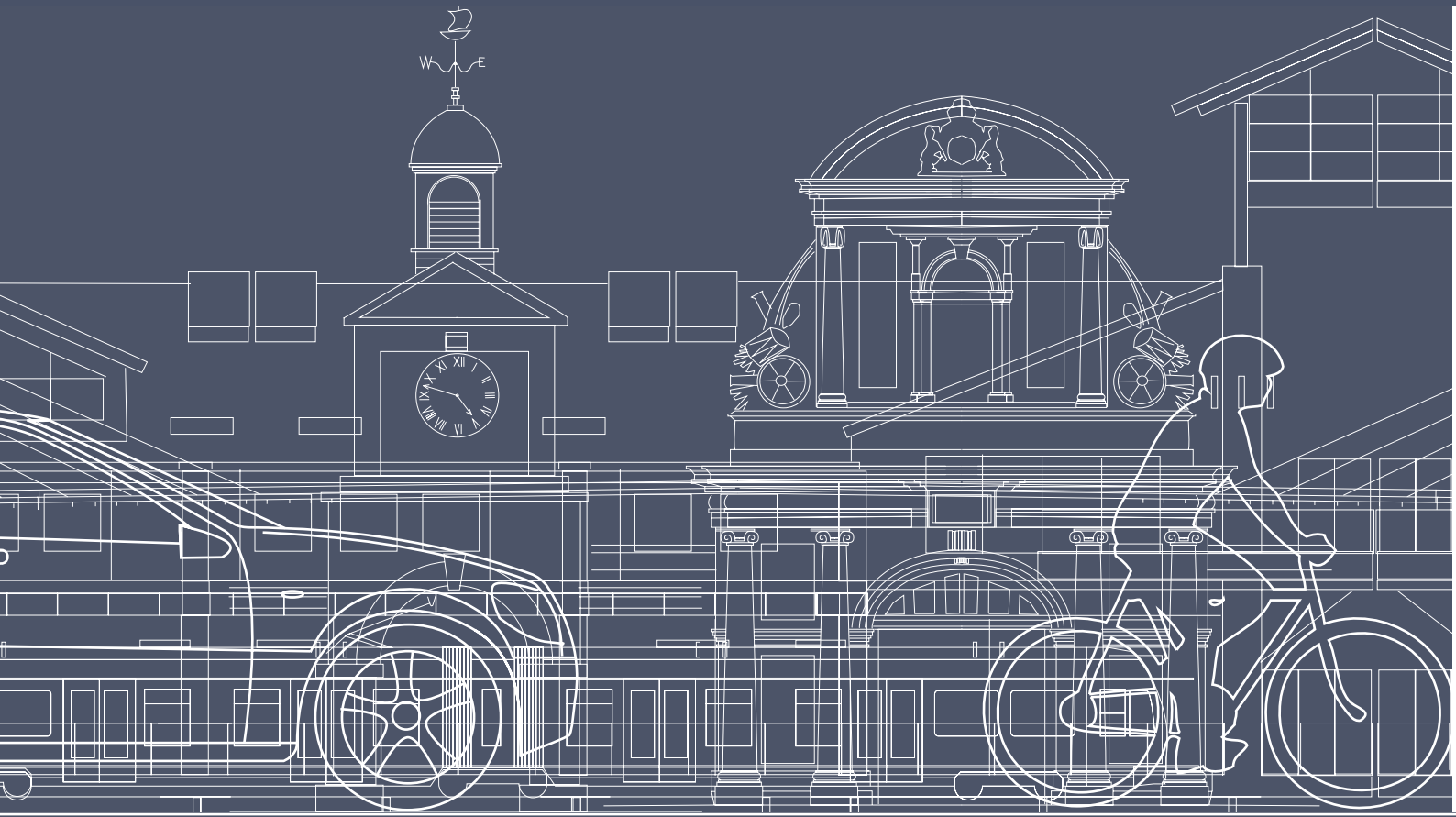


# DRAFT



## Thurrock Local Transport Plan

# VISION 2050

FEBRUARY 2023

# DRAFT

## Foreword

*We are at a critical point where change is needed, and today's actions can help shape Thurrock.*

*There is enormous pressure for growth in Thurrock, but we must ensure that it is sustainable.*

*Investment in the transport network is key to good growth.*

*Our Transport Vision is a crucial step in enabling continued economic development and sustainable regeneration in Thurrock, helping to prevent unacceptable traffic congestion in and around major traffic interchanges.*

*The goal is a significant shift away from private car use to public transport, walking and cycling through a programme of measures targeted on planned new residential neighbourhoods.*

*Thurrock Council is working with stakeholders and all our communities - it is only through these strong partnerships that we can achieve the bold ambitions that we have set for ourselves.*

This document produced with the assistance of  
Latcham Limited and Doyle Design LLP

**LATCHAM**

LATCHAM LIMITED

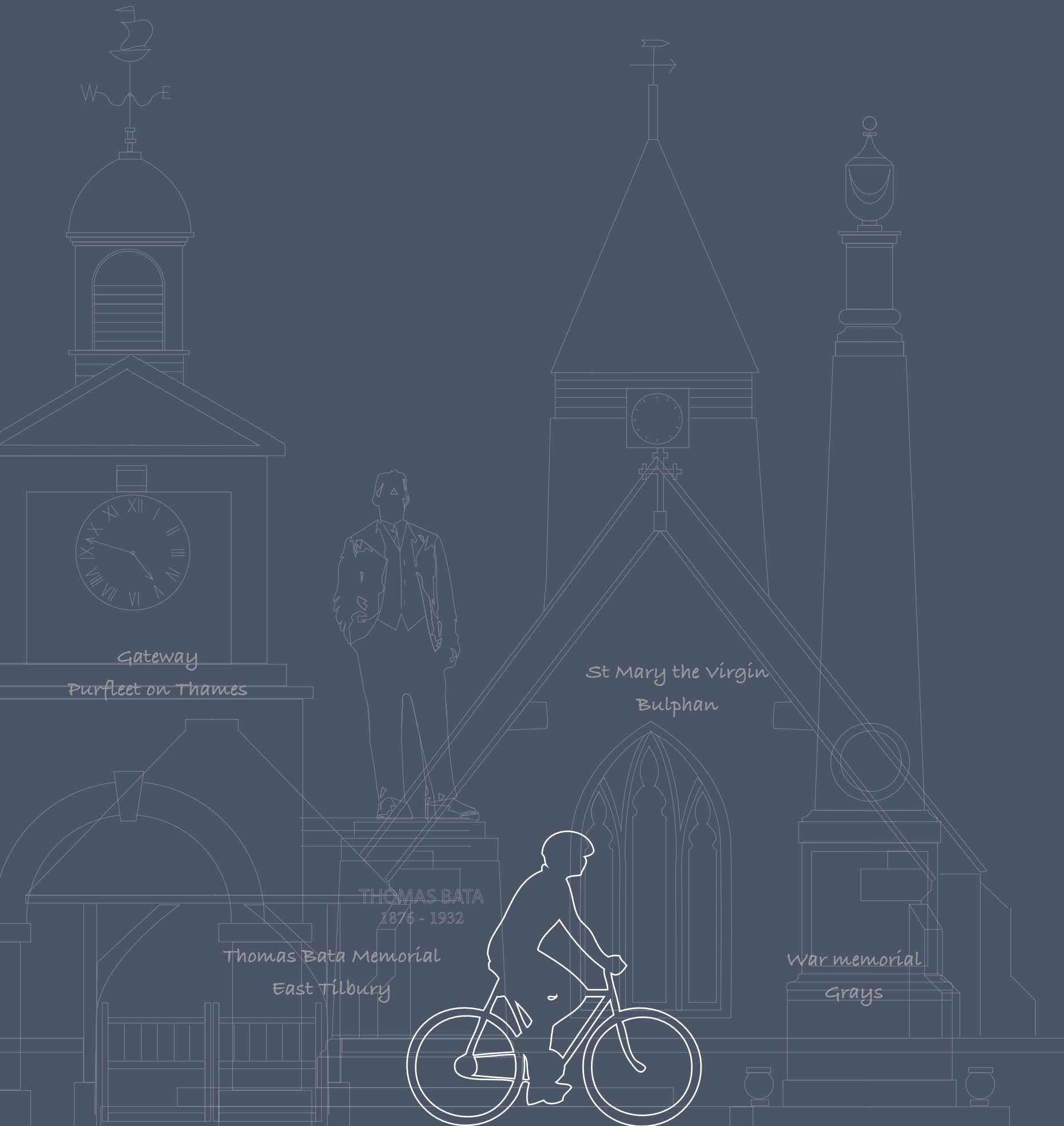
[www.richardlatcham.com](http://www.richardlatcham.com)

**DOYLE**

DOYLE DESIGN LLP

[www.michael-doyle.com](http://www.michael-doyle.com)





# Contents

## PREFACE

## INTRODUCTION AND CONTEXT

1. INTRODUCTION	8
2. INTEGRATED	10
3. THURROCK TODAY	12
4. SPATIAL CONTEXT	14
5. MODAL SHIFT	16
6. TIMESCALES	18
7. DEVELOPMENT & REGENERATION	20

## VISION

8. VISION STATEMENT	24
9. VISION GOALS	26
10. STRATEGIC PRIORITIES	30
11. NEW TECHNOLOGY	32
12. RAIL NETWORK	34
13. BUS RAPID TRANSIT	36
14. RIVER THAMES	40
15. WALKING AND CYCLING	42
16. BUS NETWORK	44
17. STREETS	46
18. STRATEGIC ROADS	48

## FRAMEWORK DIAGRAMS

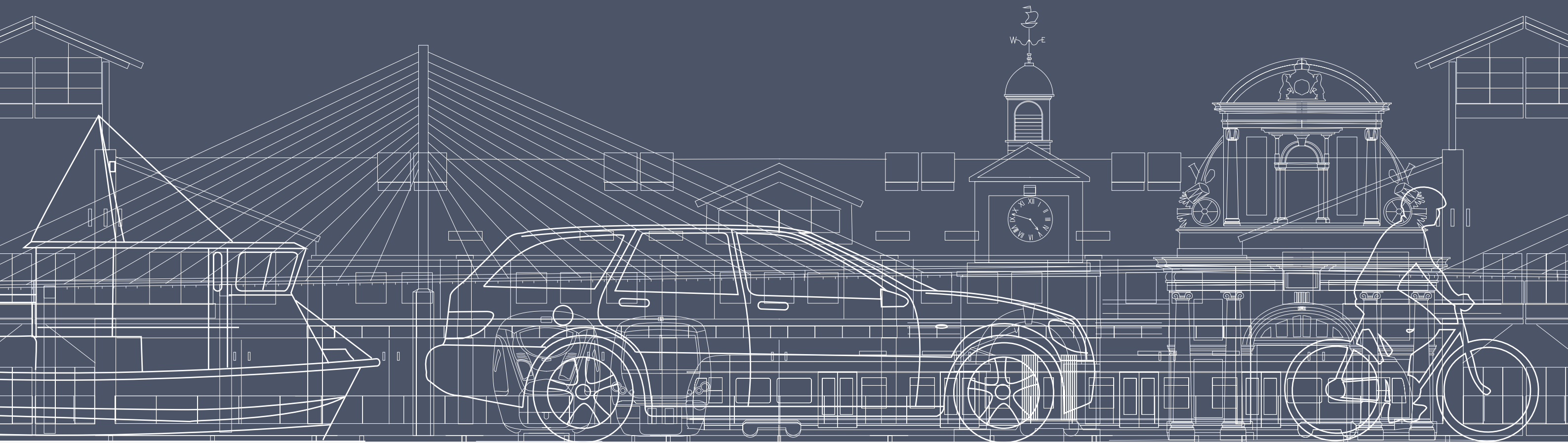
19. FRAMEWORK DIAGRAM	52
20. PROJECTS	54
21. RAIL	56
22. BRT AND BUS	58

## GLOSSARY

GLOSSARY	60
----------	----



# INTRODUCTION & CONTEXT





# 1. INTRODUCTION



## The challenge

1.1 Over the next fifteen years, Thurrock will change on a scale not seen for several generations. The Local Plan identifies big plans for new homes and business areas alongside strategies to regenerate existing communities and transform town centres. This is a chance to rethink our approach to transport and how people travel in and through the Borough. Our driving purpose is to ensure future transport investment and planned growth benefit Thurrock's communities.

## Transport Vision

1.2 This Vision document imagines a future for Thurrock where people find it easier to get about using a transport network that is better connected, more integrated, and less congested. Our aim is to develop a transport system for Thurrock that:

- Is fully inclusive, meeting the needs of residents.
- Is integrated to provide seamless multi-modal journeys.
- Is accessible for everyone, safe and attractive to use.
- Delivers sustainable community regeneration and growth; and
- Responds to the exceptional circumstances of Thurrock as an international centre for logistics and commercial development.

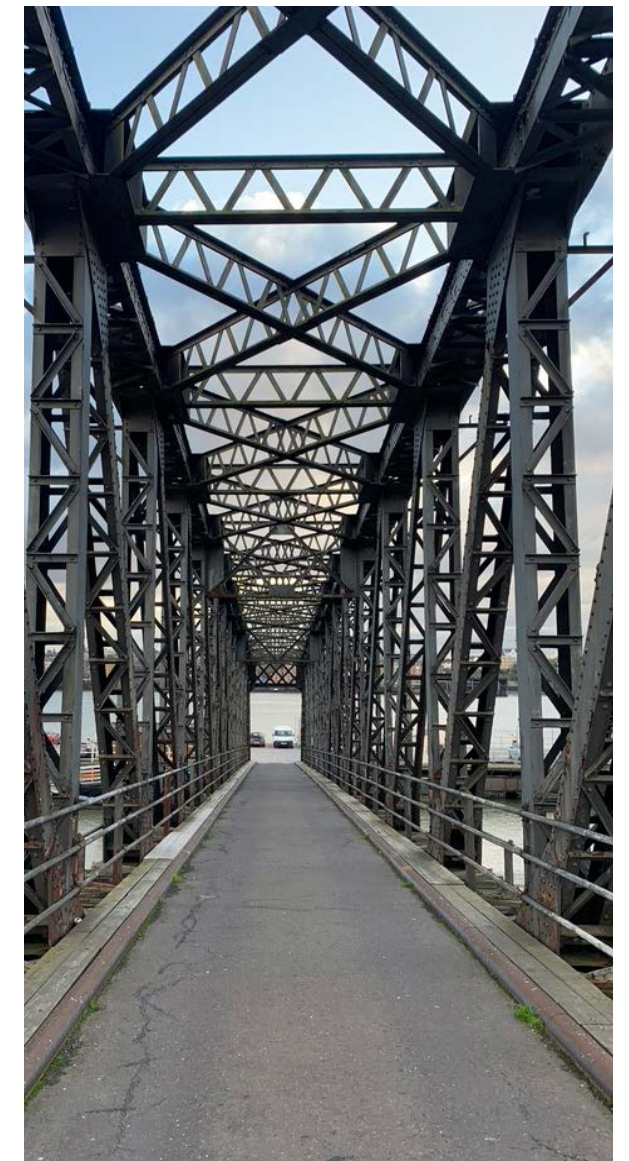
1.3 We have called this transport vision 'Connecting Thurrock' to highlight that Thurrock's strategic location does not currently translate into well-connected places at the local/district level. Local connections mean everything. Poor connectivity is a barrier to employment for existing communities that rely on public transport. It means economically disadvantaged groups cannot access a full range of local services.

1.4 We will work with our partners to ensure Thurrock has a transport network that ranks alongside the country's most sustainable and 'liveable' places.



## Context

- 1.5 Thurrock lies on the north side of the River Thames, only 20 miles east of central London. It is home to one of the largest shopping complexes in Europe at Lakeside and several ports of national significance - importing and exporting goods and services for the whole UK.
- 1.6 It is a Borough of contrasts. Large tracts along the 18-mile frontage to the River Thames are developed. In sharp contrast, around 60% of the Borough is Greenbelt, with historic villages surrounded by valuable agricultural and grazing land.
- 1.7 Our Vision for transport ranges across a wide range of scales, from local neighbourhoods to global connectivity. This reflects the strategic nature of Thurrock's international gateways and plans for multi-centred growth on either side of the Thames and along the Thames Estuary, alongside the need to better manage local change, for example, in small villages.
- 1.8 The vision focuses first on the people, communities, urban centres, and businesses in the Borough today.





# 2. INTEGRATED

## Linking the Vision with the new Transport Plan, and the Local Plan and Corporate Vision

### Vision at the heart of a new Local Transport Plan for Thurrock

2.1 The current Transport Strategy sets out the Council's transport policies and priorities from 2013 to 2026. The Strategy was developed in a very different context from the position today. We need to refresh the Strategy in response to significant new challenges and opportunities such as national housing delivery targets, planning reforms, new bodies such as 'Transport East' and new planned transport schemes such as the Lower Thames Crossing.

2.2 This Vision forms a part of a broader new long-term plan for transport in Thurrock. This has four parts:

- Issues and Opportunities
- Transport Vision.
- Interim Transport Strategy
- Transport Action/Implementation plans.

2.3 The Transport Plan will outline how, over the next 25 years, the use and management of the Borough's transport networks - local and national roads, railways, stations, interchanges, footpaths, and cycleways - will change and how connections to and through the borough will be improved.

2.4 The Thurrock Local Transport Plan will establish a new strategic approach, policies and guidelines and detail how we will make it happen. The Transport Plan will be influential in delivering the Council's overall vision and the priorities in the new Local Plan.

### Building on Thurrock's corporate vision

2.5 The Connecting Thurrock Vision and the broader Transport Plan are based upon and will help fulfil Thurrock's corporate vision and priorities.

