



HATCH
REGENERIS

Lower Thames Crossing Economic Costs Study

Executive Summary

Report by Hatch Regeneris
February 2020

Thurrock Council

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Executive Summary

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Contents Page

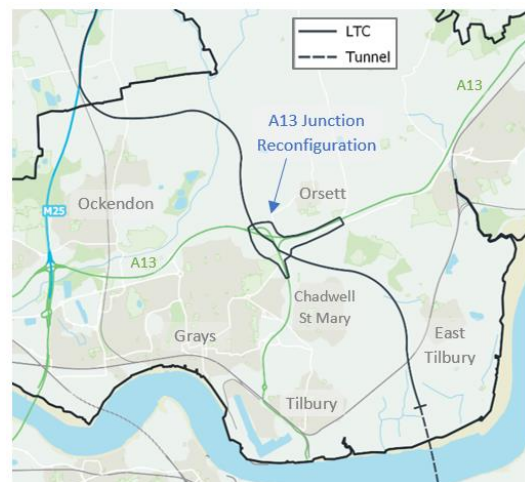
Executive Summary	1
The LTC Scheme	1
Study Area Context	2
Connectivity Impacts	4
Impact Framework	5
Business and Economy Cost Impacts	6
Community Cost Impacts	7
Environmental Cost Impacts	8
Growth Cost Impacts	9
Conclusions	10

Executive Summary

- i. Hatch Regeneris has been commissioned by Thurrock Council to undertake an assessment of the local economic and social costs of the Lower Thames Crossing scheme (LTC Scheme hereafter).
- ii. The primary aim for the study is to identify the type and scale of potential economic, social and environmental costs upon the local community and area that can be expected as a result of the construction and operation of the LTC Scheme.

The LTC Scheme

- iii. The proposed LTC scheme is a nationally significant infrastructure project developed by Highways England. It consists of a tunnel crossing beneath the Thames to connect the areas around Kent, Thurrock and Essex
- iv. The latest proposals incorporate the following two design elements with the Thurrock Area:
 - 3-lane, 70mph, dual carriageway (with the exception of the southbound section from the M25 to the A13 that will be 2-lane only)
 - Reconfiguration of A13 junctions with the A1089 and the A128 to incorporate partial connectivity between the LTC and the A13 and A1089 but loss of movement from the A128 southbound to the A1089 southbound.



Source: Hatch Regeneris. Contains OS data © Crown copyright and database right 2019

Thurrock's Position

- v. Whilst it is recognised that the LTC Scheme may bring a range of strategic transport connectivity benefits to the South East of England and South Midlands, a range of limitations have been identified within the current configuration of the scheme that will negatively affect the Thurrock area.
- vi. As set out within their 2018 Statutory Consultation Response, Thurrock Council considers the current LTC Scheme does not meet several national and Highways England strategic policy tests and scheme objectives, including the delivery of economic growth and achieving sustainable local growth within the Thurrock area. Furthermore, the LTC Scheme is inconsistent with the housing and development potential for Thurrock and further engagement is required to assess the negative health and environmental impacts of the scheme, including noise, air quality and visual impact during both construction and operational phases.
- vii. From a direct transport perspective, the LTC Scheme provides limited additional connectivity for residents and businesses of Thurrock. The only means of accessing the LTC Scheme is through the reconfigured A13 junctions with the A1089 and A128, but even these will have constraints, e.g. restricting current access from the A128 to the A1089 southbound.
- viii. Throughout the construction phase there will be considerable disruption of local roads and Public Rights of Way across Thurrock. This will affect access to employment, education, health facilities and local services, as well as delay development opportunities.

Study Area Context

- ix. The Thurrock area is characterised by the following key metrics:

