity space	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Potential effects from changes in community cohesion	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity
Potential effects from changes in crime and community safety (including fear of crime)	2025: first full year of the operation of Gate One 2030: first full year of the operation of the whole Resort 2038: maturity

Baseline

8.46 The data sources used to inform the health baseline are summarised in Table 8.7.

Table 8.7 Data sources used to inform the health impact assessment

Data	Source	Year	Confidence ³
Self-reported health, proportion of people with disabilities or long-term illness at relevant geographies, proportion of households with access to a car or a van	ONS, the Census	2011	High
Life expectancy, health inequalities, proportion of children or adults overweight or obese, proportion of adults physically active, mortality rate from various diseases, numbers of noise complaints registered, proportion of population exposed to traffic noise, hospitalisation rates for various diseases	Public Health England: Local authority fingertip profiles	2019	High
Health trends for England	Public Health England, Health Profile for England 2019	2019	High
Health priorities and key issues of Kent	Kent County Council, Joint Strategic Needs Assessment	2016	High

³ Confidence level based on the organisation responsible for collating data sources (high = regulatory source and highly representative of required baseline information, medium = regulatory source but not very representative or non-regulatory source but highly representative, low = non-regulatory source and not very representative of required baseline information.)

Data	Source	Year	Confidence³
Sexual health priorities and key issues of Kent	Kent County Council, Joint Strategic Needs Assessment: Sexual Health	2017	High
Health priorities and key issues of Thurrock	Thurrock Council, Joint Strategic Needs Assessment	2012	High
Deprivation rankings, deprivation rankings on individual subdomains	MHCLG, English indices of deprivation	2019	High
Access to Healthy Assets and Hazards deprivation measure	Consumer Data Research Centre, Access to Healthy Assets and Hazards	2019	High
2018 Mid-year population estimates (by LSOA, MSOA, Region and country)	ONS, Population Estimates for UK, England and Wales, Scotland and Northern Ireland	2019	High
Estimates of the proportion of households in poverty	ONS, Small area model-based households in poverty estimates, England and Wales: financial year ending 2014	2019	High
Proportion of ethnic minorities at relevant geographies	ONS, Annual population survey	2019	High
Key health priorities and outcomes sought in Kent	Kent County Council, Joint Health and Wellbeing Strategy	2015	High
Key health priorities and outcomes sought in Thurrock	Thurrock Council, Health and Wellbeing Strategy	2016	High
GPs	NHS Digital – GP Workforce Statistics March 2020	2020	High
Dentists	NHS Dental Statistics, 2019-20	2020	High
Pharmacies	Ordnance Survey, AddressBase Plus	2020	Medium
Community uses			
Emergency services			
A&E attendances and percentage admitted, transferred, or discharged within 4 hours or less 2018-2019	NHS Digital, Provider level analysis for HES Accident and Emergency Attendances	2019	High
Proportion of the population with a high anxiety score	NHS, Self-reported wellbeing - people with a high anxiety score	2017	High
Sleep time guidelines	National Sleep Foundation	2015	Low
Proportion of the population that sleeps certain amounts per night	Sleep Council, The Great British Bedtime Report	2017	Low
Prevalence of smoking among workers in manual occupations	ONS, Adult smoking habits in the UK: 2018	2019	High
Working age residents employed in construction	ONS, Annual Population Survey, January to December 2019	2019	High
Resident qualifications			
Workplace qualifications			
Economic activity of residents			

Data	Source	Year	Confidence ³
Business counts by size and industry	ONS, UK Business Counts, 2019	2019	High
Tourism bedspaces within CSA	Visit Britain Accommodation Stock Audit, 2016	2016	High
Private rented sector bedspaces within CSA	MCHLG, Live tables on dwelling stock (including vacants), Table 615 All vacant dwellings by local authority district, England, 2018	2018	High
Owner occupied bedspaces within CSA			
Employment	ONS, Business Register and Employment Survey, 2018	2018	High
Employment growth			
Employment by industry			
Jul 2019 Claimant Count	ONS, Claimant Count by sex and age	2019	High
Apr 2018- Mar 2019 Unemployment	ONS, Model-based estimates of unemployment	2019	High
Not in employment, education or training (NEET)	Department for Education, NEET and participation: local authority figures, 2019	2019	High
Construction employment growth 2019-2023	Construction Skills Network forecasts 2019-2023, 2019	2019	Medium
Jan 2018 – Dec 2018 Qualifications of those in employment (total, by industry), Resident Qualifications, On the job training	ONS, Annual Population Survey	2019	High
Apr 2018- Mar 2019 Employment Rate, Economic Activity Rate, Economic Inactivity Rate,	ONS, Annual Population Survey (Workplace Analysis)	2019	High
Jan 2019- Dec 2019 Employment Rate, Economic Activity Rate, Economic Inactivity Rate, for the healthy and the disabled population			
Apr 2018- Mar 2019 Occupation and Industry employment	ONS, Annual Population Survey	2019	High
Earnings	ONS, Annual Survey of Hours and Earnings, 2019	2019	High
Apprenticeship starts, achievements, by size, by level, by industry 14/15 to 17/18	Department for Education, Apprenticeships and traineeships data	2019	High
Self-reported levels of social ties and community support	Department for Digital, Media, Culture & Sport, Community Life Survey 2018-19	2019	High
Crime over time to 2019	ONS Crime Statistics, 2019	2019	High

Data	Source	Year	Confidence ³
Proportion of respondents who meet with friends at least once a week; Proportion of respondents agreeing that there are people who would be there for them if they needed help; Proportion of respondents who could call on people if they wanted company or to socialise	Department for Digital, Media, Culture & Sport, Community Life Survey 2018-19	2019	High

Assessment methodology

- 8.47 The assessment methodology in this chapter is preliminary and is subject to review following engagement with key stakeholders, that will take place before the production of the ES. Further assessment work will be undertaken between the current statutory consultation and the preparation of the ES.
- 8.48 Chapter six of this PEIR outlines the general assessment approach adopted for this EIA. There is no UK legalisation or guidance for the assessment of human health effects. However, there are some well-established guides available for HIAs including, *Health in Environmental Impact Assessment: A Primer for a Proportionate Approach*,⁴ *Health Impact Assessment: a practical guide*,⁵ and the *Healthy Urban Planning Checklist*.⁶
- 8.49 A key aspect of this health chapter is establishing health pathways – these determine the relationship between the activities of the London Resort and potential effects on the receptor population. These are identified through a literature review (see **Appendix 8.3**) which summarises the literature on the links between health determinants and effects on individuals' health. It contains the evidence base which underpins the assessment of the London Resort's health effects. For example, the literature review considers the relationship between air quality and health effects, and how this differs by group.
- 8.50 A summary of the assessment procedure in this chapter is provided below:
- identification of the health receptors and receptor populations potentially affected by the London Resort;
 - assessment of the sensitivity of these receptors based on the number of people exposed to the health effect and the extent to which the exposed receptor population experiences inequalities in health or can access services and facilities. This is informed

⁴ IEMA (undated), health in environmental impact assessment. A primer for a proportionate approach.

⁵ WHIASU, Health Impact Assessment, a practical guide.

⁶ NHS HUDU, 2017, Healthy Urban Planning Checklist (third edition)

through stakeholder engagement, desk-based studies of policy, and baseline datasets. An assessment of how the sensitivity of receptors may change under future baseline conditions is also provided, particularly with respect to changes in demographic and economic variables such as population and employment;

- assessment of the mechanisms through which the London Resort may impact identified receptors. This is informed by the strength of links between health determinants and health outcomes (health pathways) informed by the wider scientific literature, as well as other factors (such as size of the change, whether impacts meet policy); and
- combining the sensitivity of the receptor with the magnitude of impact, the significance of effect is determined.

8.51 Effects are identified from the interaction between the magnitude of impacts and the sensitivity of receptors.

Receptor sensitivity

8.52 The sensitivity of receptor populations is defined as high, medium, low or negligible. For health effects, the receptor sensitivity is determined by the number of people exposed to the health effect and the extent to which the exposed population experiences inequalities in health or can access services and facilities. A receptor population with a high sensitivity would consist of individuals whose health outcomes are very sensitive to most changes, whilst a low sensitivity would consist of individuals whose health is not likely to be sensitive to changes to their environment.

8.53 Vulnerable population groups include those with higher levels of social deprivation or relatively poor health status. The vulnerable groups are shown in Table 8.12. Vulnerable groups present in each study area have been identified in the vulnerable populations section of **Appendix 8.2: Detailed baseline**, and **Appendix 8.3: Literature** considers which groups are vulnerable for each health effect.

8.54 For example, as a general finding of the literature, children are vulnerable to changes in access to public open space. If the open space baseline found an existing deficiency in local publicly accessible open space, and low levels of physical activity and high numbers of children present in the study area, the sensitivity of the receptor population to health effects would be high.

8.55 The rationale for the sensitivity of the receptor population is summarised within the baseline for each effect.

Impact magnitude

8.56 The assessment of the magnitude of impact has been undertaken based on professional judgement, informed by the literature identified in **Appendix 8.3: Literature** regarding the

links between the various changes anticipated as a result of the London Resort and potential health effects, as there are no industry standard criteria relating to the assessment of the magnitude of health impact. The strength of the evidence linking activities to health outcomes is also assessed and is based on the rating-system presented in **Table 8.8**.

Table 8.8 Evaluation of the strength of evidence – ratings

Strength of evidence	Description
Strong	A wide range of peer-reviewed research has found an association between the determinant and health outcomes. There is consensus in the scientific community about the existence of the association.
Moderate	Several peer-reviewed studies have found an association between the determinant and health outcomes. There is broad agreement in the scientific community about the existence of the association, but there may be a number of dissenting voices about the particulars.
Weak	A few peer-reviewed or non-peer-reviewed research articles have found an association between the determinant and health outcomes. There is little consensus in the scientific community, or there are conflicting studies.

8.57 Where strength of evidence is 'weak' it is not considered evidence for the lack of a potential relationship between the project activities and health outcomes. It simply reflects gaps in the state of our (and, more generally, the scientific community's) knowledge about the causal links involved. However, it does show that there is uncertainty in the assessment of the likely effect. The assessment of the strength of the evidence can be found in **Appendix 8.3**.

8.58 Several factors are considered when assessing the magnitude of impact:

- the size of the change;
- whether health priorities or policy have been set for the relevant health determinant; and
- the strength of the evidence linking impacts to health outcomes.

8.59 The magnitude of impact is assessed as high, medium, low or negligible.

Significance of effect

8.60 Table 8.9 shows how the magnitude of impact and sensitivity of receptor combine to determine the scale of the effect. Effects can be beneficial, adverse or neutral; temporary or permanent; and, direct or indirect.

- 8.61 Embedded mitigation is referred to and included in the initial assessment of effects. If the effect does not require secondary mitigation (or none is possible), the residual effect will remain the same. If, however, secondary mitigation is required, an assessment of the post-mitigation residual effect is provided.

Table 8.9 Effect significance matrix

Significance magnitude	Sensitivity of receptor		
	High	Medium	Low
High	Major	Major	Moderate
Medium	Major	Moderate	Minor
Low	Moderate	Minor	Negligible
Negligible	Minor	Negligible	Negligible

- 8.62 For the purposes of this assessment, effects that are classified as moderate or major are considered to be significant.

Assumptions and limitations

Engagement

- 8.63 The Applicant acknowledges that further technical engagement will need to be undertaken to inform the ES, due to the provisional nature of the evolving proposals that will be presented at the PEIR stage. Further engagement will be undertaken with key stakeholders, during and following the statutory consultation period and prior to the submission of the DCO application.

Baseline data

- 8.64 The assessment of the existing environment is naturally limited to the availability of baseline data. Existing baseline health conditions are established through interpretation of nationally recognised research, data and survey information. The most recent data published for our given study areas is used throughout this assessment, with a preference for using the most up to date data (2018, 2019 or 2020) where possible. Where data from these years is not available, the next best alternative has been used (i.e. the most up to date). In some cases, the next best alternative dataset will be the 2011 Census, which although now dated, provides very detailed spatial information for a large number of different indicators and includes the whole population. The Census is the most comprehensive database of demographics in the UK.
- 8.65 The data sources are referenced throughout the chapter and data is sourced from government departments and official sources wherever possible. Baseline data will continue to be updated prior to the application for consent and reported on within the ES, as more recent datasets are published over the coming months.
- 8.66 The assessment presents baseline data over a reasonable period of time where timeseries

data are available, so that the impact of any short-term shocks or changes can be identified in the baseline. This may be relevant to the impact of COVID-19 on health, social and demographic baseline data. Where relevant, the impact of COVID-19 on the receptor sensitivity and conclusions is discussed in this chapter. The likely impact depends on whether the effect is short or long term in nature. Short term effects may have to consider the impact of COVID-19 but the effect in the longer term is expected to reduce significantly.⁷

- 8.67 Information on the future baseline is presented where available. Where it is not available, the receptor population affected in the future assessment years are assumed to have the same sensitivity as the receptor population in the existing baseline.

Health effects

- 8.68 The health assessment considers the residual effects of other EIA technical assessments – i.e. it only considers the effects post mitigation. The explanations of these mitigation measures are not repeated in this HIA and reference should be made to the respective technical topic chapter of the PEIR. The same assumptions and uncertainties of these assessments therefore apply to this chapter.
- 8.69 There are several uncertainties relating to forecasting the impact of the London Resort. Where there is uncertainty, the assessment will deal with this through applying worst case approaches and transparency of assumptions.

Cumulative effects assessment

- 8.70 This assessment presents data on the evolution of the health baseline wherever possible, whilst acknowledging that this is subject to uncertainty. A complete set of future baseline data does not exist for health receptors, and therefore the current baseline is generally assumed to continue. The other assessments on which this assessment draws are all inherently cumulative and hence by nature the secondary effects assessed within this chapter are cumulative.
- 8.71 For example, **chapter seven: land use and socio-economics** presents projections on population and employment to show how the baseline is likely to evolve in the do-nothing scenario. For the ES, **chapter nine: transport** will also use a transport model that accounts for changes in the future baseline. The results of the transport assessment will also inform the traffic-related effects for the air quality and noise assessments.
- 8.72 The assessment is therefore inherently cumulative and a separate assessment of the cumulative impact of committed schemes would risk double counting. Based on this approach, the need for a cumulative effects assessment which considers the overall impact of other, committed schemes is redundant. The 2020 Scoping Report noted that:

⁷ Even under the most pessimistic scenario, economic activity is expected to return to pre-crisis levels by 2024, indicating that the majority of the effects of COVID-19 are expected in the short-term. Office for Budget Responsibility, 2020, Fiscal Sustainability Report July 2020

‘the only exception to this is where specific cumulative schemes have a direct impact upon health provision or health outcomes (e.g. a scheme including a hospital or increase to open space). In these instances, the impact of this would be explicitly included here in the cumulative assessment.’

8.73 **Chapter seven: land use and socio-economics** presents information on changes in the future baseline relevant to this health assessment. For example, it considers if any identified cumulative developments are anticipated to result in changes to community facilities, public services and public rights of way. These changes to the future baseline are identified in the baseline of this health assessment.

8.74 The cumulative effect assessment will be reviewed at the ES stage based on the conclusions of the updated assessments.

RELEVANT LAW, POLICY AND GUIDANCE

8.75 This section summarises the relevant legislation and planning policies that define the context of the London Resort. Further information on the policies relevant for the London Resort is presented in **Appendix 8.1: policy**.

Legislation and national planning policy

8.76 Table 8.10 contains the legislation that has been considered in the assessment of health effects. More detail on the legislation and on how it relates to this health chapter is provided in **Appendix 8.1: policy**.

Table 8.10 Legislation relevant for the HIA

Legislation
<i>Health and Social Care Act 2012 (HM Government of Great Britain & Northern Ireland, 2012a)</i>
<i>The Social Value Act 2012 (HM Government of Great Britain & Northern Ireland, 2012b)</i>
<i>Equality Act 2010 (HM Government of Great Britain & Northern Ireland, 2010a)</i>
<i>Environmental Protection Act 1990 (HM Government of Great Britain & Northern Ireland, 1990)</i>

8.77 The national planning policy relevant to the assessments in this chapter is summarised in Table 8.11. More detail on how this relates to this health chapter is provided in **Appendix 8.1: policy**.

