



# THAMES STRATEGY EAST





Image: Thames Estuary Partnership

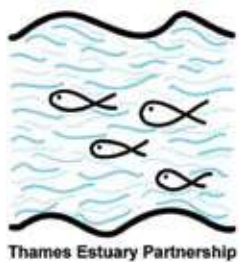


# THAMES STRATEGY EAST



# THAMES ESTUARY PARTNERSHIP

The Thames Estuary Partnership was formed in response to the challenges facing the river Thames in particular. It brings together all the major stakeholders with an interest in the river. The Partnership recognises the importance of the river and its hinterland as a growth area of international, national, regional, metropolitan and local significance. The Partnership was responsible for initiating, managing and co-ordinating the preparation of the Strategy. The project partners are the eleven local authorities on both sides of the Thames from Tower Bridge to Tilbury, the Greater London Authority, the Communities and Local Government, the London Development Agency, the Environment Agency, the Thames Gateway London Partnership, the Thames Estuary Partnership, the Port of London Authority, English Heritage, Natural England, RSPB and Groundwork UK.



# FOREWORD

The River Thames is world renowned and characterises London and the Thames Gateway – a world-class city-region and financial centre. To ensure that it remains so, the government have designated the Thames Gateway as the most ambitious urban regeneration and development programme anywhere in the world. The River and the estuary are of international significance for wildlife - home to 170,000 birds and 121 species of fish - it is one of the cleanest metropolitan rivers in the world. It is home to world-class archaeological, built and cultural heritage including the World Heritage Site at Greenwich. It is also home to one of the UK's largest ports.

The Thames Gateway also, however, has areas and developments of poor visual, ecological, archaeological, built and cultural quality; in addition to areas of social and economic deprivation. Consequently, this river-focused Thames Strategy East will provide the much needed background data, analysis, policies, guidelines and spatial frameworks that will promote the transformation that the government is committed to.

Greening the Gateway promotes the central role of accessible green space in securing sustainable economic and social regeneration and the government's desire to see the Thames Gateway 'become a world class model of sustainable development, with the living landscape at its heart'. It states the government's expectation of 'extremely high standards' in the design and implementation of new developments; looks forward to the 'emergence of a continuous linked network of varied landscapes, both within and between built-up areas'; promotes the central role of accessible green space in securing sustainable economic and social regeneration and the government's desire to see the Thames Gateway 'become a world class model of sustainable development, with the living landscape at its heart'.

This Strategy takes the key messages of the Sustainable Communities Plan and Greening the Gateway forward with particular reference to the River Thames and promotes an holistic approach to the delivery of the necessary transport, utilities and environmental infrastructure in relation to the river and its hinterland. This would be a multi-functional infrastructure to be planned, designed, implemented, managed and maintained in conjunction with transport, utilities and flood-risk management infrastructure integrating the needs of people and wildlife.

Translating policy, planning and design into implementation, management and maintenance in compliance with this Strategy, will ensure the highest quality of outcomes for future generations. It promotes the highest quality of development possible, so that the Thames Strategy East area within the Thames Gateway becomes an exemplar world-wide for sustainable, high quality, liveable, communities.

This report has been produced by a partnership led by the Thames Estuary Partnership and involving over twenty other organisations. The background research has been carried out by LDA Design and graphic design by Draught Associates. I would like to thank everyone who has contributed to this valuable piece of work.

Signed:



Chris Baines  
President  
Thames Estuary Partnership

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# PART 1

## INTRODUCTION

THE STRATEGY IS IN THREE PARTS:

### PART ONE:

Introduction - describes the background, extent and scope of the Strategy. It also sets out a Vision for the River.

### PART TWO:

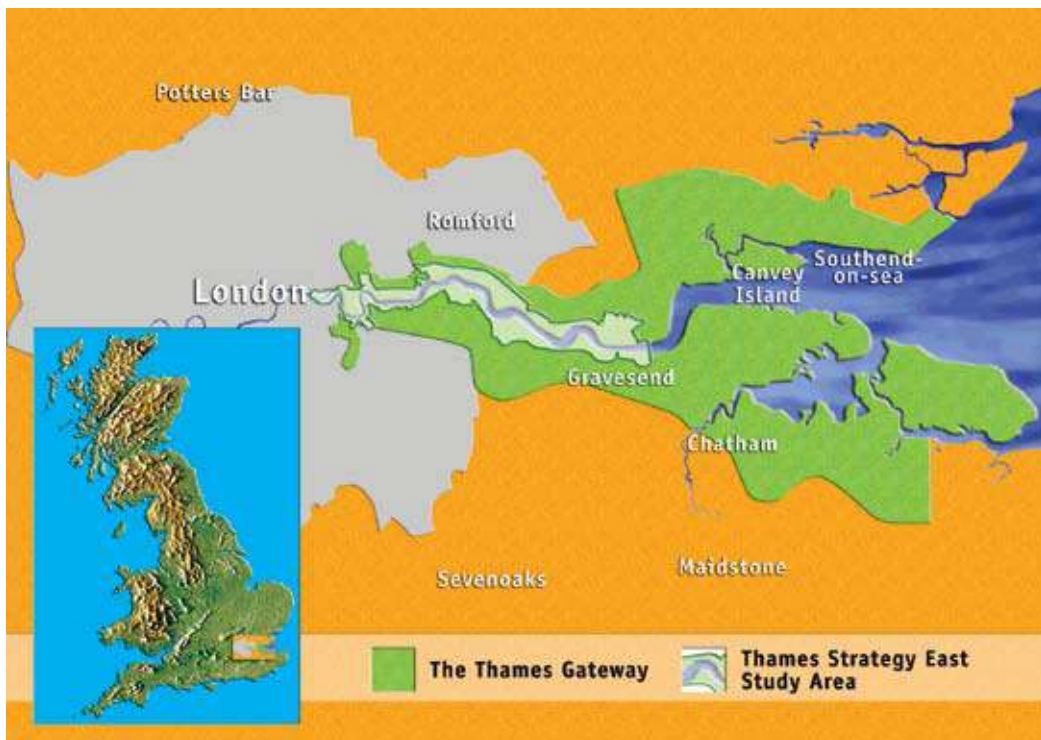
Strategic Guidance - provides a broad understanding of the river as a landscape, townscape and riverscape resource and promotes an overall guidance to achieve the Vision. It also describes an underlying framework supported by Strategic Guidance statements based on the themes of:

- planning and design
- biodiversity
- archaeology, historic and cultural resources
- flood risk and climate change
- river economy
- related design guidance.

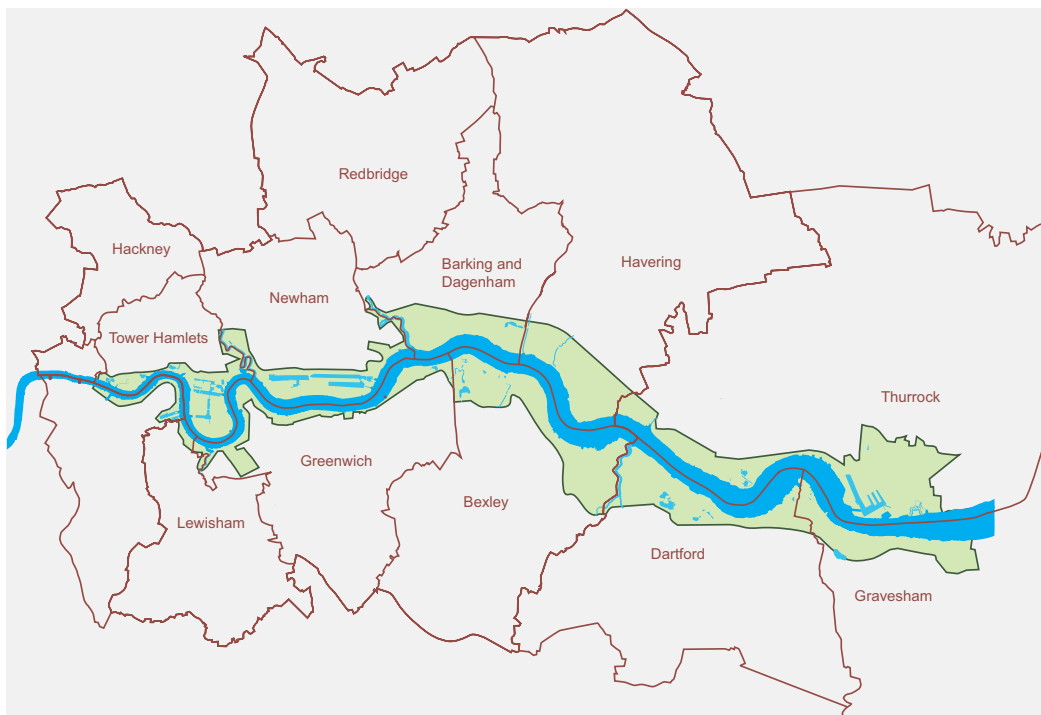
### PART THREE:

Reach Guidance - this is the main body of the Strategy and provides more detailed guidance for each of the 9 river reaches based on the assessment of the reaches' character in order to deliver the overall Vision.

**FIG 1.1  
THAMES  
STRATEGY EAST  
WITHIN THAMES  
GATEWAY**



**FIG 1.2  
THAMES  
STRATEGY EAST  
ADMINISTRATIVE  
BOUNDARIES**





## 1.1 BACKGROUND

The River Thames is one of the world's great rivers, the UK's busiest and most commercially significant tideway and an important artery for London and the communities of Thurrock, Dartford and Gravesham. The River Thames sits at the heart of the Thames Gateway, which the government has designated as a national and regional growth area. With the projected growth in population and jobs and the consequent need for housing and infrastructure, there is a unique opportunity to transform the Thames Gateway into a model of sustainable development for the 21st century.

The Thames is a tidal 'working' river and supports important commercial activity focussed at the Port of London and Safeguarded Wharves. This commerce exists alongside recreational, leisure and tourism river uses.

The character of the river changes along its length and with the twice daily changing tides. It becomes gradually wider and waterfront development less continuous towards the east. Extensive inter-tidal mudflats and fresh-water marshes are important features of the River Thames and are of international importance for wildlife, supporting rich bird and fish populations.

The area covered by the Strategy has a deep and varied archaeological, cultural, industrial, built and environmental heritage, much of which derives directly from its association with the Thames. There is a quality and robustness in the juxtaposition of the very diverse landscapes, riverscapes, townscapes and cultural heritage. It is a rich legacy that traces social, economic and environmental human endeavour in relation to the river. The converse side of this rich legacy, however, is generally poor social, economic conditions and environmental quality unfit for contemporary, sustainable community life in the 21st century.

This Strategy therefore, promotes an holistic approach to the delivery of the necessary transport, utilities and environmental infrastructure in relation

to the river and its hinterland. If the Thames Gateway is to be successful and sustainable, there needs to be a step change in the real and perceived overall environmental quality and the River Thames should be central to achieving this.

The Thames Gateway faces serious challenges due to the combined effects of climate change, historic contamination and the poor image of parts of the area. The Strategy provides the context for and promotes the development of sustainable river-related communities fit for a world-class city and region over the next 100 years.

The Thames Gateway Delivery Plan (November 2007) sets out a framework for delivery of sustainable communities and is accompanied by a three year spending plan (2008-2011). This strategy will help to deliver the aims for the Thames Gateway.

This is the third in a series of strategies relating to the River Thames, the first from Hampton to Kew and the second from Kew to Chelsea.

## 1.2 THE VISION

The Vision for Thames Strategy East is to achieve:

*A world class river where the diverse social, economic, cultural and environmental legacy is recognised through:*

- conserving and enhancing the natural assets of the area and making a positive contribution to its character
- balancing the competing demands placed on the river - the region's greatest physical asset
- creating vibrant, sustainable communities alongside the Thames that include and benefit new and existing residents
- creating a high quality, multi-functional, well-connected network of river-related spaces and places that are accessible to all, and are managed and maintained to the highest standards for people and wildlife
- promoting the use of the river as an artery for public, commercial, industrial, leisure and recreational transport and use.

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**MARITIME  
GREENWICH  
IN 1860**



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**DOWNSTREAM  
VIEW FROM  
TOWER BRIDGE**



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**BATTERY PARK,  
NEW YORK**

The Esplanade which extends along the entire river edge of the Battery City Park, New York is an excellent example of a high quality, multi-use, urban riverside walkway



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**LONDON AND  
THAMES  
ESTUARY  
PHOTOMONTAGE**

London and the Thames Estuary will be at greater risk from flooding in future years. This photomontage illustrates a scenario for London if proper action isn't taken now (Thames Estuary Partnership)



### **1.3 THE PURPOSE OF THE STRATEGY**

The purpose of the Strategy is to provide:

- An holistic and long-term vision and framework for the sustainable future development and management of the Strategy Area that provides the context for development over the next 100 years.
- A cross-borough, cross-river perspective to inform the preparation of Regional Spatial Strategies, Local Development Frameworks, masterplans, design guidance and investment programmes and priorities.

It does this through a series of Strategic Guidance statements in Chapter 2 and more specific Reach Guidance statements for each of the nine Reaches in Chapter 3. These statements are designed to either influence planning policies and development control decisions or provide an agenda for projects to be implemented.

### **1.4 WHO IS THE STRATEGY FOR?**

The target audience for the Strategy is Officers and Members of Local Authorities, Government, Government Offices, Regional Government and Development Agencies, Thurrock Thames Gateway and London Thames Gateway Urban Development Corporations (UDC's), sub-regional and trans-regional partnerships, private sector developers, riparian land owners and managers and community interest groups. It is also expected that the Strategy will be of interest to other stakeholders and those interested in the long-term management and use of the Strategy area.

### **1.5 THE NEED FOR THE STRATEGY**

The need for the Strategy was originally identified in RPG3B/9B Strategic Guidance for the River Thames RPG9A and Thames Gateway Planning Framework for the South East. Since then the London Plan has continued the requirement for an appraisal of the Thames Policy Area within London. By providing both policy and project guidance, the Strategy provides an essential bridge between statutory requirements and existing and future regeneration strategies for delivering the Thames Gateway.

### **1.6 THE SCOPE OF THE STRATEGY**

The Strategy is based on the detailed character assessments that were carried out and which provide the baseline for the Strategic and Reach Guidance statements. The Strategy promotes the protection and enhancement of the river's assets, the mitigation of any unavoidable negative impacts of development and the creation of new infrastructure to reinforce the central dominant role of the river. It is an underlying assumption of the Strategy that development within the Gateway can be fundamentally positive, but that an integrated, holistic and creative approach to planning, design quality, management and maintenance of the river and riverside environment is essential.

The Strategy expands the Vision for the area based on the following themes:

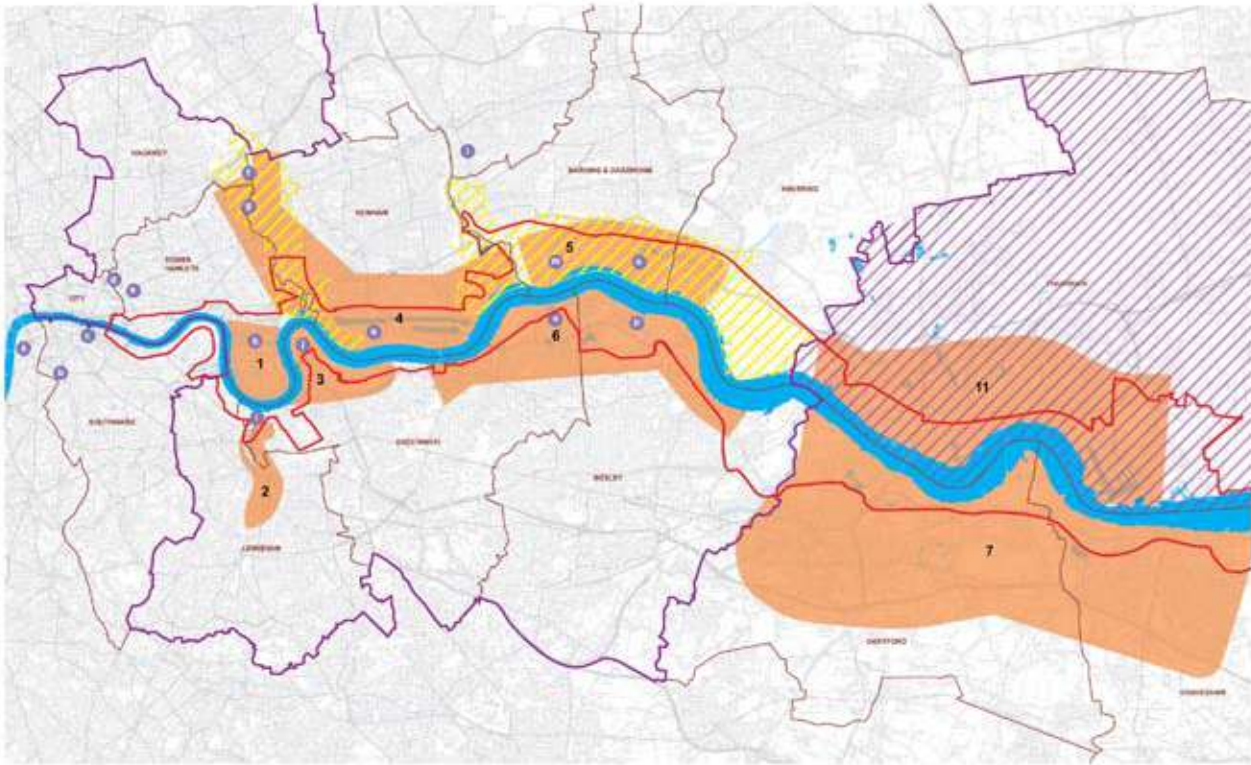
- Planning and Design
- Biodiversity
- Archaeology, Historical and Cultural Resources
- Flood Risk Management/ Climate Change
- Economy of the River.

Guidance statements (including project suggestions) and river related design guidance, have been produced which are supported by spatial Guidance Plans at both the strategic and reach levels.

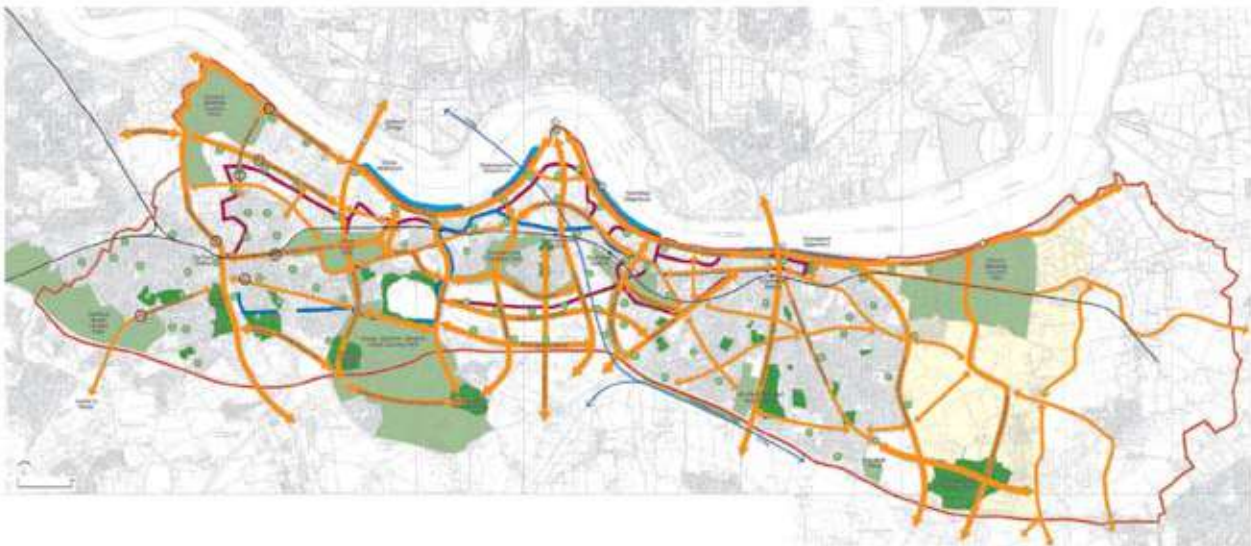
### **1.7 CONSULTATION**

The Strategy has been fully influenced by a wide consultation exercise encompassing key stakeholders at all levels of national, regional and local government, statutory authorities, interest groups and local communities. The consultation was carried out in 2005 through questionnaires, public exhibitions, workshops and meetings. The draft Strategy has been substantially amended in the light of the consultation responses to form this final Thames Strategy East.

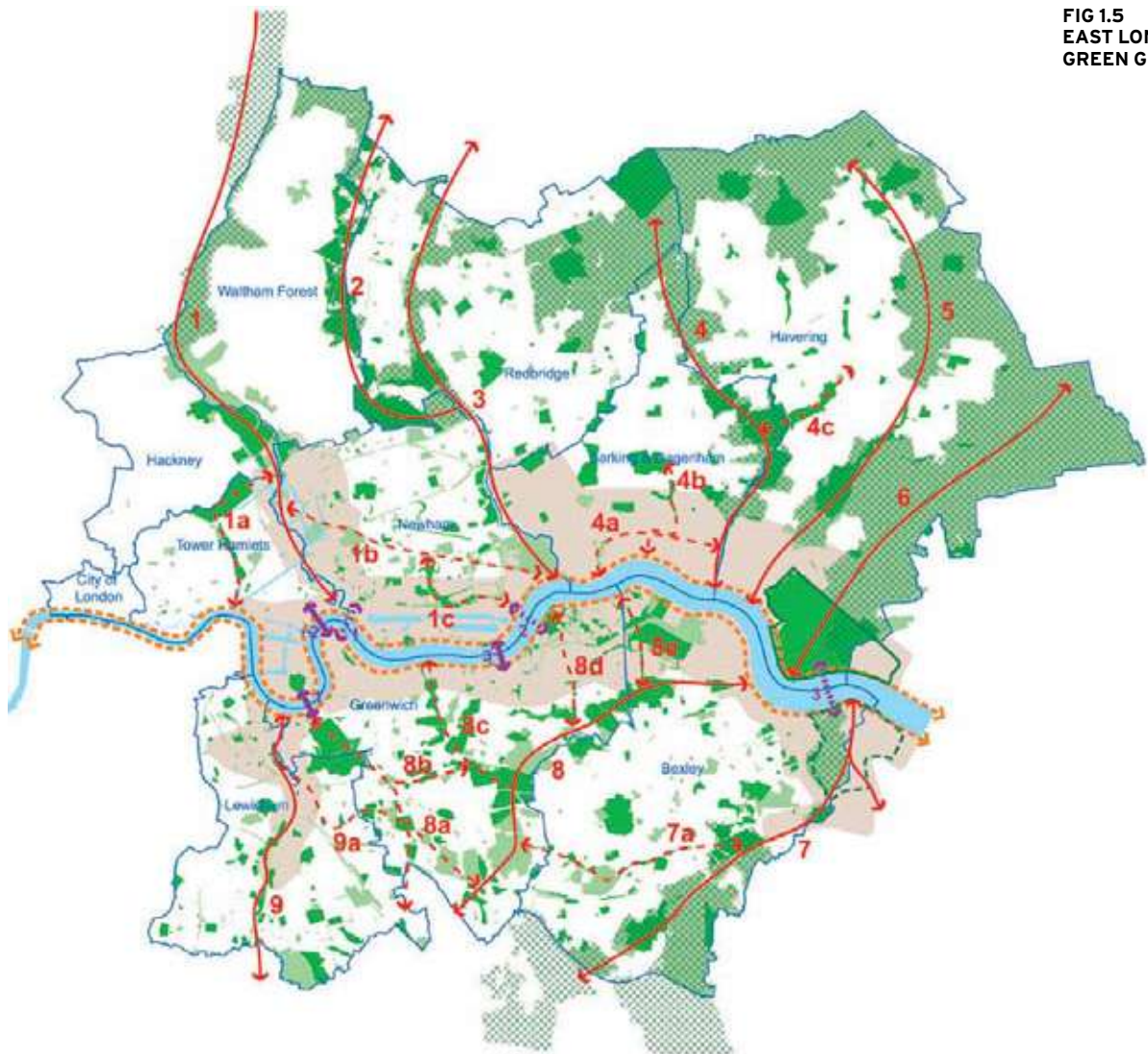
**FIG 1.3  
REGENERATION  
INITIATIVES**



**FIG 1.4  
KENT THAMESIDE  
GREEN GRID**



**FIG 1.5  
EAST LONDON  
GREEN GRID**



**EAST LONDON GREEN GRID**

- Private open space
- Public open space
- Zones of Change
- London Riverside Conservation Park
- London Riverside Conservation Park proposed extension to include Dartford and Crayford Marshes
- Metropolitan greenbelt within London boundary
- Existing river crossing
- 1 Greenwich pedestrian subway
- 2 Blackwall Tunnel
- 3 Woolwich Ferry and pedestrian subway
- Proposed river crossing
- 1 Proposed cable car connecting The Dome and proposed Lee Valley Olympic Park
- 2 Proposed Thames Gateway Bridge
- 3 Proposed cable car connecting the London Riverside Conservation Park and Dartford/Crayford Marshes

- Proposed Thames Path
- Strategic greenspace corridor
- Strategic greenspace link
- 1 Lee Valley Regional Park
- 1a Victoria Park/Mile End Park Link
- 1b Northern Outfall Sewer Link
- 1c Becton Park Link
- 2 Epping Forest Corridor
- 3 Barking Creek/River Roding Corridor
- 4 Beam River/East Dagenham Corridor
- 4a London Riverside Link
- 4b Goresbrook Link
- 4c Ravensbourne River Link
- 5 Ingrebourne Valley Corridor
- 6 Rainham/Upminster Corridor
- 7 Darent/Cray River Corridor
- 7a River Shuttle Link
- 8 Eltham to Erith Corridor
- 8a Greenwich to Eltham Link
- 8b Kidbrook Link
- 8c Thames Barrier to Shooters Hill Link
- 8d Tripcock Park to Plumstead Common Link
- 8e Thamesmead Link
- 9 Ravensbourne/Pool River Corridor
- 9a Quaggy River Link



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## PART 2

# STRATEGIC GUIDANCE

Strategic Guidance provides a broad understanding of the river in terms of landscape, townscape and riverscape drawn from the character assessments from which the Strategy has developed. It then details the existing framework of river uses, land uses, views, landmarks, transport infrastructure, areas of biodiversity, etc. It promotes the Vision, supported by a Concept Plan and a Connections Plan which delineate, in simple terms, the underlying spatial framework for the Strategy. The Strategic Guidance (SG) statements are based on the following themes: Planning, Biodiversity, Archaeology, historical and cultural resources, Flood-risk management and Economy of the River Thames Corridor.

**VIEW LOOKING  
UPSTREAM TO  
QEII BRIDGE**



**HOUSE BOATS  
MOORED AT NEW  
CONCORDUA  
WHARF**



**MAJOR  
LANDMARK:  
TOWER BRIDGE**



## 2.1 UNDERSTANDING THE RIVER

The River Thames is multi-faceted, it has many important uses and functions, but first and foremost it is a functional and dynamic system in constant flux created by the daily tidal cycles. When considered in its wider setting, the river functions on many essential levels: the river acts as an artery for communication and a resource for commerce, industry, commodities, housing, biodiversity, open space, visual appreciation, cultural heritage, recreation, drainage, water supply and flood risk management.

### CHARACTERISATION METHODOLOGY

Character assessments were carried out of the Strategy Area. These addressed landscape, townscape and riverscape from both banks, the hinterland and from the river itself. The character assessments have been used to split the Strategy area into 9 reaches of the river each incorporating both north and south banks. General descriptions and specific guidance for each reach are documented in Part Three. The character of the Strategy Area is determined by the complex inter-relationship between riverscape, landscape and townscape that defines its distinctiveness and sense of place.

The Strategy Area falls within a number of previous character assessments. The first is the Greater Thames Estuary Landscape Character Area identified by Natural England. The Strategy Area as far as Dartford, is included within the Tidal Thames Landscape Assessment, produced by the Environment Agency.

### CHARACTERISATION SUMMARY

The most dominating characteristic of the Thames is that it is a tidal river with a very high tidal range of around 7 metres. This causes significant and continual change. At full tide the expanse of the water surface area is powerful and impressive with waves often overlapping riverside paths on the highest spring tides. At low tide large expanses of intertidal mudflats and beaches are exposed. During the period known as slack tide when the tide begins to turn the calmness is in stark contrast to the fast and turbulent

conditions found at the mid point of a tidal cycle. When in or on the river, at low-tide one is often looking up to river walls, embankments and adjacent development whereas at high-tide, one is on a level with or even above surrounding land.

The Strategy Area is characterised by the metropolitan landscape of central London at its western end, where the relatively narrow river is constrained by development on both banks. The river gradually widens and becomes more estuarine in character from west to east and waterfront development becomes less continuous. Beyond the Isle of Dogs industrial uses become more dominant, interspersed with housing and open spaces. Beyond the Woolwich Ferry the riverscape opens out significantly with longer views and expanses of open sky and east of the Dartford Crossing the river becomes more estuarine in character. All along the river the various industrial, residential and open space character types are repeated in combinations and patterns based around locations of historic towns and settlements, transport connections and good navigation characteristics. The River has always been a working river and this is reflected in its character throughout the Strategy Area.

The character blocks in the west of the strategy area are smaller and more intricate with a fine urban grain whereas to the east single land uses occupy large blocks of land and give a much coarser urban grain. There are also significant areas where the character is currently changing at a rapid rate as land uses and economies re-structure.

### GEOLOGY AND GEOMORPHOLOGY

The geology of the area consists of silt-clays and organic peat overlain upon fluvial gravels, which in turn is overlain over the solid rock strata.

Over the centuries urbanisation has taken its toll on the River Thames, with the river edges becoming more developed and the stream becoming narrower. Successive generations of building into the river (also known as encroachment) has brought about increased water levels and higher water velocities, increasing the erosion power of the river and reducing flood

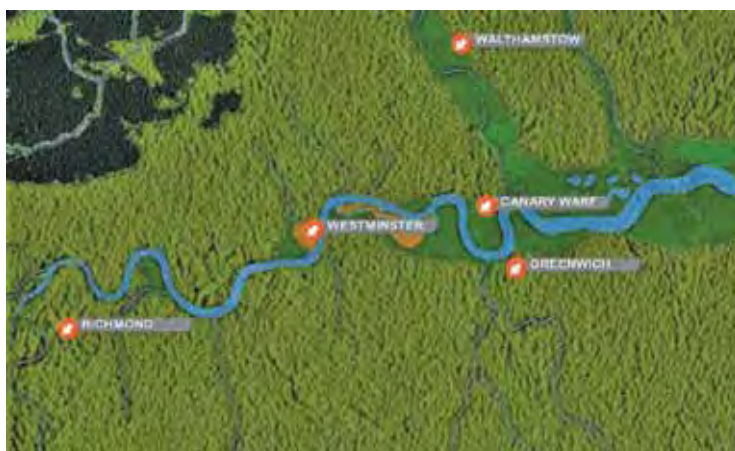


**FIG 2.1**  
**CHANGE IN**  
**CONFIGURATION**  
**OF THE RIVER**  
**THAMES**  
**OVER TIME**

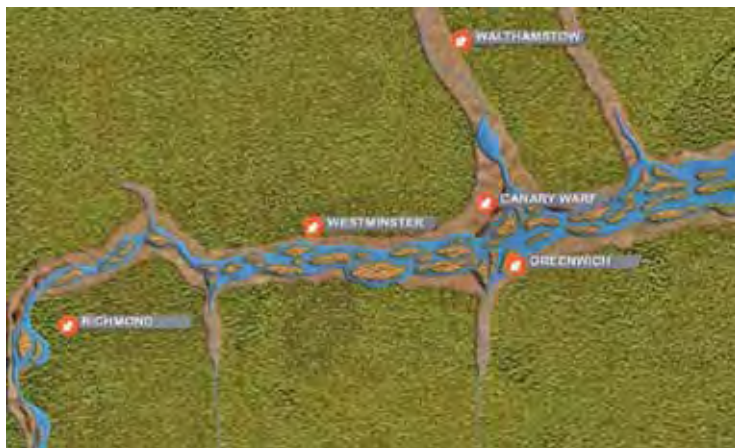
THE THAMES  
TODAY



THE THAMES 2,000  
YEARS AGO



THE THAMES  
50,000  
YEARS AGO



THE THAMES  
450,000  
YEARS AGO



storage capacity and inter-tidal habitat. This is particularly the case in central London. As one progresses further east the riverbanks gradually change from hard-engineered vertical walls to natural and semi natural banks.

#### PHYSICAL AND HUMAN PROCESSES

The River Thames has experienced much change over time due to physical and human processes. Its physical position has changed, as illustrated in Figure 2.4. Seventy thousand years ago, when the North Sea was still land, the River Thames, in a form which is very different from its current layout and channel, linked London to Siberia. The form of the river has been shaped by humans over the centuries through reclamation of the inter-tidal zone for agriculture and building. Humans have also constructed flood embankments, docks, piers and bridges and dredged the river for navigation and used the river to dispose of large quantities of sewage and industrial effluent, all of these activities have impacted on the natural state of the river.

The tidal influence of the river was directly linked to development and encroachment. Docks were built to allow the docking of vessels which had previously only been able to operate during high tides. The Thames Barrier controls tidal surges for the upstream section of the river, but it also dictates the height of the upstream and downstream river defences. The flood defences downstream of the barrier are higher than those upstream of the barrier, which has an impact on the relationship of the river edge development to the river itself.

Before the combined sewage system, designed by Bazalgette, was constructed in 1860's, the river itself acted as an open sewer. A period known as 'The Great Stink' led to the closure of the Houses of Parliament due to the terrible stench emanating from the river.

Since the early 1800s, the river was very polluted, however, it has improved considerably over recent decades with wildlife returning to areas previously thought too inhospitable and devoid of life. Despite this, pollution occurrences are still

common and in 2007 a new £2bn sewer project has been given the go ahead to remove the vast majority of this pollution. This will, in time, encourage greater use of the river by both people and wildlife.

#### ARCHAEOLOGY AND BUILT HERITAGE

Historically, the River Thames has acted as a conduit for settlers, traders and invaders, consequently, it is steeped in archaeological and built heritage. The remains of settlements, industrial uses, harbours, docks, ships and boat yards give clues to past uses. The estuary has been exploited for its resources, in terms of agriculture, fisheries and salt workings from the prehistoric period up to today. The remains of military fortifications, such as Tilbury Fort serve as a reminder of the vulnerability of the estuary to attack. There are special buildings of historical and conservation note, including two World Heritage Sites, that have strong associations with the River Thames. There are also a number of intangible historical associations that are very important to retain and utilise in creating a sense of place.

The Strategy includes studies of the archaeological, cultural, industrial and built heritage. The Archaeology and Built Heritage Study was funded primarily by a Heritage Lottery Fund grant and through English Heritage. The archaeological potential lies within the river terraces, the flood plain and the channel, including the inter-tidal zone. There is a high potential for a sequence of well-preserved buried landscapes dating from the prehistoric period onwards.

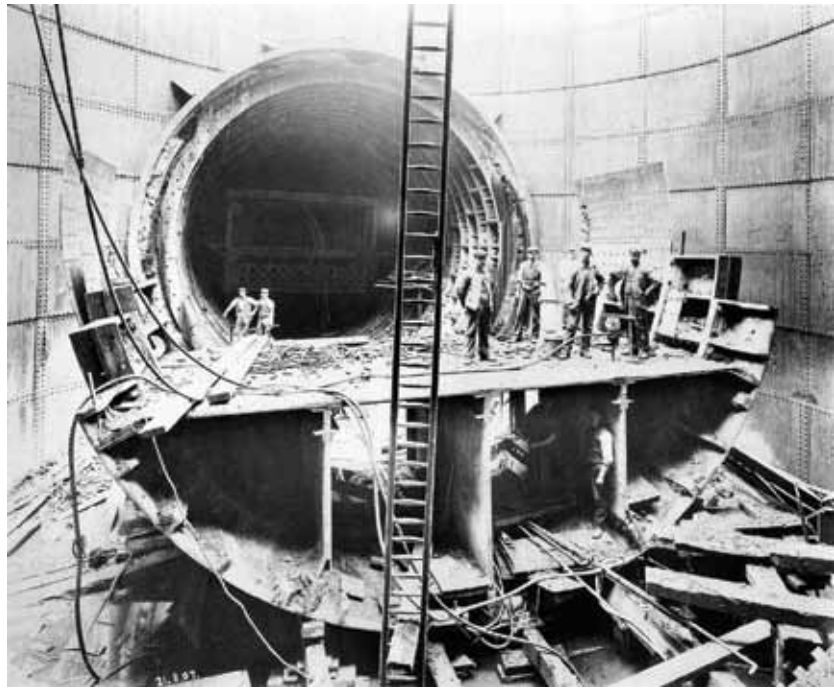
In built heritage terms, residential and industrial riverside settlements developed, in addition to linear settlements above the flood plain. The expansion and transfer of the docks from inner London to Tilbury, and industrialisation have been important influences on built form.

#### ECONOMY OF THE RIVER

The 'working' character of the East Thames owes much to its continuing use as a major port and thoroughfare. In 2006 the Port of London handled 54.4 million tonnes of cargo making it the third biggest port in the UK. The Port of London

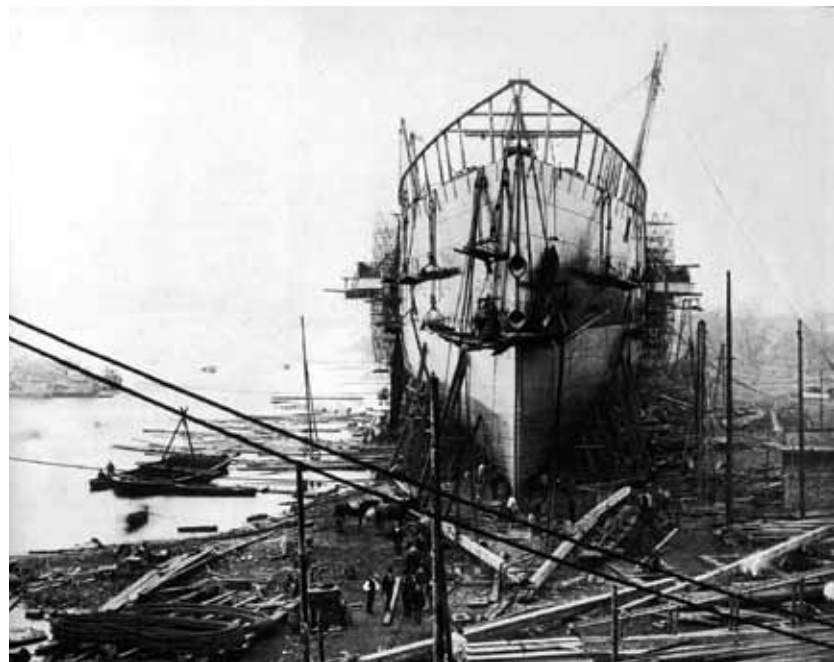
**ROTHERHITHE  
TUNNEL DURING  
CONSTRUCTION  
IN 1907**

*Liquid History:  
The Thames  
Through Time,  
Stephen Croad*



**GREAT EAST  
MILLWALL IN 1857**

*Liquid History:  
The Thames  
Through Time,  
Stephen Croad*



**TILBURY DOCK**

Tilbury Dock  
handles a key  
percentage  
of the UK  
water-borne trade



currently has around 70 operational terminals spread between Fulham and Canvey Island. The majority of these terminals are located within the Thames Strategy East area with the Port of Tilbury being particularly important. The volume of cargo handled by the Port is forecast to grow to 70 million tonnes a year by 2015. Policies such as the Safeguarded Wharves in London are designed to ensure that the port's long term future is secure in the face of competition for other forms of development.

Just to the east of the Strategy Area, the proposed London Gateway container terminal has recently been approved. Once operational London Gateway will make the Port of London the biggest port in the UK. This is expected to have a positive effect with commercial and trans-shipment opportunities across the Strategy Area.

Historically the development of the River Thames has been based on transport and a hinterland has developed within the marshes, providing for maritime and naval industry, aggregates and processing waste for central London. Other economic uses of the river and its environs include riverside residences, boat yards, tourism attractions, pockets of remnant grazing marshes and a number of commercial fisheries.

#### CONTRIBUTION TO STRATEGIC OPEN SPACE

The River Thames has the potential to provide the backbone of an open space infrastructure, which, with appropriate north-south linkages, would connect with the London Metropolitan Green Belt and beyond. There is also the opportunity to extend the Thames Path to create a continuous multi use strategic route on both banks of the river within the Strategy Area, linking to the network of open space corridors as proposed in the Green Grid strategies for East London, South Essex and Kent Thameside.

#### BIODIVERSITY

The River Thames, the tidal sections of creeks and tributary rivers and adjoining land comprise corridors of complex and extremely valuable habitats. The variety of river depths, flows, salinity and turbidity

make for a wide range of in channel habitats which support over 120 species of fish. The Thames is an important nursery for many commercially important North Sea fish species including bass and Dover sole. Periods of inundation and exposure with daily tidal cycle create conditions that make the river foreshore a unique and valuable habitat. The river's hinterland includes areas fresh and salt water marsh, grazing marshes, mud-flats, shingle beach, inter-tidal vegetation and river walls. These important habitats are recognised by a series of local, national and international designations.

In addition to these protected sites, some river walls and extensive areas of previously developed land have become valuable habitats and have been colonised by a diverse range of flora and fauna that offer significant local importance for biodiversity. One of the key aspects of the nature conservation interest of the River Thames is its apparent, and real, wildness and the mosaic of semi natural and man made habitats that provide London's longest unbroken wildlife corridor. The power of the tidal river creates a sense of untamed nature despite its urban context.

#### RECREATION

The River Thames, its associated tributaries, docks, other water bodies and adjacent areas provide open spaces for water and land-based recreational uses. Areas of water extending out towards the shipping channel are currently used in a fairly limited capacity for sailing, windsurfing, power boating, pleasure boating, rowing, angling and sub aqua clubs. The Thames itself is perceived to be an unsafe area for water sports due to the high and strong tides, strong currents, underwater obstacles and water quality concerns. It is therefore not surprising that there are relatively few facilities.

There is limited provision along the water margins for angling, canoeing, swimming and appreciating nature. The Port of London Authority provides public launching sites, landing facilities and mooring, in addition to the private marinas.

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**BARKING  
BARRIER**



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**THE THAMES  
AT LOW TIDE**  
Looking across  
to the Wapping  
riverfront



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**THAMES BARRIER**



The Thames Path, a key national trail, passes through the Strategy Area from the west and currently ends at the Thames Barrier. Beyond this point there is a path along the south bank as far as the River Darent however on the north bank there are only discrete sections at certain points along the river front. The Thames Path 'City to Sea' Strategy promotes the completion of the Path from the Barrier to Southend and the Isle of Grain respectively. The banks of the Thames and its tributaries provide limited opportunities for land based sports including walking, cycling, horse riding, angling and naturalists. Some sections of the existing Thames Path are gated off at times. The Thames Path should be freely open to all at all times, although in some locations access should be managed to enable river related activities to continue unhindered.

Access to the foreshore has traditionally been available via steps and slipways. However, many of these have fallen into disrepair or have been gated off. This Strategy supports the improvement of access to the foreshore although realises this has to be both responsible and safe. (see also p.25)

London Docklands provides the opportunity for competitive sporting events including sailing, rowing, canoeing, water ski-ing and dragon boat racing. Other dock areas have been converted to marinas, for example Limehouse Marina.

The tributaries of the River Thames and the British Waterways Canal network provide links to the Thames itself, particularly for boating, walking and cycling. The River Lee joins the Thames, via Bow Creek, at Bow Locks and via Regents Canal at Limehouse Basin.

A diverse assemblage of fish species and a large nearby population ensures that both freshwater and marine recreational angling are popular activities.

#### FLOODING, WATER RESOURCES AND QUALITY

The river is a dynamic natural system that rises and falls each day in response to the tidal regime of the north sea and the fluvial waters from upstream in the catchment.

Both of these constitute a flood risk to the riverside. Currently, all the Strategy Area has a high level of protection and a low risk of flooding (less than 0.01% chance per year). The Thames Barrier, along with other barriers, gates, embankments and flood defence walls, provides an integrated system of flood risk management for the Thames estuary.

The tidal levels and surges, fluvial flows and wave action are also concentrated by the 'funneling effect' of the estuary. Flood risks are currently being considered through an Environment Agency study, Thames Estuary 2100, which is examining flood risk management options for the rest of the century. The effects of climate change are anticipated to be sea level rise, more extreme weather patterns, hotter, drier summers and wetter winters. Current Environment Agency predictions estimate a rise of around 1 metre in mean high tides over the next 100 years. However some estimates are considerably above these levels and would call for more radical approaches to flood risk management. Ground water is also rising in the Thames Gateway as a direct result of the reduction in abstraction for industrial purposes.

The Indicative Flood Plain Map (Figure 2.20) illustrates that, without flood defences in place, 90% of the Thames Gateway would be prone to flooding. The condition of the flood defences varies; upstream of the Thames barrier and along its tributaries, they are older and generally in poorer condition; downstream of the Thames Barrier and along its tributaries, they are generally in good condition and not due to be replaced before 2030.

Thames Estuary 2100 introduces the concept of flood compatibility, flood resilience and flood protection. PPS25 classifies land uses as water compatible, highly vulnerable, more vulnerable, less vulnerable and essential infrastructure. These classifications should ensure that the type of development is appropriate to the level of flood risk that is present recognising that it is not possible to provide 100% flood protection.

The Thames is naturally a rather murky brown colour. This is due to high sediment loads which are maintained in suspension

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**RESTORATION  
OF BLUE RIBBON  
NETWORK**

Community involvement and environmental education is important to engage local communities



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**BEACH  
ADJACENT TO  
CHERRY PIER**

This strategy encourages safe access to the foreshore



by tidal action, this should not be confused with pollution. The water quality of the River Thames has improved over the years, initially in the late 1800s due to the introduction of the combined sewerage system and more recently since the 1960's due to more advanced sewage and industrial effluent treatment. This has resulted in an improvement in water quality and consequent recovery of the ecosystem. Because of the legacy of the Victorian combined sewerage system, pollution still enters the Thames during periods of high water flows, this is currently ameliorated using two purpose built vessels, the 'Thames Bubbler' and 'Thames Vitality', built to oxygenate the water at specific inflow points.

In March 2007 the Government announced the go ahead of a relief sewer project to address the sewage overflows during wet weather. The project involves two large (approximately 7m diameter) tunnels, one from Hammersmith to Beckton and one from the Lea Valley to Beckton. The project is expected to be complete around 2020 and cost around £2bn at 2006 prices. Beckton sewage treatment works will be the location where the overflows are treated and the sewage sludge is processed.

#### RIGHTS FOR THE RIVER THAMES

There are a number of rights associated with the River Thames.

#### NAVIGATION

The Thames is a navigable river over which the public has a right of navigation, that is to say, a right to pass and repass over the whole width and depth of water in the River Thames and the incidental rights of loading and unloading. Vessels are allowed to anchor and moor for reasonable times in locations which do not hinder navigation and to take ground and wait for the tide to continue the journey. More information is available from the Port of London Authority.

#### RIPARIAN (RIVERSIDE) LANDOWNERS

Private riparian rights also exist. These are rights exercised by landowners to moor adjacent their property for such periods as is necessary to load and unload. The

public right of navigation therefore enables vessels to be manoeuvred to the point on a frontage where the private riparian rights can be exercised.

#### ACCESS TO THE FORESHORE

The Port of London Authority is a public trust and owns the majority of the bed and foreshore of the River Thames within the Thames Strategy East area. The Crown Estate owns some of the river bed and foreshore, normally areas of the river adjacent to former royal palaces or dockyards.

The general public have public rights of access to the foreshore for the purposes of navigation and fishing on a tidal river and rights ancillary to the right to fish, such as taking worms from the foreshore for fishing. There is no public right to pass along or across the foreshore except in the exercise of these rights, unless there is a lawful, dedicated right of way from one place to another over the foreshore. There is no right of recreation, bathing or to wander along the foreshore. However the Port of London Authority is aware that there is a public demand for access to the foreshore and tolerates public access at locations where it is appropriate and the risk to public safety is acceptably low.

Members of the public may apply to the Port of London Authority or Crown Estate for a permit to search the foreshore. One day and standard permits allow the holder to dig to a depth of 0.075 metres (3 inches). Mudlark permits giving dispensation to dig to a depth of 1.8 metres are only available to current members of the Society of Thames Mudlarks.

#### RIVER WORKS LICENCE

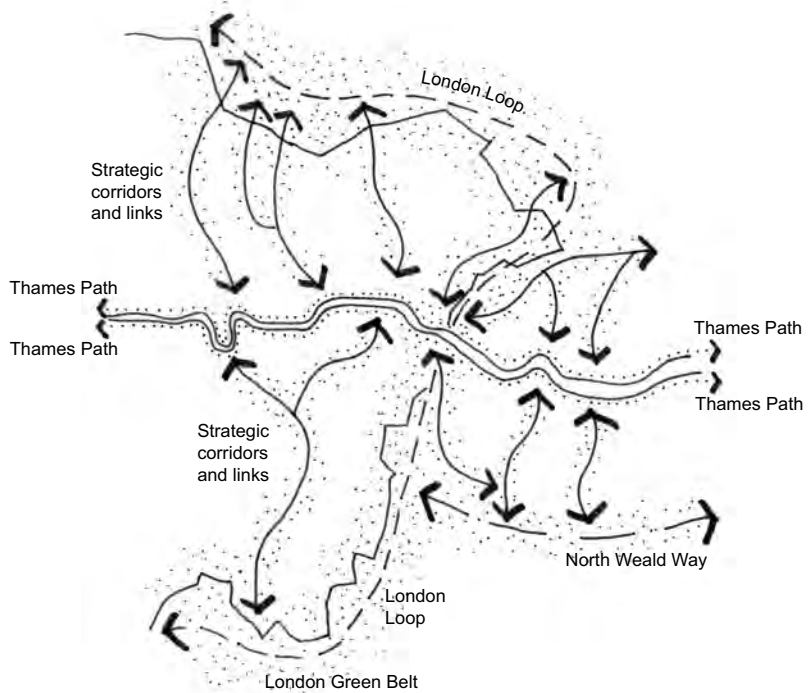
Anyone wishing to place a structure in, on or over the Thames (within the mean high water mark), including the permanent mooring of a vessel will require a Port of London river works licence. Other consents including planning permission and Environment Agency consent may also be required.



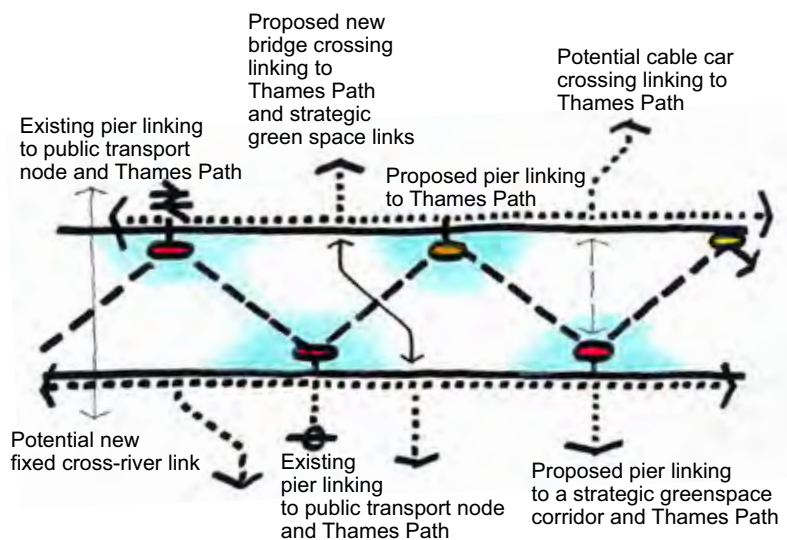
**VIEW ACROSS  
AVELEY  
MARSHES**  
One of the  
few remaining  
marshes within  
the study area



**FIG 2.2  
OVER-ARCHING  
CONNECTIVITY  
DIAGRAM**



**FIG 2.3  
PIERS CONCEPT  
PLAN**



## 2.2 SPATIAL CONNECTIVITY CONCEPT

One of the primary areas of concern that came out of the strategy consultations was the lack of connectivity to the river from its hinterland, east-west links along its banks and links across the River.

The underlying spatial concept of the Strategy, therefore, is one of connectivity in its broadest sense. This Strategy promotes access for all to the wonderful resource of the Thames through a coordinated infrastructure of public and private transport, footpaths, cycle paths and bridleways. If achieved this will help to generate a unique character and sense of place for both the existing and new communities of the Thames Gateway.

This Strategy promotes greater connectivity in three ways. This is illustrated in the Spatial Connectivity Plan (Fig 2.4) which is purposely based on the London Tube map to promote the idea of the River Thames at the heart of the area.

Firstly, foot and cycle access along both banks connecting the Green Grids of East London, Kent Thameside and South Essex. Opportunities to enable cross river foot and cycle access should be taken. For example a new route on the proposed Thames Gateway Bridge, or improved routes at the Dartford and Rotherhithe crossings, or via novel ideas such as cable cars.

Secondly, improving links from the hinterland to the river by foot and cycle.

Thirdly, an expansion of existing passenger ferries to connect existing and emerging residential communities along the river to popular destinations such as central London, Isle of Dogs, town centres and tourist attractions. A balance needs to be struck between the number of points of embarkation and journey times. It is possible that 'zig-zag' routes could be geared towards the tourist market out of commuting hours, with faster routes with less stops during commuter hours. Piers exist at Canary Wharf, Maritime Greenwich, the O<sub>2</sub>, Woolwich Arsenal. New ones might include Barking Riverside, Thamesmead, Grays Beach, Swanscombe Peninsula, and the London Riverside Conservation Park. This is illustrated in the Piers Concept Plan (Fig 2.3).

This Strategy also promotes the concept of a sequence of major landmarks throughout the Strategy area that are intended to be iconic structures. Existing major landmarks include Tower Bridge, Canary Wharf, Maritime Greenwich, Millennium Dome (O2), the Thames Barrier, the QEII Bridge and Tilbury Docks. Potential major landmarks include the proposed Thames Gateway Bridge, proposed development at Barking Riverside, a sculpture or structure at the London Riverside Conservation Park and major landmark development on the Swanscombe Peninsula. There are also other existing landmarks such as, Tate and Lyle Glucose Factory, the Ford Factory, Crossness Sewage treatment Works, Ingress Abbey and Tilbury Docks. Together with the ever changing views, these landmarks should promote a positive sense of place for the Thames Gateway.

The Lee Valley Regional Park is of regional significance and should be better linked to the Thames. The London Riverside Park is designated as a major open space of regional significance and should be fully developed over the next 20-30 years. This Strategy suggests that the area of the park include the Dartford Marshes on the opposite southern bank of the river to create a fantastic and very diverse destination experience. The two areas should be connected, possibly by cable car which would be an attraction in itself.

## 2.3 STRATEGIC POLICY GUIDELINES

### 2.3.1 PLANNING

Great rivers characterise their cities, the Thames is no different: it characterises London. Historically, to the west, the Thames has been the focus for palaces, parks, residential development, recreation and leisure, with limited commercial and industrial activity. To the east, the Thames has been the focus for industrial development, docks and much of London's utility infrastructure.

Examples such as London Docklands and Milton Keynes demonstrate the value of early investment in an environmental infrastructure, particularly focusing on river and dock locations. There is now a focus for major development and change in the Thames Gateway and the need

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**LANDMARK:  
O<sub>2</sub> (MILLENNIUM  
DOME)**



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**QEII PIER BY  
GREENWICH  
PENINSULA**

The Quantum Cloud on the QEII Pier by Greenwich Peninsula forms a striking new landmark



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**RIVER CRUISE**

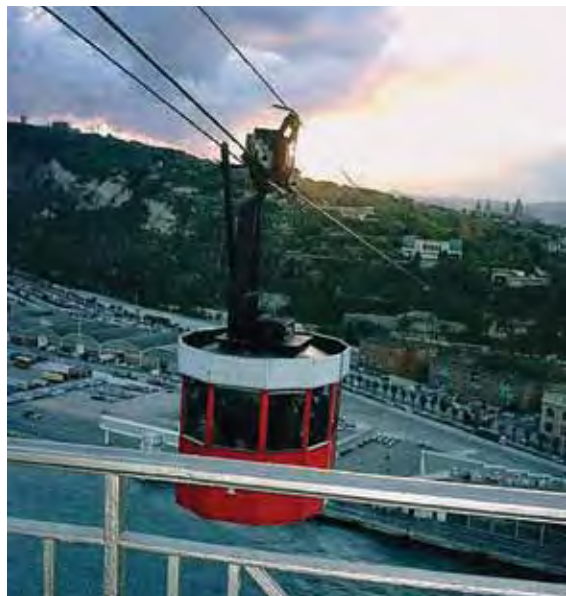
One of a number of cruise boats along the River Thames



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**BARCELONA - A  
MOUNTAIN-SIDE  
CABLE CAR**

The potential use of a cable car would be effective to link the northern and southern river banks



for clear spatial planning and policies for an environmental infrastructure is imperative. Water should not be seen as merely a setting for development rather the water space is promoted for the uses of water transport, water recreation, waterside open space, natural habitats and flood storage/management. The Strategy proposes a new sequence of panoramas, river prospects and townscape views throughout the Strategy Area in addition to the London panorama and townscape views at Greenwich. It also identifies locations for and promotes areas for new landmarks in the Strategy Area. These will begin to define a new understanding of the nature of the Thames Gateway, promote a greater sense of space and place and aid way-finding.