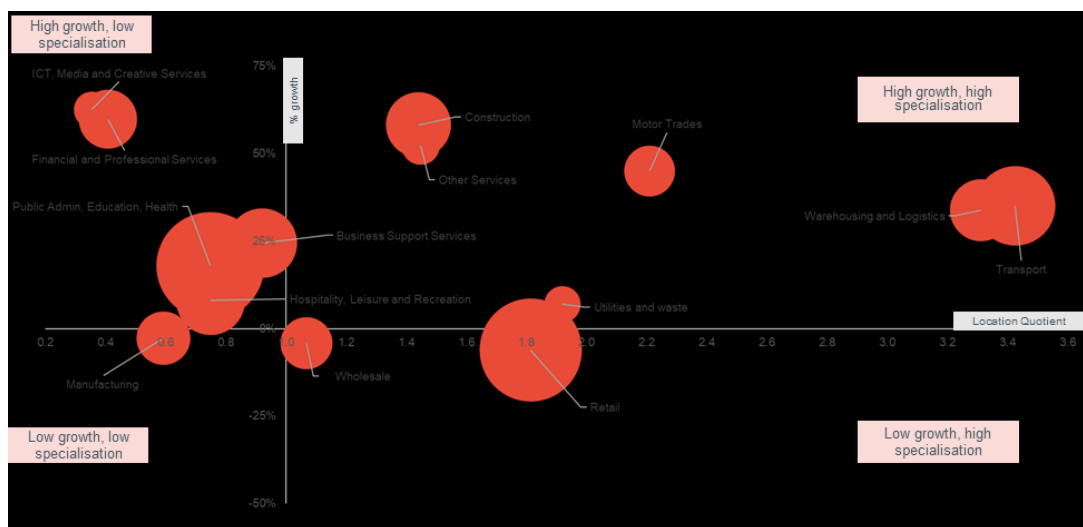
Current Transport Network

- The Strategic Road Network focuses around M25 and A13, with A1089 spur providing access to Port of Tilbury. The A128 is also an important connector to the A127 from Brentwood. The A13/A1089 and A13/A128 junctions will be significantly impacted by the LTC Scheme, as well as the A13/A1014 junction.
- Around 16 local roads or tracks currently cross the proposed LTC alignment and provided connectivity between urban areas and local villages / hamlets, such as routes between Chadwell St Mary and East Tilbury.
- The bus network is focused around connections to and from Grays and Lakeside, with nine services crossing the area potentially affected by the LTC Scheme, at five specific points.
- There is an extensive cycling and PRow network across the area with up to nine cycle routes and 20 PRow / tracks crossing the area potentially affected by the LTC Scheme.

Business and Economy

- The economy has been performing well and shown strong growth over last 5 years (+29% employment, +43% businesses).
- Around 2,200 businesses (employing 12,500 workers), are located within the direct corridor around the LTC Scheme alignment (18% of all Thurrock workers and 34% of Thurrock businesses).
- Across the wider Thurrock economy, the Transport and Logistics sectors are particularly specialist; however, there are aspirations to diversify Thurrock's economy and grow a number of 'opportunity sectors', including the creative industries and environment and energy sector.

Sector Size, Specialisation and Growth, Thurrock



Source: BRES 2017

- Thurrock has a strong SME base compared to the South Essex average, and has received a large amount of venture capital investment in recent years.
- There has been investment from major organisations into Thurrock in recent years (Port of Tilbury, DP World, Amazon, UPS, Made.com, Lidl) and the construction of Tilbury2 development is progressing rapidly. This recent investment has delivered a large number of jobs, although further investment could secure a higher proportion of skilled jobs in the area.
- Vacancy rates for Industrial, Office and Retail are all higher than the average for South Essex.

Community

- Around 57,300 residents are located within the direct corridor around the LTC Scheme alignment. Population growth has been higher than the South Essex average over the last 5 years.
- Thurrock has a slightly lower economic activity rate than the comparator areas and a higher unemployment rate than the immediate surrounding areas. Thurrock residents are also overrepresented in lower skill level occupations, which reflects the nature of prominent industries in the area. The focus on diversification of the economy and growth in sectors such as the creative sector will provide residents with an opportunity to upskill and access new employment opportunities. Recent investment in skills and training will also support this.

Occupational Profile, Thurrock



Source: Annual Population Survey 2018 (ONS)

- Household income and levels of deprivation vary significantly across the borough. However, a third of the Lower Super Output Areas within the direct corridor around the LTC Scheme are within the top 30% most deprived in the country.
- Some areas of Thurrock struggle with significant health and wellbeing challenges, including obesity, health inequality, social isolation and inadequate service provision. The Council's Active Travel and Health and Wellbeing strategies are working to improve the situation and reduce inequality.
- However, the data in this section clearly shows that there are areas of Thurrock which struggle significantly with many challenges. In particular, the communities living in and around Tilbury and South Ockendon are characterised by high deprivation, low incomes and poor health outcomes.