Table 8.11 National planning policy

Policy
<i>National Planning Policy Framework (NPPF)</i>

8.78 Regional and local planning policies are summarised in **Appendix 8.1: policy**.

BASELINE CONDITIONS

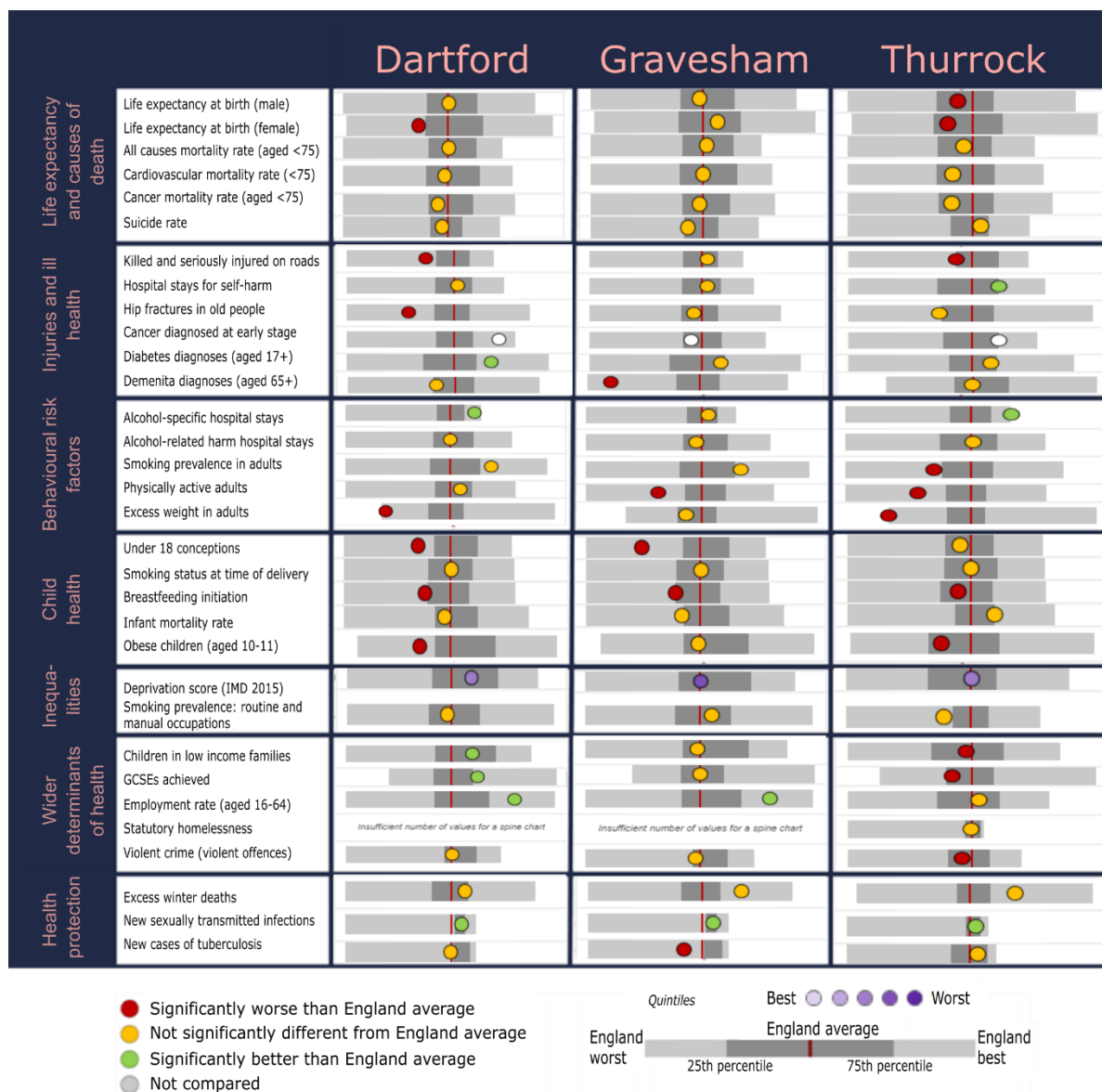
OVERVIEW OF HEALTH BASELINE CONDITIONS

Current baseline conditions

- 8.79 This section sets out a summary baseline of the health conditions in the three host authorities of Dartford, Gravesham and Thurrock, which together comprise the CSA. The summary baseline provides a picture of overall health and highlights the most important issues in the CSA local authorities, and the findings inform a number of the effect assessments. A more detailed summary of general health conditions is provided in **Appendix 8.2: detailed baseline**.
- 8.80 Public Health England (PHE) prepares public health profiles⁸ to provide an overview of health conditions within individual local authorities. A summary of the indicators and how the local authorities in the CSA perform is shown in Figure 8.3. The values for each area are shown as a circle; the England average is indicated by a red line. The grey bar indicates the range of values taken by all English local authorities.
- 8.81 Life expectancy at birth is worse or similar to the national average across each of the three host local authorities. The life expectancy of females is significantly worse in two of the three local authorities compared to the national average. Cancer is highlighted in the areas' Joint Strategic Needs Assessments (JSNAs) as a cause of concern.⁹ The lifestyle factors responsible for the relatively poor life expectancy in the areas are obesity, lack of physical activity, and smoking. Sexual health in general is good in the area and alcohol-specific hospital admissions are relatively low, but the areas have a relatively high under-18 conception rate (despite sustained improvements over the past decade).
- 8.82 Locals enjoy a high employment rate, with the attendant health benefits the better socio-economic status employment brings. However, the skills level of the areas is limited compared to regional and national levels. The three local authorities are not particularly deprived on the English Indices of Multiple Deprivation's (IMD) overall deprivation measure, but problems exist around education, employment, and skills and crime.

⁸ PHE, Local authority fingertip profiles

⁹ Kent County Council, 2016, Joint Strategic Needs Assessment; Thurrock Council, 2012, Joint Strategic Needs Assessment

Figure 8.3 PHE public health profile of Dartford, Gravesham and Thurrock, 2019

Source: PHE, Local authority fingertip profiles

Future baseline

8.83 Future baseline conditions are informed by national trends, as described in PHE's Health Profile for England 2019 document.¹⁰ Where future trends and forecasts are identified, they inform the future baseline; where the trends identified concern the present, the most accurate expectation of future baseline conditions is the continuation of the trends below.

Life expectancy¹⁰ PHE, 2019, Health Profile for England 2019

- 8.84 Life expectancy gains have seen a slowdown in recent years. This phenomenon has been more prominent in the UK than elsewhere in Europe, where the UK has been sliding in the life expectancy tables for both males and females.

Mortality

- 8.85 Mortality and the leading causes of death present a mixed picture: death rates from dementia have been increasing steadily, and so are deaths from drug misuse, but deaths from heart conditions are decreasing.

Demography

- 8.86 England's population has steadily increased over recent decades, but the population has also been ageing. The proportion of those aged over 85 is forecast to continue increasing.

Chronic ill health

- 8.87 As England's population grows older, the number of people with chronic conditions, or living with ill health (morbidity) is forecast to increase. The prevalence of mental health disorders has also increased since 1993.

Lifestyle

- 8.88 Obesity and smoking are among the leading risk factors for ill health and are associated with a range of conditions. Since 2007 there has been an upward trend in adult obesity, but smoking prevalence continues to decline. The latest data also shows an increase in the rate of certain new sexually-transmitted infections (STIs).

Housing and socio-economic status

- 8.89 The quality of housing plays a role in maintaining good health. Homelessness remains high in England, but England's employment rate continues to rise, although certain groups of the population find it hard to enter into or stay in meaningful work.¹¹

¹¹ No reliable employment forecasts taking into account the impact of COVID-19 have been identified. It is known that employment will have been negatively affected in the short term, which is not yet recorded in any reliable detail in the available data. If such information is available at the time of the ES, it will be taken into account.

VULNERABLE POPULATIONS

- 8.91 This section summarises the vulnerable populations present in each study area. The population share of vulnerable groups is compared to the shares in the RCA and NCA to determine if these groups are present in relatively larger numbers in the area. The relative presence of vulnerable population for each effect informs the sensitivity of the receptor population.
- 8.92 The results are summarised in Table 8.12. A vulnerable population highlighted in red signals that the vulnerable population has a relatively larger presence in the study area than both the RCA and the NCA. An orange highlight indicates that the vulnerable population has a relatively larger presence in the study area than in the NCA, but not larger than in the RCA. A dark green highlight indicates that the vulnerable population has a relatively smaller presence in the study area than in the NCA, and a light green highlight indicates that the vulnerable population has a relatively smaller presence in the study area than in the NCA, but not smaller than in the RCA.
- 8.93 Table 8.12 highlights that the various study areas have a higher proportion of young people (25%-26% in comparison to 22% across the RCA and 21% nationally), and more households living in poverty (after housing costs) (23%-25% across all areas except the PSB in comparison to 22% across the RCA and 21% nationally), but a lower presence of older people in the population (12%-15% in comparison to 17% in the RCA and 18% nationally).
- 8.94 Data are not available on the presence of ethnic minorities at the lowest geographical levels, but the CSA and regional population is ethnically more diverse than the national average. The proportion of people living with an illness or disability is lower than the national rate but higher than at the regional level.
- 8.95 Data are not available on the presence of LGBTQ+ people for the study areas, and the regional rate is similar to the national rate; the ONS does not currently collect data on the UK's transgender and queer population. The relative presence of LGB groups is taken to be a proxy for the relative presence of LGBTQ+ groups.

Table 8.12 Vulnerable populations in the study areas

	PSB	CIA	NSA	CSA	RCA	NCA
Young people	25%	26%	25%	25%	22%	21%
Older people	15%	12%	14%	15%	17%	18%
Households in poverty (before housing costs)	14%	15%	15%	14%	14%	17%
Households in poverty (after housing costs)	22%	25%	23%	23%	22%	21%
Ethnic minorities	n/a	n/a	n/a	21%	21%	14%
People with long term illness or disability	18%	16%	16%	16%	15%	18%
LGBTQ+	n/a	n/a	n/a	n/a	2.2%	2.1%

	PSB	CIA	NSA	CSA	RCA	NCA
n/a means that data is not available for the identified study areas. Data on the proportion of ethnic minorities is not available at the PSB, CIA or NSA levels. The proportion of LGBTQ+ persons is not available at any study area level smaller than the RCA. A precautionary approach is applied where data is unavailable.						

SUMMARY OF EXISTING POPULATION HEALTH

8.96 The 2011 Census collects data on self-reported health. Individuals are asked to assess their general health, ranging from very good to very bad. Table 8.13 contains the data on self-reported health. As can be seen, the levels of self-assessed health are very similar across all study areas: everywhere 5% of the population said they experienced 'bad' or 'very bad' health, and between 46% and 49% experienced 'very good' health.

Table 8.13 Self-reported health in the study areas

Area	Very good health	Good health	Fair health	Bad health	Very bad health
PSB	46%	35%	13%	4%	1%
CIA	47%	35%	13%	4%	1%
NSA	48%	35%	13%	4%	1%
CSA	48%	35%	13%	4%	1%
SCA	47%	35%	13%	4%	1%
RCA	49%	34%	12%	4%	1%
NCA	47%	34%	13%	4%	1%

Source: ONS, the 2011 Census

8.97 Deprivation based on the English Indices of Multiple Deprivation (IMD) is average across all study areas: each study area ranks on average within the 5th decile on the IMD's overall deprivation measure (where 1st is the most deprived 10% of the country), meaning that the study areas are within the top 60% in England.

However, each study area performs relatively poorly on the education, skills, and training and crime subdomains. The CSA performs especially poorly on these two subdomains. 0 shows the decile where the study areas on average fall in terms of deprivation, where 1 indicates the 1st (most deprived) decile, and 10 indicates the 10th (least deprived) decile.

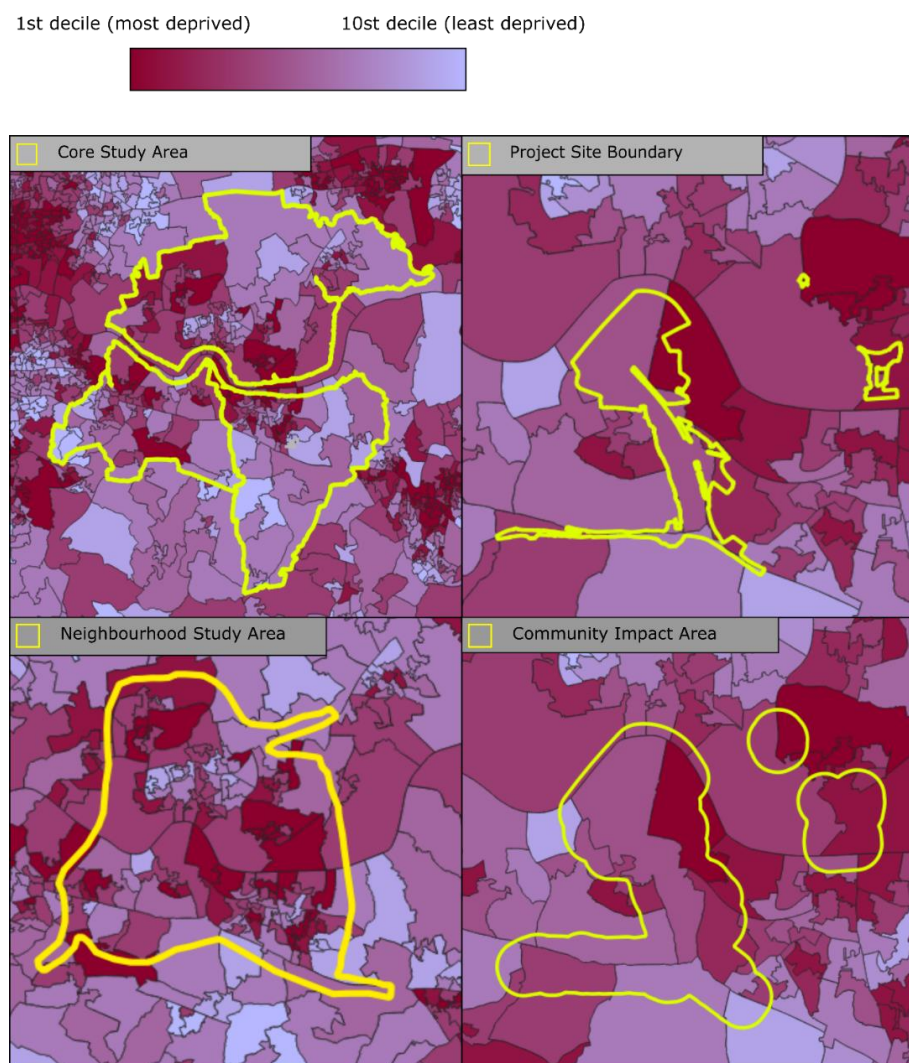
Table 8.14 Deprivation in the study areas

	IMD overall	Income	Employment	Education, Skills and Training	Health Deprivation and Disability	Crime	Barriers to Housing and Services	Living Environment
PSB	5	5	6	4	6	4	5	6
CIA	5	5	5	4	6	3	5	6
NSA	5	6	6	4	7	4	6	6
CSA	5	5	6	3	6	2	5	5

Source: MCHLG, 2019, English Index of Multiple Deprivation; Volterra calculations

8.98 The map in Figure 8.4 shows the deprivation levels within the study areas.

Figure 8.4 Deprivation map of the study areas



Source: MHCLG, 2019, English Index of Multiple Deprivation

8.99 The relevant baseline for each effect is now considered in turn.

BASELINE FOR CONSTRUCTION EFFECTS

Potential effect of displacement or changes in access affecting public services and community facilities

8.100 The London Resort will be a large construction project. The land take required to construct the London Resort might displace or disrupt some public services and community facilities. Depending on how reliant the local population is on these facilities, their health might potentially be affected to varying degrees. These changes can result in a range of adverse health effects for the general population and some groups in particular who are prone to the effects of social isolation.

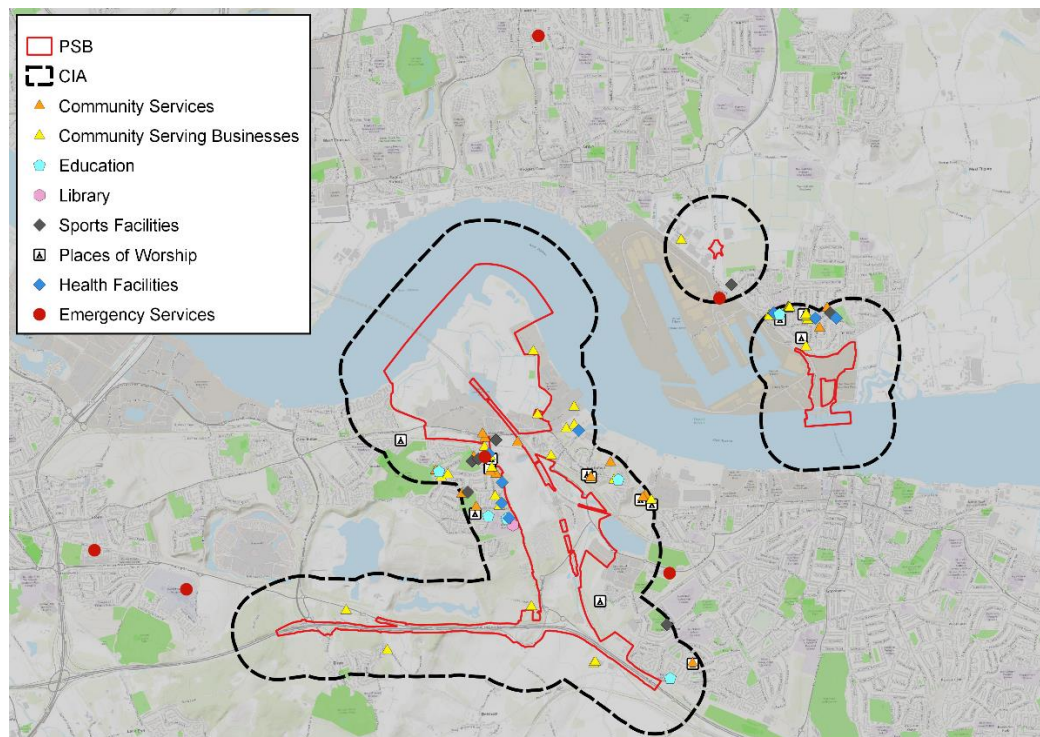
Baseline

8.101 **Chapter seven: land use and socio-economics** identified 80 potential community facilities across the CIA, although only four of these are located within the PSB, and thus at risk of displacement by the London Resort. These are identified in **Figure 8.5**. Further work will be done before the submission of the DCO and as part of the ES, to identify these facilities and determine the level of the service they provide and the level of importance to the local community. The assessment identified that the CIA is within the optimum range indicated by research in terms of provision of community centres, and none of these are located within the PSB or at risk of displacement by the London Resort.

