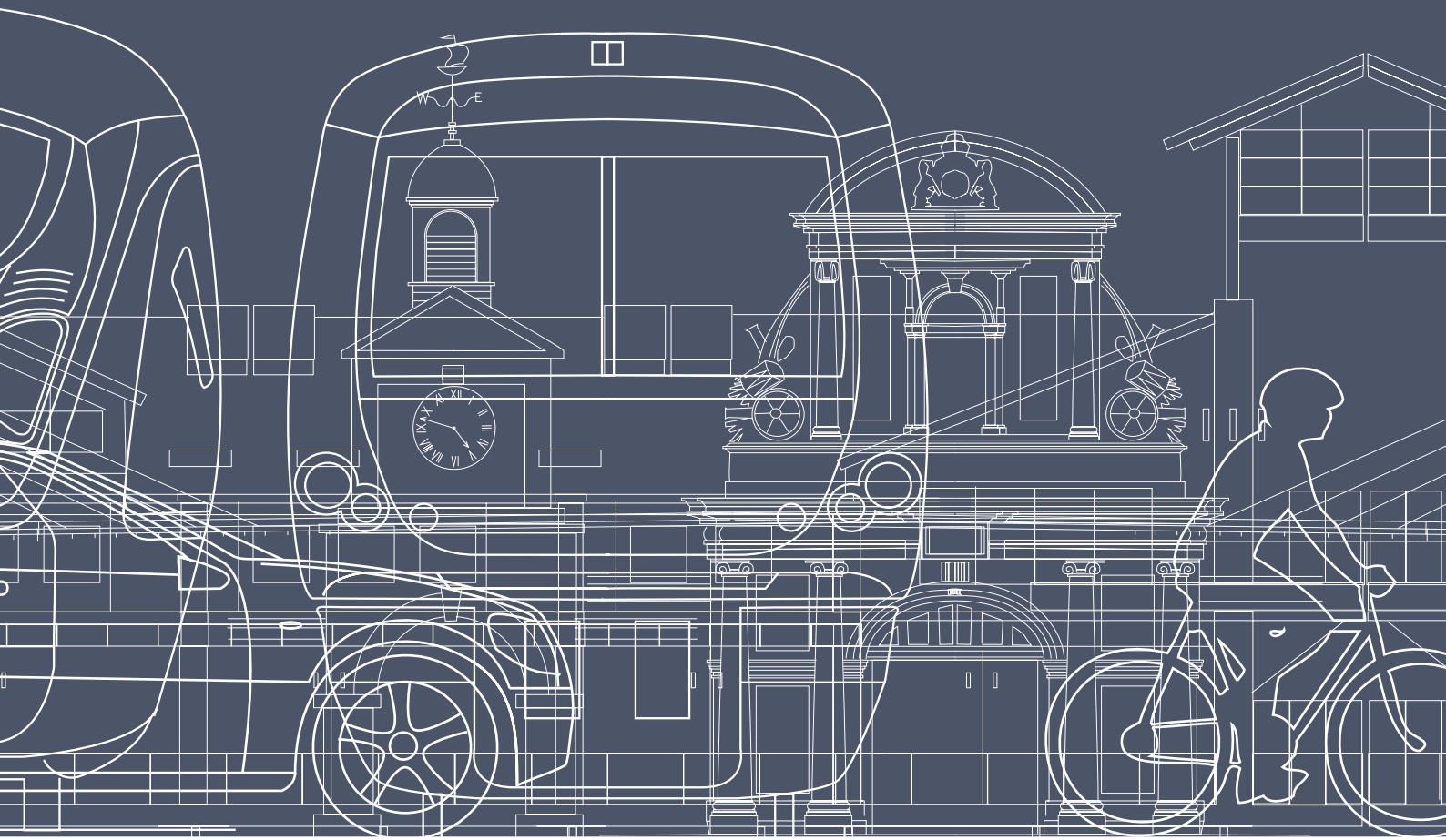


# DRAFT



## Thurrock Local Transport Plan

# ISSUES & Opportunities

Non-technical Summary of the LTP Baseline Review

FEBRUARY 2023

# DRAFT



## **Foreword**

*Transport is crucial in supporting Thurrock's ambitious plans for regeneration and growth, including those to be set out shortly in our new Local Plan.*

*We must review and renew our transport plans to respond to changing trends and new opportunities.*

*The new Thurrock Transport Plan will point the way to a modern, integrated, and reliable transport system to help the local economy flourish and prosper and help our residents contribute to and benefit from that prosperity.*

*The new Plan will show how to connect people to opportunities and information, entrepreneurs with ideas and capital, and employers with talent and skills.*

*This 'Issues and Options' Report is a crucial first step in developing the new Transport Plan for Thurrock.*

.....  
This document summarises the findings of a Transport Baseline Study undertaken by Stantec Limited. Maps and diagrams are reproduced from that report with their kind permission.



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## Contents

1.	Background	6
2.	Structure	8
3.	COVID-19	10
4.	Accessibility	12
5.	Congestion	16
6.	Mobility	20
7.	Safety	24
8.	Pollution, carbon reduction and health	26
9.	Affordability	30
10.	Transport opportunities	34
11.	New public transport modes	38
12.	Development and regeneration	40
13.	Conclusions	46
	GLOSSARY	48

## Figures

Figure 1.	NTAS Chart 1: 'Which of the following best reflects your current experience of the outbreak'. Source: National Travel Attitudes Study: Wave 4 (Provisional)	10	Figure 11.	Bus routes in Thurrock (Credit: Stantec)	23
Figure 2.	NTAS Chart 7: 'How concerned for your health, if at all, would you be currently if you were to use the following transport modes? Source: National Travel Attitudes Study: Wave 4 (Provisional)	11	Figure 12.	Analysis of personal Injury accident data for Thurrock over the last 8 years (2011-2019) (Credit: Stantec)	25
Figure 3.	NTAS Chart 7: 'When the current travel restrictions and social distancing are removed, how concerned, if at all, for your health would you be when using the following modes? . Source: National Travel Attitudes Study: Wave 4 (Provisional)	11	Figure 13.	Road transport emissions as a share of UK greenhouse gas emissions for transport.	27
Figure 4.	Distance travelled percentage by mode (for Thurrock)	13	Figure 14.	Air Quality Management Area NO2 trends in Thurrock (Credit: Stantec)	27
Figure 5.	Thurrock's strategic transport connections (Image: Stantec)	13	Figure 15.	Air Quality Management Areas in Thurrock (Credit: Stantec)	28
Figure 6.	Journeys associated with an average household in Thurrock (Credit: Stantec)	14	Figure 16.	Air Quality Management Areas in Thurrock mapped with speed reductions in the PM peak (Credit: Stantec)	29
Figure 7.	Average delay (seconds per vehicle per mile) (Credit: Stantec)	17	Figure 17.	EV charging 'Super Hub' at Moto Thurrock (credit: Gridserve)	29
Figure 8.	Great Britain and Thurrock split between journey purposes (Credit: Stantec)	21	Figure 18.	Age, deprivation, education and health levels in Thurrock . (Credit: Stantec)	31
Figure 9.	Car ownership in England and Thurrock (Credit: Stantec)	21	Figure 19.	Comparative measures of Economic Performance for Great Britain and Thurrock. (Source: NOMIS- Data to December 2019)	33
Figure 10.	Car ownership in Great Britain and Thurrock (Credit: Stantec)	21	Figure 20.	Broad location of potential new housing development areas in Thurrock (incomplete list - areas and boundaries are provisional and subject to review and amendment as part of the development of the Local Plan).	41
			Figure 21.	Summary Table (Source: Stantec)	47

# 1. Background



## Baseline Study

- 1.1 Chapters 1 to 9 of this Issues and Options Report summarises the findings of a Thurrock Transport Baseline Study undertaken by Stantec Limited. The Baseline Study documents the existing transport and travel situation in the borough and forms the basis of the transport planning evidence for the emerging Local Plan.
- 1.2 The Transport Baseline Study uses data from several sources:
- Census 2011
  - Department for Transport
  - National Travel Survey (NTS)
  - TEMPro 7.2
  - Ordnance Survey
  - Office of Rail and Road
  - Royal Mail postcode
  - Police injury accident records
  - Thurrock Council

- 1.3 Appendix A- LTP Baseline Borough-wide Figures (a separate document) contains baseline outputs from the data sets used to inform the baseline analysis summarised in this report.
- 1.4 The Baseline Study incorporates key stakeholder feedback on the primary challenges, aspirations and opportunities they face and supplemented the data.
- 1.5 Consultation opportunities were offered to a range of stakeholders. The following stakeholders actively engaged with the Study:
- C2C Trains
  - Network Rail
  - DPWorld/London Gateway
  - Essex County Council
  - National Highways
  - Kenex Thames Gateway Tramlink Ltd
  - Port of London Authority
  - Port of Tilbury
  - Stephenson of Essex
  - Segro
  - Thames Clippers
  - Transport East STB

## Local Plan

- 1.6 The Local Plan will provide the policy base and guidance, help coordinate strategies, and identify the necessary infrastructure requirements for delivering potentially over 30,000 new homes and around 25,000<sup>1</sup> new jobs across the borough. Strategic growth locations are being identified, which will be informed by the borough's current interconnectivity and access characteristics, which are explored within this study.
- 1.7 Thurrock Council has prepared and consulted on two Issues and Options reports and has carried out a Call for Sites to develop the base for the new Local Plan for the borough. These documents and this study will become part of the broader suite of evidence to help shape a robust and progressive Local Plan for Thurrock to 2037/38.

<sup>1</sup> Provisional growth figures - subject to review as part of the Local Plan drafting process.

- 1.8 The Local Plan will reflect on the implications of the Lower Thames Crossing proposals on the borough and how that will affect the Land Use planning processes and the provisions for access and movement within and through the borough.
- 1.9 The Structure of the Local Plan is made up of several phases, which will progress through the following:
- Strategic Policies, Proposals and Infrastructure.
  - The 5 Strategic Character Areas: Development Frameworks & Infrastructure Delivery Plans.
  - Strategic Growth Locations: Inset Plans, Master Plans, Transport Access Strategies, and Infrastructure Delivery Plans.
  - Strategic Urban Extensions/New Settlements.
  - Strategic Employment Allocations.
  - Town Centres- Design Coding.

# 2. Structure



2.1 The Baseline Study is structured around the guidance within the Planning Policy Guidance (PPG) “Transport Evidence Bases in Plan Making and Decision Taking”. PPG tells us that transport evidence bases in plan making and decision taking should establish evidence that may be useful in:

- ‘improving the sustainability of transport provision
- enhancing accessibility
- creating choices among different modes of transport
- improving health and wellbeing
- supporting economic vitality
- improving public understanding of the transport implications of development
- enabling other highway and transport authorities/service providers to support and deliver the transport infrastructure that conforms to the Local Plan
- supporting local shops and the high street’

2.2 PPG also advises on the key issues that should be considered in developing a transport evidence base, which are to:

- assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms
- assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport
- highlight and promote opportunities to reduce the need for travel where appropriate
- identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate
- consider the cumulative impacts of existing and proposed development on transport networks
- assess the quality and capacity of transport infrastructure and its ability to meet forecast demands
- identify the short, medium and long-term transport proposals across all modes.’

2.3 To form an understanding of the baseline, in accordance with PPG, the Study addresses ‘all current transport issues as they affect all modes and freight covering, for example, accessibility, congestion, mobility, safety, pollution, affordability, carbon reduction across the whole Plan area and, within relevant areas of the Plan, including existing settlements and proposed land allocations.’

2.4 The Study is based on consultation and includes inputs from relevant transport and planning authorities, transport providers and key stakeholders - as the PPG advocates.

2.5 The Study is structured around the following:

- **Accessibility** is the extent to which individuals and households can access day-to-day services, such as employment, education, healthcare, food stores and town centres.
- **Congestion** is the degree to which travel demand is greater than the capacity of the network to accommodate within a given period.
- **Mobility** is the ability of people and goods to move efficiently and freely around an area and is a crucial factor in economic growth and wellbeing for the population. It primarily concerns the opportunity to travel and the network connections available.
- **Safety** considers the injuries and casualties that occur due to interactions between users of the transport network.
- **Pollution**, carbon reduction and health examine the trends and impacts of the transport network in terms of the pollution impact, the trends in carbon production and how this interacts with public health.
- **Affordability** looks at the demographic factors which shape travel behaviour by changing the needs and costs of travel.

2.6 These topics are covered in the body of this report, with detailed data provided in appendices.

## Opportunities

2.7 Chapters 10 sets out borough-wide transport opportunities.

2.8 Chapter 11 describes the main development and regeneration opportunities that provide the main opportunities for the further development of Thurrock’s transport networks and services.

### Focus on specific areas of Thurrock

2.9 More detailed issues and opportunities in five spatial sub areas are set out in separate reports:

- Aveley and Ockendon
- Thurrock Urban area
- The Fens
- Stanford Le Hope, Corringham, London Gateway/TEP
- Chadwell St Mary, Tilbury, East Tilbury and Linford



# 3. COVID-19

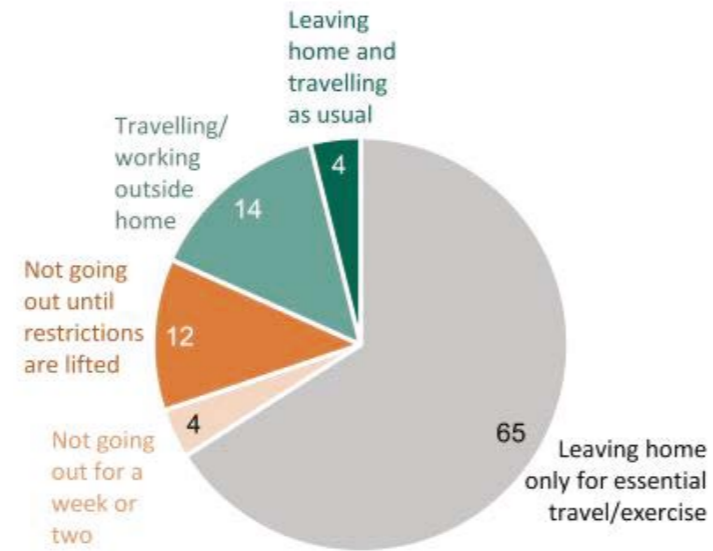


Figure 1. NTAS Chart 1: 'Which of the following best reflects your current experience of the outbreak'. Source: National Travel Attitudes Study: Wave 4 (Provisional)

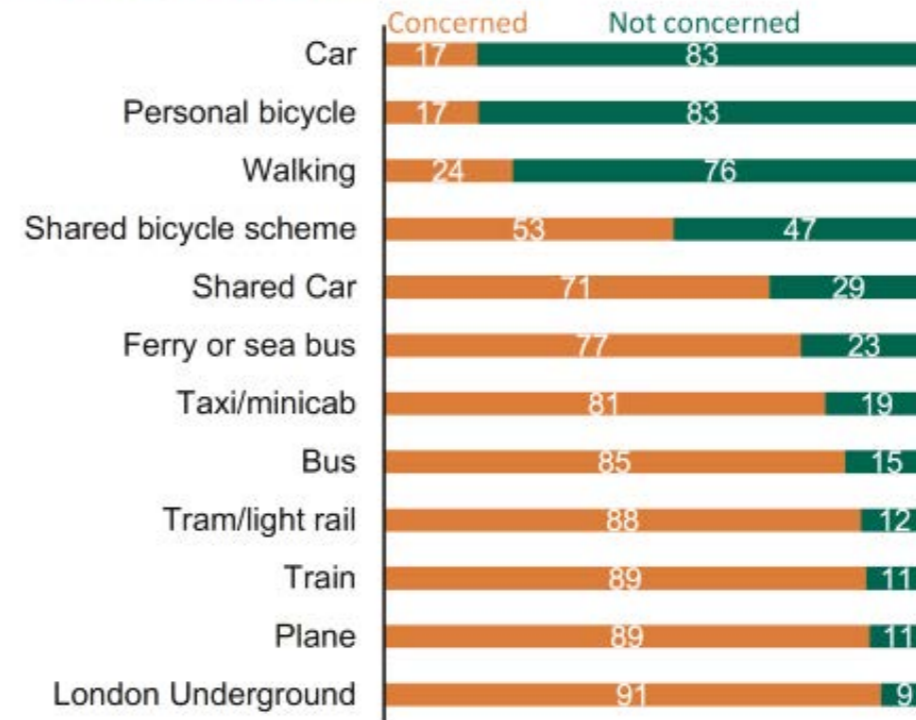


Figure 2. NTAS Chart 7: 'How concerned for your health, if at all, would you be currently if you were to use the following transport modes?'. Source: National Travel Attitudes Study: Wave 4 (Provisional)