Environment

- The area is characterised by a mosaic of landscapes, including coastal marsh, low-lying fenland, farmland and more developed urban areas.
- There are designated Sites of Special Scientific Interest, including Hangman's Wood and the Mucking Flat Marshes, within the LTC Corridor, as well as one Special Protection Area/Ramsar.
- There are 18 air quality management areas across Thurrock where air pollution levels are likely to fall short of national targets, although none are directly within the LTC Corridor
- Thurrock is home to 17 scheduled monuments, ranging from forts to crop marks. Seven are likely to fall within the 200m buffer of the LTC alignment.
- There are seven Conservation Areas in Thurrock. Three of these are likely to fall within the 200m buffer of the LTC Corridor.
- Three Grade II Listed Buildings are proposed for total demolition.
- Data on open space from the Ordnance Survey¹ shows there are a number of open space sites in Thurrock. Provision of open space is spread across the borough but tends to concentrate around built up areas and communities.
- Within the direct LTC construction development boundary, there is an allotment, Children's Play Area and areas of semi-natural green space. The LTC Scheme is also likely to pass through/nearby to cycle routes, Coalhouse Fort and golf courses.

Connectivity Impacts

Construction Phase

- x. Whilst Highways England has yet to provide detailed construction plans, the construction phase of the LTC Scheme is forecast to have the following impacts:
- Works to reconfigure the A13/A1089 and A13/A128 junctions results in an estimated increase of 875,000 travel hours per annum, equivalent to an economic loss of value of £10.5 million across a single year
 - Forecast road closures, diversions, and additional construction traffic are forecast to have the following impacts²:
 - **Major Adverse** impact on Station Road and Muckingford Road
 - **Moderate Adverse** impact on Brentwood Road, Stanford Road, Baker Street, Heath Road, and Stifford Clays Road
 - **Minor Adverse** impact on North Road
 - Around 17 PRoWs will be closed for substantial periods of the construction phase.
 - There will be around 11,700 monthly HGV movements that may increase traffic flows on certain routes by as much as 5%. In addition to this there will also be further traffic movements bringing workers to and from compound sites.

¹ <https://www.ordnancesurvey.co.uk/business-government/products/openspace>

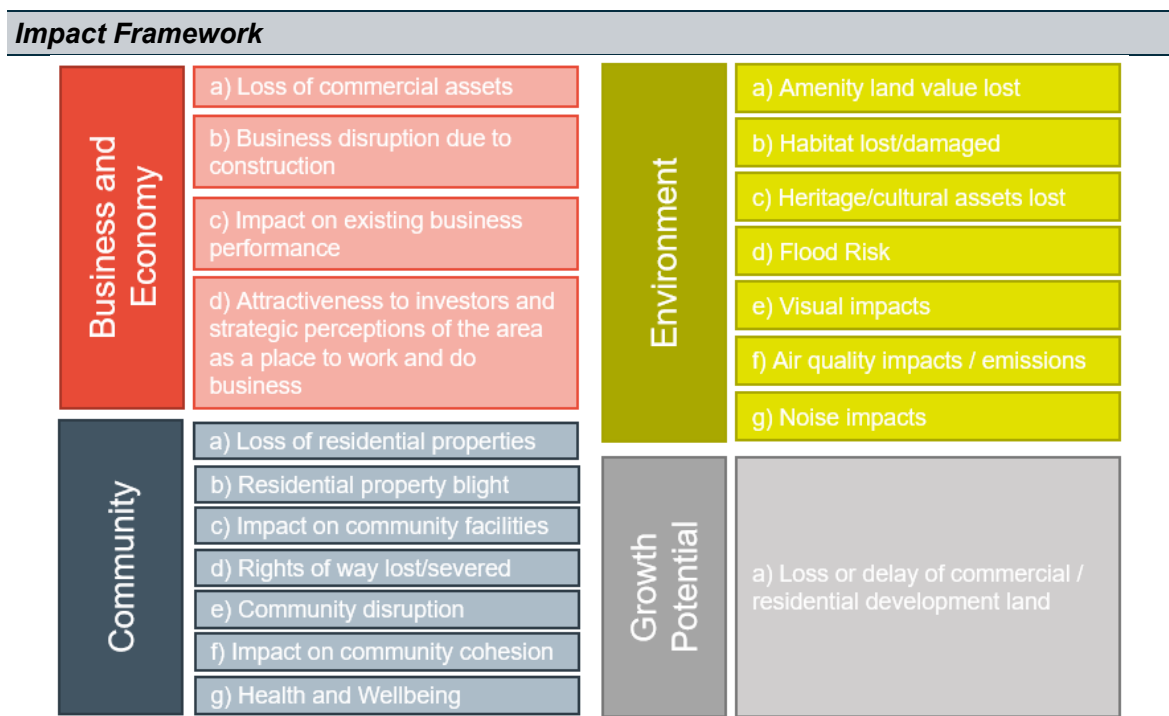
² Scale: neutral = no noticeable impact on travel; minor adverse impact = a relatively small effect on travel over a long duration of time (months) or a medium to high impact for a very short time period (a few days); moderate adverse impact = a medium effect on travel over a long duration of time (months) or a high impact over a short time period (a few weeks); major adverse impact = a relatively large effect on travel over a long duration of time (months)