8.102 The CIA is within the 5th decile (where 1st is the most deprived) on the IMD's barriers to access to housing and services subdomain¹², further indicating that the area has average levels of access to public services. A more detailed look at the data indicates that problems are more likely to be associated with homelessness and housing affordability, rather than access to services.

8.103 Emergency services are also shown in **Figure 8.5**. In terms of emergency services, A&E services are located at Darent Valley Hospital towards the lower western area of the London Resort. There are two police stations – one is located in the CIA and on the north side of the river (Tilbury Police Station) and the other is located on the south side of the river on the eastern part of the London Resort (North Kent Police Station), just outside the CIA. There are also three fire stations near the London Resort – one is within the CIA whilst the other two are located on either side of the river but lie outside of CIA boundary.

¹² MHCLG, 2019, English Index of Multiple Deprivation

Figure 8.5 Community facilities / services within the CIA

Source: Ordnance Survey Addressbase Premium; Google Maps

8.104 As discussed in **Appendix 8.2: detailed baseline**, a higher proportion of Kent and Thurrock residents have indicated feeling higher levels of anxiety than the national average. Part of this anxiety might be related to social interactions, and individuals struggling with social anxiety can be more sensitive to displacement of their community ties, resultant from the displacement of frequented community facilities.

8.105 Users of social services report feeling safe in greater proportions in Kent and Thurrock, than they do at the national level (refer to baseline section of **potential effect of displacement or changes in access affecting public services and community facilities** in **Appendix 8.2: detailed baseline**). Adult social care users in both areas are more likely to say they receive as much social contact as they desire than are social care users nationally. However, adult carers report satisfaction with their levels of social contact in Kent and Thurrock to be below the national level.

Future baseline

8.106 **Appendix 8.2: detailed baseline** identified that for six existing development proposals with consent, there is maximum consent for approximately 70,000 sqm of community floorspace. Of this, 50,000 sqm is at Eastern Quarry (along the bottom of the CIA) and 21,000 sqm is in Ebbsfleet Central (in the centre of the CIA).

Receptor population

- 8.107 The receptor population is made up of the general population of the study area and groups vulnerable to this effect, which include: young people, older people, people on low incomes, ethnic minority groups, and people with long-term illness or disability. Young people are especially vulnerable to the displacement of educational facilities, affecting both social life and academic progress. Older people are vulnerable to social isolation if the community facilities where much of their social life takes place are displaced. People on low incomes are hit especially hard by the loss of public services on which they rely. Ethnic minority groups often benefit disproportionately from the use of community facilities, and their loss could hit them hardest. People with long-term illness or disabilities often rely on their communities for physical and emotional support, which displacement of community facilities may disrupt.
- 8.108 It should be noted, however, that many of the residents who use these public services and community facilities will live outside of the CIA. It is assumed that there would be vulnerable groups present among these residents, broadly in line with the CIA average.

Sensitivity of receptor population

- 8.109 The existing health levels of the receptor population, and the deprivation measure for barriers to services, are considered to be average overall. However, there are also issues with relatively high rates of anxiety in the area, a mixed picture regarding the levels of social contact of social care users and carers, and presence of relatively high numbers of young people, people on low incomes (after housing costs) and ethnic minorities compared to the national average. Therefore, the sensitivity of the receptor population to changes in access to public services and community facilities is judged to be **medium**.

Potential effect of displacement or change in access to open spaces

- 8.110 Due to the land take of the London Resort, and in the absence of mitigation, there is the possibility for open spaces to be displaced, or there may be a change in the ease of access to them. Reduced access to open spaces may be associated with the loss of many health benefits associated with open spaces, which may affect some groups in particular. This effect will consider the health effect associated with changes in access to open spaces. It will be reviewed for the ES when the PSB is finalised and the impacts upon open space are further determined.

Baseline

- 8.111 **Appendix 8.2: detailed baseline** shows that obesity and physical inactivity are identified as problems in the CSA and the wider areas of Kent and Thurrock. However, the utilisation of outdoor spaces and sports club membership is higher in Kent and Thurrock than the national average, suggesting that the driver behind physical inactivity and obesity is not lack of access to facilities, but has other causes.

8.112 **Appendix 8.2: detailed baseline** shows that there are 39 open spaces within the CIA, with a total area of 47 ha. In addition to these, there are three marshes which overlap with the CIA. The initial public rights of way (PROW) assessment finds that there are nine PROWs and routes that will be affected by the London Resort, providing access to and routes around the marshes.¹³

Future baseline

8.113 The Ebbsfleet Implementation Framework¹⁴ will be used by the EDC to shape and support its plans. It has the ambition for the garden grid and major parks to focus on delivering an integrated blue and green network, connecting the city's parks and open spaces into a unified network which allows residents to travel across the city within green corridors. It also aims for seven city parks to be developed from existing open spaces within Gravesham and Dartford areas, providing areas for sports, play and informal recreation, as well as long distance views and ecological enhancement. Finally, it has the ambition that Swanscombe Peninsula Park, currently made of three marshes (Botany Marsh, Black Duck Marsh and Broadness Marsh), will be consolidated into one coherent ecological reserve. The proposals for the marshes being developed for this project by the Applicant will give consideration to these ambitions.

Receptor population

8.114 The receptor population is made up of the resident population of the study area and groups vulnerable to this effect, which include: young people, older people, people on low incomes, and people with long-term illness or disability. Young people are at a vulnerable stage in life, and poor access to open spaces can lead to physical inactivity, obesity and mental health issues. Older people are less mobile and require spaces for physical activity close to their homes; physical inactivity is an issue amongst older residents. The relationship between self-reported health and open space provision is strongest among low income groups, suggesting that they use these areas to a higher degree. Those with mental health issues or other disabilities may be particularly affected by changes in access to open space.

Sensitivity of receptor population

8.115 The baseline identified that the areas containing the CIA have a good level of outdoor space. The section on vulnerable populations has found relatively high numbers of young people and people in poverty (after housing costs), who are vulnerable to changes in access to open space. As there is a generally good provision of open space, yet some subsets of the population are likely to be sensitive to changes, the sensitivity of the

¹³ This is informed by an initial PROW assessment by EDP. The assessment currently deals only with those routes affected on the Peninsula. The remaining routes are being reviewed in due course, with limited interventions expected. All remaining rights of way that are not discussed in this baseline are at this stage assumed to be retained through both the construction and operation phase and are not considered to face significant impacts as a result of the London Resort.

¹⁴ Ebbsfleet Development Corporation, Ebbsfleet Implementation Framework, 2017

receptor population to displacement or change in access to open space is judged to be **medium**.

Potential effects from displacement of commercial uses

- 8.116 As a result of the land take, there will be the displacement of some existing commercial businesses, which may lead to disturbances in the community for those who rely on them, job relocations, or job losses in extreme cases. This would cause disruptions and unemployment in the area, which may hit some groups harder than others, resulting in health adverse effects. A land referencing study will be undertaken in advance of the DCO to understand more about the characteristics of the jobs currently supported on the Project Site and their sensitivity to change.

Baseline

- 8.117 **Appendix 8.2: detailed baseline** shows that businesses employing an estimated 1,330 full time equivalents (FTEs) are located on the PSB and will potentially be displaced. Further work will be done to refine this employment estimate and understand more information about the existing commercial uses and their workforce.
- 8.118 The local labour market is performing well, with 83% of the 16 to 64 population of the CSA economically active, and 80% are employed, higher than all comparator areas. However, skill levels in the area are lower than in the SRCA, the RCA and the NCA. As a result, lower-skilled residents might find it harder to find new employment if their existing workplace is displaced. The unemployment rate (3.9%) is lower than the RCA (4.1%) and the NCA (4.3%). These statistics do not reflect the impact of COVID-19 due to a time lag in data collection. The impact of COVID-19 on the labour market will be clearer for the ES where it will be considered in more detail.

Future baseline

- 8.119 **Appendix 8.2: detailed baseline** found that there is maximum consent for over 600,000 sqm of office floorspace at the six existing development proposals with consent. Of this, 120,000 sqm is at Eastern Quarry (along the bottom of the CIA) and 450,000 sqm is in Ebbsfleet Central (in the centre of the CIA). In the future baseline it is therefore likely that in terms of quantum, the new floorspace delivered will more than offset the 70,100m² (NIA) of floorspace within the PSB which is lost as a direct result of the London Resort. However, it is known that some of the uses currently on the site are well suited to the location (some are known as 'bad neighbour' uses), and therefore in order to appropriately assess the loss of floorspace as a result on the London Resort, the loss of the 70,100m² (NIA) of floorspace within the PSB is considered.

Receptor population

- 8.120 The receptor population is made up of the resident and working population of the study area and groups vulnerable to this effect, which include: young people, older people, low income groups, and ethnic minorities. Young people can be indirectly affected if their

parents/carers are displaced and potentially lose jobs, leading to worse health outcomes for the child. For those over 50, unemployment caused by job losses is often associated with greater difficulties in regaining employment. Job losses are associated with an increased risk of unmet health needs, and the effect is strongest among low income groups. Individuals from ethnic minority backgrounds may find it harder to gain access back into the workplace in the event of commercial displacement.

Sensitivity of receptor population

8.121 The baseline identified that the local labour market is performing well, with a high share of the population in work, and relatively few residents are economically inactive. Nevertheless, a relatively large quantity of employment floorspace falls within the PSB, and vulnerable populations such as the young, those on low incomes, and ethnic minorities have a large presence in the area. The area is relatively deprived in terms of education and skills levels. Therefore, the sensitivity of the receptor population to displacement of commercial uses is considered to be **medium**.

Potential health effects from displacement of residential dwellings

8.122 Residential properties will be displaced as a result of the land take of the Proposed Development. Relocation is expected to have an effect on the health and wellbeing of the people who are required to move, through the stress of moving, the disruption of social networks, and through a change in living conditions.

Baseline

8.123 Within the PSB there is one building which is identified as residential. This is a property on the corner of London Road and Pilgrim's Road which is understood to form three dwellings. Further work is being done to understand in more detail the occupancy of these residential units.

Future baseline

8.124 It is not anticipated that the number of dwellings within the PSB to be acquired will change through to 2022, and so the effect is assessed against current baseline levels.

Receptor population

8.125 The receptor population is made up very specifically of the residents of the dwelling which will be displaced. It is not known whether this contains any groups vulnerable to this effect, which include: young people, older people, and people with long-term illness or disability. Residential displacement may adversely affect children, and can cause a child's education to suffer. Older people are less mobile than the population average, and often have stronger ties to the location and community, having lived longer in the same place. Those with long-term illness or disability, and especially those with dementia and the less mobile can be worse affected by involuntary relocation.

Sensitivity of receptor population

- 8.126 There is currently little information available on the residents of the dwellings affected, and whether they have any vulnerable characteristics. A cautionary approach is applied and receptor sensitivity to the potential health effects from the displacement of residential dwellings is judged **high**.

Potential changes to local traffic and transport and changes in use of active travel modes

- 8.127 During the construction phase, there may be temporary changes in traffic and transport around the site (e.g. reduced access to roads), as well as changes in access to active travel modes through and around the site (e.g. removal of a pedestrian path).

Baseline

- 8.128 **Appendix 8.2: detailed baseline** shows that obesity and a lack of physical activity is a problem within much of the area of the NSA. A higher share of households in the NSA have access to a car or van relative to the regional and national averages. The under 75 mortality rate from preventable cardiovascular diseases in Thurrock is significantly worse than the national average, although Kent performs better than the average.
- 8.129 The average distance travelled to work in the NSA is higher than the regional or national average, so that the population may be more exposed to interruptions to traffic. These statistics, however, do not reflect the impact of COVID-19 due to a time lag in data collection. The impact of COVID-19 on the transport network and traffic will be clearer for the ES where it will be considered in more detail.
- 8.130 Many of the local transport networks are expected to remain unchanged and operate in a similar manner as during the construction period. However, a multitude of transport network changes is planned in the region, which will affect the Kent North Thames Coast within which the London Resort is situated.
- 8.131 The host LPA's core strategies envisage that some development would occur at the site, accessed from London Road, with associated travel demand and transport infrastructure. Existing commitments forming part of the Ebbsfleet Garden City and Lower Thames Crossing are also considered.
- 8.132 There are a number of schemes being delivered in proximity to the London Resort that will affect the future baseline, including recently approved upgrades to both the Bean and Ebbsfleet junctions along the A2(T) and the delivery of the Lower Thames Crossing which will see significant reductions in traffic along the A2(T) once complete.
- 8.133 For the full transport baseline, please refer to **chapter nine: transport**.

Receptor population

- 8.134 The receptor population is made up of transport users and the resident population of the

study area, and of groups vulnerable to this effect, which include: older people, low income groups, and people with long-term illness or disability. The removal of established routes (transport and pedestrian) may cause issues for older people in the form of preventing them from accessing usual amenities, leading to worse health outcomes. Those from lower socio-economic backgrounds may be disproportionately affected by a reduction in access to transport routes due to a heavier reliance on public transport.

Sensitivity of receptor population

8.135 The sensitivity of the receptor population has not been determined at this stage. Further work will be presented in the ES that will accompany the DCO application for the London Resort.

Potential effect of increased flooding

8.136 Risks of flooding may be increased due to changes in land use affecting the river and groundwater environment, which can in turn lead to multiple adverse human health effects on affected groups. **Chapter 17: water resources and flood risk** assesses changes to the risk of flooding as a result of the London Resort development.

Baseline

8.137 **Chapter 17: Water resources and flood risk** has undertaken an assessment of flood risk in the area. Parts of the Project Site fall into all of Flood Zones 1-3. The northern part of the Swanscombe Peninsula is located within Flood Zone 2 with a large band across the centre of the peninsula located within Flood Zone 3. The Access Corridor is located almost entirely within Flood Zone 1. The Essex Project Site is located entirely within Flood Zone 3 and benefits from defences. Whilst the Project Site currently receives protection from a storm surge up to the 1 in 1000-year flood event, climate change is predicted to result in sea level rises and therefore an increased risk of tidal flooding to the Project Site. **Chapter 17: Water resources and flood risk** has identified site users as sensitive receptors to flood risk. Site users have a high sensitivity to flood risk.

Receptor population

8.138 The chapter considers site users as the primary sensitive receptors potentially exposed to this effect. The groups vulnerable to this effect include: older people, and people with long-term illness or disability. Older people are disproportionately affected by the occurrence of flooding due to decreased levels of mobility. Due to the mental health problems posed by an increase in the risk of flooding, those with existing mental health problems would therefore be at greater risk of deterioration should flooding occur.

Sensitivity of receptor population

8.139 Given the likelihood that vulnerable groups will be present among site users and the receptor populations likely sensitivity to flooding, the sensitivity of the receptor population is **high**.

Potential effect of changes in noise and vibration during construction

- 8.140 Increases in exposure to noise has been linked to adverse health outcomes, as discussed in more detail in **Appendix 8.3: literature**. Through the large scale of construction activity needed for the London Resort, there are noise concerns which must be considered. Some groups are more affected by noise disturbance than others. Further detail is provided in **chapter 15, noise and vibration**.

Baseline

- 8.141 Unregulated night-time noise has the potential to affect the sleep of residents. **Appendix 8.2: detailed baseline** has found that across the nation the public is getting far less sleep than recommended by experts.
- 8.142 **Appendix 8.2: detailed baseline** presents a mixed picture on the noise environment of the NSA: data is available at the level of the three CSA LPAs, and Dartford and Thurrock register a higher number of noise complaints per 1,000 residents than the national average, while Gravesham registers fewer. Noise from road, rail and air traffic exceeding specified targets affects lower proportions of the population than nationally, both during the day and at night in the CSA LPAs, which contain the NSA.
- 8.143 Noise surveys have been undertaken between December 2014 and February 2020. At each noise survey location there was found to be no tactile evidence of vibration due to road traffic or other sources, during site visits at the Kent Project Site. As such, vibration is not considered to be a significant issue at the Kent Project Site. However, the COVID-19 pandemic has impacted the suitability of conducting additional noise survey measurements around the Project Site, with lockdown conditions not considered to be representative of a typical noise environment. Future assessments will be conducted and presented in full in the ES.