The Strategy proposes an environmental infrastructure that integrates access and movement, utilities and built form. This environmental infrastructure is proposed to be multi-functional, providing for:

- Cycleways, bridleways and footpaths
- Piers, jetties, wharves and boat yards
- Roads, railways and light rapid transit
- Bridges
- Sustainable drainage systems (SDS)
- Flood risk management
- Energy
- Water supply
- Sewage
- Drainage
- Housing
- Commercial development
- Industrial development
- Education
- Biodiversity
- Air quality
- Micro-climate management
- Biological water treatment and water cleansing
- Water quality and estuary water quality
- Leisure
- Recreation
- Healthy living
- Parks and open spaces.

The Strategy presents a 100 year vision and will ensure that the influence of the River Thames and its hinterland will be respected and developed to create beautiful, connected places from often despoiled and degraded post-industrial riverscapes and landscapes - creating places where people will choose to live, work and play. The following Strategic Guidance should be read in conjunction with Fig 2.5 Strategic Guidance Plan.

- SG1 Design Statements which accompany significant development proposals should specifically address the river and uses of the river.
- SG2 Development should support and contribute to the delivery of the Framework Plans, in particular maximising the active use of waterside locations including the use of under used waterways in the Thames Estuary. Development should also optimise the economic potential of the waterways.
- SG3 Priority should be given to completing footpath and cycle paths and in particular the Thames Path foot/cycleway network, along both banks of the river and connections to it from the hinterland, in accordance with Green Grid Strategies and taking into account safety or security reasons to divert around cargo terminals, boatyards and other riverside installations.
- SG4 Development within a Reach should protect and enhance the positive aspects of its character. Where parts of some Reaches are of poor quality and major interventions may be necessary to create a new character to reflect the Thames-side location.
- SG5 Discrete developments should create an appropriately scaled continuous visual or physical edge to the river frontage. The maximum length of the continuous 'edge' should be considered in terms of urban grain, human scale, walking distances and accessibility. Where appropriate it should also contribute to the creation of strategic views, landmarks and major landmarks proposed in the Strategy.

- SG6 Development should protect strategic and local views by:
- avoiding obstructing or cluttering views
  - providing opportunities for views across water
  - providing interpretation
  - providing fully accessible elevated viewing points.
- Infrastructure proposals such as the Thames Gateway Bridge should exploit their full potential as both landmarks and viewing points
- SG7 Opportunities should be taken to implement co-ordinated lighting strategies, recognising the navigational requirements of the river and that light pollution should be minimised.
- SG8 Positive opportunities should be sought as alternatives to encroachment, such as seeking opportunities to realign flood defences to increase the storage volume of the river, enhance biodiversity, restore landscape character, improve access to river, conserve and promote archaeology, enhance river transport and promote sustainable development.
- SG9 New urban form and built infrastructure such as bridges, piers, jetties and flood defences should be of the highest design quality and should contribute to a Reach's character and make a positive contribution to the river's character.
- SG10 Development proposals should protect and enhance the existing network of designated parks and open spaces and their links as well as essential river related infrastructure such as river related transport facilities.
- SG11 The Green Grid Strategies and Borough Green Space Strategies will provide information on strategic deficiencies in the provision of green space which should be positively supported when preparing development proposals, area development frameworks and master plans. Opportunities should be sought to create Local Riverside Parks of 0.4ha size at 2 km intervals.
- 2.3.2 BIODIVERSITY**
- The richness of the River Thames as a natural system should be a key influence on development proposals. The whole of the river and its tributaries in London are designated as a Site of Metropolitan Importance for nature conservation. Extensive tracts of the marshes and tidal mudflats of the Thames Estuary are given national and international protection
- The River Thames and its hinterland has National and local Biodiversity Action Plans. Many of the post-industrial landscapes have developed significant conservation value. The River Thames acts as an essential wildlife corridor.
- The Strategy promotes the protection and enhancement of existing habitats and the creation of new habitats. If designed in a bold, imaginative and co-ordinated way, this new environmental infrastructure will change a general public perception of the Gateway as an environmentally degraded place, to one of a beautiful and a desirable place to live, work and play.
- SG12 Biodiversity should be protected and enhanced at both designated sites and other sites which have particular biodiversity interest. The links between ecological sites should also be protected and enhanced. Enhancements should use habitats and species associated with the river/estuarine environment and should enable access for all without disturbance to wildlife.
- SG13 There should be no development on or over water or in-channel low tide features unless for a water dependant use (such as wharves, jetties, passenger piers and slipways).
- SG14 Fisheries and spawning grounds within the Thames and its tributaries should be identified and protected.
- SG15 A co-ordinated eradication programme aimed at noxious and



**HUNGERFORD BRIDGE, CHARING CROSS, LONDON**

This is an example of a high quality river crossing that has two new suspension footbridges hung off either side of the existing rail bridge



**AERIAL VIEW OF EAST BOSTON PIERS PARK, BOSTON**

Innovative reuse of old industrial pier as a new public waterfront park



**OLYMPIC MASTERPLAN FOR LEE VALLEY**

An aerial perspective of the Olympic Park  
(*Edaw and Smoother*  
[www.smoother.com](http://www.smoother.com))



**WOOLWICH FERRY IN 1950**

*Liquid History: The Thames Through Time,*  
Stephen Croad

invasive species detrimental to biodiversity, such as Japanese knotweed, Himalayan balsam and Giant hogweed should be adopted.

- SG16 Where negative impacts cannot be mitigated on the site, compensation measures should be proposed offsite and should include the creation and/or enhancement of habitats that contribute to strengthening the ecological connectivity within the Strategy Area and beyond. Positive links should be created between existing and new habitats creating new stepping stones to facilitate migration, dispersal and genetic exchange of wild species.

### 2.3.3 ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES

Man's use and exploitation of the Thames is the very reason that most settlements along the river exist. The river was historically the cultural and economic focus and transport artery for the communities along its banks. It is therefore no accident that the strategy area has hugely important historic and cultural links and the potential for a wealth of archaeological remains buried under successive layers of alluvium silts in the foreshore of the river.

Many intangible elements of history survive in the river based communities and industries, in terms of stories, folklore, memories and place/street names.

The Thames has a variety of cultural resources worthy of protection and enhancement. These should be documented, protected and their value and potential understood and enhanced to reinforce the sense of place, community pride and connection with place. The educational, interpretative, tourism and leisure potential of the cultural resource should be co-ordinated and developed.

- SG17 Known and possible archaeological resources should be protected using existing statutory protection measures. A programme and action plan for the designation of further protected archaeological

and historic sites should be drawn up and implemented. The implications for additional resources and funding should be addressed. The results should be made publicly accessible, for example on the Sites and Monuments Record (SMRs). Archaeological, historical and cultural resources should be enhanced and should promote visitor access and interpretation.

- SG18 Improve and unify statutory and non-statutory planning designations, including locally listed buildings, across the region through survey work, historic analysis and related planning policy. The following areas have been identified as priority areas for statutory listing reviews.
- Royal Dock area,
  - Barking Town Centre,
  - Ford Dagenham Motor Works,
  - Concrete Barges, Rainham,
  - Powder Magazines, Purfleet,
  - Newham stretch of the Strategy Area.

Where conservation area appraisals are not available, or where they are out of date, local planning authorities should prepare conservation area appraisals. All conservation area appraisals should be adopted as Supplementary Planning Documents. In addition, the following areas have been identified as potential conservation areas or conservation areas in need of boundary review:

- Canning Town,
- North Woolwich,
- Riverside area between Landsdowne and Overcliffe,
- Boundary review of St Saviours Dock Conservation Area to include concrete bunkers, London Borough of Southwark.

- SG19 Develop and maintain an Historic Environment Network, a tool to link information, interest groups and stakeholders in sharing, promoting, interpreting and reconstructing the heritage of the River Thames. A feasibility study should be prepared with reference to the East London Research Group. This should involve Local history groups, Universities, Institutions, such as museums, Local authorities, English Heritage and Environment Agency.



**GREENWICH  
MILLENNIUM  
VILLAGE**



**THAMES  
BARRIER PARK**  
Development  
of beautiful,  
connected places



**GREENWICH  
PIER 1950**  
*Liquid History:  
The Thames  
Through Time,  
Stephen Croad*



SG20 Promote joint marketing initiatives related to the defence of the Thames, including Tower of London, Woolwich Arsenal, Tilbury Fort and Coalhouse Fort.

SG21 The local planning authorities should consider the potential for applying Section 106 agreements to:

- the restoration and conservation of historic building
- community heritage projects (oral history etc)
- the local historic environment network.

SG22 Archaeological and historic references and public art based around historical and cultural assets should be used in development design to create a sense of place and pride in the heritage of an area.

SG23 Interest and knowledge of the area's heritage should be developed through research and local oral history projects with schools, colleges, universities and local interest groups.

### 2.3.4 FLOOD RISK MANAGEMENT/ CLIMATE CHANGE

Fig 2.19 illustrates typical existing flood defences upstream and downstream of the Thames Barrier and describes how flood risk management can be sensitively designed in the future.

The effects of climate change will be far reaching for the Strategy Area. The UK Climate Impacts Programme (UKCIP) published a set of scenarios of possible future climate changes which included increased risk of extreme weather events such as winter storms, flooding and prolonged droughts, rising sea levels, drier summers and higher summer temperatures. In addition, the urban heat island currently adds 5-6°C. Rising tide levels in the south east are compounded by the gradual sinking of the south eastern tip of the British Isles.

The Environment Agency is currently developing a strategy, Thames Estuary 2100, that will encourage sustainable flood risk management along the Thames

estuary for the next 100 years. It is anticipated that there will be a approximately 1 metre rise in high tide of the River Thames over the next 100 years, but some scenarios predict higher sea level rises.

The infrastructure designed to cope with flood risk includes the Thames, Barking and Dartford Creek Barriers and associated walls and embankments. This is shown on Fig 2.20 and includes the Thames Barrier closures chart which indicates an increasing number of closures from 1983 to 2007. Rising tide levels mean that the barriers will be closed more frequently, and will cause inconvenience and delay to navigation, effect the tidal nature of the river and high levels of use will impact on the maintenance regime of the Barriers.

PPS25 was published in December 2006. As a result of this the GLA is producing a Regional Flood Risk Appraisal and boroughs will have to produce Strategic Flood Risk Assessments. New development will require a flood risk assessment even where it is protected by the tidal flood defences. Issues such as flood warning, evacuation and flood recovery will need to be addressed. Our understanding of flood risk is set to improve over the coming years. Through implementing the vision, policies and design objectives of this Strategy, there is an opportunity to deal with these risks in an holistic way by investing in a multi-functional environmental infrastructure.

SG24 Development proposals for riverside sites and for existing parks and open spaces should investigate the potential for full or part realigned flood defences prior to commencement of site planning. Flood defences should then be realigned as and when appropriate by following Environment Agency guidance. Even in cases where flood defences are not re-aligned, development should be set back from existing flood defences to allow space for their future

maintenance and upgrade. It will not be appropriate to set back some river dependent uses such as wharves, boatyards and passenger piers.

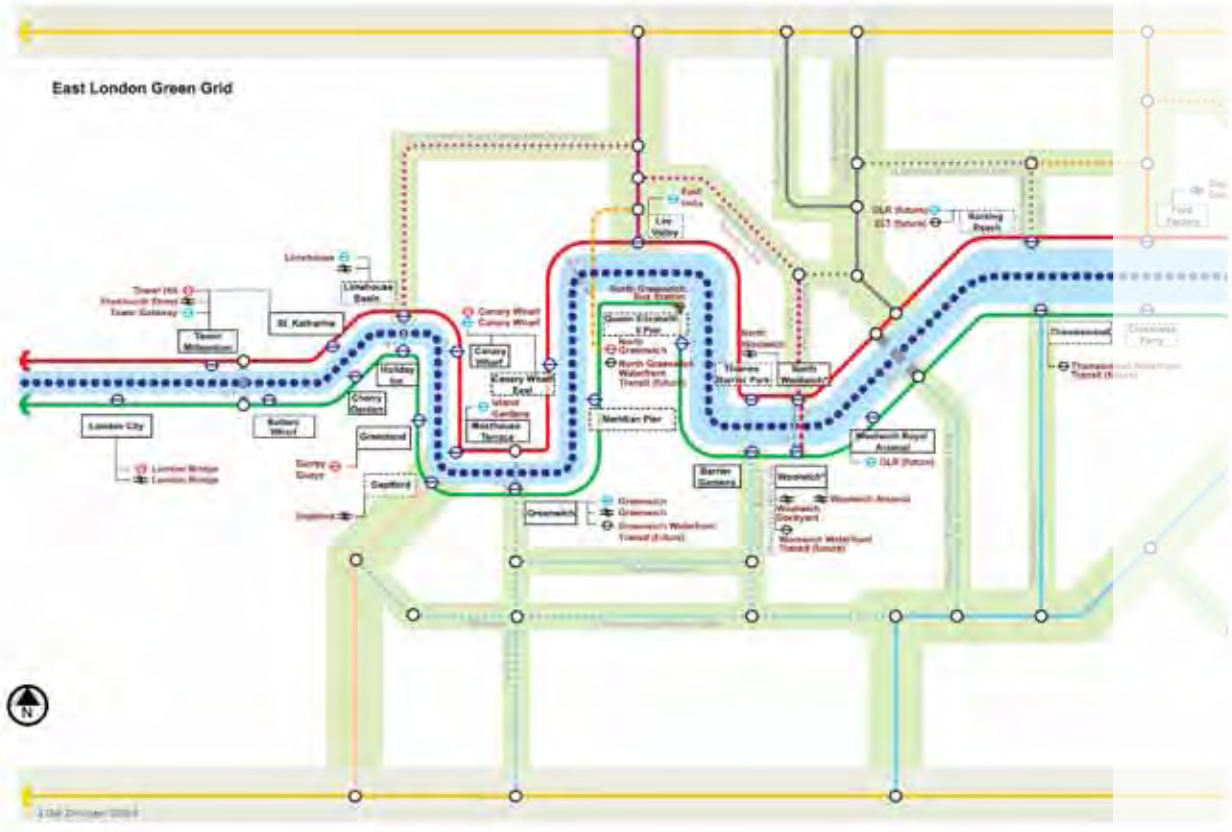
- SG25 Development proposals should seek to improve the visual appearance and ecological value of existing sheet piling and concrete slab river defences following Environment Agency guidance contained in 'Partnership in Planning - Riverbank Design Guidance for the Tidal Thames'.
- SG26 Existing open space infrastructure should be re-assessed in terms of its flood storage potential as part of a multi-functional environmental infrastructure resource. Environment Agency initiatives should identify areas where managed retreat for flood risk management can provide opportunities for habitat creation.
- SG27 Development proposals should aim to minimize surface water run-off through incorporation of sustainable drainage systems and should generally avoid discharging clean surface water into the combined sewer system.

- SG28 Opportunities should be sought to protect and enhance viable wharves (and wharves that are capable of being made viable), jetties, piers and associated businesses and infrastructure.
- SG29 Opportunities should be sought to create new river related uses and infrastructure to serve existing and new communities and destinations.
- SG30 Existing agricultural and productive landscape uses should be protected, enhanced and encouraged where appropriate. Enhancements should promote landscape and biodiversity interest.

### **2.3.5 ECONOMY (INCLUDING WHARVES, COMMERCIAL RIVER USERS AND AGRICULTURE)**

The River Thames has always been an economic driver. The Strategy supports the protection and enhancement of existing, and the creation of new, economic water-related uses and businesses. These might include freight, transport, tourism, leisure and recreation and green industry related development. There needs to be an improved infrastructure to exploit access to the river and river based transport for commuters and visitors to existing and future communities and destination points along the river. The Strategy also promotes the protection of existing agricultural uses, particularly marginal grazing marshes and productive landscapes and allotments.

**FIGURE 2.4**  
**RIVER CONNECTIVITY**

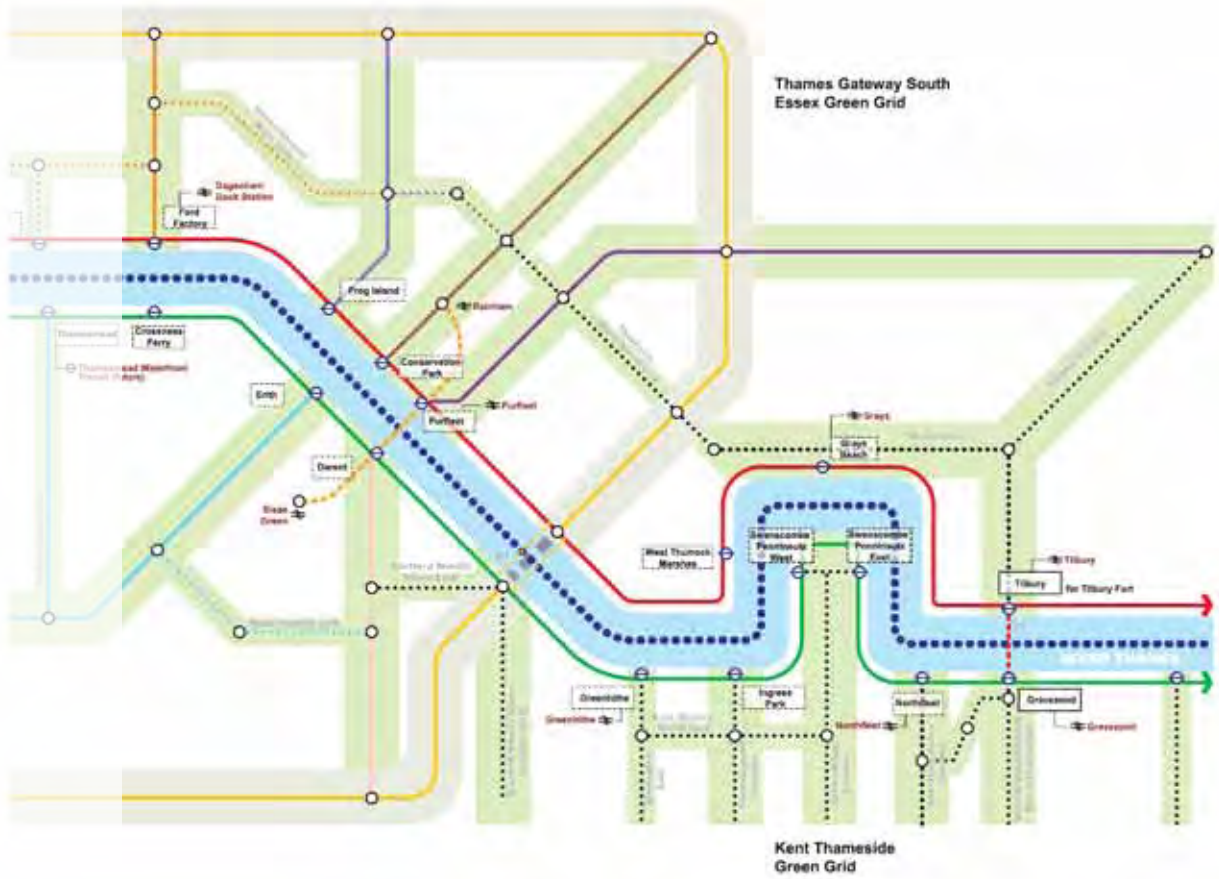


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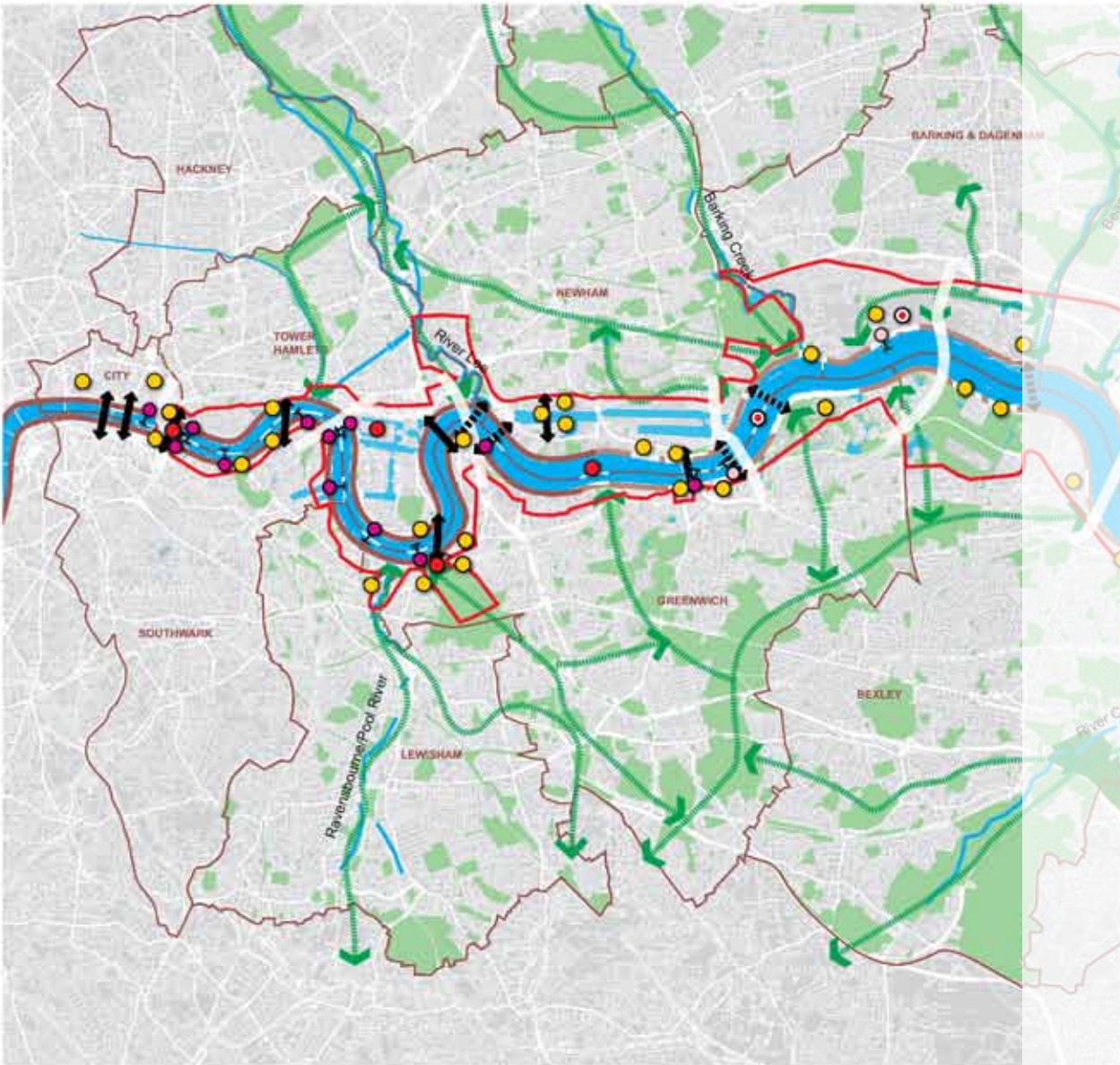
Green Space	Footpaths/Corridors/Links	River Crossings	Public Transport Connections
London Green Belt	Thames Path North	Bridge	River Boat Route
Strategic Links	Thames Path South	Proposed Cable Car	Existing Public Pier
Strategic Corridors	Lee Valley Regional Park	Ferry	Proposed/Future Pier (by converting commercial pier to public use, by bringing disused pier back into operation or by constructing a new pier)
	Roding Valley/Epping Forest Corridor	Tunnel	Railway Station
	Beam River/East Dagenham Corridor	<b>Bridges:</b>	Underground Station
	Ingrebourne Valley Corridor	<b>B1: Tower Bridge</b>	Docklands Light Railway Station
	Rainham/Upminster Corridor	<b>B2: Proposed Thames Gateway Bridge</b>	Bus station
		<b>B3: Proposed Foot/Cycle path attached to Dartford Bridge</b>	Proposed transit
		<b>Tunnels:</b>	<b>* Jetty used for ferry service</b>
		<b>T1: Rotherhithe Vehicular Foot Tunnel</b>	
		<b>T2: Greenwich Foot Tunnel</b>	
		<b>T3: Blackwall Tunnel</b>	
		<b>T4: Woolwich Foot Tunnel</b>	
		<b>Ferries:</b>	
		<b>F1: Woolwich Ferry</b>	
		<b>F2: Tilbury Ferry</b>	

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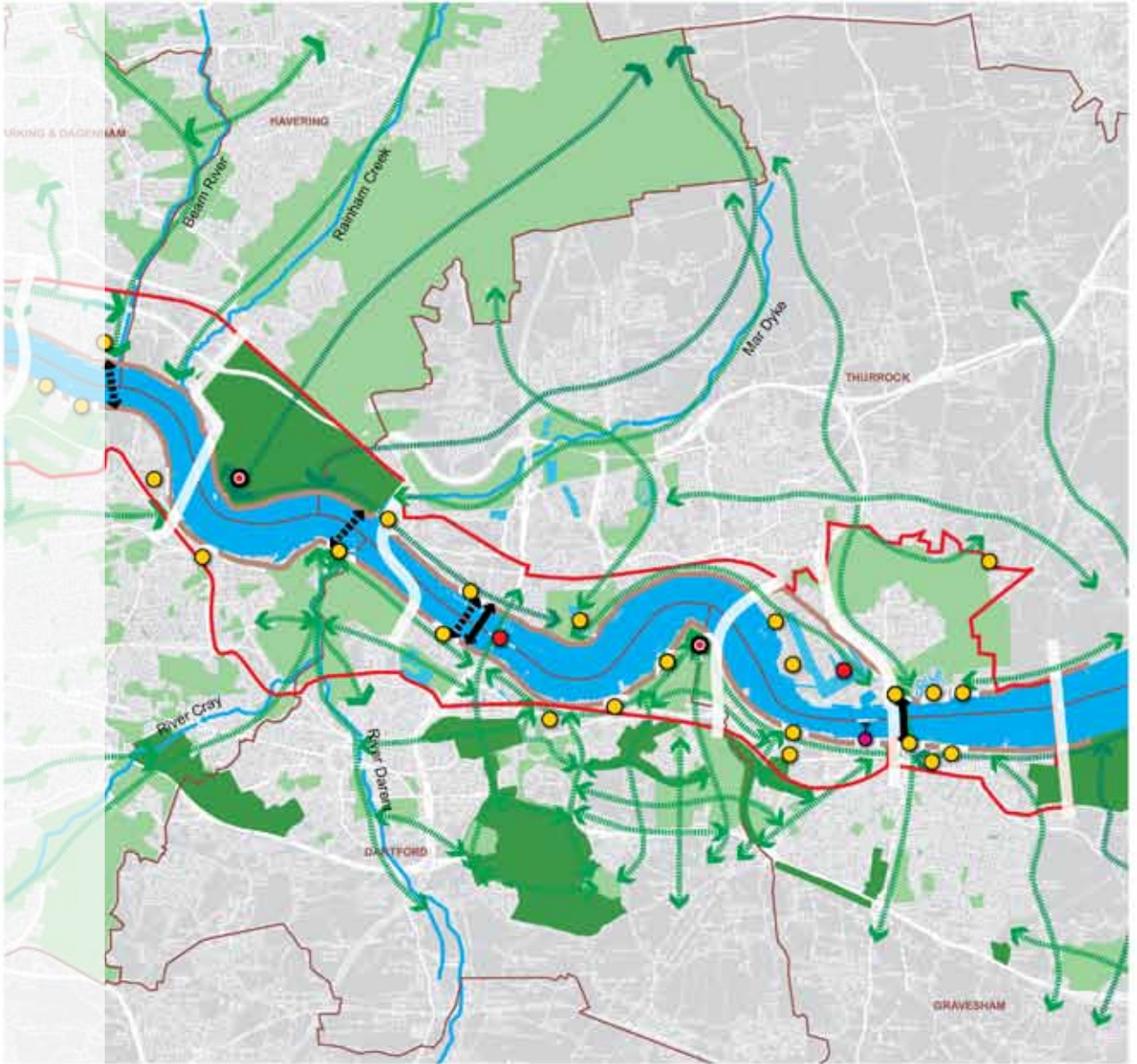


**FIGURE 2.5**  
**STRATEGIC GUIDANCE PLAN**

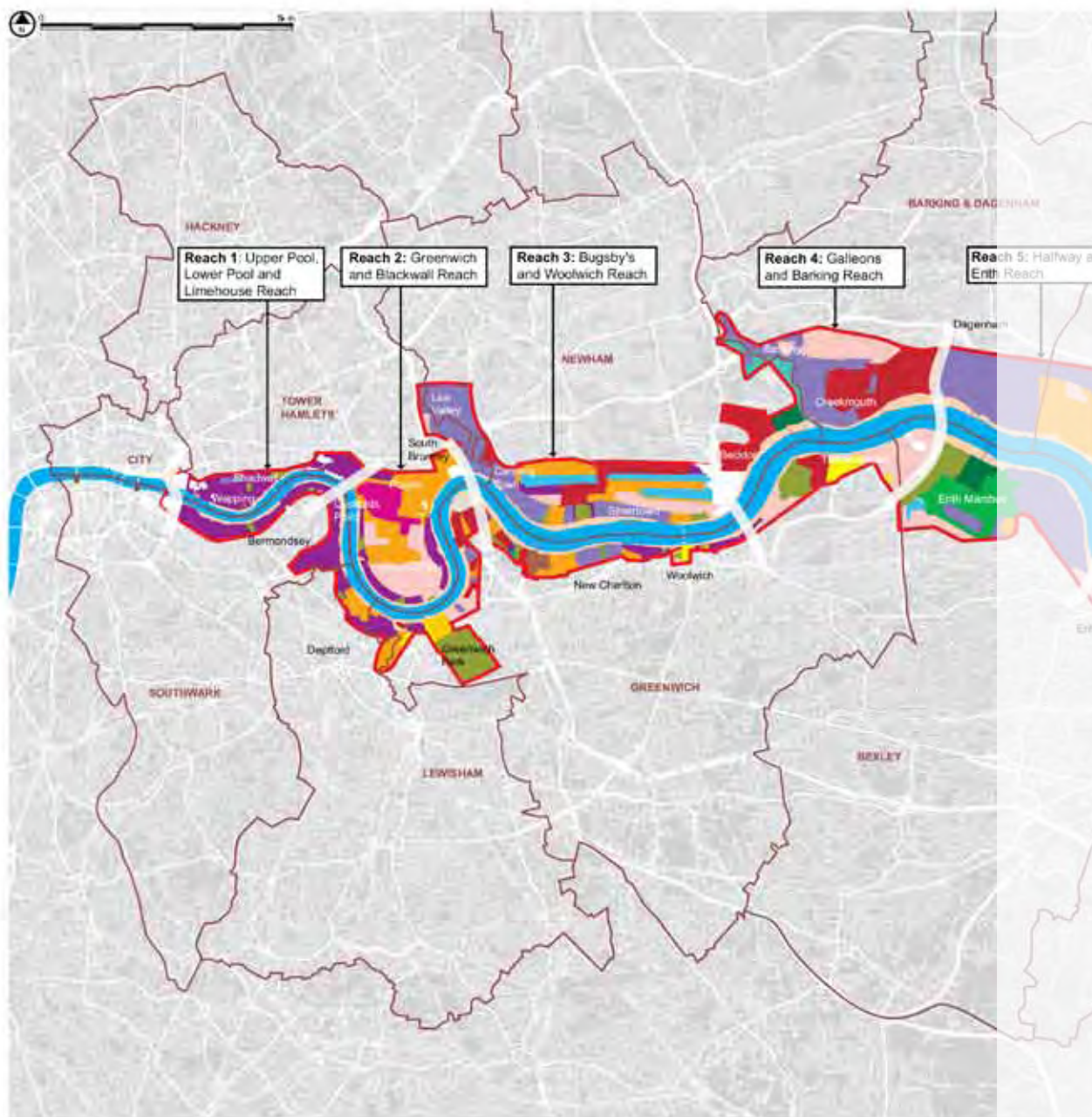


- |   |                                    |   |  |   |  |
|---|------------------------------------|---|--|---|--|
|  | Thames Strategy East boundary area |  | Existing / proposed public open space (The green spaces have been taken from East London Green Grid, Kent Thameside Green Grid where appropriate. Other green spaces have not been verified) |  | Thames Path as proposed in Thames Path City to Sea : One of the World's Great Journeys   |
|  | River Thames and its tributaries   |  | Existing Passenger Pier  |  | Footpath designated as Thames Path   |
|  | Water bodies                       |  | Potential Passenger Pier   |  | Strategic Green Connections (includes current work on East London Green Grid, Kent Thameside Green Grid, and Thames Gateway South Essex Greengrid) |
|  | Borough Boundaries                 |  | Existing landmark (see Figure 3.63 for more detail)  |   |  |
|  | Existing river crossings           |  | Existing major landmark (see Figure 3.63 for more detail)  |   |  |
|  | Proposed river crossings           |  | Proposed major landmark (see Figure 3.63 for more detail)  |   |  |

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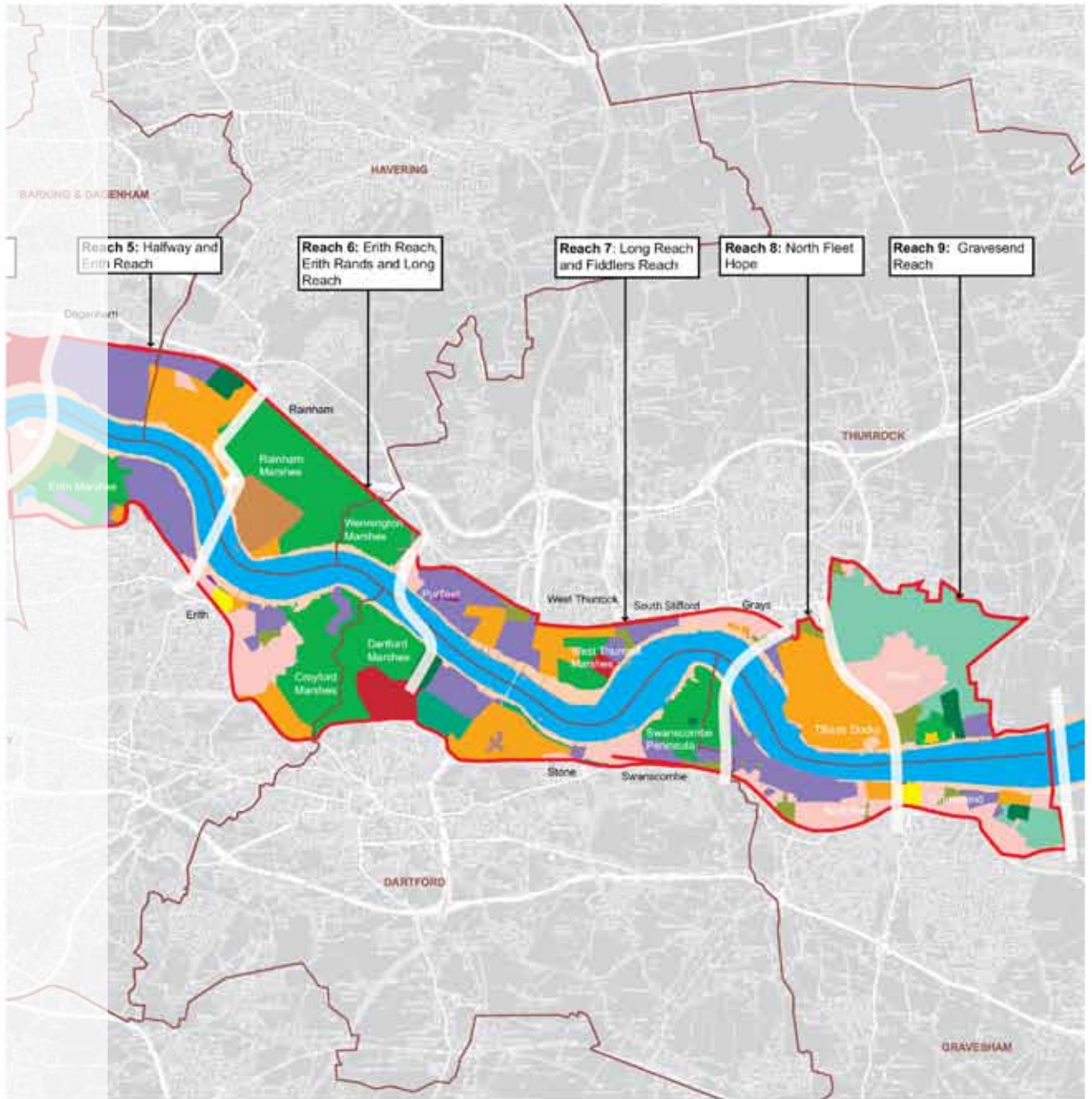


**FIGURE 2.6**  
**CHARACTER TYPES AND THAMES STRATEGY EAST REACHES**



*For brief descriptions please refer to Part 4  
 For detailed descriptions please refer to Appendix 3: Characterisation*

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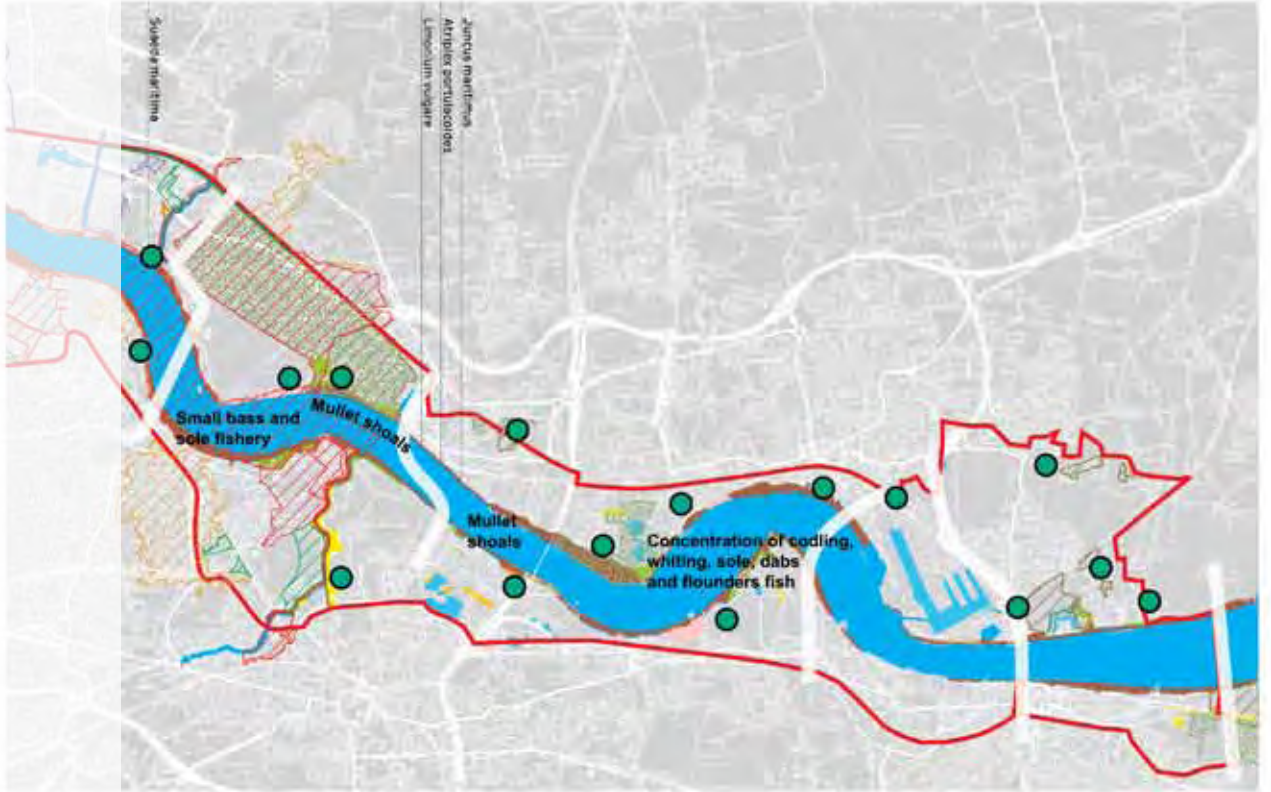


**FIGURE 2.7**  
**BIODIVERSITY**

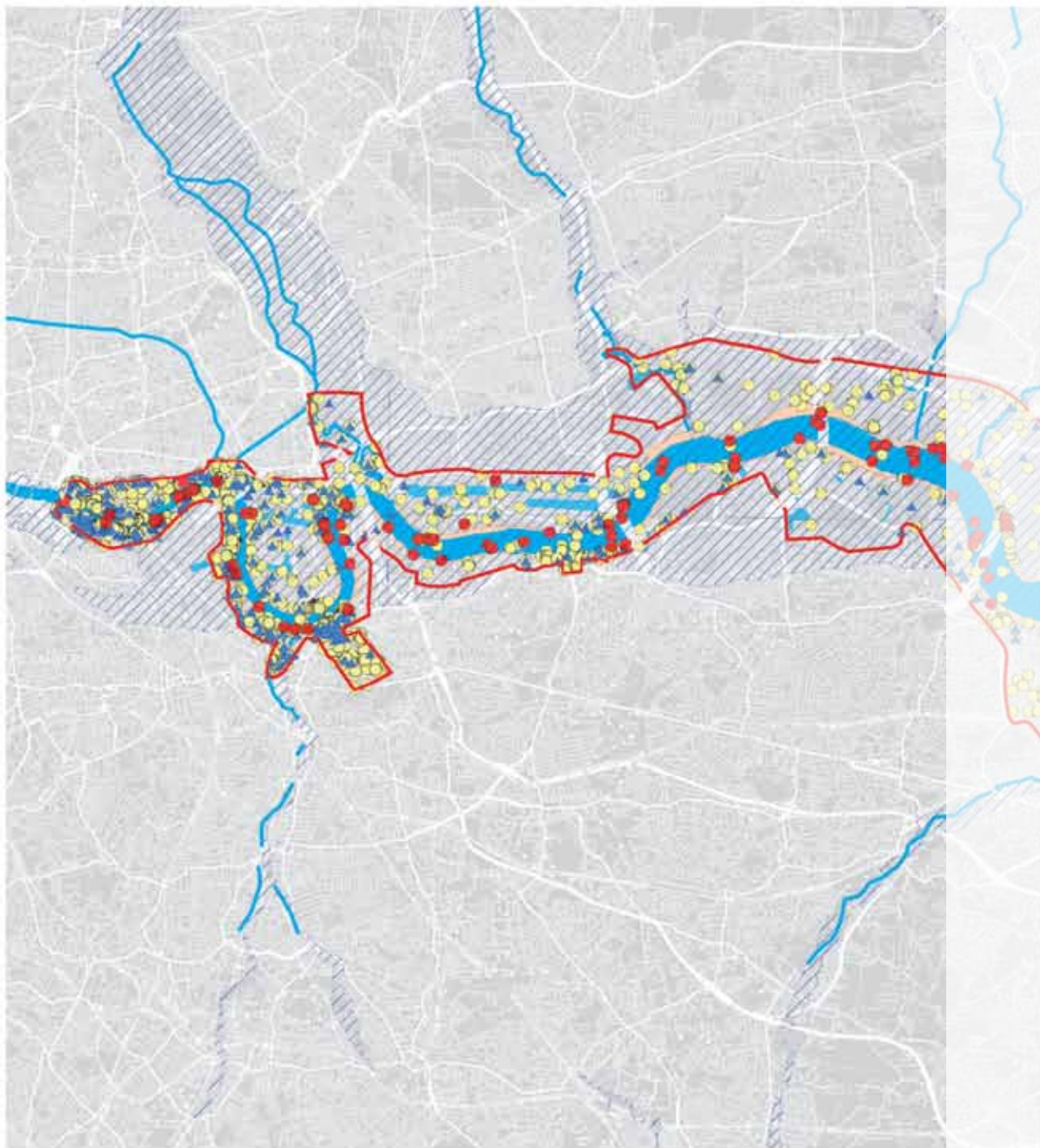





Information on intertidal substrate, distribution of saltmarsh and reedbed vegetation, furthest known upstream distribution records for saltmarsh plant species and some sites of importance for invertebrates are taken from the Tidal Thames and Species Audit, LUC, March 2004

For further information on biodiversity, please refer to Part 4 of the report and Appendix 6: Biodiversity



**FIGURE 2.8**  
**ARCHAEOLOGY**

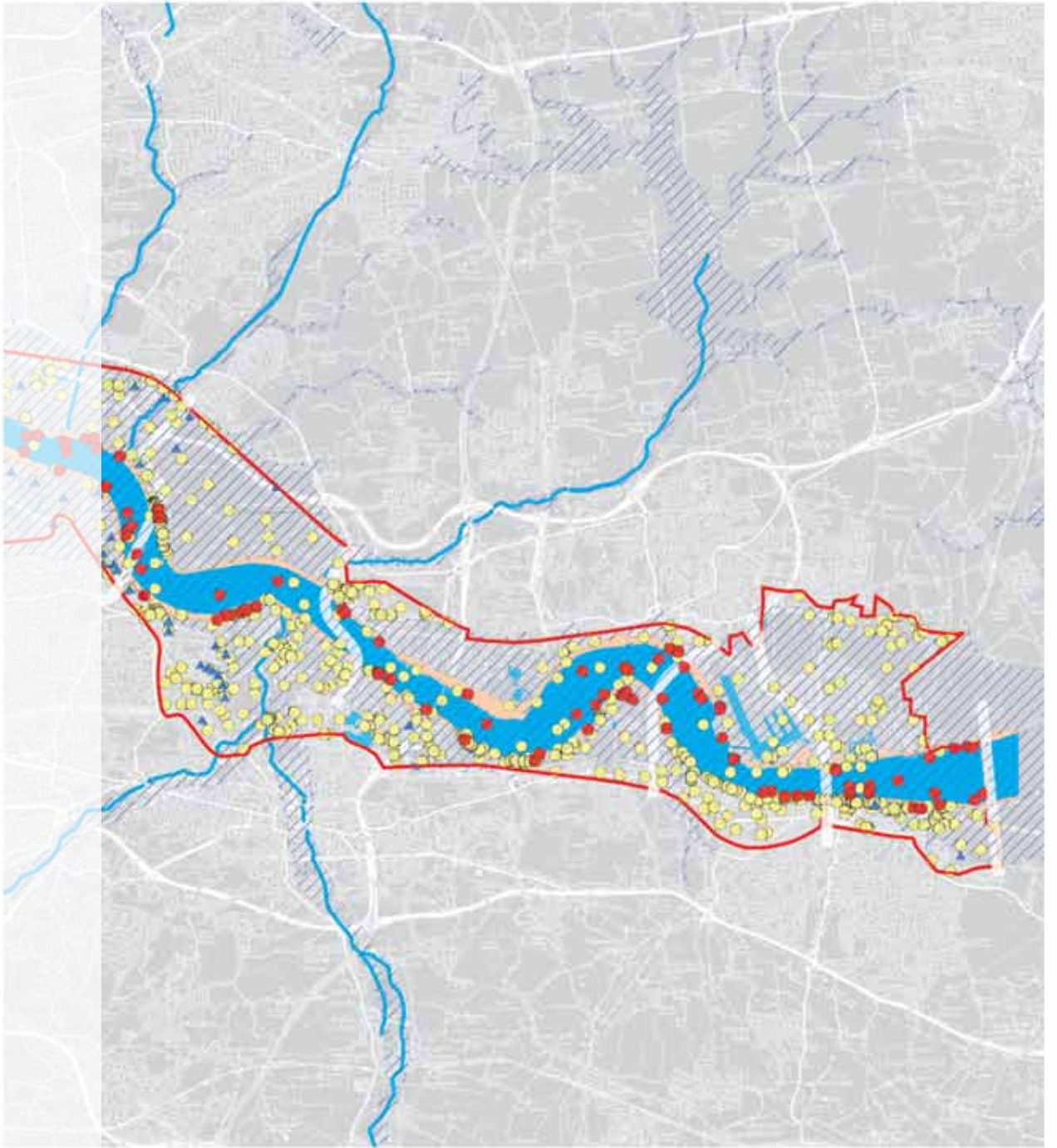


-  Thames Strategy East boundary area
-  Wreck Site
-  Known archaeology, as recorded by Sites and Monuments Record
-  Sites revealed through archaeological investigation
-  Alluvium floodplain

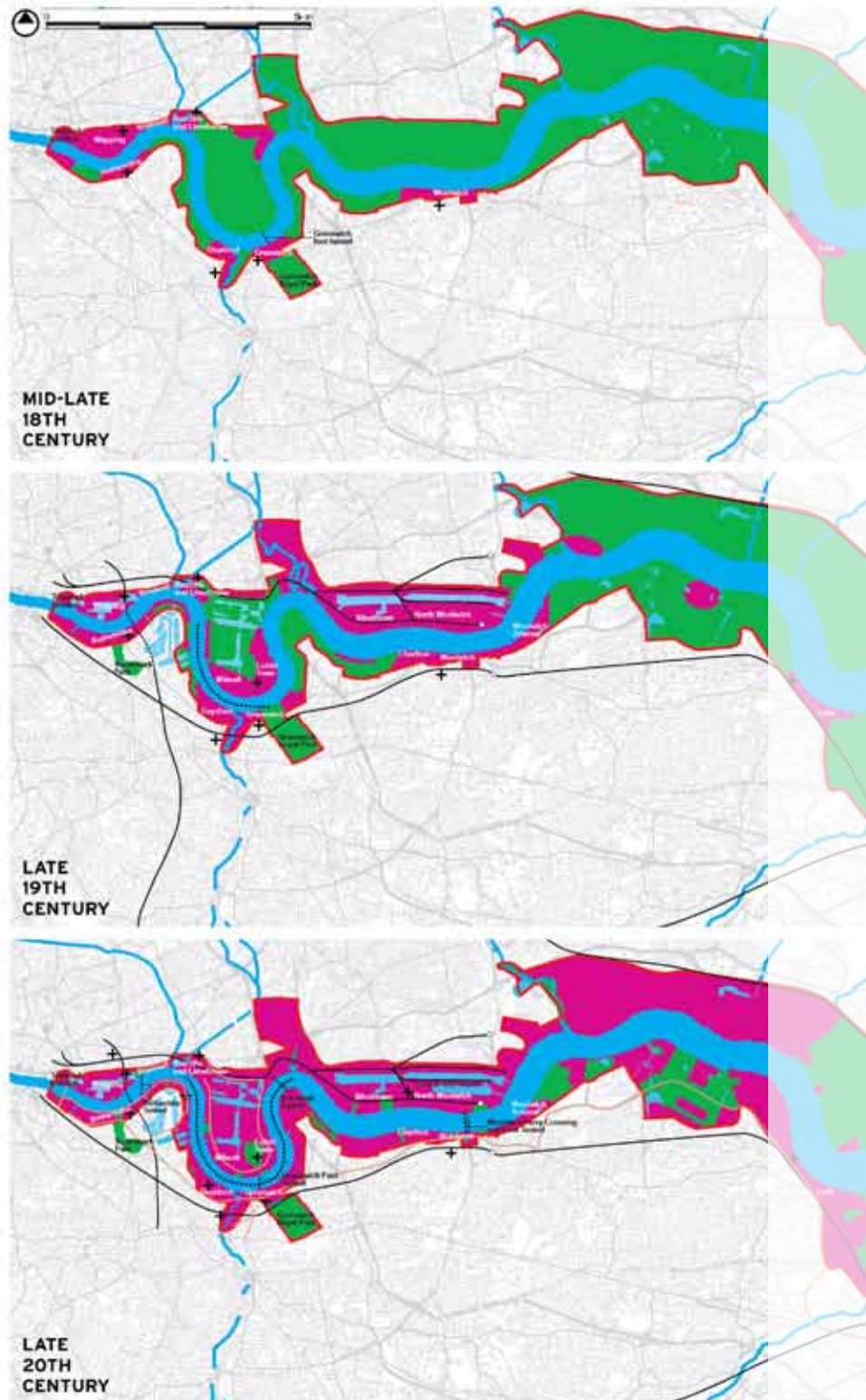
*Produced by Museum of London Archaeology*

*For further reach information please refer to Part 4 and Appendix 4: Archaeology No schedule exists, this figure illustrates the concentration of archaeological significance in the Strategy Area. The purpose of this map is to illustrate the type and distribution of archaeological interest.*

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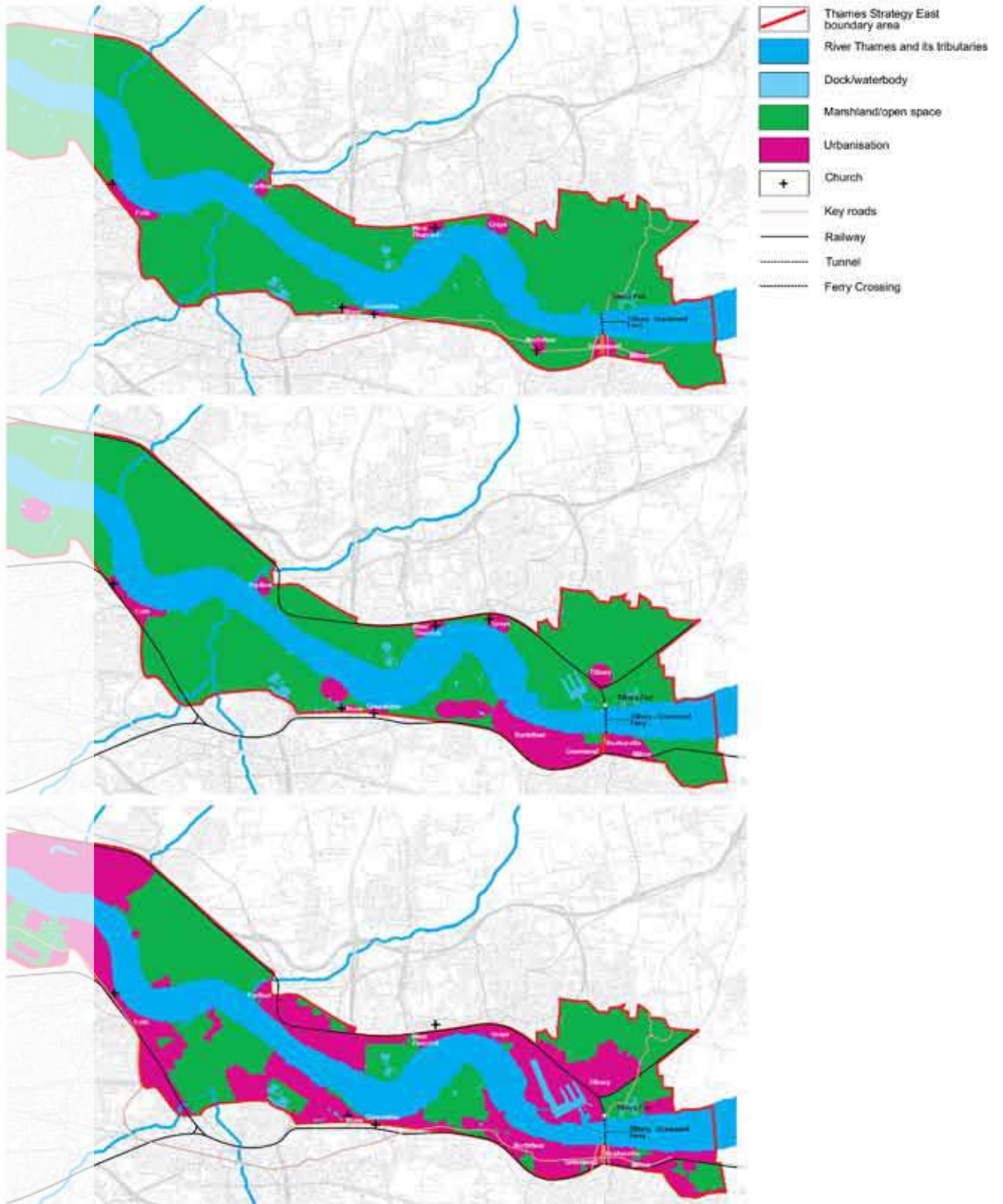