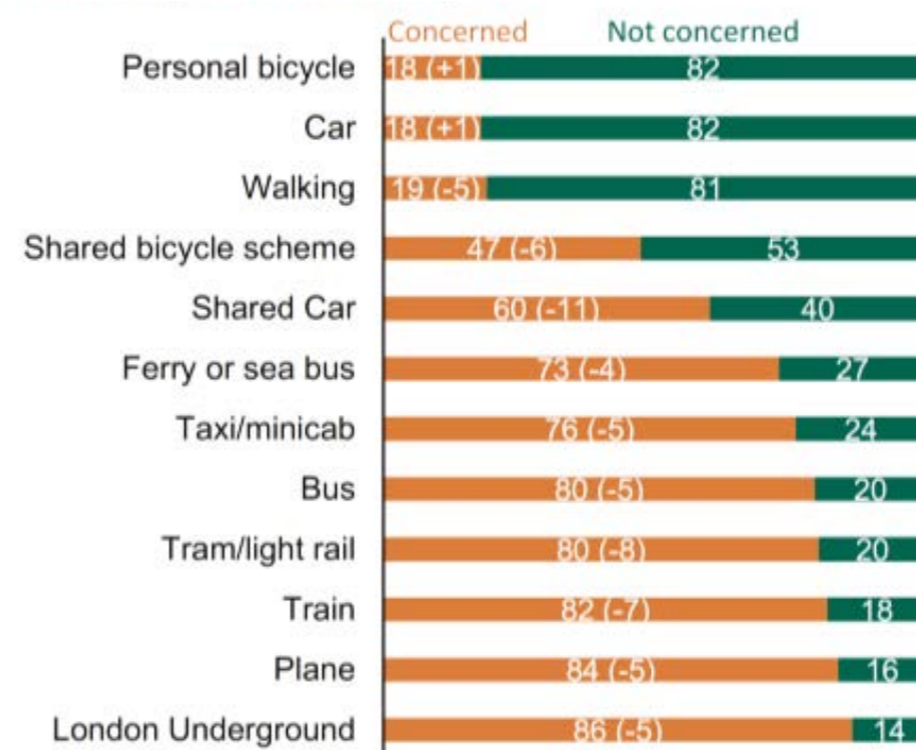


Figure 3. NTAS Chart 7: 'When the current travel restrictions and social distancing are removed, how concerned, if at all, for your health would you be when using the following modes?'. Source: National Travel Attitudes Study: Wave 4 (Provisional)

- 3.1 This study considers data from 2019 or before, as the behaviour of travellers during 2020/21 will not be typical of continuing trends and is not considered to provide a sound basis for forecasting or planning.
- 3.2 Discussion with the train operator C2C indicated that passenger numbers compared to 2019 are significantly suppressed, with travel only rising to around 46% of February 2019 patronage during the non-lockdown periods in 2020.
- 3.3 Figure 1 extracted from National Travel Attitudes Study (NTAS): Wave 4 (Provisional) shows the suppression of travel reported during the pandemic.
- 3.4 The impact of the pandemic on travel behaviour has included shifts in behaviour and suppression of travel and activity. Figure 2 from the NTAS, illustrates the perception of safety has been a key driver of these changes:
- 3.5 It is worth considering the long-term impact that such a seismic change in behaviour may cause. Many workers who were accustomed to commuting have seen the possibility of remote working, and other workers may have changed modes on the basis of personal safety or in accordance with government guidance.

- 3.6 NTAS notes:  
*"The coronavirus (COVID-19) pandemic had a substantial and potentially sustainable impact on active travel. When interviewed between May and July 2020, 39% reported to walk more and 38% reported to cycle more than before the outbreak of the corona virus."*  
 Source: National Travel Attitudes Study: Wave 4 (Provisional)
- 3.7 It is a recognised Transport Planning principle that enduring changes in modal choice are most likely to occur in response to significant life events.
- 3.8 Changes in behaviour, such as increases in walking and cycling, may endure, with ongoing benefits to public health and a reduction in motor vehicle use.  
*"Of those that reported to walk or cycle more, 94% thought it [is] likely that they would continue to cycle and walk more once travel restrictions were removed."*  
 Source: National Travel Attitudes Study: Wave 4 (Provisional)
- 3.9 Figure 3, taken from NTAS Chart 7, illustrates that risk awareness engendered by the pandemic may have a lasting effect on behaviour.

# 4. Accessibility

- 4.1 Accessibility is the extent to which individuals, households and goods can move to the destinations they want by whichever mode they choose. This travel includes employment, shopping, commerce, medical and leisure purposes.
- 4.2 Thurrock's strategic transport connections provide strong local links by road to outer east London. To a lesser extent, there are also strong local links by road to and from Basildon, Kent and central Essex.
- 4.3 The Dartford Crossing better connects Thurrock with the south of the river compared with other areas of South Essex.
- 4.4 Thurrock possesses strong rail links to central and outer east London, with interconnection with the London Underground, Overground, DLR and the Elizabeth Line.
- 4.5 Freight connections are an essential element of the Thurrock rail network, with the ports using rail connections alongside HGV road transport of goods.
- 4.6 The ports in Thurrock are both a significant employer and driver of economic activity locally and of national importance for the movement of goods into the UK-including short sea shipping. 'Freeport' status offers an opportunity to continue to develop this area of employment in the Borough.
- 4.7 A ferry service connects Thurrock to Kent in the south, across the river Thames, as does the Dartford Road crossing. The Thames Clipper is also planned to extend into Thurrock to transport passenger and light goods along the route into London. A 'park and glide' ferry is proposed connecting the proposed London Resort with remote car parking areas.
- 4.8 Although well served by transport links, as analysis in this report will show, the network around Thurrock can become congested during peak times, notably the M25 motorway and A-roads linking Thurrock to London.

- 4.9 The question remains as to whether Thurrock has enough highway and public transport capacity available to accommodate future growth.
- 4.10 The Department for Transport's National Travel Survey (NTS) records travel behaviour statistics and is the primary source of data on individual travel patterns by residents of England within Great Britain. The NTS is a household survey designed to monitor long-term personal travel trends and inform policy development. It provides information on what travel demand and modal choice currently characterise households in Thurrock.
- 4.11 The NTS provides an overview of demand, allowing for a general prediction of transport choice. However, transport choice is affected by proximity to facilities and interchange. Modes with fixed points of access, like rail, bus and ferry, will typically have much higher usage close to those points, and therefore, those modes are often more dominant or important for those areas.
- 4.12 The M25 Motorway connects Thurrock to the wider motorway network. A-roads in the borough connect to London and the east. The A13, A1090, A1089 and A1014 are vital connections between the three ports and the national network.
- 4.13 The A1089 corridor and the retail and industrial environment along it create a western boundary to Chadwell St Mary and Tilbury. The areas to the east are more lightly populated than Grays, with East Tilbury, Stanford-le-Hope and Corringham surrounded by open land.
- 4.14 At 75%, the most significant proportion of work-related journeys to, from and within Thurrock are made by car. As a result of peak hour car reliance, the Thurrock road network, the M25 motorway and the A-roads linking Thurrock to London can become congested at peak times.
- 4.15 Further study will be undertaken to consider whether Thurrock has sufficient highway and public transport capacity to accommodate future growth.

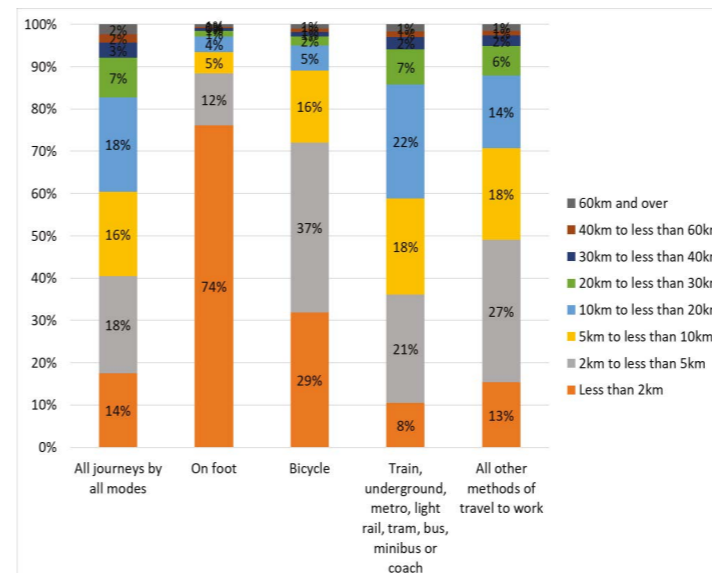


Figure 4. Distance travelled percentage by mode (for Thurrock)

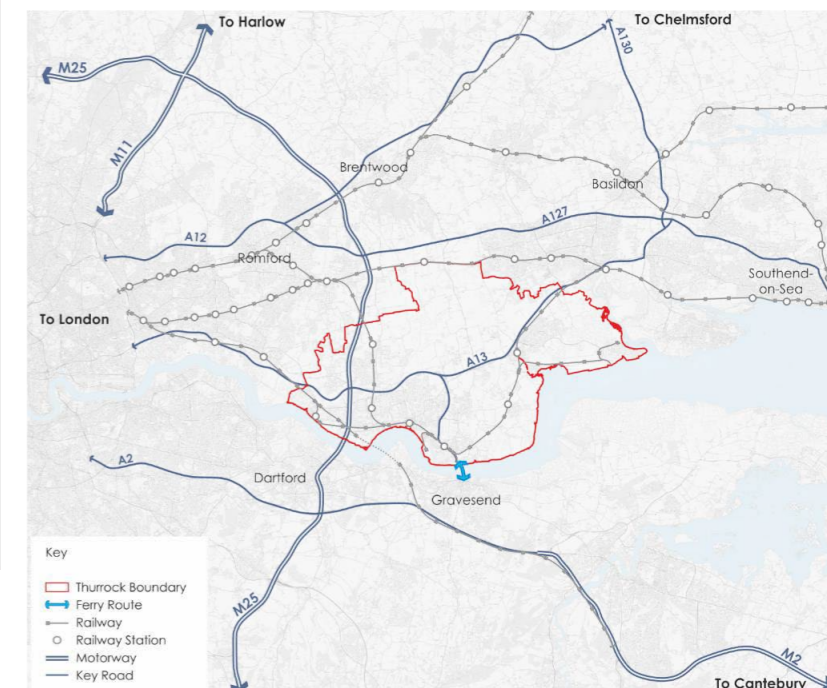


Figure 5. Thurrock's strategic transport connections (Image: Stantec)

- 4.16 The NTS indicates that 8% of journeys within, into or out of Thurrock for any journey purpose use public transport. This compares with a 9.1% share of journeys across England.
- 4.17 Public transport demand is concentrated in Thurrock's urban areas, particularly the Grays area, around the rail stations. Passengers' access to public transport infrastructure by a quick walking journey seems to be the primary determinant of public transport utilisation. Residents are willing to use public transport opportunities where services and infrastructure are present.
- 4.18 Notably, at approximately 25%, rail makes up a significant proportion of employment journeys outbound from Thurrock. The majority are commuters to London. The available rail connections link Thurrock to London in the west and Essex to the east and north.
- 4.19 A bus service connects Thurrock to Kent across the Thames via the Dartford Crossing. The Tilbury passenger ferry service connects the pier at Tilbury with Gravesend. 'Clipper' river bus services along the Thames are planned.
- 4.20 The general focus of commercial marine movements is on international trade.
- 4.21 Purfleet is separated from Aveley by the A13. Aveley is separated from South Ockendon by the M25/A282 corridor, Purfleet is separated from Grays and Chafford Hundred by the Lakeside's retail and business zones.
- 4.22 Primary commercial land uses are scattered across urban areas in the borough with shopping areas concentrated in town centres and urban areas. The Lakeside Shopping Centre lies in the west of the Borough primarily focused around motor vehicle access but also served by rail and bus services.
- 4.23 Primary industrial land uses are concentrated around port areas, West Thurrock, and the Lakeside basin. There is a strong focus on marine operations with access to the Thames, the estuary and onwards to the Channel and international waters.
- 4.24 Port operators strongly value the rail network for freight movement to and from the ports and desire improved rail freight connectivity to complement their marine operations. They also recognise the importance of rail connectivity for their workforce.

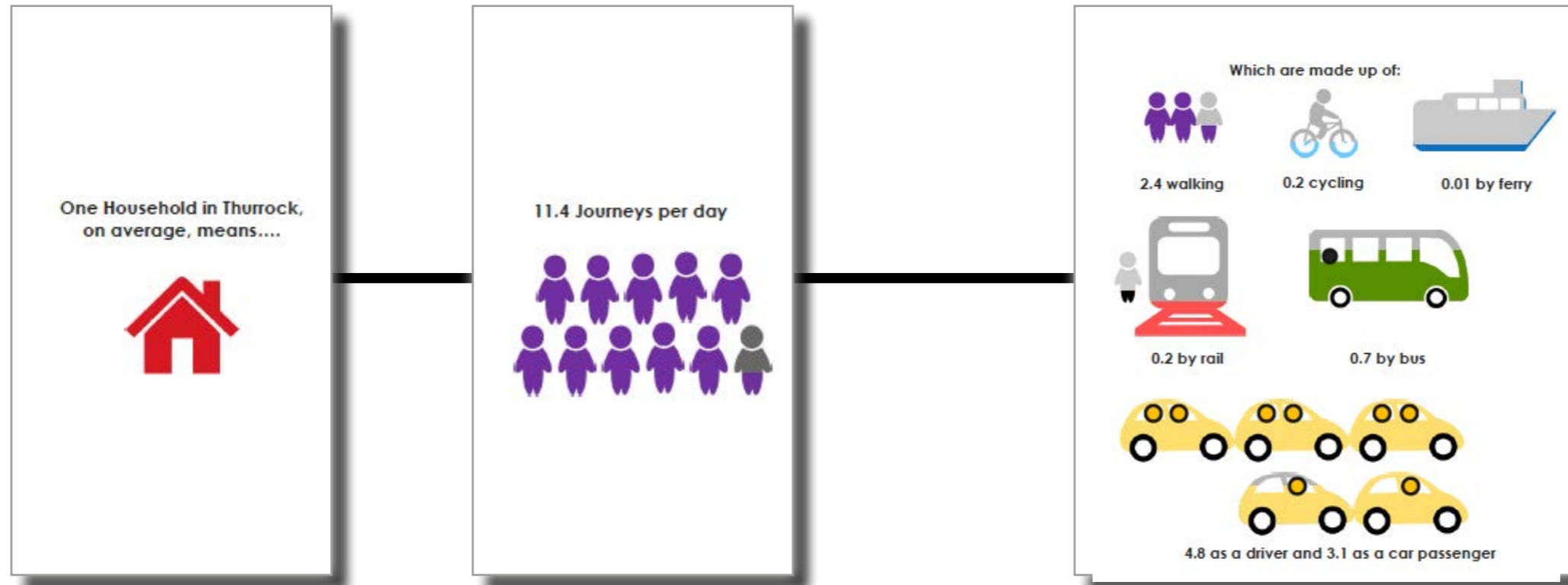


Figure 6. Journeys associated with an average household in Thurrock (Credit: Stantec)

## Headlines- Accessibility

4.25 For journeys within Thurrock, NTS data indicates the proportion of journeys to work on foot, by bicycle, by ferry and by bus is greater than the national average. For journeys to work of less than 2km, 34% of journeys are made on foot. This accounts for 7% of all daily journeys to work. For journeys to work of fewer than 30km, 30% of journeys are made using non-private car modes.