Receptor population

- 8.144 The receptor population is made up of the general population of the study area and groups vulnerable to this effect, which include: young people, older people, and people with long-term illness or disability. For young people the effects of sleep disturbance and annoyance can hamper cognitive progression and educational attainment, and so are significantly more important at earlier stages of life. Older people may be more susceptible to the impact of noise pollution due to lower mental processing and sensory changes that take place throughout the ageing process, and to disturbed sleep. Changes in noise exposure can have disproportionate impacts on those with epilepsy through acting as an additional trigger.

Sensitivity of receptor population

- 8.145 The sensitivity of the receptor population has not been determined at this stage. Further work will be presented in the ES that will accompany the DCO application for the London Resort.

Potential effect of construction resulting in changes in air quality

8.146 Changes in air quality can affect human health, as detailed in **Appendix 8.3: literature**. The scale and nature of the construction activity required for the London Resort may lead to adverse effects on the general population, but would disproportionately affect certain groups, such as children, older people, and those with pre-existing medical conditions. Issues with air quality have been linked to a number of respiratory illnesses and other health conditions. Further detail on air quality is presented in chapter 16.

Baseline

8.147 The mortality rate from respiratory diseases in Kent and Thurrock is higher than the national average (refer to **Appendix 8.2: detailed baseline**). However, admissions from respiratory tract infections in children under 5 and admission rates for asthma for children aged 0-18 are lower than the national average.

8.148 **Appendix 8.3: literature** found that exposure to air pollution increases the risk of lung cancer. As recorded in **Appendix 8.2: detailed baseline**, cancer was the underlying cause of death in 29% of mortality in 2014 in Kent. The most common forms of cancer for both men and women include lung cancer. In Thurrock, lung cancer is identified as a serious problem, and death rates are higher than for both men and women than both regional and national comparators.

8.149 The air quality environment around the Project Site is varied. Nearby roadside monitoring sites located adjacent to London Road exceeded legal limits of NO₂ in the most recent reporting year, but nearby urban background air quality monitoring sites monitored NO₂ concentrations below legal limits. Part of the Project Site is located within the Northfleet Industrial Area Air Quality Management Area (AQMA) (Gravesham Borough Council) and also in close proximity to the Dartford AQMA.

8.150 Both human and ecological receptors are considered within the air quality chapter of the PEIR. The impact of the development will be predicted at existing receptor locations as well as at proposed onsite receptor locations in order to assess exposure of future site occupants to poor air quality. Receptors include: residential properties, amenity spaces, hospitals, care homes and schools. For a full overview of the receptors that will be considered, and the air quality objectives relevant for those receptors, refer to Table 16.3 within **chapter 16, air quality**.

Future baseline

8.151 All pollutant types are expected to decrease in the years until 2030, due to: improvements in emission control measures from point sources and industrial processes, improvement in emission abatement technology in the transport sector, and local policies aimed at improving air quality.

Receptor population

8.152 The receptor population is made up of the resident population of the study area and groups vulnerable to this effect, which include: young people, older people, and people with long-term illness or disability. Changes in air quality may have a disproportionate impact on children because their lung function does not finish developing until they mature into adulthood. Old people are more likely to suffer from cardiovascular or respiratory conditions and are therefore more likely to be affected by changes in air quality. Those with long-term illnesses, especially individuals with pre-existing lung conditions would be disproportionately at risk from the increased levels of pollutants created by the construction period.

Sensitivity of receptor population

8.153 The sensitivity of the receptor population has not been determined at this stage. Further work will be presented in the ES that will accompany the DCO application for the London Resort.

Potential effects of the presence of the construction workforce

8.154 The London Resort will have a large workforce, some of whom will be non-home based and require accommodation locally. Residents and facilities near the Project Site may therefore interact with this workforce. The evidence suggests this is generally positive but there can be local concerns about the presence of the workforce, particularly, as identified in **Appendix 8.3: literature**, regarding lifestyle changes and the concerns of some vulnerable groups who can feel threatened or intimidated by the presence of a construction workforce, which could result in social exclusion.

Baseline

8.155 **Appendix 8.2: detailed baseline** identifies several lifestyle factors which could be affected by the presence of the construction workforce. These include: smoking, and obesity rates. It also presents the level of construction workers and businesses in the CSA.

8.156 Smoking is a problem in the area, especially in Thurrock, where the prevalence of smoking among adults is significantly higher than it is among national and regional comparators. Exposure to smokers can help normalise smoking behaviour and has been found to be a significant contributor to the uptake of smoking among adults. As shown in **Appendix 8.2: detailed baseline**'s section for this effect, manual workers in the UK were found to have far higher rates of smoking than the general population, and studies in the US have found workers in the construction industry to have the highest prevalence of smoking of all occupations.

8.157 Note that based on analysis of survey results by University College London (UCL) and Action on Smoking and Health (ASH) as many as one million smokers may have quit during the coronavirus pandemic. This could however be a short term trend unless it translates

into long-term success.¹⁵

- 8.158 Excess weight and obesity are a significant problem in the CSA, and physical activity levels are low in Gravesham and Thurrock (although not in Dartford), meaning that any further disincentive to exercise will have a magnified impact. Some groups within the population can be intimidated by a large construction workforce, thus limiting their likelihood of frequenting areas where such groups may be present.
- 8.159 **Appendix 8.2: detailed baseline** shows that the CSA is performing relatively well on metrics of sexual health, with low rates of new STI diagnoses, low abortion rates and low rates of teenage pregnancy.
- 8.160 **Appendix 8.2: detailed baseline** identifies that there are 17,300 residents of the CSA who are employed in construction. They make up 8.5% of the local workforce, a higher share than regional (7.4%) and national (7.2%) comparators. There were 3,200 construction firms in the CSA, or 22% of all firms. This is a far higher proportion than regional and national (13%) averages. These statistics do not reflect the impact of COVID-19 due to a time lag in data collection. The impact of COVID-19 on the labour market will be clearer for the ES where it will be considered in more detail.

Future baseline

- 8.161 **Appendix 8.2: detailed baseline** predicted that construction jobs in the UK will grow by 0.5% annually. Growth is expected to be stronger in London and the South East at 0.9% and 0.8% respectively, but annual growth in the East of England is expected to be slightly lower, 0.4%. Some 168,500 UK construction jobs could be created between 2019 and 2023. As noted above, these forecasts have yet to be updated to reflect any impacts of COVID-19.

Receptor population

- 8.162 The receptor population is made up of resident population of the study area and groups vulnerable to this effect, which include: older residents and people with disability or long-term illness. Older people might opt to use community facilities less due to possible feelings of intimidation, due to the drastic change in the make-up of people in the area a large construction workforce might effect. Disabled people are more susceptible to poorer levels of mental and/or physical health, and so they may be disproportionately affected by the immediate introduction of a large construction workforce because of a change in the make-up of an area.

Sensitivity of receptor population

- 8.163 Lifestyle factors potentially affected by an influx of construction workers, such as smoking and obesity are a potential problem in the area. Since there are relatively low proportions

¹⁵ ASH, 2020, A million people may have stopped smoking since the COVID pandemic hit Britain [accessible at: <https://ash.org.uk/media-and-news/press-releases-media-and-news/pandemicmillion/>]

of vulnerable groups, the sensitivity of the receptor population to the potential effects associated with the presence of the construction workforce is **low**.

Potential effect of work and training opportunities created during construction

8.164 The work and training opportunities provided by the construction of London Resort are expected to bring positive health benefits to the local population through higher incomes and the mental health benefits of social status, further detailed in **Appendix 8.3: literature**. A number of positions will be filled locally, and there will be opportunities for upskilling and training. The Applicant is committed to providing an employment and skills offer which positively impacts on local people and children. To achieve this, an Employment and Skills Strategy will be developed in advance of the DCO.

Baseline

8.165 There exist strong health inequalities between the most deprived and least deprived parts of all three local authorities comprising the CSA. Deprivation is closely linked to unemployment, insecure employment, low skills and incomes, and low socio-economic status in general. The evidence presented earlier in this baseline found that one of the biggest determinants of health in the CSA is a skills deficit, and all study areas had higher prevalence of households in poverty (after housing costs).

8.166 **Appendix 8.2: detailed baseline** presents information on:

- economic activity of residents;
- employment growth in the area;
- unemployed residents and 16 to 17-year olds not in employment, education or training (NEETs); and
- local skills.

8.167 **Appendix 8.2: detailed baseline** shows that a large share (83%) of the CSA's population is economically active, a significantly higher share than the RCA (80%) and NCA (79%). The employment rate is similarly higher at 81% in the CSA, compared to 77% in the RCA and 76% in the NCA respectively.

8.168 Employment growth in the CSA since 2015 has been broadly in line with regional and national comparators – all growing by between 3% and 4% (refer to **Appendix 8.2**). There were 7,900 unemployed residents in the CSA, translating to an unemployment rate of 3.9%. This is better than the SRCA (4.0%), RCA (4.1%) and the NCA (4.3%).

8.169 In the three months to February 2019, there was an average of 3,720 16 to 17-year olds in the wider sub-regional area that were NEET. The proportion of NEETs within the 16 to 17-year-old population was 5.1%, higher than the regional (4.9%) and lower than the national level (5.5%). These statistics do not reflect the impact of COVID-19 due to a time lag in

data collection. The impact of COVID-19 on the labour market will be clearer for the ES where it will be considered in more detail.

- 8.170 In 2019, only 33% of CSA residents were qualified to NVQ4+ level, lower than the regional (46%) and national (40%) comparators. Within the CSA, 9% had no qualifications, higher than the regional (7%) and national (8%) comparators.

Future baseline

- 8.171 As discussed under the future baseline of the potential effects of the presence of a construction workforce, construction jobs in the UK are forecast to grow by 0.5% annually. Growth is expected to be stronger in London and the South East at 0.9% and 0.8% respectively, but annual growth in the East of England is expected to be slightly lower, 0.4%. Some 168,500 UK construction jobs could be created between 2019 and 2023.

Receptor population

- 8.172 The receptor population is made up of the resident population of the study area and some subsets of the population who may experience differential impacts to this effect including: young people, low-income groups, and ethnic minority groups. Young people benefit indirectly from parental employment from jobs created in the construction phase of the London Resort, stable employment reducing the child's risk of being unemployed in later life. The unemployed would disproportionately benefit from additional employment and individuals both unemployed and from lower socio-economic backgrounds would benefit from training programmes created in the construction phase. Ethnic minority groups are under-represented in the labour market therefore, additional employment opportunities created in the construction phase have the potential to benefit this group even more

Sensitivity of receptor population

- 8.173 The CSA struggles with significant health inequalities linked to deprivation and relatively low skill levels. A relatively large share of the population belongs to a vulnerable demography: young people, low income groups and ethnic minority groups are more prevalent in the CSA than at the national level. Therefore, the sensitivity of the receptor population to changes in work and training opportunities created in the CSA is judged to be **medium**.

BASELINE FOR OPERATIONAL EFFECTS

Potential health effects associated with changes in noise and vibration during operation

- 8.174 As outlined within the discussion of the **potential effect of changes in noise and vibration during construction**, there are links between changes in noise and adverse health outcomes. As a result of the operation of the London Resort, further increases to noise levels may be expected in and around the Project Site. This is also addressed in **chapter 15** of the PEIR.

Baseline

- 8.175 The baseline section on the potential effects of changes in noise and vibration during construction showed that parts of the NSA record above average numbers of noise complaints. It also showed that noise exceedances due to road, rail and air traffic noise affects lower shares of the population than the national average.
- 8.176 As discussed under the noise and vibration baseline relating to the construction of the London Resort, noise and vibration monitoring has been undertaken, with further measurements planned once the impact of the coronavirus pandemic on the noise environment has receded. There was no tactile evidence of vibration due to road traffic or other sources during site visits at the Kent Project Site. More detail on the noise baseline will be provided in the ES.

Receptor population

- 8.177 The receptor population is made up of the resident population as well as visitors to and workers in the study area and groups vulnerable to this effect, which include: young people, older people, and people with long-term illness or disability. For young people the effects of sleep disturbance and annoyance can hamper cognitive progression and educational attainment are significantly more important at earlier stages of life. Older people may be more susceptible to the impact of noise pollution due to lower mental processing and sensory changes that take place throughout the ageing process, and disturbed sleep. Changes in noise exposure can have disproportionate impacts on those with epilepsy through acting as an additional trigger.

Receptor sensitivity

- 8.178 The sensitivity of the receptor population has not been determined at this stage. Further work will be presented in the ES that will accompany the DCO application for the London Resort.

Potential health effects associated with changes in air quality during operation

- 8.179 As outlined within the discussion of the **potential effect of changes in air quality during construction**, there is a robust body of evidence linking air pollution and changes in air quality to adverse human health outcomes. As a result of the operation of the London Resort, there may be additional changes in the air quality of the area surrounding the Project Site. Further detail is provided in chapter 16 of the PEIR.

Baseline

- 8.180 The baseline section for construction effects relating to air quality identified that respiratory conditions are generally a problem in the area, with higher than average mortality rates from respiratory diseases. Lung cancer was also identified as a concern within the area.

- 8.181 The construction baseline for air quality effects also presents baseline information relating to existing and future conditions of air quality in the study area. This information is relevant to the operational effect, especially the future baseline expectation that all pollutants will decrease by 2030.

Receptor population

- 8.182 The receptor population is made up of the resident population as well as visitors to and workers in the study area, and groups vulnerable to this effect, which include: young people, older people, and people with long-term illness or disability. Changes in air quality may have a disproportionate impact on children because their lung function doesn't finish developing until they mature into adulthood. Old people are more likely to suffer from cardiovascular or respiratory conditions and are therefore more likely to be affected by changes in air quality. Those with long-term illnesses, especially individuals with pre-existing lung conditions would be disproportionately at risk from the increased levels of pollutants created by the construction period.

Receptor sensitivity

- 8.183 The sensitivity of the receptor population has not been determined at this stage. Further work will be presented in the ES that will accompany the DCO application for the London Resort.

Potential health effects from a change in local traffic and active travel during the operational phase

- 8.184 The baseline for the **potential effect of local traffic and transport and changes in use of active travel modes during construction**, also applies to the operational phase due to the proposed changes in access and active travel.

Baseline

- 8.185 The baseline section for the **potential effect to local traffic and transport and changes in use of active travel modes during construction** has identified that obesity and a lack of physical activity tend to be problems in the areas containing the NSA. The rate of death from preventable cardiovascular disease is also higher. A high share of households has access to a car or a van, and a higher proportion travel large distances to work, so that traffic interruptions could pose problems.

- 8.186 For a complete transport baseline review, please refer to the transport chapter of the PEIR.

Receptor population

- 8.187 The receptor population is made up of transport users, and the resident population of the study area, and of groups vulnerable to this effect, which include: older people, low income groups, and people with long-term illness or disability. The removal of established routes (transport and pedestrian) may cause issues for older people in the form of

preventing them from accessing usual amenities, leading to worse health outcomes. Those from lower socio-economic backgrounds may be disproportionately affected by a reduction in access to transport routes due to a heavier reliance on public transport. Poor planning and transport infrastructure may create an unsafe environment which would be particularly harmful for those with cognitive impairments, which could increase the risk of traffic-related injuries.

Receptor sensitivity

- 8.188 The NSA suffers from higher-than-average rates of obesity, lack of physical activity, and a relatively high mortality rate from preventable cardiovascular diseases. The future baseline has shown that local traffic will see improvements and transport network upgrades, benefiting the numerous car users of the area.
- 8.189 The sensitivity of the receptor population has not been determined at this stage. Further work will be presented in the ES that will accompany the DCO application for the London Resort.

Potential health effects associated with changes in electromagnetic field exposure

- 8.190 The scale of the London Resort introduces considerations for the changes in exposure to electromagnetic fields. The London Resort may result in changes in electrical currents in the area, as well as exposure of the general population to large amounts of industrial equipment. Increased exposure to electromagnetic fields can affect certain groups more than others.

Baseline

- 8.191 It has not been possible to assess the baseline for this effect due to a lack of relevant information. This baseline remains under review and more detail will be provided at the ES stage should it become available.