**FIGURE 2.9**  
**HISTORIC DEVELOPMENT PATTERNS**

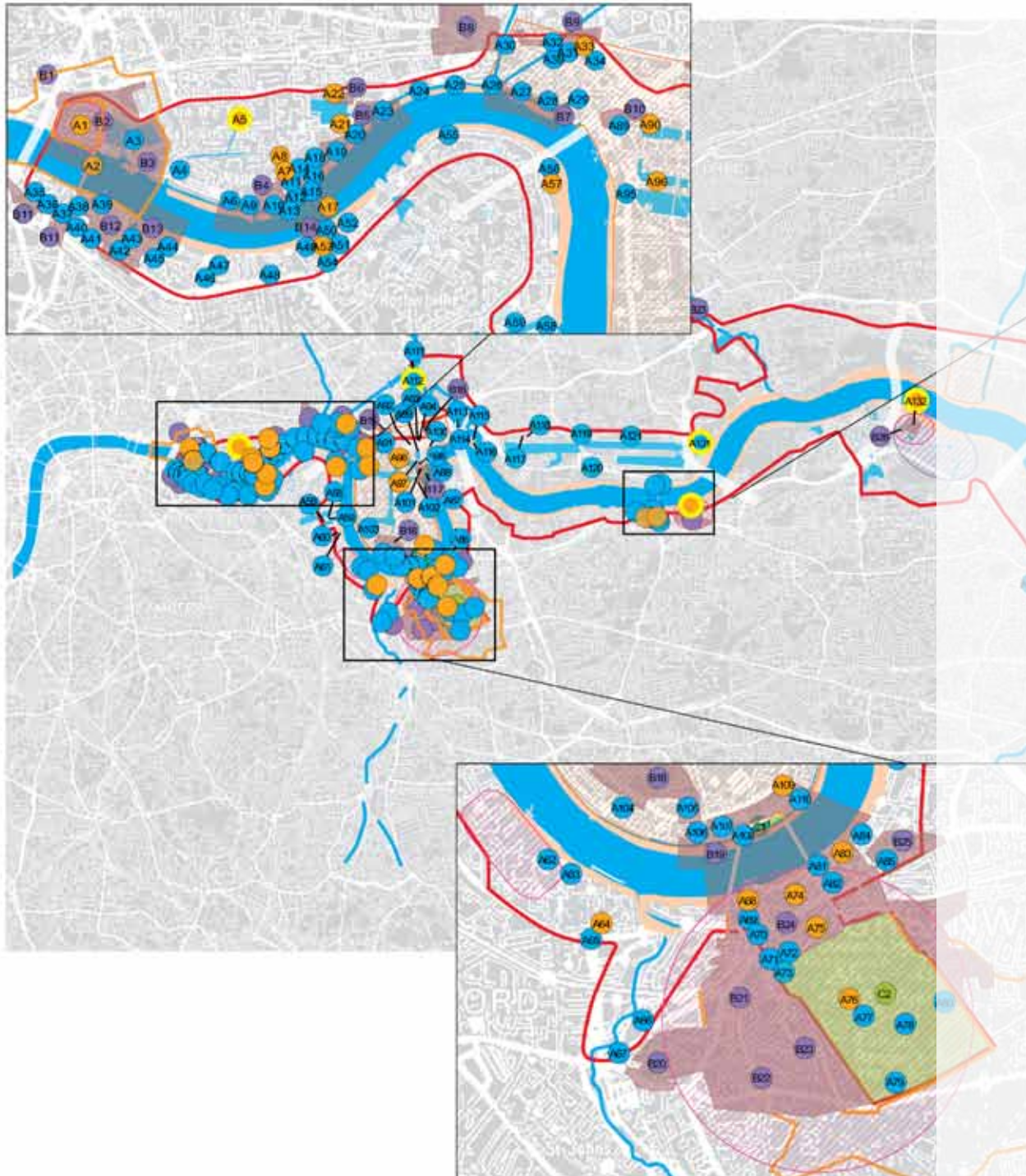


*Information sourced from Alan Baxter and Associates  
 For further information see Appendix 5: Built Heritage*

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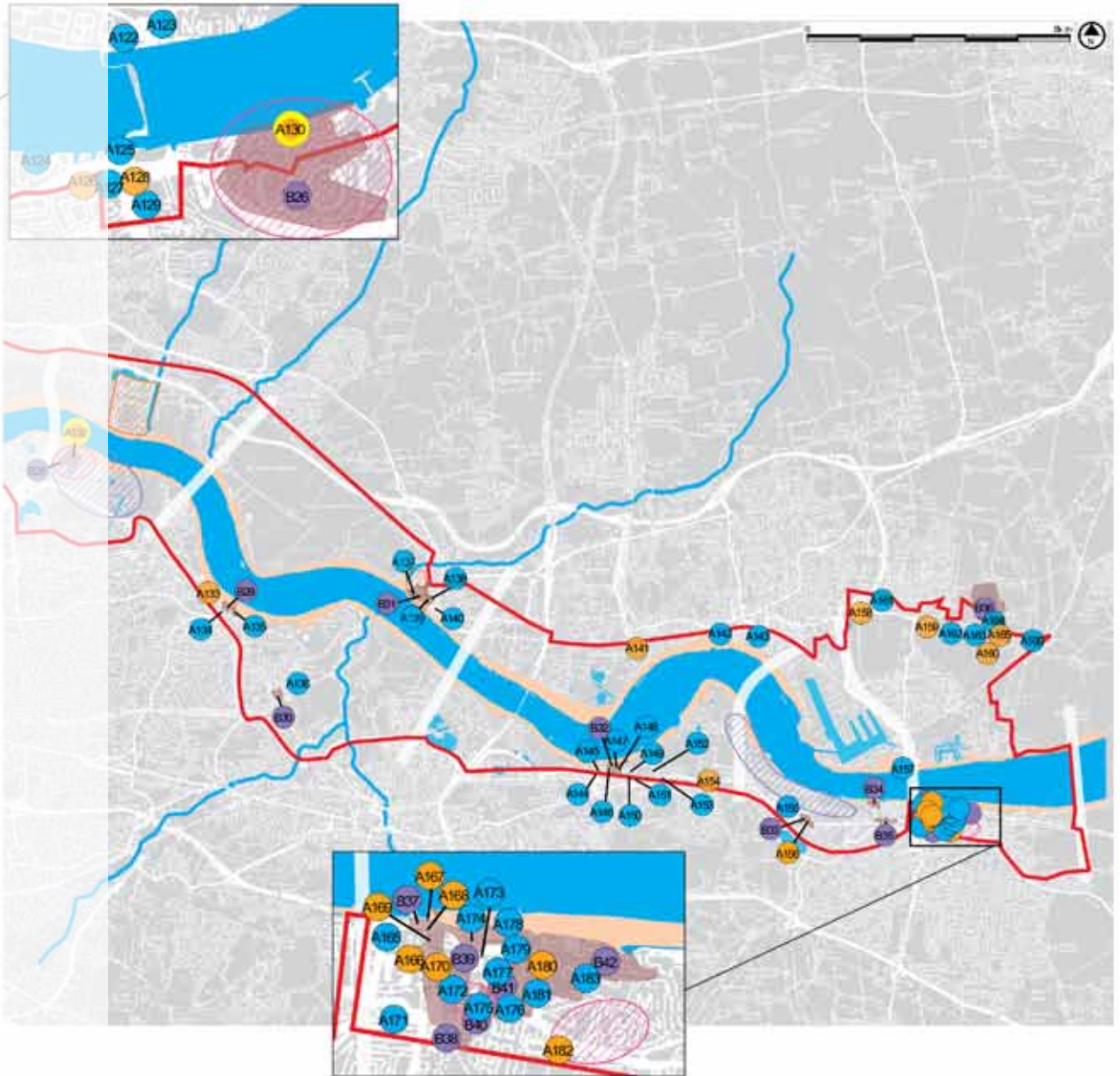
**FIGURE 2.10**  
**BUILT HERITAGE**



Refer to schedule of listed buildings, buildings at risk and conservation areas in Appendix 5: Built Heritage

Information sourced from Alan Baxter and Associates

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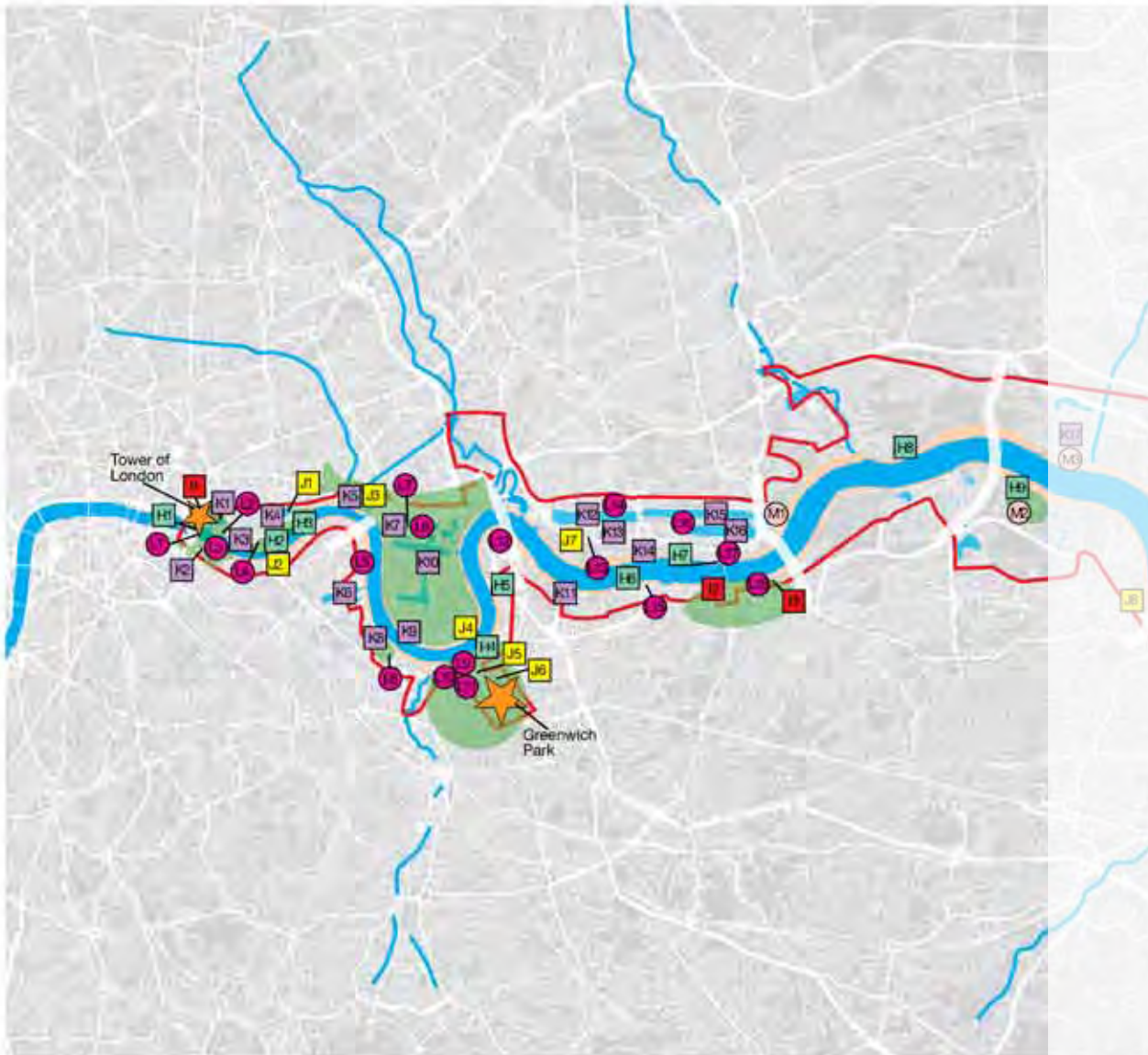


- |  |   |
|--|---|
| Thames Strategy East boundary area     | Grade I or II* registered park or garden                                    |
| Grade I or II* listed building         | World heritage site   |
| Grade I or II* listed building at risk | World heritage site buffer zone   |
| Grade II listed building               | Proposed area for review of listed buildings                                |
| Grade II listed building at risk       | Existing conservation/management plan or masterplan with conservation input |
| Conservation area                      | Potential conservation or management plan with conservation input           |
| Grade II registered park or garden     |   |





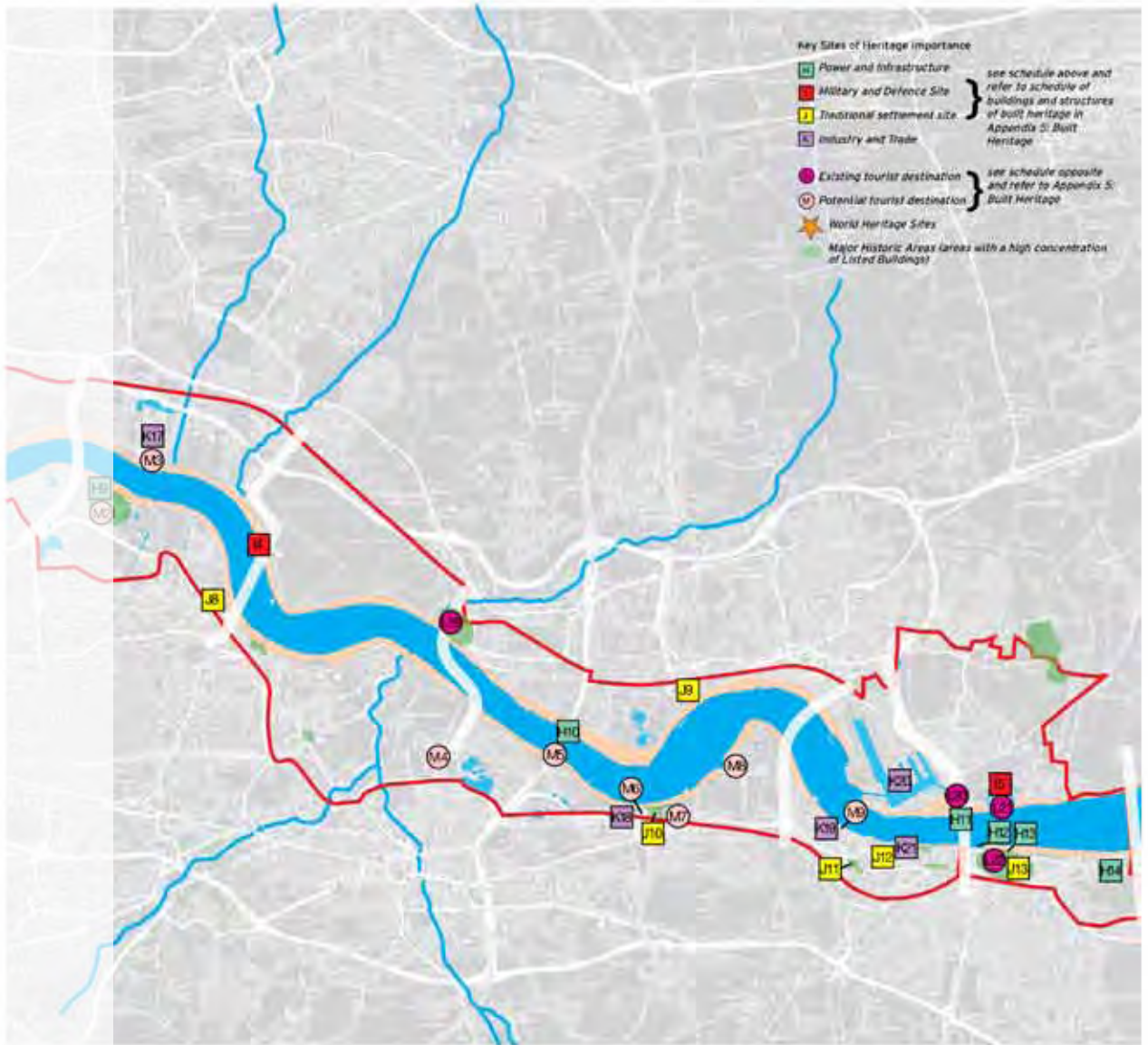
**FIGURE 2.11**  
**BUILT HERITAGE AND TOURIST ATTRACTIONS**



- |     |  |     |   |     |   |
|-----|--|-----|---|-----|---|
| H1  | Tower Bridge, City of London                                   | I4  | World War II concrete barges/lighters at Rainham.   | J12 | Rosherville, Northfleet   |
| H2  | Thames Tunnel  | I15 | Tilbury Fort  | J13 | Gravesend Town Centre   |
| H3  | Rotherhithe Tunnel, Rotherhithe                                | J1  | St-George's-In-The-East Church, Wapping   | K1  | St Katharine's Dock   |
| H4  | Greenwich Generating Station                                   | J2  | St Mary's Church, Rotherhithe   | K2  | Shad Thames, Butler's Wharf, New Concordia Wharf and Anchor Brewhouse, Bermondsey |
| H5  | South Metropolitan Gas Company Holder                          | J3  | St Anne's Church, Limehouse   | K3  | Wapping Wall, Wapping Pier Head and High Street; warehouse and wharves            |
| H6  | The Thames Barrier   | J4  | Christchurch, Cubitt Town   | K4  | Shadwell Dock   |
| H7  | North Woolwich Station & Woolwich Ferry                        | J5  | Maritime Greenwich including: the Cutty Sark and Gypsy Moth, Royal Naval College, National Maritime Museum (including the Queen's House), the Royal Observatory, Trinity Almshouse and St Alfege Church | K5  | Limehouse Basin   |
| H8  | Barking Power Station  | J6  | Greenwich Park  | K6  | Greenland Dock  |
| H9  | Crossness Pumping Station                                      | J7  | Silvertown Church and the Church of St Mary, Woolwich   | K7  | West India Quay   |
| H10 | Queen Elizabeth II Bridge, Dartford                            | J8  | Christchurch, Erith   | K8  | Convoy's Wharf  |
| H11 | London International Cruise Terminal                           | J9  | St Clement's Church, West Thurrock  | K9  | Millwall Ironworks and the Thames Ironworks                                       |
| H12 | Gravesend Town Pier  | J10 | Greenhithe  | K10 | The surviving West India, Millwall and East India Dock                            |
| H13 | Royal Terrace Pier, Gravesend                                  | J11 | St Botolphs Church, Northfleet  | K11 | Angerstein Wharf, Charlton  |
| H14 | Thames & Medway Canal  |     |   | K12 | The Royal Victoria Dock   |
| I1  | Tower of London, City of London                                |     |   | K13 | Spiller Millennium Flour Mills and Silo D   |
| I2  | Mast Pond Wharf and surviving buildings from Woolwich Dockyard |     |   |     |   |
| I3  | Royal Arsenal, Woolwich  |     |   |     |   |

Note: The above sites were highlighted as part of the Thames Strategy East Cultural Heritage Study by Alan Baxter Associates. Please refer to Appendix 5: Built Heritage.

For further reach information, please refer to Part 4 of the report and Appendix 5: Built Heritage Information sourced from Alan Baxter and Associates



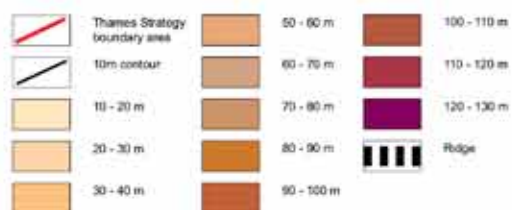
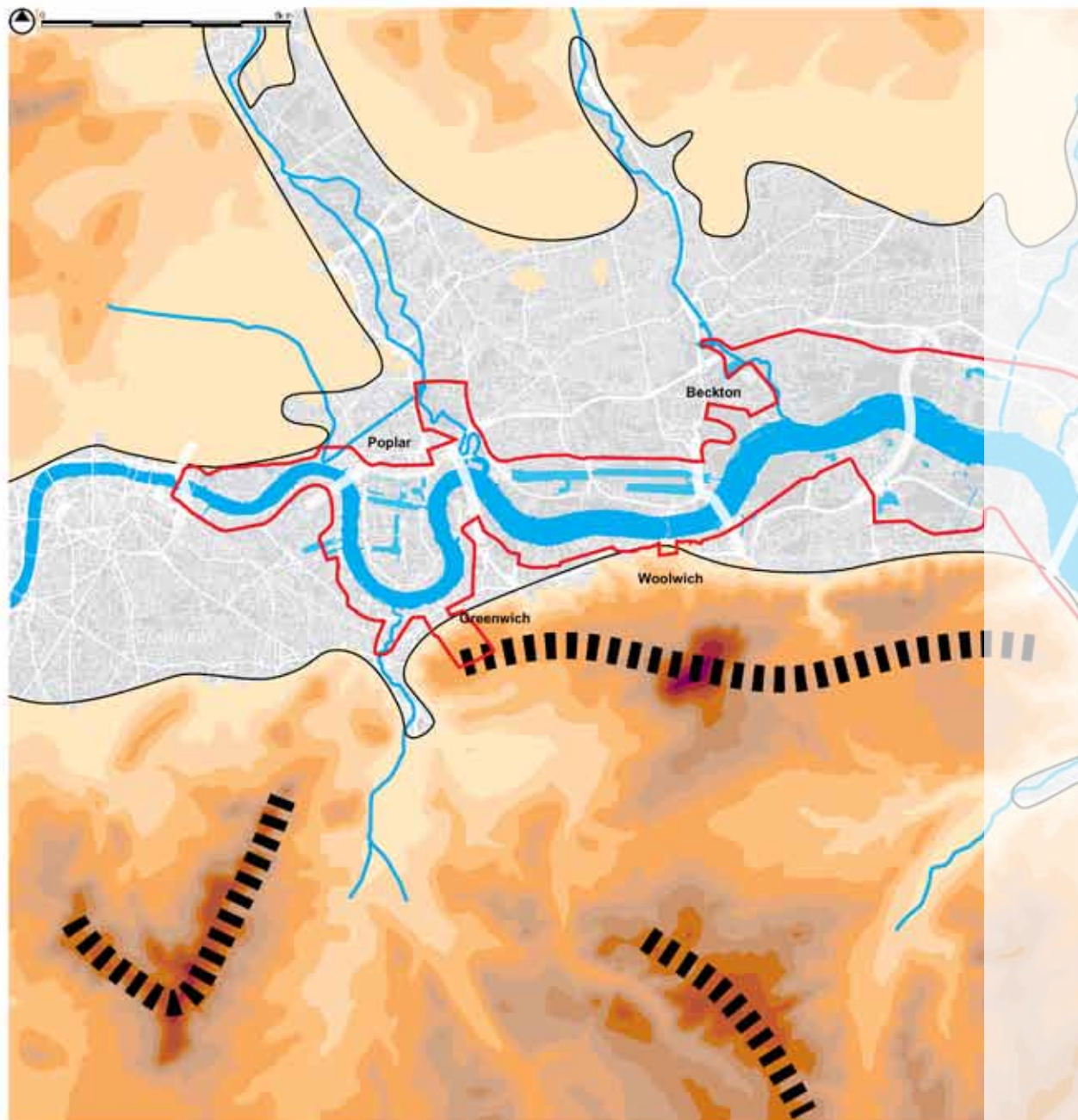
- K14 Tate and Lyle Thames refinery
- K15 Royal Albert Dock
- K16 King George V Dock
- K17 Ford Motor works at Dagenham
- K18 Portland Cement Works, Greenhithe
- K19 Blue Circle Cement Works, Bevan's Wharf
- K20 Tilbury Docks
- K21 Henley's Telegraph Works Co, factory and research laboratories
- L1 The Tower of London and Tower Bridge
- L2 St Katharines Dock-Marina
- L3 Shad Thames and the Design Museum
- L4 Wapping's industrial heritage
- L5 Surrey Docks Farm
- L6 Royal Naval Dockyard, Deptford (archaeological interest) Samuel Pepys House and Master Shipwrights House (potential attraction)
- L7 Museum of the Docklands, West India quay

- L8 Canary Wharf
- L9 Maritime Greenwich including the Cutty Sark, Greenwich market, National Maritime Museum, Royal Naval College, the Royal Observatory, Greenwich Park and the Ranger's House
- L10 Greenwich Theatre
- L11 Fan Museum, Greenwich
- L12 Millennium Dome
- L13 St Marks Church, Silvertown
- L14 ExCEL Exhibition Centre
- L15 Thames Barrier Information and Learning Centre
- L16 London City Airport
- L17 North Woolwich Railway Museum, 24 hour museum
- L18 Firepower! The Royal Artillery Museum, Woolwich Arsenal
- L19 Powder Magazines, Purfleet

- L20 London International Cruise Terminal Terminal, Baggage Hall
- L21 Tilbury Fort (potential links with Coalhouse Fort to the East)
- L22 Gravesend Town Centre, Royal Terrace Pier and Town Pier (recently restored)
- M1 Gallions Hotel (potential attraction)
- M2 Crossness Pumping Station
- M3 Ford motor works at Dagenham
- M4 Joyce Green Hospital
- M5 Queen Elizabeth II Bridge, Dartford
- M6 Greenhithe
- M7 Ingress Park
- M8 Swanscombe Marshes
- M9 North Fleet Industrial

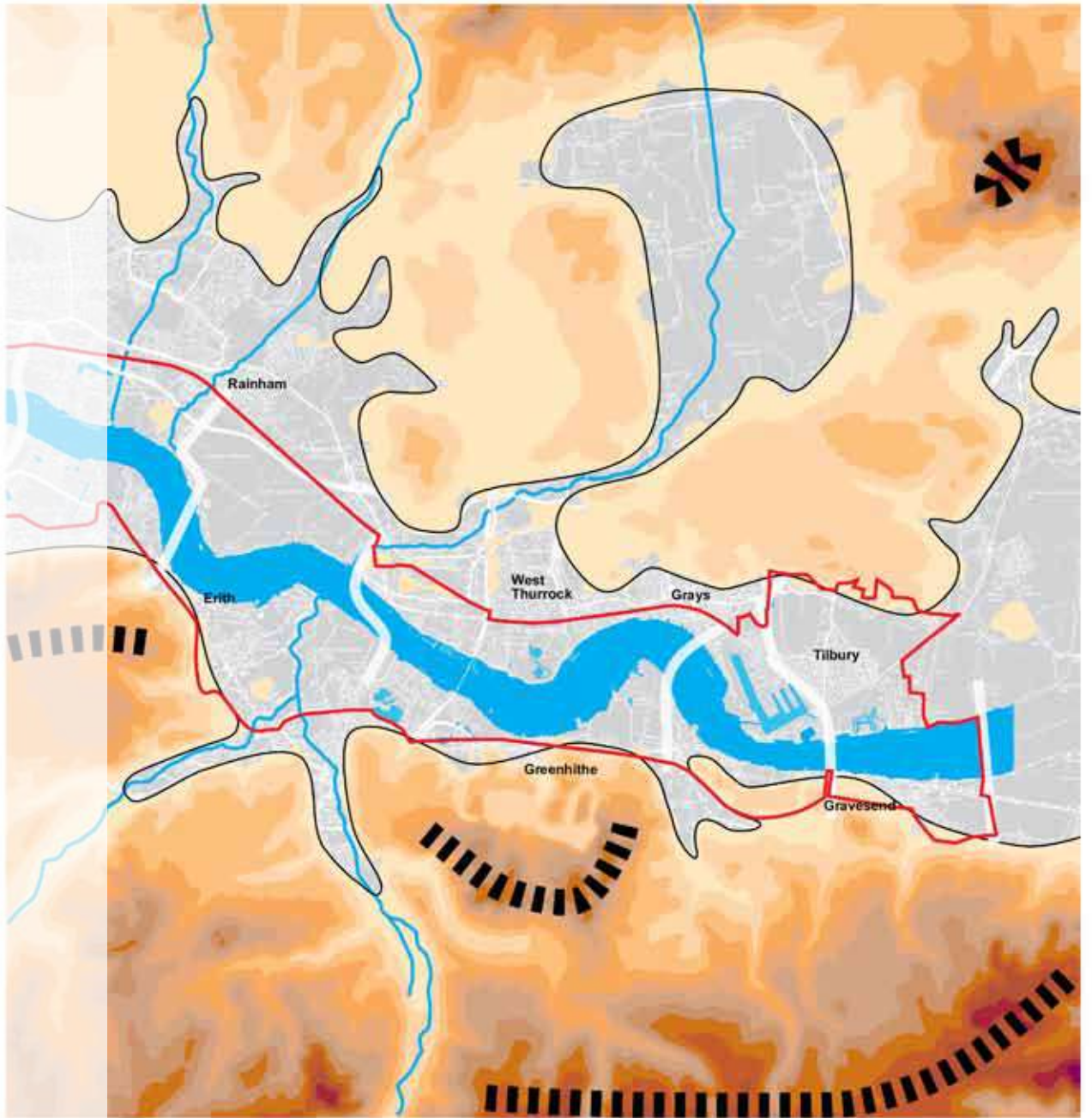


**FIGURE 2.12**  
**TOPOGRAPHY**

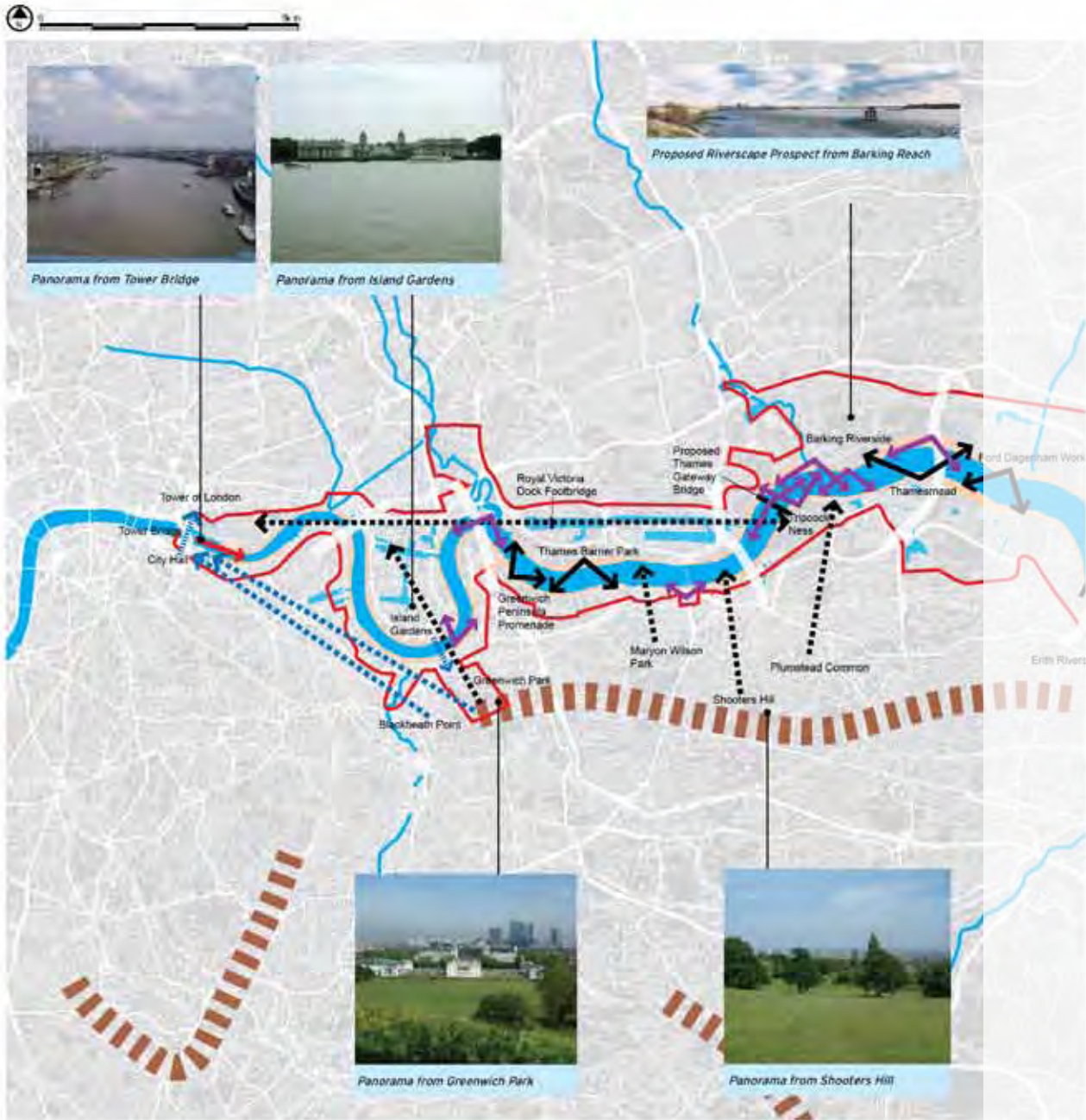


For further reach information please refer to Part 4 and Appendix 3: Characterisation

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**FIGURE 2.13**  
**VIEWS, PANORAMAS AND RIVER PROSPECTS**



*Views designated as part of the London View Protection Framework*

*London Panoramas  
 From Tower Bridge to central London  
 From Greenwich Park to central London  
 From Blackheath Point to central London*

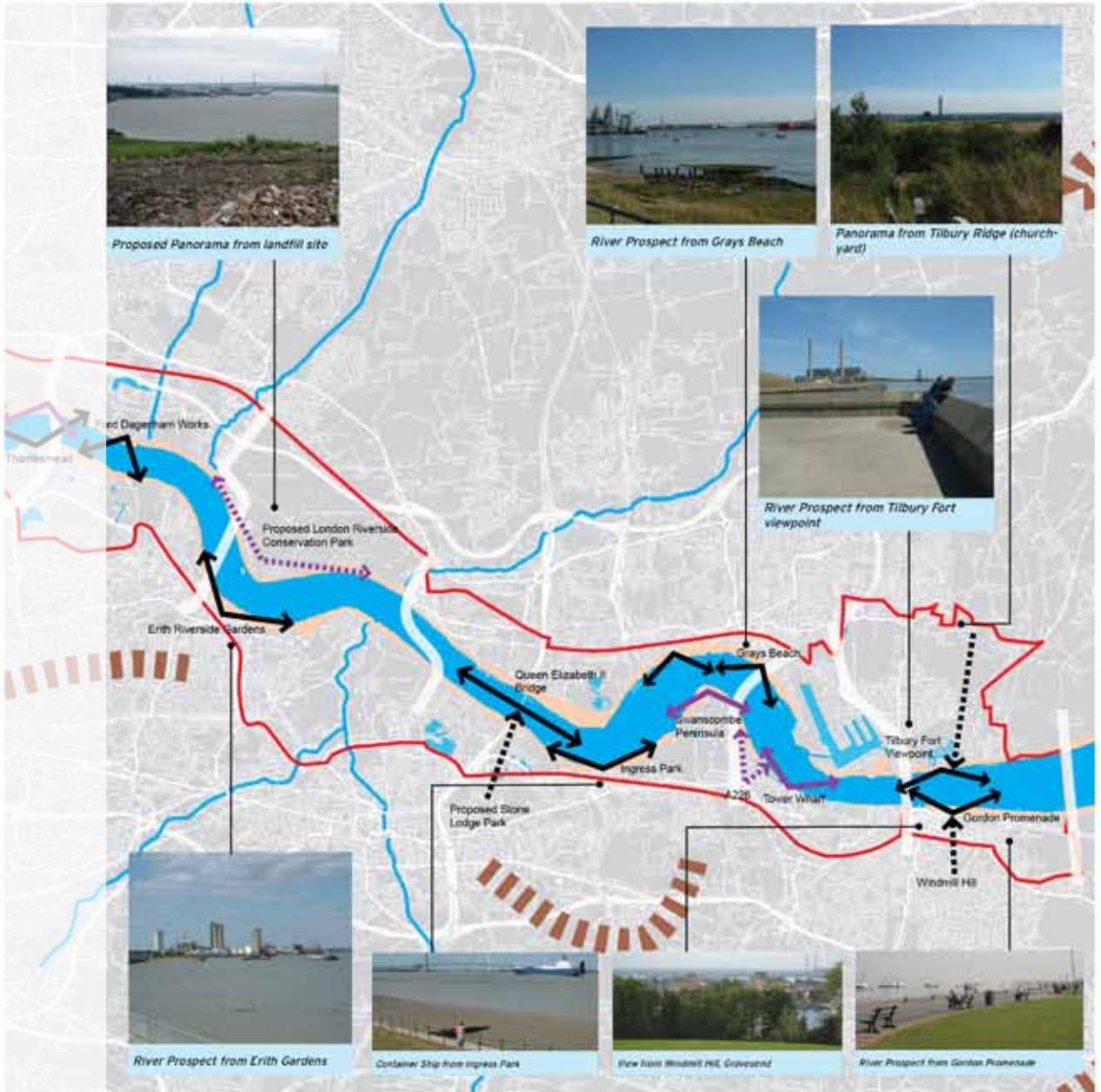
*Island Gardens, Isle of Dogs to Royal Naval College  
 City Hall to Tower of London*

*River Prospects  
 Tower Bridge prospect*

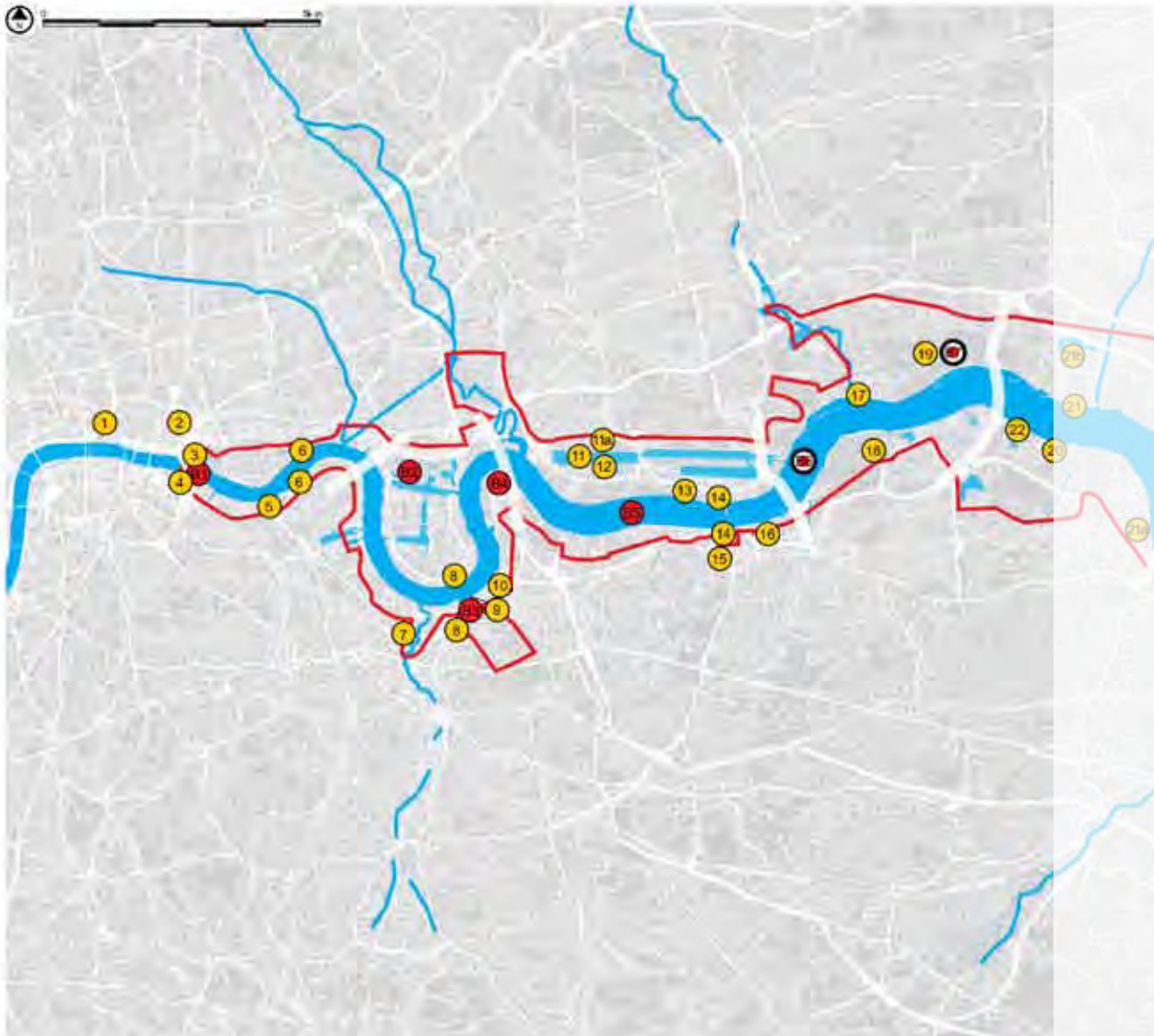
*Townscape Views  
 Island Gardens, Isle of Dogs to Royal Naval College  
 City Hall to Tower of London*

*For further information on Reaches see Part 4 and Appendix 3: Characterisation*

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**FIGURE 2.14**  
**LANDMARKS**



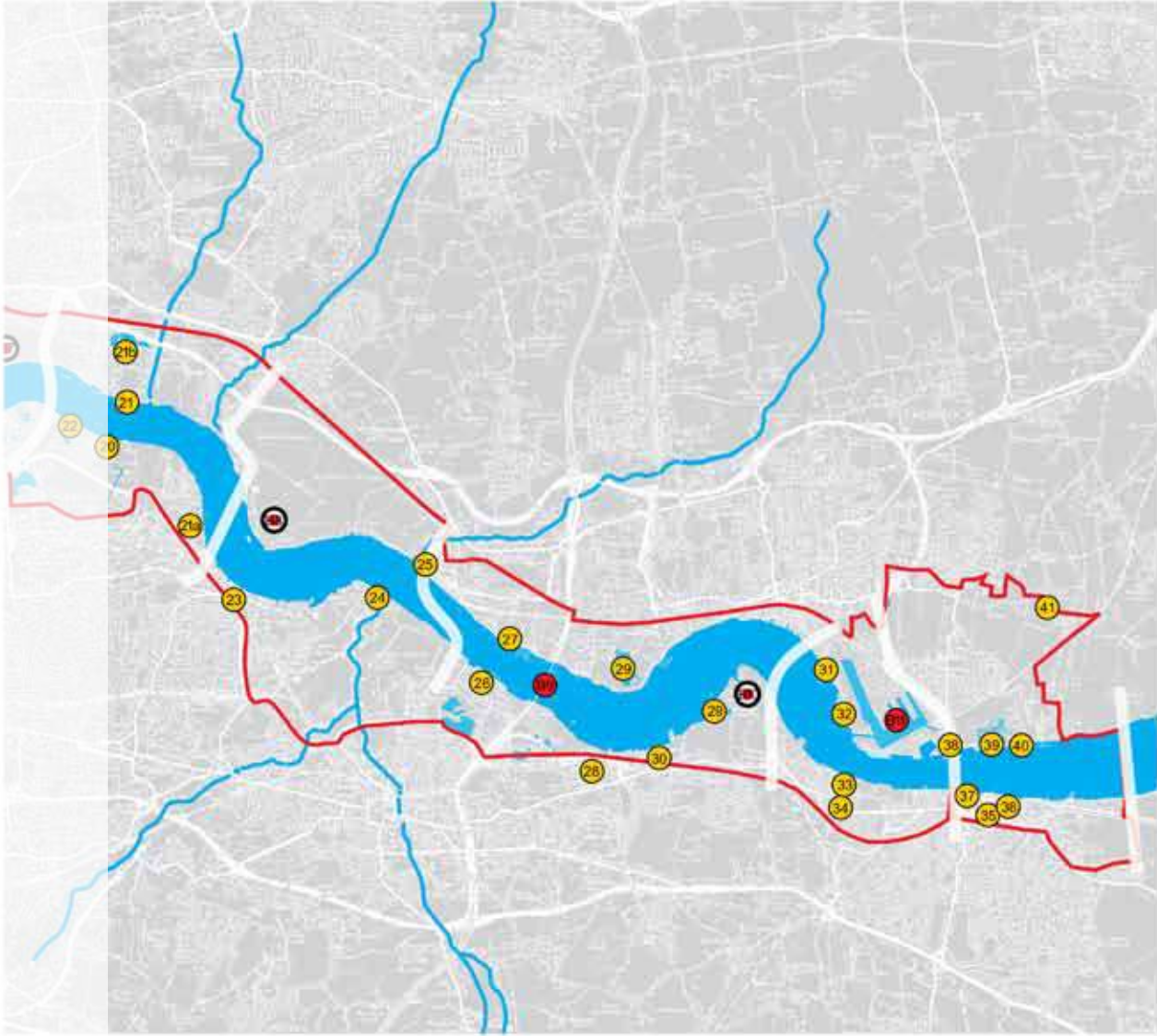
**11 Major Landmarks**

- B1:** Tower Bridge
- B2:** Cluster of office towers at Canary Wharf
- B3:** Old Royal Naval College
- B4:** Millennium Dome
- B5:** The Thames Flood Barrier
- B6:** Proposed Thames Gateway Bridge (Beckton and Tripcock Park)
- B7:** Proposed development at Barking and Dagenham
- B8:** Proposed Landmark in the Proposed London Riverside Conservation Park
- B9:** Queen Elizabeth II Bridge
- B10:** Proposed development at Swanscombe Peninsula
- B11:** Tilbury Docks

**Landmarks**

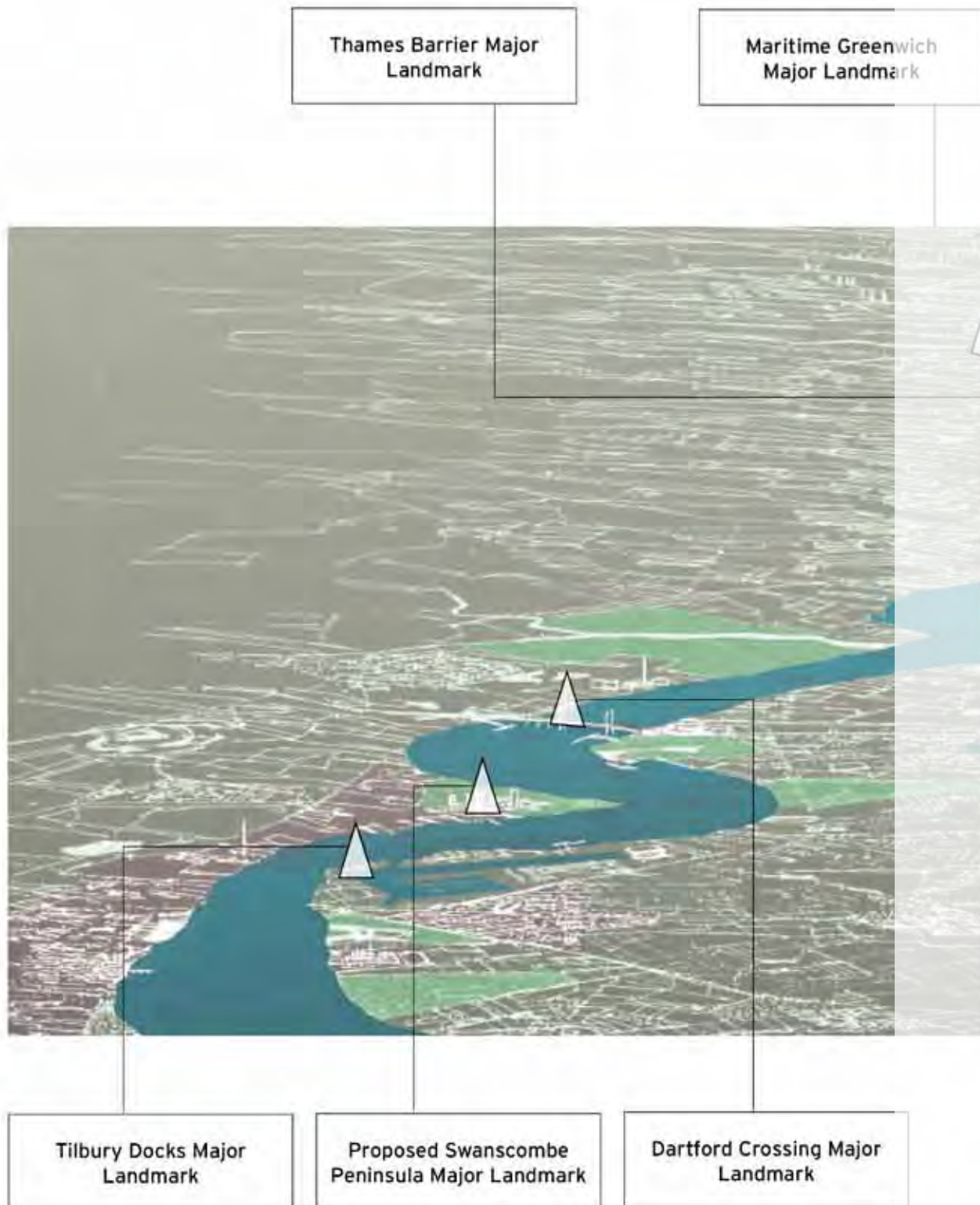
- 1. St Pauls Cathedral
- 2. Swiss Re Building (Gherkin)
- 3. Tower of London
- 4. City Hall
- 5. St Mary's Church, Bermondsey
- 6. Domes entrances to the Rotherhithe Tunnel
- 7. Laban Dance Centre
- 8. Domed entrances to Greenwich foot tunnel
- 9. Cutty Sark
- 10. Greenwich Power Station
- 11. Royal Victoria Dock Footbridge
- 11a. Excel Exhibition Centre
- 12. Millennium Mill
- 13. Tate and Lyle Glucose Refinery
- 14. Woolwich Ferry Terminals
- 15. St. Mary's Church, Woolwich
- 16. Royal Arsenal
- 17. Barking Creek Flood Barrier
- 18. Twin Tumps
- 19. Barking Reach Switching Station
- 20. East London Sewage Incinerator
- 21. Ford Works and Jetty at Ford Dagenham Works
- 21a. Pirelli Towers
- 21b. Wind turbines at Ford
- 22. Crossness Pumping Station
- 23. Christ Church, Erith
- 24. Dartford Creek Flood Barrier
- 25. Purfleet Military and Heritage Centre
- 26. Littlebrook Power Station
- 27. Purfleet Thames Terminal
- 28. St Mary's Church, Stone
- 29. 'Super' pylons
- 30. Ingress Abbey
- 31. Tilbury Bulk Grain Terminal
- 32. Tilbury Docks riverside wharf
- 33. Chimneys at Northfleet
- 34. Catholic Church, Northfleet
- 35. Church of St George, Gravesend
- 36. New Tavern Fort
- 37. Gravesend Town Pier
- 38. PLA London International Passenger Cruise Terminal
- 39. Tilbury Fort
- 40. Tilbury Power Station
- 41. Flint Church, West Tilbury

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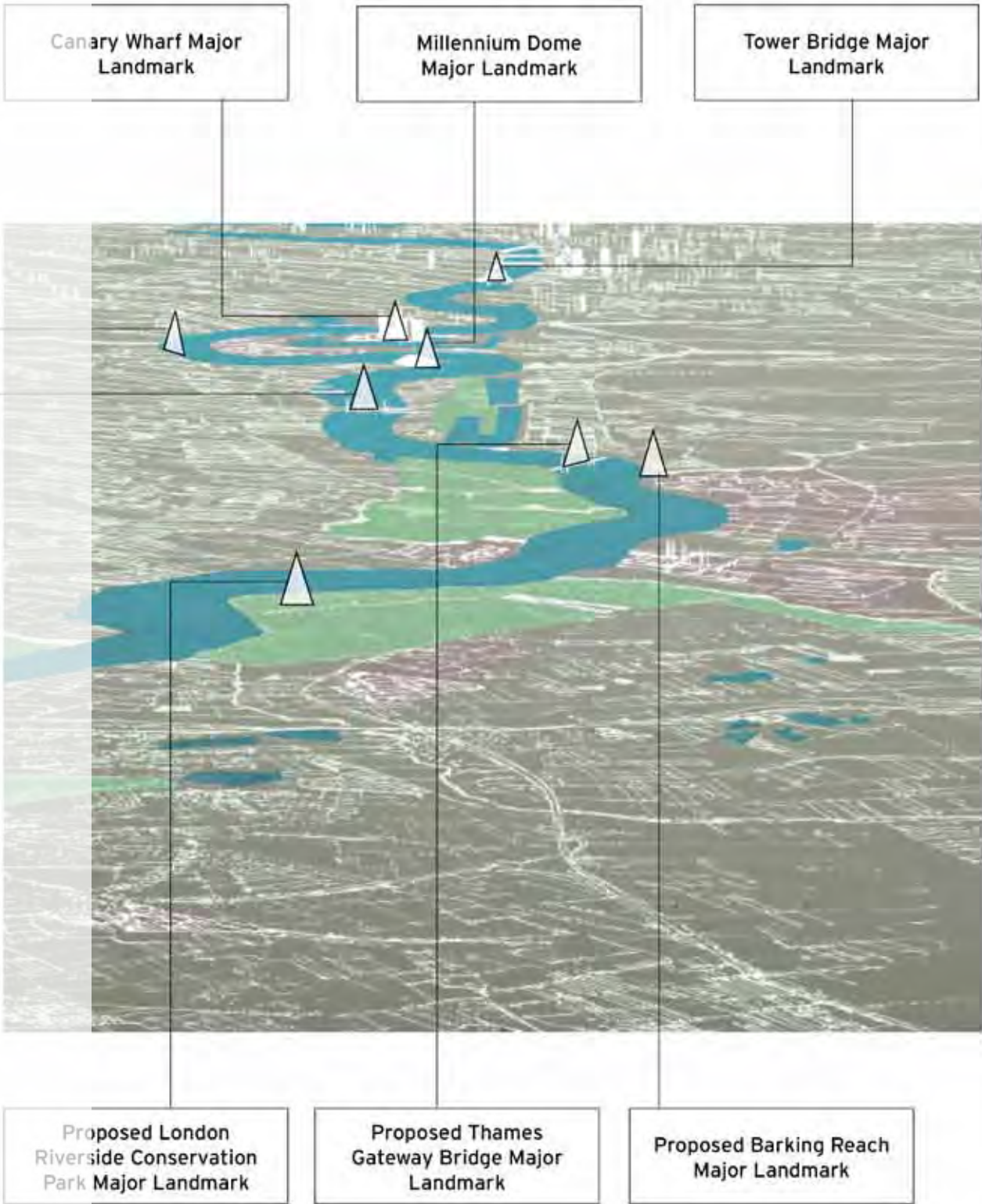




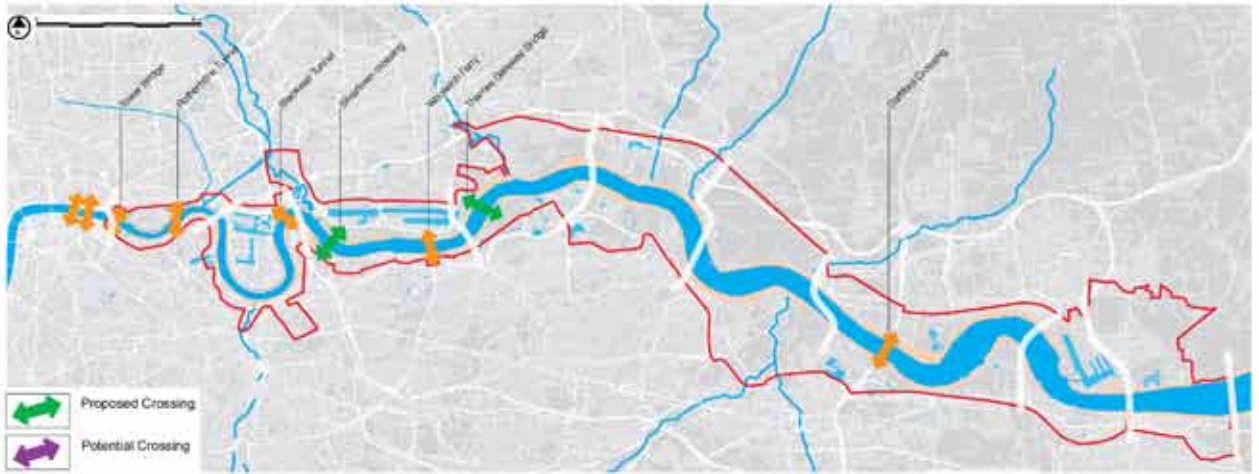
**FIGURE 2.15**  
**MAJOR LANDMARKS**



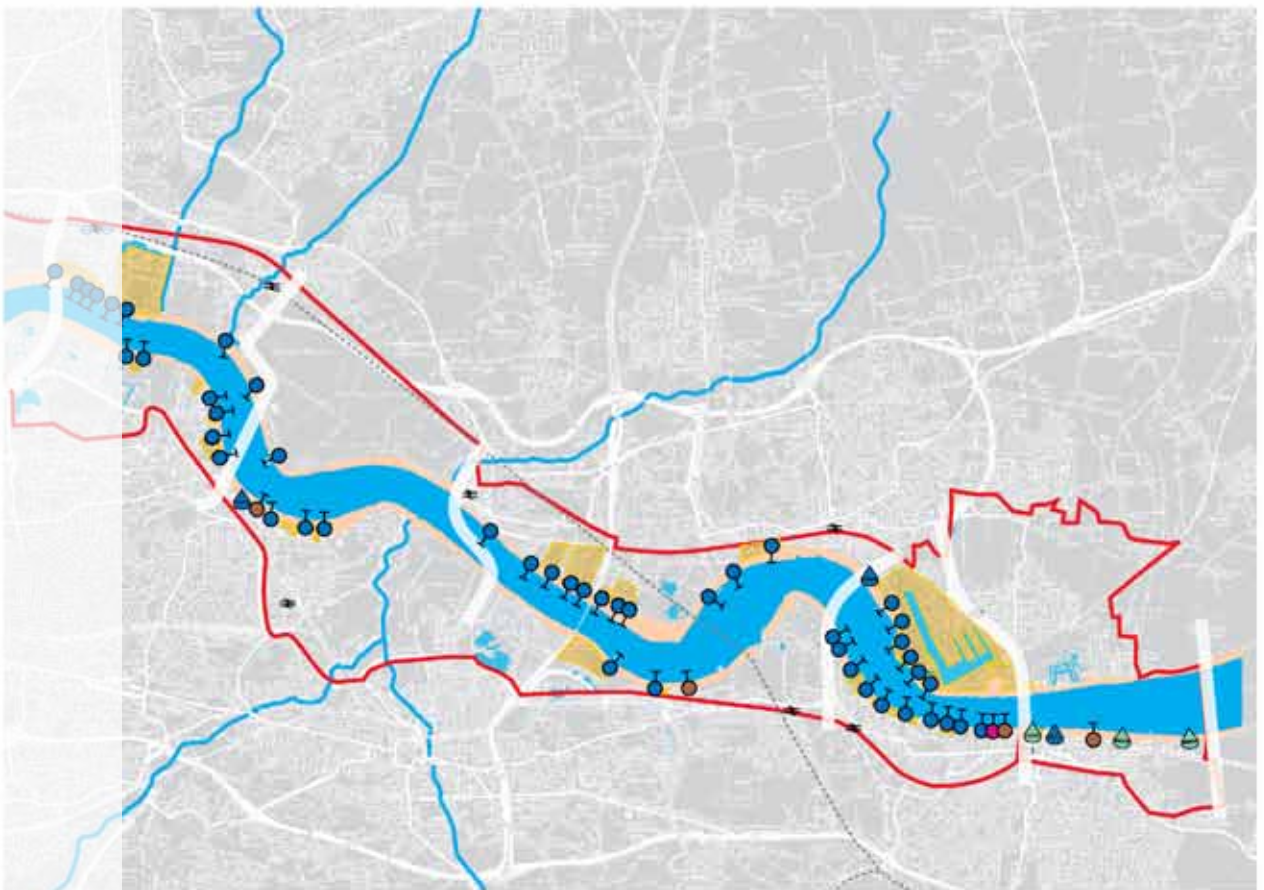
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VEHICULAR RIVER CROSSINGS