4.26 Walking journeys are mostly (74%) under 2km, cycle journeys are mostly (82%) under 10km, and most of them (67%) are under 5km.

4.27 Walking routes within urban areas typically travel along vehicle corridors with some separate footpath connections through more modern housing areas. The quality and interconnectivity of routes vary. Some rural links along Public Rights of Way have evolved rather than being strategically led.

4.28 The same is true for cycle provision, where facilities are provided but are not comprehensively connected.

4.29 Rail passenger growth levels at Stanford-Le-Hope and East Tilbury are lower than adjacent stations, although still strong by national standards. Further studies could establish whether this trend is due to insufficient train and platform capacity suppressing demand, attractive factors of other stations, or different reasons.

4.30 In 2019 (pre-COVID), the train operator's view was that capacity upgrades would be required soon. As a result, new trains were to be brought into service in 2022 to deliver increased capacity, initially on the Fenchurch Street Shoeburyness line.

4.31 The train operator (C2C) believes links to other transport modes and connections to employment destinations are adequate for current demand. However, transport links between rail stations and additional employment destinations may need to be developed to strengthen access and stimulate public transport patronage.

4.32 Higher frequency train services require signalling infrastructure improvements with onboard GPS and constant service monitoring. The train operator has suggested that working with the DfT, service improvements in the area could deliver 24 trains per hour<sup>2</sup>.

4.33 In 2020, passenger numbers fell to around 26% of February 2019 patronage levels with the imposition of COVID restrictions and concerns over safety. Numbers rebounded to approximately 40-50% of 2019 patronage in the summer of 2020. However, passenger numbers fell again in late 2020 and early 2021 with the reintroduction of restrictions.

4.34 The train operator expects significant changes to working practices. However, London will remain a focus of economic activity and patronage will climb over the long term.

### Conclusion

4.35 Travel patterns in Thurrock are heavily focused on the private car. However, where opportunities to use other modes are convenient and available, people are willing to use them.

4.36 The network of transport routes has severance issues caused by the busiest roads within Thurrock, particularly the M25 and A13. This notably causes difficulty in east-west travel and impedes residents' travel options and opportunities.

4.37 The rail network is in the process of being improved, and capacity increased. This process is essential, as the recent pattern of decreased rail patronage is expected to revert to growth in the longer term.

4.38 To support non-car travel, the rail sector believes stations must link with new residential developments and employment growth areas.

4.38.1 Inbound traffic in the morning peak hour is private car dominated – 80% car.

4.38.2 Outbound journeys are considerably more sustainable and focussed on London – 29% of journeys use rail, and 84% of all rail journeys are to London Boroughs.

4.38.3 Journeys internal to Thurrock are a broader mix of modes, and sustainable travel makes up a significant proportion of journeys – 21% of journeys are on foot.

4.38.4 Rail connections to London stations are a great attractor for Thurrock and provide sustainable travel opportunities. Planned network and operational enhancements will accommodate a forecast increase in passenger demand.

4.38.5 Cycle facilities provide access across Thurrock. However, there are gaps in the network, mixed levels of provision, and severance by major highway routes, particularly the M25 and A13.

4.38.6 The River Thames frontage provides interchange opportunities with ferry services that are expected to expand with the introduction of Thames Clipper services.

4.38.7 Consultees prefer that planned developments connect to existing networks and hubs to maximise the benefits of planned improvements.

4.38.8 A concern for future development is access to amenities such as supermarkets, healthcare, and schools by non-car modes. As development plans come forward, non-car access to such facilities should form part of the integrated planning for those developments.

4.38.9 For strategic development, a key challenge is access to GPs, pharmacies, and other front-line healthcare services by non-car modes. Introducing Integrated Medical Centres provides an opportunity to ensure development proposals have access to high-quality medical services.



# 5. Congestion



Average delay (seconds per vehicle per mile)

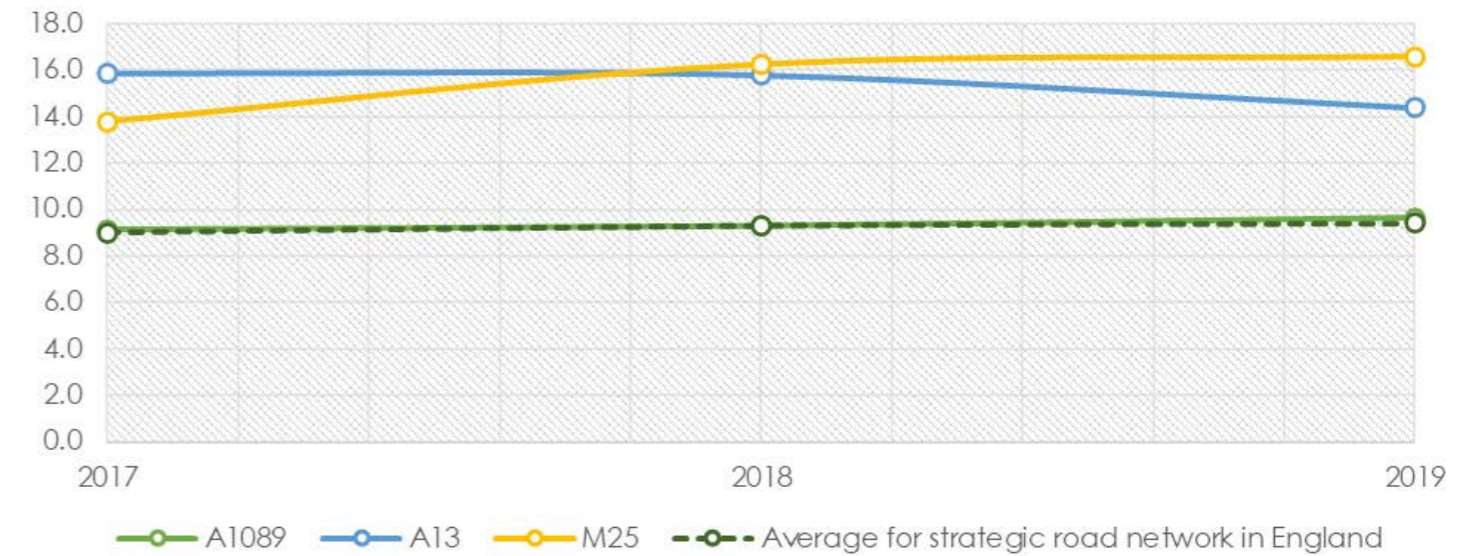


Figure 7. Average delay (seconds per vehicle per mile) (Credit: Stantec)

5.1 The national policy identifies congestion as a consequence but also a burden on economic success:  
*“For many, traffic is an inconvenience, though some might also describe it as a consequence of economic success. Indeed, it’s a sign that a lot of people have jobs to go to. However, if left unchecked it can have a significant impact on our towns, cities and communities, and act as a drag on local growth.*  
*The Department for Transport (DfT) predicts up to 55 per cent growth in traffic levels by 2040. However, levels of congestion are predicted to rise – up to 85 per cent worse in the same period”<sup>3</sup>*

5.2 This section examines factors contributing to transport network congestion and constricted travel demand in Thurrock.

5.3 The full effects of the COVID-19 pandemic on congestion and travel demand will not be known for some time. New ways of living and working may result in longer but lesser peaks in congestion - or a general downturn in commuting.

5.4 The average delay on the M25 and A13 in Thurrock is significantly higher than the average for England. The delay is concentrated on sections of the network. The worst performing sections are the A13 westbound between A126 and M25/A282 and the A282 Dartford Crossing section on the M25 route.

5.5 The trend in congestion does not indicate a definite upwards or downward direction. On average, congestion levels track the general national trend of slight increases in congestion over time.

5.6 Of the 25,500 inbound and 40,700 outbound movements to Thurrock daily, the most significant proportion come via the M25 motorway and A13, particularly for HGVs to the ports and industrial zones. East-west A- roads and more local roads from the north also carry large traffic volumes. This is particularly pronounced in the evening peak hour.<sup>4</sup>

5.7 Around 34,000 vehicles per day leave Thurrock via the M25 motorway, 9,500 of which are HGVs (28% of traffic leaving Thurrock). East-west A-roads and more local roads from the north carry much outbound traffic to the trunk road network, with over 50,000 vehicles using the busiest non-trunk routes on an average day.

5.8 For journeys internal to Thurrock, the 50,000 daily vehicles on the busiest routes used are on east-west A-roads. Some more minor roads in urban areas also carry significant traffic, with several routes carrying around 20,000 vehicles daily. Routes leading to ports have high proportions of HGV traffic.

5.9 Many of the key roads in Thurrock, the M25 motorway and A roads, have high average speeds (50+mph). Differences between average peak and off-peak speeds highlight sections with reduced speeds- indicating areas of congestion.

5.10 Network resilience cannot be wholly understood through average speed and traffic volumes. However, it is reasonable to conclude that the absence of an increasing congestion trend in Thurrock indicates that the current transport situation is not degrading - except when adverse conditions, such as road closures or traffic incidents, occur.

5.11 Modelling traffic behaviour would provide a greater understanding of the network, points of potential capacity problems and overall network sensitivity to congestion.

5.12 Data indicates that the speed reductions are more significant in the evening than in the morning.<sup>5</sup>

5.13 Journey time reliability is lower in the evening than in the morning peak. Network performance is worse in the evening than the morning peak by both measures. This is not typical for urban areas, where a more diffused evening peak tends to occur due to workplaces and schools’ different leaving times. In Thurrock the situation is not entirely typical, but this may be a symptom of the large logistics and industrial sector within the borough.

5.14 Hot spots of congestion within Thurrock coincide with key bus and cycle corridors, indicating that congestion will have an effect on non-car modes. This can be observed from the data held in Appendix A, with a number of hotspots on main bus routes.

5.15 The co-location of congestion for private car and major bus services and cycle routes is likely and difficult to avoid in urban areas. Key corridors which provide the best journey time attract private vehicles as well as providing direct access for other modes. However, the balance between modes can be adversely tipped towards the apparent safety and ease of use of the private car in congested areas, as public transport impacted by congestion is less attractive as reliability is impacted, and walking and cycling experience more intimidation and safety concerns.

3 A country in a jam: tackling congestion in our towns and cities, Local Government Association

4 As shown in the data displayed in Appendix A

5 In Appendix A



### Conclusion- Congestion

- 5.16 The majority of journeys to, from and internally in Thurrock are made by private car. Around 80% of journeys to work are made by car, either as a driver or passenger. For journeys of less than 2km to work, 50% use a private vehicle, but for journeys over 2km, this increases to 76%.
- 5.17 Internally, many journeys to work in Thurrock are made on foot, by bicycle and by bus. For journeys to work of less than 2km, 34% of journeys are made on foot, which accounts for 7% of all daily journeys to work.
- 5.18 Notably, rail makes up a significant proportion of employment journeys from Thurrock, around 25%. This will be mainly commuters to London.
- 5.19 This reliance on rail commuting into London has resulted in crowded peak-hour trains. However, as noted above, the impacts of the pandemic have resulted in a significant downturn in rail use—a trend that will take time to reverse.
- 5.20 Bus companies have not reported any major capacity issues with their services at present but have noted the impacts on the reliability of services. Local plan growth will likely drive demand for additional capacity and services.

- 5.21 The average congestion level in Thurrock is higher than the average for England on key routes (the M25 and A13).
- 5.22 The congestion trend is upwards on the M25 and downwards on the A13. Overall, the average network delay appears stable under current conditions.
- 5.23 Rail passenger capacity would have soon been reached had not the COVID-19 pandemic occurred. The rail operator and Network Rail should revisit the shorter-term plan to increase rail network capacity post-pandemic. However, additional capacity is still expected to be needed over the long term.
- 5.24 The severance of east-west travel and the limited available routes increases network sensitivity.
- 5.25 Modelling future traffic behaviour is needed to fully understand network sensitivity, especially if the Lower Thames Crossing is completed. A Thurrock Strategic Transport Model is under development.

### Headlines- Congestion

- 5.26 The trend across major roads monitored by the Department for Transport indicates key routes in Thurrock are experiencing different trends in congestion:
  - A1089 congestion tracks national trends
  - A13 congestion has a downward trend for 2017-19
  - M25 congestion has an upward trend for 2017-19
- 5.27 Thurrock's journey purposes data taken from the national travel survey shows broadly typical purpose split, but notably higher than the national average proportion of shopping journeys
- 5.28 Travel out of Thurrock into London makes up 40% of AM peak journeys.
- 5.29 The programme of route improvement on the A13 and key junctions in Thurrock correlates with the points of highest average delay.
- 5.30 Commuting travel is a substantial proportion of peak-hour journeys. Modal shifts and home working can therefore reduce congestion.
- 5.31 Data collection and transport modelling will enable informed decision-making regarding the sensitivity of congestion on key routes.

- 5.32 The proposed Lower Thames Crossing will increase strategic network capacity. It will also likely cause significant traffic re-routing. The impact cannot be reliably predicted without robust local traffic modelling of the network changes.
- 5.33 The rail operator and Network Rail are working to increase rail capacity.
- 5.34 Additional station stops will affect the operational efficiency of the rail network. Cooperation between rail operators and developers is needed to determine the appropriate strategy to provide effective rail links, including enhancing connections to existing stations and integrated rail-bus ticketing.
- 5.35 The severance of east-west travel in Thurrock by the M25 limits route options, increasing congestion and network sensitivity.
- 5.36 There are bottlenecks on key routes for freight, and large increases in freight movement volumes are forecast over the lifetime of the Local Plan.
- 5.37 The movements in and out of Thurrock are extremely tidal, with large volumes outbound in the morning and inbound in the evening.

# 6. Mobility

6.1 Mobility is the ability of people and goods to move efficiently and freely around an area. It is a crucial factor in economic growth and the population’s wellbeing.

6.2 Thurrock’s transport network comprises various modes of transport and routes between different locations. Quality of life and social and economic inclusion is improved when residents can freely choose the most efficient way to travel across the transport network.

6.3 Widening travel choices and removing barriers to efficient and free movement for people with varying physical ability and wealth levels can strongly influence social and economic opportunities and behaviours.

6.4 This section examines factors that support mobility by multiple modes of transport.

## Roads

6.5 Analysis of journey purposes data for Thurrock<sup>6</sup> indicates 30% more shopping-related journeys than the national average. All other journey purposes match the pattern across Great Britain. The next most dominant journey purpose is access to employment.

6.6 Car ownership in Thurrock is above the average for England, with 20% of households having no car or van compared to the national average of 26%.

6.7 Residents of Thurrock are slightly less likely to choose to drive than the average across Great Britain, with 19% more car passenger journeys than the average for Great Britain.<sup>7</sup>

6.8 The M25 Motorway connects Thurrock to the national motorway network. The Dartford Crossing provides the motorway to Kent and is a focus of demand, as is the M25 more generally.

6.9 A-roads connect east to west across the Borough, linking Outer East London with South East Essex, Basildon and Southend.

6.10 The A13 links the M25 with South Essex. There is restricted local access to this vital route when approaching from some directions—with traffic channelled along the remaining available trunk roads towards alternative junction accesses.

6.11 The following committed and commenced schemes will change and improve mobility across the road transport network within Thurrock:

6.12 Projects underway and implemented.

- A13 widening, 2021.
- Integrated Transport Block Capital Programme 2022/23.
- Public transport infrastructure.
- Walking & Cycling (PRoW).
- Parking Management.
- Minor Works.
- Freight Management.
- Road Safety Engineering.
- Safer Routes to School.
- DfT Block Maintenance Capital Programme 2020/21.
- A126 Safer Roads Programme, 2020/21 (3-year programme).
- Emergency Active Travel Tranche 1 measures (various).

6.13 Committed and commenced projects

- Stanford-le-Hope Interchange.
- Grays South Regeneration: Underpass and Public Realm, 2023.
- GTC bus station enhancements (accelerated scheme)
- A13 East Facing Slips, 2025.
- A126 bus priority (MSA to Cycgnet View).
- EAT Tranche 2 measures (various measures following consultation).
- A1013 Treetops school access scheme.
- N13 cycle route enhancements.