Operational Phase

- xi. Whilst the majority of local roads will be re-established once the LTC is operational there will still be some on-going impact upon connectivity, as follows:
- Reconfiguration of the A13/A1089 and A13/A128 junctions will result in an estimated increase of up to 55,000 travel hours per annum, equivalent to an economic loss of value of £650,000 across a single year.
 - Loss of the additional third lane being created on the A13, east of the A1014 junction, that will become part of the off-slip for LTC.
 - The likely need to reconfigure the A13/A1014 junction to mitigate significant impacts on who this junction will function when the LTC Scheme is in operation
 - Potential realignment of Station Road adding journey time to private car trips and the 374 bus route.
 - Closure of Hornsby Lane for through movements.
 - Permanent amendments and diversions to at least nine PRoW and/or tracks, with one potential closure (FP 61).
 - Potential risk of significant local transport network disruption in the event of concurrent incidents on the LTC and Dartford Crossing that are estimated could happen as often as once every 80 to 160 days.

Impact Framework

- xii. The baseline socio-economic context, along with the forecast transport impacts of the LTC Scheme, have been used to development an assessment framework with which to assess the economic and social costs of the LTC Scheme within Thurrock.
- xiii. The cost impacts have been categorised into four main themes, and associated sub-themes, presented in the diagram below.



Source: Hatch Regeneris

Business and Economy Cost Impacts

- xiv. The LTC Scheme will have a significant negative impact upon the local economy and businesses in Thurrock, as a result of the disruption caused by the construction and subsequent operation of the scheme.
- **Permanent loss of one commercial premises in Thurrock** - the Cattery on Springfield Farm. There will also be a **loss of 152ha of agricultural land** that could affect up to 53 farms located within 1 km of the proposed LTC route.
 - Construction-related **business disruption** may occur from restricted access to some commercial premises along the LTC route and the negative impact of reduced accessibility to town centres. Disruption around the A13 junctions with the A1089 and A128 could impact upon access to the Port of Tilbury and other businesses located off the A1089. The impact of local road closures and additional HGV construction traffic could reduce trips to local retail centres and impact upon levels of turnover.
 - **On-going business performance** could be affected by reduced accessibility from the A128 to the A1089, as well as in the event of concurrent closures of the LTC and Dartford Crossing.
 - The LTC could also have an adverse impact upon the **attractiveness of the local area to investors** by negatively affecting strategic perceptions. This could impact upon local vacancy rates and subsequent levels of business rates and rental incomes.

Summary of Key Business and Economy Impacts

Impact Area	Estimated Cost to Thurrock
a) Commercial assets / land value lost	c. £4 million
b) Business disruption during construction	Jobs loss GVA Impact
	115 FTE up to c. £39 million
c) On-going business performance	up to c. £18 million
d) Attractiveness to investors & strategic perceptions	Minor to Moderate Adverse (across Thurrock)