- |  |  |   |                |
|--|--|---|----------------|
| Thames Strategy East boundary area               | Proposed DLR station                                 | Yacht club                                | Mooring        |
| Mudflats   | Tube station   | Watersports Facilities and Marine Centres | Launching site |
| Mainline railway station                         | Channel Tunnel Rail Link (under construction)        | Commercial terminal                       | Proposed pier  |
| DLR station (including those under construction) | Safeguarded wharf (Protects wharf outside of London) | Pier                                      |                |



**FIGURE 2.17**  
**URBAN STRUCTURE**



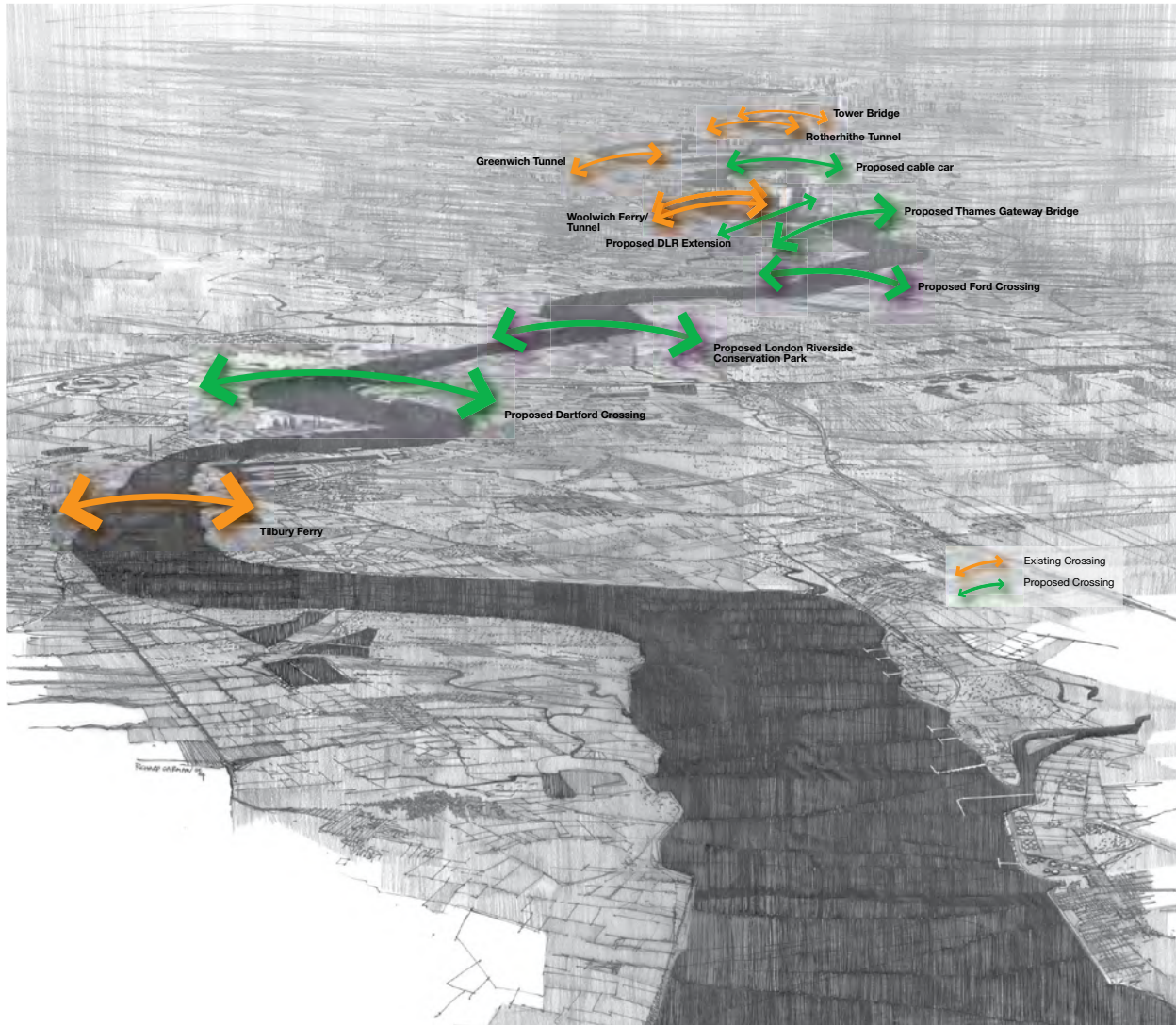
**Key**

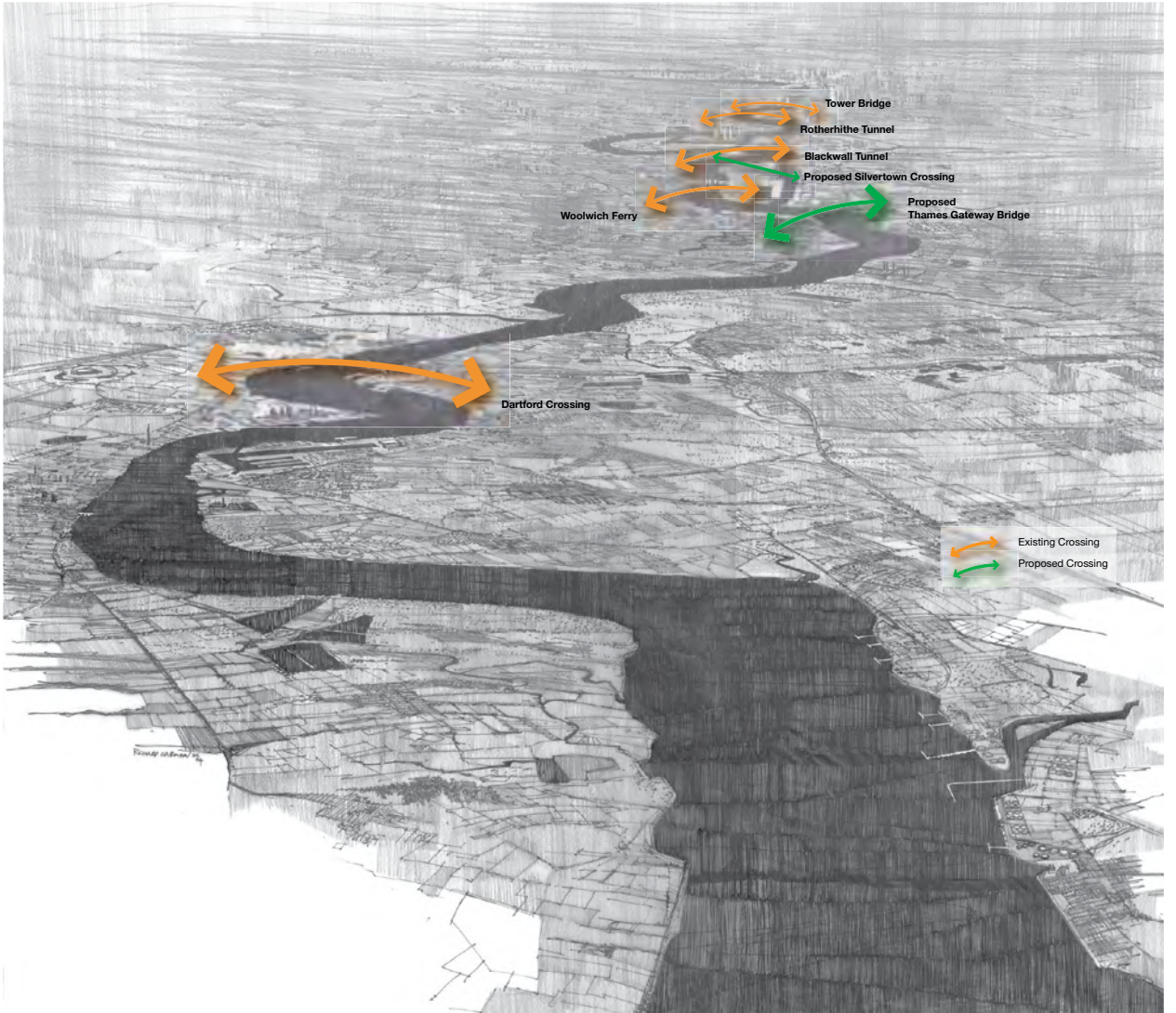
	Thames Strategy East boundary area		Steps
	Existing footpath/cycleway (including all existing footpath/cycleways, existing Thames Path, National Cycle Network developed by Sustrans)		Existing town centres
	Proposed footpath/cycleway (including opportunities to create new sections Thames Path, Thames Path City to Sea, National Cycle Network developed by Sustrans)		Existing public and private open space (Green space information supplied from East London Green Grid and Kent Thameside Green Grid. Other green spaces has not been verified)
	Proposed development (London Plan Opportunity Areas)		Proposed park or green space

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**FIGURE 2.18**  
**RIVER THAMES CROSSINGS**



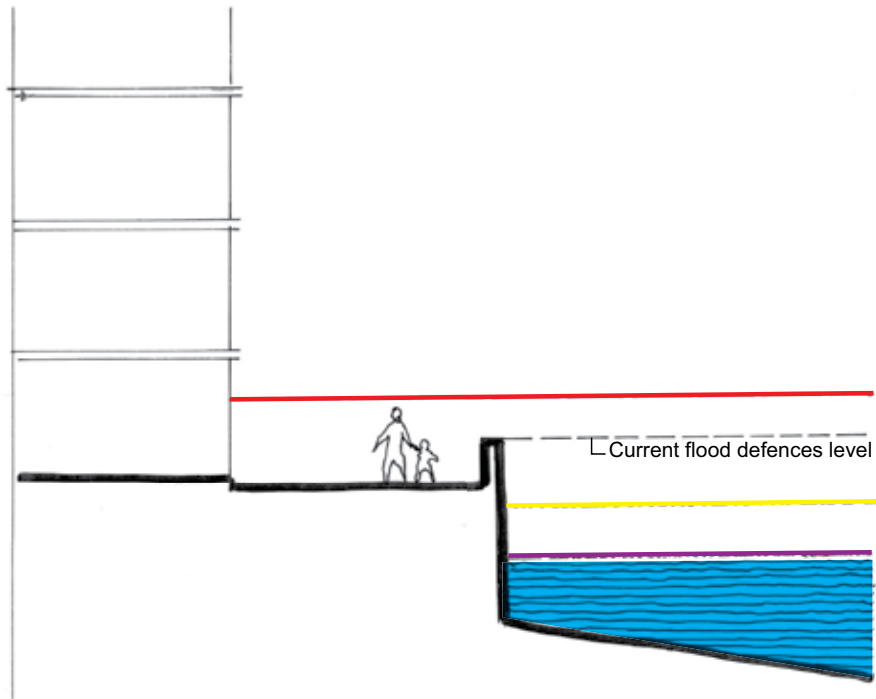




**FIGURE 2.19**  
**FLOOD RISK MANAGEMENT CROSS SECTIONS**

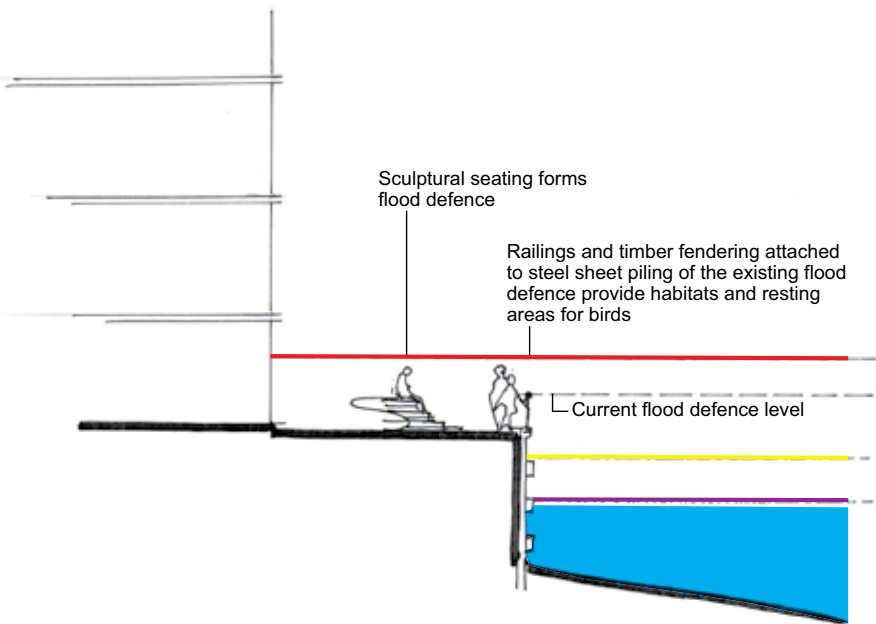
**TYPICAL CITY RIVER SECTION UPSTREAM OF THAMES BARRIER**

This scenario is such that views of the River Thames can be restrictive. Buildings are often too close to the river to allow places and spaces along the riverside to develop



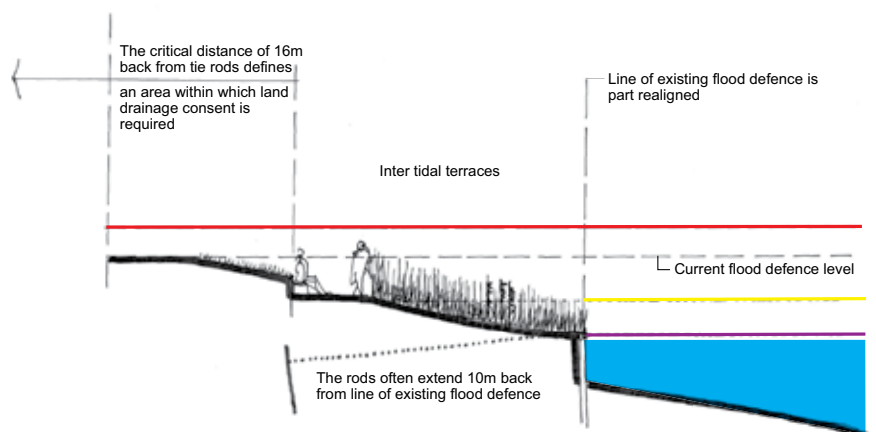
**OPTIONS FOR RIVER EDGE TREATMENT UPSTREAM OF THAMES BARRIER**

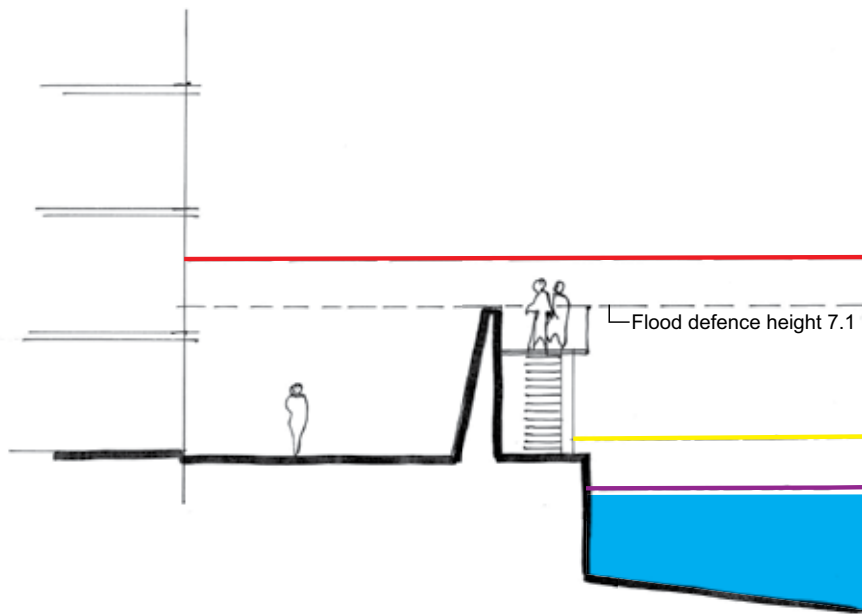
This would be an option in severely restricted sites. Creativity is essential to provide imaginative forms of flood defences such as sculpture and seating. Views of the Thames and a sense of place are created



**OPTIONS FOR RIVER EDGE UPSTREAM OF THAMES BARRIER**

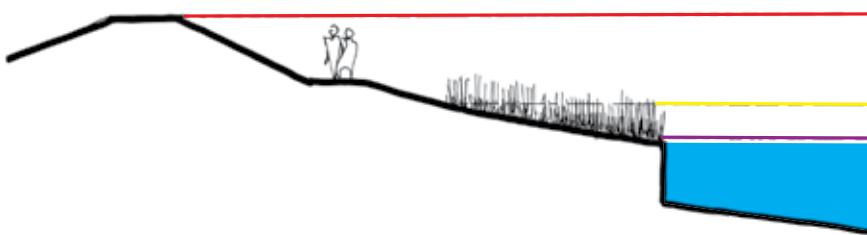
This option provides space for a functional rivers edge. This option of part-realigning the flood defences allows inter tidal terrace to develop





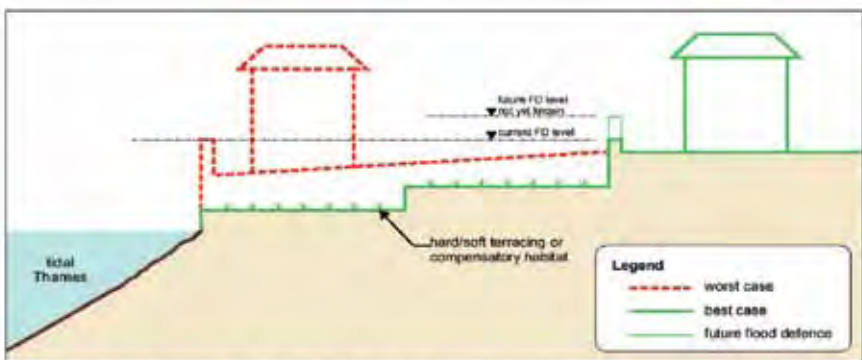
**TYPICAL RIVER SECTION DOWNSTREAM OF BARRIER**

Visually the river is blocked from view when behind the flood barrier

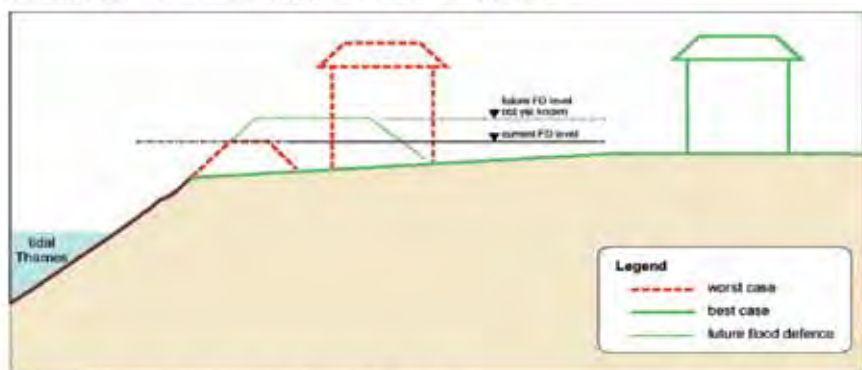


**OPTIONS FOR RIVER EDGE UPSTREAM OF THAMES BARRIER**

This option provides space for a functional rivers edge. This option of part-realigning the flood defences allows inter tidal terrace to develop between the MHWS and MHSN and allow clear views of the river



A - New development set back to enable cheaper and sustainable future flood defence.

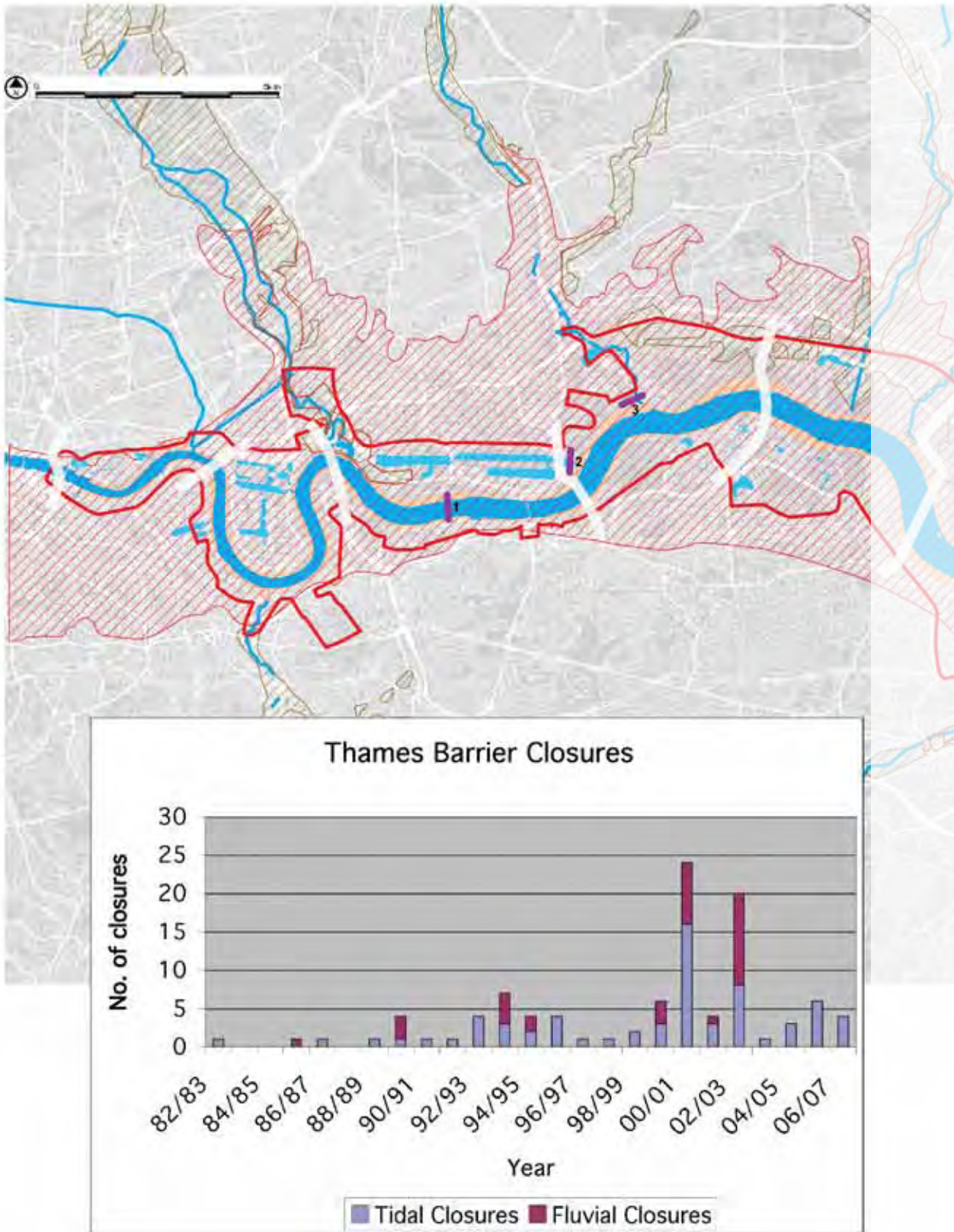


B - New development set back to enable future flood defence construction.

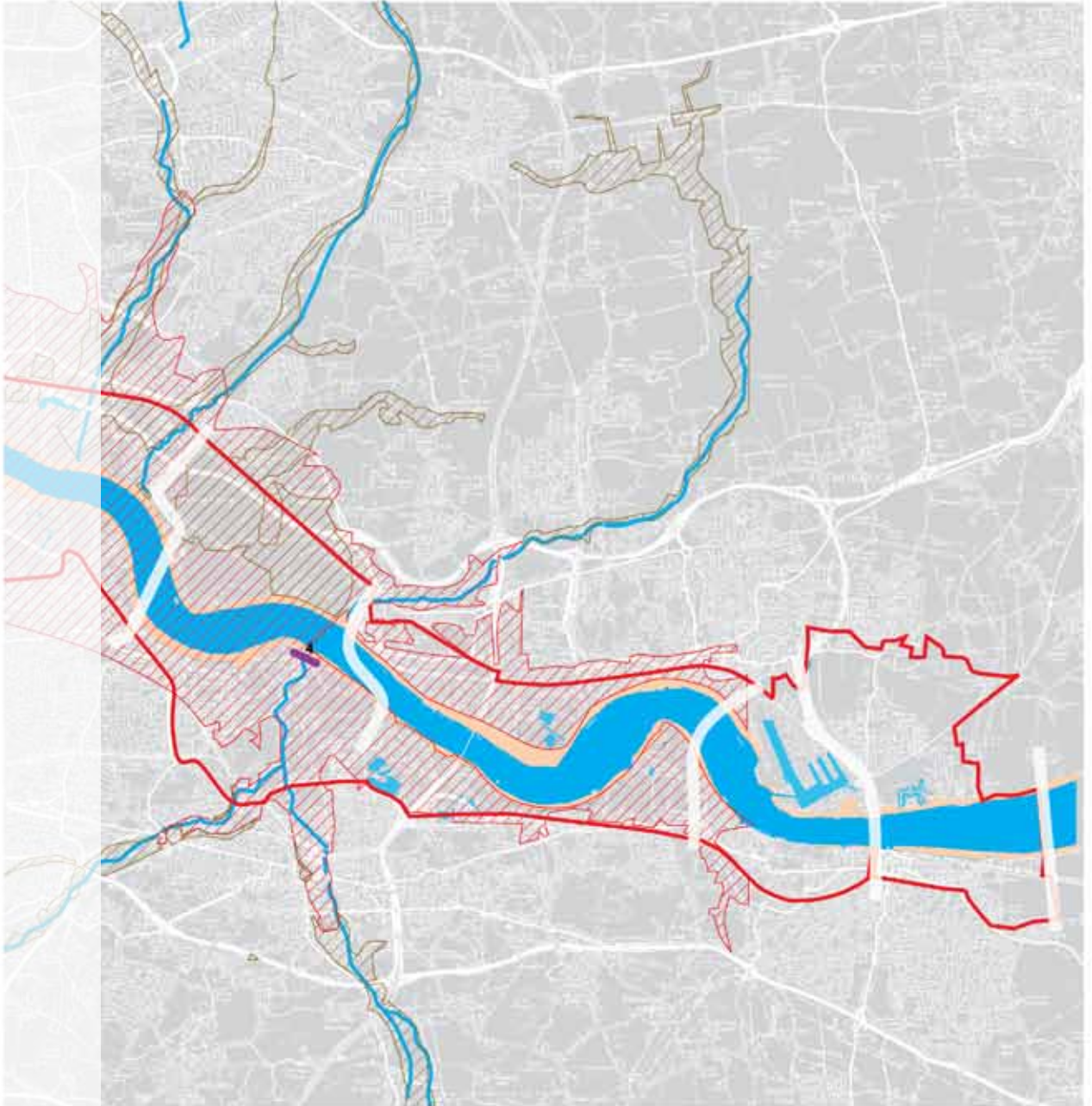
**TRANSLATING FLOOD DEFENCE INTO FLOOD RISK MANAGEMENT**

(Environment Agency)

**FIGURE 2.20**  
**FLOOD RISK MANAGEMENT**



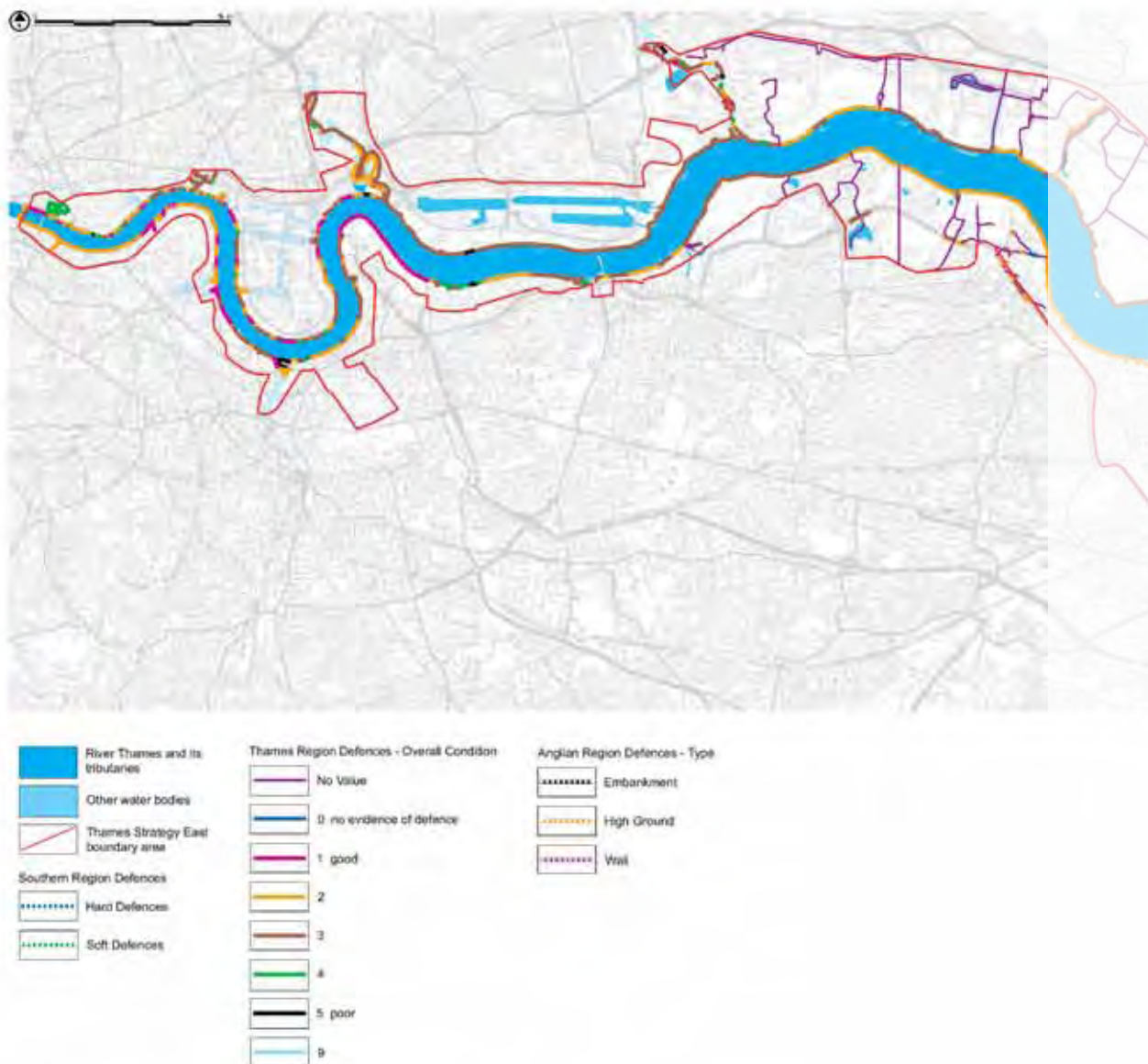
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-  Thames Strategy East boundary area
-  Indicative Tidal Flood Plain (1:1000 risk of flooding from the sea)
-  Indicative Fluvial Flood Plain (1:100 risk of flooding from Thames tributaries)
-  Major Flood Barriers
  1. Thames Barrier
  2. Gated entrances to Royal Docks
  3. Barking Barrier
  4. Dartford Creek Barrier

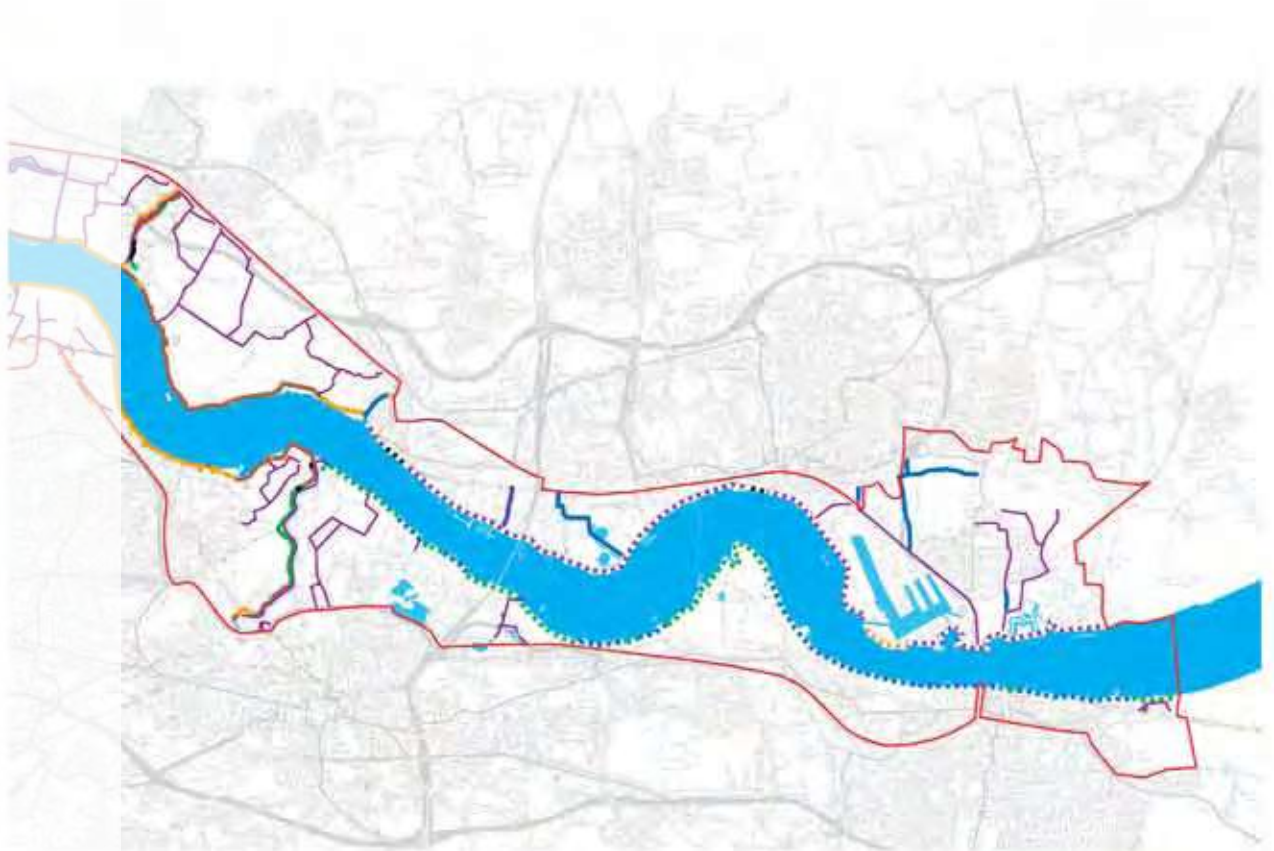


**FIGURE 2.21**  
**FLOOD DEFENCE CONDITIONS**



*This information has been sourced from the Environment Agency. No standard type or condition assessment of defences exists between Southern, Thames and Anglian Regions.*

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## 2.4 DESIGN OBJECTIVES

The areas along the Thames feature a variety of development and spatial patterns that reflect its social, political, economic and cultural richness. It is an understanding of these features (or elements) that forms the basis of TSE's specific Design Principles and related guidance.

This section first describes the elements of the built environment that contribute to the distinctiveness of each section of the river. The next section describes the general principles of urban design as set out in 'By Design' and discusses each in the context of the Thames. The last section provides detailed design guidance to ensure that development will adhere to the principles discussed above.

The elements, principles and guidance are all based on a thorough analysis spatial and built form, including plot sizes, buildings, blocks, roads, open spaces, natural areas and townscape/landscape types.

Spatial and formal studies have resulted in the descriptions of the predominant associations of elements. These predominant associations along with remarkable exceptions allow the structure and character of given riverside conditions within each reach to be understood more clearly. These differing associations of elements - in turn drive the formulation of Urban and Landscape design guidance to deliver the 9 objectives outlined on the next pages.

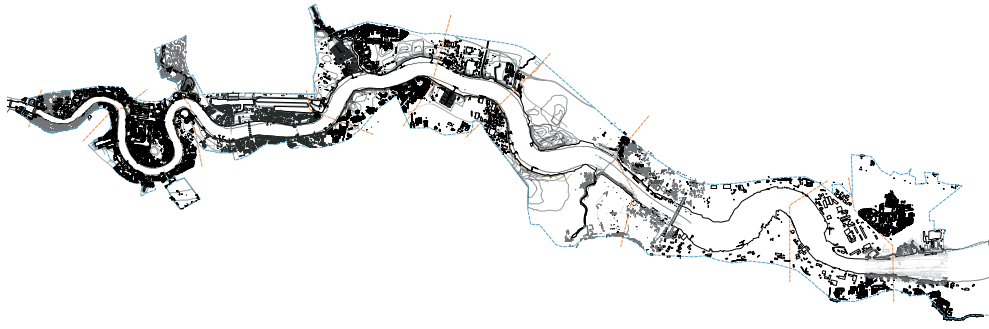
**BARKING RIVERSIDE**  
View to the East



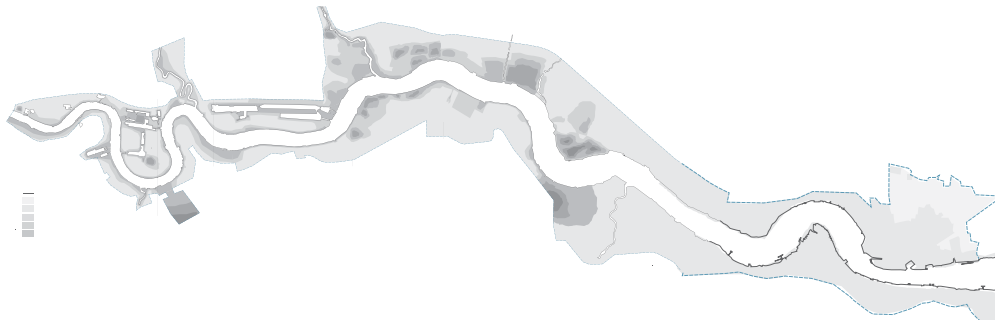


**FIGURE 2.21**  
**URBAN AND LANDSCAPE ELEMENTS**

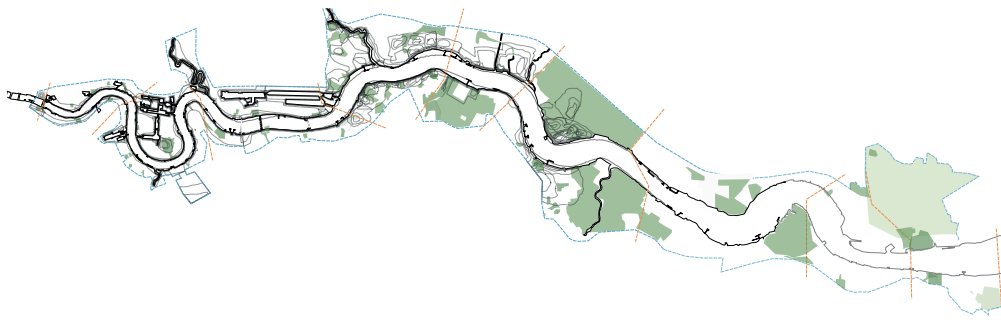
**URBAN GRAIN**



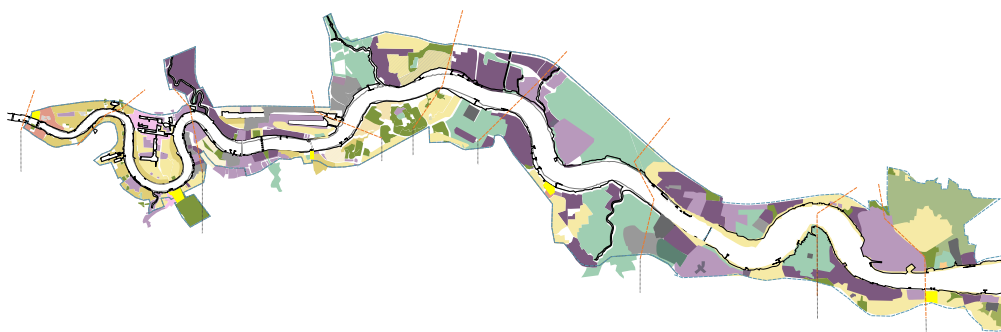
**TOPOGRAPHY**



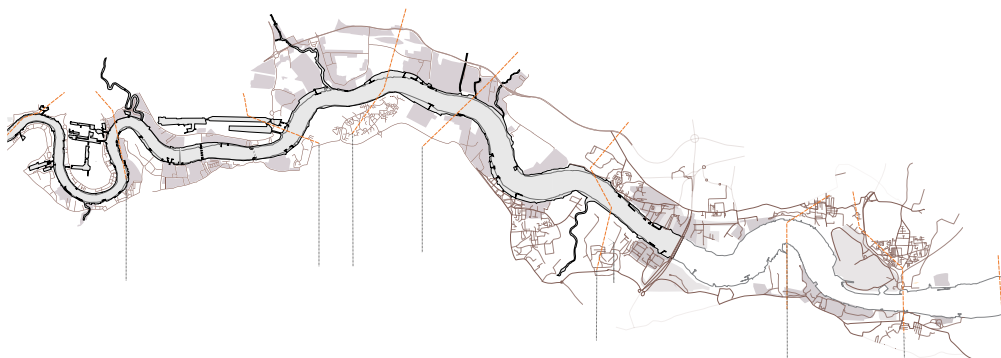
**ECOLOGICAL  
FEATURES AND  
LANDSCAPE  
TYPES**



**PATTERN OF  
LAND USE IN  
RELATION TO  
THE RIVER**



**URBAN  
STRUCTURE**



## URBAN AND LANDSCAPE ELEMENTS IN RELATION TO THE RIVER

The following elements were studied to understand the rich landscape/townscape of the Study area.

### URBAN GRAIN

There is a very wide range of urban grain types in the Strategy Area, varying from the upper reaches where traditionally narrow fronted warehouses give a tight block structure with a correspondingly fine urban grain, to the lower reaches where there is frequently no block structure at all. The proximity of buildings to the river is also a factor which contributes to the grain.

### TOPOGRAPHY

Topography is a term that refers to the lie of the land; usually expressed in terms of the elevation, slope and orientation of terrain features. The topography of an area often has a great influence on its microclimate, particularly in riverside locations.

The northern bank of the river is predominantly flat with little relief other than the man made features around Rainham Marshes.

In contrast the southern bank has a well defined ridge running almost parallel with the river for much of the London part of the Strategy area and again between Dartford and Gravesend. This affords good views towards and beyond the river.

### ECOLOGICAL FEATURES AND LANDSCAPE TYPES

Landscape types include the network of open spaces, wildlife habitat, and other natural areas, which sustain clean air, water, and natural resources. It is the landscape elements in varying combinations that give rise to a particular landscape type.

### PATTERN OF LAND USE IN RELATION TO THE RIVER

Patterns of land use can arise naturally in a culture through customs and practices, but land use may also be formally regulated by land use planning.

Throughout the Strategy area there is a complex mix of land uses and it is difficult to establish definite patterns. In general the western reaches have more residential uses and eastern reaches have a greater proportion of industrial land uses, particularly those that occupy large land areas such as utility industries and, logically, port activities. There are also a number of town centres with their diverse range of land uses.

### URBAN STRUCTURE

Urban Structures are a product of different associations of elements at different scales, ie. the organisation of places, features, landmarks, thoroughfares, links and nodes. It is important that urban structure should be appropriate to its waterfront location and respond to the successful associations of a given place.

**GLIMPSES OF THE RIVER THROUGH EXISTING DEVELOPMENT**



**TRADITIONAL VERTICAL SCALE IN THE DOCKLANDS**

A relic of London's 18<sup>th</sup> century river edge. Shad Thames.



**TYPICAL MORPHOLOGY OF THE LOWER THAMES**

Large scale, industrial forms set in a largely horizontal estuarine landscape. Erith town centre.



**URBAN IDENTITY, CANARY WHARF**

High buildings may be clustered to create urban identity in key landmark locations, such as Canary Wharf



**DESIGN PRINCIPLES FOR THAMES STRATEGY EAST**

**CHARACTER**

The very purpose of design guidance is to ensure that the existing and proposed communities are built on the basis of existing character and that all opportunities are sought to reinforce this.

There are many unique place identities and characters in the Strategy Area. For example the upper reaches (the docklands) are generally quite urban and contained in character, while the lower reaches are much less constrained and estuarine in character.

It is also important to celebrate and reinforce historic settlements and assets in the Strategy Area. Some of these places, such as the waterfront towns of Gravesend or the villages of the marshes, still evidence a strong character and association with the river, while others have a latent character and little association with the river. The areas which have little regard to their environs in terms of sense of place give the greatest opportunities in design terms.

## CONTINUITY AND ENCLOSURE

The different 'urban scales' of the Strategy Area present similarly varying design challenges to creating 'continuity and enclosure'.

In climatic terms the River Thames is often an exposed or hostile environment due to the lack of enclosure or shelter, especially in the lower reaches. There is also little by way of urban continuity in much of the Strategy Area. However there are distinct patterns running from west to east which need to be respected.

For example the predominantly vertical emphasis of both historic and more recent development in the inner docklands reaches predominates up to the Greenwich peninsula, whilst beyond the Thames Barrier the river widens and is characterised by flat marshland edges, resulting in a much more horizontal emphasis which prevails in the landscape.

In many of the more utilitarian lower reaches, intermittent large-scale industrial structures predominate. Continuity and enclosure would not be desirable: to retro-fit between the industrial structures would interrupt the horizontal emphasis. Bold, large-scale industrial installations contribute to the dramatic character.

For more utilitarian areas, such as docks, wharves, industrial structures and employment areas, design guidelines for continuity and enclosure may be irrelevant, and specific development briefs may be more appropriate.

At the same time, at the more local urban scale of the public realm associated with the riverfront, for example, the individual town centre or the specific development site, enclosure and continuity are vital for the promotion of good, sheltered places.



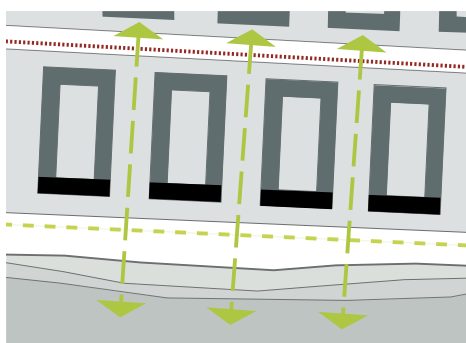
**RIVER THAMES WIDENING**  
As the river widens it becomes characterised by flat marshland edges and a more horizontal emphasis in the landscape.



**RAINHAM HILL**



**NONCONTINUOUS  
RIVER EDGE  
FRONTAGE  
FORMING ROUTES  
PERPENDICULAR  
TO THE RIVER**



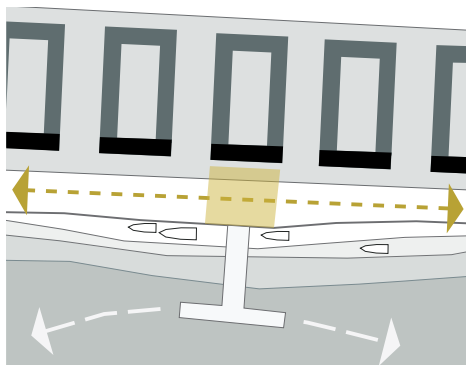
**QUALITY OF PUBLIC REALM**

A particular problem in many parts of the Strategy Area is that successive raising of the flood embankments has removed the direct visual connection between the communities, river footpaths and the river itself. In some places there is sufficient land available to reprofile the river edge, but frequently development is hard up against the flood defences and the only solution is to elevate the walkway by raised decking.

The need is for a safe, attractive and well-designed network consisting of the Thames Path running on both northern and southern banks in an east-west direction linked to an interconnected system of north-south access routes as defined in the relevant Green Grid Strategies.

The network needs to support foot and cycle usage, link to sustainable transport, and be accessible to all. Wherever possible, it needs to be overlooked to allow community surveillance. Detailing and construction materials need to be appropriate to the setting. Concrete may be fine in an industrial setting, but only the highest quality materials are acceptable in front of The Old Naval College, Greenwich.

**STRATEGIC  
ROUTES  
AND LOCAL  
MOVEMENT  
NETWORK**



**MOVEMENT IN RELATION TO THE RIVER**

Connecting places together by 'green modes', fundamental to the success of a sustainable movement framework.

Other Strategies such as Thames Path 'City to Sea', and the Green Grids are looking at the provision of long distance footpaths along both banks of the Thames, and connections to them. Just as important as these strategic routes are the more local linkages. Many of these local links follow natural routes along river and stream channels and this helps to reinforce the natural geography and thus the sense of the place. These strategic and local routes need to be planned to link all modes of public transport (including river boat services) to town centres and other centres of activity.

Barriers to the ease of movement in the river corridor are found particularly around the major industrial sites. In many cases it is impossible to provide river access due to river wharfage, and the nature of the land uses can make provision of safe routes difficult even when they are set back from the river.

## LEGIBILITY

The most obvious but fundamental starting point for orientation is the river itself. Successive raising of the river banks has meant that the river is frequently invisible, difficult to find, or where it is visible it is inaccessible. The very flatness of much of the Strategy Area, together with the sinuous character, often compounds the problems of legibility by foreshortening views so that structures appear to 'jump' backwards and forwards across the river.

It is important to allow the landscape to be read. New development should consider the introduction of landmarks sparingly and in relation to broader strategies. Rather than introducing a range of land marks it is important to value and retain the existing industrial and military relics and remnants that permeate the landscape.

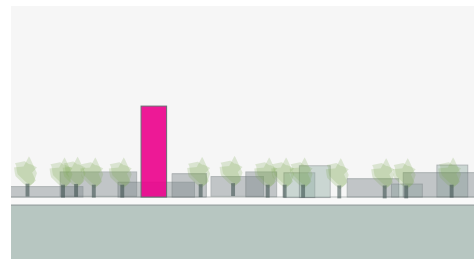
## ADAPTABILITY

In the Strategy Area adaptability means development that can respond to changing social, technological, environmental and economic conditions, although in practice this is difficult to predict, and even more difficult to plan for. At the macro development scale it concerns the general docklands decline; the issue of protected working wharfs; the continued use of cement works; and possible future changes in energy production which may release power station sites. It also concerns the ability of urban areas to adapt to changing circumstances, such as increasing density around transport nodes to encourage sustainable transport, and promoting ecological function in urban landscapes.

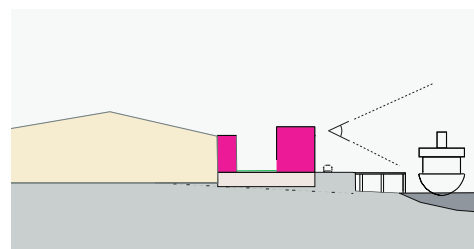
## DIVERSITY

This issue concerns the creation of places which offer variety and choice, not just in terms of urban form but also in landscape, ecological, cultural heritage and flood risk management terms.

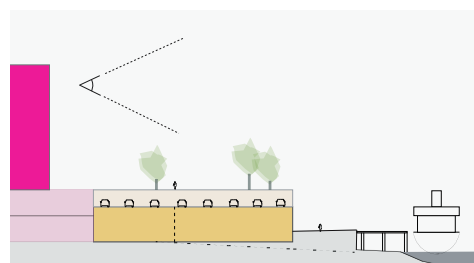
The challenge is not just about creating diversity in terms of land use, social mix or tenure patterns, it is about finding ways of creating new communities which are in true balance with their environment. Particular design themes which might be explored, and which have been creatively exploited in low-lying countries such as the Netherlands, include devising urban forms which are in harmony with water bodies such as lakes and canals that provide capacity for flood risk management, and the use of bridges to celebrate crossing points.



**LANDMARKS TO BE INTRODUCED AS PART OF BROADER STRATEGIES**



**PROTECTING AND INCORPORATING WHARVES FOR LONDON'S FUTURE NEEDS**



**URBAN FORMS IN HARMONY WITH WATER**

## **GUIDANCE PRINCIPLES: ASPECTS OF DEVELOPMENT FORM**

### **1 / URBAN STRUCTURE IN RELATION TO THE RIVER**

In some locations, historic patterns of urban morphology should be observed and replicated where appropriate. For example, at Gravesend, which has a powerful sense of place. In locations where there is less to work with by way of context, it is still important that traditional patterns should be understood, if not replicated. Generally this should result in an urban structure which respects the line of the riverfront or which creates a network of routes running at right angles linking to the river. However, there will always be exceptions which prove the rule.

### **2 / RIVERSIDE URBAN GRAIN**

It is very difficult to be prescriptive about the 'ideal' block size for new riverside development, because it should vary according to land use, location and urban context. For example in traditional urban areas upstream, which enjoy a good range of mixed uses, a block size of 60 to 90 metres might be appropriate. This allows a fine-grained mix of uses and urban forms, a permeable layout and directs access across the public realm, whether along the riverfront or along side streets running at right angles to the river. In particular there should not be a wall of development closing off the waterfront, but a network of routes giving views of the river.

Further downstream, a more coarse grained block structure may be more appropriate, giving an urban grid of blocks spaced at an interval of 150 metres along the river. In industrial areas the grid block interval might increase to as much as 300 metres or more, though wherever possible future development should ensure that access is provided to the river at 150 metre intervals, a comfortable walking distance.

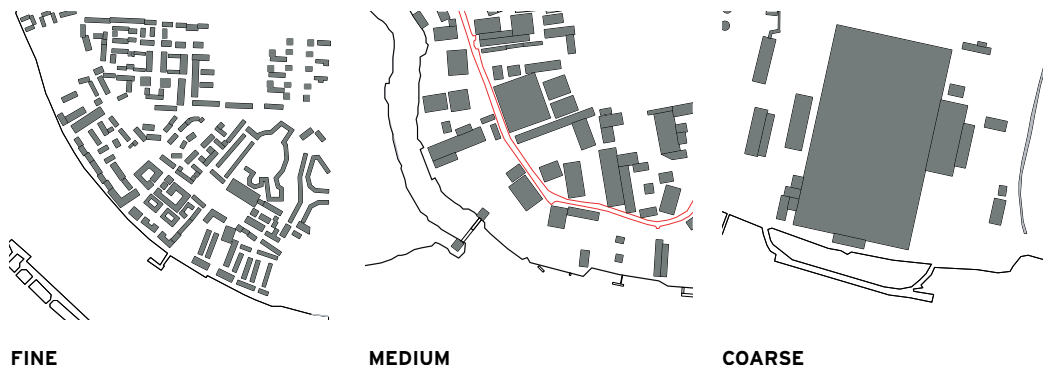
### **3 / LANDSCAPE STRUCTURE**

At the wider scale there should be a clear landscape structure which enhances the different landscape characters of the reaches. Most importantly the structure should reinforce the waterfront, estuarine and tributary characters of the corridor as well as other distinctive topographical and ecological features, because in many cases this has been seriously eroded. Some parts of the Strategy Area need no input, such as the setting of Tilbury Fort, or the historic landscapes of Greenwich, but other parts need quite radical intervention.

At the more local scale, it is important that landscape plans should link together the different parts of the study area with a well articulated network of spaces and places which are well policed and sheltered from prevailing winds.

Open spaces should be sheltered from the wind, where possible, should allow good and interesting views out onto the landscape/ riverscape or overlooking urban activity, and should ideally have places in the sun and in the shade.

#### **URBAN GRAIN**



Modulation to the riverfront is particularly important for north facing building terraces which might otherwise overshadow the riverfront.

#### 4 / DENSITY AND MIX

Density and mix needs to be carefully considered in the river corridor to allow development to benefit from fine waterfront locations without destroying their visual settings or bio-diversity. There is nothing inherently wrong with high density development along sensitive 'soft' green edges, as long as all factors are taken into account. Similarly, mixed uses can add vitality to many parts of the riverfront and are generally to be encouraged so long as they are compatible with other land uses and do not undermine existing town centres.

High density development used in the right place, such as town centres or around transport nodes, can increase the vitality and viability of services. Used in the wrong place it can result in over-development of sensitive sites and put undue pressure on local infrastructure.