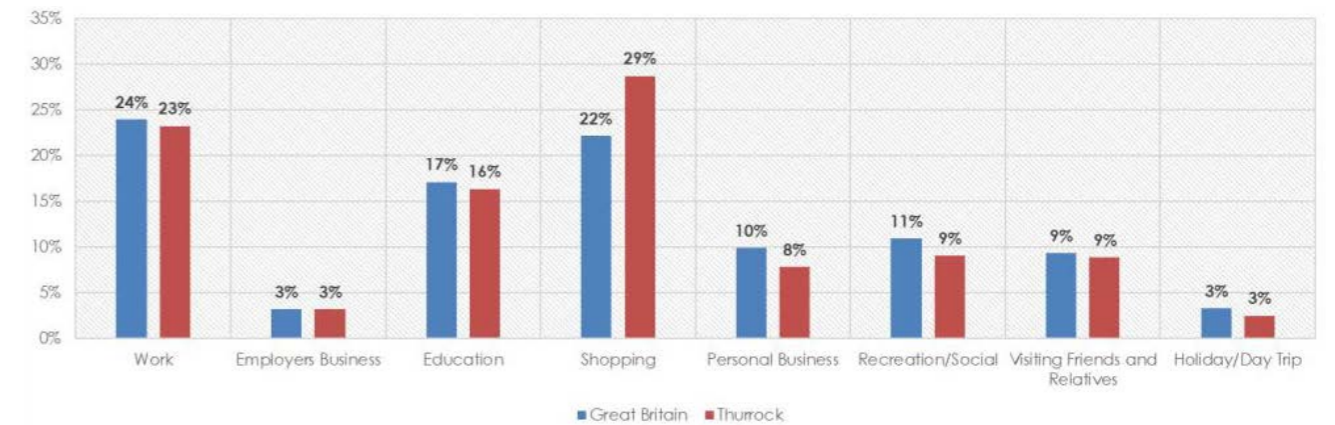


Figure 8. Great Britain and Thurrock split between journey purposes (Credit: Stantec)

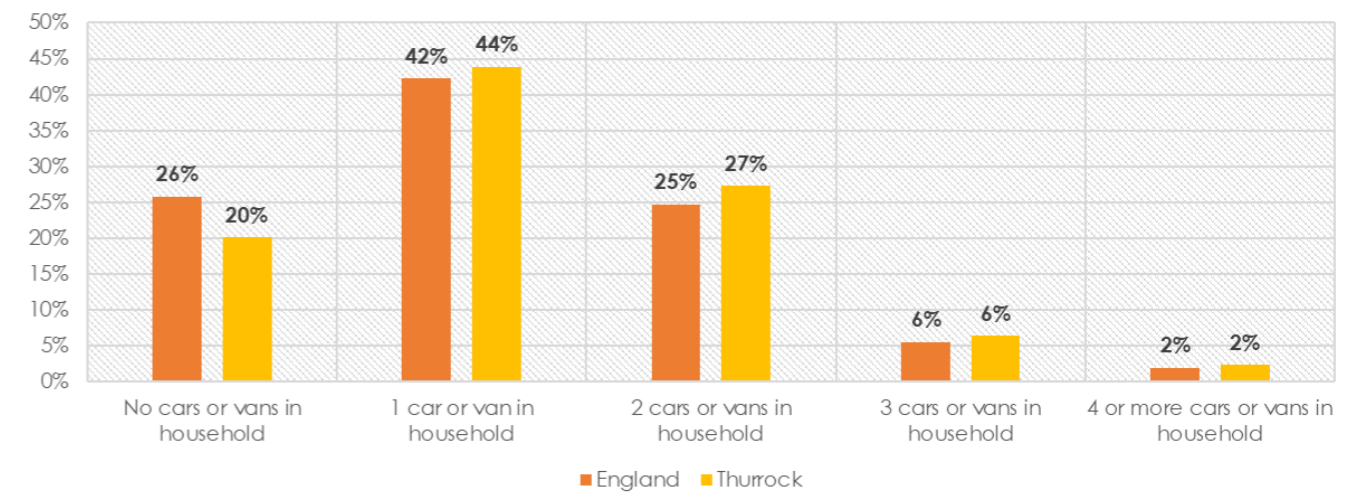


Figure 9. Car ownership in England and Thurrock (Credit: Stantec)

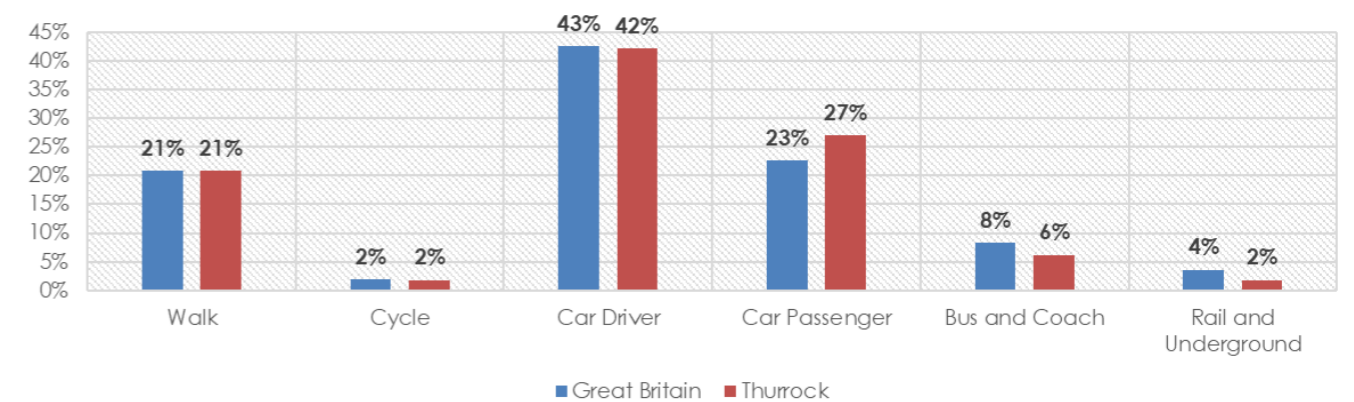


Figure 10. Car ownership in Great Britain and Thurrock (Credit: Stantec)

6 journey purpose data analysed from 'TEMPro'.

7 Source: National Travel Survey via TEMPro version 7.2.

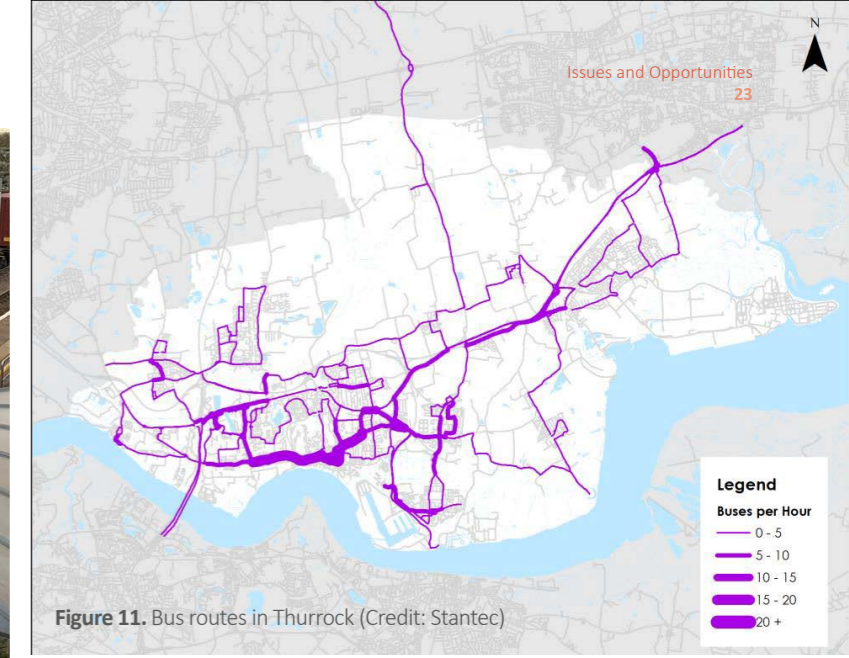


Figure 11. Bus routes in Thurrock (Credit: Stantec)

- 6.14 The proposed Lower Thames Crossing will provide an additional river Thames crossing and new strategic road link from the A2/A20 via Tilbury to the M25 north of South Ockendon. This can potentially enhance the transport network within Thurrock- provided it is connected and integrated with Thurrock's existing transport network and other modes- rather than simply bypassing the Borough.
- 6.15 Effective transit of freight from existing and planned port areas is a critical function of Thurrock's trunk road network. This supports economic development within Thurrock and enables freight movements to and from London and the wider region.
- 6.16 Residents of more rural areas of Thurrock own more cars- typically two or more vehicles per dwelling. Rural residents depend more on private cars because public transport services are fewer.
- 6.17 Car ownership is typically lower in urban areas, with Tilbury and Ockendon area residents least likely to own a car.
- 6.18 There are few large car parks in Thurrock, concentrated around Grays in the southwest of the Borough.
- 6.19 The Transport Strategy will identify appropriate areas for additional car parking capacity, including rail interchanges and parking for employment and leisure developments.

**Rail**

- 6.20 There are seven rail stations in Thurrock. Grays station offers up to nine trains per hour to London Fenchurch Street (about 35 minutes) and Southend (about 47 minutes).
- 6.21 Thurrock's rail connections are generally east-west, serving demand to/from London. There are no direct rail connections across the river to the north or south, limiting access to employment opportunities.
- 6.22 There is no station stop on the High-Speed 1 (HS1) rail line as it travels across southwest Thurrock. The nearest passenger interchanges are at Ebbsfleet and Stratford- which also serve 'Javelin' high-speed commuter services to Kent.
- 6.23 The rail network serves large distribution, industrial and port areas in Thurrock, providing a strategic freight alternative to HGV transport of goods. Freight trains share sections of the rail network with passenger services and compete for a limited number of train 'paths'.

**Buses**

- 6.24 Thurrock has an extensive bus network with connecting services to Greater London, Essex, and Kent.
- 6.25 The bus network connects all settlements within Thurrock and provides links to key employment areas and into London.
- 6.26 The highest frequency services run through central Grays to connect with the rail station interchange and between Grays and Stanford-le-hope.
- 6.27 Infrequent bus services extend to the more rural settlements.

**River**

- 6.28 A passenger ferry service across the Thames links Tilbury in Thurrock with Gravesend in Kent. The river is less than 600m wide, and the ferry is vital in breaking down the severance and connecting residents on each side to employment opportunities and services on the opposite side. The crossing takes between 5 and 10 minutes, depending on river traffic, with a 30mins service frequency from 5:30 am-7 pm, Monday to Saturday.
- 6.29 Demand for the service is higher in summer but still significant through the winter, with thousands using the service each month.
- 6.30 There are plans to expand marine services by extending the 'Thames Clippers' river bus service with additional jetties serving passengers and light freight.

**Conclusion- Mobility**

- 6.31 Thurrock's transport network supports high levels of mobility in some areas with high-quality public transport connections, private and commercial vehicle road networks, and walking and cycling routes. In sharp contrast, there are limited public transport links across the river, to rural areas and to the north of the Borough. The Road Network is congested and often disrupted.
- 6.32 Connections to London by all modes are essential for Thurrock residents.
- 6.33 Bus and ferry services are essential for more local journeys. Maintaining connections and service levels will continue to be necessary.
- 6.34 The most common travel mode in Thurrock is driving a private car, followed by a private car passenger, then walking, followed by a bus. These modes account for 96.5% of all journeys in Thurrock. Improving walking routes and more and better bus services are essential in encouraging non-car travel.

**Headlines- Mobility**

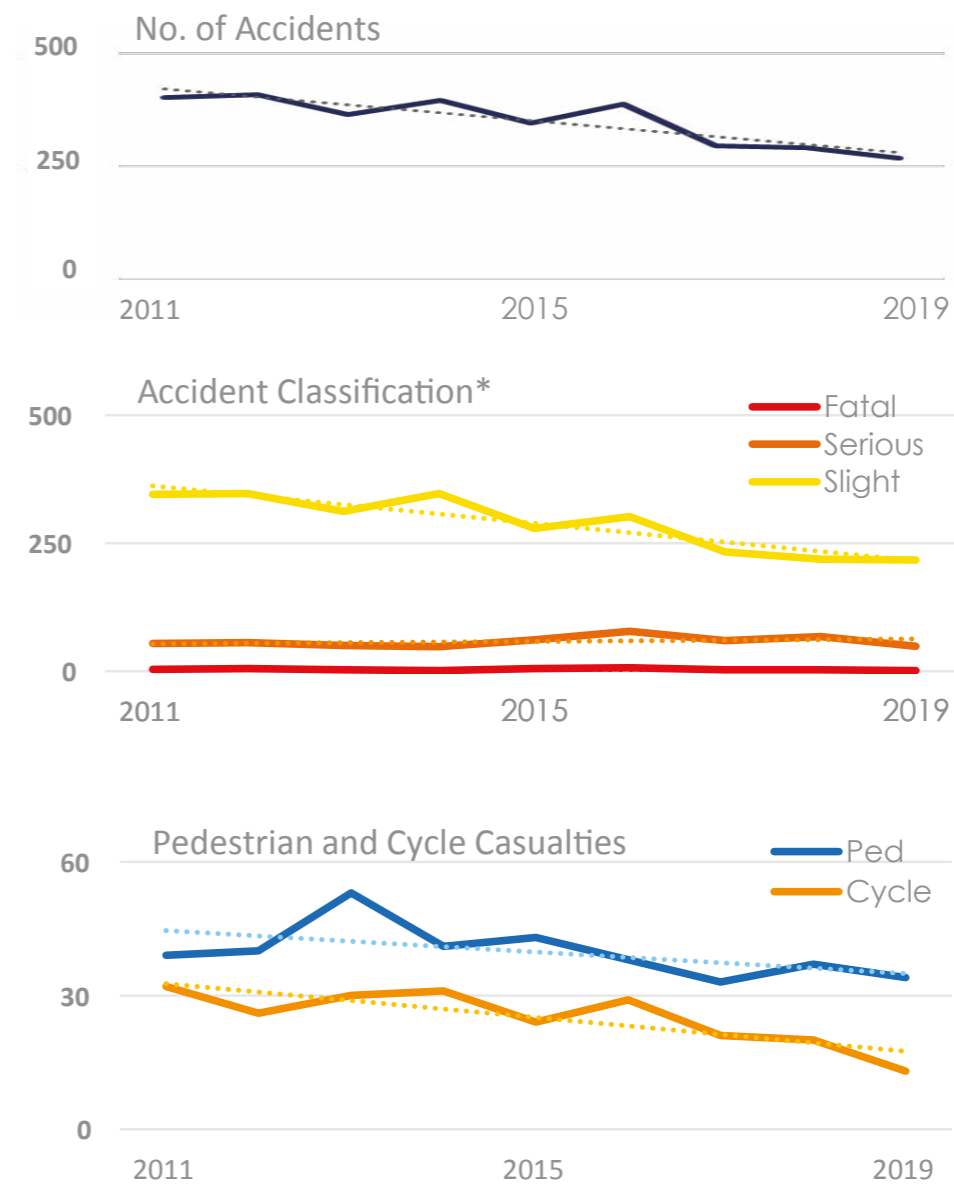
- 6.34.1 Higher car ownership than the national average, 28% more households have access to a car than the average for England.
- 6.34.2 Despite higher car ownership, Thurrock residents are slightly (1%) less likely to drive than the national average.
- 6.34.3 Thurrock has frequent rail services into London stations, with a 35-40-minute journey time to Fenchurch Street.
- 6.34.4 Thurrock has an extensive bus network connecting settlements, key employment locations, and Greater London.
- 6.34.5 Thurrock has good interchange connectivity between travel modes with more important interchanges at critical destinations such as Grays.
- 6.34.6 Expanding river passenger services offer opportunities to increase non-car travel into London and across the river with new river piers connected to nearby transport interchanges.
- 6.34.7 The M25 constrains east-west travel and limits mobility and choice of travel mode between Purfleet, neighbouring areas, and Grays.
- 6.34.8 Accommodating cycles and private cars within the same street network result in conflicting priorities. The development of cycle facilities and expansion of the route network has not followed a strategic approach. There are opportunities to remove barriers to use by inexperienced or less confident cyclists.
- 6.34.9 Prioritising public transport access vs. the private car can increase bus service reliability, encourage a shift to public transport and reduce peak hour congestion at critical locations in the transport network.