Receptor population

- 8.192 The receptor population is made up of workers and visitors, and the resident population of the study area, and of groups potentially vulnerable to this effect, which include: young people and people with long-term illness or disability. Young people may be at a greater risk of developing cancer as a result of EMF exposure. Exposure to EMF may be harmful for those with mental health issues due to the perception that EMF can affect things such as sleep and mood. It should be noted however that the literature linking EMF and adverse human health outcomes is judged to be very weak. A large body of literature exists on the health outcomes associated with exposure to EMF and has been researched for many years, such as headaches, anxiety, and nausea, but evidence is weak in proving the link and conclusions are often inconclusive.
- 8.193 On the worker population in 2019, **Appendix 8.2: detailed baseline** estimates that about 20% of the working residents were disabled, which compares to 14% in the RCA and 16%

in the NCA. It is not unrealistic to assume that a similar share of the London Resort's workforce will have a similar profile. It is not possible to know the share of vulnerable groups among visitors, but it is assumed that there will be some present.

Sensitivity of receptor population

8.194 The sensitivity of the receptor population has not been determined at this stage. Further work will be presented in the Environmental Statement that will accompany the DCO application for the London Resort.

Potential health effects associated with the inclusive design, site access and facilities of the London Resort

8.195 The way in which the London Resort is designed, including how the site is accessed and the specific facilities it contains, may influence health outcomes of particular groups. There are many design factors that must be considered in order to effectively minimise the burden of adverse health outcomes on visitors to the theme park, as well as workers on-site and residents. The Applicant will be working closely with affected groups.

Baseline

8.196 **Appendix 8.2: detailed baseline** identifies that in 2019, 20% of the CSA's employed residents was comprised of disabled individuals, and 23% of the total 16 to 64 year old residential population. The CIA is performing better than the RCA and the NCA on the inclusion of disabled residents in the workforce, based on the proportion of disabled residents in employment.

8.197 Using a different measure of disability, the 2011 Census found that economic activity rates are far lower for residents suffering from a long-term illness or disability, and unemployment rates are significantly higher.

8.198 Several major theme parks across the UK are known to provide services and facilities that cater to those who may be disabled.¹⁶ Alton Towers, Chessington World of Adventure, Thorpe Park and Legoland (to name a few) all offer some version of an accessibility and restriction guide which outlines all the relevant information on rides, services, and health facilities for those who are disabled. Alton Towers, for example, provides hotel accommodation that enables visitors to access buttons that turn off colour changing lights and sounds in the lift for those who may be sensitive to these effects. At Legoland, on-site wheelchairs are available for disabled visitors.

Receptor population

8.199 The receptor population is made up of workers and visitors, and the resident population of the study area, and of groups vulnerable to this effect, which include: young people,

¹⁶ Retrieved from UK Accessible Theme Parks, Firefly, 2018. (URL: <https://www.fireflyfriends.com/uk/blog/uk-accessible-theme-parks/>)

older people and people with long-term illness or disability. The chances of overcrowding are very strong in a theme park, and so considerations that account for access to families with small children would lead to positive health outcomes. Good accessibility to and around the site is important for older people to reduce the adverse health effects that are associated with travelling, such as stress or the potential for physical accidents. Good accessibility for a leisure destination such as a theme park is an important issue for individuals that are living with a disability, as they may encounter additional challenges in the normal process of booking tickets and accessing the park.

Sensitivity of receptor population

- 8.200 The CIA is performing relatively well on the inclusion of disabled residents in the workforce, and there is a relatively small proportion of older residents and people with long-term illness or disability but a higher proportion of young people. However, it is expected that vulnerable groups will be present in the visitor and worker receptors.
- 8.201 A number of existing theme parks in the UK provide facilities and services that cater to those who may be disabled, and therefore theme parks in general can be considered as already having a degree of accessibility.
- 8.202 The sensitivity of the receptor population to potential health effects associated with the inclusive design, site access and facilities is **medium**.

Potential changes relating to changes in access to work and skills during operation

- 8.203 The baseline for the construction effect relating to access to work and skills is also relevant here. The London Resort will create numerous employment and training opportunities, which can result in associated improved health outcomes. These pathways are discussed in greater detail in **Appendix 8.3: literature**.

Baseline

- 8.204 The baseline (**Appendix 8.2**) shows that the CSA has relatively high economic activity and employment rates, whilst unemployment is slightly higher than the rate recorded across the region, although in line with the national level. The residential population is relatively less skilled and hold fewer qualifications than that of the RCA and the NCA.
- 8.205 **Appendix 8.2: detailed baseline** shows that employment growth in the CSA (16%) has been faster than nationally (11%), and in line with the RCA (16%). Retail, motor trades, construction, transport & storage, and business administration and support services are the sectors accounting for a larger relative share of the workforce at the CSA than at the NCA.
- 8.206 The CSA general population and working age population are expected to grow significantly faster than the SRCA, RCA, and NCA, as shown in the future baseline. The median earnings of residents of the CSA are higher than nationally, but slightly lower than in the SRCA or the RCA. The median earnings of those working in the CSA are higher than all comparator

areas.

- 8.207 The sectoral makeup of apprenticeship starts in the CSA is broadly similar to the distribution nationally. The completion rates of apprenticeships is lower across most sectors in the CSA than in the NCA.

Future baseline

- 8.208 **Appendix 8.2: detailed baseline** shows that the population in the CSA is expected to grow by 7% until 2025, and by 10% until 2030, reaching 429,000. Employment in the CSA is expected to grow at 1.3% compound annual growth rate (CAGR), growing by 10% until 2025, and 17% until 2030, reaching a total of 190,000 workers in the CSA in 2030.

Receptor population

- 8.209 The receptor population is made up of workers and the resident population of study area and groups vulnerable to this effect, which include: young people, low-income groups, and ethnic minority groups. As detailed in **Appendix 8.3: Literature**, young people benefit indirectly from parental employment from jobs created by the London Resort, stable employment reducing the child's risk of being unemployed in later life. The unemployed would disproportionately benefit from additional employment and both the unemployed and individuals from lower socio-economic backgrounds would benefit from training programmes in the operational phase. Ethnic minority groups are under-represented in the labour market therefore, additional employment opportunities created in the operational phase have the potential to benefit this group even more

Sensitivity of receptor population

- 8.210 The CSA struggles with significant health inequalities linked to deprivation. Although employment growth has been strong in the area, the skills-base of the residents is relatively low. The CSA contains a relatively high number of vulnerable groups. Therefore, the sensitivity of the receptor population to changes in access to work and skills during the operational phase of the London Resort is **medium**.

Potential effects from a change in the demand for health services

- 8.211 There is likely to be an increase in the demand for local health services due to the increased number of workers, residents and visitors. These increases in demand may lead to reduced access for others.

Baseline

- 8.212 **Appendix 8.2: detailed baseline** identifies that there are two GP practices situated within a 500m radius of the site, both of which are located on the north side of the river, whilst one other GP which lies just outside the CIA boundary is located on the south side. The three practices serve an average of 4,500 patients per FTE GP. This is substantially above the NHS benchmark of 1,800 patients per FTE GP. Two pharmacies have been identified

within the CIA. These pharmacies fall just outside the PSB and are Ackers Chemists Ltd and Swan Valley Pharmacy.

- 8.213 The nearest A&E to the site (falling within the CIA) is Darent Valley Hospital, which is part of the Dartford and Gravesham NHS Trust. The Dartford and Gravesham Trust is performing better than the national average for England, with 87% of people being attended to in under 4 hours.¹⁷

Future baseline

- 8.214 **Appendix 8.2: detailed baseline** shows that there are plans to provide a new primary healthcare facility in Ebbsfleet Garden City, and that a new primary healthcare facility is being provided at Stone / Greenhithe area (just outside the CIA) providing new facilities for three GP practices in order to meet demand from new housing development nearby, which will be delivered by 2022. Darent Valley Hospital could also be expanded should demand justify this.

Receptor population

- 8.215 The receptor population is made up of workers, visitors, the resident population of the study area and of groups vulnerable to this effect, which include: older people, ethnic minorities and people with long-term illness or disability. Older people currently face barriers to accessing healthcare due to a lack of mobility or knowledge in accessing the correct services. Ethnic minority groups have historically had poorer health and barriers to accessing healthcare services. Individuals with disabilities and chronic conditions have a greater reliance on and use of healthcare services.

Sensitivity of receptor population

- 8.216 The baseline has shown that local GP surgeries are overburdened. The NHS Trust to which the local A&E department belongs is performing better than the national average, although still falls short of the NHS target that 95% of those arriving at A&E be attended to within 4 hours. There are some vulnerable groups within the CSA (ethnic minorities) although others are present in relatively low proportions.
- 8.217 Therefore, the sensitivity of the receptor population to changes in the demand for health services is **high**.

Potential effects from a change in the demand for public services and community facilities once operational

- 8.218 The baseline for the construction effect relating to changes in the demand for public services and community facilities is also relevant to this baseline for this effect. This effect focuses on changes once the London Resort is operational.

¹⁷ NHS Digital, 2018/19, Provider level analysis for HES Accident and Emergency Attendances

Baseline

8.219 The baseline section for the **potential effect of displacement or change in access affecting public services and community facilities** has identified that the deprivation measure for barriers to services are average. Although the area has good levels of provision of community infrastructure, there exist issues with relatively high rates of anxiety in the area, and a mixed picture regarding the levels of social contact of social care users and carers.

Future baseline

8.220 The future baseline identified that up to 70,000 sqm of community uses could be delivered by the Ebbsfleet Development Corporation (EDC). Additionally, there is to be a new hub facility for lifelong learning – including library provision - at Eastern Quarry. This facility, which will be within the CIA, is to be delivered by 2022.

Receptor population

8.221 The receptor population is made up of the workers and the resident population of the study area and groups vulnerable to this effect, which include: young people, older people, people on low incomes, ethnic minority groups, and people with long-term illness or disability. Young people are especially vulnerable to the displacement of educational facilities, affecting both social life and academic progress. Older people are vulnerable to social isolation if the community facilities where much of their social life takes place are displaced. People on low incomes are hit especially hard by the loss of public services. Ethnic minority groups often benefit disproportionately from the use of community facilities, and their loss could hit them hardest. People with long-term illness or disabilities often rely on their communities for physical and emotional support, which displacement of community facilities may disrupt.

8.222 It is not known how many vulnerable groups are present among workers, but it is assumed that there are some.

Sensitivity of receptor population

8.223 The same conclusions apply as before, for the **potential effect of displacement or change in access affecting public services and community facilities**. Deprivation related to barriers to services is average, the level of provision of community infrastructure is good, but the picture regarding anxiety is negative, and that regarding the social contact of adult carers and social care users is mixed. The vulnerable groups of young people, those on low incomes and ethnic minorities have a relatively larger presence in the CSA than nationally.

8.224 Therefore, the sensitivity of the receptor population to changes in access to public services and community facilities is judged to be **medium**.

Potential effects associated with open space provision and amenity space

8.225 Any positive changes to the amenity and open space offering would result in health benefits.

Baseline

8.226 The earlier baseline for the **potential effect of displacement or change in access to open spaces during construction** has shown obesity and physical inactivity to be serious problems, although utilisation of outdoor spaces for exercise/health reasons and sports club membership are generally good in the area.

8.227 The earlier baseline for the **potential effect of displacement or change in access to open spaces during construction** identified that the CIA has open space provision of 47 ha. There are also three marshes overlapping with the PSB: Black Duck Marsh, Botany Marshes and Broadness Salt Marsh; and the initial PROW assessment finds there are nine PROWs and routes that will be affected by the London Resort.

Future baseline

8.228 As discussed under the future baseline of the construction effect relating to changes in access to open spaces, the Ebbsfleet Implementation Framework - used by the EDC to shape and support its plans – registers an ambition for seven city parks to be developed from existing open spaces within Gravesham and Dartford areas, providing areas for sports, play and informal recreation, as well as long distance views and ecological enhancement. The EDC has the ambition that Swanscombe Peninsula Park, currently made of three marshes (Botany Marsh, Black Duck Marsh and Broadness Marsh), will be consolidated into one coherent ecological reserve. The proposals for the marshes being developed for this project by the Applicant will give consideration to these ambitions.

Receptor population

8.229 The receptor population is made up of workers in the area, the resident population of the study area and groups vulnerable to this effect, which include: young people, older people, people on low incomes, and people with long-term illness or disability. Young people are at a vulnerable stage in life, and poor access to open spaces can lead to physical inactivity, obesity and mental health issues. Older people are less mobile and require spaces for physical activity close to their homes; physical inactivity is an issue amongst older residents. The relationship between health and open space provision is strongest among low income groups, suggesting that they use these areas to a higher degree. Those with mental health issues or other disabilities may be particularly affected by changes in access to open space.

Sensitivity of receptor population

8.230 In line with the baseline for the **potential effect of displacement or change in access to**

open spaces during construction, it was identified that the areas containing the CIA have a good utilisation of open space and sports infrastructure. The area struggles with obesity, though physical inactivity might not be related to lack of infrastructure. There is also a relatively high presence of the vulnerable groups of young people and people on low incomes in relatively larger numbers. The sensitivity of the receptor population to changes in open space provision and amenity space is **medium**.

Potential effects from changes in community cohesion

8.231 A development of this scale, which increases traffic to the area, as well as resident and worker numbers in the area, will have impacts on the local communities and community cohesion. Higher quality social networks of an individual are associated with lower risk of various diseases and conditions, and community networks play an important role in maintaining mental health.

Baseline

8.232 **Appendix 8.2: detailed baseline** identifies that parts of Dartford, Gravesham and Thurrock, which contain the CIA, are fairly deprived in terms of access to retail services, access to health services, and physical environment, although other areas are performing relatively well.

8.233 While no direct data on the strength of community cohesion are available at the level of the CIA, regional data suggests that 71% of the area's residents meet up with friends in person at least once a week. This is lower than the national average (74%). Other data suggests that support networks are strong: it is likely that people have someone they could rely on for help (95% in the RCA and NCA), or to socialise with (91% in the RCA and the NCA).

8.234 The picture regarding overcrowding is mixed. Kent performs better (3.6% of households in overcrowded conditions) than the national average (4.8% of households in overcrowded conditions), but Thurrock performs worse (5.6%).

Receptor population

8.235 The receptor population is made up of the resident population of the study area and groups vulnerable to this effect, which include: young people, older people, ethnic minorities, and people with long-term illness or disabilities. A stronger sense of community in young people is associated with feelings of happiness, better educational attainment, and better mental health. Social interaction (as a result of a more cohesive community) in older adults leads to a lower risk of cardiovascular problems, some cancers, osteoporosis and arthritis. Ethnic minorities place a high value of importance on their community and support systems with others of the same backgrounds. A strong community is important for those living with disabilities, as outlined in **potential effect of displacement or change in access affecting public services and community facilities**.

Sensitivity of receptor population

8.236 Although the baseline has shown that community life in the region is relatively healthy, more fine-grained data about local conditions invites a more mixed assessment. Some parts of the CIA perform poorly in terms of access to services, a welcoming physical environment and overcrowding. The vulnerable groups of young people and ethnic minorities are present in the area in relatively large numbers. The sensitivity of the receptor population to changes in community cohesion is therefore **medium**.

Potential effects from changes in crime and community safety

8.237 The increase in activity as a result of the London Resort may change crime levels in and around the Project Site. Changes in crime and fear of crime can result in adverse health outcomes, as detailed in **Appendix 8.3: literature**.

Baseline

8.238 **Appendix 8.2: detailed baseline** shows the crime rate in the CSA is substantially higher than the national average. For many types of crime, the CSA is broadly in line with or only slightly higher than England and Wales, however criminal damage and arson, shoplifting, stalking and harassment, vehicle offences and violence without injury are all higher in the CSA than the national rate.

8.239 Over time, crime levels per 1,000 population in the CSA have generally moved in the same direction as the corresponding trends exhibited by both the RCA and nationally, but this diverged in 2016 and ever since the crime rate in the CSA has grown faster than the comparators.

8.240 Crime and the fear of crime may result in lower rates of physical activity and higher rates of mental distress. As discussed in earlier sections, the residents of the host LPAs tend to have higher rates of physical inactivity and anxiety. The section on deprivation has also highlighted that the CSA is within the bottom 20% of the country on the crime domain.

Receptor population

8.241 The receptor population is made up of visitors and the resident population of study area and groups vulnerable to this effect, which include: young people, older people, ethnic minorities, and LGBTQ+ populations. Children have been found to be less physically active in an environment not judged as safe, leading to higher levels of childhood obesity. Older people are at greater risk of crime and fear of crime due to a higher prevalence of social isolation while higher levels of safety are associated with higher levels of physical activity amongst older people. Crime disproportionately affects ethnic minorities, and nearly all LGBTQ+ people have been the victim of hate crime in their life.

Sensitivity of receptor population

8.242 The crime rate in the CSA has increased at a faster rate than the comparators since 2016

and now the crime rate is relatively high. The vulnerable groups of young people and ethnic minorities are present in relatively large numbers in the CSA. The sensitivity of the receptor population to changes in crime and community safety is **high**.

SUMMARY OF RECEPTOR SENSITIVITIES

8.243 The table below summarises receptor sensitivities for each potential effect assessed in this chapter. The table also lists the populations potentially vulnerable to each given effect, and details which vulnerable groups have a large presence in each study area.