2.6 An ambitious and collaborative community that is proud of its heritage and excited by its diverse opportunities and future.

2.7 Three priorities define the vision:

People – a Borough where people of all ages are proud to work, play, live, and stay

2.8 This means ensuring better access to public services, a partnership approach, improving health and wellbeing and safer communities.

Place – a heritage-rich Borough that is ambitious for its future.

2.9 This means better connections between people's homes and the places, services and public spaces they need to get to – with a clean environment.

Prosperity – a Borough that enables everyone to achieve their aspirations

2.10 This means finding opportunities for businesses and investors to enhance the local economy, better connecting public services, and improving access to vocational and academic education, skills, and job opportunities- especially for businesses and entrepreneurs.

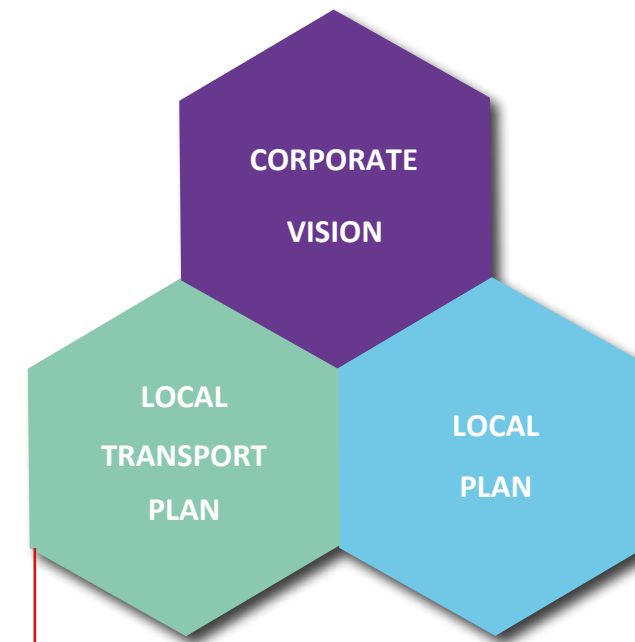


Figure 1. Thurrock's Corporate Vision, Local Plan and Local Transport Plan



Figure 2. Thurrock's Corporate Vision

### Aligning our transport vision with the emerging Thurrock Local Plan

2.11 The Vision builds upon the current Development Plan and aligns with the spatial strategy in the emerging Local Plan.

2.12 The Vision is informed by and designed to help to shape emerging plans for regeneration and growth across the Borough.

2.13 We need to consider how new developments will affect our transport system - and how our transport system should develop to match the changing growth patterns in Thurrock.

2.14 The Vision is the first step in outlining the strategic and local infrastructure improvements required to support planned growth and regeneration, including:

- Regenerating existing estates and neighbourhoods.
- Growing neighbourhoods and new communities.
- New employment uses, particularly port and freight/logistics.
- The national infrastructure needed to deliver sustainable economic growth, maximising the local benefits and mitigating other impacts.
- Town and local centres and public realm improvements.

- Improved strategic green-blue infrastructure across Thurrock

- Prepare for the impacts of climate change.

- Improving access to local services, facilities, employment opportunities, and supporting quality of life and wellbeing.

- Relieving traffic congestion and delays.

- Improving air quality and significantly reducing emissions.

- Protect and enhance the role of the river Thames as an economic asset.

### Local plan studies

2.15 The Vision has been prepared with regard to the current Development Plan and Issues and Options Stage 2 Report prepared as the first stage of the revised plan and the adopted Local Plan.

2.16 The Vision builds upon recent Design Charrettes coordinated by the Prince's Foundation and preliminary findings from a series of planning and master planning studies commissioned to help shape and inform the Local Plan's development.



# 3. THURROCK TODAY



3.1 Thurrock has a diverse range of places and land uses and associated social, economic, transport and environmental challenges.

### Economic disadvantage and 'levelling up'

3.2 There are high levels of deprivation in parts of the Borough.

### A growing population

3.3 The population is projected to increase by around 10% every decade, with predictions estimating an even more significant increase during the most recent ten years, from 143,000 in 2011 to about 178,000 at the time of the next census in 2021. Future population estimates from the Office for National Statistics predict that Thurrock's population will have risen to over 209,000 by 2038.<sup>1</sup>

### Employment and skills

3.4 Low skill levels could continue to hinder greater aspirations and generate good job opportunities. Though it has reasonable employment rates, there are insufficient workers in professional or knowledge-based jobs.

### Health and wellbeing

3.5 There are high levels of obesity in key communities, which will adversely impact on long-term health. Multiple-deprivation is high compared to the region, especially in some urban areas, which may harm social wellbeing and create community tensions.

3.6 High numbers of HGVs and high traffic flows on strategic roads negatively impact local air quality, CO2 emissions, and congestion. Growth could well make this worse. The worsening air quality will increase respiratory problems whilst increasing congestion could harm job creation and economic performance, particularly concerning international gateways, such as London Gateway.

3.7 Very low levels of walking and cycling could fuel increasing obesity, so it will be necessary to learn from other places' success in improving walking and cycling.

3.8 It will be essential to build back better after COVID-19 and increase the use of public transport and walking and cycling to limit traffic growth, especially given forecast increases in congestion and CO2 emissions.

<sup>1</sup>Based on 2011 Census data - to be updated in line with 2021 census date when available.



### Transport accessibility

3.9 Whilst access to many local services by public transport and on foot is generally good, crucial gaps exist and use is limited. For example, poor access to further education and hospitals is likely to exacerbate low skills and health issues- of particular concern with an ageing population.

3.10 Many new jobs are in areas that are practically inaccessible by non-car means. A range of measures can be applied to make these areas more accessible and break down barrier to employment for many social groups.

### Ageing infrastructure

3.11 New and better transport infrastructures and systems can support the needs of a growing and changing population and new and expanding businesses.

3.12 There is a pressing need to look further in time and address the impacts of ageing transportation infrastructure, tackle the effects of climate change and develop a resilient transport system.

3.13 The scale of growth anticipated cannot be delivered without significant investment to solve current and future transport infrastructure deficiencies. These transport improvements must also offer local benefits and meet the needs of existing Thurrock residents.

### Transport capacity and congestion

3.14 Finding better solutions to share highway space as more people and goods travel to, from, and within Thurrock – business as usual is unsustainable and highly likely to worsen traffic congestion, negatively impact street safety, transport service reliability, and the free movement of goods.

3.15 The regeneration and growth agenda means that the future transport network must be more multi-functional and multi-modal.



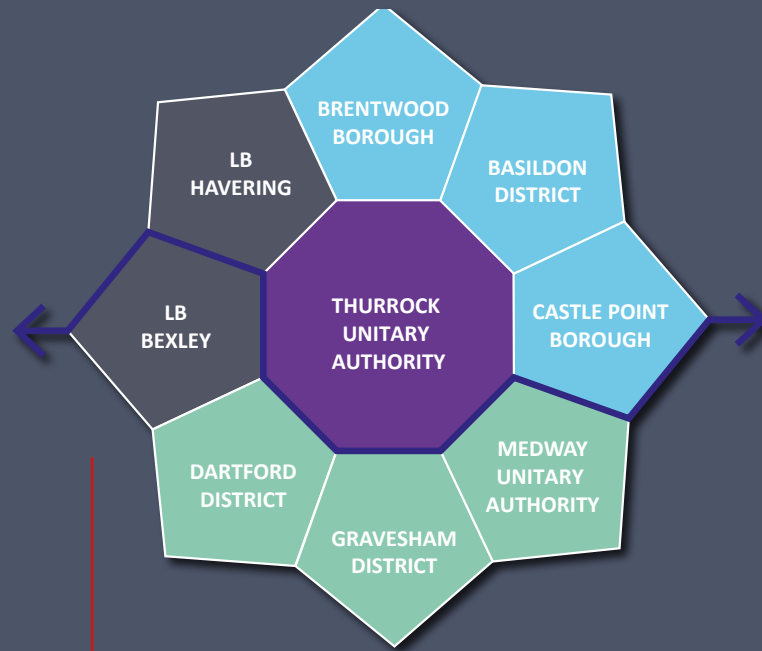
# 4. SPATIAL CONTEXT

## Local Plan

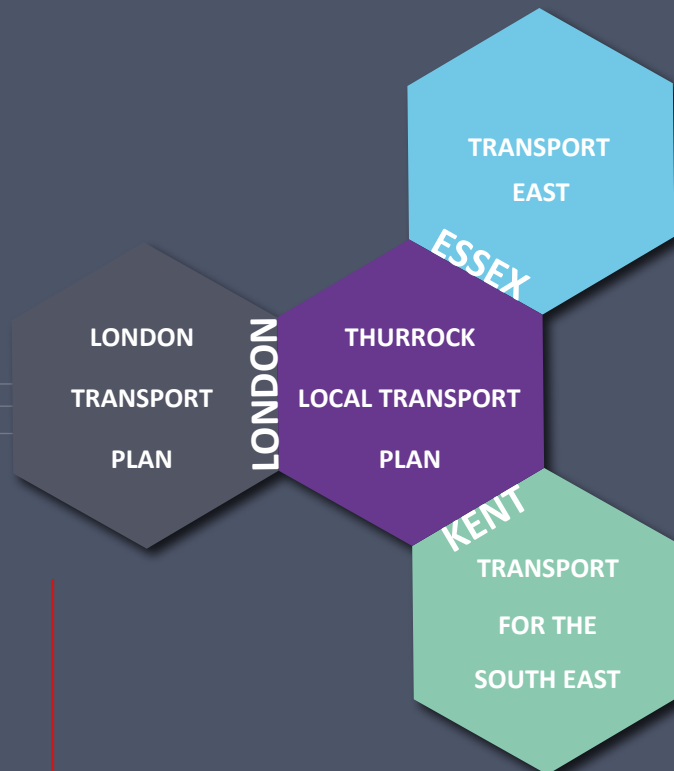
- 4.1 Thurrock aims to create better places by integrating planning and transport strategies and taking a more sustainable approach. We are therefore developing the Local Transport Plan alongside the Local Plan to support and enable sustainable growth in housing and jobs and integrate sustainable transport into planned new developments.
- 4.2 Thurrock needs to accommodate significant housing and employment growth. We are working towards a future where employment opportunities are available to every adult resident, with 24,500 new jobs planned for the next 20 years and a total housing requirement of up to 32,000 new homes by 2038. <sup>2</sup>
- 4.3 Thurrock lies at the heart of the Lower Thames Estuary - Europe's most extensive regeneration programme- where there is a more significant growth vision for a million homes and 1.3 million jobs linked with London, Kent, and Essex.
- 4.4 Significant development and expansion plans are in the pipeline for the global ports in Thurrock, including London Gateway deep-sea container port development, Tilbury Docks and Tilbury 2 and Thames Freeport. Highly significant development is planned for Lakeside with a potential leisure-based scheme on the south side of the Thames.

## Sub-regional network

- 4.5 Thurrock's transport network sits within a broader sub-regional transport system encompassing south east Essex, north Kent, outer east London, and the wider Thames Estuary.
- 4.6 Thurrock's future transport network needs to link into this fast-developing sub-regional transport system, which requires cross-boundary working and an integrated approach to planning, funding, and infrastructure delivery. This approach will support growth locally within Thurrock and in the broader sub-region.
- 4.7 Figures 3 and 4 visualise some of these relationships.
- 4.8 Thurrock's Transport Vision should be further developed in partnership with neighbouring boroughs and transport bodies.

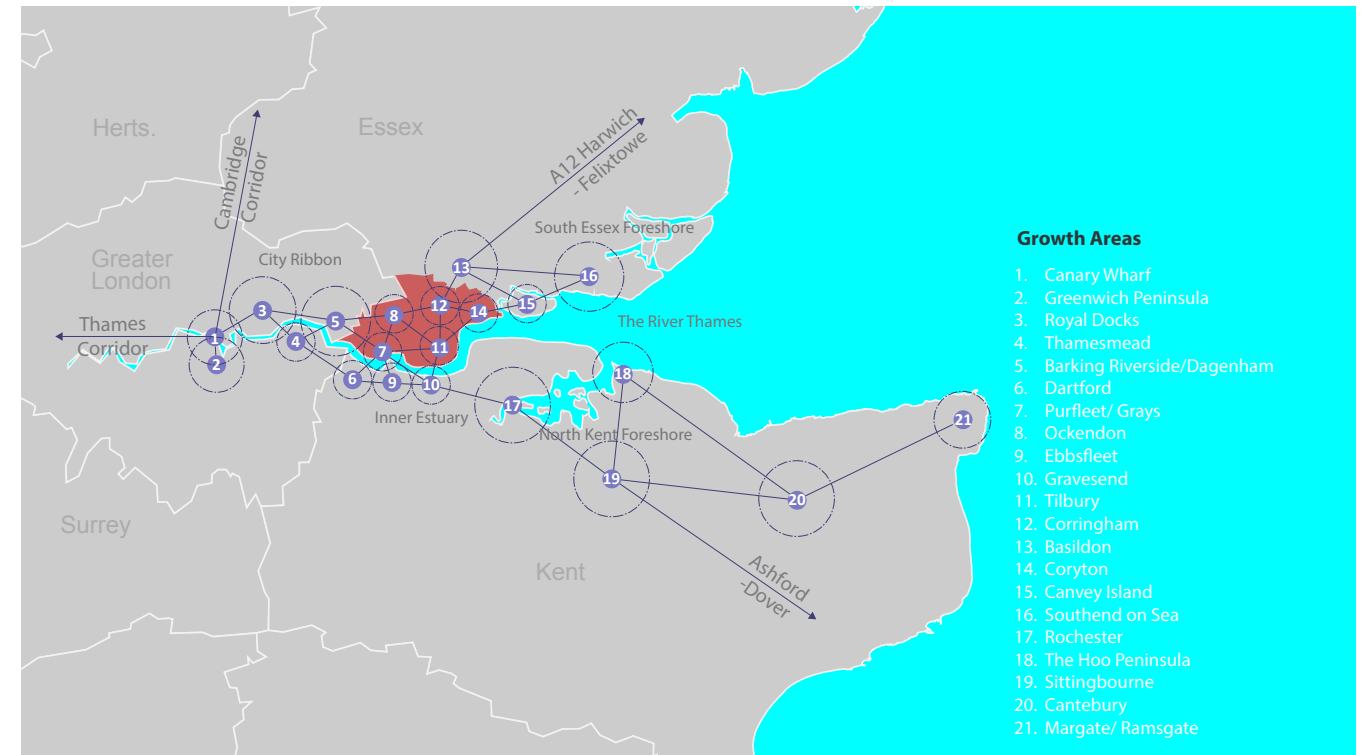


**Figure 3.** Thurrock's neighbouring authorities and potential transport project development partners



**Figure 4.** Relationship between the Thurrock Local Transport Plan and neighbouring transport bodies' plans

<sup>2</sup> Provisional growth figures- subject to review as part of the Local Plan drafting process.



### Growth Areas

1. Canary Wharf
2. Greenwich Peninsula
3. Royal Docks
4. Thamesmead
5. Barking Riverside/Dagenham
6. Dartford
7. Purfleet/ Grays
8. Ockendon
9. Ebbsfleet
10. Gravesend
11. Tilbury
12. Corringham
13. Basildon
14. Coryton
15. Canvey Island
16. Southend on Sea
17. Rochester
18. The Hoo Peninsula
19. Sittingbourne
20. Canterbury
21. Margate/ Ramsgate

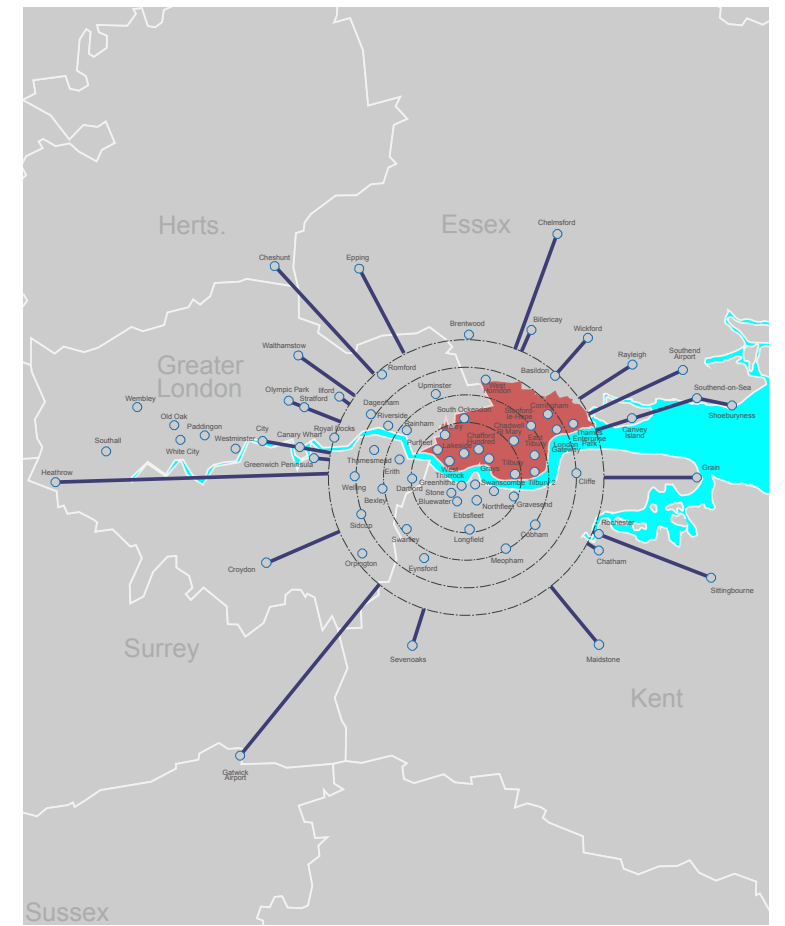
### Thurrock at the heart of the Thames Estuary

- 4.9 Thurrock, our close neighbours and associated towns, lie at the heart of the Thames Estuary sub-region and the focus for regeneration and growth to 2050. Figure 5 shows these relationships and growth areas.
- 4.10 The Vision is for a cluster of highly connected town and local centres with new housing and jobs delivered through an area-wide approach to transport investment and funding for significant regeneration and growth projects.