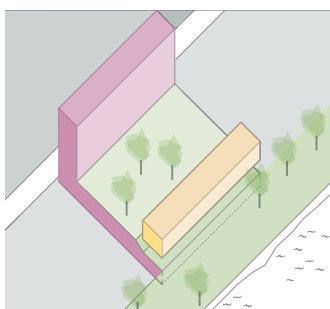
#### 5 / SCALE AND MASSING

The considerable variations in urban scale from two storey housing to 20 storey power station are a distinctive feature of some reaches, and make prescriptive guidelines difficult. As a general rule, for local small scale schemes, development needs to be respectful of its neighbours and be in scale with its surroundings.

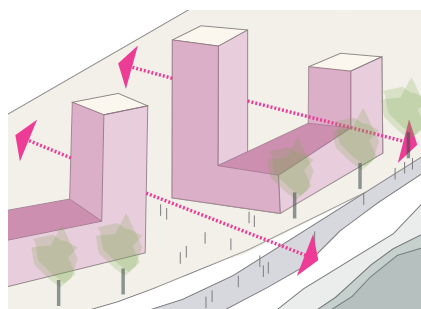
For larger developments there is greater flexibility in terms of appropriate scale however massing studies which show its townscape and skyline impacts should be obligatory, and these may need to consider the colour and lighting implications of development as well.

#### 6 / CLIMATIC GUIDELINES

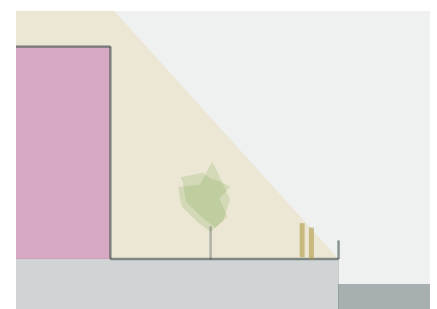
The particular climatic requirements of the Thames Gateway mean that special care needs to be given to design for microclimatic improvement. This applies both to buildings and to the public realm. On the riverfront this is critically important because at certain times of the year this is an extreme environment, but even set back from the river the needs of climatic amelioration are very relevant. Developments need to consider the best orientation of buildings to benefit from passive solar orientation, the best way in which to provide sheltered open spaces for residents, and the best detailing and materials for buildings to ensure an adequate response to exposed locations.



**FORMING EDGES OF APPROPRIATE SCALE TO BOTH RIVER AND MAIN MOVEMENT NETWORKS**



**MIXING OF SCALES TO MAINTAIN CONTACT WITH THE RIVER**



**CONSERVATION OF SUNPATH IN MASSING AND LAYOUTS**



7 / NEW MIXED  
USE DEVELOPMENT

Waterfront development should generally be animated by mixed uses wherever feasible. This includes buildings which encourage public or semi-public uses at ground and first floor levels.

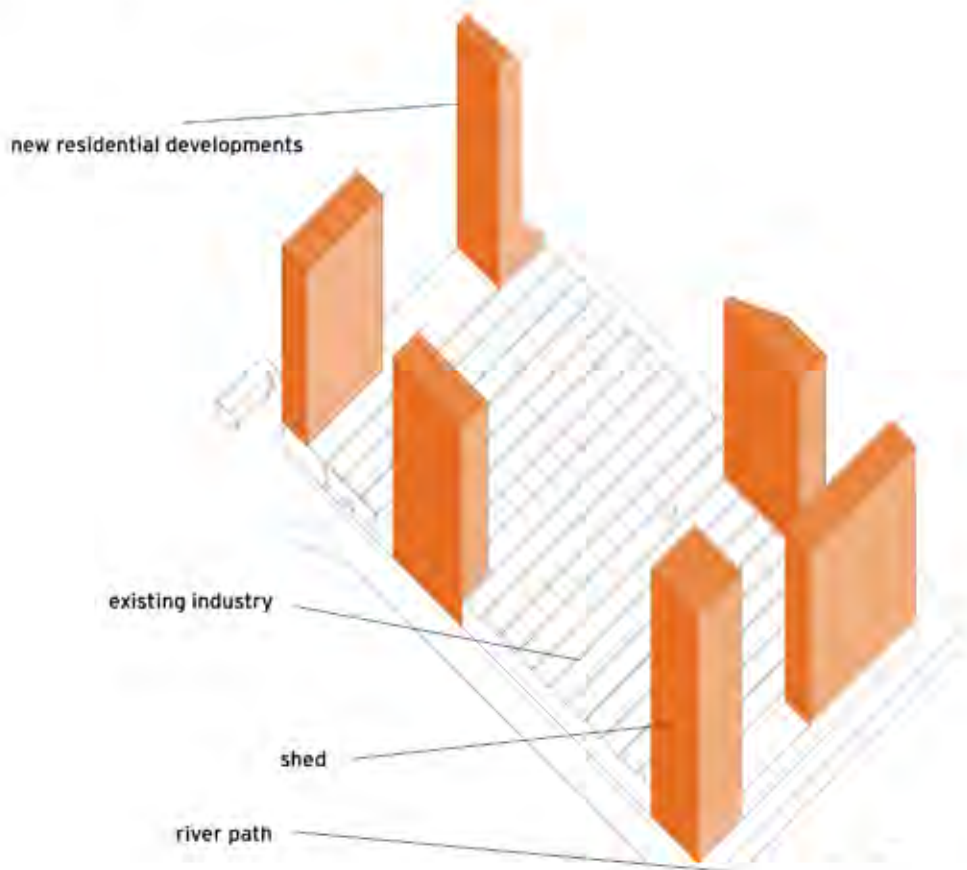
The relationship between urban form and the public realm should be carefully considered to ensure integration. Particular care should be taken to integrate car parking within building forms, or failing that to hide it from the river. The relationship between buildings and planting needs to be carefully considered in its wider visual setting.

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PARTICULAR URBAN  
CONFIGURATIONS MAY COMBINE  
HOUSING WITH EXISTING LAND USES.

**7A / GUIDELINES  
FOR MIXED  
HOUSING AND  
INDUSTRY WITHIN  
COMPREHENSIVE  
RIVERSIDE  
DEVELOPMENTS**

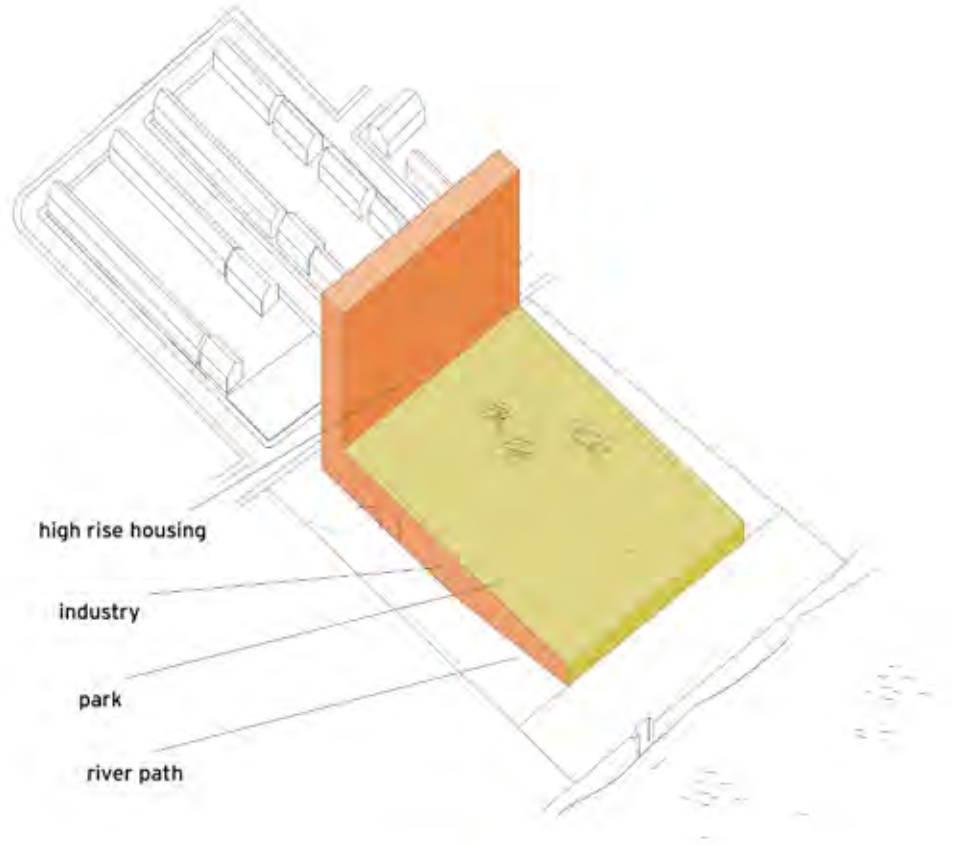
**TALL**  
TALL ELEMENTS  
OF RESIDENTIAL  
SITUATED  
ALONGSIDE  
EXISTING  
INDUSTRY.



WAYS OF COMBINING PUBLIC SPACE BY THE RIVER WITH INTEGRATED COMMERCIAL AND HOUSING DEVELOPMENTS.

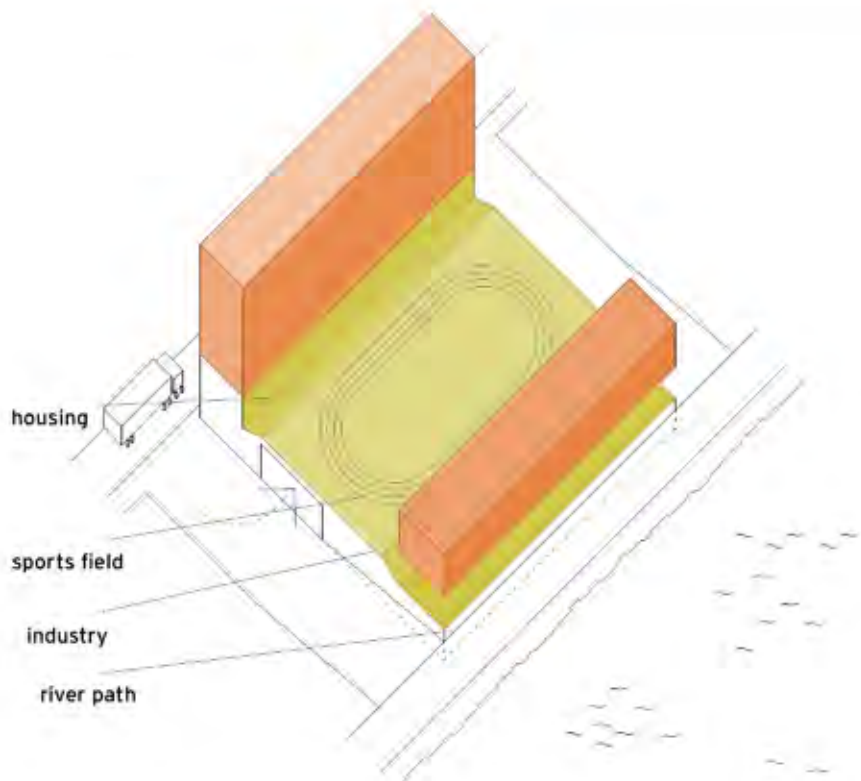
**7B / GUIDELINES FOR MIXED HOUSING AND INDUSTRY WITHIN COMPREHENSIVE RIVERSIDE DEVELOPMENTS**

**SET BACK/PARK ON TOP**



**7C / GUIDELINES FOR MIXED HOUSING AND INDUSTRY WITHIN COMPREHENSIVE RIVERSIDE DEVELOPMENTS**

**DEFINE EDGES AND ENCLOSE PUBLIC REALM CAN BE PULLED UNDER THE DEVELOPMENT.**



## 8 / GUIDELINES FOR NEW RIVERSIDE INDUSTRIAL DEVELOPMENT

Waterfront sites should be restricted to those uses which require and are actively using the waterfront. Rectangular plots should be aligned so that the short sides of plots front the water, to echo the traditional river morphology and maximise river access. Buildings should generally front the water with storage areas away from the river except where functional requirements dictate otherwise.

### 8A /1 GUIDELINES FOR THE INSERTION OF HOUSING AMONGST EXISTING RIVERSIDE INDUSTRY

**ENVELOPING**  
POCKETS OF PUBLIC REALM MAY EXTEND FROM THE RIVER EDGE AND NEW DEVELOPMENT.



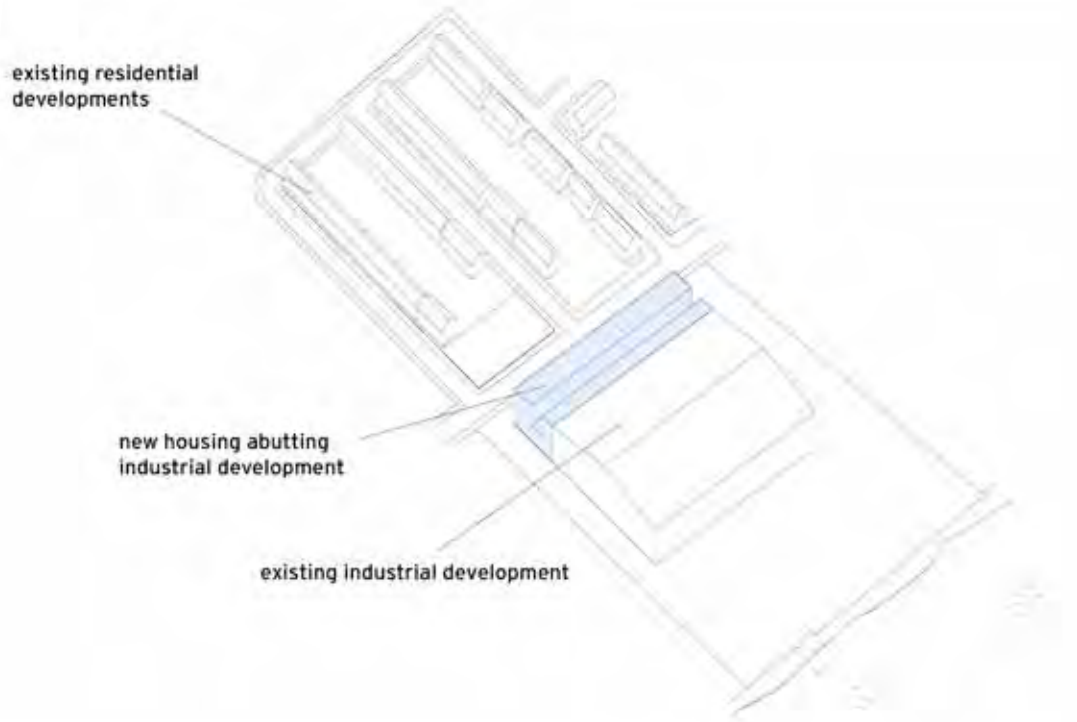
### 8A /2

**WRAPPING**  
DEVELOPMENT FORMING NEW INTERFACE WITH THE RIVER.



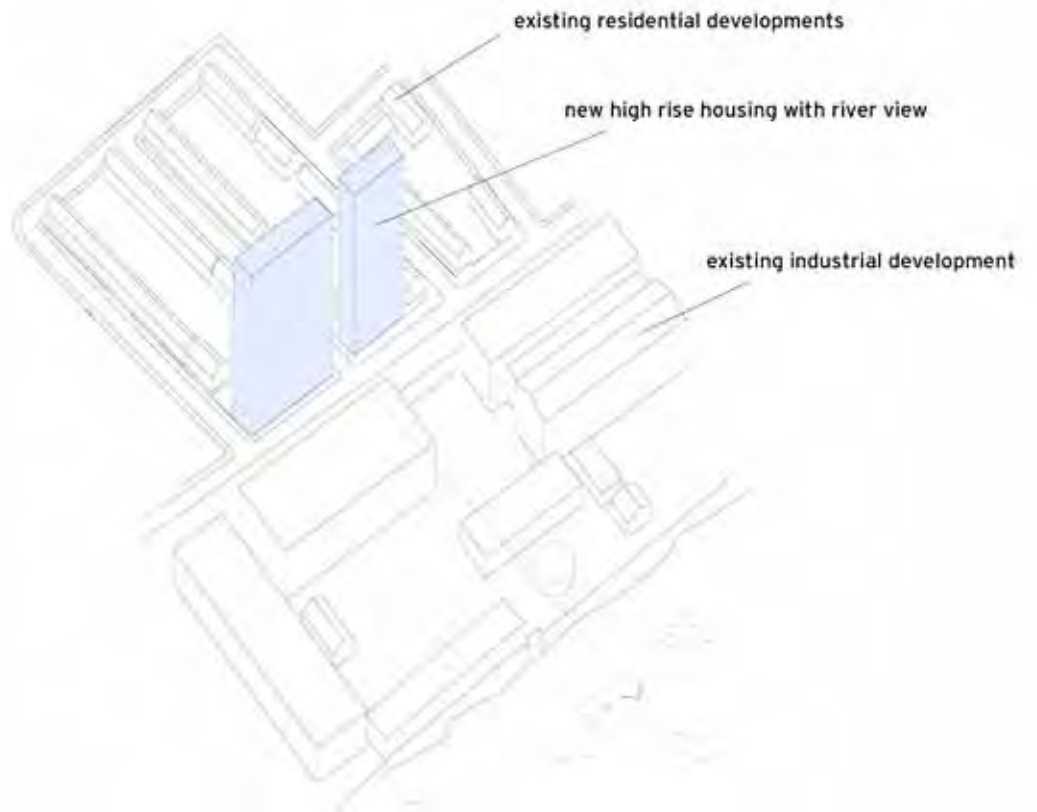
8A /3

**BY THE EDGE**  
NEW  
DEVELOPMENT  
ADDRESSING  
THE STREET.



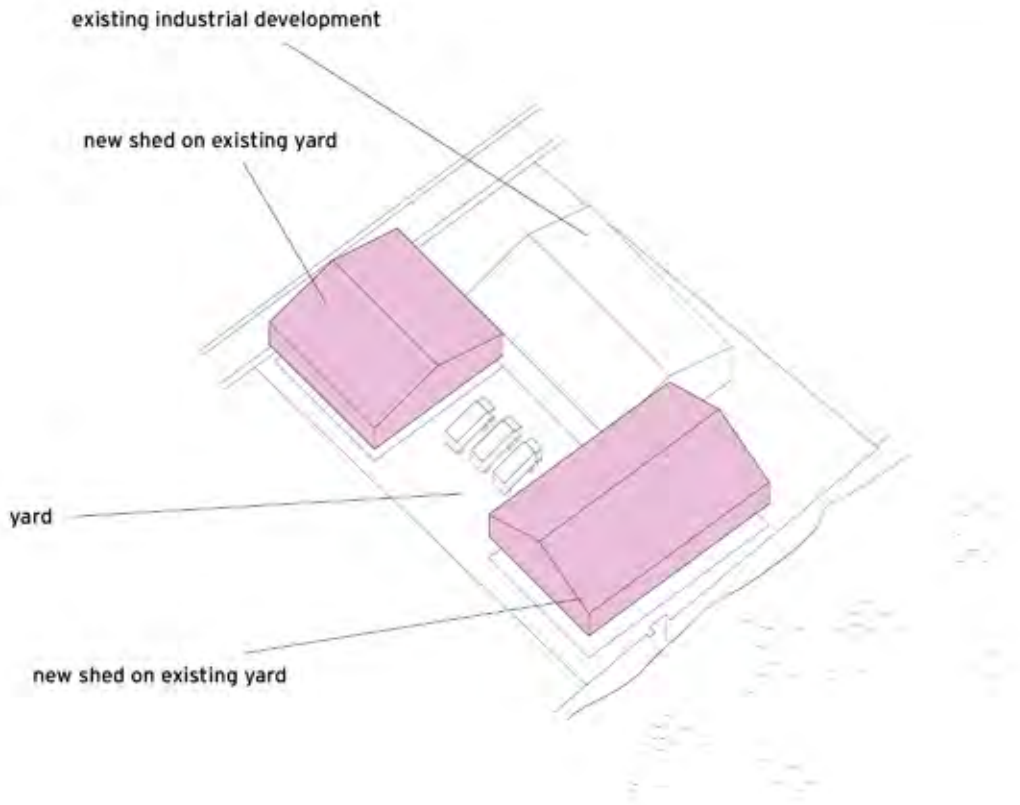
8A /4

**TALL**  
RESIDENTIAL  
ELEMENTS WITH  
RIVER VIEW  
OVER EXISTING  
INDUSTRY.



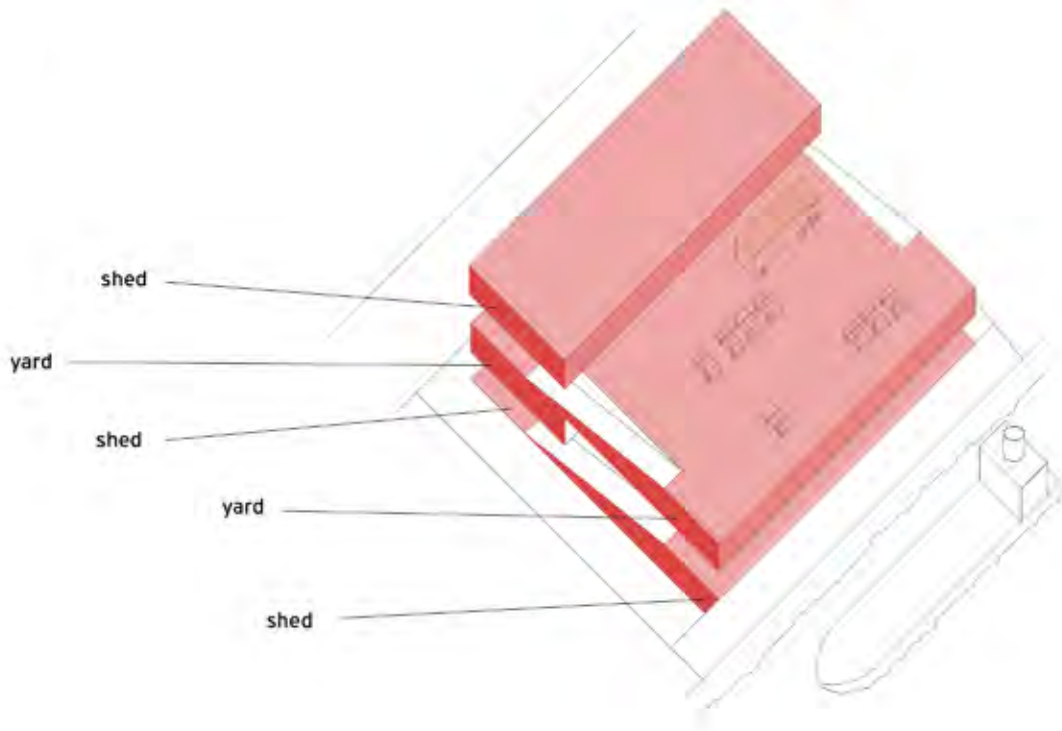
**8B /1 GUIDELINES  
FOR THE  
INTENSIFICATION  
OF RIVERSIDE  
INDUSTRY**

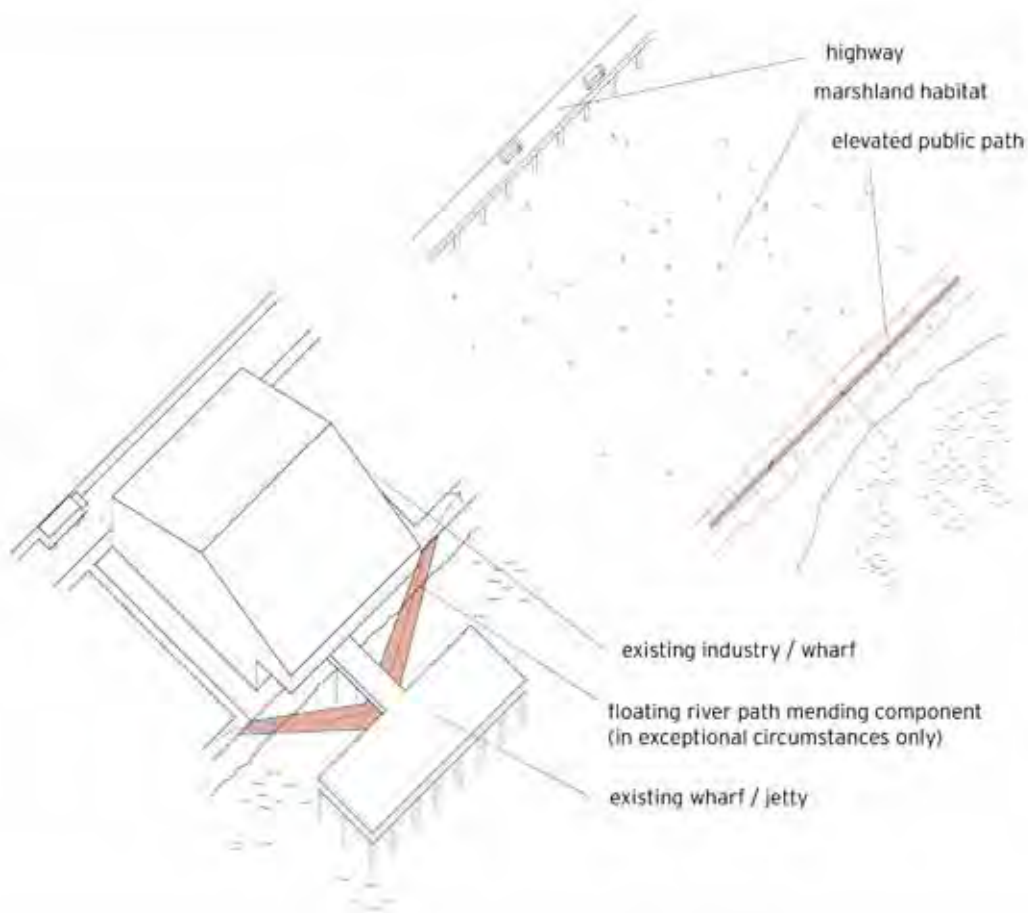
**INTENSIFYING**  
LIFTED SHED  
TO MAINTAIN  
YARDAGE.



**8B /2 GUIDELINES  
FOR THE  
INTENSIFICATION  
OF RIVERSIDE  
INDUSTRY**

**STACKING**  
RAISING  
EMPLOYMENT  
DENSITY ON  
KEY SITES.





**8B / 3 GUIDELINES FOR THE INTENSIFICATION OF RIVERSIDE INDUSTRY**

**BY PASSING**  
 MAINTAIN RIVER  
 EDGE WALKS.

**9 / GUIDELINES FOR THE ACCESS / INHABITATION OF BIG SPACES BY THE RIVER**

Most new riverfront development, including those uses which actively use the water, for example for river transport, should be able to accommodate riverfront access. This will require careful and well managed design but examples can be found, for example at Walbrook Wharf, city of London.

Where active waterfront uses prohibit public access to the river, alternative public routes should be provided parallel to the water and as close as conveniently possible. These routes should be safe, well-lit and integrated into the wider public realm.

Where public access is prohibited there may be opportunities for creating or enhancing habitat for sensitive species of wildlife.

Planting should not be cosmetic, and should be part of a wider landscape strategy. Large scale structure planting to increase biodiversity interest will be more appropriate than isolated tree planting.

# PART 3

## REACH GUIDANCE

This section summarises the character of each of the nine Reaches identified through rigorous assessments. The assessments provide the foundation for the more detailed Framework Plans, Design Guidance, Policies and Recommendations for each Reach which are documented here.

The Strategy Area has been split into the following nine reaches.. These are based on the traditional Thames Reaches with adjoining places gives for reference:

**Reach 1 The Pool and Limehouse Reach**  
(Tower Bridge -Rotherhithe/Limehouse)

**Reach 2 Greenwich Reach and Blackwall Reach**  
(Isle of Dogs, Deptford & Greenwich)

**Reach 3 Bugsby's Reach and Woolwich Reach**  
(Greenwich Peninsula -Galleons Point/Woolwich)

**Reach 4 Gallions Reach and Barking Reach**  
(Beckton, Barking & Thamesmead)

**Reach 5 Halfway Reach and Erith Reach**  
(Dagenham & Belvedere)

**Reach 6 Erith Rands**  
(Rainham Marshes - Erith)

**Reach 7 Long Reach and Fiddlers Reach**  
(Purfleet/Greenhithe - Grays/Swanscombe Peninsula)

**Reach 8 Northfleet Hope**  
(Tilbury Docks & Northfleet)

**Reach 9 Gravesend Reach**  
(Gravesend & Tilbury)

SCENES FROM  
REACH 1





# REACH 1 THE POOL AND LIMEHOUSE REACH

## 3.1.1 CHARACTERISATION

This Reach stretches from The Tower of London to Cuckold's Point on the southern bank and West Ferry Circus on the northern bank. This characterisation should be read in conjunction with Figure 4.13. The river runs east from the Tower of London to King's Stairs where it bends north-east around Wapping. The river then bends sharply around Rotherhithe Peninsula and runs due south beyond Cuckold's Point. The river varies in width between 250metres and 350metres. This part of the Thames is characterised by a mix of large historic brick wharf buildings and new riverside developments. The historic wharves are usually adjacent to the edge of the river with a strong vertical form, most have been converted to high quality flats and offices. The more modern development is of much more variable design and is usually set back to allow some riverside access. The dock basins and canals are also important features of this area which provide open spaces in the otherwise densely built-up urban fabric. Building heights vary between 5 - 10 storeys and there are a limited number of small parks. The land use along this part of the river is almost exclusively residential and offices and the intensity of development here is greater than other reaches in the Strategy Area.

The only immediate major re-development opportunity for development is the Cold Meat Store, Bermondsey. However, in the longer term there should be scope for regeneration/redevelopment of the lower quality developments, many of which are post-war housing estates but may also include the Tower Hotel. Redevelopment would provide opportunities for the creation of a much stronger relationship between buildings and the river, for better access to and along the river, for better integrated communities and for

realignment of flood defences. The rich historic and ecological resource of the area, both existing and emerging, should be better interpreted and enhanced.

From this Reach there are many views to important London landmarks including Tower Bridge, the Tower of London, City Hall, Canary Wharf and the Swiss-Re Building. Tower Bridge creates a distinct sense of arrival at the heart of London. The river is busy in this reach with a combination of tourist, passenger and freight vessels, recreational boats and barges and occasional cruise and military ships.

The historic areas along most of the northern and the western part of the southern bank of the river have retained a fine urban grain with many narrow streets and small block sizes.

There are many interesting buildings and historic connections through street names and pubs for example. The northern bank of the river comprises St-George-in-the-East, Wapping, Shadwell and Limehouse. The building frontages on the northern bank are generally more continuous than those on the southern bank. The Wapping waterfront includes a large number of converted historic wharf buildings, built of London stock brick with characteristic features such as vertical form, arched windows and cranes attached to the walls. Some of the narrow streets behind the wharf buildings, notably Wapping High Street, are still cobbled and retain their historic character. St Katharine Docks have been redeveloped as a mixed use area. Shadwell Basin and Limehouse Basin have also been redeveloped as marinas and are mainly surrounded by residential development. The King Edward Memorial Park, east of Shadwell Basin contains the entrance pavilion to the Rotherhithe tunnel. Development behind the riverfront is varied, with housing estates of various types and ages from the 1960s, 1970s, 1980s and 1990s.

The building frontage on the southern bank is more open with a number of small parks and viewing points. Historic wharf buildings, with vertical form, line the riverfront between Tower Bridge and St.Saviour's Dock. Butler's Wharf has recently been

redeveloped and now includes restaurants and cafes overlooking the river and a wide, high quality York stone promenade. Historic street patterns also remain here; Shad Thames, behind Butler's Wharf, is a memorable narrow, cobbled street with historic warehouses on either side. Development along the riverfront East of Tempus Wharf mainly comprises council estates of relatively low quality. These do not address the river adequately and do not match the scale or mass of the historic buildings. The small green spaces and viewpoints along this part of the riverfront are in need of refurbishment. Surrey Water is the only remaining dock basin on the southern bank of this Reach following the closure of the extensive Surrey Docks complex. Surrey Docks is a mix of mainly residential refurbished wharves and new build which was built by the LDDC and is sympathetic in scale and materials to the original buildings. There is a museum at Rotherhithe Station detailing the history of the world's first underwater tunnel (now used for the East London Line).

#### RIVER BANKS

The riverbanks are mostly vertical walls dressed with sections of timber. There are no soft edges to the river in this Reach.

#### THE THAMES PATH

The Thames Path and Thames Cycle Route run along both banks of the river throughout this Reach. However it is difficult to follow in several parts due either to historic riverfront wharf buildings or poorly connected recent developments and there are variations in the legibility of the route. Some developments have the effect of making the Path feel like a private space. Opportunities should be taken in the long term to re-route the Thames Path so that it runs along the river edge and feels like a public space, or where the path deviates inland it should be clearly signposted. There are a number of steps and ramps leading up to the riverside sections of the Path which are obstacles to cyclists and those with reduced mobility. The Path varies in quality from very high in front of Butler's Wharf to very poor by some riverside council estates.

The Thames Path should connect into the Green Grid network and provide access to river transport services at piers. This could strengthen the case for providing a ferry service linking the northern and southern banks of the river and running east-west along the river for tourism and commuting.

#### RIVER INFRASTRUCTURE

Existing piers within the Reach (St Katharine's Pier, Cherry Garden Pier and Butlers Wharf Pier) strengthen the case for river-wide north-south and east-west ferries for tourism and commuting. Tower Millennium Pier, just to the west of the Strategy Area, is at capacity and consideration should be given to the feasibility of developing an ancillary pier. The River police station at Wapping is also located on the north bank within this Reach.

There are 3 river crossings in this reach. Firstly, Tower Bridge provides a world class pedestrian experience although it can become congested at peak seasons and wheelchair access is convoluted. Secondly, Rotherhithe Tunnel, which is dominated by vehicles making the pedestrian and cycle experience extremely poor, this is unlikely to change in the short to medium term. Thirdly, the East London Line is a tube link running through the historic Thames Tunnel. Access onto the foreshore is relatively good with 17 sets of steps along the northern bank and 12 sets of steps along the southern bank, although many of these are not currently in use. There is also a marina at St Katharine Docks and two water sports centres: St Katharine Yacht Club and St Katharine Yacht Haven.

There are a number of locations where there are communities living on residential barges within this reach. Whilst these represent the diverse nature of London and the Thames, moorings need to reflect Policy 4C.19 of the London Plan which requires mooring facilities not to have a harmful impact on navigation, biodiversity and the character of the river.

#### BIODIVERSITY

As well as the River itself, ecological habitats within this Reach include vertical and hard defence walls, artificial structures and docks. Sites of biodiversity

importance include Limehouse Basin and Limehouse Cut that are designated as Sites of Metropolitan Importance. Russia Dock woodland and Surrey Water are designated as Sites of Borough Importance (Grade1) and St Katharine Docks are designated a Site of Local Importance. For further information on biodiversity refer to Appendix 3 - Characterisation and Appendix 6 - Biodiversity.

## HERITAGE

There are a many sites of built heritage importance in this Reach including the Tower of London (designated a UNESCO World Heritage Site), Tower Bridge, St Katharine Docks, Shadwell Dock and Limehouse Basin, Rotherhithe Tunnel, Thames Tunnel, Shad Thames, Butler's Wharf, New Concordia Wharf and Anchor Brewhouse, Wapping Wall, Wapping Pier Head and High Street, St George's-in-the-East Church at Wapping, St Anne's Church at Limehouse, and St Mary's Church at Rotherhithe. There are a number of Conservation Areas, mostly on the northern bank. For further information on built heritage refer to Appendix 3 - Characterisation and Appendix 5 - Built Heritage.

Archaeology in the area includes prehistoric finds of burnt and worked flint, pottery, daub and bone along with evidence of later prehistoric agriculture. The Tower of London is multi-period; the medieval fortress is believed to be located on a late Roman administrative complex. Other evidence of Roman development includes cremation cemeteries and a massive Roman masonry building. King Edward III (1327-77) built a moated manor house to the west of Rotherhithe which is partly excavated. At Limehouse, limekilns, an extensive industrial complex and wharves dated to the later medieval period have been recorded. During the 17th century Rotherhithe was home to a thriving shipbuilding industry and in 1620 the Mayflower set sail for America from Rotherhithe docks. For further information on the archaeology in the area refer to Appendix 3 - Characterisation and Appendix 4 - Archaeology.

This reach is steeped in history and much of it is intangible. Many of the place names have historic associations for example Limehouse which derives from the lime kilns that existed around Limekiln Docks. Many pubs have historic connections with Dickens or with the Mayflower sailing, the world's first underwater tunnel was built in this reach by Marc Brunel and his son Isambard Kingdom Brunel and Thomas Telford designed St Katharine's Dock.

## RIVER ECONOMY

Commercial use within this reach is focused on the servicing of river tourist vessels whilst pleasure craft use the St Katharine Docks and Limehouse Basin. There is little prospect of any permanent industrial uses in the foreseeable future.

## KEY CHARACTERISTICS AND INFLUENCES

- This Reach is characterised by large historic brick wharf buildings adjacent to the river edge. Most of which have been converted to flats and offices
- The surviving dock basins and canals are important features which provide open spaces in the otherwise dense urban fabric
- The key landmarks are the Tower of London; Tower Bridge; City Hall; St Mary's Church; Bermondsey; and the dome entrances to the Rotherhithe Foot Tunnel.

### 3.1.2 REACH GUIDANCE

This Reach Guidance (RG) corresponds with figure 4.14 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

## PLANNING AND DESIGN

- RG1.1 A development framework should be prepared for the Cold Meat Store site in Southwark and any other major riverside sites that become available for redevelopment. They should fully address the riverside location in line with the principles set out in this Strategy.

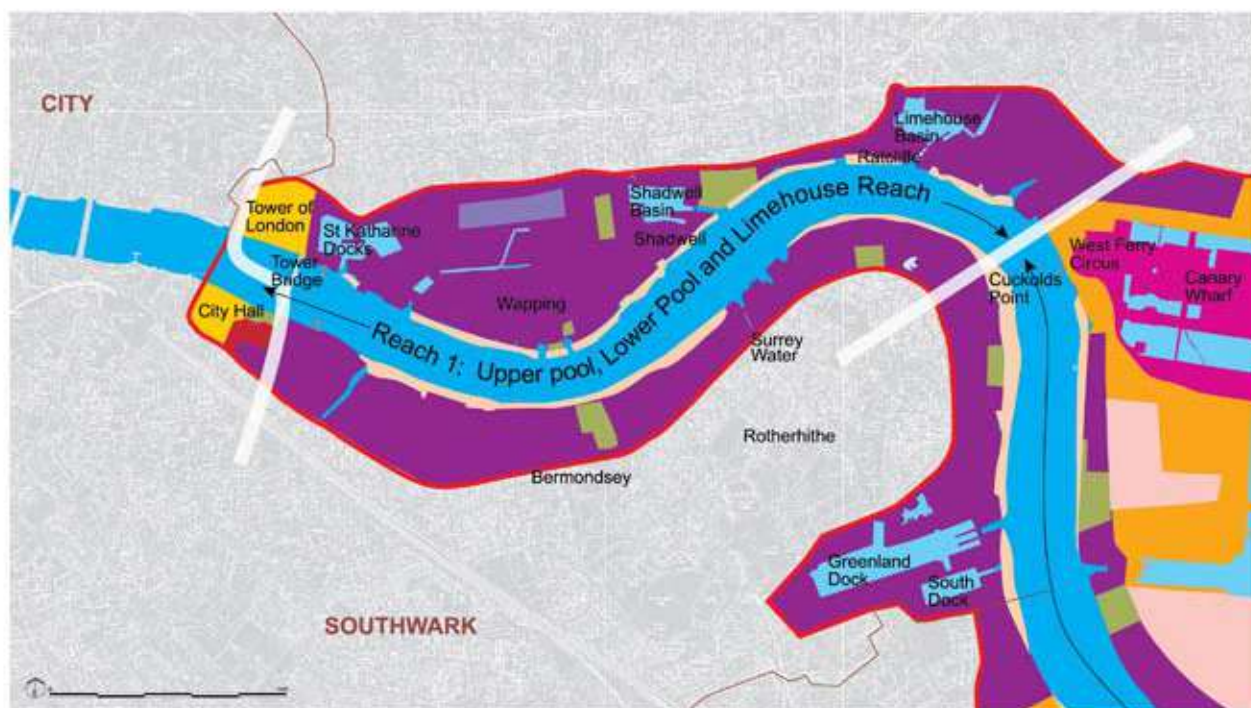
- RG1.2 Provide step free access, suitable for wheelchair users between the Thames Path and Tower Bridge.
- RG1.3 Protect the character and features of the historic fine urban grain along with the character and form of the historic wharf buildings.
- RG1.4 Protect and enhance the strategic links to the River along Regents Canal and Limehouse Cut that link Victoria Park/Mile End Park and the Lee Valley Regional Park.
- RG1.5 Protect, enhance and interpret the London river prospect from Tower Bridge. In particular any proposals to redevelop the Tower Hotel should improve the setting of Tower Bridge and the Tower of London.
- RG1.6 Protect, enhance and interpret views to St Mary's Church, Rotherhithe; St George's-in-the-East, Wapping; and St Anne's, Limehouse, the domed entrances to the Rotherhithe Tunnel, St Paul's Cathedral, Swiss Re Building, Tower of London and City Hall.
- RG1.7 Encourage river and water related activities and other enhancements on the remaining dock areas of St Katharine's Dock, Shadwell Basin, Limehouse Basin and Surrey Water.
- RG1.8 Protect and enhance the existing river infrastructure including St Katharine's Pier, Cherry Garden Pier and Butlers Wharf Pier in this Reach. Promote proposals to address the shortage of capacity at Tower Millennium Pier (just outside Strategy Area) and promote new river transport where demand is shown or where feasible.
- RG1.9 Continue the programme of improvements to the Thames Path and other riverside walks, spaces and links where of poorer quality; provide well-signposted alternative routes for cyclists avoiding obstacles such as steps; use high quality, durable materials. In particular by seeking opportunities to provide a high quality river walk and public spaces for the post war housing estates on the Bermondsey and Rotherhithe waterfront.
- RG1.10 Protect, retain and refurbish the series of twenty-nine steps down to the foreshore and improve their interpretation.
- BIODIVERSITY**
- RG1.11 Protect the vegetation communities established on the sloping, vertical and hard river flood defence walls downstream of Tower Bridge and encourage habitat provision on existing sterile river walls, e.g. sheet steel piling and within new flood defence installations.
- RG1.12 As much of the natural habitat of this Reach has been lost, opportunities should be taken to create areas for natural colonisation of vegetation by salt marsh communities when flood defences are refurbished or replaced, and/or when redevelopment takes place.
- ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES**
- RG1.13 Protect and enhance the exceptional heritage of this Reach and promote a heritage trail, with interpretation along the Thames Path. This should include the industrial, cultural and maritime history of this Reach. This will include the historic pubs, churches, docks and wharves that characterise the Reach.
- FLOOD RISK MANAGEMENT/CLIMATE CHANGE**
- RG1.14 Seek opportunities for creative realignment of flood defences and making space for water in all

riverside development proposals, where defences are being replaced and at riverside open spaces.

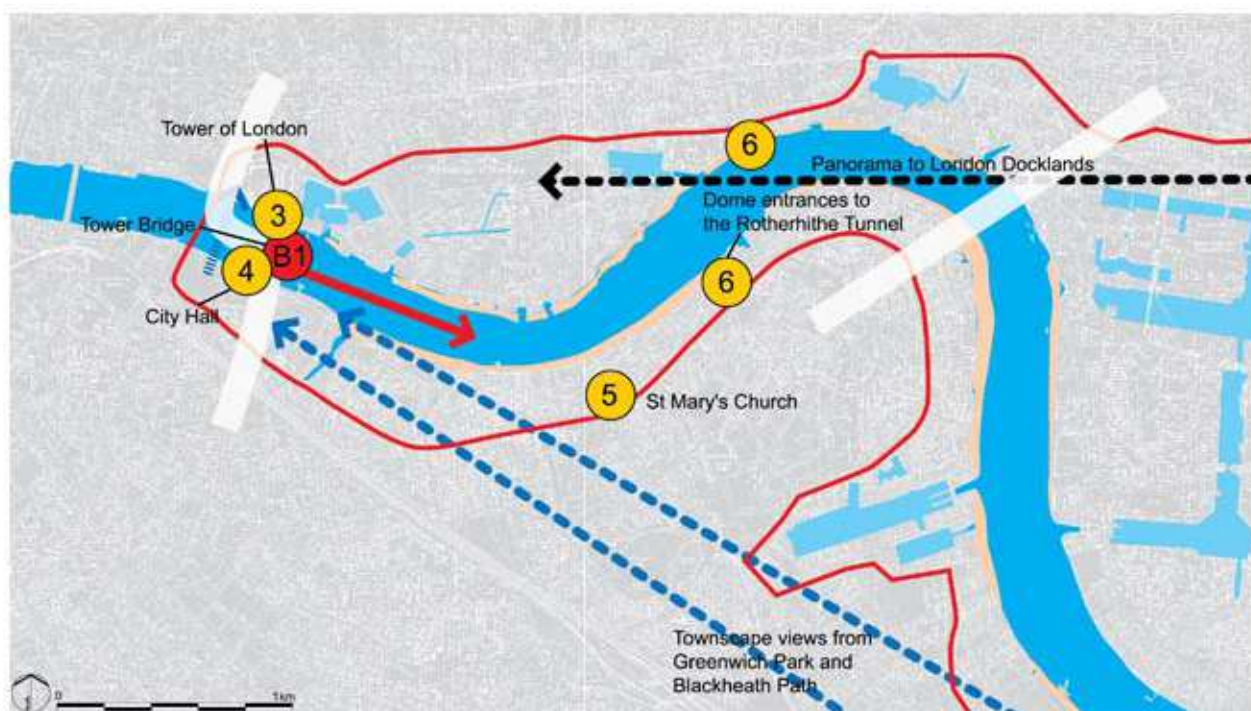
## ECONOMY

RG1.15 Protect and enhance the existing many and diverse economic uses of the river including piers, river-based transport, docks, marine centre and moorings, and the mix of riverside uses including housing, business, and river-related tourism. These uses should be managed to minimise conflict with adjoining uses.

**FIGURE 3.11 REACH 1 SUMMARY DATA**  
 UPPER POOL, LOWER POOL AND LIMEHOUSE REACH

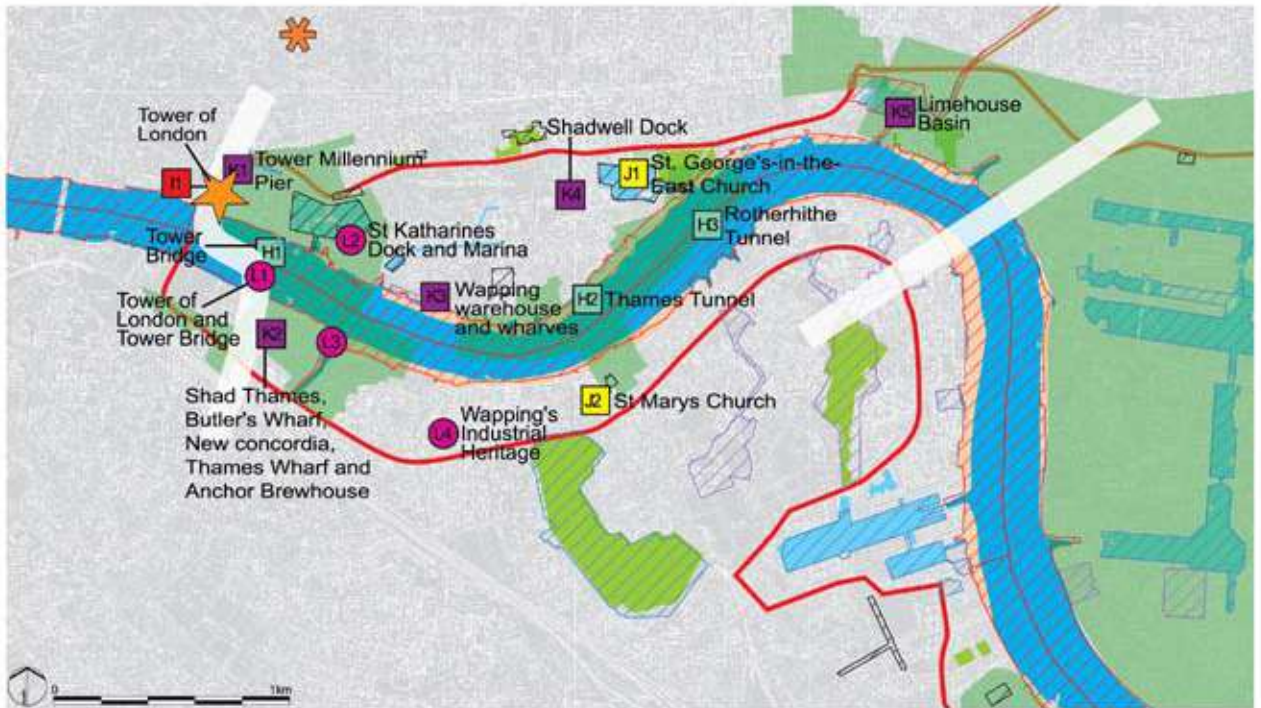


CHARACTERISATION



VIEWS, LANDMARKS AND MAJOR LANDMARKS

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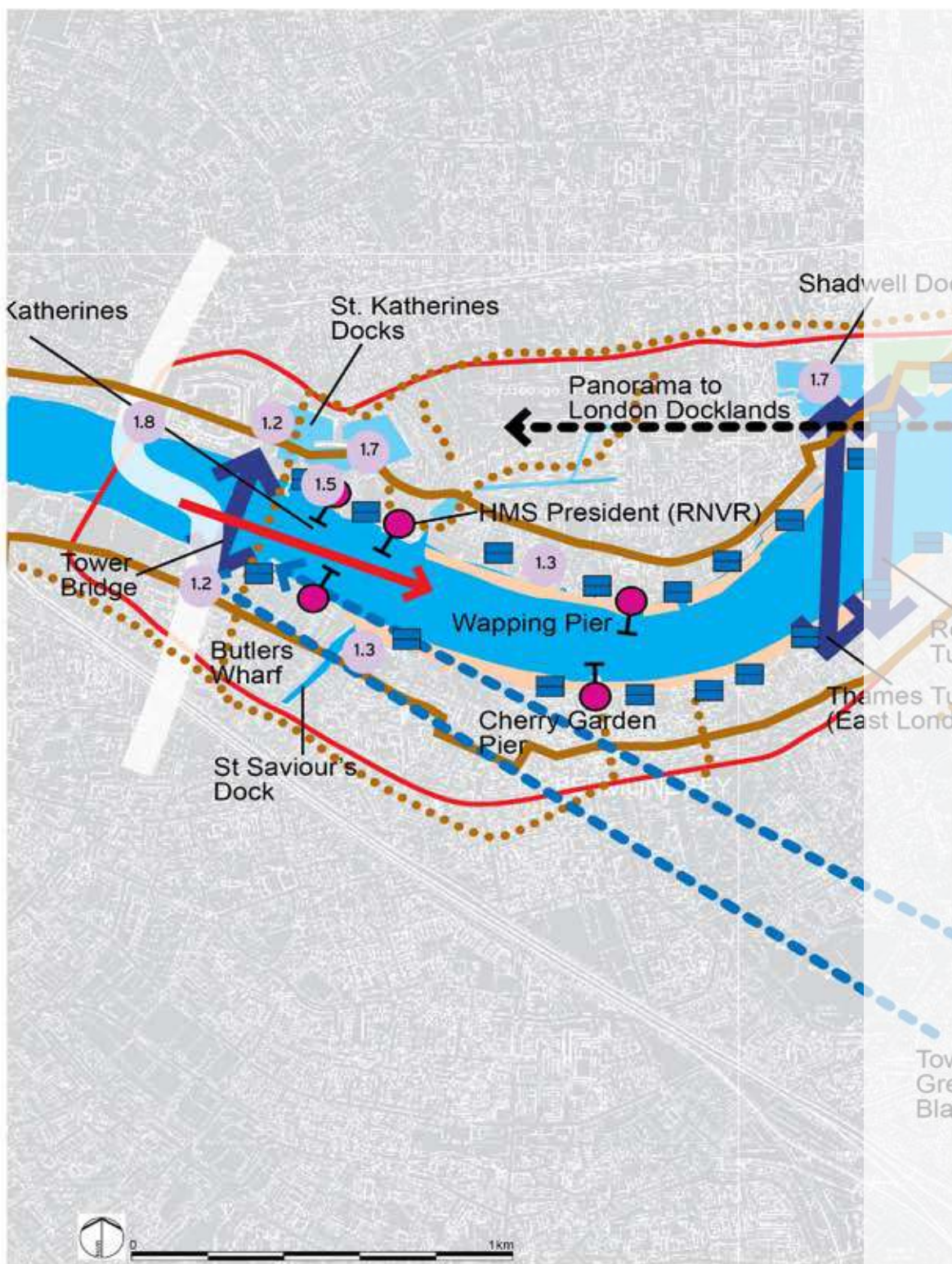


BIODIVERSITY, BUILT HERITAGE AND TOURISM



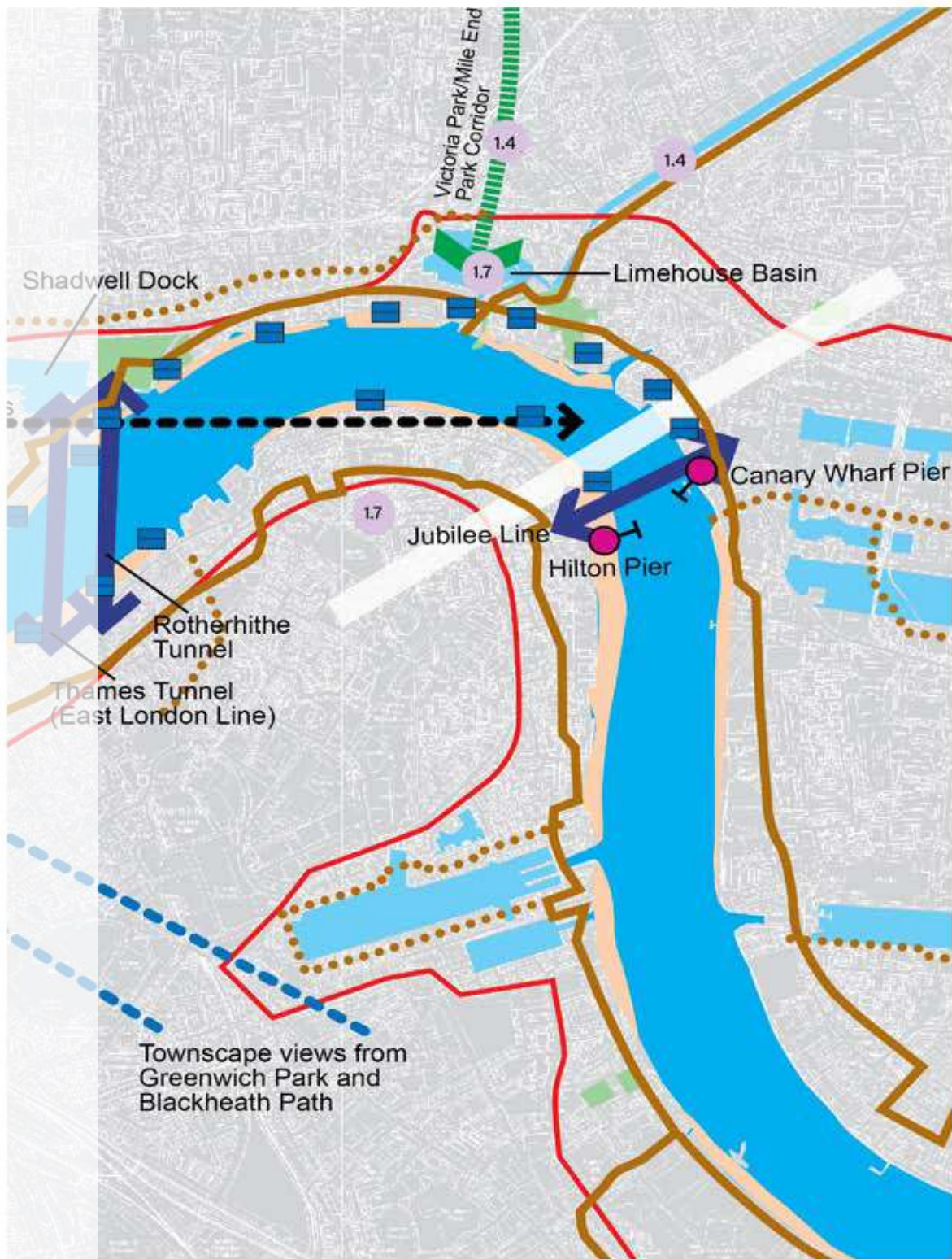
ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE

FIGURE 3.1.2 REACH 1: GUIDANCE PLAN



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SCENES FROM  
REACH 2



# REACH 2 GREENWICH REACH AND BLACKWALL REACH

## 3.2.1 CHARACTERISATION

This Reach stretches from Westferry Circus to Blackwall Pier on the northern bank and from Cuckold's Point to Blackwall Point on the southern bank including a large part of the Greenwich Peninsula. This characterisation should be read in conjunction with Figure 4.31. The defining feature of this Reach is the distinctive horseshoe bend of the river around the Isle of Dogs. The river has a more or less even width of around 350m throughout this Reach. Like Reach 1, this part of the Thames is mostly characterised as an enclosed river corridor with densely built up frontages. Although residential development along the riverfront predominates in most parts of the Reach, there are still areas of commercial and industrial use including active wharves.