Table 8.15 Summary of receptor sensitivities

Activity	Effect	Receptor(s)	Study area	Receptor sensitivity	Populations vulnerable to effect
CONSTRUCTION EFFECTS					
Displacement to land and property as a result of the land take	Potential effect of displacement or change in access affecting public services and community facilities	Residents	CIA	Medium	Young people, Older people, Low income groups, Ethnic minority groups, People with long-term illness or disability
	Potential effect of displacement or change in access to open spaces	Residents	CIA	Medium	Young people, Older people,
		Visitors			Low income groups, People with long-term illness or disability
	Potential effects from displacement of commercial uses	Residents	PSB	Medium	Young people, Older people, Low income groups, Ethnic minority groups
	Potential effects from displacement of residential dwellings	Residents	PSB	High	Young people,

Activity	Effect	Receptor(s)	Study area	Receptor sensitivity	Populations vulnerable to effect
					Older people, People with long-term illness or disability
					Older people, Low income groups, People with long-term illness or disability
					Older people, People with long-term illness or disability
Construction activity	Potential changes to local traffic and transport and changes in use of active travel modes	Residents Visitors Transport users	NSA	Not determined	Older people, Low income groups, People with long-term illness or disability
	Potential effect of increased flooding	Residents Visitors Workers	NSA	High	Older people, People with long-term illness or disability
	Potential effect of construction resulting in changes in noise and vibration	Residents	NSA	Not determined	Young people, Older people, People with long-term illness or disability
	Potential effect of construction resulting in changes in air quality	Residents	NSA	Not determined	Young people, Older people, People with long-term illness or disability
	Potential effects of the presence of the construction workforce	Residents	CSA	Low	Older people, People with long-term illness or disability
	Potential effect of work and training opportunities created	Residents	CSA	Medium	Young people, Low income groups,

Activity	Effect	Receptor(s)	Study area	Receptor sensitivity	Populations vulnerable to effect
					Ethnic minority groups
OPERATIONAL EFFECTS					
Noise exposure	Potential health effects associated with changes in noise and vibration	Residents	NSA	Not determined	Young people, Older people, People with long-term illness or disability
Air quality	Potential health effects associated with changes in air quality	Residents	NSA	Not determined	Young people, Older people,
					People with long-term illness or disability
Traffic and transport	Potential health effects from a change in local traffic and active travel	Residents Transport users	NSA	Not determined	Older people, Low income groups, People with long-term illness or disability
Electromagnetic field exposure	Potential health effects associated with changes in electromagnetic field exposure	Residents Visitors Workers	NSA	Not determined	Young people, People with long-term illness or disability
Inclusive design	Potential health effects associated with the inclusive design, site access and facilities of the London Resort	Visitors Workers	CIA	Medium	Young people, Older people, People with long-term illness or disability
Existence of the London Resort	Potential health effects relating to changes in access to work and skills	Residents	CSA	Medium	Young people,

Activity	Effect	Receptor(s)	Study area	Receptor sensitivity	Populations vulnerable to effect
					Low income groups, Ethnic minority groups
	Potential effects from a change in the demand for health services	Residents	CIA	High	Older people,
		Workers			Ethnic minority groups, People with long-term illness or disability
	Potential effects from a change in the demand for public services and community facilities	Residents	CIA	Medium	Young people,
		Workers			Older people, Low income groups, Ethnic minority groups, People with long-term illness or disability
	Potential effects associated with open space provision and amenity space	Residents	CIA	Medium	Young people,
		Workers			Older people, Low income groups, People with long-term illness or disability
	Potential effects from changes in community cohesion	Residents	CIA	Medium	Young people, Older people,
					Ethnic minority groups, People with long-term illness or disability
	Potential effects from changes in crime and community safety (including fear of crime)	Residents	CSA	High	Young people,
		Visitors			Older people,

Activity	Effect	Receptor(s)	Study area	Receptor sensitivity	Populations vulnerable to effect Ethnic minority groups, LGBTQ+ populations
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POTENTIAL SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSALS

CONSTRUCTION EFFECTS

Potential effect of displacement or change in access affecting public services and community facilities

Health pathway and strength of evidence

8.244 As shown in **Appendix 8.3: literature**, the evidence linking the displacement of or change in access to public services and community facilities and adverse health outcomes is judged to be strong. There is clear evidence on the positive effects of social networks for all individuals, such as improved self-confidence and preventive health behaviours, with further evidence linking the loss of these networks to negative health outcomes through increased loneliness, social isolation and higher rates of disease.

Health priorities and policy context

8.245 Developmental policy within the CSA is generally based on the underlying aim of improving the well-being of residents and the community as a whole. The continued provision of community facilities is frequently mentioned within policy, as increasing populations have forced the local authorities to improve the quantity and quality of such facilities to meet demand. The loss of community services and facilities, without adequate reprovion, is generally resisted by local authorities.

8.246 The key health priority themes that link with public services and community facilities as a determinant of health include: reductions in waiting times for certain services, stronger and better connected communities, better information flows about the range of health services available, and coverage for hard to reach groups such as Gypsies, Roma and Travellers.

Categorising effects on human health

8.247 There are no public services or community facilities which will be displaced from the PSB as a direct result of the London Resort. Transport modelling to assess the extent of change in access to public services and community facilities in the CIA will be undertaken for DCO. The effect on health of any such change in access would be adverse in the absence of mitigation. The magnitude of this potential impact and any mitigation and thus the scale of the effect will be assessed in the ES that will accompany the DCO application for the London Resort.

Potential effect of displacement or change in access to open spaces***Health pathway and strength of evidence***

8.248 As shown in **Appendix 8.3: literature**, the evidence linking the displacement of or change in access to open spaces to health is considered to be extensive. There is clear and strong evidence on the positive effects of open spaces across all groups including increased physical activity, better cognition and better mental health outcomes. Substantial evidence also exists on the adverse outcomes associated with displacement of or a clear lack of access to open spaces, such as loneliness, increased crime, and mental health problems in children.

Health priorities and policy context

8.249 At the local level, the objectives surrounding health and social care are primarily based on the provision of healthcare services, as well as the encouragement of healthy lifestyles. The needs of residents for, among others, sports and leisure facilities will be taken into account by planners, and visions for better provision of facilities for recreation, sport, walking and cycling have been set forth.

8.250 The key health priority themes that link with access to open space as a determinant of health include: reductions in the mortality rate from cardiovascular diseases, programmes to address physical inactivity, and improving physical activity assets and facilities.

Categorising effects on human health

8.251 There is no open space which will be displaced from the PSB as a direct result of the London Resort. There is one playing field within the PSB but it will be retained. Detailed assessment of the landscape strategy with regards to the marshes is ongoing. The effect on health of any such change in provision and access could be beneficial or adverse and is subject to review and will be reported on in the ES. Transport modelling to assess the extent of change in access to open spaces in the CIA will be undertaken as part of the ES for the submission of the DCO.

Potential effects from displacement of commercial uses

Health pathway and strength of evidence

8.252 As shown in **Appendix 8.3: literature**, the evidence linking the displacement of commercial uses to health outcomes is considered to be moderate. There is clear and strong evidence on the positive effects of employment, such as income and social status, along with the adverse health outcomes that are associated with displacement of various commercial uses (causing unemployment), where some groups are affected more so than others. The effects of displacement may result in the relocation of businesses, which can lead to reduced cohesion in the community and financial burdens for smaller businesses. However, the evidence is less developed on the topic of the overall burden on health as a result of job relocation or the effect on the community as a result of lost commercial entities.

Health priorities and policy context

8.253 The Swanscombe Peninsula is designated as an opportunity area in both Dartford and Gravesham policy as an area with the potential to deliver substantial economic benefits.

8.254 The key health policy themes that link with commercial development as a determinant of health include a focus on the social determinants of health such as education and employment.

Categorising effects on human health

8.255 There will be up to 1,330 FTE jobs displaced from the PSB. Surveying to better understand these businesses and their employment and relocation requirements is ongoing. The effect on health of any such displacement is likely to be adverse, although the expansion of local work and training opportunities associated with the London Resort will offer many employees alternative employment opportunities. LRCH will also pay compensation where entitled. Compensation may be required where land is acquired, land value is affected, or adverse effects are expected. LRCH recognises that claimants may find it difficult to secure alternative accommodation both in the locality and also at similar entry level (rent / value) and is therefore proposing to make an enhanced proposal to qualifying claimants, the London Resort Premium. The magnitude of this potential impact and thus the scale of the effect will be assessed in the ES that will accompany the DCO application for the London Resort.

Potential effects from displacement of residential dwellings

Health pathway and strength of evidence

8.256 As shown in **Appendix 8.3: literature**, the link between displacement of residential dwellings and health is judged to be weak. There exist numerous theories on how housing-led regeneration projects and displacement may positively or negatively affect human

health, but many studies varied in their findings and few long-term or definite results were found. Whilst some people may be accepting of change or the change may result in improved living conditions, it is conservatively assumed that the effect is considered to be negative for the residents of the PSB.

Health priorities and policy context

- 8.257 A number of host LPA policies on issues such as the economy, tourism, sports/recreational facilities have a community driven element, and involuntary relocation of residents weighs against the aims of community integration. National policy further supports the integration of communities, where everyone can feel confident and proud of their identity and participate in a number of ways.
- 8.258 The key health policy themes that link with housing and community ties as a determinant of health include: ensuring all houses have adequate heating and insulation, focusing efforts on reducing under-occupation and overcrowding, improving social and community networks (particularly to improve mental health), and aiming at stronger and more cohesive communities.

Categorising effects on human health

- 8.259 The London Resort needs to acquire 19 London Road in order to construct the visitor centre and also to create the entrance to the Resort down Pilgrim's Road. The assessment year for this effect is 2022; the earliest date at which this displacement could take place. It is assumed that this takes place all within this year.
- 8.260 There will be three dwellings (within one property) which will be displaced as a result of property acquisition. **Chapter seven: land use and socio-economics** expects the magnitude of impact on residents of the three dwellings to be high. This combines with a receptor of high sensitivity, for a temporary **major adverse** health effect on the residents of said dwellings (**significant**).
- 8.261 Vulnerable populations would similarly experience an impact that is high in magnitude, leading to a temporary **major adverse** health effect for these groups (**significant**).
- 8.262 More work is required to understand the occupancy of the building and the resident's sensitivity to change.

Potential changes to local traffic and transport and changes in use of active travel modes

Health pathway and strength of evidence

- 8.263 As shown in **Appendix 8.3: literature**, the link between changes to local traffic and transport, as well as changes to the use of active travel modes, is judged to be strong. There is a reasonable body of evidence linking poor transport access to adverse health outcomes (such as isolation, depression, and stress) and increased risk-taking behaviour, but the evidence is particularly strong regarding the link between reduced active travel

methods and positive health outcomes which aren't realised, such as increased physical activity.

Health priorities and policy context

- 8.264 All the local authorities have set out plans that aim to increase the efficiency of transport networks and minimise car use, whilst simultaneously providing safe and accessible cycling/walking routes for the community to promote healthier lifestyles.
- 8.265 The key health policy themes that link with traffic and transport as a determinant of health include: integrating physical activity into transport and environmental planning, improving physical activity assets and facilities, improving conditions for vulnerable road users such as pedestrians and cyclists, targeting road safety in disadvantaged communities especially.

Categorising effects on human health

- 8.266 The traffic modelling that will inform the transport chapter and provide information to support the effects upon human health has not been undertaken. The transport chapter for the ES will set out the environmental effects. However the assessment will not be available until the submission of the full ES. As such, health effects associated with changes to transport cannot be determined at this stage. The magnitude of any potential health impact and thus the scale of the effect will be assessed in the ES that will accompany the DCO application for the London Resort.

Potential effect of increased flooding

Health pathway and strength of evidence

- 8.267 As shown in **Appendix 8.3: literature** the relationship between flood risk and health outcomes is judged to be moderate. There is not a substantial body of evidence surrounding the health effects of flooding, but the evidence does indicate links between flooding and mental health outcomes. Individuals from areas of flooding experience higher levels of PTSD, depression, and anxiety disorders.

Health priorities and policy context

- 8.268 Development will mostly be directed to areas outside of high flood risk zones. According to the policies of the three host CSA LPAs, flood risk will be mitigated, and any future proposals for the Swanscombe Peninsula East Undeveloped Area will be subject to a comprehensive masterplan approach which deals with the issues of, amongst others, flood risk.

Categorising effects on human health

- 8.269 Modelling of flooding will be undertaken for DCO. The intent will be to design the interventions to avoid increased risk of flooding. The magnitude of any potential health impact and thus the scale of the effect will be assessed in the ES that will accompany the

DCO application for the London Resort.

Potential effect of changes in noise and vibration during construction

Health pathway and strength of evidence

8.270 As shown in **Appendix 8.3: literature**, the relationship between changes in the levels of noise and vibration during the construction phase and health outcomes is judged to be strong. The evidence is clear that increased levels of noise can adversely affect health, with those living in quiet locations judged to have a better quality of life. Negative health outcomes that can arise as a result of increased noise exposure include sleep disturbance and psychological stress, with particular adverse effects on children, older people, and disabled people.

Health priorities and policy context

8.271 An excessive amount of noise and vibration is recognised by the planning authorities as an impediment to the well-being of surrounding residents and workers, and as a result the design of any development should sufficiently prevent such issues. Kent County Council found that concerns around noise pollution were raised by many residents and businesses in relation to major transport infrastructure.¹⁸

8.272 No health priorities that link to noise and vibration have been identified, although noise pollution has been raised as a concern by residents and businesses.

Categorising effects on human health

8.273 Modelling of noise impacts will be undertaken for DCO. The magnitude of any potential health impact and thus the scale of the effect will be assessed in the ES that will accompany the DCO application for the London Resort.

Potential effect of changes in air quality during construction

Health pathway and strength of evidence

8.274 As shown in **Appendix 8.3: literature**, the relationship between changes in air quality and human health outcomes is judged to be strong. The evidence is clear that pollutants (such as PM and NO₂) have negative health impacts on individuals, such as coronary heart disease, lung cancer, and annoyance.

Health priorities and policy context

8.275 All the host LPAs have developed plans with key objectives to tackle environmental and climate issues, with air quality being one of many components in this policy area. Air quality is also seen as an important factor in maintaining good health amongst residents

¹⁸ KCC, 2016, The Kent Environment Strategy 2016

and the community as a whole. Traffic and transport are recognised as key determinants of air quality, and efforts to ameliorate conditions focus on these areas.

- 8.276 The key health policy themes that link to air quality as a determinant of health include: targeting a reduction in the mortality from respiratory diseases, and identifying air pollutants of the greatest concern (particulate matter (PM), oxides of nitrogen and ozone).

Categorising effects on human health

- 8.277 Modelling of air quality impacts will be undertaken as part of the assessment work to be reported on in the ES and submitted as part of the DCO application. The magnitude of any potential health impact and thus the scale of the effect will be assessed in the ES that will accompany the DCO application for the London Resort.

Potential effects of the presence of the construction workforce

Health pathway and strength of evidence

- 8.278 As shown in **Appendix 8.3: literature**, the evidence linking the presence of a construction workforce and human health outcomes is judged to be weak. There does not exist an extensive range of literature noting the health impacts of the introduction of a construction workforce, however, there is limited evidence on the effects on anti-social behaviour which may be introduced as a result of the construction workforce and the attitudes that particular groups have towards construction workers.

Health priorities and policy context

- 8.279 The key health priorities that link with the presence of a construction workforce as a health determinant tend to focus on promoting healthier lifestyles. Priorities include: reducing smoking inequalities, improving smoking cessation services, encouraging responsible drinking and fewer alcohol-related hospital admissions, concentrating some of the effort in areas of high deprivation.

Categorising effects on human health

- 8.280 As noted in the baseline section, whilst there is anecdotal evidence of perceptions of adverse impacts associated with large construction workforces, there is limited causal evidence suggesting that the presence of construction workers is likely to have significant health impacts. However, any likely impacts on the receptor population would likely be adverse, such as changes in risk-taking behaviour and anti-social behaviour.
- 8.281 The number of people that are likely to be affected by construction worker behaviour is expected to be small and short-term in nature. Whilst there is a relatively large number of people on site (between 2,500 and 4,100 at peak times during the construction of Gate One), it is a low proportion in the context of the existing population (between 0.6% and 1.0%) and worker numbers (between 1.4% and 2.4%) in the study area.

- 8.282 The magnitude of impact upon the general population in 2023 (peak construction year) is therefore expected to be low, affecting a low sensitivity receptor. This results in a temporary health effect which is **negligible** at the CSA level (**not significant**).
- 8.283 The magnitude of impact upon vulnerable groups in 2023 (peak construction year) is expected to be medium. This is a worst-case scenario, which depends on the levels of interaction of vulnerable groups with construction workforce and the extent to which they are deterred from activities due to the presence of a large construction workforce. The temporary health effect is considered to be **minor adverse** at the CSA level (**not significant**).