### Core

- 4.11 Figure 6 shows how Grays and Tilbury form part of a city-scale sub-regional centre on either side of the river, including Gravesend, Ebbsfleet and Dartford.
- 4.12 The existing towns, urban areas and economic hubs need to be joined up with sustainable connections. The focus is on better connecting Grays, Tilbury, Gravesend, Purfleet on the Thames, Dartford, Ebbsfleet, Bluewater and Lakeside, where major regeneration plans are underway or in the pipeline.
- 4.13 This sub-regional urban core can be further strengthened by developing stronger connections with regeneration and growth plans across Essex and Kent, Central London, Heathrow and the Thames Valley and Cambridge and Gatwick growth corridors.

**Figure 5.** Thurrock lies at the heart of the Lower Thames Estuary - Europe's most extensive regeneration programme connectivity



**Figure 6.** Concept of a city-scale sub-region centred on Grays, Tilbury, Gravesend, Ebbsfleet and Dartford with national transport investment planned alongside local regeneration and growth



# 5. MODAL SHIFT

“The goal is a significant shift away from private car use to public transport, walking and cycling through a targeted programme of measures to encourage a shift to more sustainable transport modes - especially in planned new residential



Figure 7. Multi modal diagram

### Sustainable travel choices

- 5.1 Thurrock’s transport vision is not a simple mode-by-mode strategy - railways, bus, walking, cycling etc. The Vision focuses instead on developing an integrated, sustainable, well-coordinated and inter-connected transport system or network that supports various travel needs. It enables people to make sustainable travel choices.
- 5.2 A vision for movement in Thurrock requires building up the three inter-related movement systems or networks:
  - the walking and cycling network (active travel)
  - the road network (includes micro-mobility);
  - the public transport system.
- 5.3 Our Vision is founded upon linked concepts of ‘Multi-modal’ and ‘Modal Shift’ that combine with the idea of an ‘Integrated network’.

### Modal shift– enabling people to choose sustainable travel modes.

- 5.4 The vision is for a sustainable and well-connected transport system that supports reduced car dependency in favour of walking, cycling, and public transport.
- 5.5 The modal shift involves more people using active travel and public transport modes with increases in capacity and quality across all modes. This includes new highways and increased highway capacity alongside adding more multi-modal functions to the road network to support a shift to walking, cycling and public transport.
- 5.6 The active travel network will comprise a comprehensive, connected, safe and healthy network of on and off-road walking and cycling routes linking homes to vital local destinations and the blue and green networks.

### ‘Multi-modal’ – widening the choice of ways to move around Thurrock.

- 5.7 The goal is a more multi-modal network with increased capacity and quality for walkers, cyclist, and using public transport users and a modal shift to help support growing places.
- 5.8 The vision for movement in Thurrock requires building more multi-modal systems, with better connectivity between these systems and places - inside and outside the Borough. This multi-modal approach applies to i) the walking and cycling network, ii) the road network, iii) the public transport network, and iv) the River Thames corridor.
- 5.9 The goal is a significant shift away from private car use to public transport, walking and cycling through a targeted programme of measures to encourage a shift to more sustainable transport modes - especially in planned new residential neighbourhoods.
- 5.10 Potential benefits include increased physical activity and better health outcomes, reduced congestion and improved speed, safety, and reliability of journeys for other road users, decreasing emissions, cleaner air and helping to tackle climate change. This aligns with the emerging Air Quality and Health Strategy and on-going air quality modelling work.

### Integrated network

- 5.11 The vision is for an integrated, sustainable, and well-connected transport system that supports various travel needs. The integrated network combines each travel mode into a single integrated whole with several choices of mode and route for most journeys.
- 5.12 The vision for a fully integrated high-capacity public transport network combines bus, rail, MRT and riverboat with quality, seamless interchange hubs and integrated wayfinding that all deliver an attractive travel choice to support a rapidly growing Borough.
- 5.13 The integrated network includes local roads that are reliable, connected, and resilient, supporting the efficient movement of people and goods to, from and across Thurrock and a high-quality roadside urban environment.
- 5.14 The integrated network includes high-quality public transport systems linking Thurrock with other regional transport nodes and the urban areas within Thurrock.
- 5.15 The vision is for public transport network integration projects that include new high-quality public transport links between growth areas, critical strategic economic hubs and other regional transport nodes in outer East London, South Essex, and North Kent.

# 6. TIMESCALES



Figure 8. Artist's impression of Lower Thames Crossing Mardyke Valley Viaduct (Credit: National Highways)

- 6.1 The Connecting Thurrock Vision 2050 sets the long-term vision and direction for the Thurrock Transport Strategy over nearly three decades
- 6.2 Recent national and international changes and challenges (including Brexit and COVID-19) point to significant, sometimes rapid, and unpredictable changes in the coming years. This creates a pressing need to prepare and deliver plans for transport at pace and to continue addressing new and emerging challenges and opportunities.
- 6.3 The Vision for 2050 is complemented by a more detailed fifteen-year Transport Strategy outlining policies, programmes, projects, and schemes over three, five-years periods:
  - 2022-2027.
  - 2028-2032.
  - 2033-2037.
- 6.4 The Strategy will be reviewed and renewed as needed within the 2050 Vision period.
- 6.5 The 2050 Vision and fifteen-year Strategy sit within a broader context of regional and national transport planning events set out in Figure 10 opposite.
- 6.6 The diagram shows the Thurrock Transport Strategy's delivery in the context of planned/committed regional, sub-regional and national infrastructure.

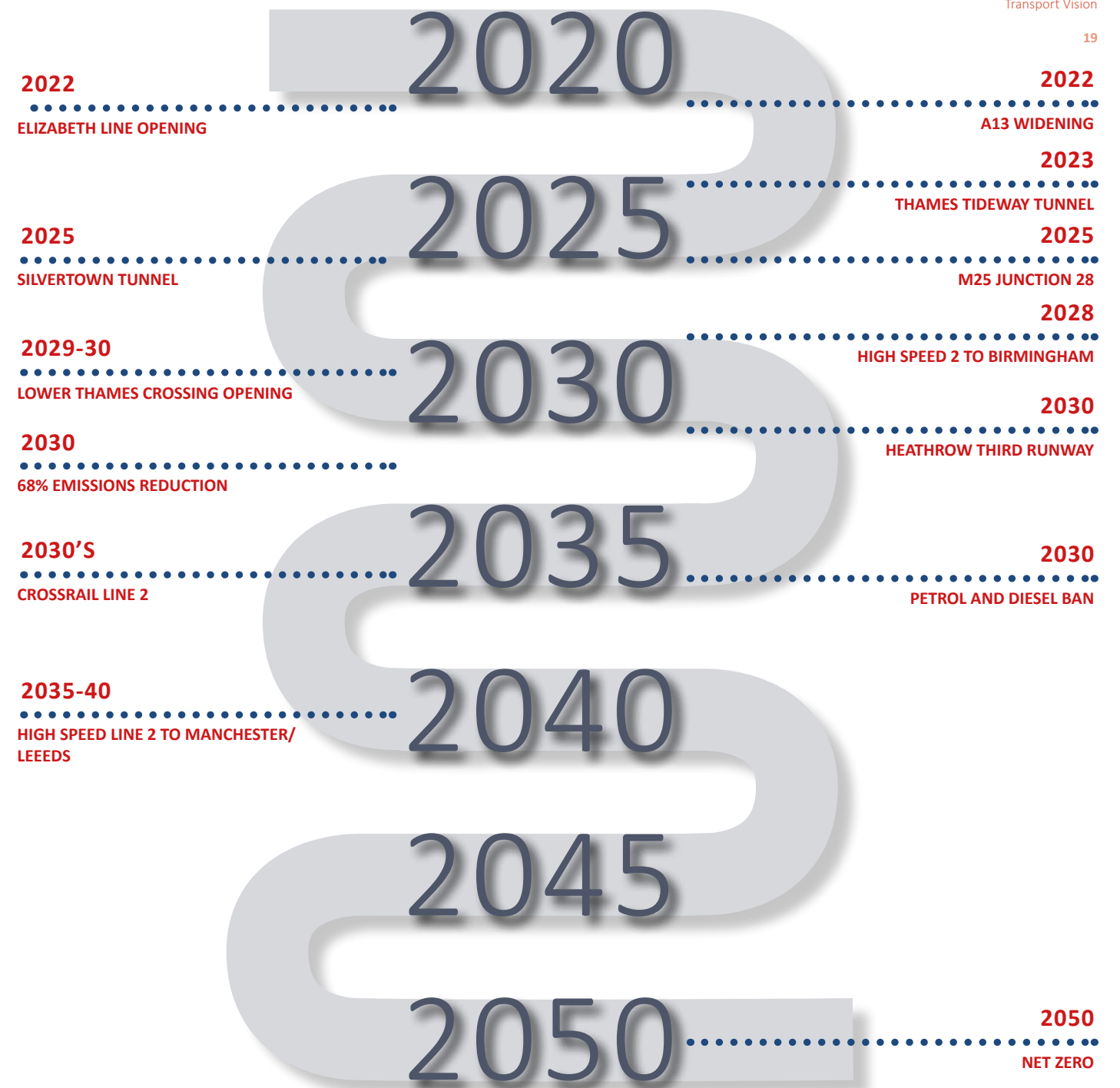


Figure 9. Timeline



Figure 10. Artist's impression of HS2 train (Credit: Hitachi Rail)

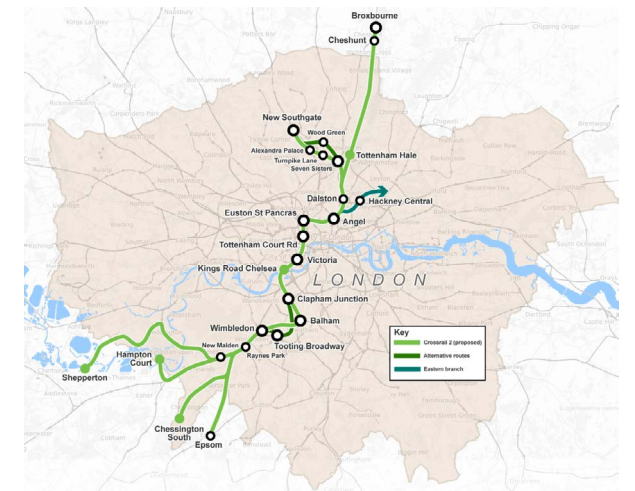


Figure 11. Crossrail Line 2 (Credit: Cnrb)



# 7. DEVELOPMENT & REGENERATION

## Vision

- 7.1 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.
- 7.2 Investment in new strategic public transport connections will act as a catalyst for housing and employment development and regeneration, particularly in more isolated areas.
- 7.3 The Vision is of highly connected and integrated housing, employment, freight and logistics and urban centre development intrinsically linked with new and better transport capacity.



### Thurrock's existing communities

- 7.4 Transport infrastructure investment will be designed to deliver better access to services, jobs and homes for existing residents of Thurrock.
- 7.5 Sustainable interventions are needed to manage increasing traffic levels, ensure planned growth, protect essential journeys, improve safety, and lower pollution impacts.
- 7.6 The performance of the existing and planned future highway network needs to be managed to minimise congestion and delay, balance competing pressures and encourage a shift towards active travel and public transport modes.
- 7.7 Short-distance car journeys involve routes along and across the congested strategic road network, making short local trips longer and less reliable. Therefore, a key aim of new development and regeneration is to improve local connectivity and reduce severance.
- 7.8 Underlying planned estate and community regeneration is the need to deliver better access to services, jobs, and homes. Improving public transport connectivity and street environment improvements in housing regeneration areas will be a key element of the strategy.

### Connecting new communities

- 7.9 Thurrock's potential for housing growth will be realised through new residential development sites forward through the Local Plan. The growth level that could be accommodated is estimated to be approximately 1173 dwellings per year and around 30,000 new homes by 2040<sup>3</sup>. The areas identified include town centres, sustainable urban extensions at the edge of existing urban areas, and Garden Villages detached from existing urban areas. Delivering this scale of growth depends on improvements in transport connections and capacity and a reduction in barriers to movement across the area.
- 7.10
- 7.11 Good quality road connectivity and accessibility are essential in creating sustainable, well-functioning and liveable communities. The Vision advocates rebalancing and reallocating road space to deliver positive local benefits.
- 7.12 The challenge of integrating land use and transport plans is to ensure that high-quality public transport and active travel networks serve all sites identified for housing development and regeneration. This ensures all new communities are well-connected, exceptionally walkable, and 'cycle-able'.

3 Standard method calculation (using 2014 based household projections and the 2017 affordability ratio) Thurrock Local Plan Issues & Options (Stage 2) Devenber 2018.

### Connecting town centres, village cores, district and local centres, shopping parades, and large-scale retail centres

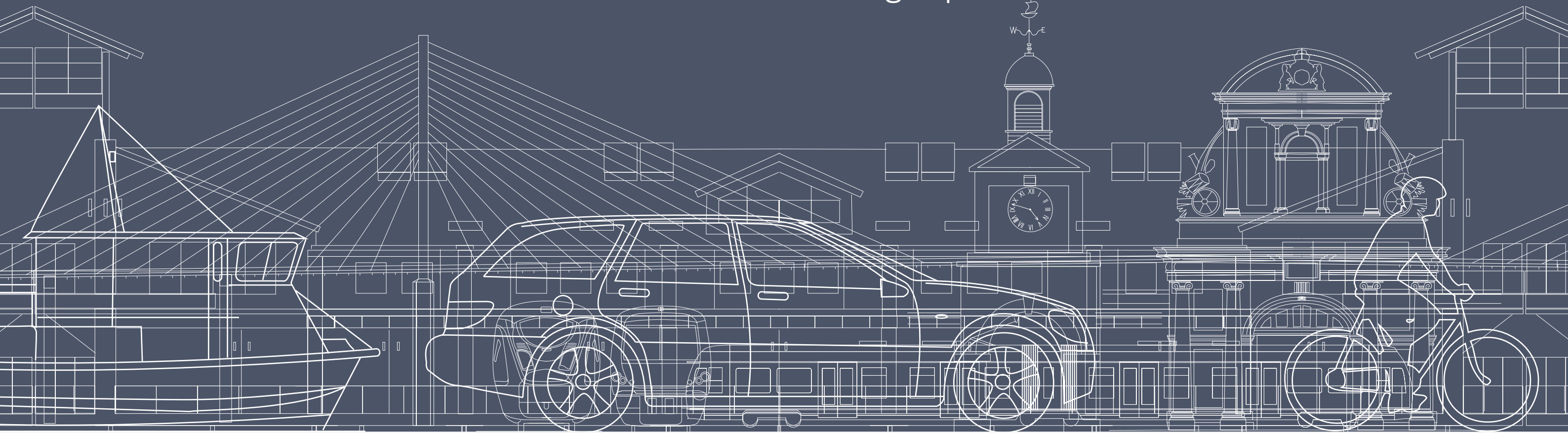
- 7.13 Good public transport connectivity including a package of efficient servicing and parking measures is key to the economic competitiveness of all Thurrock's centres – from local parades and village high streets to town centres and large-scale retail centres.
- 7.14 The foundations for the revitalisation of Thurrock's urban centres will be creating better-connected places that are walkable and cycle-friendly, easy to access by public transport, and not traffic dominated.
- 7.15 Our Vision is for local needs to be met locally to minimise travel and make places that are not traffic dominated. The Vision is to develop a network where 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 local and district centres with excellent public transport connections and easily accessible by walking and cycling.

### Connecting business and employment, freight, and logistics

- 7.16 High-quality transport connectivity underlies Thurrock's current and future reputation as a dynamic and competitive borough. Future transport infrastructure investment needs to meet community and business expectations to support and encourage growth and development.
- 7.17 This means improving local public transport, walking, and cycling access to main employment clusters, including evenings and weekends. Direct connections between ports and Freeports and the strategic road and the national rail networks need to be developed with new highway links to employment growth areas.

# VISION STATEMENT

Our future transport vision, goals and strategic priorities.