# 7. Safety

- 7.1 Personal Injury Accident data over the last eight years (2011 – 2019) indicates the location of accidents and road traffic accidents trends across Thurrock.<sup>8</sup>
- 7.2 The overall number of accidents has been steadily falling, with 403 accidents in 2011 and 267 in 2019. Fatal and slight accidents have decreased overall. However, serious accidents have increased slightly.
- 7.3 The number of pedestrian and cyclist casualties has also been falling, with accidents for cyclists decreasing faster.
- 7.4 Between the start of 2017 and the end of 2019, there were 853 road traffic accidents across Thurrock, resulting in:
  - Seven fatalities (1%),
  - 177 serious injuries (21%)
  - 669 slight injuries (78%)
  - 152 pedestrian or cyclist accidents - predominantly in urban areas around Grays, Ockendon and Stanford-Le-Hope, with less prevalence in The Fens
  - One cyclist fatality (in Purfleet)
  - One pedestrian fatality (in South Ockendon)
  - One fatality involving an HGV (A13 Stanford-le-Hope)
  - 104 pedestrian casualties (9%), which is a lower percentage than the equivalent figure for Essex and Great Britain
  - 54 cyclist casualties (5%), which is lower than the comparable figure for Essex and Great Britain
  - 77 involving HGVs (9%) - located primarily on the trunk roads and motorway. Some were close to Tilbury and Purfleet.

<sup>8</sup> The reporting of road traffic accidents changed in 2015/2016, which has meant that the number of casualties recorded as serious has increased in Great Britain. As such, trends should be viewed as a whole over the 8-year period, not by a year-to-year basis.

- 7.5 Accident types and rates within Thurrock can be benchmarked against National and regional data. The Department for Transport provides road traffic accident data for Great Britain, and the Safer Essex Roads Partnership (SERP) provides a road safety service across 'Greater Essex' (including Essex County Council, Southend-on-Sea Borough Council and Thurrock Council).
- 7.6 The 2019 data shows that of all casualties:
  - Pedestrians represented 14% in the UK, 11% across Essex, and 9% in Thurrock.
  - Cyclists represented 11% in the UK, 7% across Essex and 3% in Thurrock.
- 7.7 The Safer Essex Roads Partnership (SERP) has adopted a 'Vision Zero' strategy with an ambitious target to achieve zero deaths and serious injuries by 2040.
- 7.8 **Conclusions**  
Thurrock performs better for pedestrian and cyclist safety and has fewer fatalities than national and regional averages.
- 7.9 It is vital to maintain existing trends of improving safety.
- 7.10 The expansion of pedestrian and cycle routes and improved legibility of routes can support continual improvements in pedestrian and cycle safety.
- 7.11 Creating safe environments in new development and new infrastructure in which vulnerable road users can safely mix with motor vehicles is essential to improve the trends towards safer travel networks.
- 7.12 **Headlines**  
There has been a consistent reduction in accident rates between 2011 and 2019: 403 to 267, a 34% decrease.
- 7.13 Cycle and pedestrian injuries declined by 59% and 13%, respectively.
- 7.14 There is a very low level of serious injuries and fatalities, which remained consistent over the assessed period. Accidents involving HGVs were most common on the trunk roads.



**Figure 12.** Analysis of personal Injury accident data for Thurrock over the last 8 years (2011-2019) (Credit: Stantec)

# 8. Pollution, carbon reduction and health

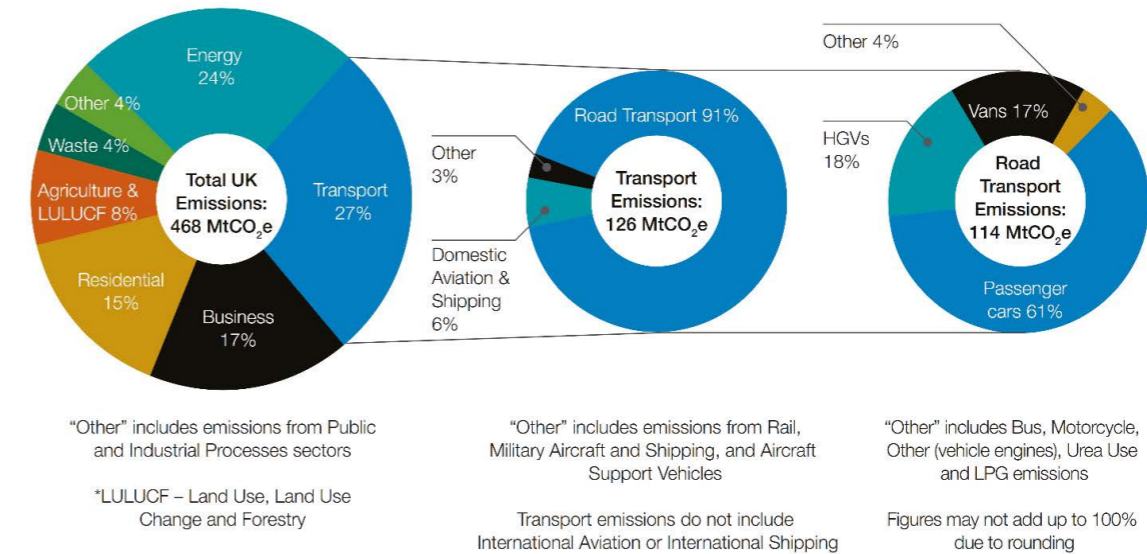


Figure 13. Road transport emissions as a share of UK greenhouse gas emissions for transport.

8.1 The Department for Transport’s “Future of Mobility: Urban Strategy - Moving Britain Ahead -2019”<sup>9</sup> highlights the impacts of transport on pollution and the importance of the reduction of pollution in the UK in changing this picture:

8.2 “Greenhouse gas emissions: Today, transport is the largest greenhouse gas emitting sector in the UK, accounting for 27% of greenhouse gas emissions. Road transport accounts for 91% of these.” [Paragraph 2.9 & Figure 3]

8.3 Consequently, the Government’s priority is to change the mix of vehicles using UK Roads, with a ban on the sale of new petrol or diesel-powered cars from 2030.

8.4 Overall Nitrous Oxide (NOx) monitoring shows a general downward trend of emissions within Thurrock, with a 21% drop between 2008 and 2018, with an average year-on-year decrease in total values of 2%.

8.5 Local authorities designate Air Quality Management Areas (AQMA) in areas assessed to have poor air quality. The objective is to monitor residents’ potential exposure to poor air quality and ensure that national air quality objectives are reached.

8.6 Figure 14 (over) illustrates Thurrock’s current Air Quality Management Areas (AQMA).

8.7 Thurrock is developing an Air Quality Assessment Model to inform future AQMA designations. The Model will confirm which currently designated areas should remain as AQMAs.

8.8 It is no coincidence that current designated AQMAs are generally in areas where roads are congested. The map opposite shows speed reductions in the PM peak as a proxy measure of congestion, which confirms many AQMAs are along congested routes. However, some AQMAs are along less congested routes, and there are congested routes which are not within AQMAs.

8.9 Thurrock’s AQMAs are concentrated around the Grays urban area and key arterial urban roads. The southern arterial road, London Road, running west from Grays, experiences significant congestion in peak times and is an AQMA. Similarly, Arterial Road is classified as an AQMA.

8.10 From discussions with key transport operators, HGV fleets continue to modernise, with the efficiency of vehicles being a priority for operators. Efficient routing and avoidance of congestion being supported by in-vehicle technology continue to progress.

8.11 Transport for London has a programme of electrification and equipping bus depots with charging infrastructure, enabling electric buses to come in from Greater London to Lakeside Shopping Centre.

Source: BEIS (2018). Final UK greenhouse gas emissions national statistics: 1990-2016

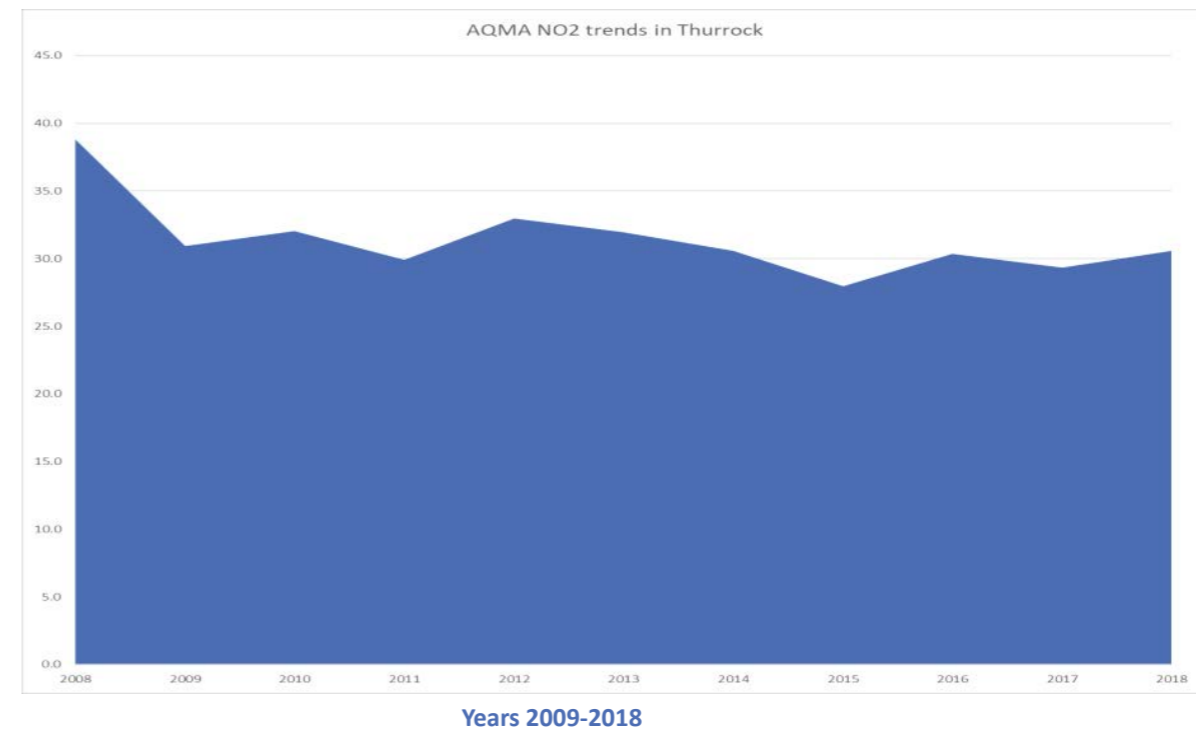


Figure 14. Air Quality Management Area NO2 trends in Thurrock (Credit: Stantec)

9 Source: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/846593/future-of-mobility-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/846593/future-of-mobility-strategy.pdf)

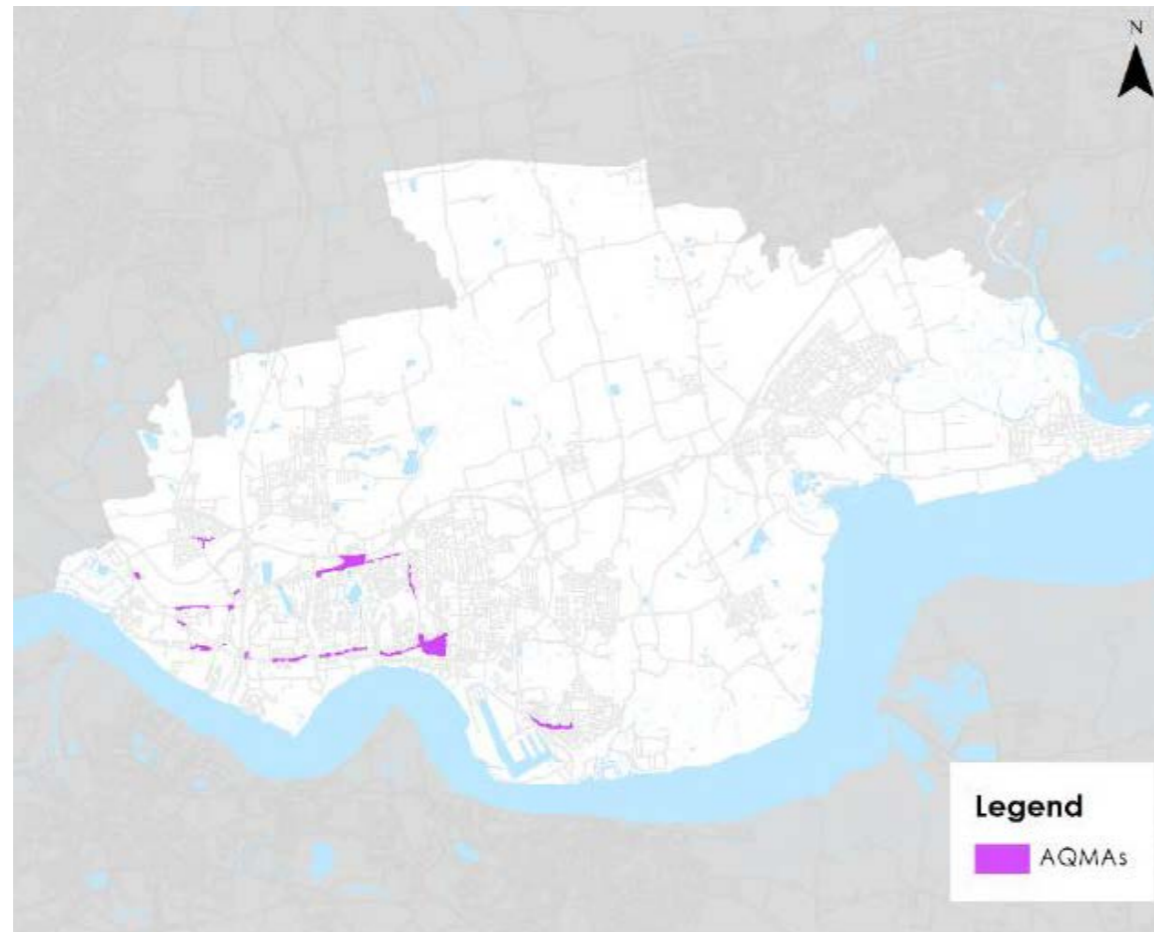


Figure 15. Air Quality Management Areas in Thurrock (Credit: Stantec)