Potential effect of work and training opportunities created

Health pathway and strength of evidence

- 8.284 As shown in **Appendix 8.3: literature**, the evidence linking the creation of work and training opportunities to positive health outcomes is considered to be **strong**. There is clear and strong evidence on the positive effects of employment, including better physical health outcomes (such as more money available to provide better services for individuals and healthcare) and better mental health outcomes (such as increased sense of purpose and confidence). In addition, there exists extensive and clear literature on the benefits of education and its link to positive health outcomes, as individuals are likelier to have healthier lifestyles and behaviours.

Health priorities and policy context

- 8.285 All authorities have overarching aims of improving the skills of their residents, so that their workforces become more developed and higher quality, and with greater earnings potential. All three host CSA local authorities specify that developments will be expected to deliver skills training, in order that their local residents benefit from the opportunities.
- 8.286 The key health priority themes that link to work and training opportunities as a health determinant include: a recognition of the influences of wealth disparity on health, the importance of acting on the social determinants of health such as education and employment and a determination to concentrate efforts on the geographic areas of the greatest deprivation.

Categorising effects on human health

- 8.287 There is a strong and significant positive link between employment opportunities and health outcomes.
- 8.288 As identified in **chapter seven: land use and socio-economics**, the London Resort is expected to support a peak onsite workforce of 2,500-4,100 in 2023 (the peak construction year of Gate One). In total, over the course of the construction period, the London Resort will support 23,300 job years for Gate One and Gate Two.

- 8.289 An Employment and Skills Strategy will be produced for the ES. This will outline the strong commitment to maximising local economic impacts throughout the construction and operational phases. Significant beneficial effects are expected as a result of the creation of jobs and training programmes and higher incomes are expected.
- 8.290 The exact details of the Employment and Skills Strategy will be defined in the ES but the key objectives include creating local employment opportunities; providing career paths and not just jobs; addressing skill gaps and promoting career choices through training and working with local school; colleges and universities; and celebrating diversity and inclusion.
- 8.291 Given the links between employment and health, the work and training opportunities created by the London Resort will have a positive effect on health. However, the jobs will be temporary in nature and benefit people over a relatively wide geography. It should be noted that, whilst the employment opportunities created during the construction phase will be temporary in nature, the improvements to skills supported and associated increase in future opportunities and incomes will be permanent.
- 8.292 The magnitude of impact upon the general population in 2023 (peak construction year) is therefore expected to be low, affecting a medium sensitivity receptor. This results in a temporary health effect which is **minor beneficial** at the CSA level (**not significant**).
- 8.293 The magnitude of impact upon the health of vulnerable groups resulting from employment and skills in 2023 (peak construction year) is expected to be medium, as some of the employment opportunities are expected to benefit vulnerable groups. The Applicant is committed to working with the supply chain, wider businesses and partners to ensure that under-represented and vulnerable groups are represented and supported in their access to employment and skills. The temporary health effect is **moderate beneficial** at the CSA level (**significant**).
- 8.294 These conclusions will be reviewed in advance of the DCO application once the Employment and Skills Strategy is finalised and the construction job estimates are refined.

OPERATIONAL EFFECTS

Potential health effects associated with changes in noise and vibration during operation

Health pathway and strength of evidence

- 8.295 As shown in **Appendix 8.3: literature**, the relationship between changes in the levels of noise and vibration during the construction phase and health outcomes is judged to be **strong**. The evidence is clear that prolonged exposure to increased levels of noise can adversely affect health, with those living in quiet locations judged to have a better quality of life. Negative health outcomes that can arise as a result of increased noise exposure include sleep disturbance and psychological stress, with particular adverse effects on children, older people, and disabled people.

Health priorities and policy context

- 8.296 As discussed above in the section on construction noise, an excessive amount of noise and vibration is recognised by the planning authorities as an impediment to the well-being of surrounding residents and workers, and as a result the design of any development should sufficiently prevent such issues. Kent County Council found that concerns around noise pollution were raised by many residents and businesses in relation to major transport infrastructure.
- 8.297 No health priorities that link to noise and vibration have been identified, although noise pollution has been raised as a concern by residents and businesses.

Categorising effects on human health

- 8.298 There is a relationship between changes in noise and health outcomes. There is therefore potential for a change in the baseline position, widening in health inequalities and/or a contribution to health priorities.
- 8.299 Modelling of noise impacts and their implications for human health will be assessed in the ES that will accompany the DCO application for the London Resort.

Potential health effects associated with changes in air quality during operation***Health pathway and strength of evidence***

- 8.300 As shown in **Appendix 8.3: literature**, the relationship between changes in air quality during the operational phase and human health outcomes is judged to be strong. The evidence is clear that pollutants (such as PM and NO₂) created from air quality changes have negative health impacts on individuals, such as coronary heart disease, lung cancer, and annoyance.

Health priorities and policy context

- 8.301 As discussed above in the section on construction's impact on air quality, all the host LPAs have developed plans with key objectives to tackle environmental and climate issues, with air quality being one of many components in this policy area. Air quality is also seen as an important factor in maintaining good health amongst residents and the community as a whole. Traffic and transport are recognised as key determinants of air quality, and efforts to ameliorate conditions focus on these areas.
- 8.302 The key health policy themes that link to air quality as a determinant of health include: targeting a reduction in the mortality from respiratory diseases, and identifying air pollutants of the greatest concern (particulate matter (PM), oxides of nitrogen and ozone).

Categorising effects on human health

- 8.303 There is a relationship between changes in air quality and health outcomes. There is

therefore potential for a change in the baseline position, widening in health inequalities and/or a contribution to health priorities.

- 8.304 Preliminary work on air quality is presented in chapter 16 of this PEIR. Further modelling of air quality impacts and their implications for human health will be assessed in the ES that will accompany the DCO application for the London Resort.

Potential health effects from a change in local traffic and active travel

Health pathway and strength of evidence

- 8.305 As shown in **Appendix 8.3: literature**, the link between health and changes to local traffic and transport, as well as changes to the use of active travel modes, is judged to be **strong**. There exists reasonable evidence linking better transport access to better health outcomes, such as access to employment opportunities (and associated health benefits) and increased happiness, but the evidence is particularly strong regarding the link between an increase in active travel methods and human health outcomes, such as increased physical activity.

Health priorities and policy context

- 8.306 As discussed above in the section on the impacts on local traffic, transport and active travel uses during construction, all the local authorities have set out plans that aim to increase the efficiency of transport networks and minimise car use, whilst simultaneously providing safe and accessible cycling/walking routes for the community to promote healthier lifestyles.
- 8.307 The key health policy themes that link with traffic and transport as a determinant of health include: integrating physical activity into transport and environmental planning, improving physical activity assets and facilities, improving conditions for vulnerable road users such as pedestrians and cyclists, targeting road safety in disadvantaged communities especially.

Categorising effects on human health

- 8.308 The traffic modelling that will inform **chapter nine: transport**, and provide information to inform the effects upon human health, has not been undertaken. The transport chapter will set out the environmental effects and summarise the transport interventions associated with the London Resort (including the river access, ferry terminal and link with Fastrack routes). However, the assessment will not be available until the submission of the full ES. As such, health effects associated with changes to transport cannot be determined at this stage. The magnitude of any potential health impact and thus the scale of the effect will be assessed in the ES that will accompany the DCO application for the London Resort.

Potential health effects associated with changes in electromagnetic field exposure

Health pathway and strength of evidence

8.309 As shown in **Appendix 8.3: literature**, based on a review of the existing literature, the link between EMF and adverse human health outcomes is judged to be **weak**. A large body of literature exists on the health outcomes associated with exposure to EMF and has been researched for many years, such as headaches, anxiety, and nausea, but evidence is weak in proving the link and conclusions are often inconclusive.

Health priorities and policy context

8.310 In relation to communications infrastructure Public Health England (PHE) takes the lead on public health matters associated with radio frequency electromagnetic fields, or radio waves. PHE's main advice is that EMF levels should comply with the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines. ICNIRP is formally recognised by the World Health Organization (WHO). PHE's view is that *'the overall exposure [from all mobile network EMFs, including 5G] is expected to remain low relative to [the ICNIRP] guidelines and, as such, there should be no consequences for public health'*.

Categorising effects on human health

8.311 There is a relationship between exposure to electromagnetic fields and health outcomes, if exposure exceeds ICNIRP guidelines. There is therefore potential for a change in the baseline position, widening in health inequalities and/or a contribution to health priorities. However, health effects are unlikely as they require high and prolonged exposure to EMF.

8.312 As the site is developed, new EMF emitters such as new cellular infrastructure and public wi-fi will be placed where required. These changes may require existing communications infrastructure to be altered, replaced or moved to a new location. Such changes, if required, will become apparent once the optimum location to place new EMF emitters is determined through consultation with relevant statutory undertakers. This will change the underlying EMF condition. All changes must ensure that EMF exposure limits do not exceed ICNIRP Guidelines. The Applicant confirms that proposed new electrical infrastructure for the London Resort will comply with ICNIRP guidelines. As such, any potential health effects are unlikely, and it is not a likely significant effect. Therefore, health effects are related as **negligible (not significant)** for all assessment years.

Potential health effects associated with the inclusive design, site access and facilities of the London Resort

Health pathway and strength of evidence

8.313 As shown in **Appendix 8.3: literature**, the link between inclusive design features, site access, and facilities on-site and health outcomes is judged as moderate. Links between general design and accessibility of the site and health are considered to be moderate, but strong evidence exists in the human health impacts on particular groups, of lack of

accessibility and design considerations, such as those with sensory impairments, older people, pregnant women etc. For all groups, first-aid points, suitable fire routes and evacuation procedures, and communication systems are important for good inclusive design.

Health priorities and policy context

8.314 Local policies tend to support the creation of improved signage, and an enhanced network of landscaped paths and cycle routes.

8.315 The key health priorities that link to inclusive design, site access and facilities as a determinant of health include: parenting support for parents with learning disability, ensuring implementation of the learning disability health self-assessment, and provision of learning disability day opportunities to local social enterprises.

Categorising effects on human health

8.316 The Applicant is committed to designing and operating a venue that actively encourages people from the broadest spectrum of society and surrounding areas to enjoy the Resort and surrounding areas on equal terms. To achieve this ambition, the Applicant will subscribe to all relevant standards, will meet relevant building regulations, and is committed to on-going dialogue with stakeholders identified through consultation (e.g. representatives of user groups).

8.317 The Applicant will subscribe to all principles of inclusive design from the Commission for Architecture and the Built Environment (CABE). These principles are:¹⁹

- to place people at the heart of the design process;
- acknowledge diversity and difference;
- offer choice where a single design solution cannot accommodate all users;
- provide flexibility in use; and
- provide buildings and environments that are convenient and enjoyable for everyone to use.

8.318 The London Resort is committed creating a development that is accessible and inclusive so that everyone – regardless of disability, age, gender, sexual orientation, race or faith – can enjoy what is on offer confidently and independently with choice and dignity. Examples of provisions to make the Resort more accessible to everyone include providing mobility assistance (a fleet of e-Vehicles), step-free pedestrian routes, accessible seating, assistive listening systems, quiet rooms, faith rooms, accessible toilets and changing places facilities and concessions, baby change facilities and creche or staff working in the resort.

¹⁹ CABE (2006), The principles of inclusive design

More detail will be provided in the ES.

- 8.319 The inclusive design elements associated with Gate 1 will be delivered by 2025 and the rest will be delivered by 2030. The year with the greatest potential health effect will be 2038 (fully operational) as the inclusive design measures will be monitored and the Applicant will respond to the requirements of visitors and staff. Many of those changes will be expected to be implemented by this time. That said, inclusive design is as much as about management / operational policy as physical provision – the Applicant is all they can to ensure these policies will be in place from opening day onwards.
- 8.320 The magnitude of any potential health impact and thus the scale of the effect will be confirmed in the ES that will accompany the DCO application for the London Resort.

Potential health effects relating to changes in access to work and skills

Health pathway and strength of evidence

- 8.321 As shown in **Appendix 8.3: literature**, the evidence linking the creation of work and training opportunities to positive health outcomes is considered to be **strong**. There is a large and robust body of evidence linking employment to positive health outcomes, including better physical health outcomes (such as more money available to provide better services for individuals and healthcare) and better mental health outcomes (such as increased sense of purpose and confidence). There is also a strong body of evidence linking education to positive health outcomes, as individuals are likelier to have healthier lifestyles and behaviours.

Health priorities and policy context

- 8.322 All authorities have overarching aims of improving the skills of their residents, so that their workforces become more developed and higher quality, and with greater earnings potential. All three host CSA LPAs specify that developments will be expected to deliver skills training, in order that their local residents benefit from the opportunities.
- 8.323 The key health priority themes that link to work and training opportunities as a health determinant include: a recognition of the influences of wealth disparity on health, the importance of acting on the social determinants of health, such as education and employment, and a determination to concentrate efforts on the geographic areas of the greatest deprivation.

Categorising effects on human health

- 8.324 There is a strong and significant positive link between employment opportunities and health outcomes.
- 8.325 As identified in **Chapter seven: land use and socio-economics**, the London Resort is expected to support 8,740 direct jobs in 2025, 12,940 in 2030 and 17,240 by 2038. This also shows that these jobs would be provided across a range of skill levels and occupations,

and by 2038 there will be between 13,300 and 26,900 net additional jobs at the national level by 2038.

- 8.326 An Employment and Skills Strategy will be produced for the ES. This will outline the strong commitment to maximising local economic impacts throughout the construction and operational phases. Significant beneficial effects are expected as a result of the creation of jobs and training programmes and higher incomes are expected.
- 8.327 The exact details of the Employment and Skills Strategy will be defined in the ES but the key objectives include: creating local employment opportunities; providing career paths, not just jobs; address skill gaps and promote career choices through training and working with local school; colleges and universities; and celebrating diversity and inclusion.
- 8.328 Given the links between employment and health, the work and training opportunities created will have a positive effect on health. These health effects are expected over the medium to long term as they are permanent, good quality positions. The skills created and associated increase in future opportunities and incomes will be permanent. There will be also expected to be health benefits to dependents of staff working onsite.
- 8.329 The magnitude of impact upon the general population in 2025 is expected to be low and this increases to medium in 2030 and 2038 due to the expected increase in jobs. The sensitivity of the receptor population to changes in work and training is medium. This results in a temporary health effect which is **minor beneficial (not significant)** at the CSA level in 2025 and **moderate beneficial (significant)** in 2030 and 2038.
- 8.330 The magnitude of impact upon the health of vulnerable groups resulting from employment and skills opportunities is expected to be medium in 2025 and this is expected to increase to high in 2030 and 2038, as more employment opportunities become available which could benefit vulnerable groups. The Applicant is committed to working with local authorities and bodies and their existing employment and skills programmes, to ensure under-represented and vulnerable groups are given equality of opportunity and supported in their access to employment and skills. This results in a temporary health effect which is **moderate beneficial** at the CSA level (**significant**) in 2025 and **major beneficial (significant)** in 2030 and 2038.
- 8.331 These conclusions will be reviewed in advance of the DCO application once the Employment and Skills Strategy is finalised.

Potential effects from a change in the demand for health services

Health pathway and strength of evidence

- 8.332 As shown in **Appendix 8.3: literature**, the evidence linking the creation of work and training opportunities to positive health outcomes is considered to be **moderate**. Reduced access may lead to the exacerbation of health outcomes, unmet health needs, and financial burdens. Those groups with pre-existing reduced access to healthcare would be the worst affected from an increase in demand for health care services.

Health priorities and policy context

- 8.333 At the local level, the objectives surrounding health and social care are primarily based on the provision of healthcare services, as well as the encouragement of healthy lifestyles. Dartford council has set out their desire to provide additional primary health services in order to meet the anticipated needs arising from a growing population. Similarly, Gravesham and Thurrock have also stated their intentions to bolster their health and social care infrastructure systems, with several strategic sites being marked for targeted investment.
- 8.334 The key health priority themes that link to the health infrastructure as a determinant of health include: the creation of new health centres, providing better information and advice about the local services available, improving access to and staffing levels in local health services, the reduction of waiting times in certain services, and an increase in the uptake of health checks.

Categorising effects on human health

- 8.335 **Chapter seven land use and socio-economics** concludes that the onsite residents, other London Resort workers, and visitors could potentially, in the absence of mitigation, have a significant impact upon healthcare provision. The worst-case scenario sets out an increase in A&E attendances of up to 10%. On an already constrained healthcare system, this is assessed to potentially lead to major adverse socio-economic effects. However, it is noted that mitigation measures will be further considered as part of the work undertaken for the DCO application and reported in the ES, in order to minimise the risk of such effect being realised.
- 8.336 In the absence of mitigation this assessment takes a precautionary approach at this stage. This increased demand for health services would translate into a **high** magnitude of impact upon healthcare (high sensitivity receptor) for the general population and vulnerable groups. This results in a **major adverse** permanent effect (**significant**) upon healthcare in 2025, 2030 and 2038.