Between Greenwich and Blackwall Point, the character of the river changes and is influenced by industrial uses on the Greenwich Peninsula. Large industrial structures, buildings set back from the riverfront and large working aggregate wharves contrast with the now predominantly residential, urbanised riverside of the Isle of Dogs. The Millennium Dome (now called the O2) at the tip of the Greenwich Peninsula marks the end of the Reach and provides a new impressive landmark beside the river.

The area to the north of the river includes Poplar, the Isle of Dogs and Blackwall. The key characteristics of the Isle of Dogs are the recent residential and commercial developments and high rise glazed office blocks of Canary Wharf that dominate the skyline. The central Canary Wharf development is now a lively mixed-use area with squares, bars, restaurants and shops. The interconnected dock basins are a key

feature of the peninsula which provide open space and a setting for the commercial developments, although the actual size of the docks has been reduced through the redevelopment. In the inner areas of the Isle of Dogs there are a number of low-rise housing estates, warehouses and business parks which present opportunities for regeneration.

The main open spaces on the peninsula are Millwall Park, a rather bland urban park and Mudchute Farm, a city farm that is like a 'piece of countryside' with paddocks, hedgerows and scrub. From Island Gardens at the tip of the peninsula there are impressive views of the Old Royal Naval College at Greenwich as painted by Canaletto. Poplar is severed from the Isle of Dogs by the A1261 (Aspen Way), and is a deprived area with numerous council estates in need of regeneration. In general the Isle of Dogs is fragmented and lacks a coherent urban structure with a marked contrast between the high rise towers and low rise housing with some warehouses and business park development. The number of people living and working on the Isle of Dogs will increase significantly over the next decade. Some existing development has resulted in the inappropriate loss of some former water space. London Yard Beach on the east of the Isle of Dogs should be protected and promoted as a local amenity with a sympathetic river edge treatment.

The area south of the river includes the eastern part of the Rotherhithe Peninsula, Deptford, Greenwich and the western part of the Greenwich Peninsula. The eastern bank of the Rotherhithe Peninsula is characterised by a mix of high quality residential waterfront developments and run down council estates including the large Pepys Estate which is being redeveloped. The two docks, Greenland and South Dock, are prominent features. Deptford is undergoing significant change with a number of new high density residential developments under construction. The area has a mix of uses and characters including the large warehouse buildings at Convoy's Wharf, wharves, depots and old warehouse buildings mixed with more recent residential and office development along Deptford Creek - the confluence of the Ravensbourne River and the River Thames.

Convoy's Wharf is a Safeguarded Wharf which is currently being considered for redevelopment. The site is currently being accessed to determine how much of the site is viable as a wharf.

The award-winning Laban Dance Centre is a prominent landmark building along Deptford Creek that is driving regeneration based on cultural activities. The AHOY Sailing Centre (The Adventure Help and Opportunities for Youth Centre) is a charity operating from the old west Deptford Power Station Pier on Greenwich Reach West. The Centre provides an introduction to sailing and boating for disadvantaged young people. This jetty needs maintenance to continue to provide safe access and egress to the Thames and as a base for training on the safe use of the river for recreation. The Ahoy and Creekside Education Trust are both fundraising to undertake education and public access work, which should be actively promoted and supported, subject to planning considerations.

Some recent developments along Deptford Creek, exemplified by the Creekside Trust, illustrate good practice for improving biodiversity. New river walls have been colonised by a rich variety of native and alien plants, and innovative designs have included a kingfisher nesting bank. The Ravensbourne/Pool River Corridor is a multi-functional green space promoted in the East London Green Grid and is also promoted as the 'Waterway Link' by the London Borough of Lewisham. It focuses on Deptford Creek at its northern-most end and connects via a network of green links and corridors to the South East London Green Chain.

The Unesco World Heritage Site of Greenwich which includes the former Royal Naval College, the National Maritime Museum and Greenwich Park is the key heritage site in East London. Greenwich has a cohesive historic town centre that is also an attraction with its markets, narrow streets, small shops and cafés. Greenwich Park is a 2012 Olympic venue. Equestrian events will take place in the Royal park with the backdrop of the National Maritime

Museum. From Greenwich Park there is a spectacular elevated view over the Thames and to central London. In contrast to the rest of this Reach which is located on relatively flat flood plain, much of Greenwich is located on the Greenwich ridge which provides one of the most important elevated panoramic views over the maritime architecture and across the Thames to Canary Wharf, St Paul's and central London. The Greenwich to Eltham Link is a multi-functional green space link promoted in the East London Green Grid and will form a strategic green connection linking Greenwich to the South East London Green Chain.

The western side of the Greenwich Peninsula has a predominantly industrial character with a number of active wharves and trading estates although a number of proposals have recently been made for other land uses. The Millennium Dome (O2) has been retained and transformed to provide a 26,000 capacity sports and concert arena; and a waterfront entertainment complex. It provides a distinctive landmark at the tip of the Greenwich Peninsula. Eventually, the development will provide approximately 10,000 dwellings and a mix of other uses including 48 acres of open space.

Greenwich Peninsula will host several events at the 2012 Olympic games. Gymnastics and the basketball finals will be held at the Dome. Greenwich Arena, a portable facility with a capacity of 6,000 will host the badminton and rhythmic gymnastics competitions. Development on land released from industrial use on the Greenwich Peninsula is providing opportunities to improve the existing river dependent uses, in particular a major boatyard and safeguarded wharves. There is potential public water recreation benefit from use of the existing slipways on the west side and the draw dock on Draw Dock Road just west of the Dome.

#### RIVER BANKS

With the exception of London Yard Beach, the river banks are mostly hard and vertical in this Reach. There is a

small part of the riverfront by Primrose Wharf where the river bank is sloping. Here the Thames Path passes behind willow trees growing on the bankside.

#### THAMES PATH

Public access to the riverbank along the edge of the Isle of Dogs on the northern bank is generally poor. There are gaps in continuous access and the route sometimes follows main roads set back from the river. The Thames Path is more complete on the southern bank, although problems do exist here in that there is no access to the riverfront by Convoy's Wharf; the riverside footpath adjacent to the Royal Naval College is too narrow to provide safe passage for both cyclists and pedestrians and the route is disjointed along the eastern Rotherhithe Peninsula.

#### RIVER INFRASTRUCTURE

The Greenwich Foot Tunnel gives excellent links for pedestrians between the Island Gardens and Greenwich Town Centre. The Blackwall tunnel is a vehicular crossing near the eastern end of the Reach and the DLR and Jubilee lines provide further cross river links. Existing river crossings should be protected, enhanced and improved. A cable car link across the Thames near the Dome was considered in the run up to the Millennium but was found not to be feasible. This opportunity could be examined again to provide a link between the Millennium Dome and the Lee Valley Regional Park.

This reach has 5 safeguarded wharves. Northumberland Wharf on the north bank of the Thames, Tunnel Glucose, Victoria Deep Water Terminal and Convoys Wharf on the south bank of the Thames and Brewery Wharf on Deptford Creek.

There is a self maintaining deepwater hole in the Thames just downstream from the mouth of Deptford Creek which provides a midstream mooring for large cruise and naval ships visiting London. There has been consideration of a cruise liner terminal at both Convoys Wharf and Greenwich Reach East. Neither proposal appears likely to be implemented at present but these two sites probably represent the last opportunity to provide a cruise liner terminal in London capable of handling the largest cruise ships

capable of navigating the Thames. The PLA have recently improved the cruise liner embarkation facilities at Greenwich.

There are a number of piers throughout this Reach: Canary Wharf Pier, Great Eastern/Masthouse Terrace Pier on the northern bank and Holiday Inn Pier, Greenland Pier, QE2 Pier, Millennium Dome Pier and Greenwich Pier on the southern bank. These together with proposed piers at Canary Wharf East and Meridian Pier will strengthen the case for north-south and east-west ferries for tourism and commuting. Greenwich Pier is at capacity and consideration should be given to the feasibility of developing an ancillary pier. In addition the non operational pier between Alcatel and Tunnel Refineries is publicly accessible.

There are mooring sites in Poplar Dock, Greenland Dock and South Dock. One launching site is located on the northern bank at Millwall Dock Slipway and four are located on the southern bank: Point Drawdock, Johnson's Drawdock, Newcastle Drawdock and London Yard Causeway. Deverell's Boatyard, which is one of a limited number of boatyards in the Strategy Area, is located at Badcock's Wharf and is currently proposed to be relocated just downstream to Bay Wharf. There are ten sets of steps on the southern bank and four on the northern bank giving access to the foreshore. On the northern bank there are three water sports centres: Dockland Sailing Centre, Cruising Association and Poplar Dock Marina. On the southern bank there are also three water sports centres: Surrey Dock Water Sport Centre, South Dock Marina and the AHOY Sailing Centre.

#### BIODIVERSITY

Sites of biodiversity interest within this Reach include Mudchute Farm, Deptford Creek and Greenwich Park which are designated as Sites of Metropolitan Importance. The Docks on the Isle of Dogs and Rotherhithe Peninsula are designated as Sites of Borough Importance (Grade 1) and several other sites, mostly around the edges of the Isle of Dogs are designated as Sites of Borough Importance (Grade 2). The tidal areas at the mouth of Deptford Creek provide refuges for fish, and sheltered roosting and feeding habitat for

wildfowl and waders. There are areas of pseudo salt marsh in this reach, especially on the areas of sloping flood defence such as concrete rip-rap. The black redstart is found in the area. For further information on biodiversity refer to Appendix 3 - Characterisation and Appendix 6 - Biodiversity.

#### HERITAGE

As with Reach 1, this Reach has a wealth of world class heritage. This includes the surviving docks, Millwall Ironworks and the Thames Ironworks, Greenwich Park, Maritime Greenwich (A World Heritage Site including the Cutty Sark, the former Royal Naval College, the National Maritime Museum, the Royal Observatory, Trinity Almshouses and the church of St Alfege), Greenwich Generating Station, South Metropolitan Gas Company Holder, Victualling Yards at Deptford and the Millennium Dome. There are a number of Conservation Areas mainly on the Isle of Dogs, Deptford and Greenwich. The Creekside Education Trust runs guided walks at low tide. Further information on built heritage is found in Appendix 3 - Characterisation and Appendix 5 - Built Heritage.

Archaeological finds in this area include extensive prehistoric woodland on the Isle of Dogs, a prehistoric trackway on the western side of the Greenwich Peninsula, a Bronze Age barrow cemetery and a Roman building within the Greenwich World Heritage Site. Greenwich, Poplar and Deptford all have medieval origins although only Greenwich is mentioned in Domesday Book (1086). From 1513 Deptford was important for its Royal Dockyard founded by Henry VIII and Greenwich was flourishing as a maritime centre. Later the Isle of Dogs also became a focus for shipbuilding. For further information on archaeology refer to Appendix 3 - Characterisation and Appendix 4 - Archaeology.

#### RIVER ECONOMY

Although changing, the economic use of the river in this stretch is still vibrant with a mix of recreational, tourist and commercial activities. Managing the

potentially conflicting uses will be of key importance in this reach, particularly with respect to the introduction of more residential land uses.

#### KEY CHARACTERISTICS AND INFLUENCES

- This reach is characterised by a much more intensive and diverse use of the river itself. Although many river dependent uses have ceased over the last couple of decades a significant number still exist in this reach
- The high rise, glazed office blocks of Canary Wharf dominate the skyline and form a prominent landmark visible from all angles and from a considerable distance
- The key existing landmarks in this Reach are Canary Wharf, the domed entrances to the Greenwich Foot Tunnel, Cutty Sark, the Old Royal Naval College, the Millennium Dome (O2) and Laban Dance Centre on Deptford Creek.

#### 3.2.2 REACH GUIDANCE

This Reach Guidance (RG) corresponds with Figure 4.32 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

#### PLANNING AND DESIGN

- RG2.1 Depending upon the outcome of the current planning application, development frameworks which clearly address the stated vision for Thames Strategy East should be prepared for Convoys Wharf.
- RG2.2 Protect the waterspace of the dock basins on the Isle of Dogs and Rotherhithe Peninsula and promote further active use of the water.
- RG2.3 Improve the management and maintenance of areas of poorer quality public realm along the riverfront, including parts of Rotherhithe surrounding Greenland Dock and South Dock and Isle of Dogs.

- RG2.4 Protect, enhance and develop Mudchute Park/Farm and Sir John McDougal Gardens as vibrant, diverse city parks with good connections to the surrounding Thames Path and other footpaths.
- the Laban Centre
  - the domed entrances to the Greenwich Foot Tunnel
  - the Cutty Sark
  - Greenwich Power Station.
- RG2.5 Promote the regeneration of Deptford by emphasising the historic naval associations which are part Deptford's character, increasing active river use and forging stronger links to Greenwich Town Centre.
- RG2.6 Ensure new development by Deptford Creek relates well to the river, allows appropriate access along its length, contributes to a well-connected, high quality public realm, and to the cultural arts facilities and existing communities.
- RG2.7 Protect and enhance the historic and maritime character of Greenwich town centre which is typified by its intimate scale and fine grained street pattern.
- RG2.8 Protect and enhance the industrial character of the western bank of the Greenwich Peninsula. Where development is proposed ensure that river related facilities, in particular Deverells Boatyard are retained or suitably relocated.
- RG2.9 Create appropriate landmarks (possibly public art) to identify the entrances to West India Dock, East India Dock and Deptford Creek.
- RG2.10 Protect, enhance and interpret the impressive views within the reach including:
  - the London panoramic views from Greenwich Park and Blackheath Point to central London (beyond Reach 2)
  - the view from Island Gardens to the Maritime Greenwich
  - the Millennium Dome (O2)
  - Nelson's House and adjacent docks
- RG2.11 Investigate the possibility of providing a link between the Millennium Dome and the Lee Valley Regional Park.
- RG2.12 Promote strategic green connections linking the Thames Path:
  - across the Isle of Dogs
  - along the Ravensbourne/Pool River Corridor (Waterlink Way)/ Deptford Creek
  - along the Greenwich to Eltham Link to the South East London Green Chain on the southern bank.
- RG2.13 Protect and enhance existing river infrastructure of the Greenwich Foot Tunnel, Dockland Sailing Centre, Cruising Association, Poplar Dock Marina, Surrey Dock Water Sport Centre, South Dock Marina the AHOY Sailing Centre and the steps and slipways down to the foreshore.
- RG2.14 Investigate opportunities to reinstate boat repair and maintenance operations at Ferry End Marine Slipway on the Isle of Dogs.
- RG2.15 Enhance the Thames Path at the following locations:
  - through the industrial areas on the western side of the Greenwich Peninsula
  - around the Isle of Dogs.
- BIODIVERSITY**
- RG2.16 Enhance the nature conservation potential provided by the dock basins by considering innovative solutions to creation of reedbeds and other features that would be beneficial to fish and other wildlife.
- RG2.17 Protect and enhance intertidal areas within Deptford Creek, which provide refuges for fish

and sheltered roosting and feeding habitat for wildfowl and waders including the innovative treatment of the flood defences in the Creek.

#### ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCE

RG2.18 Protect and enhance the key heritage and cultural resources of the Reach including:

- The setting of Maritime Greenwich World Heritage Site
- Deptford, including the Laban Centre
- Millwall Ironworks
- Greenwich Power Station.

RG2.19 Promote visitor awareness and create interpretation and educational links to the heritage of the area, including Surrey Quays Farm; Samuel Pepys House; Creekside Centre, the Laban Centre and the intangible heritage such as the place names of Millwall (which derives from the windmill that stood on the west bank of the Isle of Dogs) and historic associations such as Canaletto's paintings from Island Gardens.

RG2.20 Create archaeological and historical references in designs, for example, to the extensive prehistoric woodlands on the Isle of Dogs, and the naval associations of Deptford.

#### FLOOD RISK MANAGEMENT/ CLIMATE CHANGE

RG2.21 Seek opportunities for creative realignment of flood defences and making space for water in all riverside development proposals, where defences are being replaced and at riverside open spaces.

#### ECONOMY

RG2.22 Protect and enhance the existing diverse mix of economic river-related uses including river-based transport, Safeguarded Wharves, boatyards, marinas, and river-related tourism.

RG2.23 Promote the use of existing piers at Canary Wharf Pier, Masthouse Terrace Pier, Great Eastern Pier, Holiday Inn Pier, Greenland Pier, Millennium Dome Pier and Greenwich Pier for river passenger services and seek ways of alleviating overcrowding at Greenwich Pier.

RG2.24 Promote the creation of new piers at Deptford, Canary Wharf East and Millennium Village West to add to river passenger services and recreational opportunities.

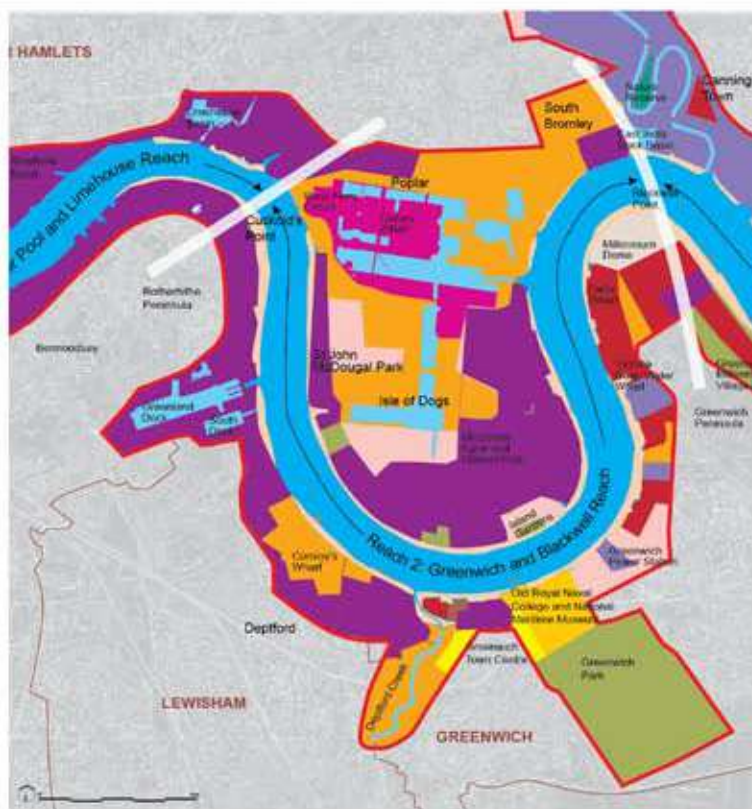
RG2.25 Promote the development of a new boatyard facility within the reach, expected to be at Bay Wharf.



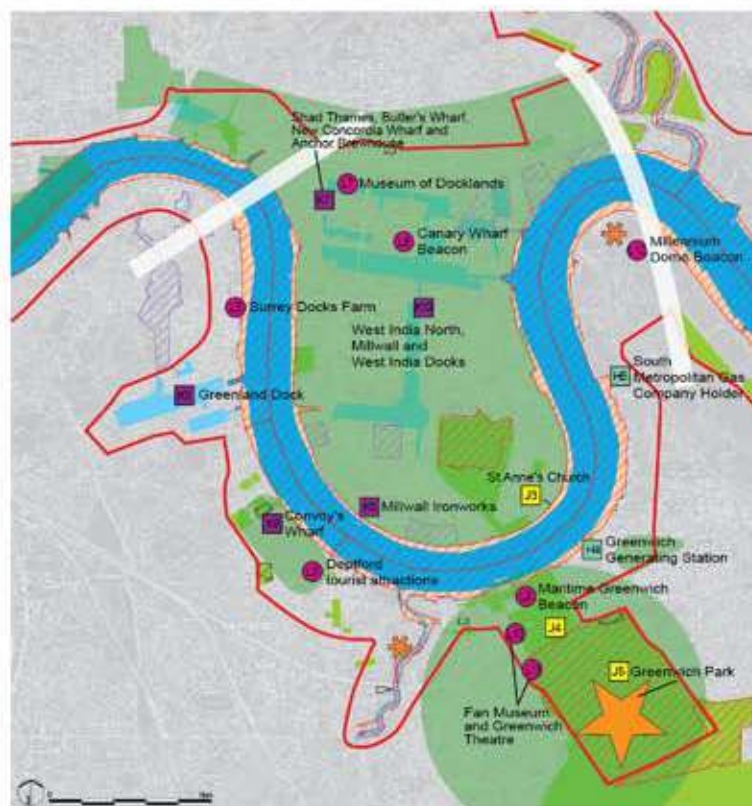


**FIGURE 3.2.1 REACH 2: SUMMARY DATA**  
 LIMEHOUSE, GREENWICH AND BLACKWELL REACH

CHARACTERISATION



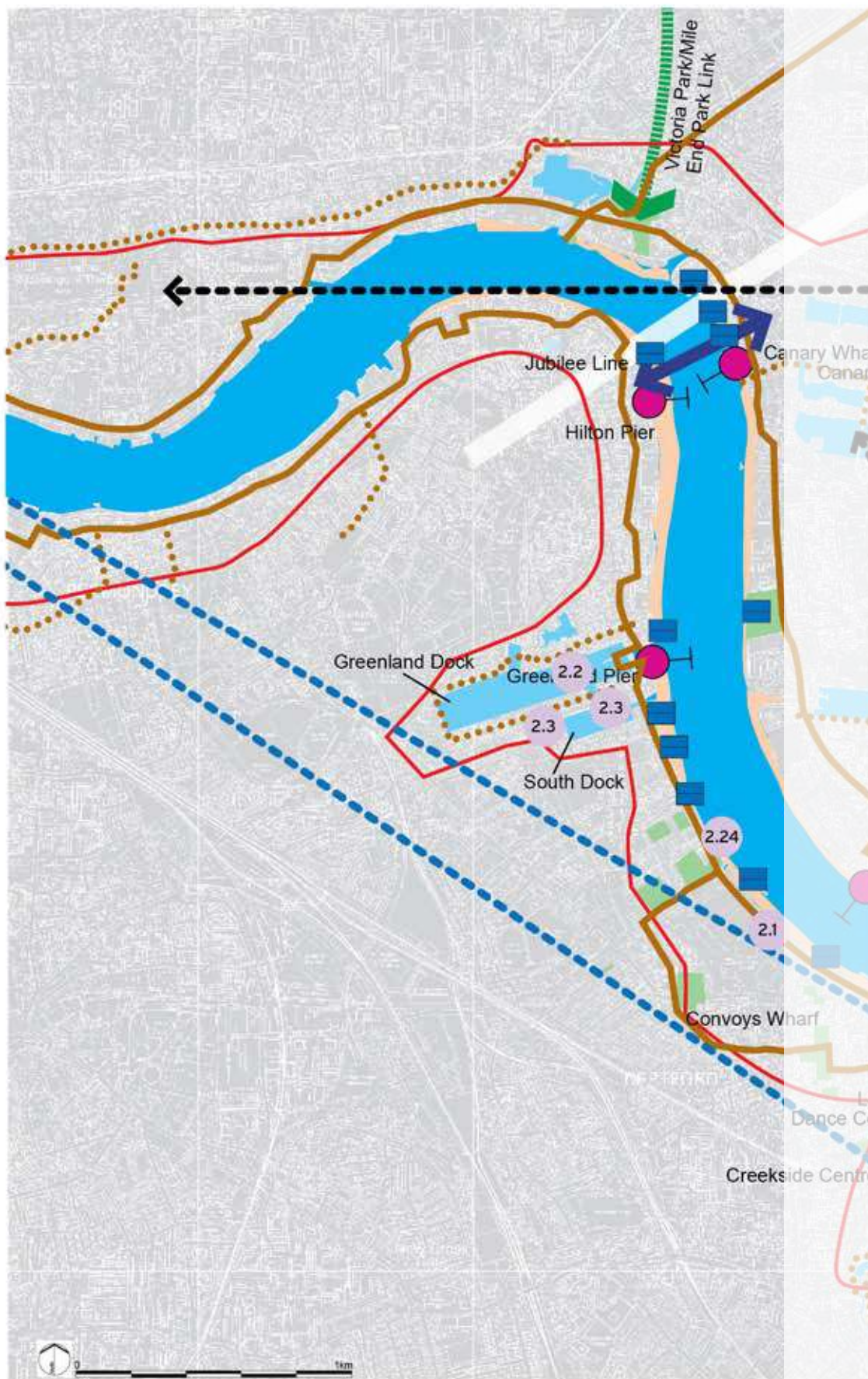
BIODIVERSITY, BUILT HERITAGE AND TOURISM



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FIGURE 3.2.2 REACH 2: GUIDANCE PLAN



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SCENES FROM  
REACH 3



# REACH 3 BUGSBY'S REACH AND WOOLWICH REACH

## 3.3.1 CHARACTERISATION

This Reach stretches from Blackwall Pier to Gallions Point on the northern bank of the river and from Blackwall Point to the eastern extent of the Royal Arsenal development on the southern bank. This characterisation should be read in conjunction with Figure 4.42. The river turns sharply south east around Blackwall Point forming Greenwich Peninsula, and then turns due east around Manhattan Wharf. Between Manhattan Wharf and Gallions Point the river runs eastwards, in a more or less straight course; at Gallions Point the river curves to the north east. The river widens from approximately 350m wide at Blackwall Point to 500m at the Thames Barrier. The character within this Reach is mainly industrial, with a number of working wharves, boat yards and commercial estates. Pockets of high density riverside residential development exist at the Greenwich Millennium Village, either side of Thames Barrier Park and the Royal Arsenal. The Thames Barrier is an iconic structure and a significant landmark.

The predominantly industrial character of this reach is undergoing change with the construction of employment-led development west of the Thames Barrier and new riverside residential blocks east of the Barrier.

The area on the northern bank includes the southern extent of the Lower Lee Valley, Silvertown, North Woolwich and the Royal Docks. The Lower Lee Valley is a complex area comprising a range of industrial, utility and commercial uses as well as small pockets of recent residential development. The Lee Valley is central to London's successful 2012 Olympic bid and the aim of the Strategy is to influence the associated development of the proposed Olympic precinct, which includes the Olympic Village, media centre and sports stadia, these will be located outside the Strategy Area.

The lower part of Bow Creek/River Lee is largely inaccessible and mostly hidden from view, however a range of developments is anticipated by the Lower Lee Opportunity Area Framework. These are expected to comprehensively change the area with a vision for a "water city". Trinity Buoy Wharf at the confluence of the River Thames and Bow Creek is a former light house and buoy manufacturing works. The site now provides studios for artists in converted shipping containers and this is seen as a potential catalyst for further cultural and creative industries in the area and developed as a leisure and recreational 'Gateway' to the Lee Valley Regional Park.

The Royal Docks are majestic in scale ranging from 1.8 to just over 2 kilometres in length and comprise Royal Albert Dock, King George V Dock and Royal Victoria Dock. The Docks form a physical barrier to accessing the Thames from the north, although the Stephen Redgrave Bridge, the Connaught Bridge and the Victoria Dock Footbridge have improved access.

London City Airport is located on the strip of land between Royal Albert Dock and King George V Dock. The international exhibition centre, ExCeL, is located on the northern side of Royal Victoria Dock and the University of East London is located on the northern side of the Royal Albert Dock. The northern bank of the river by Silvertown and North Woolwich is dominated by large scale heavy industry, in particular the Tate and Lyle glucose refinery. The proposed Silvertown aquarium and research facility - to be called 'Biota!' - has been granted planning permission and is part of the plans for Silvertown Quays.

The Royal Albert Basin Development Framework, drawn up jointly by the London Borough of Newham, the London Development Agency (who own the site) and the Greater London Authority, proposes the redevelopment of this area to create nearly 3,000 new jobs and over 2,000 new homes. The Framework also proposes that the actual basin itself (within the City Airport Public Safety Zone) provides the opportunity for enhanced water use with a larger, permanent marina, new slipways and waterside access and up to 8,000 square metres of marine related workspace (low

employment density). A total of 1,400 units of residential accommodation are proposed for Royal Albert Island. The Royal Quay development is also identified for residential development, with the proposed creation of dockside apartments and a gym/café in the Gallions Hotel. This area of the river lies within the recently created London Thames Gateway Urban Development Corporation (LTGDC) which has been specifically devised to promote regeneration through redevelopment of underused/vacant sites as strongly encouraged by national, strategic and local planning policy guidance.

The area on the southern bank includes the eastern part of the Greenwich Peninsula, New Charlton and Woolwich. The first phase of the Greenwich Millennium Village, a high profile residential development, has been completed. Part of the Charlton riverfront is an aggregate zone of distinctive character with large cranes apparent. Further inland the area is characterised by a retail park including a large superstore with extensive car parking and industrial estates but poor links to the riverside. The Charlton Business Park is a Strategic Employment Location in the London Plan.

Woolwich town centre, marked by high-rise white apartment blocks, is close to the river and the Woolwich Ferry Terminal. The town centre is bustling with a pedestrianised high street, market place, central town garden and some notable buildings including the Town Hall. An updated Development Framework is being prepared for Woolwich Town Centre. There has been a recent turnaround with changes made through SRB and the Royal Arsenal development and the Development Framework will continue to promote Woolwich as a premier, public transport hub. Woolwich will be very well connected by existing main-line train services, the DLR due to open in 2009, the proposed Greenwich Waterfront Transport and the potential Crossrail station. The A206 currently severs the town centre from the river and the new residential, commercial and retail development at the Royal Arsenal.

The Royal Arsenal site, east of Woolwich town centre, is currently being redeveloped as a mixed-use development. The quality of the development completed recently is of a high standard comprising residential (over 1000 new dwellings), commercial, leisure, heritage (Royal Arsenal Museum 'Firepower' and the new Greenwich Heritage Centre), light industrial business park, a new river pier, parkland and riverside walk. Each of the 20 listed buildings on the site are being restored and put to new uses.

#### RIVER BANKS

The river banks on both sides of the river are predominantly vertical sheet piled banks to enable docking of vessels. The treatment of the riverbank, as part of the development of the Dome (O2) is exemplary with the setting back of flood defences, creation of inter tidal habitat, provision of educational signage and a wide riverside promenade and cycle path.

#### THAMES PATH

The Thames Path (City to Sea) proposed route runs eastwards from the Thames Barrier within this reach. The National Cycle Route 13 passes along the northern side of the Docks, but there are currently obstructions to its most desirable route. Some of these will be overcome through redevelopment.

On the northern bank, there is no continual river side path although there is good access to the river at the Thames Barrier Park, Royal Victoria Gardens and Galleons Lock development. In the short term, a route could follow National Cycle Network Route 13 (NCN 13); in the longer term it could forge a new path along the riverfront as redevelopment opportunities arise.

On the southern bank most of the Thames Path exists. There are exemplary, high quality riverside promenades along the entire eastern length of the Greenwich Peninsula and at the Royal Arsenal development. The two missing sections are along the Charlton - Woolwich waterfront; firstly from the Thames Barrier Visitor Centre to Harlinger Street, where the route deviates inland around



the Harrington Way industrial area; and secondly, where Mast Pond Wharf is being redeveloped.

#### RIVER INFRASTRUCTURE

River based infrastructure is extensive in this Reach. The Thames Barrier is located between Silvertown and New Charlton and is a critical element of London's tidal flood defences. There are eleven Safeguarded Wharves within this reach. Six are along the northern bank of the river including Orchard Wharf, Thames Wharf, Peruvian Wharf, Manhattan Wharf, Sunshine Wharf and Thames Refinery. A further two safeguarded wharves, Mayer Parry and Prior's, are located on the River Lee. Tate and Lyle's Silvertown factory is the biggest cane sugar refinery in the world, producing 1.1 million tonnes of refined sugar a year and employing around 1000 people. All the raw material is brought to the plant by bulk container vessels.

There are three safeguarded wharves on the southern bank, Angerstein's, Murphy's and Riverside wharves. Angerstein and Murphy's wharves are also served by a railhead and are further protected by the Greenwich Aggregates designation. Boatyard facilities also exist within this reach at Cory's Barge Works, Charlton Wharf and Durham Wharf.

There are two public piers on the southern bank; Barrier Gardens Pier by the Thames Barrier Visitor Centre and Royal Arsenal Pier. The Woolwich Ferry operates between North Woolwich and Woolwich jetties. There are three launching sites in this Reach: Bargehouse Causeway on the northern bank and Bugsby's Hole Causeway and Bell Water Gate on the southern bank. On the northern bank there are five water sports centres associated with the Royal Docks including: Peter Chilvers Windsurfing Centre, Royal Victoria Dock Watersport Centre, Royal Albert Dock Rowing Centre and the London Wetbike Club. There is also a watersports centre on Bow Creek. Greenwich Yacht Club is located on the southern bank within this reach and is a major recreational resource.

The existing river crossings in this Reach are: the Woolwich Foot Tunnel providing

access for pedestrians; the Woolwich Ferry providing free crossing for vehicles, cyclists and pedestrians and the Jubilee Line of the underground between North Greenwich and Canning Town. Crossings and transport connections will be further enhanced with the proposed DLR extension to Woolwich and Crossrail.

#### BIODIVERSITY

The main sites of biodiversity importance are Bow Creek/River Lee, designated as a Site of Metropolitan Importance and the Royal Docks, designated as a Site of Borough Importance (Grade 1). The river is industrial in character with habitats including hard flood defence walls, docks and artificial structures. The Royal Docks provide extensive open water and brackish habitats that are important for wildfowl, especially for over-wintering. The black redstart is concentrated on the industrial and brownfield sites here and small populations of sand martins have been found by the Royal Docks and Lower Lee. For further information on biodiversity refer to Appendix 3 - Characterisation and Appendix 6 - Biodiversity.

#### HERITAGE

There are a number of sites of built heritage importance in this Reach. These include the Royal Docks, Spiller Millennium Flour Mills and Silo D, Silvertown Church and St Mary's at Woolwich, the Tate and Lyle Glucose Refinery, the Thames Barrier, Angerstein Wharf at Charlton, the Royal Arsenal, the Mast Pond Wharf and surviving buildings from the Woolwich Dockyard. The Royal Arsenal is the only Conservation Area in the Reach. For further information on built heritage refer to Appendix 3 - Characterisation and Appendix 5 - Built Heritage.

Archaeological discoveries in the area include prehistoric finds by the mouth of Bow Creek; fossilised trees and a large elephant tooth by the East India Dock Basin; Roman finds by the Royal Albert Dock; and remains of a possible Iron Age settlement on the site of the Woolwich Power Station. Woolwich was notable for its fishing industry in the medieval period. The post-medieval development of Woolwich was dominated by the Royal Arsenal, at one

time the largest industrial complex in the world. For further information on archaeology refer to Appendix 3 - Characterisation and Appendix 4 - Archaeology.

ensure that new development reflects the town's historic waterfront character.

#### RIVER ECONOMY

The river economy within the reach is very active with much riverside industry using the river and numerous leisure facilities.

RG3.4 Protect and enhance the wooded character of the Greenwich ridge as a 'back-drop'.

#### KEY CHARACTERISTICS AND INFLUENCES

- The character of the riverfront in this Reach is gradually changing from predominantly industrial and commercial to a mixed use character
- The wooded ridge that forms a green backdrop to Woolwich and New Charlton is a characteristic feature of the southern bank
- The Royal Docks are characterised by open views across the large dock basins with adjacent large scale buildings including the Millennium Mill
- The main landmarks in this Reach are the Thames Flood Barrier, the Tate and Lyle Glucose Refinery, Spillers Millennium Mill, the ExCel Exhibition Centre, the Royal Victoria Dock Footbridge, the Woolwich Ferry Terminals, and Royal Arsenal.

RG3.5 Enhance the environmental quality of the New Charlton retail park through large-scale tree planting to reduce the dominating visual impact of road infrastructure, expansive car parks and retail units.

RG3.6 Protect and enhance the strategic green space connections including to the Lee Valley Regional Park, Beckton Park Link and the Thames Barrier to Shooters Hill Link (part of the South East London Green Chain).

RG3.7 Protect, enhance and interpret the impressive views within the reach including:

- the river prospects from Thames Barrier Park, Greenwich Peninsula promenade
- river prospects from Bow Creek/ River Lee through proposed developments in the Lower Lee Valley
- the panoramic views from open spaces along the Greenwich Ridge, such as Shooters Hill and Maryon Wilson Park; and from the footbridge across Royal Victoria Dock
- the settings of the notable landmarks of Millennium Mill, Tate and Lyle Glucose Refinery and the Royal Arsenal.

### 3.3.2 REACH GUIDANCE

This Reach Guidance (RG) corresponds with Figure 4.43 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

#### PLANNING AND DESIGN

RG3.1 Ensure that Development Frameworks being prepared for Albert Dock Basin, Beckton and West Silvertown support the aims of the Strategy.

RG3.8 Protect and enhance river infrastructure including the Woolwich Ferry and its terminals, the Woolwich Foot Tunnel Barrier Gardens Pier, Royal Arsenal Pier, Queen Elizabeth II Pier and the steps and slipways within the Reach.

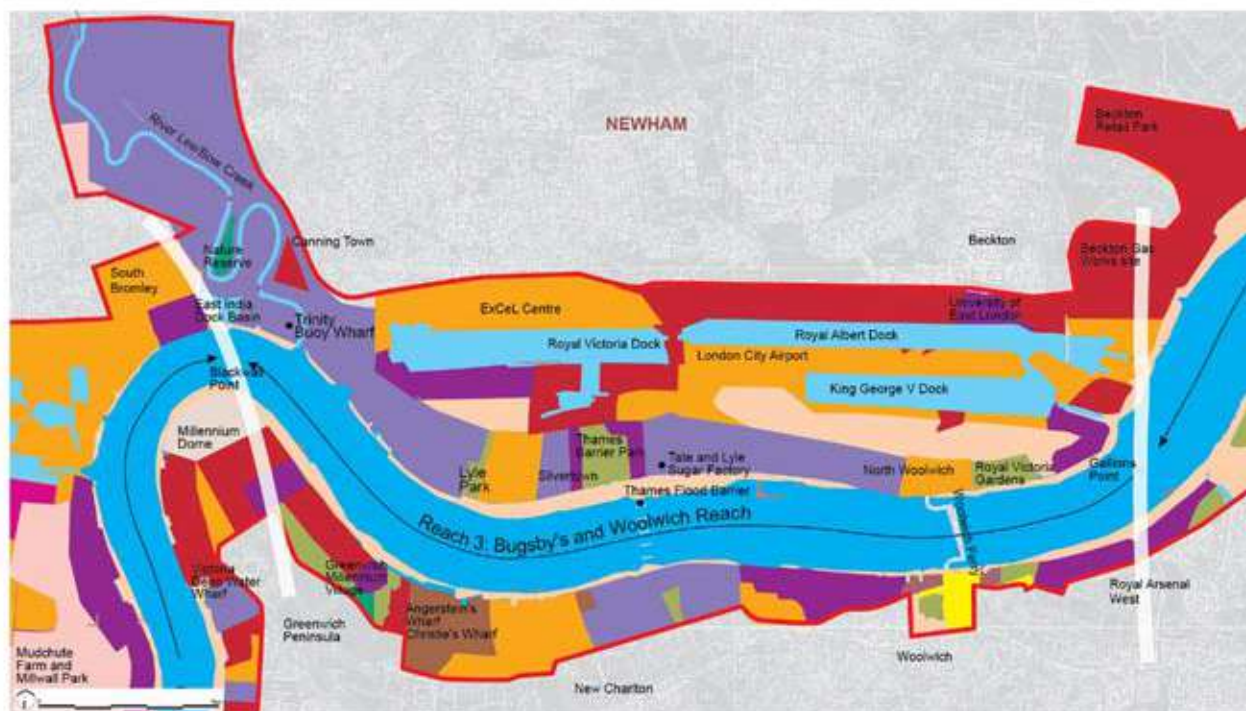
RG3.2 Protect and enhance the open character and grand scale of the Royal Docks, ensuring that buildings adjacent to the docks match this scale and enable the active use of the waterspace.

RG3.3 Reconnect Woolwich Town Centre with the riverside and

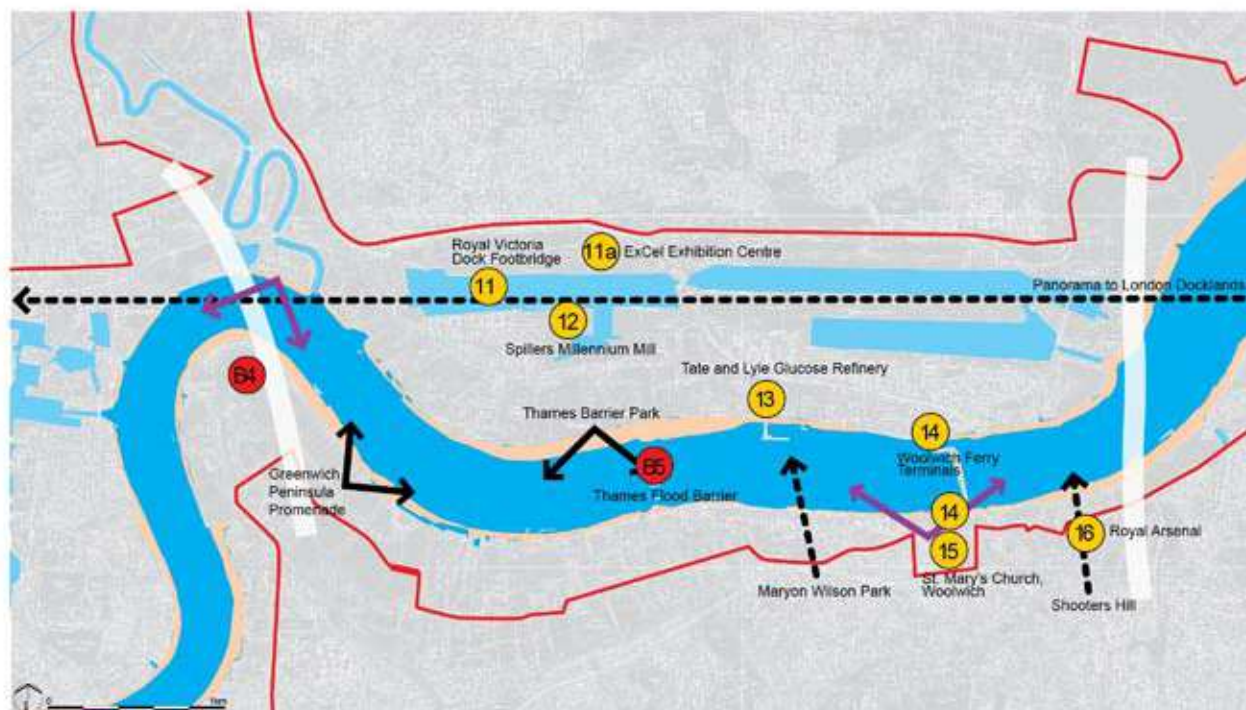
RG3.9 Provide a dual purpose pedestrian/ cycle link across the Jubilee line, the DLR and Silvertown Way from the Limmo site to Hallsville

	Road and, if built, ensure that the Silvertown Crossing has good quality pedestrian and cycle access.	ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES
RG3.10	Protect the Thames Path and improve its quality along the New Charlton riverfront and promote projects to deliver the missing sections such as between Silvertown and North Woolwich and at the Woolwich riverfront.	RG3.17 Protect, enhance and interpret the archaeological features dating back to prehistoric, Roman and medieval settlements, such as remains of the repair yard for ships at Blackwall Yard and the Royal Dockyard at Woolwich of 1512.
RG3.11	Where there is redevelopment of riverside sites, in particular in the Lower Lee Valley, promote uses that are dependant on the river and ensure mitigation to minimise the potential for conflicts of use and disturbance next to or opposite safeguarded wharves.	RG3.18 Protect and enhance Conservation Areas, listed buildings and industrial heritage of the area such as Silvertown Church, the Royal Arsenal, Tate and Lyle Glucose Refinery, Millennium Mill and the Thames Barrier.
RG3.12	Ensure that development along Bow Creek identifies access along the rivers for pedestrians and cyclists and where river crossings are proposed, ensure that these are local landmarks that enable continued navigational access.	RG3.19 Create interpretation and educational links to the intangible heritage of the area such as the place names of Silvertown which was named after S.W Silver's waterproof clothing factory.
		FLOOD RISK MANAGEMENT/ CLIMATE CHANGE
RG3.13	Protect and promote the water-based recreational uses of the Reach including on the Royals, Bow Creek and Greenwich Yacht Club and explore the feasibility of creating a new Marina within the Royal Docks.	RG3.20 Seek opportunities for creative realignment of flood defences and making space for water in all riverside development proposals, where defences are being replaced and at riverside open spaces. Particular opportunities in this Reach include redevelopment through the Lower Lee Valley.
RG3.14	Explore opportunities to improve the pedestrian and cycle permeability to the River Thames in this Reach particularly by creating safe north - south crossing points for footpaths/cycleways across the Royal Docks, the A1020 on the north side and the A206 and Bugsby's Way on the south side.	ECONOMY
		RG3.21 Promote the series of interlinked new and existing visitor destinations in the Reach including, Biota!, the Thames Barrier, Firepower - The Royal Artillery Museum, Woolwich Arsenal, Trinity Buoy Wharf and North Woolwich Railway Museum.
	BIODIVERSITY	
RG3.15	Protect and enhance the inter-tidal mud flats.	RG3.22 Promote the use of the existing and any potential new piers for river passenger services and recreational uses.
RG3.16	Enhance the biodiversity of parks and open spaces to better reflect and respect the ecology of the river through appropriate planting, habitat enabling and grassland management regimes.	RG3.23 Promote the use of safeguarded wharves in the Thameside West area for cargo handling uses.

**FIGURE 3.3.1 REACH 3: SUMMARY DATA**  
BUGSBY'S AND WOOLWICH REACH



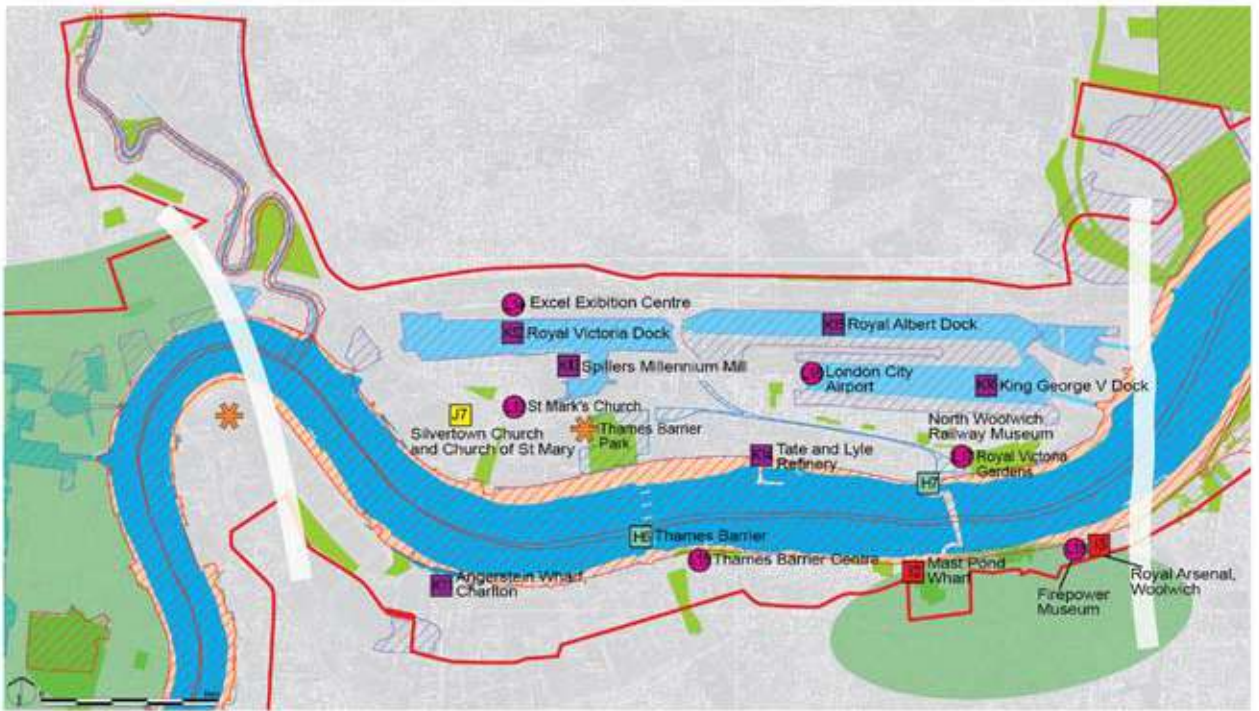
**CHARACTERISATION**



**VIEWS, LANDMARKS AND MAJOR LANDMARKS**

*Note: Proposed stations between Canning Town and North Woolwich at Thames Wharf, West Silvertown, Pontoon Dock, London City Airport and King George V are currently under construction*

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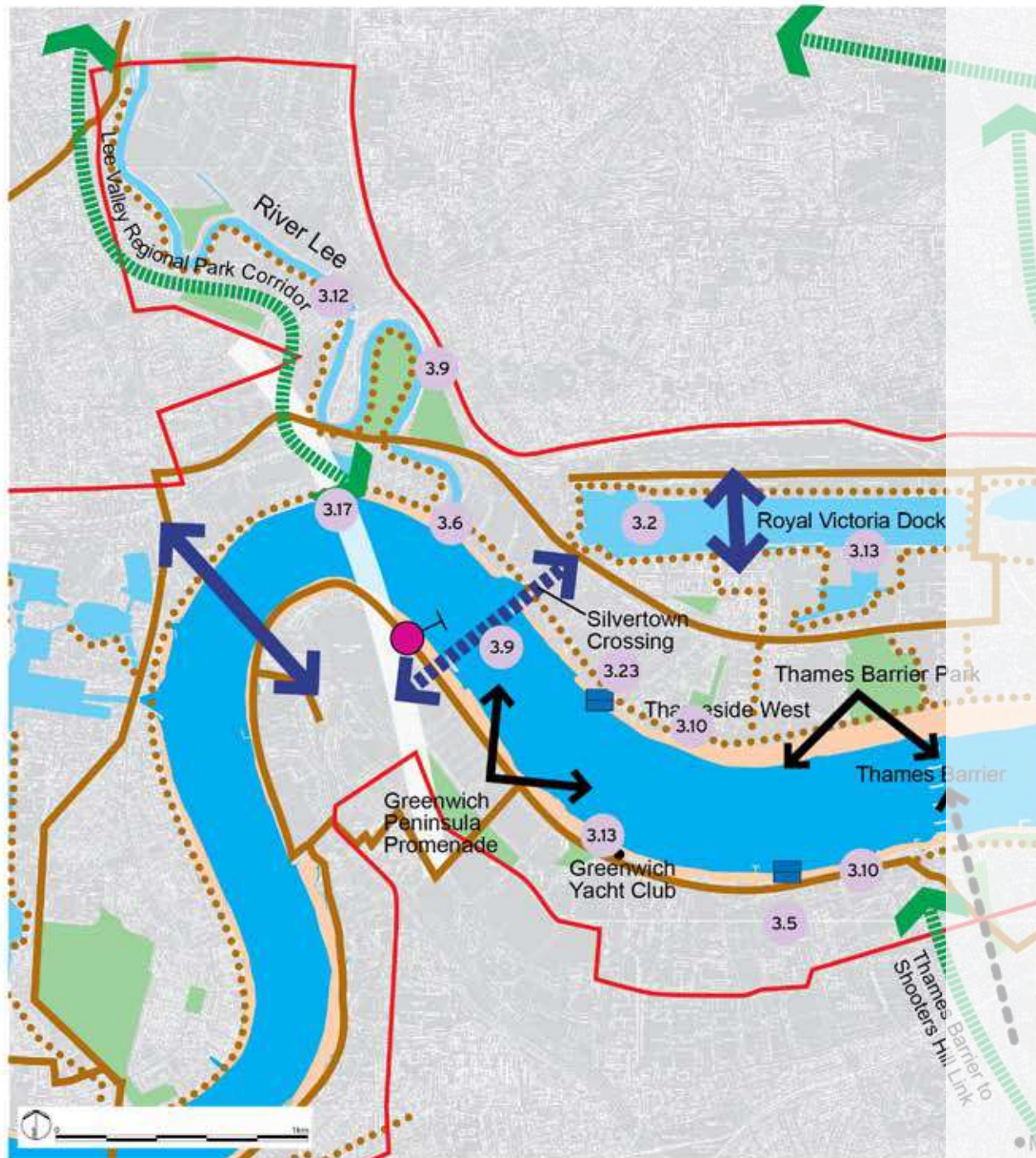


BIODIVERSITY, BUILT HERITAGE AND TOURISM

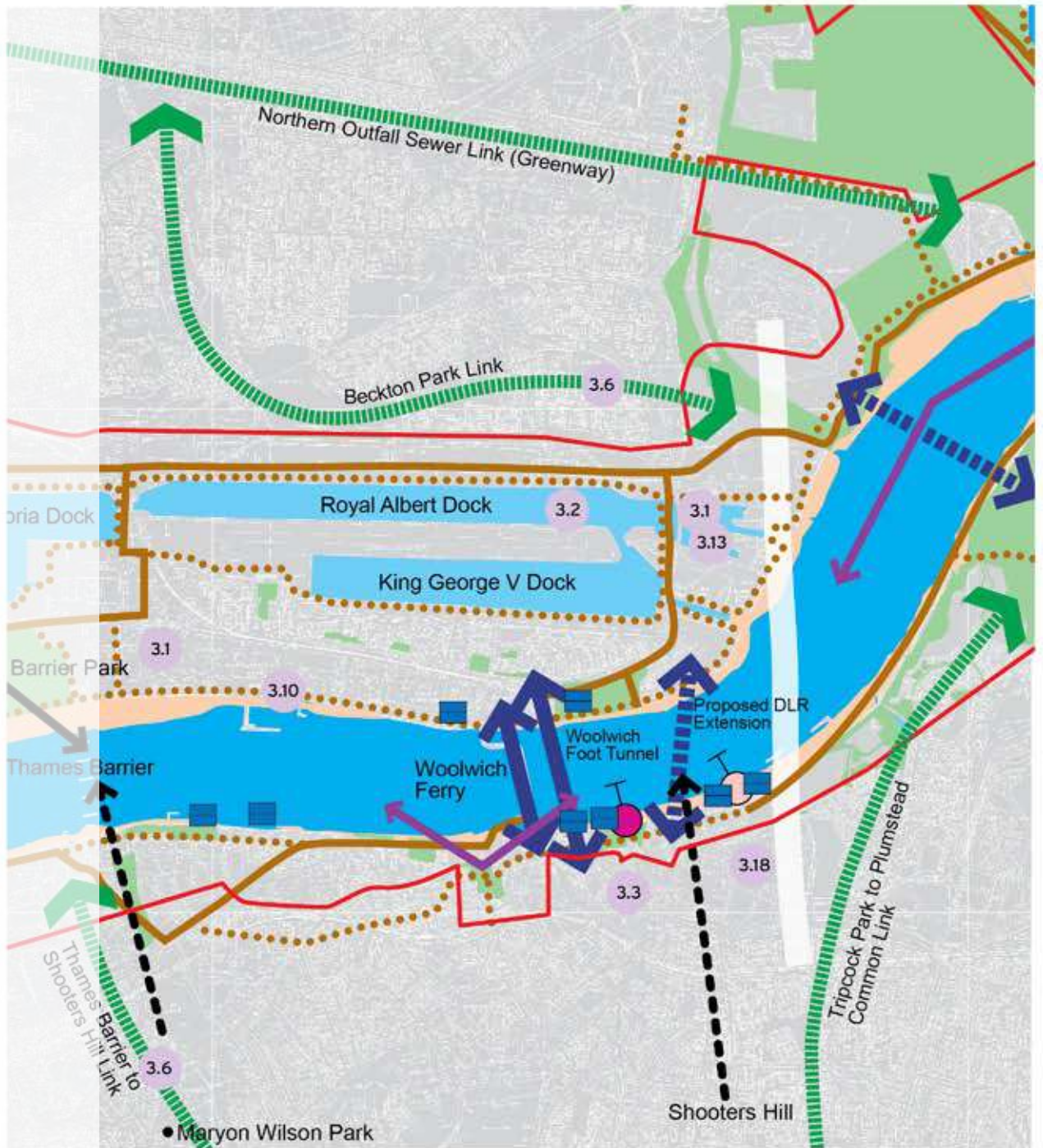


ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE

**FIGURE 3.3.2 REACH 3: GUIDANCE PLAN**



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**SCENES FROM  
REACH 4**





# REACH 4 GALLIONS REACH AND BARKING REACH

## 3.4.1 CHARACTERISATION

This Reach stretches from Gallions Point, near the entrance to the Royal Docks, to the mouth of the Goresbrook on the northern bank, and from the eastern to the western extent of Thamesmead on the southern bank. This characterisation should be read in conjunction with Figure 4.56. In this Reach the river turns north-east around Gallions Point and east around Tripcock Ness. At Barking Point the river turns slightly to the north-east and then to the south-east around Crossness. The river widens from 500m wide at Gallions Point to approximately 700m at Crossness. The Reach is characterised by extensive areas of industrial and previously developed land on the northern bank, notably the Beckton Gas Works site and the Barking Riverside development site and by the Thamesmead development on the southern bank. For detailed characterisation refer to Appendix 3.