# 8. VISION STATEMENT

*“ The vision is to create a transport system for Thurrock that improves quality of life for all people. Over the next 30 years we want to transform transport connections to help deliver zero-carbon economic growth.*

*The Connecting Thurrock Vision is to create a transport system that:*

- *Is fully inclusive, meeting the social needs of residents;*
- *Is integrated to provide seamless multi-modal journeys;*
- *Is accessible for everyone, safe and attractive to use;*
- *Delivers sustainable community regeneration and growth; and*
- *Reflects the exceptional circumstances of Thurrock as an international centre for logistics and commercial development.*

*The long-term goal is greater connectivity, innovation, sustainable economic growth and access to opportunity for all. ”*



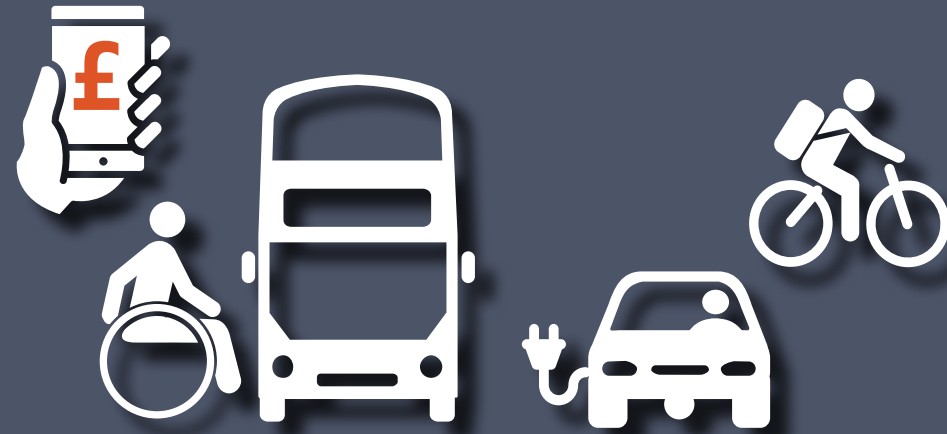
**The Vision statement structure:**

- 8.1 The Vision is set out in three parts:
- Vision statement and goals - A concise statement of Thurrock’s hopes and expectations and ten interconnected goals that apply to remodelling existing roads, bridges and other assets and providing new infrastructure to support growth and regeneration.
  - Strategic focus areas- Eight strategic focus areas – that are the foundations for developing the Transport Strategy. Each strategic focus has a background story and is a visioning exercise in its’ own right.
  - Vision 2050 Diagrams – Abstract diagrams illustrating potential transport connections, interchanges, development, and regeneration by 2050.

**Vision Statement**

- 8.2 The vision is to create a transport system for Thurrock that improves the quality of life for all people, transforms transport connections and helps deliver zero-carbon economic growth. The Connecting Thurrock Vision is to create a fully inclusive, integrated, multi-modal and accessible transport network that drives sustainable regeneration and growth.

# 9. VISION GOALS



**Goal 1: An accessible and inclusive network that supports all of Thurrock's communities.**

An accessible and inclusive network will offer better access to employment and educational opportunities and other vital services, particularly those in disadvantaged groups or areas. The thrust of the accessibility strategy will be to improve accessibility by walking, cycling, and public transport to vital services and facilities, especially further education, employment, and hospitals, with interventions that prioritise inclusive design at all stages. The priority will be to improve accessibility where deprivation is most apparent and where significant growth can be delivered sustainably.

**Goal 2: Reducing all transport emissions and improving air quality, including CO2, nitrous oxide, noise, and particulates.**

Improving air quality and reducing emissions will be achieved by minimising traffic growth, promoting low-carbon/carbon-free vehicles, and supporting a modal shift towards public transport, walking and cycling. Future physical and behaviour changes are needed to reduce emissions from transport with measures that reduce greenhouse gas and air pollution emissions prioritised. Air Quality Action Plans will be developed and implemented for all Air Quality Management Areas to ensure that road safety and congestion schemes, particularly in Air Quality Management Areas, do not increase vehicle emissions. Efforts will focus on reducing the adverse impacts of freight operations by lowering emissions from Heavy Goods Vehicles in Thurrock and encouraging rail and water freight where feasible. A targeted programme to improve air quality, reduce emissions from transport overall and address climate change focused on reducing the need to travel; encouraging a modal shift to more sustainable modes of transportation, such as public transport, walking and cycling; lowering emissions from residual sources.



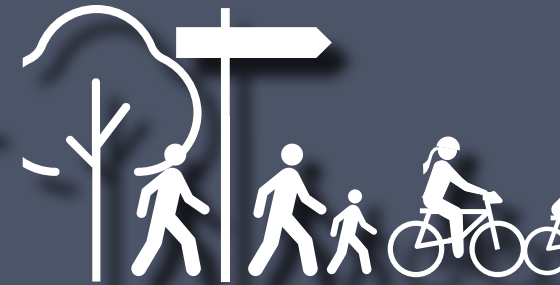
**Goal 3: Climate change resilience and responsibility**

To contribute towards mitigating climate change and reducing the vulnerability of the transport network to climate change impacts whilst protecting human health from the adverse effects of air pollution. A resilient transport network will be better able to withstand unexpected events, exceptional demand, and severe weather conditions and adapt to climate change effects. Environmentally sustainable development and travel patterns that will help reduce climate change impacts. Thurrock should help to lead the transport de-carbonisation agenda through better quality streets and connections to green and blue networks and technology, like connected, autonomous and low emissions vehicles. When undertaking transport improvements, including maintenance schemes, the Council will integrate climate change adaptation measures into the design to ensure that the transport network's vulnerability is minimised.



**Goal 4: Health and wellbeing**

Transport can deliver positive health, inclusion and environmental outcomes if integrated with broader plans and policies - the health and wellbeing strategy is critical in this area. Thurrock's future transport network will be designed to promote good physical and mental health and community wellbeing. The key method will be to enable walking and cycling for all local journeys. Encouraging active travel choices will increase walking and cycling levels, minimise noise and air pollution, and open access to open spaces and the 'Greengrid' and 'Bluegrid'. This will be combined with improving access to health and welfare services - including mental health services.



**Goal 5: Active travel choices- enable more people to walk and cycle**

Thurrock's future transport system's success and the key to reducing congestion is reducing dependency on cars in favour of increased walking, cycling, and public transport use. It will limit the Borough's contribution to climate change and help develop attractive local high streets and vibrant neighbourhoods where people are prioritised over cars. The goal is to encourage walking and cycling for all local journeys that will deliver health benefits. The vision recognises the significant severance across the Borough and that tackling these barriers for walking and cycling is key.

9.1 The Vision is based on ten goals.





**Goal 6: Modal shift to public transport- a significant shift from private car use to public transportation.**

A shift from car use combined with encouraging more people to use public transport for most or all of their journey, cleaning up the air and reducing road danger. The demand for travel in Thurrock will be managed by encouraging sustainable development patterns, public transport use, walking and cycling. Integrated public transport networks, widening travel choices, offering seamless transfer between modes and services with integrated fares, ticketing, and information and integrating public transport with sufficient secure cycle parking and interchange with a bike.

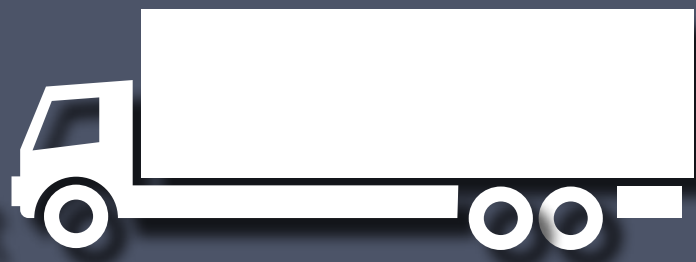
The strategy will be to deliver a targeted programme of measures to reduce the need to travel. The purpose is to encourage a modal shift to more sustainable modes of transport, such as walking and cycling, particularly in urban areas, and improve the effectiveness of the transport network, significantly increasing the capacity of routes providing access to key destinations for communities. Improving accessibility by public transport, walking and cycling, and improving the actual and perception of the safety of these modes provides a solid basis for delivering measures that will encourage a modal shift. Increasing public transport patronage depends on improved bus satisfaction and new travel choices, such as BRT and better quality interchange with rail services and stations.



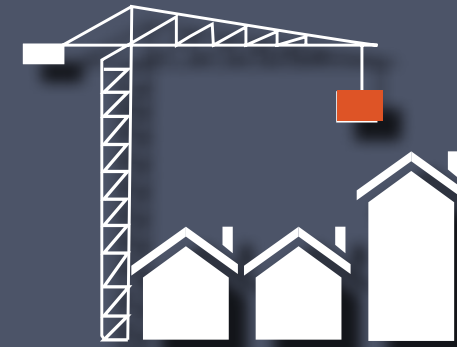
**Goal 7: Safer roads - no deaths, fewer accidents, and a feeling of safety and security for all transport network users.**

Reducing road accidents and eliminating deaths are vital in creating a sense of safety and security for all street users. The Safer Roads strategy will aim to reduce casualties, especially the more severe casualties. Road safety measures cover four main areas child pedestrians, cycle safety, driver improvement and safe journeys to school.

Measures within School Travel Plans that will improve road safety and/or school children's health will be prioritised. The Council will improve pedestrians' and cyclists' road safety and aim to mitigate safety concerns that currently act as barriers to using these modes. This will support accessibility through modal shift to walking and cycling. Priority will be given to improving the overall safety of roads in disadvantaged communities and areas around schools, colleges, major employment sites and town/ local centres. Road safety measures will be fully integrated into other transport improvements, and widespread 20mph zones will be implemented in those residential areas where the local community supports the measure.



A high priority will be given to implementing accident remedial schemes at locations and along specific stretches of road where there are clusters of accidents resulting in deaths or serious injuries, especially pedestrians and cyclists. The number of killed or seriously injured casualties recorded in recent years, likely to be prevented in future years, will help further prioritise these road safety interventions as part of urban design-led retrofitting projects. Retrofitting existing places alongside education, training, and publicity measures will improve road safety, improving the road safety of vulnerable road users, especially pedestrians and cyclists, and reducing dangerous and traffic speeds.



**Goal 8: Facilitating development, growth, and regeneration - Transport infrastructure investment to facilitate growth and renewal.**

Transport infrastructure investment is essential to deliver better opportunities for Thurrock's residents and employees from regeneration and new homes and business opportunities for all. The transport strategy will be developed to help support the physical, social and economic regeneration of existing and recent developments.

The focus will be on the regeneration strategies emerging for Purfleet, Grays and Tilbury and Estate Regeneration and Housing plans that will come forward over the short, medium and longer term. The emphasis of the approach to social regeneration will be on access to services and opportunities and access to employment, education, and health care. Access to further education is especially critical given low skills and qualifications and the need to provide the knowledge sector skills. The priority will be to enable those residents and communities facing disadvantage.



**Goal 9: Sustainable Development - coordinating land use and transport planning to avoid, minimise and mitigate negative social, environmental and climate change impacts.**

Transport has a vital role to play in facilitating sustainable development, particularly for new homes and jobs. Investment should be guided towards locations that can support the development of a sustainable transport network. Improving connectivity and accessibility for isolated communities is key to promoting the social regeneration of Thurrock's communities. The transport system needs to be balanced in favour of sustainable modes by giving people a natural choice of travel.

Reducing congestion and delay is key to promoting sustainable economic regeneration and growth. Therefore, encouragement will be given to transport solutions that reduce carbon emissions and congestion.



**Goal 10: Managing and maintaining - a better-managed and well-maintained network.**

A better-maintained network will be a safer system with fewer accidents, less disruption, fewer delays, and less need for unplanned work.

A coordinated and costed asset management and maintenance programme will result in a systematic approach to repairs and maintenance that anticipates problems arising from degradation. A more reliable transport network will give people confidence in journey times and the quality of streets and public transport systems.

# 10. STRATEGIC PRIORITIES

## Eight priorities

- 10.1 There are eight strategic priorities at the heart of Thurrock's transport vision.
- 10.2 Each priority is summarised below and described in more detail in Chapters 12 to 20.

## New Technologies and Modes

- 10.3 New technologies are changing the nature of transport. In line with national transport policy and guidance, Thurrock's future transport vision is based on a transition towards low-emission vehicles. We want Thurrock to be known for urban transport innovation. Potential new mobility innovations include increased shared use, micro-mobility, automated driving, connected transport systems and networks, significant shifts to electric and hydrogen vehicles, and new fuel supply/charging infrastructure. The imperative to reduce carbon dioxide and other greenhouse gases in response to climate change is likely to drive increasingly efficient, low-emission vehicles.

## Rail

- 10.4 We plan to transform Thurrock's railways to support the delivery of new homes and jobs, improve public transport accessibility and realise the Borough's full potential as an important economic hub at the heart of the Thames Estuary. Our vision for rail connectivity encompasses new and improved rail connections between Essex, Kent, the City and West End, north, south, and west London and Thurrock's existing and new communities, employment areas and urban centres. New and improved local, national, and international rail connections will benefit residents, businesses, workers, students, and visitors.

## Bus Rapid Transit

- 10.5 A fully integrated sub-regional Mass Rapid Transit System (MRT) will offer direct, high capacity and fast connections across the Borough and serve outer East London, North Kent and South Essex. The new network will connect through and around areas where buses are affected by congestion and across high-pressure traffic areas, such as the Dartford Crossing approaches. Thurrock's MRT is likely to be developed as a high-speed Bus Rapid Transit (BRT) system with offline high-speed bus corridors offering high levels of priority, segregation, fluidity of movement, and higher average speeds. High-quality, high-capacity, and low-emission electric vehicles will run on the BRT network.

## River

- 10.6 Cross-river connections across all transport modes must be made much stronger if Thurrock is to attract a significant slice of planned economic growth and realise the borough's full potential as an important economic hub. Thurrock's potential can be achieved by breaking down the barriers to cross-river movement and strengthening the river as a major commuter and freight artery with better connections to the broader Thurrock transport network. This will open new, direct multi-modal links to important places in central London, inner and outer east London, Essex and Kent riverside, and position Thurrock at the heart of the Thames Estuary.

## Walking and cycling

- 10.7 We aim to reduce dependency on cars in favour of increased walking and cycling – known as 'active travel' - increasing the number of people who choose to walk or ride bicycles for most of their journey and helping to improve physical fitness and health. The Vision for Thurrock is that walking and bicycle riding are always safe and convenient and the top choice for everyday trips to shops, school or college, work, exercise, and recreation. All new housing developments will have high-quality and attractive walking and cycling routes that new residents can use safely and confidently to travel to the nearest rail station or local shops.



Figure 12. Strategic priorities diagram

## Local Bus network

- 10.8 Most public transport journeys within Thurrock are by bus. The future transport developments will not change the importance of the bus network in keeping Thurrock moving - helping people to get to work, the local shops, or to healthcare. The Vision is for high-quality bus services offering faster, more reliable, accessible, comfortable, and affordable travel. The bus network will be closely integrated with rail, bus rapid transit, riverbus and ferry services.

## Streets

- 10.9 We plan to transform the environmental quality of local streets to meet the needs of the neighbourhoods they pass through, accommodate active travel, and improve public transport services. Multi-modal streets offer more options for safe, attractive, and convenient travel, including private cars, commercial vehicles and new micro-mobility transports- keeping people connected and the economy flowing.

## Strategic Roads

- 10.10 Thurrock's Strategic Road Network (or SRN) comprises motorways and trunk roads, including the M25 Motorway, the Dartford Crossings, A13 and A1089. Non-primary A Roads and B Roads, such as the A126, A1013, and B149, connect to the strategic network. Our Vision is for an upgraded and extended Strategic Road Network fit for the 21st century offering increased reliability for local journeys, reduced journey times, and improved local connectivity to drive economic growth and provide opportunities for people and businesses. Our priority is securing benefits and opportunities from new strategic road proposals.



# 11. NEW TECHNOLOGY

“We want Thurrock to be known for urban transport innovation.”

## Vision

- 11.1 New technologies are changing the nature of transport in terms of how we travel and why we travel. Technology provides an incredible opportunity. We want Thurrock to be known for urban transport innovation, improving people’s personal mobility and livelihoods through new technologies.
- 11.2 Our future vision is to embrace new technological developments that promise to change how Thurrock’s streets function and how we travel around the Borough. Potential new mobility innovations include increased shared use, micro-mobility, automated driving, connected transport systems and networks, significant shifts to electric and hydrogen vehicles, and new fuel supply/charging infrastructure.
- 11.3 Future-proofing for new infrastructure and the reconfiguring of existing systems will be required to seamlessly integrate emerging technologies into our transport network and improve the experience of travelling.
- 11.4 The challenge is to ensure that new technology (connected networks/ systems, electric vehicles, automated driving, and shared use) is fully integrated into our transport system and does not undermine our multi-modal and modal-shift objectives. Electric vehicles are a major national issue, and Thurrock is no different in needing to plan infrastructure in the short and medium term.
- 11.5 The imperative to reduce carbon dioxide and other greenhouse gases in response to climate change is likely to drive increasingly efficient, low-emission vehicles. Thurrock’s future transport vision is based on a rapid transition towards low-emission vehicles. Conventional cars and vans will need to be fully phased out by the mid- 2030s in favour of electric or hybrid vehicles.

## New mobility systems

- 11.6 New mobility systems for the transport of people are seeing radical change, including
- 11.7 **On-demand accessible shuttles and shared transport services** - Shared mobility services are transport services that share the use of a vehicle for personal travel- examples include ride-sharing and pooled rides.
- 11.8 **New ownership models and shared use** - such as car clubs and lift sharing, may affect the demand for car travel and parking spaces.
- 11.9 **Self-driving cars** - Autonomous vehicles, also known as driverless cars or AVs, are vehicles equipped with sensors and on-board computers that allow them to drive themselves effectively. Self-driving cars allow vehicles to “see” the surrounding environment and provide advice about, or take control of, decisions on navigating it. Experts predict self-driving cars will run on our streets in less than four years<sup>4</sup>. There are many levels of automation, from partial automation, including self-parking cars and adaptive cruise control, to full automation and a hands-off driving experience.
- 11.10 **Connectivity** - where vehicles communicate in real-time with other vehicles and the infrastructure, opening new services for drivers and allowing traffic to behave cooperatively so the whole system flows better with technology to reduce the likelihood and severity of collisions.

<sup>4</sup> Connected and automated mobility 2025: realising the benefits of self-driving vehicles. The government’s plans for connected and automated mobility technologies.



Figure 13. New fuels and charging points.