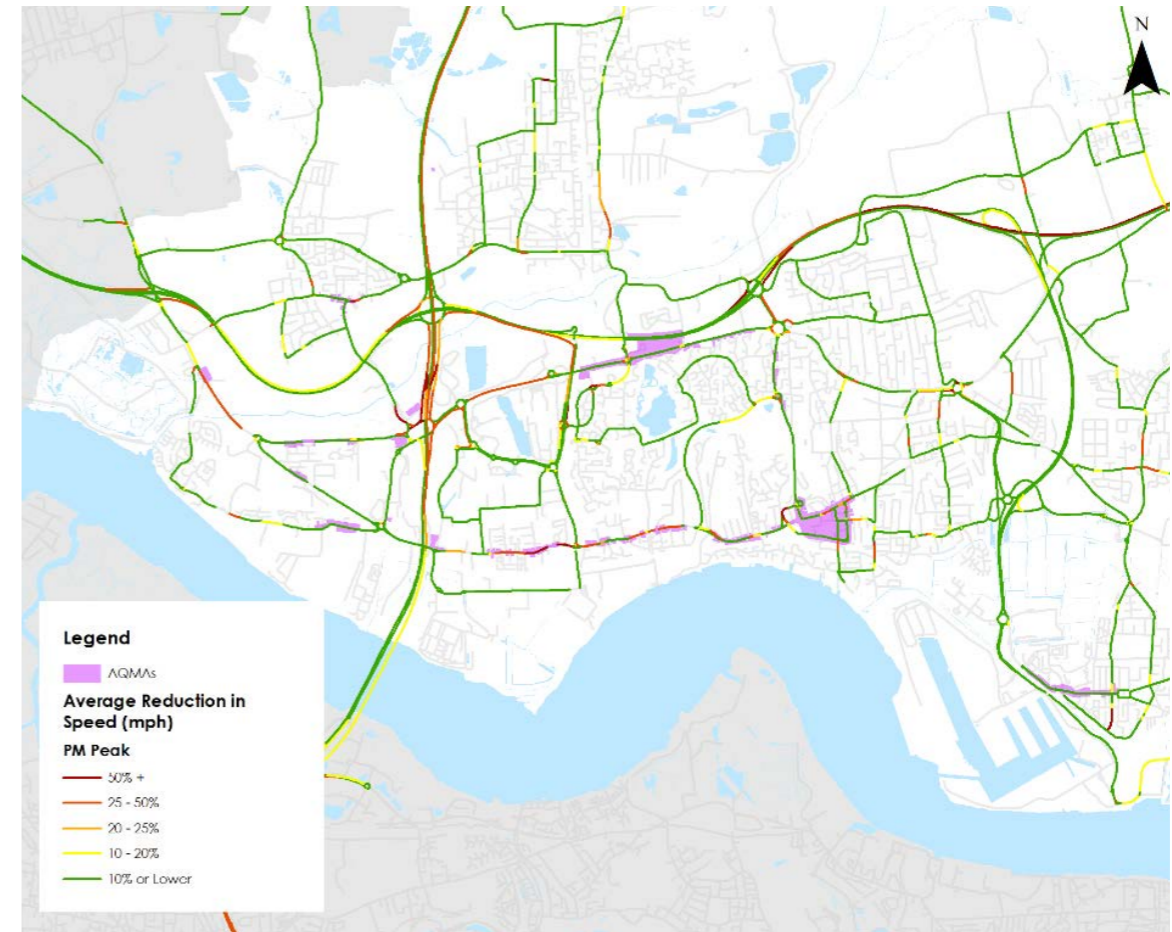


Figure 16. Air Quality Management Areas in Thurrock mapped with speed reductions in the PM peak (Credit: Stantec)

- 8.12 At present local routes do not have a specific time-line for electrification, but this is expected to progress during vehicle upgrades and as charging infrastructure is installed once this is compatible with operations and commercially viable.
- 8.13 Thurrock does not currently monitor taxi fleet fuel types, and no plans are in place to incentivise fleet changes to electric vehicles.
- 8.14 Modernisation of the Thames Clipper fuel systems is planned with initial conversion to hydrogen fuel planned as new vessels are built, with additional piers and the carriage of light cargo to utilise vehicles along the clipper routes.
- 8.15 In 2021 the Council resolved to arrange a sole provider of on-and off-street electric vehicle charging infrastructure, including maintenance, back office and customer service. The contract to run for ten years with the option to extend for a further five. The council envisages a minimum of 20 installations a year.

**Conclusion**

- 8.16 AQMA zones should be reviewed regularly, and consideration should be given to whether all the existing AQMA's are appropriate. Future reviews will be assisted by the new Assessment Model.
- 8.17 To provide information about the emissions associated with transport, Thurrock Council could introduce fleet monitoring for transport providers, such as taxis and bus operators, to understand progress towards less polluting drive systems.
- 8.18 Information on fuel uses would allow consideration of incentives to promote transfer away from fossil fuel use. Coordinating disparate modernisation schedules would be easier if the information was held in one location. Monitoring transport's impact on pollution will require data collection from various operators.

**Headlines**

- 8.19 The Average year-on-year drop of NOx emissions in Thurrock is 2%.
- 8.20 There has been a total NOx emission drop of 21% over the period from 2008 to 2018.
- 8.21 There is limited information about the current emission status or power source for taxis and buses within Thurrock.
- 8.22 Plans for improvement to emissions on buses operated by Transport for London and the Thames Clipper services are in process.
- 8.23 AQMA zones do not necessarily match areas of most significant congestion.



Figure 17. EV charging 'Super Hub' at Moto Thurrock (credit: Gridserve)

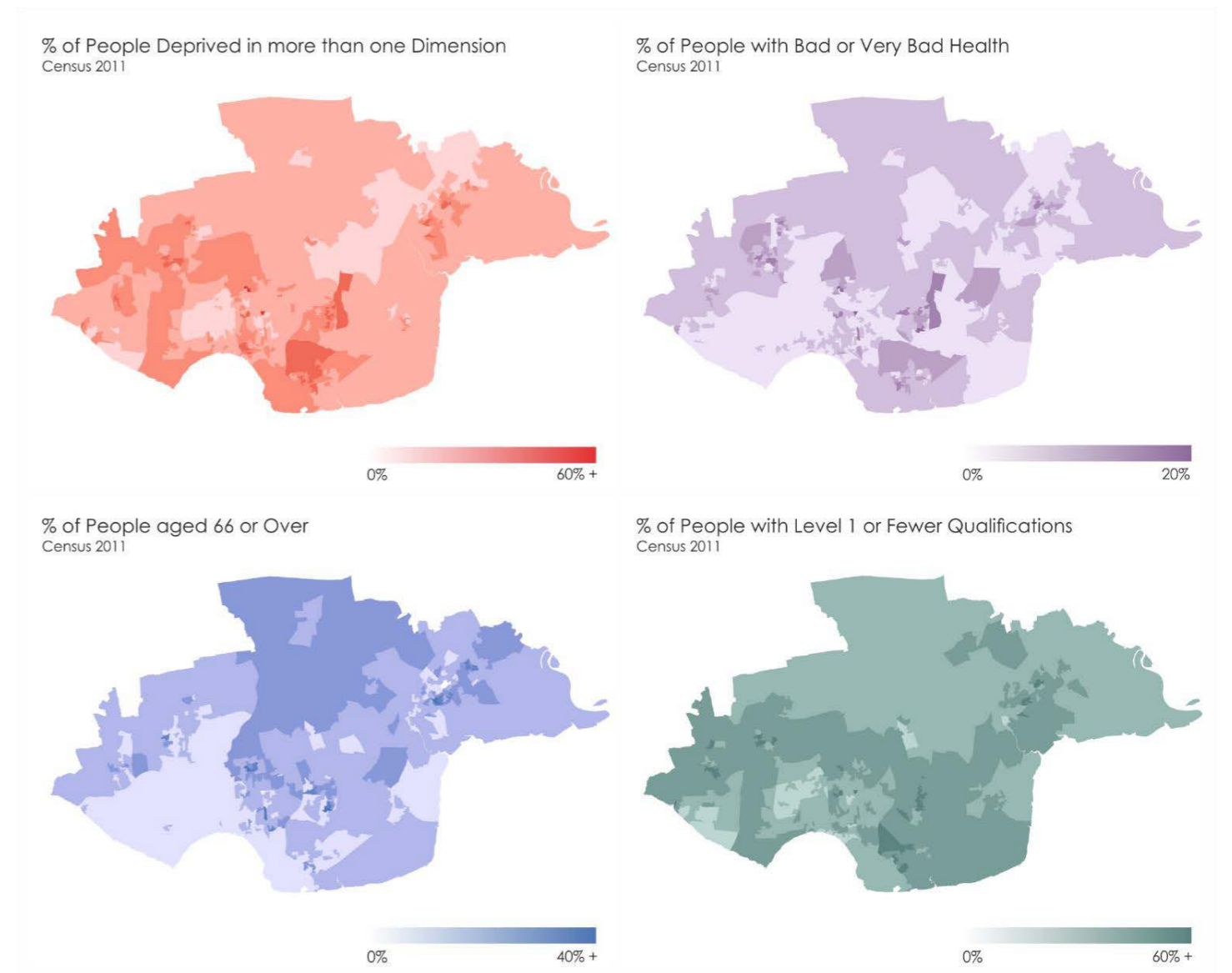
# 9. Affordability



- 9.1 This section provides an overview of deprivation, health, age and education levels in Thurrock to understand possible barriers to transport affordability.
- 9.2 From the data assimilated through the 2011 Census<sup>10</sup>, the most deprived areas of Thurrock are concentrated around urban areas, particularly Tilbury, Chadwell St Mary, Corringham and South Ockendon.
- 9.3 There is a general correlation in Thurrock between areas of high deprivation and poor health. Chadwell St Mary and Tilbury have very high levels of both.
- 9.4 There is a correlation between high deprivation, poor health, and low education in some areas and a correlation between all three measures in urban areas in Grays, Tilbury and Ockendon. Low education levels and high deprivation closely correlate across most urban areas in Thurrock.
- 9.5 There is no clear correlation between older age, deprivation, bad health, and low education - but there are areas or pockets in Thurrock where such a correlation exists.
- 9.6 The Census data for residents who are 66 years old and over generally shows higher concentrations of older residents in suburban and more rural areas. This suggests younger residents may live in urban areas closer to employment opportunities, with older residents in remote locations further from public transport connections.

- 9.7 There are high concentrations of older residents in pockets within Tilbury (i.e., over 40%). Many residents have limited qualifications in the same area, equivalent to fewer than 5 GCSE passes between grades 4 to 9.
- 9.8 Notably, the measure in which Thurrock falls below the national average is in qualifications obtained. Across most measures, the level of education obtained is lower than the average for Great Britain.
- 9.9 The Census data shows that the most qualification-deprived areas of Thurrock are concentrated around urban areas, particularly Tilbury and Ockendon.
- 9.10 Despite the apparent low level of qualifications compared to the average performance across Great Britain, Thurrock performs relatively well across various employment-related measures.
- 9.11 The level of employment exceeds the average for Great Britain, and the level of economic activity is higher than the average. Thurrock has more working households and significantly fewer workless households than the average.

<sup>10</sup> Finding to be updated following an analysis of the 2021 Census data.



**Figure 18.** Age, deprivation, education and health levels in Thurrock . (Credit: Stantec)







Measure of economic performance	Thurrock (%)	Great Britain (%)	Comparison
Economic activity rate - aged 16-64	81.5	78.9	2.6
Employment rate - aged 16-64	77.1	75.8	1.3
% aged 16-64 who are employees	66.6	64.6	2
% aged 16-64 who are self employed	10.5	10.9	-0.4
Unemployment rate - aged 16-64	5.5	4	1.5
% who are economically inactive - aged 16-64	18.5	21.1	-2.6
% of economically inactive who want a job	13.9	20.8	-6.9
Working households	60.1	58.9	1.2
Mixed households	28.6	27.2	1.4
Workless households	11.3	13.9	-2.6
% with NVQ4+ - aged 16-64	28.6	40.3	-11.7
% with NVQ3+ - aged 16-64	47.8	58.5	-10.7
% with NVQ2+ - aged 16-64	66.8	75.6	-8.8
% with NVQ1+ - aged 16-64	80.5	85.6	-5.1
% with other qualifications (NVQ) - aged 16-64	10.1	6.7	3.4
% with no qualifications (NVQ) - aged 16-64	9.4	7.7	1.7

Figure 19. Comparative measures of Economic Performance for Great Britain and Thurrock. (Source: NOMIS- Data to December 2019)

**Headlines**

- 9.12 11.3% of Households are workless compared to the 13.9% national average.
- 9.13 15.6% of Thurrock residents have some limitations in their day-to-day activities due to poor health.
- 9.14 Thurrock has relatively high employment levels compared with national averages for most employment-related measures.
- 9.15 Data shows employment opportunities are available for a range of skill sets and different educational levels.
- 9.16 Thurrock shows lower levels of qualification attainment than national averages.

**Conclusion**

- 9.17 Thurrock performs well in terms of employment levels with fewer workless households.
- 9.18 Port expansion is likely to drive strong employment growth in Thurrock. It is vital to ensure skills match employers' needs.
- 9.19 It is essential to ensure future infrastructure and developments serve and provide opportunities for all residents, including those with a range of health conditions and who are remote from good public transport connections.
- 9.20 Educational attainment is a weakness at present. Opportunities to improve transport affordability for Thurrock residents seeking education and training need to be exploited.



# 10. Transport opportunities



## Borough-wide Opportunities

10.1 Thurrock's multi-faceted development and regeneration challenges include transport issues to be overcome and opportunities to be seized.

## Improving strategic connectivity

10.2 Thurrock has the potential to deliver significant growth in housing and employment, particularly on the periphery and outside existing settlement boundaries, where poor public transport connectivity has historically acted as a constraint.

10.3 Investment in new strategic public transport connections serving housing and employment growth areas is required to act as a catalyst for development and regeneration, particularly in the historically more isolated areas.

## Better highways

10.4 While the scale of planned growth is a great opportunity, the size and locations of the areas with most significant development potential are such that some increase in traffic demand is likely. It is essential, therefore, to manage the performance of the existing and planned future highway network.

10.5 This needs to happen in order to protect essential journeys, improve safety and lower pollution impacts. Managing demand sits alongside encouraging a mode shift to active and public transport modes of transport. Only in this way can Thurrock accommodate growth whilst minimising congestion and ensuring traffic, in particular buses and freight, is not subject to excessive delays.

10.6 New growth will need to go hand in hand with measures to improve the highway network's operation and safety for active and public transport modes. Competing pressures on road space will need to be managed to provide safe routes for people walking and cycling.

## Increasing connectivity and reducing severance

10.7 Thurrock's urban fabric is divided and fragmented by main roads, railway lines, rivers and marshes. Local connectivity is fragmented due to these physical barriers to travel, meaning that many short-distance trips that could be easily made on foot or by cycle are being made by car.

10.8 Short-distance car journeys involve routes along and across the strategic network, adding to the congesting on the strategic road network and making local trips longer and less reliable. This is why a key aim of new development and regeneration is to improve local connectivity and reduce severance.

10.9 For new development, there is the opportunity for local needs to be met locally to minimise travel. Most people will walk or cycle to a nearby local centre for day-to-day needs and access quick and reliable public transport links to further away town centres. Compact new communities will be clustered around existing and new local and district centres with excellent public transport connections and easy access on foot and by bicycle.

10.10 Compact development patterns can help local centres thrive and reduce the burden on the strategic network, particularly roads, as people choose to travel less. Investment is needed in local parades, high streets, and district centres with a community transport plan to incorporate active travel measures and public realm investment projects.

1. New pedestrian, cycle and bridleway connections helping to break down road severance
2. Pedestrian connection from Chafford Hundred Station to Lakeside

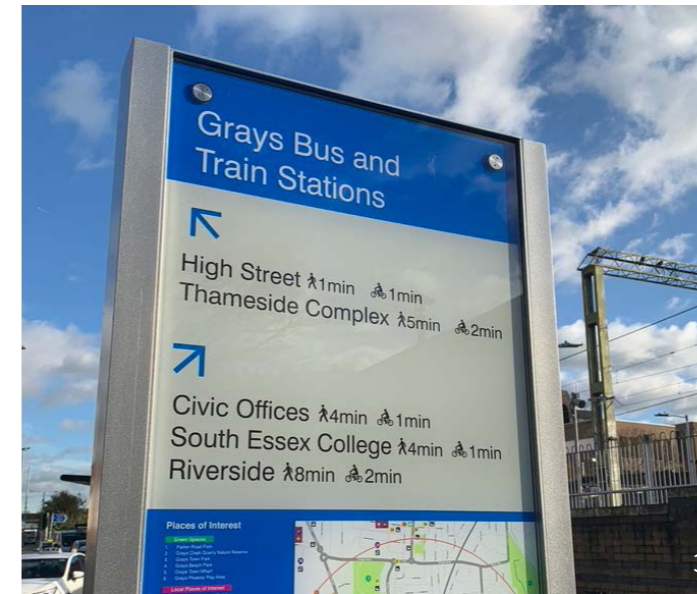
## Facilitating travel by sustainable modes

10.11 Overall, car use in Thurrock remains high. Based on journey length, many more existing trips could be walked or cycled. Against a backdrop of planned population and employment growth, high levels of obesity, and low physical activity levels, current travel patterns in Thurrock are unsustainable.

10.12 Putting human health and the quality of the environment at the heart of planning and transport in Thurrock will be key to encouraging behaviour change for existing residents and active and healthy travel choices for new residents. The aim is to encourage more people to walk and cycle as their first travel choice for most trips and to walk or cycle for at least part of a longer journey.