Source: Hatch Regeneris



Community Cost Impacts

- xv. The LTC will have a number of impacts on Thurrock's communities. This includes the economic costs of lost housing, adverse impacts to community facilities and negative social impacts of increased severance.
- The LTC scheme results in a direct **loss of up to 20 residential properties**, with associated land value and cost of relocation.
 - In addition, a further **1,400 residential properties are affected by blight**, with 160 of them located within 200m of the LTC scheme, and a further 1,240 within 500m.
 - Whilst none are lost as a result of LTC, around **14 community facilities are impacted** by the construction or operational of the scheme. Land associated with two facilities is temporarily lost. A further seven community resources experience significant adverse blight during construction, and two suffer significant adverse blight during the on-going operation of the LTC scheme.
 - There will be significant **disruption to PRowS** during the construction phase with, most routes temporarily severed, reducing access to facilities/services, increasing community isolation, and impacting health & wellbeing. There will also be some permanent diversions to routes, and many will suffer blight from the LTC Scheme.
 - The construction of the LTC scheme is likely to **disrupt the communities** living around the route through closures to local routes, increased congestion from road closures and diversions, and increased traffic from construction vehicles. Eight communities along the route will be particularly affected (*Southfields, Baker Street, Orsett, East Tilbury, Linford, Low Street, Bulphan, and West Tilbury*), whilst access to A&E will be particularly affected, followed by access to further education and special education facilities. There will also be isolated incidences of disruption in access to open spaces and important community assets in the borough, such as Coalhouse Fort which currently plays a key role in supporting the physical and mental wellbeing of residents as it is widely used for exercise, education and social interaction.
 - **On-going community** cohesion will be affected by reduced access from the A128 to the A1089, the impact of concurrent incidents on the LTC and Dartford Crossing, as well as more general perceptions of isolation created by the physical barrier of the LTC scheme and impacts on PRowS.
 - A number of these impacts have a cumulative effect upon overall **health and wellbeing**³ of local residents. These include health/stress impacts of enforced relocation, blight, noise/air pollution, disruption to access to healthcare, loss of community assets, loss of PRow, and severance and community cohesion. This study There are concerns that the costs of the LTC will disproportionately negatively affect the communities who already suffer from health inequality, such as Tilbury and South Ockendon, where there are already high levels of deprivation, isolation and poor health outcomes.

³ This assessment has predominantly focused on the qualitative health and wellbeing costs associated with the other impact areas and, therefore, does not preclude any findings from the Health Impact Assessment, to be undertaken in due course.

Summary of Community Impacts	
Impact Area	Estimated Cost to Thurrock
a) Loss of residential properties	£3.1 million
b) Residential property blight	£24.5 million
c) Impact on community facilities	<i>Moderate adverse (within LTC Corridor)</i>
d) PRoW severance/disruption	<i>Moderate adverse (within LTC Corridor)</i>
e) Community disruption during construction	<i>Moderate adverse (across Thurrock) (up to £36 million direct transport impacts #1)</i>
f) Impact on community cohesion	<i>Moderate adverse (across Thurrock) (up to £21 million direct transport impacts #1)</i>
g) Health & Wellbeing	<i>Moderate adverse(across Thurrock) #2</i>

Source: Hatch Regeneris

#1 estimated economic impact of delays to non-business-related car trips

#2 subject to findings from full Health Impact Assessment

Environmental Cost Impacts

xvi. The LTC will have a number of impacts on the environment in Thurrock. This includes the economic costs of lost housing, adverse impacts to community facilities and negative social impacts of increased severance.

- The LTC will result in **direct loss of amenity value** from land lost across 728ha
- There will also be **a direct loss of habitat**, along with indirect impacts on wider habitat corridors, including deciduous woodland, and potential impacts upon areas with Great Crested Newts and farmland birds.
- There are numerous **heritage assets** that will be directly impacted, including a number of scheduled monuments and three Grade II listed residential properties. In addition, there will be blight impacts upon a further four Grade II listed buildings and numerous undesignated heritage assets.
- Whilst available data on the scheme impacts is relatively limited, the potential impact of the LTC scheme upon **flood risk** is considered likely to be relatively neutral.
- The LTC scheme will have a range of **visual impacts**, in terms of changing the physical landscape or impairing views. Tilbury Marshes, Orsett Fen, and the Mardyke Valley will all be impacted visually. Around 160 properties are located within 200m of the LTC and may have their views impaired, whilst at least 14 PRoW routes will be negatively impacted. There are also likely to be issues associated with light pollution during the construction phase.
- The LTC will result in significant additional strategic traffic movements across Thurrock, as well as changes to local traffic. Furthermore, the construction of the scheme will generate significant HGV movements. All of these will impact upon **local air quality and greenhouse emissions**. Whilst detailed air quality modelling is unavailable, it is considered likely that there could be issues around the LTC junction with the A13, where there will be changes in vehicle speeds and there are sensitive receptors in close proximity to the junction. Whilst air quality increases will likely still remain below national limits. The impact on communities located near to the LTC Scheme could be significant.