- 11.11 **Micro-mobility** - Fast-developing battery technology is leading the development of new hybrid vehicle types, such as electric bicycles, skateboards, powered wheelchairs, mobility scooters etc. These powered vehicles are increasingly seen on roads (where many are not fully authorised and regulated. They are also seen on pavements, in parks and public rights of way, where they are not usually permitted except for wheelchairs and mobility scooters used by those with physical disabilities or limited mobility because of an injury or medical condition.
- 11.12 **Drones**- Use of drones to support emergency services and make urgent deliveries to hospitals. Drones, also known as unmanned aerial vehicles or UAVs, are small flying vehicles which rely on remote-controlled piloting or fly using on-board sensors and GPS. Drones could improve delivery times of sensitive or high-value goods such as donor organs and medical supplies and may aid asset inspection, construction site monitoring, and emergency services activities.
- 11.13 **Droids**- Droids are small, wheeled vehicles controlled by remote-controlled piloting or on-board sensors and GPS. The use of droids in the Thurrock could include couriering and deliveries.
- 11.14 **Ubiquitous data** - which could result in more advanced information about the wider transport network and the world around us, optimising how we use personal transport and the transport network.

- 11.15 **Pedestrians**- App-assisted pedestrian crossing technologies for the partially sighted and people who require more time to cross.
- 11.16 **Parking and charging technology** – New technology to help manage parking and tolls, including geofencing and permitting, App-based parking and un/loading permitting and enforcement and technology-assisted kerbside space reallocation.
- 11.17 **New fuels** - The imperative to reduce carbon dioxide and other greenhouse gases in response to climate change is likely to drive increasingly efficient, low-emission vehicles. New low-emission vehicle types, including hybrids, plug-in hybrids, and pure electric vehicles - powered by batteries at first and potentially hydrogen fuel cells in the medium to long term.
- 11.18 **Supply and charging infrastructure:** New vehicle fuels need to be supported by developing an electric vehicle charging infrastructure network for private cars, buses/MRT taxis and electric bikes/scooters.
  - On-street and private home charging with smart charging allows EVs to be charged when it is most efficient for the balance of supply and demand across the electricity system.
  - Rapid or high-powered devices along the strategic road network, bus/BRT routes and taxi ranks.
  - On-site hydrogen production and storage at bus/MRT and distribution depots.
- 11.19 The aim is to provide greater confidence to residents and businesses to invest in electric vehicles.

# 12. RAIL NETWORK

“ A transformation of Thurrock’s railways to support the delivery of new homes and jobs, improve public transport accessibility and realise the Borough’s full potential as an important economic hub at the heart of the Thames Estuary. ”

- 12.1 Enhanced public transport connections are needed to release the substantial housing and employment growth potential in Outer East London and the Thames Estuary.
- 12.2 Improvements to rail transport connectivity and capacity are the key to sustainable economic growth, reducing the barriers to movement in the area, including those presented by the River Thames and local waterways.
- 12.3 Current planning is focused mainly on increasing capacity. However, Thurrock’s future growth potential cannot be fully realised without new and better connections and interchanges involving new railway connections, new types of rail corridor transport systems and all of this coordinated with the continuation of a vital freight function.
- 12.4 Thurrock’s railways need to be transformed to support the delivery of new homes and jobs, improve public transport accessibility realise the Borough’s full potential as an important economic hub.
- 12.5 The Vision for rail is five-fold –
  - connectivity
  - capacity
  - stations and interchanges
  - multi-modality
  - freight

## Connectivity

- 12.6 Outer East London and the Thames Estuary have long been identified as having substantial housing and employment growth potential, but poor public transport connections have limited progress.
- 12.7 Thurrock’s main connectivity strengths include being at the mid-point of the C2C rail network with good east-west connectivity. Its perceived weaknesses include its reliance on a suburban commuter rail with limited north-south connectivity and no rail connection across the Thames. The shortcomings in that network must be overcome to deliver sustainable growth.
- 12.8 Sustainable growth in Thurrock requires widening the rail network’s benefits, making it a popular, fast, direct, high quality, high capacity, safe and clean alternative to the car for more journeys.
- 12.9 The Vision for rail connectivity encompasses new and improved rail connections between Essex, Kent, the City and West End, north, south, and west London and Thurrock’s existing and new communities, employment areas and urban centres. New and improved local, national, and international rail connections will benefit residents, businesses, workers, students, and visitors.
- 12.10 The full potential of rail connections into Central London will be realised through strengthening those arteries. Capacity, journey times and reliability will all be significantly improved with a 21st Century gateway at Fenchurch Street and high-capacity, high-quality interchanges at West Ham, Barking.
- 12.11 The new sub-regional rail network and stations will integrate into a borough-wide public transport network to provide seamless multi-modal journeys with a better interchange with other transport modes.
- 12.12 Thurrock will work with Network Rail and Train Operating Companies to renew and enhance the existing network and develop new rail connections and service opportunities.

## Capacity

- 12.13 Increased capacity is essential to support the delivery of new homes, improve public transport accessibility to and through Thurrock, and support significant increases in rail patronage expected over the next 25 years.
- 12.14 Our vision is to realise the full potential of the existing lines in the short and medium-term through double-tracking, new and improved stations, longer trains, new junctions, and signalling - and to add capacity through new rail lines in the long term.
  - Liverpool Street and Fenchurch Street rail connections (capacity, frequency, quality, speedy), including 12-car platform lengthening at stations.
  - Double-tracking on the Grays-Upminster Railway line and future extension to Romford.
  - New trains, new services, and creating room for thousands more passengers.
  - Increasing/releasing capacity on commuter routes through a southern Crossrail extension via Gravesend-Tilbury, a northern Crossrail/London Overground extension via Upminster/Romford and an Overground extension via Dagenham Dock.

## Multi-modal rail

- 12.15 Thurrock’s current rail network serves only two primary purposes - an east-west commuter rail network terminating at London Fenchurch Street and rail freight connections from the Thames Ports via North London to the national rail freight system.
- 12.16 The most successful and sustainable urban areas combine multiple rail-based transport modes operated as a single, integrated transport system.
- 12.17 Thurrock’s future rail vision is for a multi-modal rail network approach extending across Outer East London and the Thames corridor. This includes access and provision for a broader range of services, including Crossrail extensions via Gravesend-Tilbury and Upminster/Romford, London Overground extension via Romford, Overground extension via Dagenham Dock, and possible ‘Javelin’ train services via Ebbsfleet, Gravesend to Southend.



## Stations and interchanges

- 12.18 New and enhanced station stops are needed to serve growing communities, existing and new employment areas, and existing urban centres.
- 12.19 Our rail Vision encompasses new stations and major rail interchange ‘hub’ stations, with improved quality of all existing stations and connections to local areas. The new/enhanced stations and interchanges will act as a catalyst to regenerate existing places and enable residential intensification, new uses, and other new development.
- 12.20 New multi-modal rail interchange hub stations (including Grays, Purfleet, South Ockendon, Stanford-le-Hope, Chafford Hundred, and Tilbury Stations) will connect the rail network to the local bus, MRT and cycling networks.

## Freight

- 12.21 Thurrock’s ports, storage and distribution districts need excellent connections to the national and international rail freight network with sufficient train ‘paths’ to meet growth plans. To enable efficient freight movement by rail, the North London routing needs to grow capacity in line with London Gateway port growth.
- 12.22 Freight capacity for London Gateway, cross-London rail (via the North London line) to the East and West Coast mainlines, is vital for the movement of containers to Midlands distribution centres and other destinations in the North West. .
- 12.23 Our rail freight vision includes full line electrification in the short and medium term with a long-term vision for a new Thames rail tunnel to connect Kent and the Medway ports with freight lines around north and south to connect with routes to the south west, midlands and the north.

Figure 14. Crossrail (Elizabeth Line) train (Credit:Crossrail)



# 13. BUS RAPID TRANSIT

“The vision is for a new, direct, high capacity and fast transport system to connect across the Borough and serve outer East London, North Kent and South Essex.”

## Vision

- 13.1 Thurrock’s future position at the economic heart of the Inner Estuary depends, in large part, on a fast, reliable network that connects Outer East London, Kent and Essex. Thurrock’s potential can be achieved through new, direct connections to important places in outer east London, Essex and Kent riverside, and the Thames Estuary.
- 13.2 More and better public transport options need to be developed if planned growth and development in Thurrock and neighbouring areas are to be sustainable and not car-based. The need for capacity, frequency, speed, and connectivity is unlikely to be met solely by incremental improvements to bus services running on existing roads.
- 13.3 The vision is for a new, direct, high capacity and fast public transport system to connect across the Borough and serve outer East London, North Kent, South Essex.
- 13.4 The mass rapid transit system will bring about a step change in the way people travel within and through the Borough.

## Mode

- 13.5 There several types of 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.
- 13.6 Thurrock’s BRT is likely to be developed as a high-speed bus system with offline high-speed bus corridors. A BRT system has been chosen for several reasons.
  - This system sits somewhere between a conventional bus and rail.
  - implementation costs are lower and more cost-effective than rail-based MRT
  - Capable of accommodating equivalent passenger flows.
  - BRT is a nimbler deployment option than rail or tram in terms of expansion and rerouting.
  - It can be integrated with MRT in adjacent areas such as Kent’s ‘Fast Bus’, the planned ‘SERT’ network in south east Essex.

## Route design

- 13.7 Maximum levels of priority and segregation, fluidity of movement and higher average speeds are fundamental elements of making travel by BRT a significantly quicker and more convenient option for local journeys and onwards connectivity- versus the private car.
  - 13.8 The BRT routes will be a combination of segregated and shared lanes:
    - High-speed, dedicated bus corridors that cannot be accessed by other vehicles of any sort.
    - Segregated bus-only lanes, shared bus lanes and bus priority measures at junctions.
    - Combined with mixed traffic.
  - 13.9 The long-term ambition is for 80% segregated routes in new development areas and 60% elsewhere.
  - 13.10 Routes will be designed for higher line speeds than conventional buses with fewer stops and shorter/fixed dwell times at stops.
  - 13.11 Routes will be designed as landscape and wildflower corridors.
- ## Frequency
- 13.12 Turn up and go, high-frequency services, running longer into the evening and regularly throughout the day and night to serve port areas and distribution warehouses.

## Vehicles

- 13.13 High-quality, high-capacity, and low-emission electric vehicles will run on the BRT network.
- 13.14 In the short term, these are likely to be hybrid low-emission vehicles that minimise impacts on current bus routes, schedules, and operators.
- 13.15 In the medium-term electric buses will operate, improving air quality, energy efficiency, noise, and passenger comfort, as well as providing financial benefits. This is particularly important on routes through low air quality zones and residential areas. Exclusive BRT infrastructure offers the ideal environment for electric bus operation: less stop/start due to the fluid movement within the dedicated busways.
- 13.16 The electric vehicles may be powered through overnight battery charge in depots or on-stand charging via on-vehicle or drop-down pantograph.
- 13.17 In the long term, vehicles may run on locally generated hydrogen using sustainable energy such as wind turbines.
- 13.18 The network will be designed to accommodate future new technologies, such as autonomous shuttles. In the long term, the highest capacity routes may be converted to a rail/tram system, such as ‘Kenex’.



Figure 15. Kent Fastrack bus (Credit: Kent CC)





Figure 16. A London bus is charged using a pantograph. (Credit: TfL)



Figure 17. Dedicated line and bus stop, East Jakarta. (Credit: Gunawan Kartapranata)

### Phased approach

13.19 The future BRT system will grow in phases to integrate new lines and new vehicle types with the network developed through and around areas where buses are most affected by congestion, regeneration and growth areas.

### Breaking down road barriers

13.20 The BRT network will connect through and around areas where buses are affected by congestion and across high-pressure traffic areas such as the Dartford Crossing approaches with phased reallocation of road space on existing and proposed river crossings (Dartford Tunnel, Queen Elizabeth Bridge, proposed Lower Thames Crossing).

13.21 It will link to and across major roads with purpose-built slip roads, flyovers, and under-passes. The BRT network will extend across the River Thames, Mardyke Valley and possibly also Holehaven Creek, with several potential crossing points under consideration.

### Stops and interchange

13.22 The BRT will stop more frequently than conventional railways but with fewer stops and faster journey times compared with the bus network. The BRT network stops will be 'super stops' with quality passenger facilities with further enhancements at proposed multi-modal interchange hubs such as Grays and Tilbury and major centres such as Lakeside.

13.23 High-quality stop facilities will include next-generation Real Time Information (RTI) screens, , seating, "living roof" green bus shelters powered by photovoltaic panels provision of telephones, Wifi.

13.24 Stops and vehicles will be fully accessible with level boarding/raised kerbs and tactile paving

13.25 Stops will offer enhanced personal security with good lighting, good vista, CCTV, and materials such as Perspex rather than glass.

13.26 Stops will be integrated with broader area plans and connectivity, including cycle parking and cycle hire, wayfinding, quality public realm, and upgraded safe and convenient walking and cycling routes from interchanges to the surrounding residential and employment areas.

### Sub-regional Network

13.27 The BRT will connect related BRT networks developing in the wider Thames Gateway:

- South Essex growth areas and Southend.
- North and east Kent, including Dartford, Gravesham/Gravesend, Ebbsfleet and Dover.
- Outer East London Opportunity Areas including Thamesmead, Rainham Dagenham, and Basildon.

### Identity

13.28 The BRT will be promoted as a high-quality network with Premium branding, promotion and marketing.

### Development and regeneration

13.29 The BRT network will connect existing and new communities and growth areas.

13.30 The BRT public transport corridors will create the spines along which higher densities of both housing, employment and local facilities will be concentrated

- Connecting to – through main urban centres, including Lakeside.
- Travelling to-through work and port areas.
- Relieving congested bus spines such as London Road.
- Travelling to-through housing growth areas- where the opportunity to encourage a shift to public transport is most significant, with new residents forming new habits as new homeowners.
- Connecting to adjacent growth areas in Kent, Essex and outer east London.



# 14. RIVER THAMES

“The vision is to strengthen the River as a transport artery with enhanced connections to the broader transport network.”

- 14.1 Cross-river connections across all transport modes need to be made much stronger if Thurrock is to attract a significant slice of planned economic growth and realise the borough’s full potential as an important economic hub.
- 14.2 Thurrock’s potential can be achieved by strengthening the river as a movement artery with better connections to the broader Thurrock transport network. This will allow new, direct links to important places in central London, inner and outer east London, Essex and Kent riverside, and the Thames Estuary.
- 14.3 Current planning is focused mainly on increasing road capacity through new crossings. But Thurrock’s future growth potential will not be fully realised without new and better sustainable connections - including new boat, bus, rail, and walking-cycling connections.
- 14.4 To the west of Thurrock, the Thames has experienced a renaissance as a transport spine and a focus of riverside regeneration. In sharp contrast, the River Thames in Thurrock remains a significant barrier to access and connectivity. This is exacerbated by the fact that the links across the Thames in Thurrock comprise national rail and roads links (the M25 the High Speed 1) which offer very little connectivity into Thurrock’s local transport network.
- 14.5 The successful future development and regeneration of Thurrock at the heart of Outer East London and the Thames Estuary is highly dependent upon river connectivity. The medium- and long-term plan for Thurrock is to repeat the models of some of the more successful new connections implemented to the west along the Thames.
- 14.6 The Vision for the River Thames is as a major transport artery for commuter passengers and freight services, including ‘short-sea’ and international shipping.



Figure 18. Tilbury Ferry



Figure 19. Riverside heritage tourist destinations- Tilbury Fort

## Riverbus

- 14.7 A fast riverboat network with new direct commuter riverboat links to central London, East London, Essex, and Kent.

## River piers

- 14.8 New and improved riverboat piers serving communities, employment areas, and mixed-urban centres along the banks of the River and connecting to nearby rail, BRT and bus interchanges.

## Ferries

- 14.9 Improvements to Gravesend- Tilbury Ferry and possibly a further link from Grays to serve tourism and local trips and future large-scale riverside proposals. This may include ‘Park and glide’ ferry services combining remote parking with ferry links to town centres and other attractions and ‘Criss-crossing’ services between piers on either bank.

## Public Transport

- 14.10 New/improved crossings with riverside stations and stops fully integrated into local transport networks that act as a regeneration catalyst for riverside neighbourhoods and employment areas. Making better use of existing links such as new bus lanes and access slips to the Queen Elizabeth Bridge/Dartford Tunnel. Encouraging all future road crossings to incorporate public transport modes.

## Walking and cycling

- 14.11 Strengthening walking and cycling connections to and along the riverbank with potential cross-river links utilising existing and proposed crossings. Join up the Thames Path from source to sea’ along the tidal Thames’ entire length.

## Road crossings

- 14.12 Potential new cross-river road tunnels and bridges serving the strategic and local road network such as new routes linking the A13 and A2. Reallocated road space on existing and proposed tunnels and bridges.

## Freight

- 14.13 Safeguarding the river as a freight network including riverside wharfage, ports and riverside railheads, a potential rail-freight river crossing and riverside logistics parks at London Gateway and the Port of Tilbury – all helping reduce lorry traffic.

## Heritage, leisure and tourism

- 14.14 Development and promotion of the river as a heritage, tourism and recreation spine connecting Tilbury and Coalhouse Forts, Gravesend, St Clements Church West Thurrock, Queen Elizabeth Bridge, Purfleet heritage and Military Centre, Marshes Nature Reserve and Thameside Nature Discovery Park, and England Coastal Path, Grays Beach Riverside Park, Tilbury Ocean Terminal.



# 15. WALKING AND CYCLING

“The vision for Thurrock is a place where walking and riding a bicycle is always safe and convenient for everyone and the top choice for recreation and everyday trips to shops, school, college or work.”