## Sustainable land use and transport planning

10.13 Investment in public transport and active travel is key to unlocking sustainable new development that minimises the negative impacts of extra transport demand. Therefore, it is critical that planning for new homes and jobs is fully integrated with transport network strategy planning.



**Dense and compact**

10.14 Achieving higher densities across all land-use groups in all development and regeneration clusters will generate higher public transport patronage levels, make routes and services more viable, and encourage higher frequency and more off-peak and weekend public transport services. Compact communities and walkable neighbourhoods are essential to the Vision and delivery of both the Transport Strategy and Local Plan.

10.15 Higher density development patterns can support better quality, higher capacity, faster and more frequent public transport services that will deliver benefits for existing and future residents alike.

**Partnership working**

10.16 Working with partners to deliver major and cross-boundary schemes and positively influencing proposals and major scheme undertaken by third parties- maximizing the benefits and minimizing harmful impacts for Thurrock.

**Creating and strengthening links to new and existing transport hubs**

10.17 Developing and strengthening links to new and existing transport hubs will support new development and positively influence Thurrock's existing communities' transport choices. The key is building new developments in places that are, or can be, well served by public transport and offer good quality walking and cycling routes—connecting to existing and new local off-road trails.

10.18 Improvements to cycling and walking access to the Thames Path, river valleys, open countryside and the marshes can encourage more use of these vital local assets.

**Inclusive access**

10.19 Development and regeneration projects and major and minor transport schemes can break down barriers and provide access for all.

**Emerging technologies**

10.20 New technologies can help drive modal shift to promote non-car journeys for local journeys, de-carbonizing transport at a local level and promoting the use of low-emission cars, trains, buses and lorries for all other journeys. This can address poor air quality, tackle congestion, and improve health.

**Health and well being**

10.21 Building physical activity into everyday activities like travelling to work, school or the shops to improve health and wellbeing and tackle obesity. Providing multi-modal access to key facilities and supporting wellbeing measures that address unequal access to health, education, and local services to foster community participation and cohesion.

**Safety**

10.22 Improving road safety particularly for vulnerable road users such as people on foot and on bikes to encourage safer local journeys. Managing safety risks of development and major construction activity for vulnerable road users. Working to keep railway level crossings safe and replace them with bridges and underpasses where practicable.

**Freight**

10.23 Planning for freight growth and modal shift to river freight and rail. this includes short sea shipping. Planning for additional river, rail and road freight movements associated with planned Freeports.

**Management and maintenance**

10.24 Increased demand, particularly on an expanded strategic and local road network, will impact upon maintenance requirements. Planning for low-cost maintenance to lighten the financial burden the Council.

1. Dense and compact new housing development at East Tilbury
2. Cycling offers a healthier way to travel
3. Strengthening links to transport hubs
4. Planning for freight growth including short sea shipping

# 11. New public transport modes

11.1 Thurrock's public transport modes comprise bus and rail services along with cross-river ferry services.

11.2 In addition to riverbus services, there several types of land-based transport system that lie between conventional buses and commuter/national railways:

- Light railway (such as Docklands Light Railway and the London Tube).
- Tram (such as Croydon Tram Link) travelling on rails through city streets and on dedicated rail lines and between urban areas.
- High-speed buses travelling on city streets and dedicated bus lanes that can switch to dedicated tracks/guided rails between urban areas.

11.3 The diagram opposite analyses and compares each system/mode.



## Examples

Arriva, Ensign Bus, London Buses.

## Typical speed

9 to 27mph

## Vehicle Capacity

80 - 87

## Track and wheel

Rubber-tyred, wheel-steered vehicles on tarmac surface.

Typically operates in mixed traffic, on bus-only lanes with some bus-only streets.

## Power/fuel

Usually combustion engines. Increasing use of hybrid/electric and electric vehicles with some hydrogen-powered vehicles.

## Signalling

Common highway signalling with some bus priority.

## Stops

On-street stops at 300m intervals. Some bus stations.

## Automation

Limited opportunities for autonomous operation.

## Depot

On-street bus stands, bus stations and depots.

## Crossing segregation

Few constrains on pedestrians or other vehicles crossing the route.

## Accessibility

Raised kerb/extending ramp



## Examples

Cambridgeshire Guided Busway, Crawley Fastway, Leigh-Salford-Manchester BRT, East London Transit, Thames Gateway Fastrack.

## Typical Speed

17-30 mph

## Vehicle Capacity

80 - 87 (150 for articulated vehicles).

## Track and wheel

Rubber-tyred, wheel-steered vehicles on tarmac surface with sections of guided concrete trackway.

## Power

Usually combustion engines. Increasing use of hybrid/electric and electric vehicles with some hydrogen powered vehicles.

## Signalling

Common highway signalling with some bus priority.

## Stops

900 -2700m (Cambridge).

## Automation

Some opportunities for semi- autonomous control.

## Depot

On-street bus stands, bus stations and depots.

## Crossing segregation

Fenced on-street sections. Trackways usually fully-fenced except for stations.

## Accessibility

Raised kerb/extending ramp or raised platform with ramped access.



## Examples

Blackpool Tramway, Manchester Metrolink, Sheffield Supertram, Croydon Tramlink, Nottingham Express Tramlink, West Midlands Metro.

## Typical Speed

20-50mph.

## Vehicle Capacity

208.

## Track and wheel

Permanent way (rails and sleepers or rails set in pavement). Some 'tram without rails' systems have been developed.

## Power

Vehicle pantographs with overhead electric wires (catenary).

## Signalling

Dedicated signalling system.

## Stops

600-1200m (Croydon).

## Automation

Semi-autonomous control.

## Depot

Marshalling yards & stabling.

## Crossing segregation

Some open on-street sections but typically fenced. Off road sections fully-segregated to achieve higher line speeds. Overbridges/underpasses typically needed on off-road sections.

## Accessibility

Raised station platform with ramped access. .from street level.



## Examples

Docklands Light Railway, London Underground, Tyne and Wear Metro.

## Typical Speeds

30-50 mph

20mph (Typical Underground- 50mph max.).

## Vehicle Capacity

284.

## Track and wheel

Permanent way (typically rails and concrete bed).

## Power

Third rail or catenary.

## Signalling

Dedicated signalling system.

## Stops

600m (Royal Docks).

## Automation

Fully autonomous but train always staffed.

## Depot

Marshalling yards & stabling.

## Crossing segregation

Overbridges and underpasses. Long sections of the DLR are raised on a viaduct with some tunnel sections (Bank, Woolwich).

## Accessibility

Flush station platform with lift/ramped access from street level.



## Examples

Crossrail, Overground, C2C.

## Typical Speed

75mph (C2C maximum line speed).

## Vehicle Capacity

1128.

## Track and wheel

Permanent way (rails and sleepers).

## Power

Third rail or catenary.

## Signalling

Dedicated signalling system.

## Stops

1400m (District Line Outer-urban).

## Automation

Semi and fully autonomous but train always staffed.

## Depot

Marshalling yards & stabling.

## Crossing

Bridges, underpasses and level crossings.

## Accessibility

Some flush station platform access but typically a step up from platform level with lift/ramped access from street level.

# 12. Development and regeneration

12.1 Strategic and local-scale transport investment is needed to support the Borough's ambitious growth and development plans.

12.2 Employment areas, ports, new housing developments and urban centres offer opportunities to improve and extend transport networks and services. This development needs to be closely coordinated with increased transport capacity and improved connectivity including high quality public transport, walking and cycling routes.

## Housing

12.3 New housing development increases the local population raising the demand for and viability of existing public transport services and generating patronage for potential new services. It can also increase congestion in towns and villages as traffic movements exceed the capacity of the local highway network.

12.4 Different scales and locations have other transport implications.

12.5 Redevelopment of urban sites and the broader regeneration of urban areas, mainly existing centres and larger housing estates, provides a sustainable pattern of development which makes efficient use of historic transport infrastructure investment.

12.6 New settlements and larger-scale urban extensions are of sufficient scale to provide crucial new transport investment. The effect of such large-scale development on already congested roads needs careful consideration, and new infrastructures must usually be delivered early.

12.7 Employment and mixed-use development as part of large scale urban extensions significantly reduces the need to travel and helps act as a catalyst for regeneration as part of growth.

12.8 Unlike new settlements, urban extensions make better use of historic investment in infrastructure, particularly roads and public transport, and boost investment and patronage for existing local centres and services.

12.9 Smaller-scale urban and village extensions also benefit from existing infrastructure investment with less complex infrastructure requirements. They help make local centres more self-sufficient and reduce the need to travel to larger centres to meet daily needs. They are unlikely to fully fund new and renewed infrastructures relying instead on existing transport network capacity alongside contributions to 'top-up' capacity and enhance existing facilities rather than making further provisions.

12.10 Small, isolated sites and dispersed development patterns generally lack the critical mass to fund and deliver transport investment. Distant from existing centres, employment locations, main transport corridors and interchange hubs, they are more likely to lead to an increase in car use.

12.11 The diagram opposite identifies some potential locations being considered through the Local Plan process for new housing and transport investment over the next 25-30 years.

**Aveley** – Potential for new homes supported by improvements to the A13 corridor. This is the only large-scale extension not directly associated with a new or existing rail station.

**Chadwell St Mary** – Potential for new homes with associated facilities connecting to surrounding communities with enhancements to the existing streets and centres. Quality bus provision with new multi-modal streets planned and designed for future MRT systems.

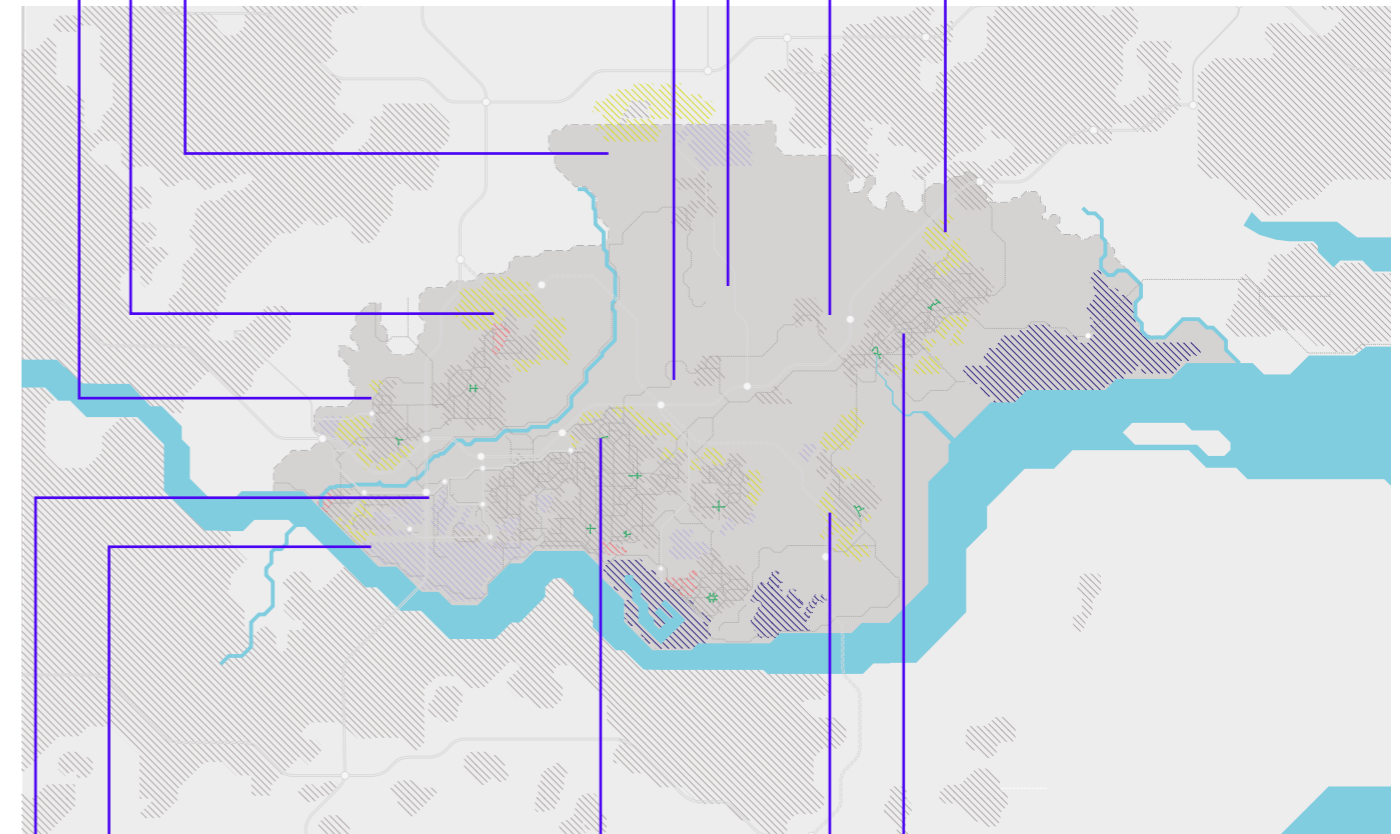
**South Ockendon** – Potential for new homes with a new rail station/interchange hub and associated train capacity and frequency improvements.

Potential new homes with associated community facilities at Horndon on the Hill, Orsett, Bulphan, Tilbury and Southfields.

**West Horndon** – Potential for new homes with excellent connections into Thurrock and neighbouring towns with a sustainable rail, bus and MRT with walkable and cycle friendly new

**Stanford-le-Hope** – Potential for new homes connecting to an upgraded rail station, enhanced interchange and associated train capacity and frequency improvements.

An area North of Corringham has been identified in the call for sites for potential new homes.



**Purfleet** – Potential new homes maximising the walkable catchment population of rapid transit stops/stations and mixed-use centres.

**Corringham** – Potential for new homes, a new railway station and associated interchange zone and associated train capacity and frequency improvements.

**Lakeside Basin** – Potential for new homes in the basin - associated with a transformation and regeneration of Lakeside Basin.

**East Tilbury** – Potential for new homes focused on a new transport interchange hub and associated train capacity and frequency improvements, walking, cycling, bus and future MRT.

**North of Grays** – Potential for new homes with associated transport and public realm enhancements alongside traffic, active travel and bus capacity/frequency improvements.

**Figure 20.** Broad location of potential new housing development areas in Thurrock (incomplete list - areas and boundaries are provisional and subject to review and amendment as part of the development of the Local Plan).



1. Thames Industrial Park (former Bata Factory) East Tilbury
2. Thames Industrial Park, East Tilbury
3. Strengthening links to transport hubs

### Main Employment Clusters

12.12 Thurrock's seven main employment clusters are the focus for new employment development and associated transport infrastructure investment.

**Purfleet and West Thurrock** contains the most concentrated cluster of employment sites, taking advantage of its strategic road network connections and proximity to London markets and the Lakeside retail clusters. Good accessibility for public transport and well connected to the strategic road network (A13 & M25).

**Ockendon** - small cluster at South Ockendon, bounded by the M25 to the west, and encapsulating the South Ockendon cluster, with a small number of employment sites. Good rail connections. Close to the M25 but does not have good direct access to this road and the strategic road network. It is served by local amenities and adequate public transport provision. There is evidence of loss of employment activity for new residential development in this cluster.

**Grays** - small urban cluster incorporating Grays town centre, which borders the River Thames to the south. Accommodates minor and finer-grained employment activities than other clusters. There is good public transport accessibility via Grays train station. Access to the strategic road network is more limited for this cluster.

**Rural North** - scattered rural sites towards the Borough's northern edge and stretching across Brentwood's southern border, with minimal existing employment activity. Poor public transport connectivity, but good access to the strategic road network (A127 connecting to M25). Poor accessibility to local amenities and services.

**Stanford-le-Hope & Linford** - cluster with a semi-rural context bounded by the Tilbury cluster to the south and the Coryton cluster to the east, incorporating the A13 corridor. This cluster has a minimal employment offer. Fairly good connections to the strategic road network, despite the rural context. Significant aggregates business within the cluster (Tarmac Building Products), which has several other sites across the authority in other Thames Gateway locations. Poor accessibility to local amenities and services.

**Coryton/East Thurrock** - the eastern area of the Borough dominated by London Gateway port-related activity. Contains the largest scale of industrial sites within the Authority area. It is well connected to the river (London Gateway Port) and the strategic road network (A13 linking to M25). New development is coming forward on the largest scale sites for large scale logistics and storage activity related to London Gateway port.