Potential effects from a change in the demand for public services and community facilities***Health pathway and strength of evidence***

- 8.337 As shown in **Appendix 8.3: literature**, the evidence linking the creation of work and training opportunities to positive health outcomes is considered to be **strong**. There is robust evidence on the benefits of social networks and interactions on health for all individuals (as a result of access to these community facilities), in particular children, older people, and ethnic minorities. However, an increased demand for public services may reduce availability for some groups in society requiring them the most.

Health priorities and policy context

- 8.338 Developmental policy within the CSA, is generally based on the underlying aim of

improving the well-being of residents and the community as a whole. The provision of community facilities is frequently mentioned as increasing populations have forced the local authorities to improve the quantity and quality of such facilities to meet demand. The loss of community services and facilities is generally resisted.

- 8.339 The key health priority themes that link with public services and community facilities as a determinant of health include: reductions in waiting times for certain services, stronger and better connected communities, better information flows about the range of health services available, and coverage for hard to reach groups, such as Gypsies, Roma and Travellers.

Categorising effects on human health

- 8.340 The growth in visitors, workers and residents will increase demand for public services and community facilities. This may not necessarily be negative if the demand increases the viability of these services. However, given the constraints on local services (identified in the health priorities and policy context), this effect is best characterised as being potentially adverse.
- 8.341 **Chapter seven: land use and socio-economics** concludes that the effect of the construction workforce in 2023 (peak construction year) on local healthcare is expected to be minor adverse at the CIA level (not significant). A preliminary assessment of the operational effect on healthcare due to workers and visitors (in the absence of mitigation) is expected to be major adverse (significant).
- 8.342 The London Resort also includes specific measures to minimise the burden on local A&E services. These include the provision of quiet rooms where people can take a break from crowds, noise and the lively atmosphere. This is particularly important for people who are neurodiverse, including people on the autism spectrum. These rooms will also help alleviate the risks of serious health conditions or overheating.
- 8.343 **Chapter seven: land use and socio-economics** finds that the impact on public services cannot be determined at this stage; further work will be undertaken to categorise this effect for the ES, following confirmation of the design proposals and provisions of the London Resort.
- 8.344 Taking a precautionary approach at this stage, this assessment preliminarily finds that increased demand for public services and community facilities could translate into an adverse health effect. In the worst case, this would be **medium** magnitude of impact upon demand for public services and community facilities for the general population and vulnerable groups (medium sensitivity receptor) which would result in **moderate adverse** permanent effect (**significant**) in 2025, 2030 and 2038.

Potential effects associated with open space provision and amenity space

Health pathway and strength of evidence

8.345 As shown in **Appendix 8.3: literature**, the evidence linking the creation of work and training opportunities to positive health outcomes is considered to be **strong**. There is clear and strong evidence on the positive effects of the provision of open spaces for all groups, including increased physical activity, better cognition and better mental health outcomes.

Health priorities and policy context

8.346 At the local level, the objectives surrounding health and social care are primarily based on the provision of healthcare services, as well as the encouragement of healthy lifestyles. The needs of residents for, among others, sports and leisure facilities will be taken into account by planners, and visions for better provision of facilities for recreation, sport, walking and cycling have been set forth.

8.347 The key health priority themes that link with access to open space as a determinant of health include reductions in the mortality rate from cardiovascular diseases, programmes to address physical inactivity, and improving physical activity assets and facilities.

Categorising effects on human health

8.348 A landscape strategy is being developed which will maximise the landscape benefits from the London Resort. It is envisaged that this will encourage enjoyment of the open space and marshes with specific proposals including new bird watching towers, improved signage and maintenance, better routes, and benefits to routes which are currently prone to flooding. Overall the impact on the marshes is expected to be beneficial. The effect on health of any such change in provision and access to that provision is likely to be beneficial. Further work will be done to refine the assessment for DCO.

8.349 At this stage a preliminary assessment is undertaken. The magnitude of impact upon the general population is expected to be low due to the improved open space provision (medium sensitivity receptor) which would result in **minor beneficial** permanent effect (not **significant**) at the CIA level from 2025 onwards.

8.350 The magnitude of impact upon the health of vulnerable groups resulting from improved open space provision is expected to be medium in all assessment years. This results in a permanent health effect which is **moderate beneficial (significant)** at the CIA level in all assessment years.

Potential effects from changes in community cohesion

Health pathway and strength of evidence

8.351 As shown in **Appendix 8.3: literature**, the evidence linking the creation of work and

training opportunities to positive health outcomes is considered to be **moderate**. There is strong evidence on the positives associated with a more cohesive community, such as reduced mortality and mental health outcomes, but many of the benefits cannot be solely attributed to community cohesion and may reflect a range of alternative factors. Generally, however, a more cohesive community has positive health benefits on its members. On the other hand, the scale of the London Resort may convey negative effects to the community, such as inadequate compensation or disturbing the current quiet cohesiveness of the area.

Health priorities and policy context

- 8.352 The CSA authorities' policies on issues such as the economy, tourism, green infrastructure and sports/recreational facilities all contain a community-driven element. The provision of community facilities is also frequently mentioned as increasing populations have forced the local authorities to improve the quantity and quality of such facilities to meet demand.
- 8.353 The key health priority themes that link to community cohesion as a determinant of health include: improving social and community networks (particularly to improve mental health), and aiming at stronger and more cohesive communities.

Categorising effects on human health

- 8.354 The key to delivering community cohesion benefits is to work with the local community. Engagement will be undertaken in advance of the DCO application and reported on within the ES. The consultation, along with further work, will inform the significance of effect, which will be determined in the ES.

Potential effects from changes in crime and community safety (including fear of crime)

Health pathway and strength of evidence

- 8.355 As shown in **Appendix 8.3: literature**, the evidence linking the creation of work and training opportunities to positive health outcomes is considered to be **strong**. Theme parks and surrounding amenities and communities have been linked to higher occurrences of crime, in addition to the need for additional measures to ensure the safety of visitors. Crime and the fear of crime can lead to many adverse health outcomes, such as reduced physical activity and obesity, social isolation in older people, and more generally reduced feelings of safety causing mental distress for individuals.

Health priorities and policy context

- 8.356 Local policies aiming at a reduction of the crime rate require developments to follow design principles which help reduce the opportunities for crime. Particular attention is given to the fear of crime, prevention of crime, drugs and alcohol, youth crime, and domestic abuse. Concern is not limited to reducing crime itself, but also encompasses a

concern for the economic cost of crime, and the adverse impacts and disorder on people's lives.

- 8.357 The key health priority themes that link to crime and community safety include: increasing the profile of hidden crimes such as violence against women, gathering better data from A&E services around alcohol and knife crime so that responses can be effectively targeted, and an investigation into the health needs of offenders themselves.

Categorising effects on human health

- 8.358 The Security Strategy will be holistically designed to ensure the creation of a safe and secure environment that will enhance the visitor experience and reflect the Resort's unique identity. Good planning and design of the built environment are central to community safety (to include employees, visitors, and the local residential and business community) and protective security. Freedom from crime and the fear of crime lead to social, economic and environment success and make a significant contribution to the fulfilment of the London Resort's wider vision. Both safety and protective security will be embedded in the early development proposals using an integrated design process.

- 8.359 The causes of crime and disorder are many and complex. For a crime to occur, the following are required:

- an offender who is motivated and resourceful;
- a target or victim; and
- a favourable place where the crime is likely to go unnoticed, unchallenged or even be promoted.

- 8.360 Through planning and design, it is possible to reduce the number of occasions when all three components are in place.

- **Community safety** comprises strategies and measures that seek to reduce the risk of crimes occurring and their potential harmful effects on individuals and society, including fear of crime, by intervening to influence their multiple causes.
- **Protective security** is an organised system of protective measures implemented to achieve and maintain security. It combines the four disciplines of personnel, information, technological systems, and physical security in a manner to create 'defence in depth', where multiple layers work together to deter, delay, detect and deny and attack.

- 8.361 Extensive coordination with both Category 1 and Category 2 emergency services, and the Kent Resilience Forum, to ensure that all stakeholder security requirements are met, and that all access routes into and out of the site are planned with the emergency services in mind.

- 8.362 Terrorism is a crime, and with the agreement of the emergency services, the security

strategy will embed counter-terrorism protective security in our built environment, reducing vulnerabilities and increasing the resilience of the community.

8.363 This strategy will be designed to minimise the risk of crime, this in turn minimising any associated health risks resulting from crime. Risks of health effects resulting from perceived risk of crime will still exist until the strategy is embedded.

8.364 A preliminary assessment is considered at this stage of a negligible magnitude of impact upon the general population due to changes in crime (high sensitivity receptor). This results in a **minor adverse** permanent health effect (**not significant**) at the CSA level associated with crime in 2025, 2030 and 2038.

8.365 The magnitude of impact upon vulnerable groups is expected to be low in all assessment years. This results in a **moderate adverse** permanent health effect (**significant**) associated with crime in all assessment years.

8.366 These conclusions are subject to change and will be reviewed in advance of the DCO following the completion of the Security Strategy.

Summary of effects

8.367 The preliminary health effects are summarised in the table below. Significant effects are in bold. Where the assessment year is not stated, the sensitivity, magnitude of impact and effect significance are the same in all assessment years.

Table 8.16 The London Resort: summary of preliminary health effects

Effect	Receptor population(s)	Spatial scale	Sensitivity	Impact	Effect
CONSTRUCTION EFFECTS					
Displacement of community uses	Residents	CIA	Medium	Adverse in absence of mitigation	Not determined
Open space	Residents	CIA	Medium	Could be beneficial or adverse	Not determined
Displacement of commercial uses	Residents Workers	PSB	Medium	Likely to be adverse	Not determined
Displacement of residential dwellings	Residents	PSB	High	Affected residents: high Potential vulnerable groups amongst these: high	Major adverse
Traffic and active travel	Residents Transport users	NSA	Not determined	Not determined	Not determined

Effect	Receptor population(s)	Spatial scale	Sensitivity	Impact	Effect
Flooding	Residents	NSA	High	Intent to design to avoid increased risk of flooding	Not determined
Noise and vibration	Residents	NSA	Not determined	Not determined	Not determined
Air quality	Residents	NSA	Not determined	Not determined	Not determined
Presence of construction workforce	Residents	CSA	Low	General population: low Vulnerable groups: medium	Negligible Minor adverse
Work and skills	Residents	CSA	Medium	General population: low Vulnerable groups: medium	Minor beneficial Moderate beneficial
OPERATIONAL EFFECTS					
Noise and vibration	Residents Visitors Workers	NSA	Not determined	Not determined	Not determined
Air quality	Residents Visitors Workers	NSA	Not determined	Not determined	Not determined
Traffic and active travel	Residents Transport users	NSA	Not determined	Not determined	Not determined
Electromagnetic field exposure	Residents Visitors Workers	NSA	Not determined	Negligible	Negligible
Inclusive design	Residents Visitors Workers	CIA	Medium	Not determined	Not determined
Work and skills	Residents Workers	CSA	Medium	General population: low (2025), medium (2030 & 2038) Vulnerable groups: medium (2025), high (2030 and 2038)	Minor beneficial (2025), moderate beneficial (2030, 2038) Moderate beneficial (2025), major beneficial (2030, 2038)
Health services	Residents Visitors Workers	CIA	High	General population and vulnerable groups: high (in	Major adverse (in the absence of mitigation)

Effect	Receptor population(s)	Spatial scale	Sensitivity	Impact	Effect
				the absence of mitigation)	
Public services and community facilities	Residents Workers	CIA	Medium	General population and vulnerable groups: medium	Moderate adverse (precautionary worst-case)
Open space	Residents Workers	CIA	Medium	General population: low Vulnerable groups: medium	Minor beneficial Moderate beneficial
Community cohesion	Residents	CIA	Medium	Not determined	Not determined
Crime and community safety	Residents Visitors	CSA	High	General population: negligible Vulnerable groups: low	Minor adverse Moderate adverse

PROPOSED MITIGATION

8.368 This health assessment seeks to understand whether effects, identified in other relevant technical assessments, could result in health effects for the population, including vulnerable groups. The health assessment considers the residual effects of other EIA technical assessments and so it accounts for mitigation defined by other technical assessments, which limits the opportunities for further mitigation. Refer to the respective PEIR chapters for further information on the proposed mitigation.

8.369 Based on consultation on the preliminary findings and further analysis of effects, the ES will present any relevant health mitigation.

8.370 Based on this assessment, this HIA provides the following preliminary recommendations:

- Crime, community safety and social cohesion – the possibility of organising events where local residents are provided access to the London Resort should be considered;
- Open space and public rights of way – opportunities to improve and maximise public access to open spaces and PROWs should be encouraged so that they encourage leisure and recreation, maximising positive health benefits;
- Inclusive design and access:
 - the distinct nature of the guest experience at the London Resort, particularly where sensory stimuli are intrinsic to the event, will be fully explained to guests to ensure guests have a clear understanding of the event experience before they book their tickets and understand the features of the events, in particular

the audio visual elements;

- communication to guests will explain the various event formats and the nature of the guest experience, in particular the audio-visual experience in the more immersive event modes;
- Monitoring – a monitoring plan should be put in place to safeguard the interests of the receptor population(s) by reporting on key issues, such as the selection and recruitment process, the workplace culture, suitability of the inclusive design and access, and safety and security.

RESIDUAL ENVIRONMENTAL EFFECTS

8.371 As explained in the mitigation, there is currently no health-specific mitigation proposed, though this health assessment does account for mitigation presented in other PEIR chapters. There may also be health mitigation developed in response to ongoing engagement and further work. In the absence of mitigation, the significance of the effects remains unchanged from 0. The mitigation, and any resulting impact on the significance of effects, will be refined in advance of the ES.

CUMULATIVE AND IN-COMBINATION EFFECTS

8.372 The assessment is inherently cumulative and a separate assessment of the cumulative impact of committed schemes would risk double counting. Based on this approach, the need for a cumulative effects assessment which considers the overall impact of other, committed schemes is redundant.

8.373 The cumulative effect assessment will be reviewed at the ES stage based on the conclusions of the updated assessments.

SUMMARY AND CONCLUSIONS

8.374 This preliminary health assessment finds that the London Resort generates the following **significant residual** health effects:

- Residential relocation (construction) – **major adverse** effects in 2022 for the residents (including any vulnerable residents) of one residential building (which is thought to contain three flats);
- Access to work and skills (construction) – **moderate beneficial** effects in all assessment years associated with access to work and training for vulnerable groups in the CSA;
- Access to work and skills (operation) – **moderate beneficial** effects in 2030 and 2038 for the general population in the CSA associated with access to work and training. A

moderate beneficial effect in 2025 and **major beneficial** effects in 2030 and 2038 for vulnerable groups;

- Access to healthcare services (operation) – **major adverse** effects all assessment years associated with the increased demand resulting from new residents, workers and visitors, in the absence of mitigation;
- Demand for community uses and public services – **moderate adverse** effects in all assessment years as a result of increased demand for community facilities and public services;
- Provision of open space – **moderate beneficial** effects for vulnerable groups in all assessment years as a result of improved open space provision; and
- Crime and fear of crime – in the absence of mitigation, **moderate adverse** effects are expected for vulnerable groups in all assessment years due to crime and fear of crime. This effect will be reviewed in advance of the DCO in response to consultation and the Security Strategy which is being prepared.

NEXT STEPS

8.375 This PEIR chapter is a preliminary assessment of the health effects of the London Resort. It is noted throughout the chapter where more work is required and/or the assessment is under review. These changes – which largely relate to information availability, assumption/model refinement, and changes to the design – will be addressed at the ES stage. This section summarises the key next steps, though it is not an exhaustive list.

Consultation and engagement

8.376 An important next step will be to continue engagement with host LPAs and stakeholders. The consultation will focus on the preliminary findings and will aim to understand the potential for effects. Health consultation will include further engagement with LPAs, health stakeholders, and members of the public (including vulnerable groups).

Baseline data and assessment

8.377 Further work will be undertaken in advance of the DCO application. This will include the following steps (which is not an exhaustive list):

- if any data is updated from the time of writing this PEIR chapter to submission of the ES, which the existing environment or anticipated trends presented in existing environment sections of this chapter rely on, then these sections will be updated accordingly in the next assessment. For example, the projections for population, employment and housing will be reviewed and sense checked against the projections that will underpin the transport assessment;

- the study areas will be reviewed in order to ensure that they are all appropriate and consistent with the updated assessments of the EIA. For example, this HIA has defined the NSA which covers all expected significant effects relating to traffic, flooding, air quality, noise and electromagnetic field exposure. The ES would review this area based on the updated assessments and modify it if required;
- assessment years will be reviewed based on up to date information for the ES;
- the literature review will be updated based on consultation on the preliminary findings and a further review of the scientific literature;
- a key change will be incorporating the results from the other EIA technical chapters. Effects relating to transport, noise, air quality, flooding and electromagnetic field exposure have not been determined so it has not been possible to assess any associated health effects. The sensitivity of the receptor population and magnitude of health impact (and significance of effect) will be assessed in the ES that will accompany the DCO application for the London Resort; and
- health mitigation and recommendations will be developed (if relevant) through consultation and further analysis of effects.