## Vision

- 15.1 The Vision for Thurrock is that walking and bicycle riding are always safe and convenient and the top choice for everyday trips to shops, school or college, work, exercise, and recreation.
- 15.2 We aim to reduce dependency on cars in favour of increased walking and cycling – known as ‘active travel’ - increasing the number of people who choose to walk or ride bicycles for most of their journey.
- 15.3 All new housing developments will have high-quality and attractive walking and cycling routes that new residents can use safely and confidently to travel to the nearest rail station or local shops.
- 15.4 Choosing active travel will help improve physical fitness and health. When more people walk or cycle and fewer journeys involve the car, community vibrancy, sociability, and cohesion are improved.

## Sharing and reallocating road space

- 15.5 Our Vision is for existing and new streets to be more friendly and safer for pedestrians and cyclists.
- 15.6 Existing streets can be retrofitted to be more friendly and safer for walkers and cyclists. New streets can be designed as ‘multi-modal’ roads and adopt the ‘healthy streets’ model.
- 15.7 For 20mph zones, cyclists can share the road space and easily integrate into the general traffic flow. For faster roads, there is an opportunity to reallocate road space to create wider pavements, regular crossings for pedestrians, and separate lanes for cyclists.

## New facilities

- 15.8 Our vision is for new walking and cycling connections and enhancement of existing routes - deliverable projects that will get more people walking and cycling safely and confidently. An array of facilities can serve walkers and cyclists on their journey:
  - Great wayfinding systems - digital, map-based and signage
  - Secure cycle parking, covered cycle storage, cycle hire and bike-share schemes, and electric bicycle and wheelchair charging points.
  - Places to rest along the way with shade/shelter, new street furniture such as benches, picnic areas, water fountains, etc.
  - Picnic areas for recreational walkers and cyclists.

## ‘Green Grid’

- 15.9 We will develop a network of walking and cycle paths into and across the grid of green spaces that weave through Thurrock - the ‘Green Grid’ and Thurrock’s ‘Green Lung.’
- 15.10 The success of the Green Grid relies upon good connections from where people live and work. We will develop new rights of way, bridleways, and non-motorised routes from existing and proposed communities into and along the Green Grid to open access to green space and promote children’s wellbeing and natural play opportunities.
- 15.11 Some existing urban areas turn their back and are poorly connected to adjacent green spaces. We will open gaps around the edges of urban areas to access green spaces and water courses.

## Fixing missing links in the network

- 15.17 Thurrock’s future walking and cycle networks rely on direct routes from where people live to where they need to go. Long diversions make the whole network poorer and deter active travel.
- 15.18 There are several ‘missing links’ or long diversions along the Thames riverside strip, the M25 and A13, and Holehaven Creek and main rail lines. There is no walking or cycling route across the Thames in Thurrock.
- 15.19 Our Vision is to break down the river, road and railway barriers and fix the ‘missing links’ with new/enhanced bridges and underpasses with improved bicycle provision on all new river transport and ferries.

## Accessibility, equity, and wellbeing

- 15.20 We want to widen access to biking and walking options, especially in disadvantaged areas that have been under served in the past, where good access to education, employment, healthcare, and open spaces are vital concerns. Measures to encourage walking and cycling will reach beyond physical changes to include public health measures and behavioural change initiatives.
- 15.21 Walking and cycling in all new developments will be designed for everyone, including those with disabilities. We will incorporate the needs of people with mobility impairments or disabilities when designing, and delivering pedestrian access routes in the built-up areas with positive measures for older people and people with physical and mental disabilities.



- 15.12 Protecting and enhancing the Green Grid is critical for the environmental regeneration of the Borough. Well-designed walking and cycling routes will open access without damaging the Green Belt or infilling critical green gaps between urban areas. New routes will preserve and enhance the natural landscape, habitats, and biodiversity.

## Blue Grid

- 15.13 The rivers, creeks, mudflats, streams, water meadows, lakes, ponds and old flooded pits form a network through and around Thurrock called the ‘Blue Grid’.
- 15.14 We will provide enhanced and new connections along the banks of rivers and streams, around lakes and ponds and across rivers, streams and creeks.
- 15.15 Like the Green Grid, well-designed walking and cycling routes can open up the Blue Grid without diminishing the Green Belt or infilling critical gaps between urban areas with routes designed to protect and enhance habitats and biodiversity, ensure water quality integrity, and preserve and enhance the natural landscape.

- 15.16 Examples include:

- Connecting up the England Coastal Path.
- Connecting up the Thames side path – north and south banks.
- New walking and cycle bridges across Holehaven Creek and the Mardyke.



# 16. BUS NETWORK

“Thurrock’s Vision is for high-quality, fast, reliable, accessible, comfortable, and affordable bus travel fully integrated with rail, bus rapid transit, riverbus and ferry services.”

## Vision

- 16.1 Thurrock’s Vision is for high-quality bus services that offer faster, more reliable, accessible, comfortable, and affordable travel integrated with rail, bus rapid transit, riverbus and ferry services
- 16.2 Most public transport journeys in Thurrock are by bus.<sup>5</sup> The future development of the rail and MRT networks and the promotion of cycling and walking will not change the importance of the bus network in keeping Thurrock moving - helping people to get to work, healthcare, the local shops, or the library
- 16.3 Planned growth will place significant capacity pressures on local bus services. Increasing bus patronage will create commercially viable services and routes with fewer supported services. Thurrock needs an enhanced bus network with increased bus priority along the key bus routes, new links, improved rail station interchanges and network capacity to serve growing places.

<sup>5</sup> For all journeys from Thurrock, data taken from the NTS shows 6.2% of journeys within Thurrock use a bus.



## A transformation in the overall quality of services and infrastructure

- 16.4 Buses are vital in supporting regeneration and social integration, especially in relatively isolated areas that cannot justify investment in more expensive public transport modes such as MRT and Rail. Significant investment and enhancements to bus services will make the bus more appealing to existing and future customers and a more attractive option than the car. The upgrades will include the following:
  - Improved bus frequencies and journey times, and reliability.
  - Improving and revising bus routes with Quality Bus corridors increasing bus priority in critical locations to avoid service interruptions due to traffic congestion at peak times.
  - Turn-up and go service levels on critical routes with journey times and reliability comparable to car journey times.
  - Good quality bus stations, bus stops and other facilities such as wayfinding, real-time information, raised kerbs at boarding points and better passenger waiting facilities.
  - Providing the greenest and cleanest zero-emission buses (hybrid, electric or hydrogen).
  - Simple fares, integrated ticketing with mobile and contactless payments.
  - Making the bus network more appealing and easier to understand through communication and branding.

## Interchange and integration

- 16.5 New ‘bus-hub’ interchanges will allow seamless transfer from one bus to another, encouraging multi-bus journeys across a single, integrated future bus network.
- 16.6 The investment will focus on interchanges that connect multiple public transport modes. Multi-modal interchanges will provide improved capacity and connections at crucial transport interchanges, such as rail and interurban bus rapid transit stations, riverbus and ferry piers and connect with walking and cycling routes.
- 16.7 For proposed ‘super stops’ and main multi-modal interchanges, interventions will include:
  - Street lighting, good surveillance, CCTV.
  - Shelters and quality seating.
  - Wayfinding systems and real-time passenger information.
  - Accessible interchanges with raised Krebs/level boarding at boarding, tactile paving, and handrails.
  - Cycle hire, cycle storage and lockers for those wishing to cycle to interchanges.
  - Safe and convenient walking and cycling routes from interchanges to the surrounding residential and employment areas.

## New routes and connections to match planned development and regeneration

- 16.8 New bus routes and services will connect existing communities, urban centres, and employment areas and support housing and job growth. Extending Thurrock’s bus network is far more affordable, practical, and flexible than building new roads and rail-based public transport networks. Bus routes are relatively easy to add and remove and more responsive to demand changes than other forms of public transport.
- 16.9 New, diverted, and extended bus services with higher frequencies and increased capacity will serve all new housing and employment opportunity areas and expanded urban centres.
- 16.10 Opportunities for new routes and connections:
  - Bus priority and access/slip lanes on existing and proposed Thames bridges and tunnels.
  - Connecting to proposed new railway stations.
  - Connecting to and through main urban centres - including Lakeside and local centres/parades.
  - Travelling to and through housing growth areas.
  - Travelling to and through employment and port areas, including the riverside strip.



Figure 20. Artist’s impression of the Lakeside Bus Interchange (Image Credit)



# 17. STREETS

“Making our streets easier to get around, healthier and pleasant to be in or near, reducing car use and ensuring more journeys in Thurrock are made by walking, cycling and public transport.”

## Keeping the population connected and the economy flowing

- 17.1 High-quality roads for people to travel for work and leisure and for businesses to move goods and materials are fundamental to Thurrock’s future success - keeping the population connected and the economy flowing.
- 17.2 Local road journeys by private cars and commercial vehicles will play an essential role in our future transport network.
- 17.3 The term ‘roads’ tends to emphasise the road surface from kerb to kerb and travel by private cars and commercial vehicles. We alternately refer to ‘streets’ to include all travel modes and the broader environment- streets at the heart of local communities, walking and cycling, and the qualities of the public realm.

## Transformation

- 17.4 We plan to transform the road network, the experience of driving in Thurrock and the environmental quality of the neighbourhoods through which roads pass.
- 17.5 This transformation will facilitate economic regeneration and growth, sustainably serve new development, and address the strategic imperative of climate change.

## Accessible and equitable

- 17.6 Our future streets will be equitable and inclusive, serving diverse users’ needs and functions with particular attention to people with physical and mental disabilities, older people, and children.
- 17.7 The aim is to design streets to be equitable and inclusive, serving the needs and functions of diverse users with particular attention to people with physical and mental disabilities, older people, and children. This is regardless of income, gender, culture, or language.

## New technologies

- 17.8 New streets will be adaptable to technological changes. This means new mobility - automated driving, connected transport systems and networks, electric vehicles, and shared-use infrastructure.

## Multi-modal roads

- 17.9 The concept of ‘Multi-Modal Roads’ will provide an overarching framework for all streets and roads in Thurrock.
- 17.10 For existing roads, this is about making our streets easier to get around - and healthier and pleasant to be in or near, whilst realising our aim to reduce car use and ensure more journeys in Thurrock are made by walking, cycling and public transport.
- 17.11 New roads will provide the capacity to enable new housing and business developments, encourage trade, and attract inward investment into Thurrock. They can embody multi-modal design principles from the outset.
- 17.12 The strategy for multi-modal roads will define road qualities for street types and become part of an efficient, well-managed and well-maintained network with low levels of disruption from new road building, maintenance, and repair.

## Sustainable, healthy, climate change-responsive streets

- 17.13 Thurrock’s vision is a sustainable road network resilient to climate change and flooding. Future extreme weather events will expose any vulnerabilities in Thurrock’s road network, testing its resilience.
- 17.14 The goal is also for sustainability, green infrastructure, and resilience – roads that connect green infrastructure and include sustainable drainage measures. Thurrock’s future multi-modal streets will be more resilient and climate responsive.

## Journey reliability, quality and safety

- 17.15 Thurrock suffers from journey reliability issues regularly created by strategic network problems, especially on the M25 and A13. The high freight volumes and lorry parking issues also result in sub-optimal street quality and safety issues in local streets. Focusing on journey reliability and safety will lead to fewer accidents, with the number of people killed or seriously injured approaching zero.

## Street types

- 17.16 Except for the Strategic Road Network, Thurrock’s streets function in two ways - as a means for moving people and goods and as places where the borough’s social, economic, and cultural life plays out.
- 17.17 Thurrock’s **small and large high streets** and parades have lots of people and goods moving on foot, by bike and in vehicles.
- 17.18 Thurrock’s network of **minor B roads** form a dense grid in defined urban areas with relatively few connections across the open countryside between settlement boundaries.
- 17.19 **Local distributor roads and residential streets** pass through neighbourhoods and need to be pleasant places to live, where it is easy to access local facilities on foot or by bicycle.
- 17.20 **Destination places** are where people come together. They have low levels of slow-moving traffic - or no vehicular traffic at all.

## Roads as better neighbours’- Healthy streets

- 17.21 **Healthy Streets’** - roads that are ‘better neighbours’ to the places they pass will be adopted as a guiding vision principle for Thurrock’s roads.
- 17.22 Thurrock’s streets will support healthy environments and better lifestyle choices. The street design will help active travel, integrate green infrastructure strategies, improve air and water quality, reduce stress levels, and improve mental health.



## Street Goals - Summary

**Multi-modal-** Multi-modal roads that provide for modal shift and meet the needs of all road users appropriate to the type of road.

**Connectivity-** Emphasis on modal connectivity and interchange. Provide access to railway stations, ports, and airports.

**Capacity-** Providing capacity to enable new housing and business developments, encouraging trade, and attracting inward investment into Thurrock.

**Journey reliability, quality and safety-** Tackling congestion and gridlock will lead to a better-quality street environment and help reduce the number of people killed or seriously injured.

**Respecting heritage and landscape** – Streets that respect their context and setting, especially when passing through local heritage assets or areas of landscape sensitivity.

**Road qualities for street type** – Making places people value and want to use. Streets and spaces that are safe, lively, and welcoming to walkers, cyclists, public transport users, and the disabled.

**Management** - An efficient, well-managed and well-maintained network with low levels of disruption from new road building, maintenance, and repair.

**Better neighbours - Healthy Streets** - roads that are ‘better neighbours’ to the places they pass: For example, by creating more space for people, healthy streets, landscape enhancements, net gains in biodiversity, responsive locally sensitive areas such as conservation areas, listed buildings, river margins, marshes and nature areas.

**Sustainability, green infrastructure, resilience** – Roads that respond to their environment, connect green infrastructure, and include sustainable drainage measures. Resilience is about climate-responsive infrastructure and how the Thurrock transport network responds to incidents on the strategic or local road network.



# 18. STRATEGIC ROADS



“Our Vision is for an upgraded and extended Strategic Road Network offering increased reliability for local journeys, reduced journey times, and improved local connectivity.”

## The Strategic Road Network and Connector Roads

- 18.1 The Strategic Road Network (or SRN) comprises motorways and trunk roads administered by National Highways, a government-owned agency. Thurrock's SRN includes the M25 Motorway, the Dartford Crossings, A13 and A1089. The SRN enables people and goods to move quickly over long distances whilst minimising the impact of motorised traffic on local streets.
- 18.2 The non-primary A Roads and B Roads in Thurrock are called Connector Roads, allowing people and goods to move between key centres and access the Strategic Road Network. They comprise the A126, A1013, A1012, A1090 Purfleet by-pass, A1306 and B149.
- 18.3 Our Vision is for an upgraded and extended Strategic Road Network fit for the 21st century offering increased reliability for local journeys, reduced journey times, and improved local connectivity to drive economic growth and provide opportunities for people and businesses across Thurrock.

Figure 21. Artist's impression of the proposed Lower Thames Crossing (National Highways)

## Council's position on LTC

- 18.4 The Council has produced the report 'LTC – Mitigating the negative impacts and maximising the benefits to create a positive legacy for Thurrock report in February 2021', summarising the findings of the Lower Thames Crossing mitigation benefits study (November 2020). The Council report identifies 57 individual schemes and interventions that could help reduce the negative impacts of the LTC construction, enhance the scheme's operation, support residents and businesses through the transition, and provide a series of lasting legacy provisions across Thurrock.
- 18.5 The Council is committed to working with National Highways to ensure a complete mitigation package comes forward in parallel with the LTC scheme designed to limit harm to the Borough's interests.

## New Strategic Roads

- 18.6 Thurrock's vision is for an enhanced and extended strategic network with construction and longer-term impacts reduced and fully mitigated and substantial local benefits (when compared to the current LTC proposals).

**Growth** - New and improved roads will facilitate and not constrain Thurrock's economic growth and development ambitions - avoiding development land sterilisation.

**Local access** - Local access to the to the SRN will be secured with safeguarding for future junctions and new Connector Roads.

**Public Transport**- New or enhanced Thames crossings will include dedicated public transport lanes or tracks, with priority at junctions and dedicated slip roads.

**Cycling** - Improve existing cycleways and bridge crossings over the Thames to support active travel and enable growth. An extension to the National Cycle Network Route 13 to connect to the Tilbury and Dartford Crossings.

**Walking** -Public Rights of Way (PRoW) will be maintained and enhanced with minimal diversions to form a comprehensive and high-quality PRoW network providing a new, complete network of active travel routes for walking/cycling/horse riding.

**Green space** - We will prioritise the improvement of low-quality green space close to the proposed new strategic roads, which require investment. Examples include Koala Park and King George's Playing Field in Tilbury, Blackshots Nature Area and green spaces included in the masterplan for the Two Forts Way Projects.

**Environment** -Health and environmental impacts like air and noise pollution will be minimised and mitigated.

**Land and marine restoration** - Enabling the restoration of the historic landfill sites and cleaning the marine habitat such as Goshams Farm.

**Greenhouse gas and carbon emissions** - Ensure that electric and/or low-emission vehicles are incentivised to use new SRN links with discounted or free use of the new crossing.

## Enhancing the existing Strategic Road Network in Thurrock

**A13 Vision** - Junction and capacity improvements new slips.

**Dartford Crossing**- Dedicated public transport lanes with priority at junctions and dedicated slip roads. Incentivising electric and/or low-emission vehicles.



## Strategic Road Connectors

- 18.7 Local access to the SRN will be secured with safeguarding for future junctions and new Connector Roads, increasing local access and significantly reducing disruption to business and community connectivity.

**Orsett Cock roundabout mitigation**- Additional mitigation to negate the negative impact of the LTC scheme upon the A128 approach to the junction.

**Tilbury Link Road** - Enabling works and safeguarding the future provision of junctions onto the LTC and Asda Roundabout enhancements.