- Both the construction and operation of the LTC scheme will generate significant **noise impacts**. Over 250 properties, and a range of other sensitive receptors (e.g. Treetops, Treetops 2 and Orsett Heath Schools), will be in close proximity to the LTC scheme and could be significantly impacted during the construction phase. Whilst detailed noise modelling outputs are not available, there are also likely to be significant impacts during the operational phase, particularly in areas around Tilbury and East Tilbury.

Summary of Environmental Impacts	
Impact Area	Estimated Cost to Thurrock
a) Amenity land value lost	£1.35 million
b) Habitat lost/damaged	Minor to moderate adverse impacts (within LTC Corridor)
c) Heritage impact	Moderate adverse # (within LTC Corridor)
d) Flood risk	Negligible to minor adverse # (within LTC Corridor)
e) Visual impacts	Moderate adverse (across Thurrock)
f) Local air quality and emissions	Moderate adverse # (within LTC Corridor)
g) Increase in noise	Moderate to Major adverse # (within LTC Corridor)

Source: Hatch Regeneris

subject to future modelling exercises and more detailed analysis

Growth Cost Impacts

- xvii. The assessment of growth has examined a range of impacts of the LTC scheme upon residential and commercial development. Whilst there remains uncertainty around future development proposals, it is clear that land required directly for the construction and final operation of the LTC scheme, as well as sites immediately surrounding the proposed alignment, hold significant economic value in development terms.

Forecast Gross Economic Impacts

- xviii. The table below provides a summary of the maximum gross economic impacts, in terms of lost value of development land.

xix. Estimated Loss of Gross Economic Value from Development Impacts			
Development Impact	Land Area	Land Impacted	Economic Cost to Thurrock
Permanent Land Lost	Total Development Area *	39 hectares	Up to £88 million *
	Number of new homes #	Up to 840 homes	
Temporary Land Lost	Total Development Area *	285 hectares	Up to £29 million *
	Number of new homes #	Up to 2,660 homes	
Development Land Blight	Total Development Area *	324 hectares	Up to £41 million *
	Number of new homes #	Up to 5,730 homes	

Source: Hatch Regeneris * commercial and residential land

delivered from residential land allocations

Forecast Net Economic Impacts

- xx. Given some of the uncertainties around future development it is challenging to assess the likely net impacts of the LTC upon development value. Under some potential residential development scenarios nearly all of the defined development land along the LTC alignment may be required to meet the Thurrock's future housing needs. This would imply the net economic cost of loss of residential land could equate to the gross costs set out above.
- xxi. Under more generous land availability assumptions, the net impacts would be lower (as residential development can take place elsewhere) but it is still estimated that between 3,100 and 4,250 new homes could be affected by blight from the LTC Scheme, with an estimated economic loss of between £17m and £23m.

Conclusions

- xxii. The construction and operation of the LTC scheme will have significant impacts upon residents and businesses located across the Thurrock area:
 - The scheme will result in **significant direct loss of land** for current agricultural and amenity uses, as well as future residential and commercial development. The loss of economic value for the area could equate to as much as **£96 million**.
 - The construction phase will **significantly disrupt access and movement**, affecting local business operations and creating community severance. The scale of impacts will depend upon the length of disruptions, but businesses could lose up to **£39 million** in economic value and communities will see a loss in social value equating to in excess of **£36 million**. A further **£29 million** will be lost from delayed development, on the basis the project is delivered to programme.
 - Once operational, the LTC Scheme will continue to **create blight across the corridor**, affecting current and future property values and creating environmental emissions. This will affect community cohesion and local health and wellbeing. There will also be on-going impacts upon business operations and affect the attractiveness of the area for investment. Whilst not all of these impacts can be quantified, there is estimated to be a loss of economic value of over **£100m**.



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