**Tilbury** - cluster with employment activity focused on the Port of Tilbury. This cluster will accommodate the confirmed Lower Thames Crossing route, which is expected to impact employment activity within the cluster positively. The cluster has essentially good connections to the strategic road network and public transport accessibility with the Purfleet Town and East Tilbury train stations located within it and with some sites reasonably close to Grays town centre and station. Important port-related occupiers found within this cluster – related to the Port of Tilbury. Some accessibility to local services and amenities, but not for all parts of the cluster (particularly sites in the more rural context in the north of the cluster).

### Office Clusters

12.13 The four key clusters of current office activity in Thurrock offer the best connected locations and focus for the delivery of new office floor space that plugs into the existing infrastructure, which is crucial for drawing new businesses to an area.

**Grays** – This location is well served by Grays railway station. Road connectivity to the north via the A1012 is good, whilst east-west connections via the A125 is congested.

**Tilbury** - This location is well served by Tilbury Town railway station. Good road connectivity via A1089 to the A13.

**Purfleet** - This location is not served by any nearby rail station but has relatively good connectivity to the M25 and A13.

**Stanford-le-Hope/Corringham** – This location has good access to Stanford-le-hope rail station and good road access to the A13.



**Ports and Freeports**

**Port of Purfleet** - The Purfleet Thames Terminal is an intermodal terminal which “handles approximately 250,000 trailers, containers and tanks per year including the import and export of 400,000 vehicles”. This port activity has attracted and supported a significant transport and logistics activity cluster in this part of Purfleet, with other potential employment sites in the area, which could help grow and expand these activities.

**Port of Tilbury** - The Port of Tilbury is London’s major port, providing distribution services for the benefit of the south east of England and beyond. It covers around 1,100 acres with excellent transport links to and from the capital and across the South East. The Port is well-positioned to access the M25 orbital motorway. There are direct rail connections within the Port, with access to the UK and dedicated barge facilities. Planned and committed developments include Tilbury Power Station/ Tilbury 2 proposals (a Nationally Significant Infrastructure Project for a new port terminal and associated facilities) and London Distribution Park.

**DP World London Gateway Port** - provides a logistics activity hub (in the form of the London Gateway Logistics Park) and a core distribution sector cluster. Connectivity with the strategic road network (namely the A1014 linking the A13 and subsequently the M25) is excellent.



1. Tilbury 2, Port of Tilbury
2. Port of Tilbury
3. Port of Tilbury
4. Derwent Centre, Sock Ockendon
5. Corringham Local Centre.
6. Lakeside
7. Grays Town Centre



**Urban Centres**

12.14 The Vision is to improve access to urban centres. To provide high-quality public transport connections and safe and attractive walking and cycling routes that will enable people to choose active and healthy ways to travel while supporting higher-density development. Growth and regeneration should support existing urban centres, like the following:

- Aveley Local Centre.
- South Ockendon Local Centre.
- Lakeside Regional Centre and Retail Park.
- Stifford Clays Local Neighbourhood Parade.
- Grays Town Centre.
- Socketts Heath Local Centre.
- Tilbury Local Centre.
- Stanford-le-Hope Local Centre.
- Corringham Local Centre.

# 13. Conclusions

## Accessibility

13.1 Thurrock has a varied geography and demographic, which makes accessing essential services challenging for some. In urban areas, the predominantly younger population have good access to environmentally sensitive active travel means to access a range of essential services and work opportunities. In rural areas, the older population is more remote from services and relies more on car travel.

## Congestion

13.2 The more highly populated urban areas attract large movements of people and goods on the constrained travel network sharing with public transport, cycling, walking, cars and goods vehicles. This network experiences delays throughout the day along key movement corridors, affecting public transport service reliability.

## Mobility

13.3 Thurrock's varied demographic and deprivation levels challenge people's mobility. There are good opportunities for local employment and access to businesses in London and Essex by rail or car. The M25 and the river Thames bring significant opportunities for the movement of people and goods in and out of Thurrock. However, they also act as a barrier with relatively few crossing points.

13.4 If delivered correctly, the proposed Lower Thames Crossing can relieve congestion around the M25/A282 and improve cross-river connectivity and mobility. However, the current design is poorly connected to and integrated with Thurrock's transport network, significantly reducing potential mobility benefits.

## Safety

13.5 Whilst there are pockets of road safety concerns, the crash injury trends in Thurrock are improving and below the national average, representing a solid base from which to build. Neighbourhoods are understood to be safe to allow growth in active travel and public transport use, which could be

## Pollution, carbon reduction, and health

13.6 Air pollution is improving across Thurrock, but the more urban environments are still significantly above the national average. Initiatives to encourage moves to less polluting means of travel need to be extended, which should complement emerging development growth in the commercial and residential markets across Thurrock.

## Affordability

13.7 The residents and businesses of Thurrock have good access to active and sustainable travel options and employment. Still, pockets of deprivation can make these unaffordable and inaccessible to some. Future commercial growth within Thurrock and a change in how people live and work following the pandemic could help increase the affordability of movement within Thurrock with more and improved local employment opportunities.

## Development and regeneration

13.8 The main development and regeneration opportunities offer opportunities to improve and extend Thurrock's transport networks and services, particularly the main employment areas, ports, new housing developments and urban centres.

## Housing

13.9 New settlements and large scale urban extensions delivered in a planned and coordinated way can help fund and deliver new transport infrastructure.

13.10 Medium size and smaller size urban extensions, village extensions and isolated sites are unlikely to facilitate provision of key transport infrastructure.

13.11 Dispersed and Isolated developments distant from local centres, employment locations and transport corridors and hubs are likely to increase in journeys and car use.

	Key Statistics	Key Opportunities	Key Challenges
<b>Accessibility</b>	Inbound traffic – 80% car Outbound – 29% Rail Internal – 21% Pedestrian	Connections to London Stations via Rail Cycle network expanding NMU access Riverfront interchange opportunities, economic activity Enabling growth in locations with higher connectivity Planned increases in rail capacity	Connection of new development into existing networks and hubs Access to essential services by active travel, e.g. GPs/health, education, employment, food retail Deriving a comprehensive public transport strategy Coordination with rail and network operators
<b>Congestion</b>	A1089 congestion tracks national trends A13 congestion downward trend 2017-19 M25 congestion upward trend 2017-19 Higher than the national average shopping journeys Travel out of Thurrock into London make up 40% of AM peak journeys	Programme of improvement on A13, key junctions Modal shift/ home working Encourage active travel Data collection enables informed decision making Lower Thames Crossing increasing network capacity - if correctly configured. Increasing rail capacity	Severance of east-west travel in Thurrock by M25 and A1089 - and the prospect of the Lower Thames Crossing Bottlenecks on critical routes for freight Extremely tidal movements in and out of Thurrock
<b>Mobility</b>	Higher car ownership than the national average, 22% fewer households have no car Residents slightly (1%) less likely to drive than the national average Frequent rail services into London stations, 35-40 minute journey time	Frequent rail services to London stations Extensive bus network Interchange opportunities due to key destination location near multiple modes River traffic expansion Balancing car ownership with sustainable mode use	Severance of east-west travel in Thurrock by M25, A1089 and Lower Thames Crossing Developing a robust active travel network and prioritise public transport over the private car Improve cross-river and London-bound marine travel
<b>Safety</b>	A decline in accident rates between 2011 and 2019: 403 to 267, a 34% decrease Cycle and pedestrian injuries also declined by 59% and 13%, respectively	Improve on existing positive trends Expand non-car pedestrian and cycle routes, and legibility of routes	Encourage and provide for active travel in new developments and infrastructure to allow a safer mix between vulnerable road users and vehicles.
<b>Pollution</b>	Average year on year drop of NOx emissions in Thurrock of 2% Total NOx emission drop of 21% over the period 2008 to 2018	Introduce fleet monitoring for all modes Incentivise or promote transfer away from fossil fuel use Capitalise on initiatives to provide alternative fuel infrastructure.	Coordination of disparate fleet modernisation schedules Data collection from a range of operators Focus on congestion relief to reduce harmful emissions
<b>Affordability</b>	11.3% of Households are workless, in comparison to the 13.9% national average 15.6% of Thurrock residents have some limitations in their day-to-day activities due to poor health	Improve upon relatively high employment levels Ensure opportunities for a mix of skill sets and educational levels are available Encourage positive effects of port expansions	Ensuring future infrastructure and development

## Ports and freeports

Ports at Purfleet, Tilbury, Tilbury 2 and DP World London Gateway Port attract significant transport and logistics activity and support further potential employment developments in the area. Connectivity with the strategic road network (A1014, A13, M25, A2 M2)

## Urban centres

13.12 High-quality public transport connections and safe and attractive walking and cycling routes can improve access and help revitalize Thurrock's local centres.

## Office clusters

13.13 Thurrock existing office clusters at Grays, Tilbury, Purfleet, and Stanfords-le-Hope/Corringham provide the best locations for new office floor space in the future providing the opportunity to plug into the existing transport infrastructure, which is crucial for drawing new businesses to an area.

Figure 21. Summary Table  
(Source: Stantec)



# GLOSSARY

**A SELA** THE ASSOCIATION OF SOUTH ESSEX LOCAL AUTHORITIES - a partnership of neighbouring councils that have come together to promote growth and prosperity in the region (<https://www.southessex.org.uk>)

**AQMA** AIR QUALITY MANAGEMENT AREA

**BLUE GRID** - A multi-functional network of greenspace and links along and across Thurrock's rivers, waterways, and water bodies.

**BRT** BUS RAPID TRANSIT - A high-quality bus-based transit system that delivers fast and efficient service that may include dedicated lanes, busways, traffic signal priority, off-board fare collection, elevated platforms, and enhanced stations.

**C2C** A train operating company operating the Essex Thameside railway contract.

**CCTV** CLOSED CIRCUIT TELEVISION

**CO<sub>2</sub>** CARBON DIOXIDE - Carbon dioxide gas emissions stem from burning fossil fuels such as petrol car engines and cause pollution and leading to climate change.

**DROIDS** – Small, semi and fully autonomous vehicles acting as couriers that may reduce the need for cars or lorry deliveries in built-up areas.

**DRONES** - A driverless aerial vehicle typically used to distribute packages to consumers during the 'last mile' delivery process. These drones generally have 4-8 propellers, rechargeable batteries, and the ability to carry lightweight containers.

**ENGLAND COASTAL PATH** – A long-distance National Trail proposed by Natural England following the coast of England.

**FASTRACK** - A Bus Rapid Transit system serving Dartford, Bluewater, Ebbsfleet and Gravesend connecting major existing and new developments with planned core express routes on which only Fastrack services will run.

**FREEPORTS** special areas within the UK's borders where different economic regulations apply. (<https://www.gov.uk/guidance/freeports>)

**GREEN GRID** - A sustainable network of multi-functional green space and links within Thurrock's towns and countryside.

**HEALTHY STREETS** – A framework for prioritising people and their health in transport, the public realm and planning policies and strategies (<https://www.healthystreets.com/what-is-healthy-streets>).

**HGV** HEAVY GOODS VEHICLE

**HS1 HIGH SPEED 1** – A 109km high-speed railway rail line between St Pancras International in London and the Channel Tunnel with intermediate stations at Stratford International and Ebbsfleet International. The line with international high-speed rail links to Paris, Brussels and Amsterdam. The route is also used by the 'Javelin' domestic route from London to Kent.

**HS2** HIGH SPEED 2 - A new railway from London to Birmingham and further north. The railway's London terminus will be at Euston, with a west London interchange at Old Oak Common.

**JAVELIN** – A high-speed train service operated by Southeastern trains between London St Pancras and Kent using the HS1 line (<https://www.southeasternrailway.co.uk>).

**KENNEX** - A proposed tram link. The planned network connects Ebbsfleet International, Grays & Gravesend to Northfleet, Swanscombe Peninsular, Chafford Hundred & Purfleet-on-Thames (<https://kenextranet.co.uk>).

**LGV** LIGHT GOODS VEHICLE

**LTC LOWER THAMES CROSSING** - A road crossing of the Thames estuary downstream of the Dartford Crossing linking Kent and Essex proposed by National Highways (<https://nationalhighways.co.uk/our-roads/lower-thames-crossing>)

**MICRO-MOBILITY** - A range of small, lightweight vehicles operating at speeds typically below 25 km/h (15 mph) and driven by users personally. Micro-mobility devices include bicycles, e-bikes, electric pedal-assisted bikes, electric scooters, electric skateboards and shared bicycle fleets.

**MODAL SHIFT** - Changes in travel behaviour and habits. For example, travelling by public transport instead of a private car.

**MODE** - The different ways passengers and/or goods can be transported. Transport. Modes for passengers and goods may include rail; maritime (sea); road; bus, and rivers.

**MRT** MASS RAPID TRANSIT - High-capacity, higher-speed road or rail-based public transport systems generally found in urban areas and travelling along dedicated paths.

**MULTI-MODAL ROADS** - Streets designed to serve different modes and provide multiple mobility options for their users. (<https://globaldesigningcities.org/publication/global-street-design-guide/defining-streets/multimodal-streets-serve-people>)

**NPPF** NATIONAL PLANNING POLICY FRAMEWORK-revised on 20 July 2021. (<https://www.gov.uk/government/publications/national-planning-policy-framework>)

**NET ZERO** - Policies and proposals for decarbonising the UK economy to reduce net global greenhouse gas emissions to near zero by 2050.

**NO<sub>x</sub>** NITROUS OXIDE

**PARK AND GLIDE** – A combined remote parking and commuter boat transfer service. 'Thames Clipper' currently operates a service from the O2 in Greenwich into central London.

**PPG** PLANNING POLICY GUIDANCE.

**RIVERBUS** – Boat services and access piers along the Thames, including the 'Thames Clipper' commuter service (<https://www.thamesclippers.com>).

**RTI** REAL-TIME TRAVEL INFORMATION.

**SERT** SOUTH ESSEX RAPID TRANSIT. Proposal for a fast, reliable and high quality bus-based public transport system in south Essex including 'Route 1a' serving Lakeside, Grays, A13, and Basildon Hospital.

**SHORT SEA SHIPPING** - Maritime transport of goods over relatively short distances, as opposed to the intercontinental cross-ocean deep sea shipping.

**SRN** STRATEGIC ROAD NETWORK - The major road transport network comprising secondary arterial roads, primary arterial roads, expressways and motorways managed by National Highways.

**STB** SUB-NATIONAL TRANSPORT BODY.

**TFL** TRANSPORT FOR LONDON - the organization responsible for managing the public transport services in London, including bus and underground train services, taxi services and the road (<https://tfl.gov.uk/corporate/about-tfl>).

**THAMES ESTUARY** – The lower reaches of the Thames including outer east and south east London, North Kent, and South Essex.

**THAMES ESTUARY GROWTH BOARD** - A private sector organisation covering North Kent, South Essex, East London, the City of London and the River Thames that has developed an action plan, 'The Green Blue' (<http://thamesestuary.org.uk>).

**THAMES PATH** - National Trail following the River Thames from its source to the Woolwich in south east London. The Trail connects with the England Coastal Path to form a 'Source to Sea' route.

**THURROCK LOCAL PLAN** - A long-term planning policy framework setting out the amount of development for Thurrock and its distribution across the borough that, by law, must be used when deciding all future planning applications (<https://www.thurrock.gov.uk/new-local-plan-for-thurrock/thurrock-local-plan>).

**THURROCK LOCAL TRANSPORT PLAN** – A plan describing future outcomes and priorities for transport and travel across Thurrock, including the action needed to implement the strategy. The plans consist of four parts- 'Issues and Opportunities', 'Vision 2050', 'Strategy', and 'Action and Implementation Plan(s)'.

**TRANSPORT EAST** – A sub-National transport body to deliver a collective vision for the future of transport in Essex, Norfolk, Suffolk, Southend-on-Sea and Thurrock.

**TRANSPORT SOUTH EAST** - A sub-national transport body for the South East of England

**TOC TRAIN OPERATING COMPANY** - A business operating passenger trains under the collective National Rail brand, typically as a franchise, such as C2C.