**East Tilbury Link** - Safeguarding for the future provision of junctions onto the LTC

**Universal Road, South Ockendon** - Safeguarding for the future provision of junctions onto the LTC

**Daneholes Roundabout** -A1013/ B149 Daneholes Roundabout enhancements.

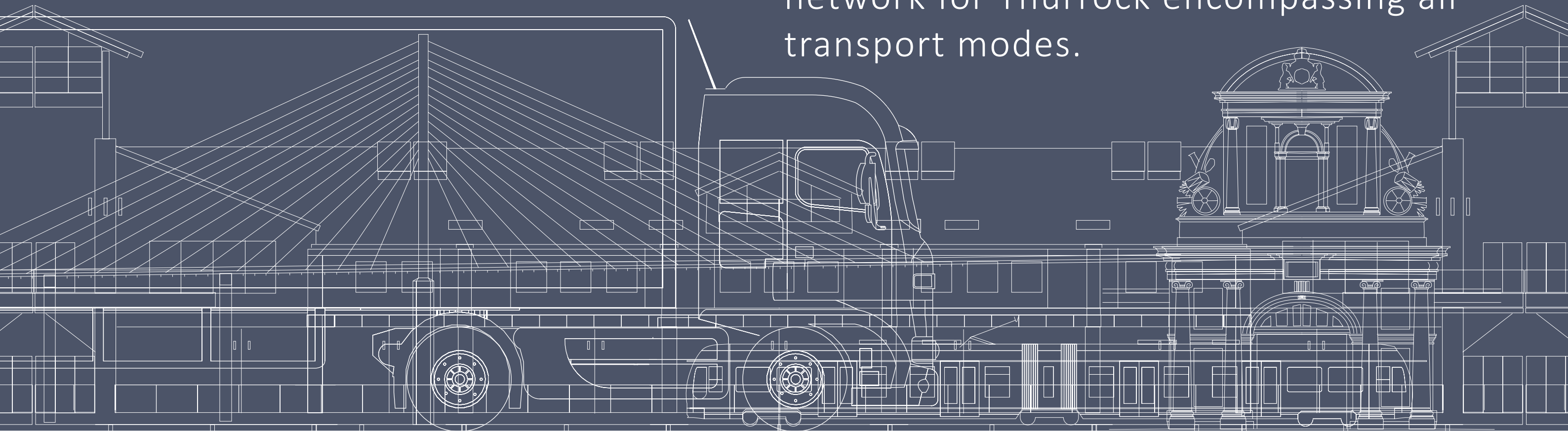
**Manorway roundabout** - Additional Lane capacity on the A1014 and A1013 approaches to ensure port and local traffic movements are not impaired by the LTC.

**A1012 Junction and Medebridge Road Improvement**- Construction haul road along the current Medebridge Road alignment from the A13 to Grangewater to a sufficient width and standard to be adopted by the Council.

Figure 22. Dartford Crossing

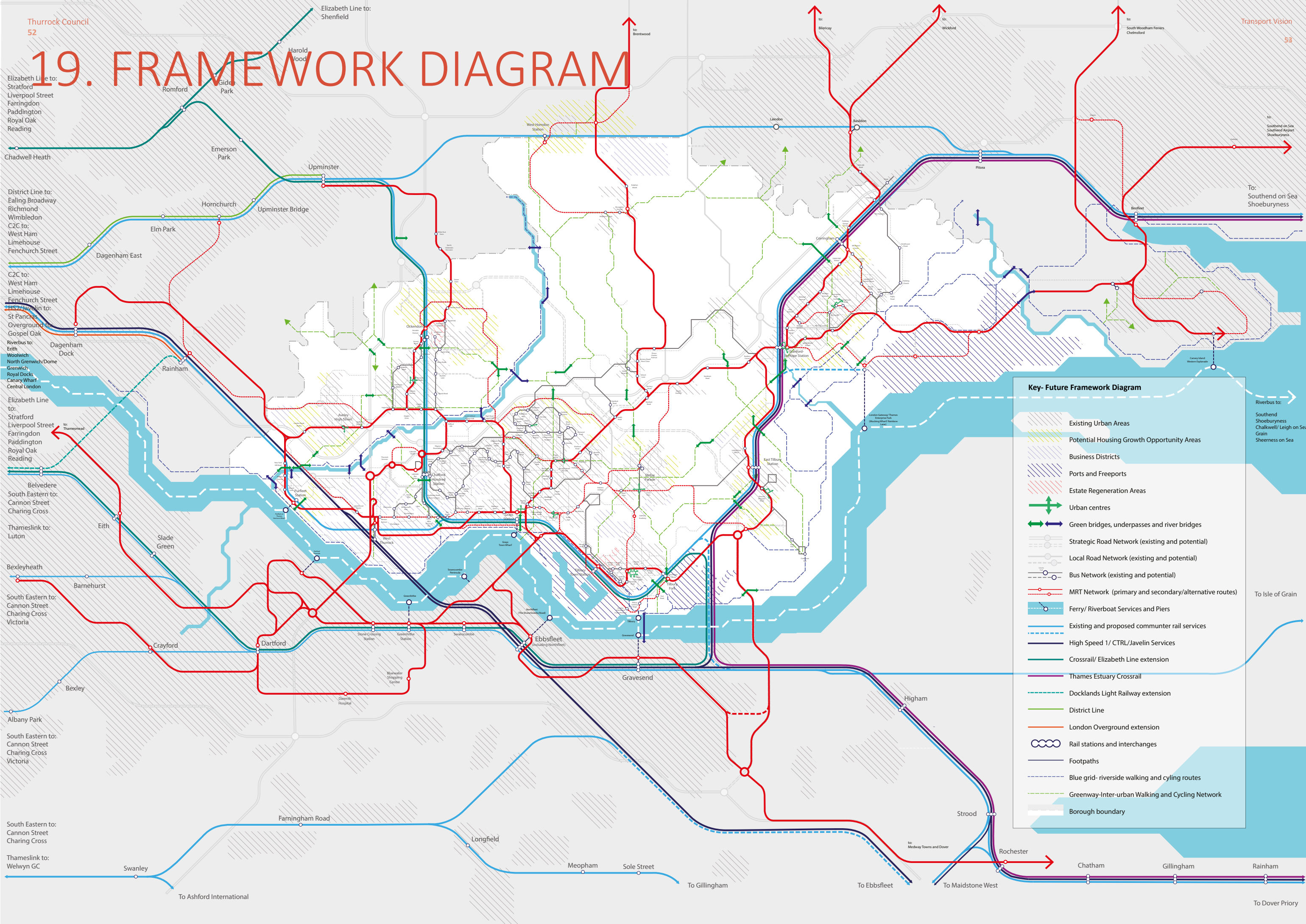
# FRAMEWORK DIAGRAMS

The following Transport Framework Diagrams describe a future vision for an extended and inter-connected transport network for Thurrock encompassing all transport modes.





# 19. FRAMEWORK DIAGRAM



**Key- Future Framework Diagram**

- Existing Urban Areas
- Potential Housing Growth Opportunity Areas
- Business Districts
- Ports and Freeports
- Estate Regeneration Areas
- Urban centres
- Green bridges, underpasses and river bridges
- Strategic Road Network (existing and potential)
- Local Road Network (existing and potential)
- Bus Network (existing and potential)
- MRT Network (primary and secondary/alternative routes)
- Ferry/ Riverboat Services and Piers
- Existing and proposed commuter rail services
- High Speed 1/ CTRL/Javelin Services
- Crossrail/ Elizabeth Line extension
- Thames Estuary Crossrail
- Docklands Light Railway extension
- District Line
- London Overground extension
- Rail stations and interchanges
- Footpaths
- Blue grid- riverside walking and cycling routes
- Greenway-Inter-urban Walking and Cycling Network
- Borough boundary

Elizabeth Line to:  
Stratford  
Liverpool Street  
Farringdon  
Paddington  
Royal Oak  
Reading

District Line to:  
Ealing Broadway  
Richmond  
Wimbledon  
C2C to:  
West Ham  
Limehouse  
Fenchurch Street

C2C to:  
West Ham  
Limehouse  
Fenchurch Street

HS2/Thameslink to:  
St Pancras  
Overground to  
Gospel Oak

Riverbus to:  
Erith  
Woolwich  
North Greenwich/Dome  
Greenwich  
Royal Docks  
Canary Wharf  
Central London

Elizabeth Line to:  
Stratford  
Liverpool Street  
Farringdon  
Paddington  
Royal Oak  
Reading

Belvedere  
South Eastern to:  
Cannon Street  
Charing Cross

Thameslink to:  
Luton

Bexleyheath

South Eastern to:  
Cannon Street  
Charing Cross  
Victoria

Albany Park

South Eastern to:  
Cannon Street  
Charing Cross  
Victoria

Thameslink to:  
Welwyn GC

South Eastern to:  
Cannon Street  
Charing Cross

to:  
Brentwood

to:  
Bletchley

to:  
Wickford

to:  
South Woodham Ferris  
Chesham

to:  
Southend on Sea  
Southend Airport  
Shoeburyness

To:  
Southend on Sea  
Shoeburyness

Riverbus to:  
Southend  
Shoeburyness  
Chalkwell/ Leigh on Sea  
Grain  
Sheerness on Sea

To Isle of Grain

To Ashford International

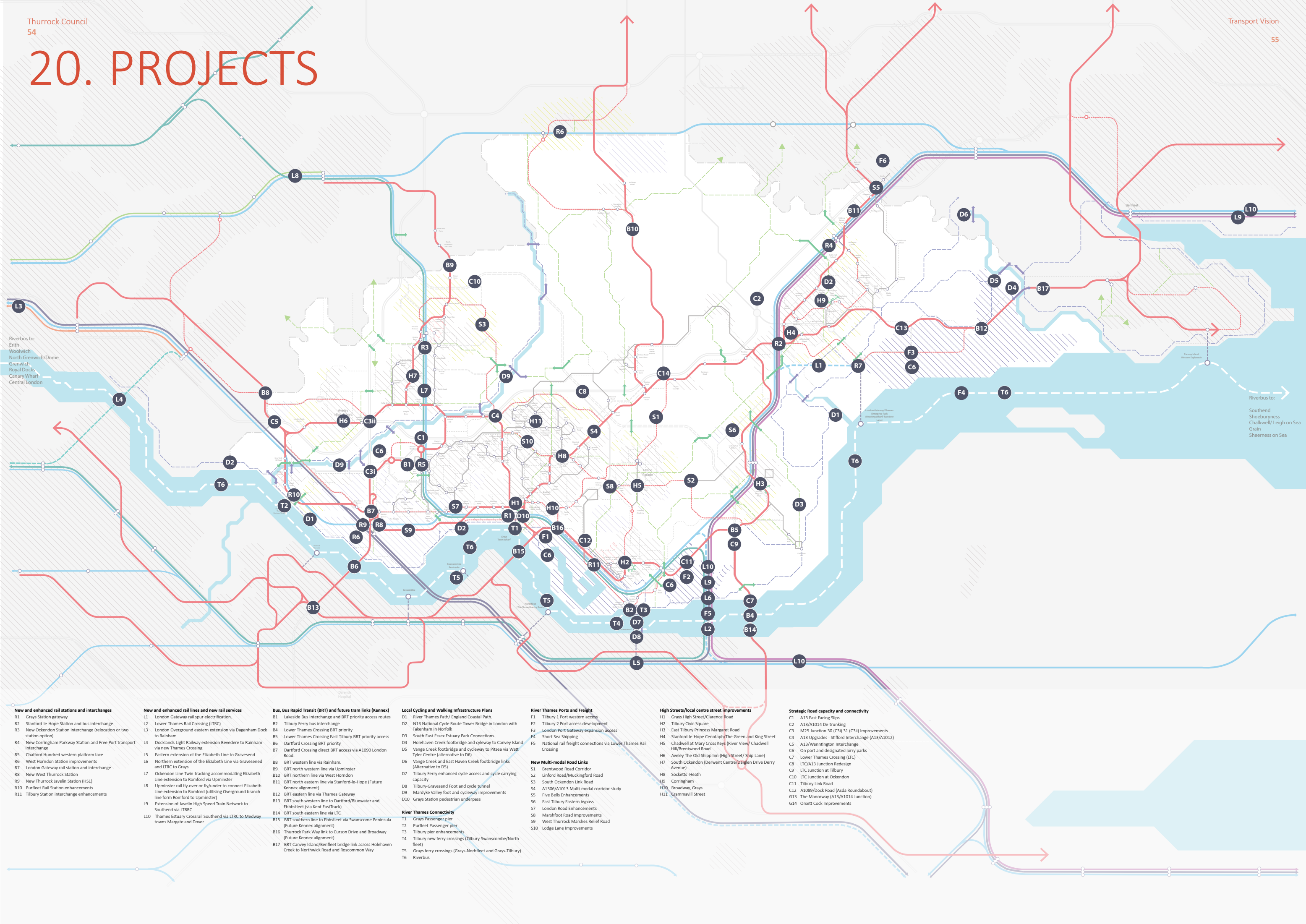
To Gillingham

To Ebbsfleet

To Maidstone West

To Dover Priory

# 20. PROJECTS



- New and enhanced rail stations and interchanges**
- R1 Grays Station gateway
  - R2 Stanford-le-Hope Station and bus interchange
  - R3 New Ockendon station interchange (relocation or two station option)
  - R4 New Corringham Parkway Station and Free Port transport interchange
  - R5 Chafford Hundred western platform face
  - R6 West Horndon Station improvements
  - R7 London Gateway rail station and interchange
  - R8 New West Thurrock Station
  - R9 New Thurrock Javelin Station (HS1)
  - R10 Purfleet Rail Station enhancements
  - R11 Tilbury Station interchange enhancements

- New and enhanced rail lines and new rail services**
- L1 London Gateway rail spur electrification
  - L2 Lower Thames Rail Crossing (LTRC)
  - L3 London Overground eastern extension via Dagenham Dock to Rainham
  - L4 Docklands Light Railway extension Bevedere to Rainham via new Thames Crossing
  - L5 Eastern extension of the Elizabeth Line to Gravesend
  - L6 Northern extension of the Elizabeth Line via Gravesend and LTRC to Grays
  - L7 Ockendon Line Twin-tracking accommodating Elizabeth Line extension to Romford via Upminster
  - L8 Upminster rail fly-over or fly/under to connect Elizabeth Line extension to Romford (utilising Overground branch line form Romford to Upminster)
  - L9 Extension of Javelin High Speed Train Network to Southend via LTRC
  - L10 Thames Estuary Crossrail Southend via LTRC to Medway towns Margate and Dover

- Bus, Bus Rapid Transit (BRT) and future tram links (Kennis)**
- B1 Lakeside Bus Interchange and BRT priority access routes
  - B2 Tilbury Ferry bus interchange
  - B4 Lower Thames Crossing BRT priority
  - B5 Lower Thames Crossing East Tilbury BRT priority access
  - B6 Dartford Crossing direct BRT access via A1090 London Road
  - B7 Dartford Crossing BRT priority
  - B8 BRT western line via Rainham
  - B9 BRT north western line via Upminster
  - B10 BRT northern line via West Horndon
  - B11 BRT north eastern line via Stanford-le-Hope (Future Kennis alignment)
  - B12 BRT eastern line via Thames Gateway
  - B13 BRT south western line to Dartford/Bluewater and Ebbsfleet (via Kent FastTrack)
  - B14 BRT south eastern line via LTC
  - B15 BRT southern line to Ebbsfleet via Swanscombe Peninsula (Future Kennis alignment)
  - B16 Thurrock Park Way link to Curzon Drive and Broadway (Future Kennis alignment)
  - B17 BRT Canvey Island/Benfleet bridge link across Holehaven Creek to Northwick Road and Roscommon Way

- Local Cycling and Walking Infrastructure Plans**
- D1 River Thames Path/ England Coastal Path
  - D2 N13 National Cycle Route Tower Bridge in London with Fakenham in Norfolk
  - D3 South East Essex Estuary Park Connections
  - D4 Holehaven Creek footbridge and cycleway to Canvey Island
  - D5 Vange Creek footbridge and cycleway to Pitsea via Watt Tyler Centre (alternative to D6)
  - D6 Vange Creek and East Haven Creek footbridge links (Alternative to D5)
  - D7 Tilbury Ferry enhanced cycle access and cycle carrying capacity
  - D8 Tilbury-Gravesend Foot and cycle tunnel
  - D9 Mardyke Valley foot and cycleway improvements
  - D10 National rail freight connections via Lower Thames Rail Crossing
- River Thames Connectivity**
- T1 Grays Passenger pier
  - T2 Purfleet Passenger pier
  - T3 Tilbury pier enhancements
  - T4 Tilbury new ferry crossings (Tilbury-Swanscombe/Northfleet)
  - T5 Grays ferry crossings (Grays-Northfleet and Grays-Tilbury)
  - T6 Riverbus

- River Thames Ports and Freight**
- F1 Tilbury 1 Port western access
  - F2 Tilbury 2 Port access development
  - F3 London Port Gateway expansion access
  - F4 Short Sea Shipping
  - F5 National rail freight connections via Lower Thames Rail Crossing
- New Multi-modal Road Links**
- S1 Brentwood Road Corridor
  - S2 Linford Road/Muckingford Road
  - S3 South Ockendon Link Road
  - S4 A1306/A1013 Multi-modal corridor study
  - S5 Five Bells Enhancements
  - S6 East Tilbury Eastern bypass
  - S7 London Road Enhancements
  - S8 Marshfoot Road Improvements
  - S9 West Thurrock Marshes Relief Road
  - S10 Lodge Lane Improvements