There is a definite change in character beyond Gallions Point as the river widens and becomes more estuarine. In contrast to Reaches 1 to 3, where the riverbanks are densely built up and where there are few views beyond the riverbanks, this Reach is more open and with sloping, soft river edges at Tripcock Park and Barking Riverside.

The northern bank has extensive areas of previously developed land. The Beckton Gas Works site has been partly developed with the Beckton Retail Park which includes a tall illuminated feature that is visible from a wide area. The remaining part of the site is undergoing final stages of remediation. Some of the cylindrical gas holders are still present at Beckton Gas Works and are imposing features on the open waste ground.

Beckton Sewage Treatment Works, the largest in the London area and one of the largest in Europe, is situated to the east of the Beckton Gas Works site adjacent to Barking Creek. Investment is planned at the works to upgrade its performance and future investment and expansion of sewage treatment capacity is expected in order to cope with increased development and flows from the capture of storm sewer overflows from further west in London. An Area Development Framework is currently being prepared for the East Beckton area.

The Creekmouth Industrial Estate, characterised by small scale industries, many of which transport goods by river, is located on the eastern side of Barking Creek. Immediately north and east of the industrial estate is the Thames View Estate, an area of predominantly low-rise, but with some medium-rise, housing.

The River Roding is one of the strategic green corridors of the East London Green Grid and work has been progressing on enhancing access along this corridor through the Roding Valley Way. There is an opportunity for the Roding to provide the continuity between all the regeneration proposals within the area. The Roding lies within two of the Government's Sustainable Communities Plan Growth Areas (Thames Gateway and the London-Stansted-Cambridge-Peterborough corridor). Since the early 1800's when the Mill Pool and the Lower Roding harboured the largest fishing fleet in Europe, Barking town centre has turned its back on the River Roding. The town centre is separated from the Roding by Abbey Green, an undervalued yet strategic greenspace.

The Barking Riverside development site is one of the largest previously developed sites along the Thames covering an area of approximately 200 ha and capable of accommodating in excess of 10,000 new homes. The site was previously occupied by three power stations and is, consequently, highly contaminated. Extensive capping operations are now taking place to remediate the site, which comprises former pulverised fuel ash lagoons, a redundant, capped tip for domestic refuse, several lines of pylons that dominate the skyline and a large electrical switching station. Two tributaries enter the Thames in this Reach, Barking Creek and the

Goresbrook. Barking Creek is navigable up to Barking Quay close to Barking town centre. The eastern bank of the creek, is built-up with commercial and industrial uses. The Barking Creek Flood Barrier is a significant landmark in the Reach.

The southern bank is dominated by Thamesmead, a large-scale development conceived as a New Town in the 1960s. The development is built on former marshland and incorporates a system of canals and lakes linked to a central pumping station which discharges water into the Thames. Tidal flooding is a critical issue on this low-lying site, where three miles of flood defences were raised and strengthened to reduce the risk of flooding. The flood defence embankment and housing, therefore, partially block views to and from the river. The first two stages of the development, around Southmere, were built in pre-cast concrete and comprise high and low rise blocks with interconnected walkways. Some of these areas have no habitable uses at ground floor due to the risk of flooding. In the later stages of the development, following improvements to the flood defences, the housing was of a more traditional design.

The Thamesmead system of canals and lakes are incorporated into a network of green spaces, including Crossway Lake Nature Reserve and Tripcock Park. Tripcock Park, located adjacent to the river by Tripcock Ness, provides spectacular views across London and the River Thames and includes areas noted for ecological importance with part of the site designated as Site of Borough Importance and District Park. The main features in this space are the 'Twin Tumps', which are two moated ammunition stores built around 1890.

The proposed Thames Gateway Bridge will provide a river crossing from the A13/A406 junction at Beckton to the A2016 in Thamesmead. It will provide a four-lane dual carriageway for general highway traffic, two segregated lanes for public transport and a segregated facility for pedestrians and cyclists. The planning application has been held up in a long running series of planning enquires.

Tripcock Point is the start of the Thamesmead area and considerable mixed use but predominantly residential development is planned. The area is on average 6 metres below high tide level but is defended from flooding to a high standard by the Thames tidal defences. The future flood risk management options for Thamesmead are currently being developed the Environment Agency's TE2100 project.

London Riverside is a focus for regeneration that extends across six square kilometres on the north bank of the Thames from Barking Creek to the Greater London's eastern boundary. London Riverside extends through Reach 5 into Reach 6 but in this Reach includes Creekmouth and Barking Riverside. All of the London Riverside area falls within the boundary of the LTGDC.

#### RIVER BANKS

On the northern bank the river edge is predominantly hard and vertical from Gallions Point to the eastern extent of the Creekmouth Industrial Estate. At Barking Riverside the edge is soft and sloping and the mud flats are extensive. On the southern bank the river edge is predominantly hard and vertical with sections of sloping rip-rap west of Tripcock Park. There is a soft, sloping edge to the river by Tripcock Park with willow trees, scrub and reeds that provide a strong contrast to the built-up character of the riverbanks at Woolwich and North Woolwich.

#### THAMES PATH

There is currently very limited public access to the riverfront along stretches of the northern bank. There is a public footpath providing access to the mouth of Barking Creek that provide close-up views of the Barking Creek Flood Barrier. There is also a public footpath along the eastern section of the riverfront at Barking Riverside. Short term options to access the riverside in East Beckton are limited by the redevelopment of Albert Dock Basin and Beckton Gas Works Phase II. Negotiations with Thames Water regarding public passage in front of and alongside the eastern boundary of the Beckton Sewage Treatment Works are

being progressed. Care should be taken to ensure that the interim route via Barking is not further occluded. The option to provide a pedestrian and cycle crossing over the River Roding alongside the DLR extension to Dagenham should be considered.

The Thames Path (City to Sea extension) and the National Cycle Network (NCN) Route 1 exist on the south bank. This provides a combination of formal hard surfacing and more informal un-surfaced paths with some elevated points where an improved view of the river can be obtained. In places it is in a poor condition with regular incidences of fly tipping and car dumping. The opportunity to enhance the quality and control of access to the Path should be taken through the redevelopment of Tripcock Park, Tripcock Point and the Thames Gateway Bridge.

The construction of the Thames Gateway Bridge will be a constraint in the medium term but once built it will offer unrivalled opportunities for views of this stretch of the Thames as well as long distance views to major landmarks.

#### RIVER INFRASTRUCTURE

There are 8 safeguarded wharves within this reach with 5 located along the eastern side of Barking Creek (Welbeck, Pinns, Kierbeck, Debden, and Rippleway) and 3 along the northern bank of the Thames Frontage near the confluence with Barking Creek (Docklands, Victoria Stone and De Pass). There are no wharves on the southern bank. Gallions Point Marina is located on the northern bank on the Beckton Gas Works riverside. There are no launching sites or piers in this Reach. There is one flight of stairs providing access to the foreshore adjacent to Barking Creek. The lack of access points should be a consideration for future projects if suitable safe locations exist.

#### BIODIVERSITY

There are several sites of biodiversity importance in this Reach. Barking Creek and The Ripple Nature Reserve are designated as Sites of Metropolitan Importance. The Gores Brook, Tripcock Park and the Beckton Sewage Works and Gas Works sites are designated as Sites of

Borough Importance. Both the sewage and gas work sites are subject to operational requirements. There are extensive areas of reedbed within Barking Creek as well as intertidal mudflats that are very important for wintering wildfowl and waders, and the areas of marsh, grassland and scrub at Barking Riverside support important populations of locally uncommon breeding birds. The riverbanks at Tripcock Park are one of the few riverside areas that has naturally re-colonised with woodland. For further information on biodiversity refer to Appendix 3 - Characterisation and Appendix 6 - Biodiversity.

#### HERITAGE

There are no statutory listed buildings in this Reach, however it contains the eastern (and now only) entrance to the Royal Docks, the Mill Pool at Barking (home to the world's largest fishing fleet in the early 1800s) and the site of Beckton Gas Works. Gallions Hotel, close to the Royal Docks and the Millpool/Barking Town Quay, are potential visitor attractions. There are two Conservation Areas: Town Quay, near Barking town centre and Malthouse/Icehouse beside Barking Creek. For further information on built heritage refer to in Appendix 3 - Characterisation and Appendix 5 - Built Heritage.

A number of archaeological finds have been made in the area, including extremely rare Upper Palaeolithic/early Mesolithic land surfaces with evidence of flint tool manufacture, an extensive buried prehistoric forest and prehistoric wooden structure, a small wooden figurine known as the 'Dagenham idol', and evidence of occupation in the Roman period north-east of Thamesmead (see Reach 5). The town of Barking is of early medieval origin and is mentioned in the Domesday Book (1086). For further information on archaeological finds in the area refer to Appendix 4 - archaeology.

#### RIVER ECONOMY

There are no economic uses of the river on the southern bank. This is in sharp contrast to the northern bank where there are many businesses that utilise the river for freight transport and which contains the entrance to the Royal Docks.

## KEY CHARACTERISTICS AND INFLUENCES

- This Reach marks a change from a heavily urbanised character to a more open estuarine character that is strongly influenced by the extensive open areas of industrial and previously developed land. The area's character may change when the Thames Gateway Bridge is constructed
- Recent riverside residential development characterises the riverfront by Thamesmead and Gallions Point
- The main landmarks are the Barking Creek Flood Barrier, the Twin Tumps in Tripcock Park and the Barking Riverside Switching Station.

### 3.4.2 REACH GUIDANCE

This Reach Guidance (RG) corresponds with Figure 4.57 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

## PLANNING AND DESIGN

- |       |   |       |   |
|-------|---|-------|---|
| RG4.1 | The respective Planning Authorities for Barking Riverside, Beckton Gas Works, Tripcock Point and the Thames Gateway Bridge should consider the inter-relationship of these developments to ensure all combine to enhance the status and use of their most important common asset - the River Thames and provide good quality riverside open spaces. | RG4.4 | Create appropriate landmarks (possibly public art) to identify the entrances to the Royal Docks and the River Roding/ Barking Creek.  |
| RG4.2 | Ensure development frameworks for the eastern Barking Creek retain and enhance a vibrant river related range of land uses. This should include improvement to and continued use of Safeguarded Wharves, improvements to the quality of the public realm and safe, attractive pedestrian and cycle routes.   | RG4.5 | Ensure that the Thames Gateway Bridge proposals respect and enhance the riverscape character, enable easy pedestrian and cycle links from the Thames path across the bridge and provide opportunities for exceptional views of the Thames Estuary.  |
| RG4.3 | Promote the development of a river related leisure and recreational destination at Barking Riverside that is appropriate and sensitive to the riverside setting and ecology of the area and include a major landmark feature to aid orientation to and along the river.   | RG4.6 | Protect, enhance and interpret the impressive views within the reach including: <ul style="list-style-type: none"><li>• the river prospects through development proposals for Creekmouth; Barking Point; Barking Riverside and the Thames Gateway Bridge</li><li>• the lookout points along the Thames Path at Thamesmead</li><li>• panoramic views from open spaces along the Greenwich Ridge, such as Plumstead Common</li><li>• views to the Twin Tumps and the Barking Creek Flood Barrier.</li></ul> |
|       |   | RG4.7 | Promote strategic green connections linking the Thames Path to: <ul style="list-style-type: none"><li>• the Northern Outfall Sewer (The Greenway)</li><li>• the Roding Valley Way</li><li>• the Goresbrook corridor</li><li>• Tripcock Park</li><li>• the Thamesmead Link which forms part of South-east London Green Chain</li><li>• local access from the river to Beckton DLR, Beckton Retail park, Dagenham Dock Station</li><li>• across the A13(T) and A2016.</li></ul>                             |
|       |   | RG4.8 | Undertake a feasibility study into a pedestrian and cycle crossing over the lower Barking Creek. This could be a dedicated opening bridge or twinned with either the DLR Dagenham extension or a re-modelling of the Barking Creek Barrier  |

but would have to meet PLA navigational requirements.

- RG4.9 Seek opportunities to safely increase the number of access points to the foreshore without impacting on sensitive habitats.

#### BIODIVERSITY

- RG4.10 Protect the special interest of the tidal mud-flats and foreshore at Barking Riverside and minimise the impact of disturbance on wintering birds using the foreshore.

- RG4.11 Protect the valuable reedbed habitat along the western bank of Barking Creek.

#### ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES

- RG4.12 Enhance understanding of the existing known and potential archaeological resource including prehistoric trackways and activity, Roman and early medieval settlement, and later medieval and post-medieval settlement, marshland reclamation, industrial, military and shipbuilding development.

- RG4.13 Commemorate the sinking of the Princess Alice paddle steamer following a crash into Tripcock point in 1878, killing approximately 640 people.

#### FLOOD RISK MANAGEMENT/CLIMATE CHANGE

- RG4.14 Seek opportunities for creative realignment of flood defences and making space for water in all riverside development proposals, where defences are being replaced and at riverside open spaces. Particular opportunities in this Reach include redevelopment along the River Roding, Barking Creek, Barking Riverside, Beckton Gasworks Phase II and Tripcock Point.

- RG4.15 Ensure that the future development of Thamesmead is informed by the Environment Agency TE2100 project and that the existing system of canals is enhanced and seek opportunities for increased flood storage within the development to minimise the current use of pumping stations.

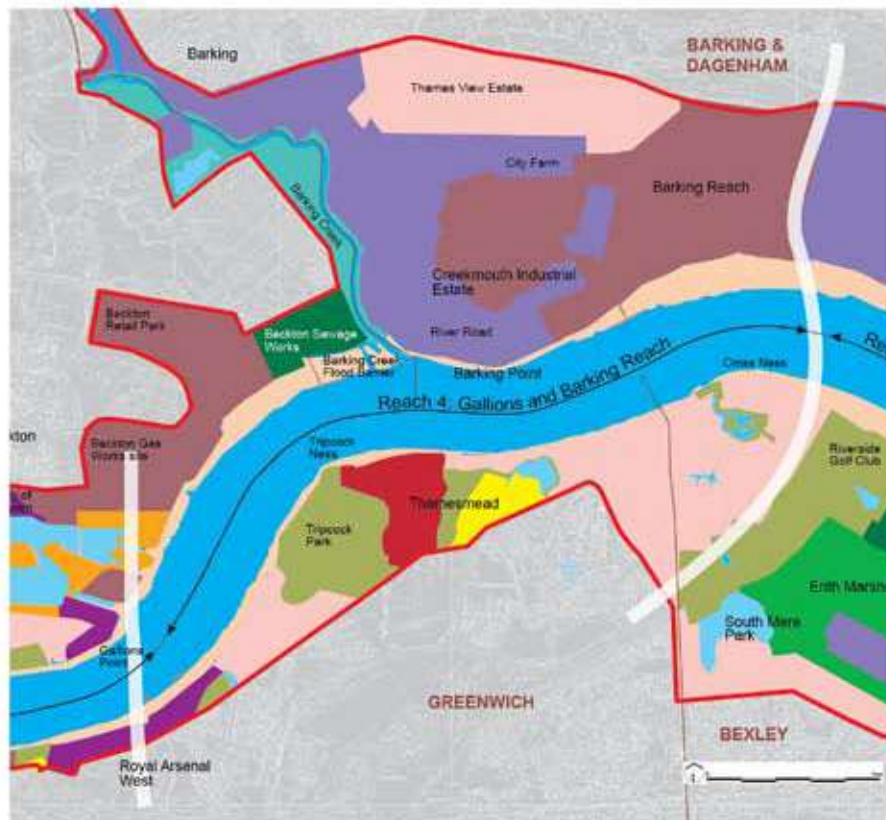
#### ECONOMY

- RG4.16 Protect and enhance the existing economic uses of the river including, river-based transport, Safeguarded Wharfs, Gallions Point Marina, mixed-use riverside areas including housing, business and river-related tourism.

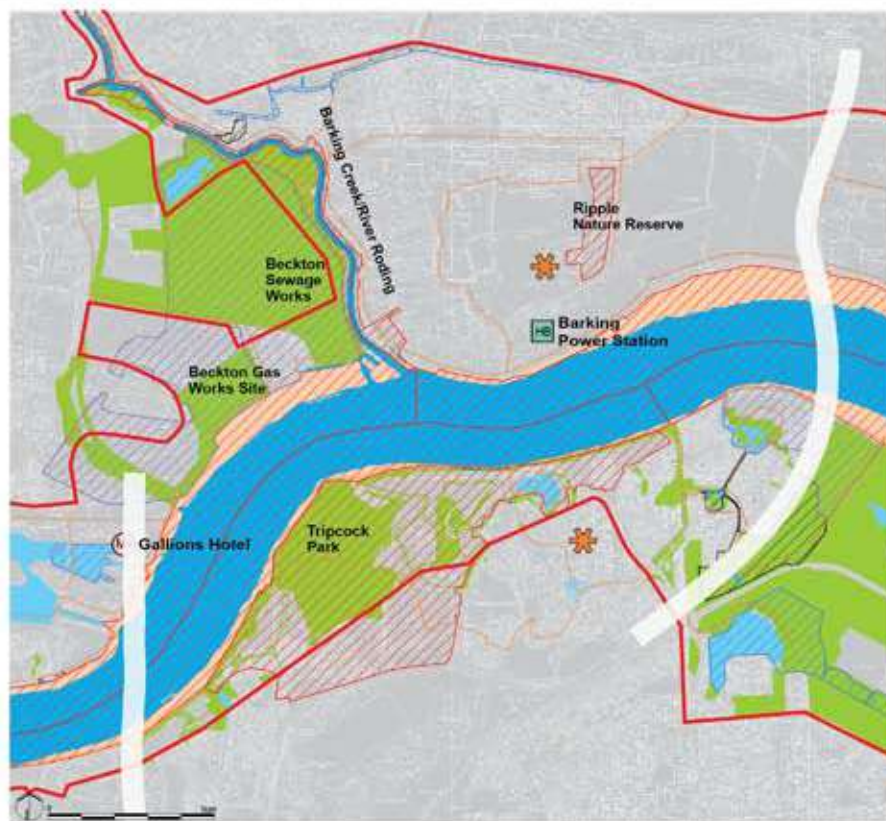
- RG4.17 Promote piers at Barking Riverside and Thamesmead to enable greater use of the river and ferry services.

**FIGURE 3.4.1 REACH 4: SUMMARY DATA**  
**GALLIONS AND BARKING REACH**

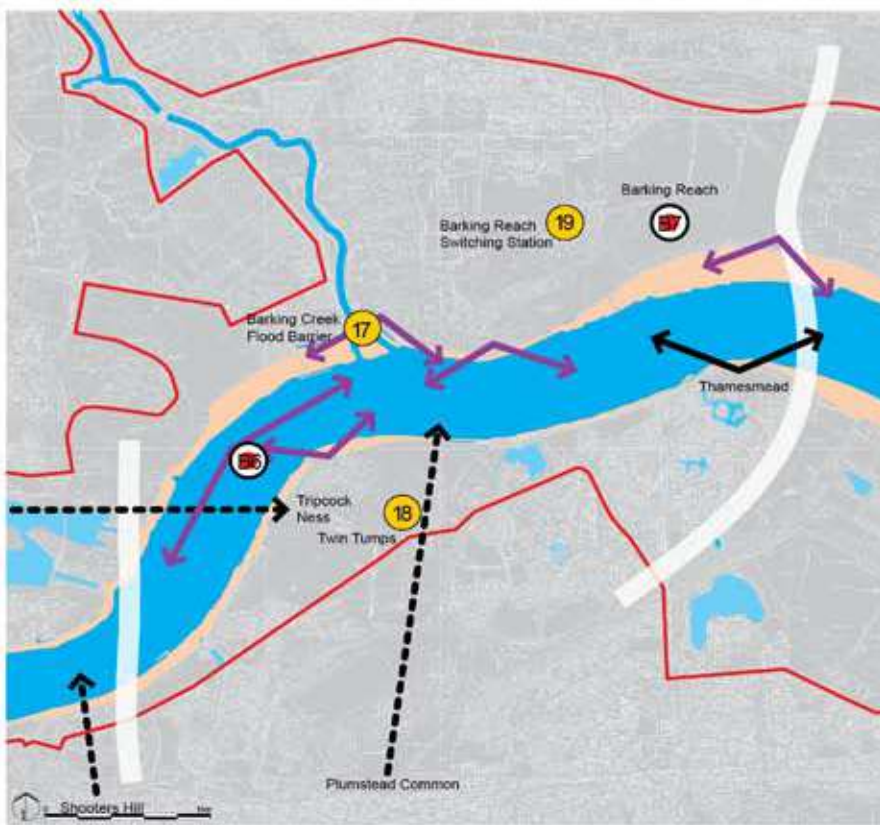
CHARACTERISATION



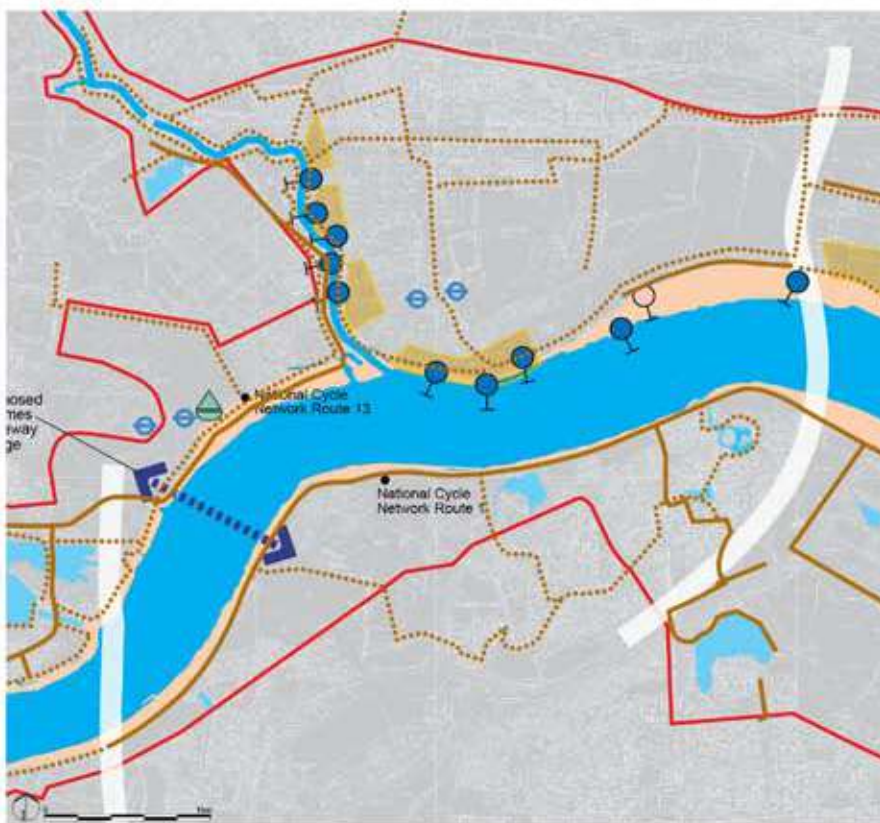
BIODIVERSITY, BUILT HERITAGE AND TOURISM



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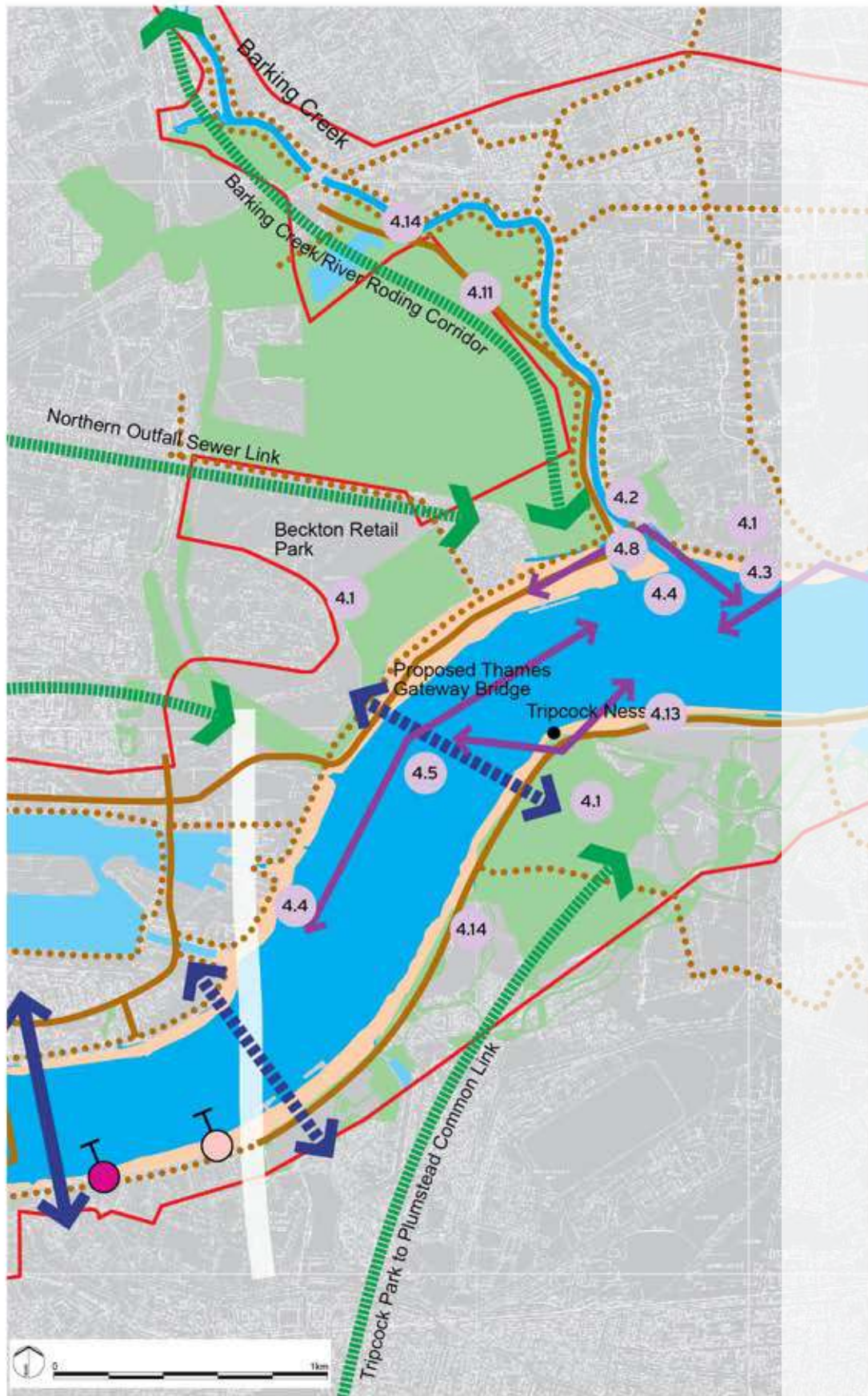


VIEWS, LANDMARKS AND MAJOR LANDMARKS



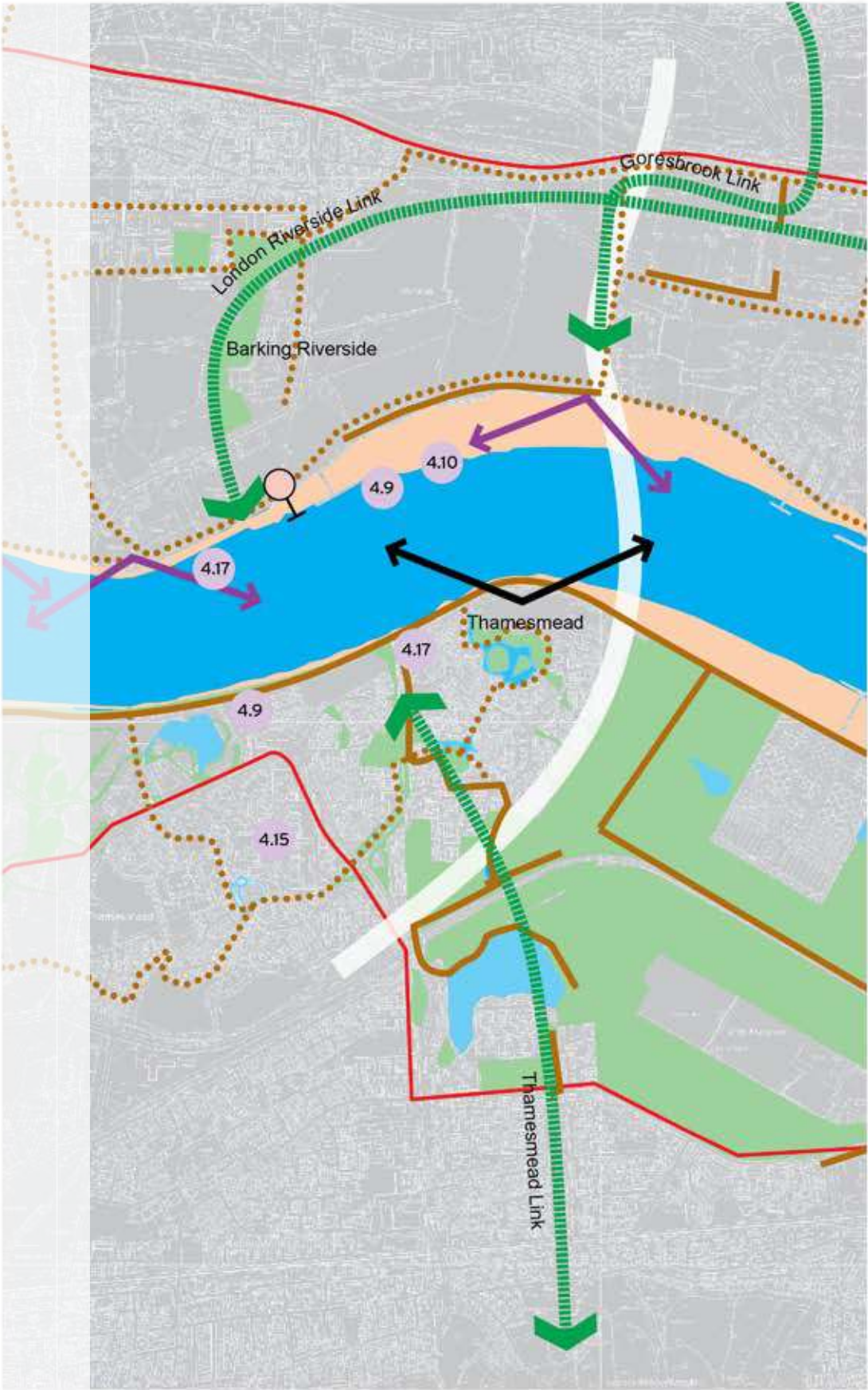
ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE

FIGURE 3.4.2 REACH 4: GUIDANCE PLAN



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**SCENES FROM  
REACH 5**



# REACH 5 HALFWAY REACH AND ERITH REACH

## 3.5.1 CHARACTERISATION

This Reach stretches from the Goresbrook to the outfall of the Havering Common Sewer on the northern bank of the River and from the Riverside Golf Club to Jenningtree Point on the southern bank. This characterisation should be read in conjunction with Figure 4.69. Within this Reach the river turns in a south-easterly direction around Crossness Point and then south around Jenningtree Point on the southern bank. The river is approximately 700m wide here including the mudflats. The Reach is characterised by an active heavy industrial riverside and utilities' infrastructure, notably the Ford Dagenham Works on the northern bank and the Crossness Sewage Works on the southern bank. The northern boundary of the Reach area is delineated by the C2C railway. For detailed characterisation see Appendix 3.

The character of the river changes noticeably between Reaches 4 and 5 with open, previously developed land and residential riverside development in Reach 4 replaced by a built-up riverfront comprising heavy industry, distribution depots, warehousing and utilities infrastructure in Reach 5.

Land use on the northern bank of the river is almost exclusively industrial and commercial. Dagenham Dock, which is dominated by the large-scale Ford Dagenham Works, comprises a range of large-scale warehouses, factory buildings and recycling plants, two 85 metre high wind turbines, a power station, oil and chemical storage cylinders, chimneys, aggregate depots, extensive open car compounds and pylons. Notable features are the number of large jetties protruding into the river and the sunlight reflecting from hundreds of vehicles stored at Ford's. The riverside Ford Dagenham Works building addresses the river very well and

is representative of the car-making that has occurred here for nearly a century. An area measuring 70 hectares is a Safeguarded Wharf on the Ford's site. The active jetties take transshipment of vehicles and vehicle parts but exclude public access along the river front. Changes in the operation of the Ford site will continue and provide a unique opportunity to recast the wider area as a high quality, mixed-use area that builds on its history yet looks to the future.

The Fairview Industrial Park is located between the expansive car compounds and Ferry Lane industrial uses adjacent to the Ford Dagenham Works and Rainham Creek. Here, there are a number of business centres, offices and works yards which contrast with the Centre for Engineering and Manufacturing Excellence (CEME) - which represents an island of contemporary design in an area dominated by industrial and post-industrial landscapes. Both Fairview Industrial Park and CEME are located within the Rainham Employment Area.

Rainham Creek is the southern end of the River Ingrebourne between Rainham Village and the River Thames. At Frog Island, the construction of the Thames tidal defences has artificially truncated Rainham Creek's confluence with the River Thames through the construction of a tide lock valve and pump. LB Havering has drafted interim Planning Guidance for the Rainham Creek - Ferry Lane area which proposes the creation of high quality commercial development on the eastern side of the Creek along Ferry Lane.

Rainham Village, located on the northern edge of the Strategy Area, has an historic link with the River Thames and Lesnes Abbey on the southern bank of the Thames that dates back to the Norman Conquest.

On the northern side of the A13 lies the Riverside Sewage Works. In between the industrial units there are pockets of semi-natural vegetation such as the area of scrub by the riverside at Hornchurch Shoot and Dagenham Breach - a lake between the Ford Dagenham Works and the A13. A number of tributaries enter the

Thames in this Reach. These include the Goresbrook, Beam River, Rainham Creek and Havering Common Sewer.

On the southern bank the Crossness Sewage Treatment Works is one of the largest in Europe. Investment is planned here to upgrade the performance of the works and to cope with increased development. The works also includes the East London Sewage Incinerator which is a new landmark for the area. It has a shiny metallic façade and curved roof reminiscent of the Thames Barrier further up-stream and is an excellent example of the high quality design of functional infrastructure and provides a landmark within the Reach. The Crossness Pumping Station, designed by Sir Joseph Bazalgette and located close to the riverside on the western side of the sewage works, is also an important landmark and a visitor destination. The Beam Engine House, part of the Pumping Station complex, is a Grade 1 listed building in a Victorian Romanesque style, featuring some spectacular restored ornamental iron work. The Sewage works is separated from surrounding development by Riverside Golf Club and Erith Marshes. Crossness Local Nature Reserve has recently been designated to the east of the sewage works. The land here is managed for wildlife and a warden has been appointed.

A large industrial area stretches from Crossness Sewage Treatment Works to Erith, which includes the Belvedere Industrial Estate, Isis Reach and fragments of marsh and ditches. This area has been the focus of significant regeneration in recent years. Most of the industrial and warehouse buildings are shed-like and flat-roofed. Erith Marshes is one of the few remnant marshes in London and its protection, enhancement and interpretation is essential, it may also be required for strategic flood storage. Southmere Park and the adjacent Riverside Golf Course are important green spaces in the vicinity of Erith Marshes. Part of Erith Marshes is identified as a strategic employment location and will be developed as the East Thamesmead Business Park. The LB Bexley and Dartford Borough Council are currently engaged in a project called

“Managing the Marshes”. This project encompasses the south Thames marshes from Erith Marsh to Crayford and Dartford Marshes in Reach 6.

A framework for the intensification of Belvedere Industrial Estate is currently being prepared for the London Borough Bexley in conjunction with the London Development Agency. The vision is for Belvedere to become one of the premier industrial estates in London, attracting international businesses, and providing increased employment for local residents. The estate is dissected by drainage ditches which, with minimal sensitive intervention, could provide ecological connectivity to Erith Marsh, habitat for water voles and an aesthetic backdrop for any proposed new development. This would provide unique environmental quality to attract new businesses but long term flood risk management needs to be a core consideration.

The recently permitted waste to energy plant at Belvedere will utilise river transport for the majority of deliveries. Positive consideration should be given to any necessary infrastructure or supporting facilities to enable this more sustainable transport of waste materials.

#### RIVER BANKS

On the northern bank between Dagenham Docks and Tilda Rice, the riverbank has predominantly hard vertical edges. There are two areas of soft sloping bank, one east of the Goresbrook and the other east of the Beam River. On the southern bank the riverbank is soft and sloping by the Riverside Golf Club and hard and vertical by Crossness Sewage Treatment Works. Between the sewage works and Jenningtree Point there is a section of hard sloping riverbank.

#### THAMES PATH

The extension to the Thames Path/NCN 13 comprises the Havering Riverside Path on the northern bank between Ferry Lane and the Havering Common Sewer and extends into Reach 6. At the north east corner of Barking Riverside, the Goresbrook has been diverted eastwards from its original channel in order to

facilitate the construction of the Channel Tunnel Rail Link. The route of the diverted Goresbrook now provides the only short term option for the extension of the Thames Path/NCN 13 eastwards.

On the southern bank riverside access exists throughout this Reach and offers good views and opportunities to access the foreshore and stand on a level with ships sailing along the river only a couple of hundred metres away which is a truly impressive experience. At Crossness Sewage Treatment Works the path runs in a canyon between the works and the flood defence. Here the route is oppressive and measures should be taken to make this more user friendly and in keeping with the heritage value of Crossness Pumping Station.

#### RIVER INFRASTRUCTURE

There are currently no river crossings on this Reach. With redevelopment, there may be an opportunity to re-establish the Ford Ferry and this possibility should be protected.

There are thirteen safeguarded wharves within this reach. Eight are on the northern bank (RMC Dagenham, Pinnacle Terminal, White Mountain Roadstone, Van Dalen, Hanson Aggregates, Ford Dagenham Terminal, Frog Island and Tilda Rice). Ford and Hansons have the added advantage of a rail link. The southern bank has five safeguarded wharves, Borax/Manor Wharf, Mulberry, Pioneer, Albion and RMC Erith. Borax/Manor Wharf is not currently in use but will be heavily used once the waste to energy plant is operational. There are no formal water sports centres, launch sites, public piers or river edge steps in this Reach.

#### BIODIVERSITY

Habitats found within this Reach include river flood defence walls, grazing marsh, inter-tidal mudflats and bodies of fresh open water. This includes Rainham Creek which, despite its poor water quality (which should be addressed) is an important over-wintering site for wildfowl. There are several sites of biodiversity importance including Erith Marshes and Crossness Local Nature

Reserve which are designated as Sites of Metropolitan Importance. Erith Marshes is one of a few remaining examples of Thames-side grazing marsh which is a Priority Habitat under the UK Biodiversity Action Plan. Several sites are designated as Sites of Borough Importance (Grade 1) including the Beam River, Dagenham Breach and fragments of Erith Marsh within the industrial estate. For further information on biodiversity refer to Appendix 3 - Characterisation and Appendix 6 - Biodiversity.

#### HERITAGE

Crossness Pumping Station is a Grade 1 listed building and the principal built heritage interest on the southern bank. It lies within the Crossness Conservation Area. The area between the Beam River and the Goresbrook supported one of the largest fishing fleets in England during much of the 19th Century. The area between Rainham Creek and the Tilda Rice works is one of considerable local heritage interest. The Rainham Ferry crossing, dating back to Norman times, brought prosperity to Rainham Village (just outside the Strategy Area). The Ingrebourne River became navigable in the mid-18th Century and from the 1920s heavy industry, in particular the Murex Site, led to the decline of the ferry settlement. For further information on built heritage refer to Appendix 3 - Characterisation and Appendix 5 - Built Heritage.

The most important archaeological discovery in this Reach are the outcrops of prehistoric forest exposed on both banks. Other archaeological finds include a prehistoric log boat, wooden objects and stakes, trackways and a Roman settlement close to the foreshore of Rainham Marshes. There is a record of continual human settlement of the Rainham area from at least the Bronze Age. Rainham is mentioned in Domesday Book (1086).

For further information on the archaeology in the area refer to Appendix 3 - Characterisation and Appendix 4 - Archaeology.

## RIVER ECONOMY

The river based economy of this Reach is vibrant with frequent arrivals and departures of sea going vessels transporting a variety of cargos. In future the use of the river will increase once the Belvedere Waste to Energy plant is operational. A positive approach should be taken to any further opportunities to increase the supporting industries that may help to serve this economy.

## KEY CHARACTERISTICS AND INFLUENCES

- This Reach has an open estuarine character with land uses of heavy industry, warehousing and utilities infrastructure and views to the distant hills north and south of the river which form the visual extent of the Thames Valley
- The Thames Path on the northern bank is fragmented and there is a lack of permeability inland
- Striking features including the riverside Grade 1 listed Crossness Pumping Station (already a visitor attraction), and the East London Sewage Incinerator.

### 3.5.2 REACH GUIDANCE

This Reach Guidance should be read in conjunction with Figure 4.70 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

## PLANNING AND DESIGN

RG5.1 Ensure that redevelopment of industrial areas on the northern bank retain and enhance a vibrant river related range of land uses whilst improving public realm and green grid links. This should include improvement to and continued use of Safeguarded Wharves, attractive pedestrian and cycle routes and elements of the East London Green Grid comprising the Goresbrook Link, the London Riverside Link, the Beam River Link and the East Dagenham Corridor.

RG5.2 The Belvedere Area Action Plan should seek to maximise opportunities to utilise the river for transport or marine support activities, particularly in associated with the proposed waste to energy plant.

RG5.3 Investigate opportunities to re-connect Rainham Creek to the River Thames through re-forming its delta at Frog Island including the creation of public open space at the confluence whilst maintaining river cargo operations.

RG5.4 Where appropriate enhance views from the river by establishing large scale woodland planting with species appropriate to a riverside location at Dagenham Dock, Fairview Industrial Park, Riverside Golf Club and the Belvedere.

RG5.5 Improve pedestrian and cycle routes through the Reach by:

- improving the Thames Path in front of the Crossness Sewage Works
- examining opportunities to implement the Thames Path along the riverside at the Ford works
- enabling safe crossing points of the A13 and A2016
- enhancing the existing links of the London Riverside Link, Goresbrook Link, Beam River/East Dagenham Corridor, Ingrebourne Valley/Rainham Creek and the Thamesmead Link.

RG5.6 Ensure new industrial buildings address and relate well to the river and are of commensurate quality with the Ford Factory and the East London Sewage Incinerator.

## BIODIVERSITY

RG5.7 Protect and enhance the valuable habitats of the Reach, in particular:

- the ditch habitat and populations of water voles at Erith Marshes, by expanding and linking the existing ditch network
- the Hornchurch Shoot, a small but significant area of inter-tidal

habitat and flood defence wall supporting typical plant communities, over-wintering ducks and wading birds.

#### ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES

- RG5.8 Enhance the understanding of the existing known and potential archaeological resource including prehistoric trackways, Roman to post-medieval settlement, and later medieval marshland reclamation.
- RG5.9 Protect and enhance the landmarks and conservation area at Crossness, the listed Crossness Pumping Station and the impressive sewage incinerator building.

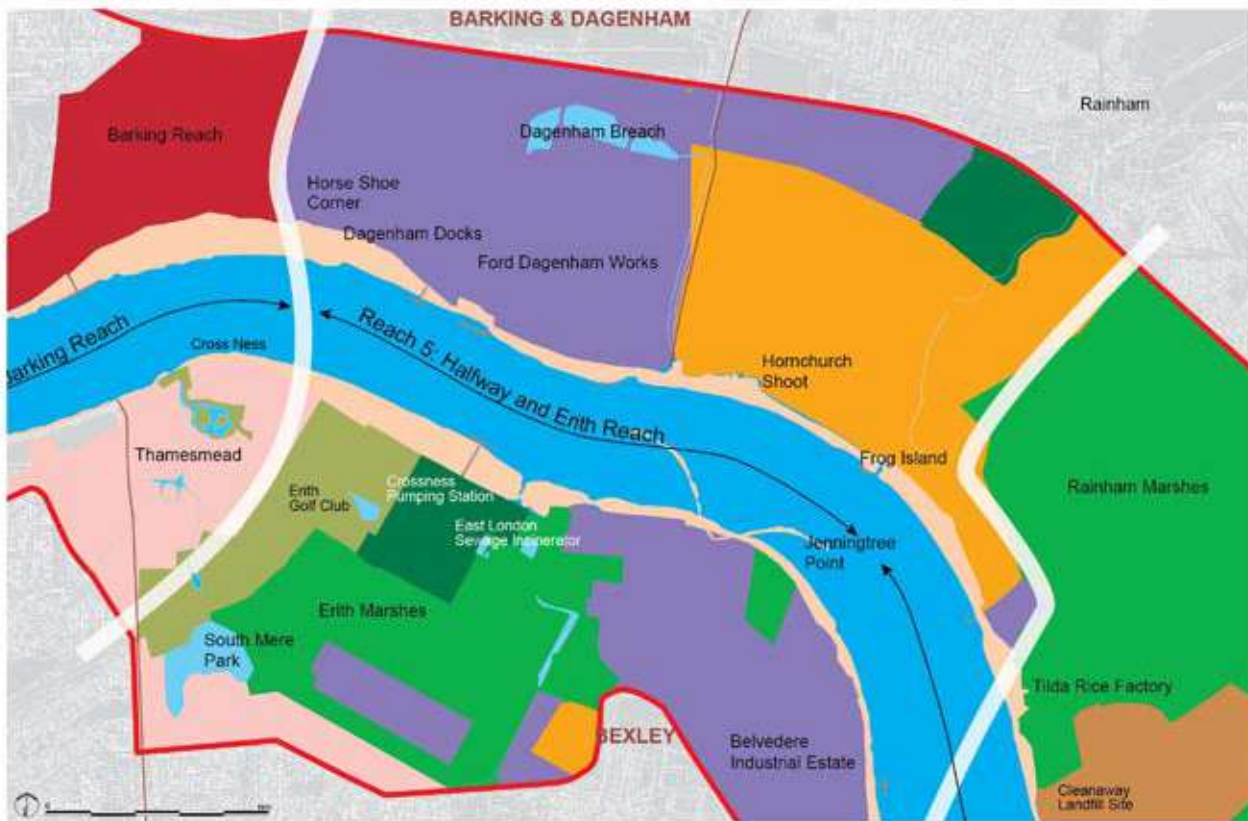
#### FLOOD RISK MANAGEMENT/CLIMATE CHANGE

- RG5.10 Undertake a hydrological study of Rainham Creek and investigate opportunities to reconnect the Creek to the western edge of Rainham Marshes through intermediary channels and generally enhance the flood management function and biodiversity of the Ingrebourne, Beam and Goresbrook rivers, through creation of floodplain habitat adjacent to the rivers.
- RG5.11 Implement the findings of the Environment Agency TE2100 project with regard to flood risk management on Erith Marshes.
- RG5.12 Seek opportunities for creative realignment of flood defences and making space for water in all riverside development proposals, where defences are being replaced and at riverside open spaces, in particular along the earth bank defences of the Belvedere Industrial Estate.

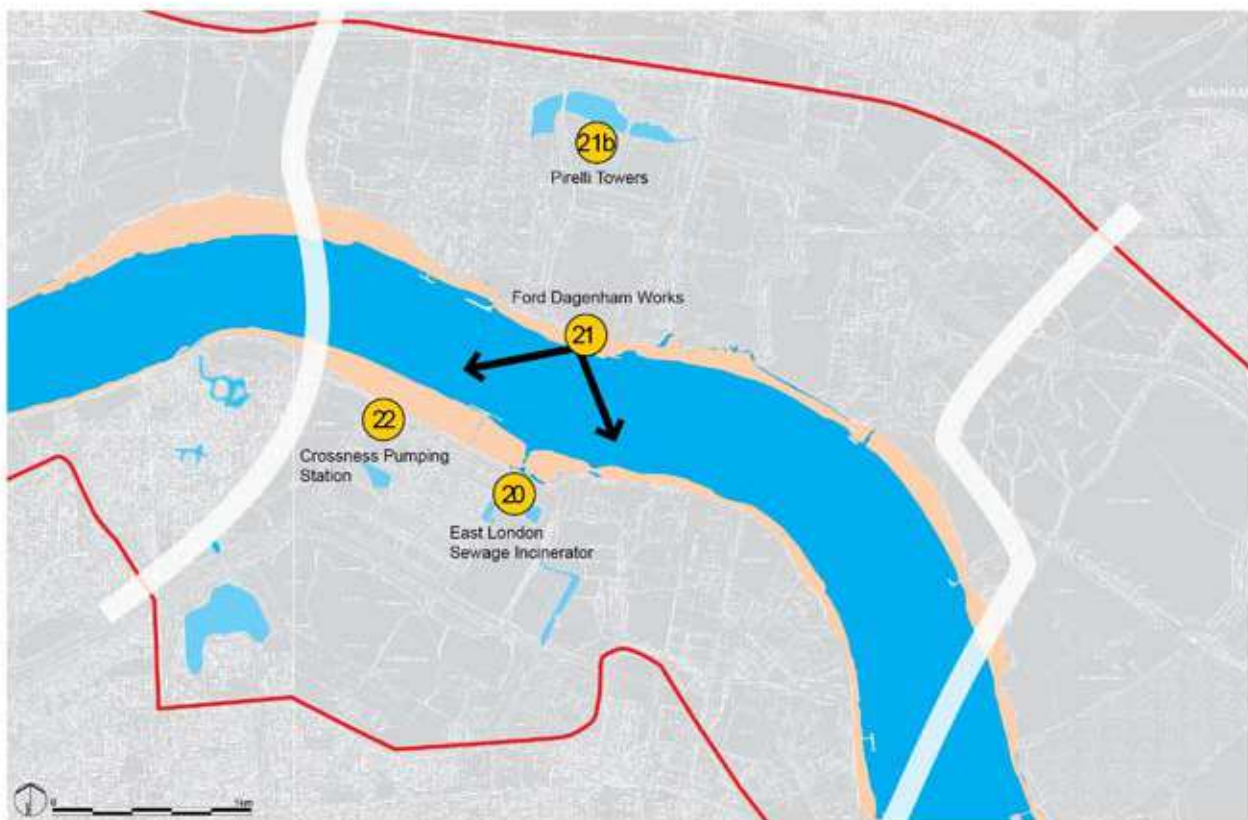
#### RIVER ECONOMY

- RG5.13 Support the continued use of river dependent industries throughout the Reach and any additional marine support uses connected with the use of barges to deliver materials to the Belvedere waste to energy plant.
- RG5.14 Promote the re-establishment of the Ford Ferry and explore options to promote existing and proposed piers at Frog Island and Crossness as part of an integrated ferry network linking concentrated leisure and recreation destinations, and cross-river and commuter routes.