- High Streets/local centre street improvements**
- H1 Grays High Street/Clarence Road
  - H2 Tilbury Civic Square
  - H3 East Tilbury Princess Margaret Road
  - H4 Stanford-le-Hope Cenotaph/The Green and King Street
  - H5 Chadwell St Mary Cross Keys (River View/ Chadwell Hill/Brentwood Road)
  - H6 Aveley The Old Shipp Inn (High Street/ Ship Lane)
  - H7 South Ockendon (Derwent Centre/Dagen Drive Derry Avenue)
  - H8 Sockets Heath
  - H9 Corringham
  - H10 Broadway, Grays
  - H11 Crammavill Street

- Strategic Road capacity and connectivity**
- C1 A13 East Facing Slips
  - C2 A13/A1014 De-trunking
  - C3 M25 Junction 30 (C31) 31 (C31) Improvements
  - C4 A13 Upgrades - Stifford Interchange (A13/A1012)
  - C5 A13/Wentington Interchange
  - C6 On port and designated lorry parks
  - C7 Lower Thames Crossing (LTC)
  - C8 LTC/A13 Junction Redesign
  - C9 LTC Junction at Tilbury
  - C10 LTC Junction at Ockendon
  - C11 Tilbury Link Road
  - C12 A1089/Block Road (Asda Roundabout)
  - C13 The Manorway (A13/A1014 Junction)
  - C14 Orsett Cock Improvements



# 21. RAIL

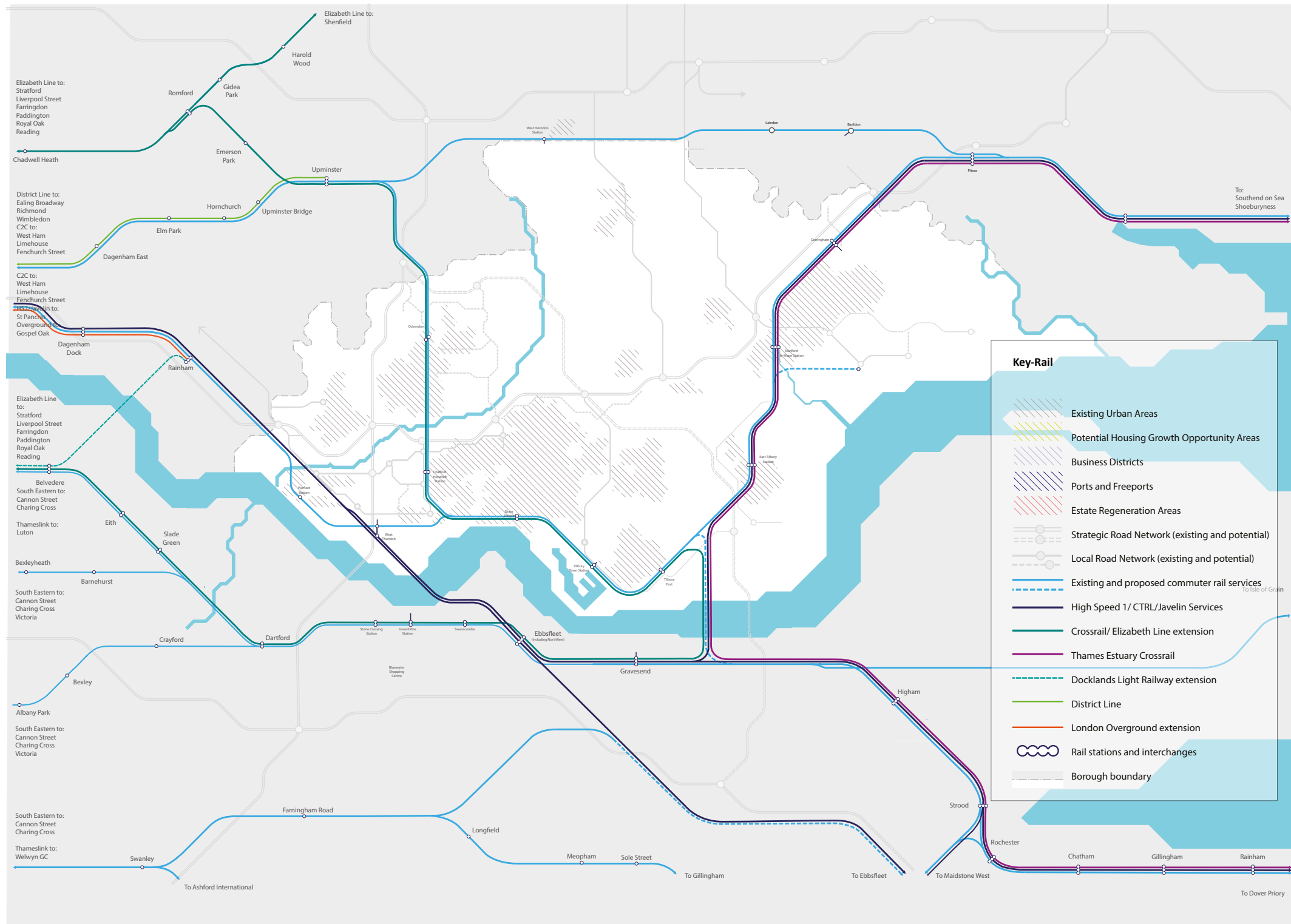


Figure 23. Future rail network diagram

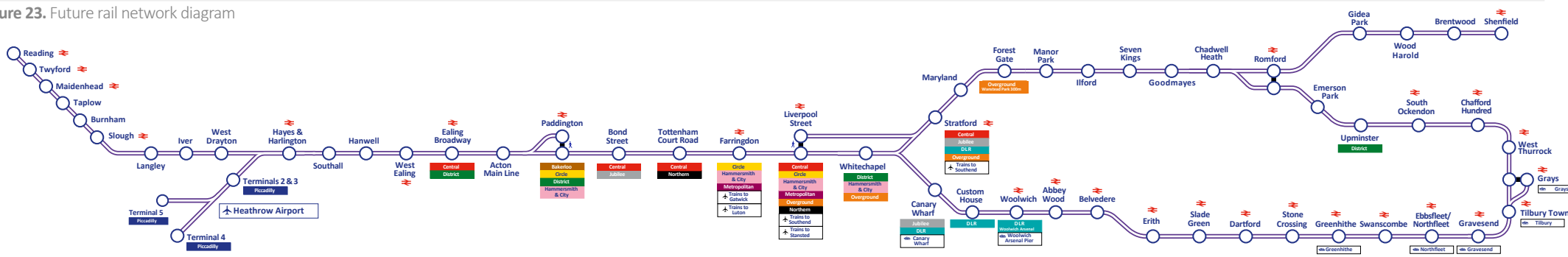


Figure 26. (left) Future Elizabeth Line Network map

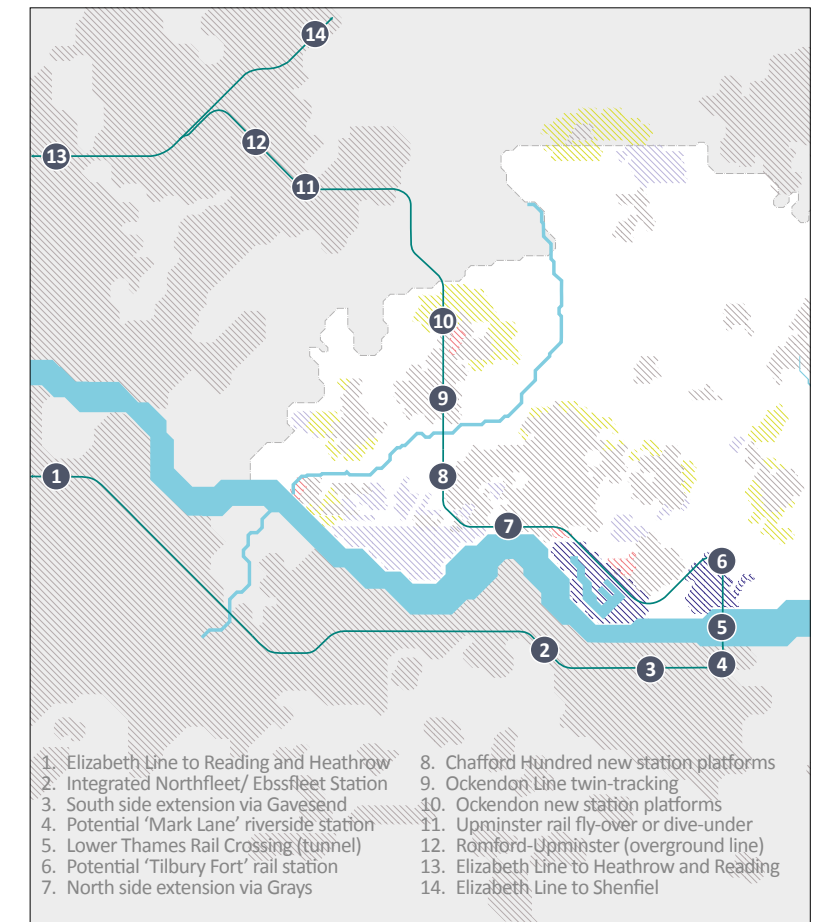


Figure 24. Elizabeth Line extension

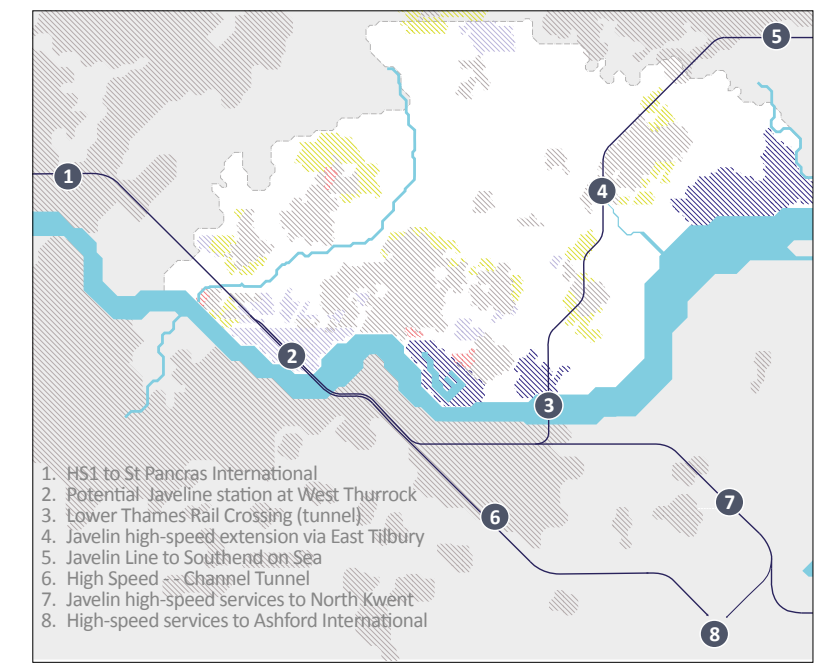


Figure 25. Javelin High Speed Line extension

# 22. BRT AND BUS

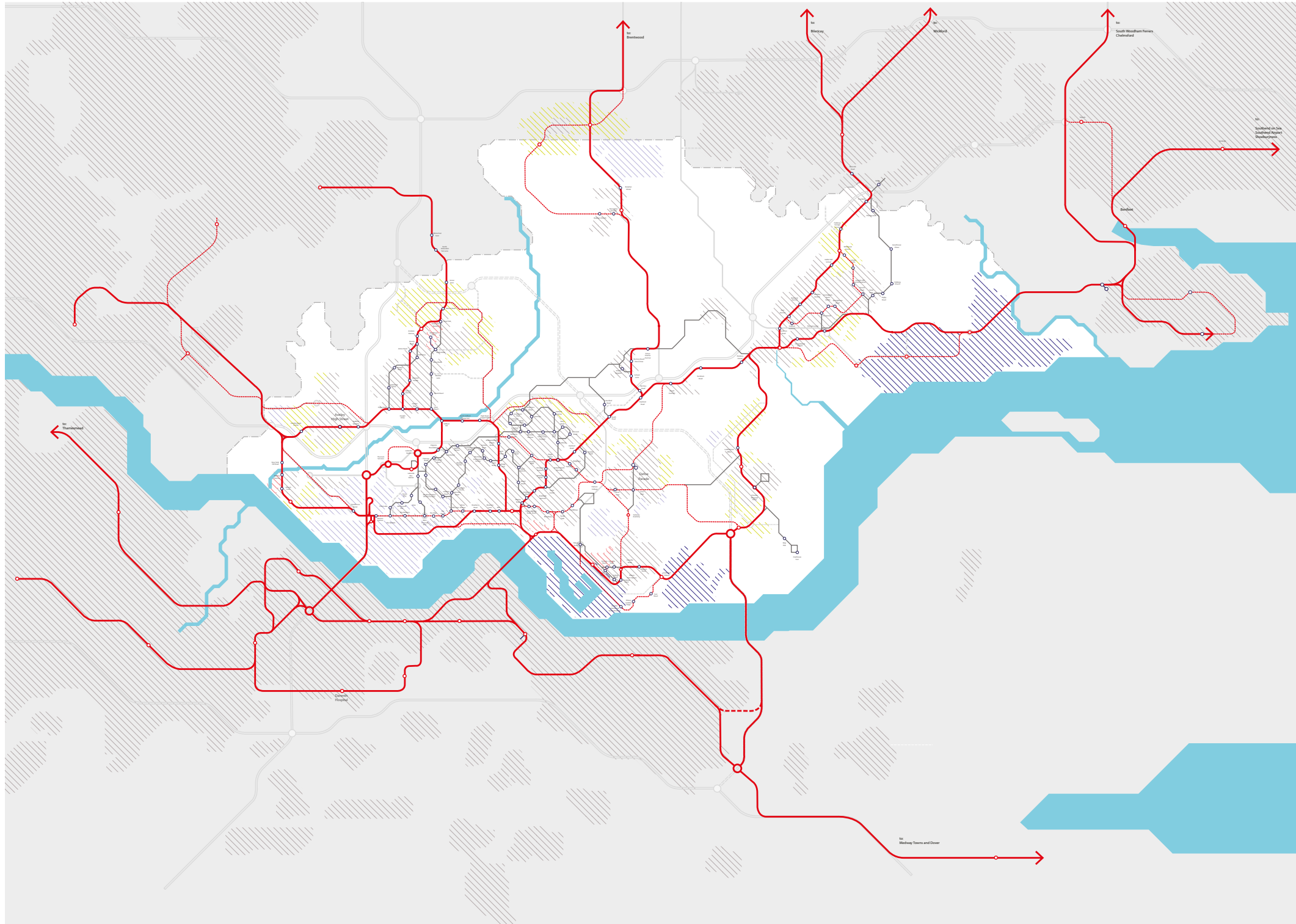


Figure 27. Future Bus Rapid Transit Network

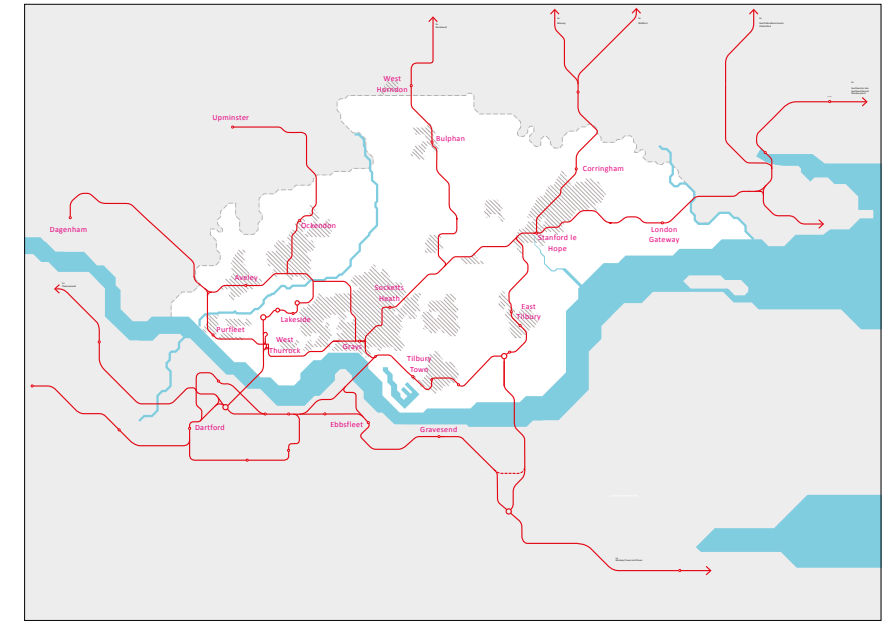
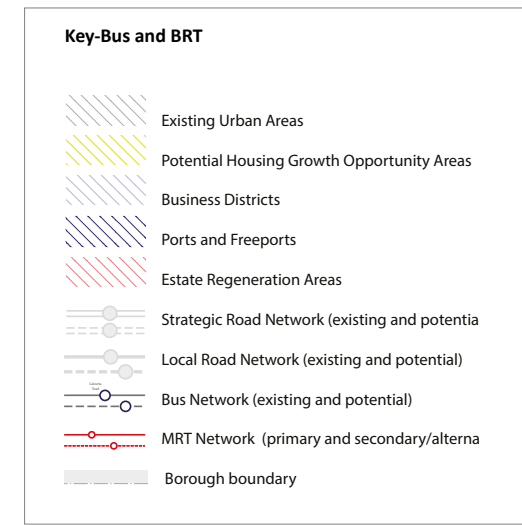


Figure 28. Bus Rapid Transit primary network





# 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 currently under construction with proposed further extensions to the 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://kenextransit.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>)

**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

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

**NTS** OFFICE FOR NATIONAL STATISTICS

**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.