**FIGURE 3.5.1 REACH 5: SUMMARY DATA**  
 HALFWAY AND ERITH REACH



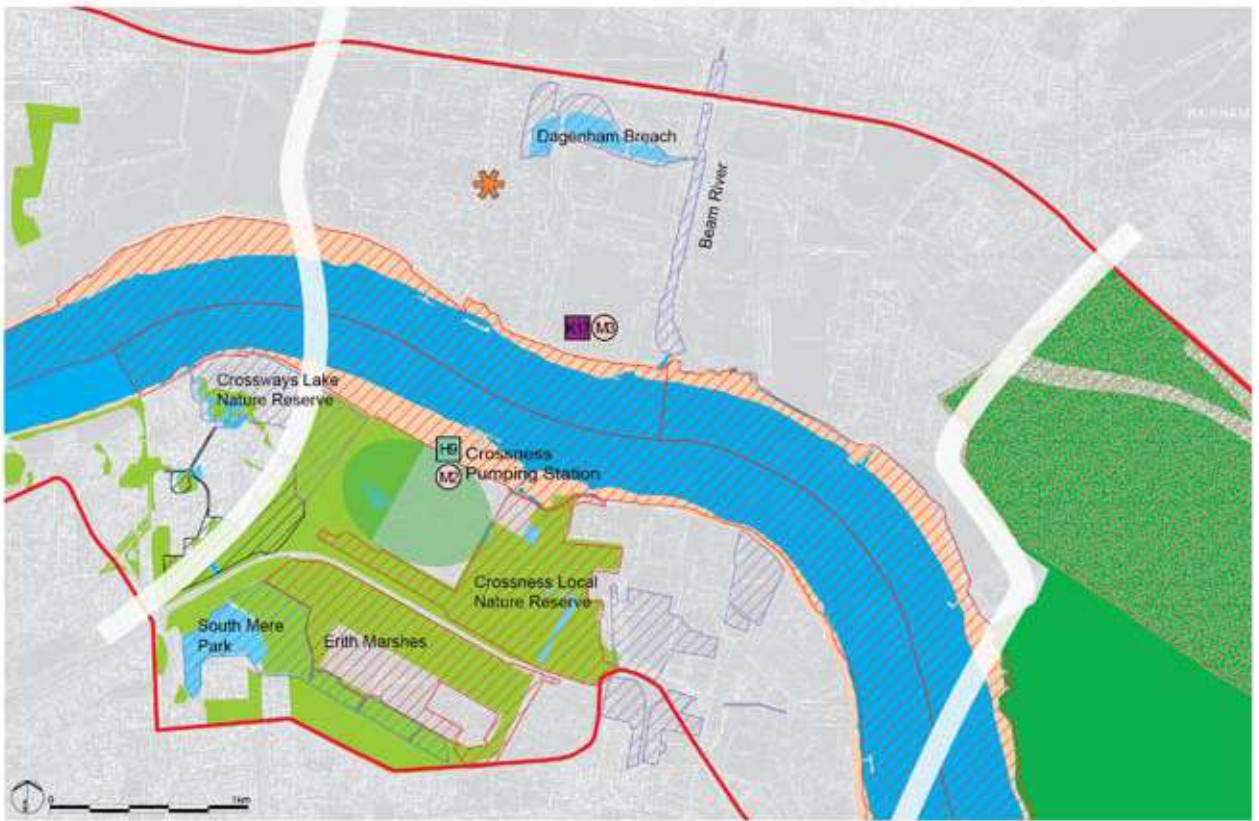
**CHARACTERISATION**



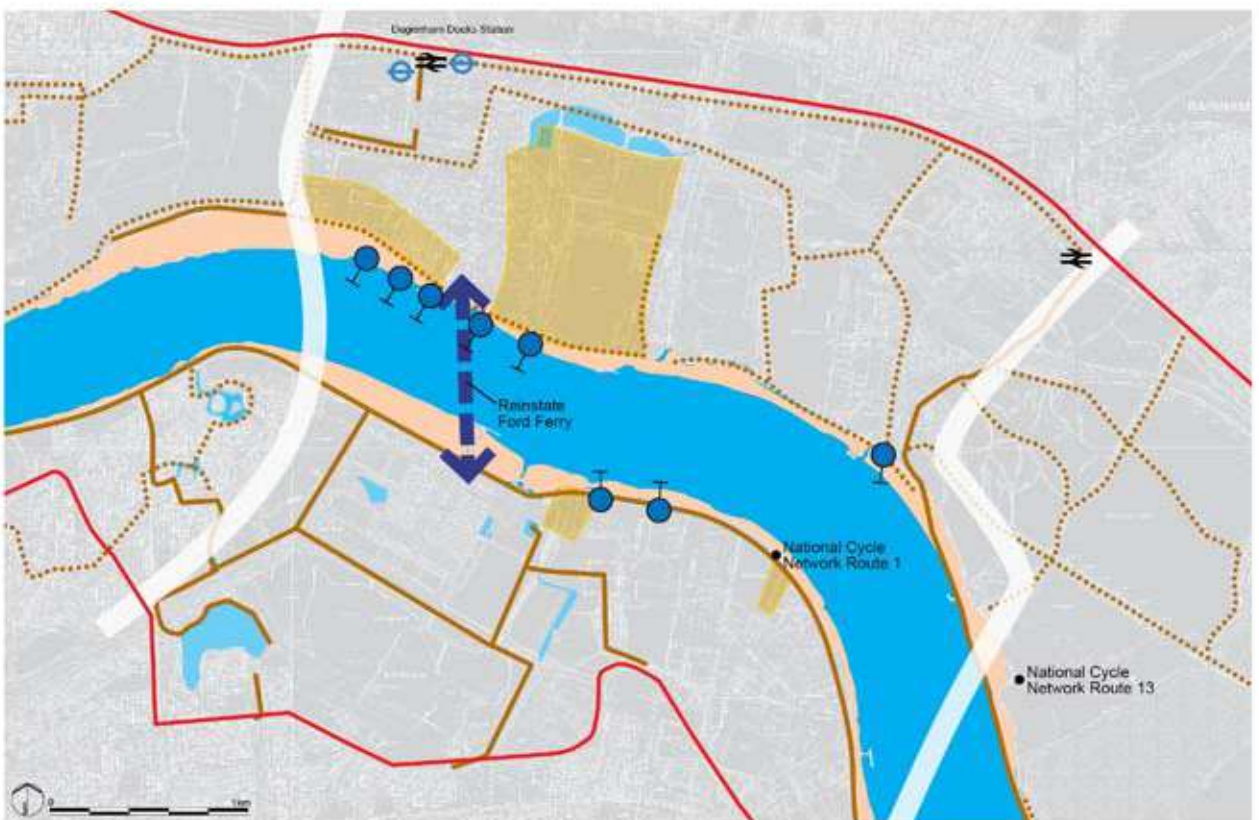
**VIEWS, LANDMARKS AND MAJOR LANDMARKS**

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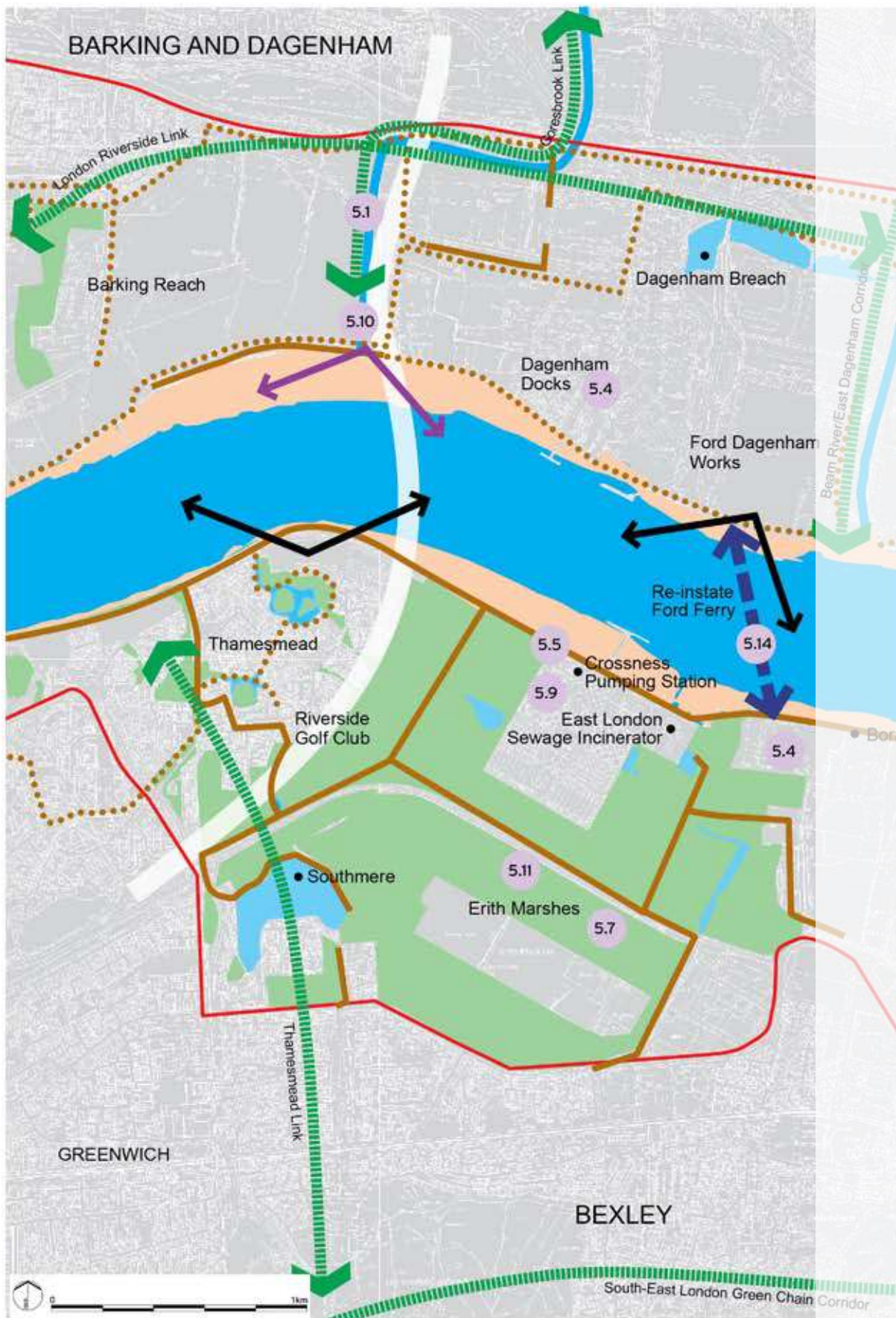


BIODIVERSITY, BUILT HERITAGE AND TOURISM

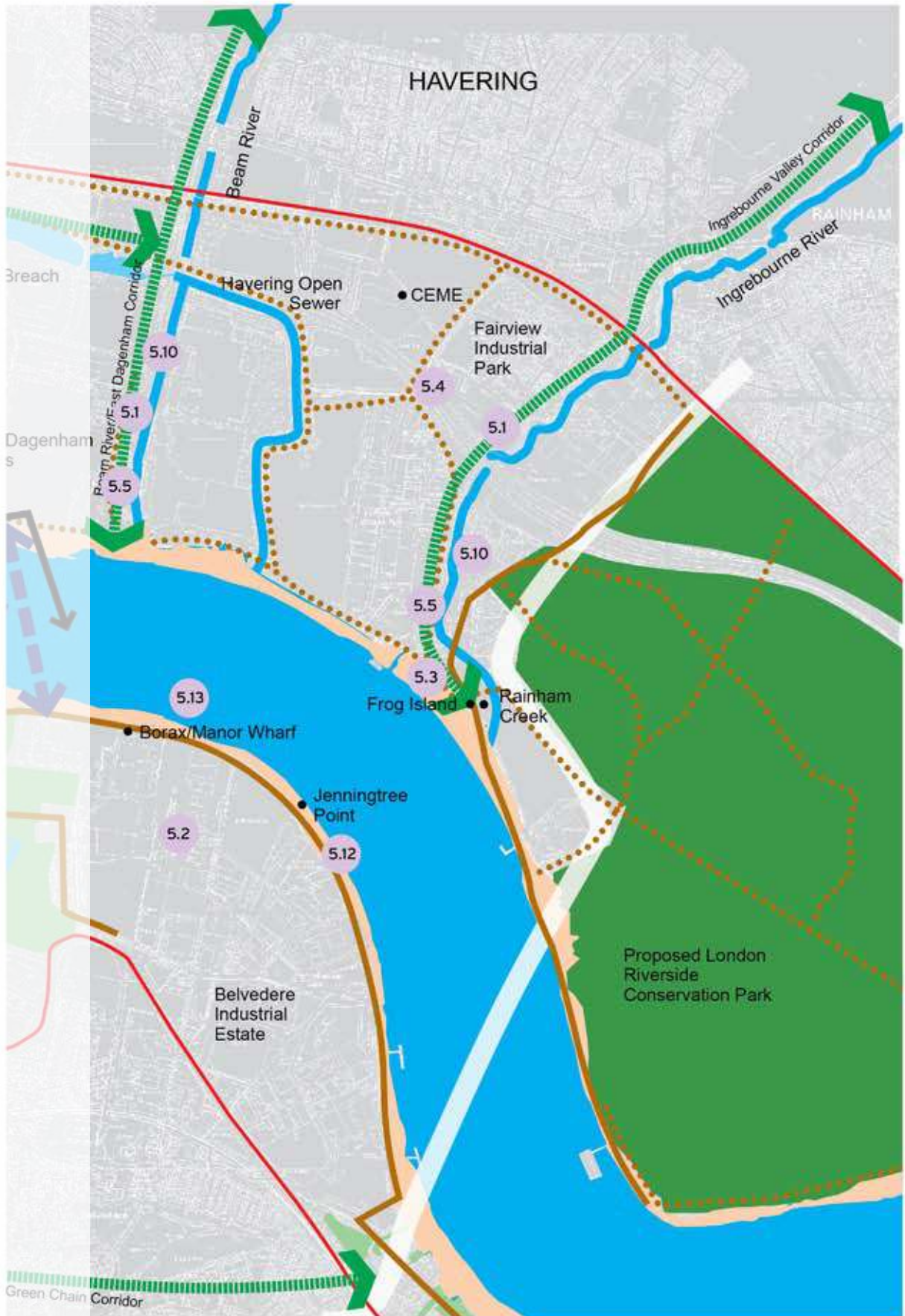


ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE

**FIGURE 3.5.2 REACH 5: GUIDANCE PLAN**



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SCENES FROM  
REACH 6



# REACH 6

## ERITH RANDES

### 3.6.1 CHARACTERISATION

This Reach stretches from the Havering Common Sewer to the Mar Dyke on the northern bank and from Erith to Longreach Sewage Works on the southern bank. This characterisation should be read in conjunction with Figure 4.82. In this Reach the river turns south around Jenningtree Point, turns east around Coldharbour Point and then turns south-east around Crayford Ness. At Jenningtree Point and Frog Island the river is approximately 750m wide and widens to approximately 1000m just beyond Coldharbour Point. This Reach is characterised by extensive areas of marshland, including Rainham, Wennington and Aveley Marshes to the north of the river and Dartford and Crayford Marshes to the south of the river. For detailed characterisation see Appendix 3.

There is a significant change in character between Reaches 5 and 6. On the northern bank the character changes from the industrial riverfront of Dagenham Docks to the vast expanses of open grazing marsh. Most of Rainham, Wennington and Aveley Marshes are flat grazing marshes of rank grassland and relatively dry reedbeds, intersected by a network of ditches. Rainham Marshes also has extensive silt lagoons, which are used to settle material dredged from the Thames. There are a number of target butts which remain from former use as an MoD target range.

The Cleanaway landfill site, located on the tip of Rainham Peninsula, is still an active domestic refuse landfill site until around 2012. Through previous landfilling and restoration operations a huge partly grass covered mound has been created. Here the character is semi-rural. The landfill site utilises river transport of much of its waste via a jetty close to Coldharbour Point. The Freightmaster Estate, located on the eastern side of the landfill site, comprises a number of low warehouses.

The Mar Dyke separates Aveley Marshes from Purfleet, where the land rises up to Beacon Hill and forms a promontory with housing development and mature trees, which contrasts with the flat, treeless marshland to the west. The dyke itself is of ecological importance, particularly the associated grasslands at its margins.

On the southern bank of the river the main land use from Jenningtree Point to Erith town centre is a mix of heavy industry, warehouses and commercial development, many of these utilise the river for transporting materials. Erith town centre is located on high ground close to the river. Two large brown brick tower blocks and a church spire mark the town centre. Erith suffered heavily from bombing during the Second World War and many of the original buildings were lost. Major redevelopment has taken place since the 1960s. More recent riverside residential development has taken place along the riverfront on either side of the Waterfront Garden at Erith. An Area Action Plan is being developed for the town centre and this will need to address the heterogeneous character of the town. There is an opportunity to improve upon the existing development and the lack of open space. The recent opening of the jetty for public amenity indicates a positive orientation towards the river that should be continued.

To the east of Erith lie Crayford and Dartford Marshes, divided by the sinuous River Darent/Dartford Creek which is flanked by flood embankments. These semi-freshwater marshes are drained by a network of ditches and grazed by cattle. The Darent Flood Barrier is a prominent vertical feature here. Immediately to the west of River Darent/Dartford Creek lies Darent Industrial Park which contains timber yards, scrap yards and light industrial uses. The former Joyce Green Hospital site, adjacent to Dartford Marshes, is previously developed land awaiting mixed-use development. Longreach Sewage Works is located to the east of Dartford Marshes in Reach 7.

Both Rainham/Wennington/Aveley Marshes on the northern bank of the river and Dartford Marshes on the southern bank of the river are protected from tidal flooding by earth embankments. However their long

term role in the strategic management of flood risk in the estuary is being examined by the Environment Agency TE2100 project. There may be good strategic reasons for utilising these areas for occasional tidal flood storage.

Rainham landfill site and Rainham, Wennington and Aveley Marshes have been identified as a major recreation and tourist destination that could potentially attract up to a million visits per year. Under the title London Riverside Conservation Park, this key ecological and open space resource will form a new regional park for London and the Thames Gateway. It is intended that the park will retain its marshland characteristics and will include the Inner Thames Marshes SSSI. The management of this area will be first and foremost for wildlife although it is envisaged that this will also have a major regenerative impact on the surrounding areas of Rainham, Purfleet, Erith, Crayford and Dartford and provide an important resource for local communities.

The RSPB opened an Environment and Education Centre on their reserve near Purfleet in Autumn 2006. In the longer term, a further visitor centre is planned for the London Riverside Conservation Park on the restored landfill site. This will be dependent on securing the funding and long term management of the site.

#### RIVER BANKS

The riverbank is predominantly soft around Rainham Peninsula on the northern bank of the river. On the southern bank the river edge is predominantly hard and vertical between Jenningtree Point and the start of Dartford Marshes, although there are some small sections of soft edge west of Erith. The riverbank is mainly soft by Dartford Marshes although there are some sections of sloping rip-rap.

#### THAMES PATH

On the northern bank of the river there is currently a public footpath along the riverfront from Frog Island to Purfleet via a footbridge over the Mar Dyke.

On the southern bank there is a public footpath along the riverfront from Jenningtree Point to Erith. There is no public access to the riverfront by the industrial area east of Erith town centre, but at Crayford Marshes the path again follows the riverfront. The River Darent/Dartford Creek is a major barrier to access and there is no access across the river close to the Thames riverfront without making a significant detour to the south. On the eastern side of the River Darent/Dartford Creek a public footpath continues along the riverfront past the sewage works. Some sections of the path west of Erith contain steep slopes, tight bends and narrow sections as the path negotiates a route between the river and adjoining uses.

#### RIVER INFRASTRUCTURE

In terms of river infrastructure, on the northern bank of the river there is one commercial terminal, the Rainham Landfill Jetty. On the southern bank of the river there are three Safeguarded wharves (RMC Railway, Mayor Parry/EMR Erith and Standard Wharf), all to the east of Erith town centre. There are no launching sites on the northern bank and one launching site on the southern bank at Erith Causeway. On the northern bank there are no water sports facilities and on the southern bank there is Erith Yacht Club.

There are no river crossings in this Reach, however there is the opportunity to provide a river crossing to link the proposed London Riverside Conservation Park on the northern and southern banks. This could either be a fixed link or ferry service. In the case of a fixed link it would need to be built to meet navigation requirements of the Port of London.

#### BIODIVERSITY

The Inner Thames Marsh SSSI includes Rainham, Wennington and Aveley Marshes and forms the largest expanse of remaining wetland bordering the upper Reaches of the Thames Estuary. Crayford Marshes and Dartford Marshes are part of the Metropolitan Green Belt and are designated as a Site of Metropolitan and Borough Importance and Site of Nature Conservation Interest respectively. They are also potential SSSI sites. They are

regionally important grazing marshes that form an ecological continuum with the Inner Thames Marshes to the north and Erith Marshes to the west. The Groundwork led 'Managing the Marshes' programme is addressing the designated conservation sites. As part of the Green Belt, their continued protection is vital not only for the habitat they provide and checking urban sprawl but also potentially for strategic tidal flood storage.

The silt lagoons on Rainham Marsh support a regionally important range of aculeate hymenoptera (and other species). A management plan for the lagoons has been drawn up by the RSPB that will provide a large area of un-vegetated exposed sands that does not conflict with PLA's operations. This has still to be agreed by the PLA and Westminster Dredgings. The concrete barges south west of the Conservation Park are important roosting sites for birds. For further information regarding biodiversity refer to Appendix 3 - Characterisation and Appendix 6 - Biodiversity.

#### HERITAGE

The key sites of importance for built heritage are the World War II concrete barges/lighters at Rainham and Christchurch at Erith that forms a significant landmark within this Reach. There are two Conservation Areas in this Reach at Erith Riverside and Oak Road, Slade Green. The 'deep sea diver' public art feature is of value interest near the concrete barges on the northern bank. For further information on built heritage refer to Appendix 3: Characterisation and Appendix 5: Built Heritage.

During the recent construction of the Channel Tunnel Rail Link there were finds of Mesolithic and Neolithic flint working surfaces. Howbury medieval moated site (a Scheduled Ancient Monument) is situated on higher ground in the marsh beside Crayford Creek. For further information on archaeological finds in the area refer to Appendix 3: Characterisation and Appendix 4: Archaeology.

#### RIVER ECONOMY

This section of the river is in active use, mainly on the southern bank, although there are two active wharves on the northern bank.

#### KEY CHARACTERISTICS AND INFLUENCES

- The distinguishing features of this Reach are the extensive areas of open marshland including Rainham, Wennington and Aveley Marshes north of the river, and Dartford and Crayford Marshes south of the river, giving the Reach a semi-rural character
- Heavy industry is also a pervasive feature of the riverside particularly on the southern bank on either side of Erith
- The main settlement of Erith is located on high ground and has a green wooded backdrop
- The main landmarks in this Reach are the Darent Flood Barrier, the Cleanaway Landfill Site and Christchurch at Erith.

#### 3.6.2 REACH GUIDANCE

This Reach Guidance (RG) should be read in conjunction with Figure 4.83 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

#### PLANNING AND DESIGN

- RG6.1 Protect the open estuarine and marshland character of Crayford Marshes, Dartford Marshes and the Inner Thames Marshes SSSI and ensure co-ordination between the preparation of plans for them, Erith Marshes and the London Riverside Conservation Park with particular regard to creating a major visitor attraction, improving access to the foreshore and the strategic management of tidal flood risk.
- RG6.2 Protect, enhance and interpret the impressive views within the reach including:
- the wooded backdrop to Erith
  - Christ Church at Erith,
  - the Dartford Creek Flood Barrier

- the river prospect from Erith Riverside Gardens
- Creation and interpret panoramic views from the top of the proposed London Riverside Conservation Park and the potential view from Rainham Cleanaway jetty.

RG6.3 Reconnect Erith with the riverside and investigate setting back the flood defences at Erith Riverside Gardens and investigate opportunity presented by integrating open space around the deep water jetty area action plan.

RG6.4 Protect and enhance the strategic connections to the Thames including:

- Rainham Village and Station
- the Mar Dyke corridor
- to Purfleet Station
- the Darent/Cray and Dartford Marsh
- Dartford-Stone corridor
- River Cray Path corridor.

RG6.5 Create a new major landmark as part of proposals for the London Riverside Conservation Park.

RG6.6 Ensure development proposals for Dartford Park (formerly Joyce Green Hospital Site) conserve and enhance Dartford Marshes and provide good quality links to the Thames.

#### BIODIVERSITY

RG6.7 Protect and enhance the Inner Thames Marshes SSSI and Dartford and Crayford Marshes SNCI and ensure that the restoration of the Rainham landfill site as part of the London Riverside Conservation Park maximises the biodiversity interest.

RG6.8 Protect the concrete barges (roosting and nesting sites) at Rainham from disturbance and enhance their quality as nesting habitat.

#### ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES

RG6.9 Enhance understanding of the existing known and potential archaeological resource including prehistoric flint manufacture, settlement and burials, Roman burials, later medieval settlement and marshland reclamation, historic grazing marsh and Thames foreshore.

RG6.10 Conserve key sites of built heritage importance, such as Christ Church at Erith, Erith Riverside and Oak Road, Slade Green.

RG6.11 Create and promote a series of interlinked new and existing destinations and cultural heritage attractions that include the London Riverside Conservation Park, the RSPB Environment and Education Centre, the Purfleet Military and Heritage Centre (in Reach 7) and, potentially, an interpretation centre for cable-making at British Insulated Callender Cable (BICCS).

#### FLOOD RISK MANAGEMENT/CLIMATE CHANGE

RG6.12 Continue the research into strategic tidal flood risk management options at Rainham, Wennington, Aveley, Dartford and Crayford Marshes and explore opportunities for flood storage along the Mar Dyke and other marsh watercourses and ditches as part of a multi-functional green space infrastructure designed to enhance biodiversity value.

RG6.13 Seek opportunities for creative flood defence realignment and making space for water in all riverside development proposals, where defences are being replaced and at riverside open spaces.

#### ECONOMY

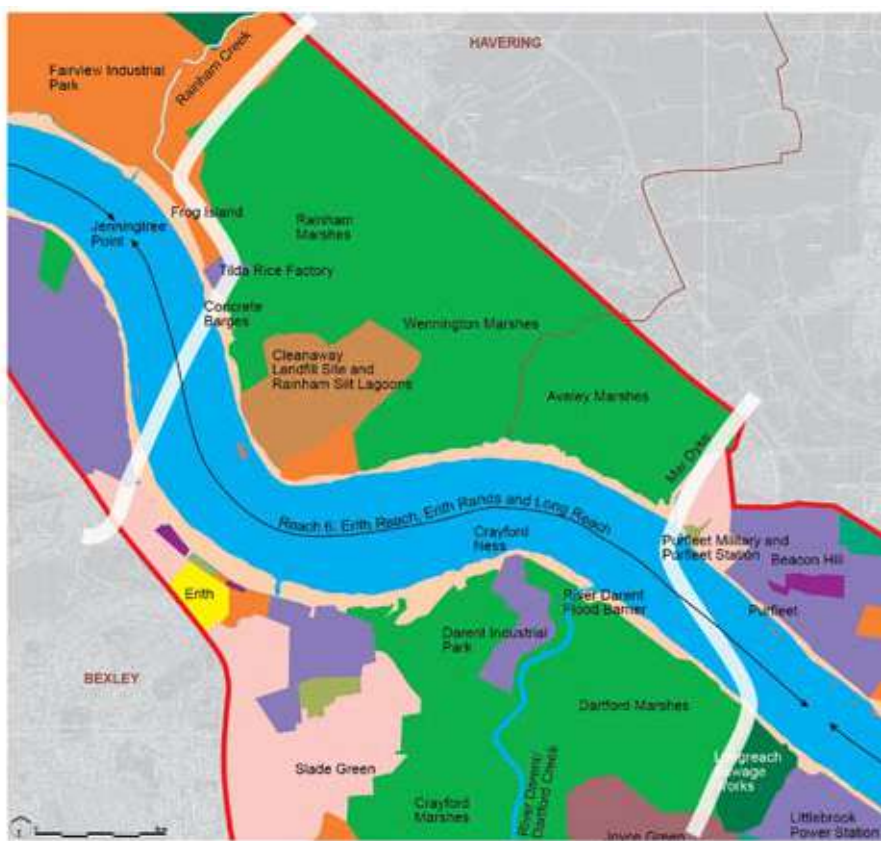
RG6.14 Protect the existing economic uses of the river including piers, river-based transport, Safeguarded Wharves and river-related tourism.



- RG6.15 Explore the opportunities for creating a new economy for the area based on leisure, recreation and tourism focusing on the London Riverside Conservation Park and the regeneration of Rainham, Purfleet, Dartford, Crayford and Erith.
- RG6.16 Investigate the scope for a sustainable waste management facility at the site of the current Rainham Landfill designed to fit in with the Conservation Park which utilises river transport and existing infrastructure.

**FIGURE 3.6.1 REACH 6: SUMMARY DATA**  
 ERITH REACH, ERITH RANDES AND LONG REACH

CHARACTERISATION

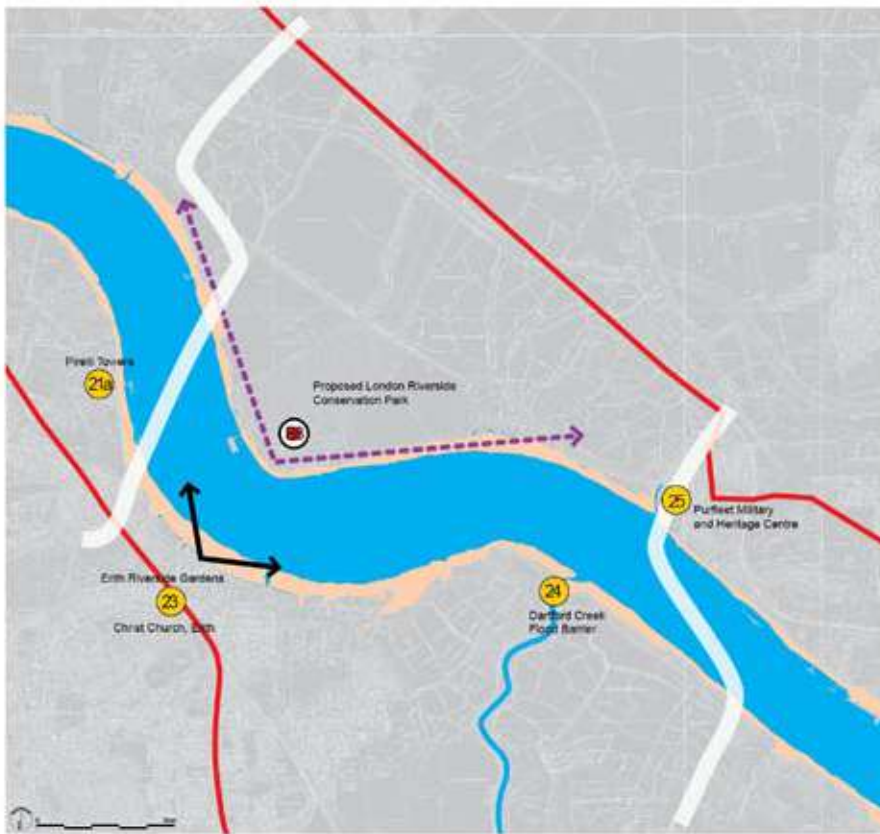


BIODIVERSITY, BUILT HERITAGE AND TOURISM

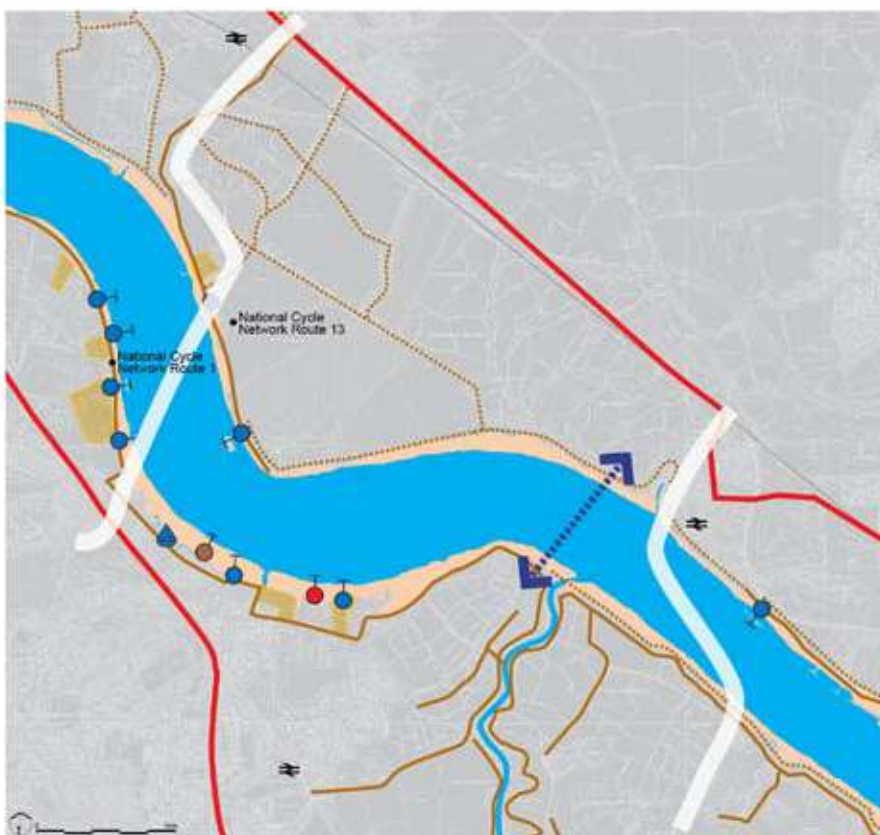


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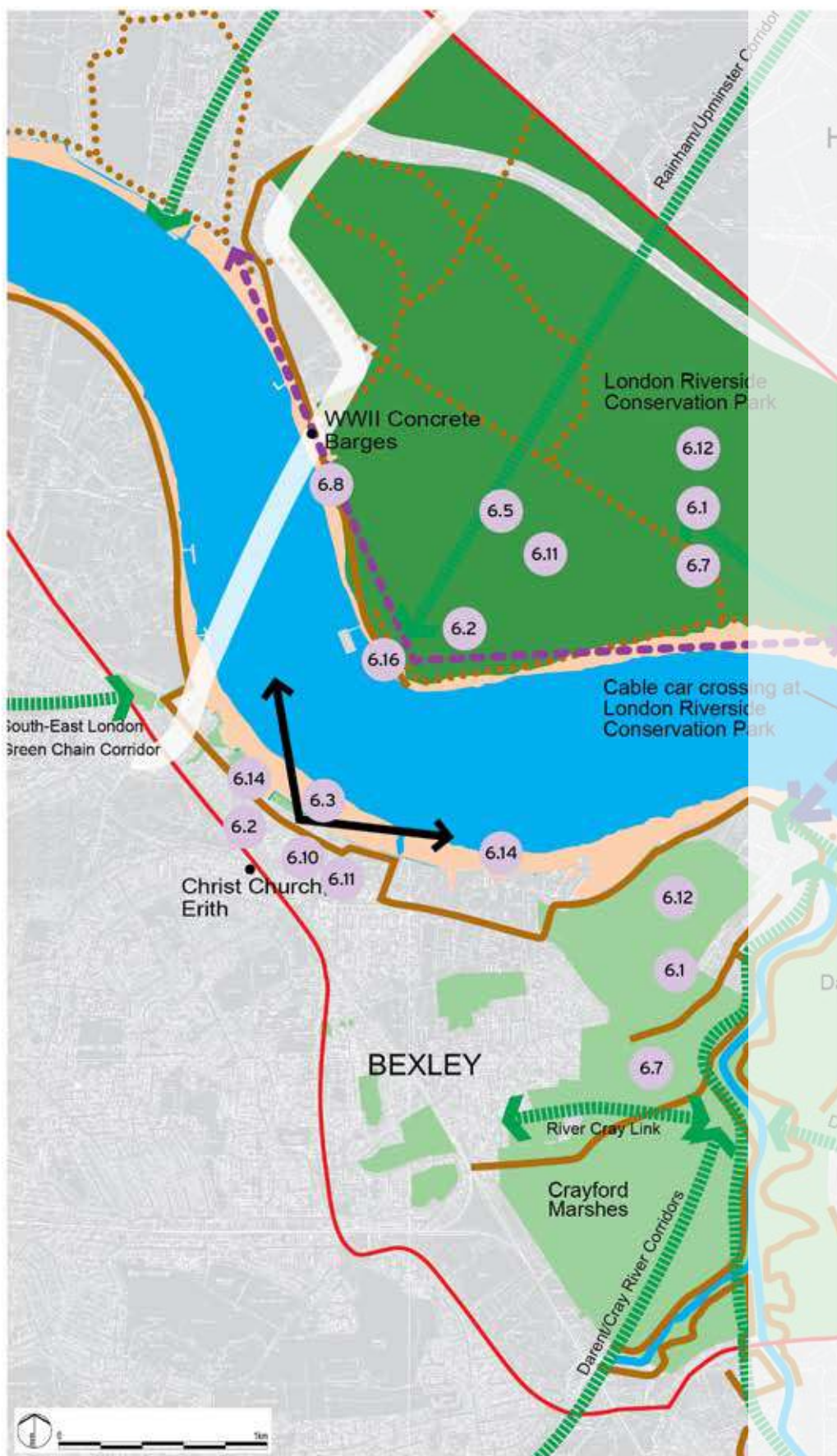
VIEWS, LANDMARKS AND MAJOR LANDMARKS



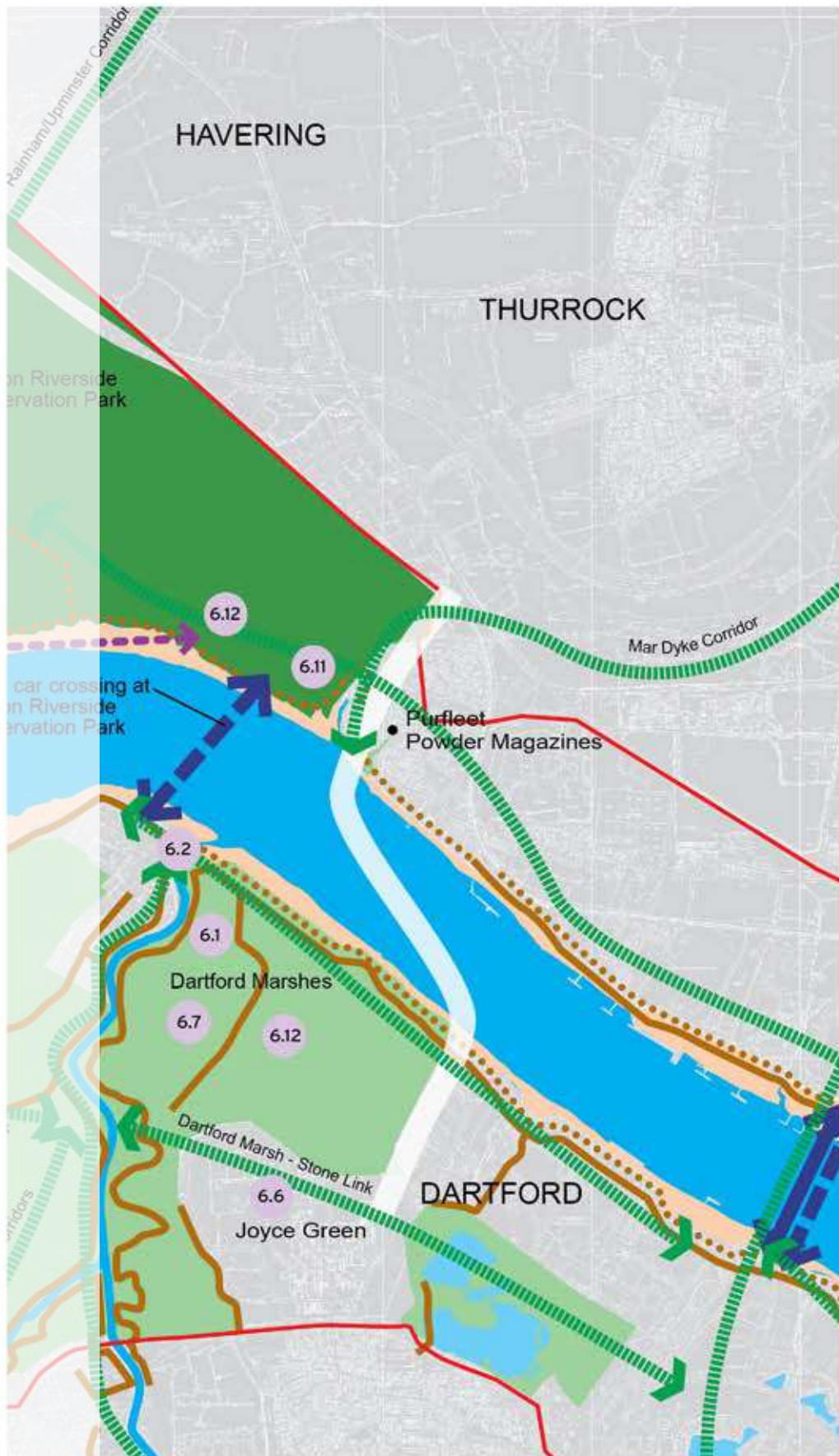
ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE



**FIGURE 3.6.2 REACH 6: GUIDANCE PLAN**



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**SCENES FROM  
REACH 7**



# REACH 7 LONG REACH AND FIDDLERS REACH

## 3.7.1 CHARACTERISATION

This Reach stretches from the Mar Dyke to Grays Beach Riverside Park on the northern bank and from Longreach Sewage Works to Swanscombe Peninsula on the southern bank. This characterisation should be read in conjunction with Figure 4.99. At the western end of the Reach, the river narrows slightly to around 700m and flows in a south-easterly direction to Stoneness by West Thurrock Marshes. At Stoneness the river turns north-east and widens to 1,250 metres before turning sharply south-east around Swanscombe Peninsula. This Reach comprises a patchwork of land uses including large scale heavy industrial complexes, container depots, recent commercial and office development at the Crossways business park, remnants of marshland at West Thurrock and Swanscombe Peninsula and pockets of residential development at Grays, Greenhithe and Ingress Park. For detailed characterisation see Appendix 3.

The most prominent feature of this Reach, and indeed the eastern part of the Thames, is the Queen Elizabeth II Bridge (QEII Bridge) which is visible for many miles around. The bridge links Essex and Kent and spans high above the Thames to allow the passage of large ships. The spectacular elevated views from the bridge are only available to vehicular traffic. The M25 and the bridge/tunnel approaches take up a large area of land especially on the Kent side where the toll areas are located.

The marshland on West Thurrock and Swanscombe Peninsulas and the areas of open wasteland around the industrial complexes give the Reach a semi-rural character and creates a sense of openness along the river. This area is also very fragmented and disjointed with residential development immediately adjacent to heavy industry.

Land use on the northern bank is predominantly heavy industry from the Purfleet Thames Terminal to Grays. The main industries include oil refining and the manufacture of soap, margarine, cement and timber. The West Thurrock cement industry was one of the largest in Europe in the 19th Century. Notable features include the Purfleet Thames Terminal, a roll-on/roll-off ferry facility where large ferries moor up. East of West Thurrock Marshes there is a large oil refinery and cement works associated with the Vopak Terminal. Two super-size pylons, one on either side of the river at West Thurrock Marshes and Swanscombe Peninsula, are dominant vertical features. Their extra size enables the power cables to span the river at sufficient height to allow the passage of large ships. This area is generally very fragmented with large scale buildings and industrial complexes interspersed with areas of wasteland, depot areas and remnant marshland.

Extensive riverside residential development has occurred along the Grays riverfront, which lacks permeability. Here a former industrial area has been redeveloped and four-storey residential blocks now line the riverfront. Behind the taller riverside apartment blocks there are suburban estates of predominantly two storey buildings. Notable features of the Grays riverfront are a marina, where Thurrock Yacht Club is based and Grays Beach riverside park. White high-rise blocks on either side of the marina are recognisable features of the Grays riverfront. Both the marina and riverside park give life and activity to the riverfront.

Land uses on the southern bank include the large scale utilities of Long Reach Sewage Works and Littlebrook Power station which is a very large structure with a tall chimney forming a significant landmark. The Crossways Business Park is located east of the QEII bridge includes a range of large, low-rise warehouses and offices built close to the riverfront. The site has recently received a Kent Environment Award under the Sustained Site Management category for recognition of the management of land in a manner which improves habitat and protects the environment. From Stone to the east, the landscape bears the enormous scars of chalk extraction.

Greenhithe is an historic settlement dating back to Roman times. The recently built Ingress Park residential development to the east of Greenhithe is centred around the restored Ingress Abbey (built in 1833). Swanscombe Peninsula is an area of predominantly flat marshland that includes Swanscombe Marshes and Botany Marshes, which are drained freshwater grazing marsh and Broadness salt marsh. Tipping of pulverised fuel ash (PFA) has occurred in the northern part of the Peninsula which has been restored to grassland, in the southern part the PFA tip rises to a significant height. A proportion of the southern section of Swanscombe Peninsula West is, and has been for generations, given over to industrial uses. The site has historically been utilised as a cement works and a large number of industrial buildings remain on site.

#### RIVER BANKS

The northern bank of the river has predominantly hard vertical edges and there are numerous large piers and jetties on the western side of West Thurrock Peninsula. Soft river edges are found at West Thurrock Marshes and Grays Beach Riverside Park. There is access to the foreshore at Grays Beach. On the southern bank there are more extensive areas of soft river edge. Soft river edges are found by Littlebrook Power Station and its associated fuel store, the Crossways Business Park and Swanscombe Peninsula. Apart from the tip of Swanscombe Peninsula, all other areas are protected by earth flood embankments. There are extensive mudflats in this Reach, particularly around West Thurrock Marshes.

#### THAMES PATH

On the northern bank there is a public footpath/NCN13 that runs continuously from Purfleet Station to Grays although it has few landward links.

On the southern bank the footpath/NCN1 is also relatively good with a footpath running alongside most of the riverfront from Littlebrook Power Station to the Crossways Business Park but missing sections should be provided. There is some access to the riverfront at Greenhithe and a riverside path has been constructed at the

Ingress Park development. The footpath continues along Swanscombe Marshes on the Swanscombe Peninsula, but does not extend out to its tip.

#### RIVER INFRASTRUCTURE

Vopak's Purfleet terminal which handles imports of CO2 and Esso's Purfleet site are amongst the eleven commercial terminals, with jetties, on the northern bank. On the southern bank there are three cargo terminals including Thames Europort which handles approximately 40% of the Port of London's ro-ro traffic. As this Reach is outside London there is currently no Safeguarded Wharves policy. Proposed piers within the Reach at West Thurrock Marshes and Grays Beach, Greenhithe, Ingress Park and Swanscombe Peninsula (east and west) will strengthen the case for north-south, and east-west ferries for tourism.

Thurrock Yacht Club is located on the northern bank at Grays and there is a launching site, Greenhithe Causeway on the southern bank. There are no public piers or riverside steps.

The most significant river crossing of the eastern part of the Thames is the Dartford Crossing comprising the Dartford Tunnel, opened in 1963 and the QEII Bridge, opened in 1991. A new strategic river tunnel for the Channel Tunnel Rail Link (CTRL) will be operational from November 2007, although its access points will be at Stratford and Ebbsfleet beyond the Strategy Area. On the southern bank in Kent Thameside, Fastrack is in the process of being implemented and will provide good local transport links.

#### BIODIVERSITY

The West Thurrock Lagoons and Marshes SSSI has in the past been recognised for its importance for wintering waders and wildfowl although the area has undergone recent decline due to closure of the power stations discharge that maintained suitable water levels. Similarly, the saltmarsh located at Stoneness is in unfavourable condition due to it being squeezed against hard sea wall from rising sea levels. The future management and use of the area has potential to restore and enhance the ecological functionality of the site. For



further information regarding biodiversity, refer to Appendix 3 - Characterisation and Appendix 6 - Biodiversity.

## HERITAGE

Key sites of built heritage importance include Greenhithe, QEII Bridge, St Clements Church at West Thurrock and St Mary Church at Stone. Greenhithe is the only Conservation Area in this Reach. The Purfleet Military and Heritage Centre is housed in the Royal Gunpowder Magazine, which is itself of heritage interest as it is the last of its size and type in the country. It is the main visitor attraction within the Reach. For further information regarding built heritage refer to Appendix 3 - Characterisation and Appendix 5 - Built Heritage.

Swanscombe is well known for the discovery of fragments of an early human skull estimated to be about 400,000 years old, in Barnfield Pit in the 1930s (this is just outside the Strategy Area). It is amongst the earliest human remains known in Europe. Bones of animals such as the rhinoceros and straight-tusked elephant have also been retrieved from the terraced deposits of Barnfield Pit. This Reach is also particularly important for early pre-historic flint artefact manufacture and an important Levallois flint industry has been recorded at West Thurrock. Many other finds have been made in this Reach including pre-historic animal bones, human skeletons (including one believed to be of post-Palaeolithic date), Bronze Age spearheads and other implements, a large number of late Iron Age and Roman burial urns, and a system of tide walls on Littlebrook Marshes, known as Littlebrook Walls. West Thurrock, Grays Thurrock, Greenhithe, Stone and Swanscombe are mentioned as manors in the Domesday Book (1086).

The Purfleet area has also yielded rich evidence of former environments and fluvial conditions, including mammal, mollusc, pollen and ostracod records. The discovery of two straight-tusked elephants and a woolly mammoth at Sandy Lane and the remains of the first jungle cat recorded in the British Isles are among the most important finds. Other finds include the remains of Neolithic stone hut circles

on the mudflats near the low tide line at Purfleet, Palaeolithic and Neolithic finds, Neolithic forest and Roman discoveries.

For further information on archaeology refer to Appendix 3 - Characterisation and Appendix 4 - Archaeology.

## RIVER ECONOMY

There are several major freight terminals, such as Littlebrook Powerstation, within this reach as well as important recreational uses.

## KEY CHARACTERISTICS AND INFLUENCES

- The Reach contains the highly visible QEII Bridge
- This Reach comprises a fragmented and disjointed patchwork of land uses including large-scale heavy industrial complexes, remnants of marshland giving a semi rural character and pockets of residential development
- The Reach is particularly important for its archaeological value
- The landscape bears the large scars of chalk extraction.

### 3.7.2 REACH GUIDANCE

This Reach Guidance (RG) should be read in conjunction with Figure 4.100 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

## PLANNING AND DESIGN

- RG7.1 Ensure that development at Swanscombe Peninsula recognises the unique character of the peninsula, does not damage the remnant marshland character of the peninsula, enhances the soft river edges around the Swanscombe Peninsula as part of flood risk management proposals, provides the Thames Path extension City to Sea and generally supports the Strategy's recommendations.
- RG7.2 Protect and enhance the strategic connections to the river including the Thurrock/Grays corridor, the City to Sea/Shoreline corridor,

- the Bluewater/Stone Castle Link, Darent Wood/Stone Link and Dartford/Stone Fiddlers corridors on the southern bank.
- RG7.3 Seek opportunities to improve access within areas lacking permeability to the river and encourage links to the Thames Path extension City to Sea. Especially within growth areas of Grays and Purfleet.
- RG7.4 Protect and enhance the positive aspects of the Reach's character including:
- the openness and marshland character of West Thurrock Marshes
  - the 'seaside' character of Grays Beach
  - the village character of Greenhithe
  - views and setting of Beacon Green at Purfleet
  - Purfleet Military and Heritage Centre
  - the high quality character of Ingress Park
  - open space between St Clements Church, the Proctor and Gamble factory.
- RG7.5 Ensure that new development at Purfleet:
- relates well to the existing urban form
  - strengthens the connection of the existing community with the riverside
  - enhances the quality of the built riverside environment
  - protects and improves riverside access
  - expands the woodland character to give a cohesive structure to currently fragmented landscapes.
- RG7.6 Seek opportunities to integrate Grays Beach Park with the river foreshore and explore opportunities to realign the flood defence wall which acts as a major barrier. Link Grays Beach with Grays Yacht Club and create an extended waterfront park and beach; in the long term consider the feasibility of extending Grays beach to cover a wider part of
- the bay. This could be developed as a significant leisure and recreation attraction and destination.
- RG7.7 Seek opportunities to provide a high quality, safe and attractive foot and cycle path over the QEII Bridge to connect the northern and southern banks of the Thames Path City to Sea, the London Loop Path and the various routes of the East London, Thames Gateway South Essex, and Kent Thameside Green Grids.
- BIODIVERSITY**
- RG7.8 Restore and enhance West Thurrock Lagoons and Marshes SSSI through appropriate site and water level management and by exploring opportunities for realignment of flood defence wall to restore the connection between the marshes and the river to help meet SSSI favourable status of saltmarsh at Stoneness.
- RG7.9 Protect and enhance the habitat for aculeate hymenoptera at the pulverised fuel ash lagoons at West Thurrock and improve links to the Swanscombe Skull Site National Nature Reserve (NNR and SSSI).
- ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES**
- RG7.10 Enhance understanding of the existing known and potential archaeological resource, particularly the Swanscombe Skull and including prehistoric flint manufacture, prehistoric and Roman settlement and burials, early medieval settlement, and sea defences, later medieval settlement, and marshland reclamation and early post-medieval mineral extraction.
- RG7.11 Protect and enhance key sites of built heritage importance and explore the opportunities to create and promote a series of interlinked new and existing destinations and cultural heritage attractions, such as Greenhithe, High House Farm

Complex, Purfleet QEII Bridge, Dartford and St Clement's Church, West Thurrock, Portland Cement Works and the Swanscombe Skull site.

proposals should be in line with Strategic Flood Risk Assessment completed for Dartford and Gravesham Boroughs.

- RG7.12 Protect, enhance and interpret the impressive views within the reach including:
- River prospects from and to QEII Bridge
  - River prospects from Ingress Park and to Ingress Abbey
  - River prospects from Grays Beach
  - River prospects from St Clements Church, West Thurrock
  - St Mary's Church, Stone
  - The panoramic view from the picnic area off the B3228 near Stone
  - The panoramic view from the proposed Stone Lodge Park
  - River prospect from Swanscombe Peninsula
  - River prospect from South Stifford to Swanscombe Peninsula
  - Views of industrial landmarks of Littlebrook Power Station, Purfleet Thames Terminal and the Super Pylons.

#### ECONOMY

- RG7.17 Protect and enhance the existing diverse economic uses of the river including piers, river-based transport, and the mix of riverside uses including industry, housing, business, and river-related tourism.
- RG7.18 Explore opportunities and demand to develop new and existing piers at West Thurrock, Grays Beach, Greenhithe, Ingress Park and Swanscombe Peninsula (east and west) as part of an integrated ferry network linking concentrated leisure and recreation destinations and cross-river and commuter routes and also for leisure pursuits such as fishing.

- RG7.13 Promote the creation of a major landmark as part of development proposals for the Swanscombe Peninsula.

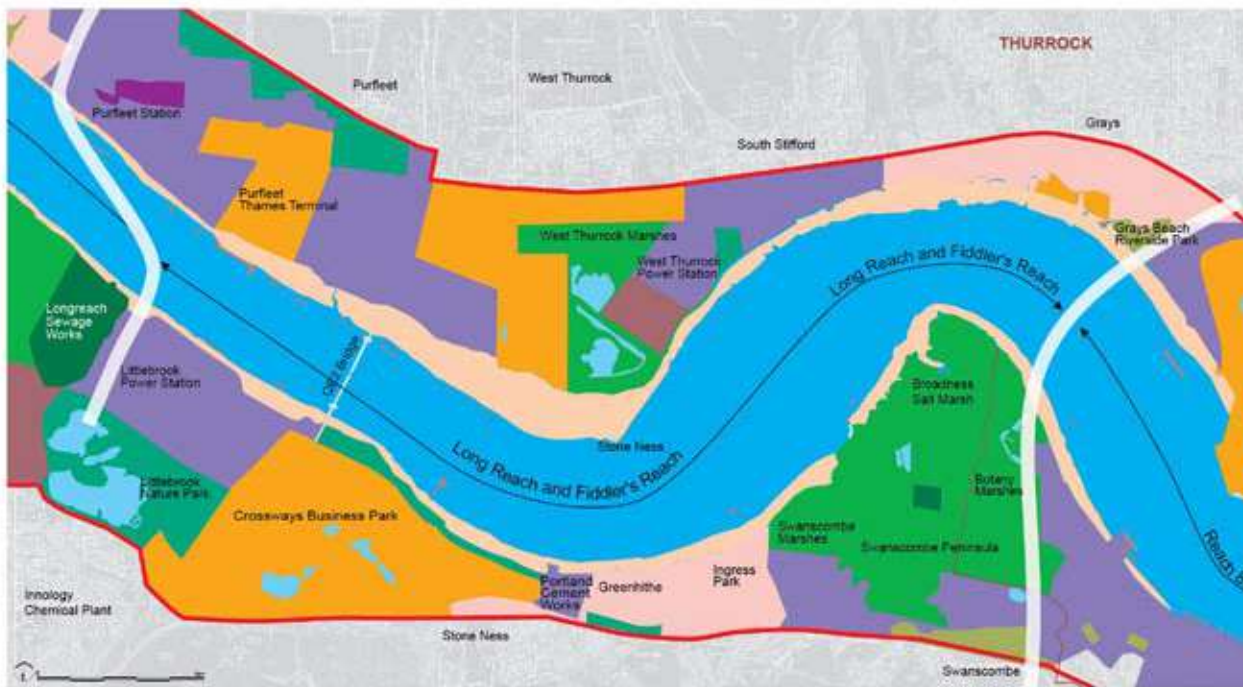
- RG7.14 Explore the opportunity to transform the QEII bridge at night through an innovative lighting scheme.

- RG7.15 Seek to retain features of industrial infrastructure such as cranes to maintain a sense of place and industrial heritage.

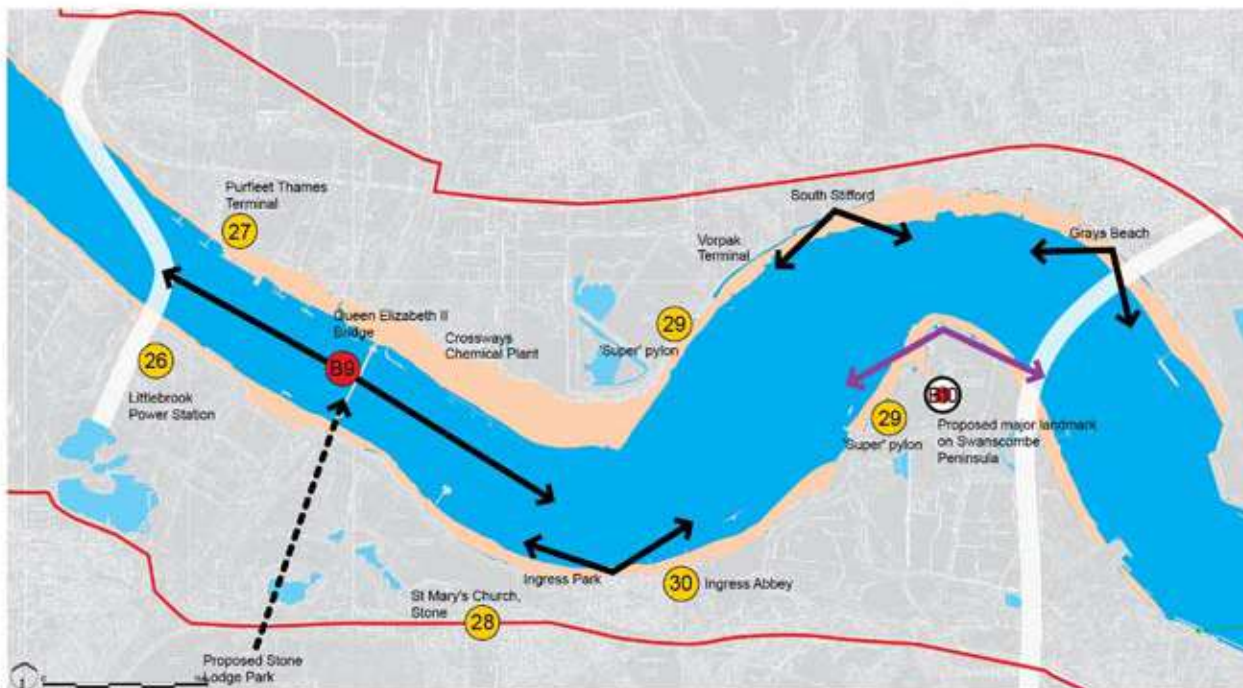
#### FLOOD RISK MANAGEMENT/CLIMATE CHANGE

- RG7.16 Seek opportunities for creative realignment of flood defences and making space for water in all riverside development proposals, where defences are being replaced and at riverside open spaces. in particular development

**FIGURE 3.7.1 REACH 7: SUMMARY DATA**  
 LONG REACH AND FIDDLER'S REACH



**CHARACTERISATION**

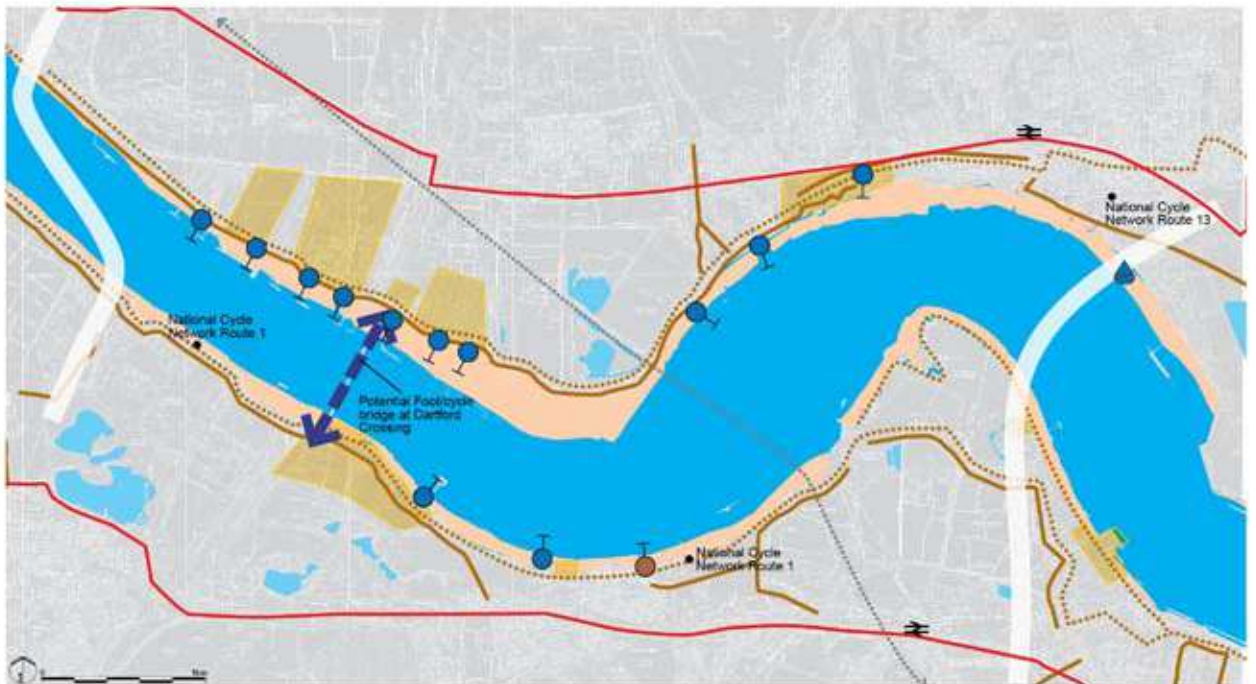


**VIEWS, LANDMARKS AND MAJOR LANDMARKS**

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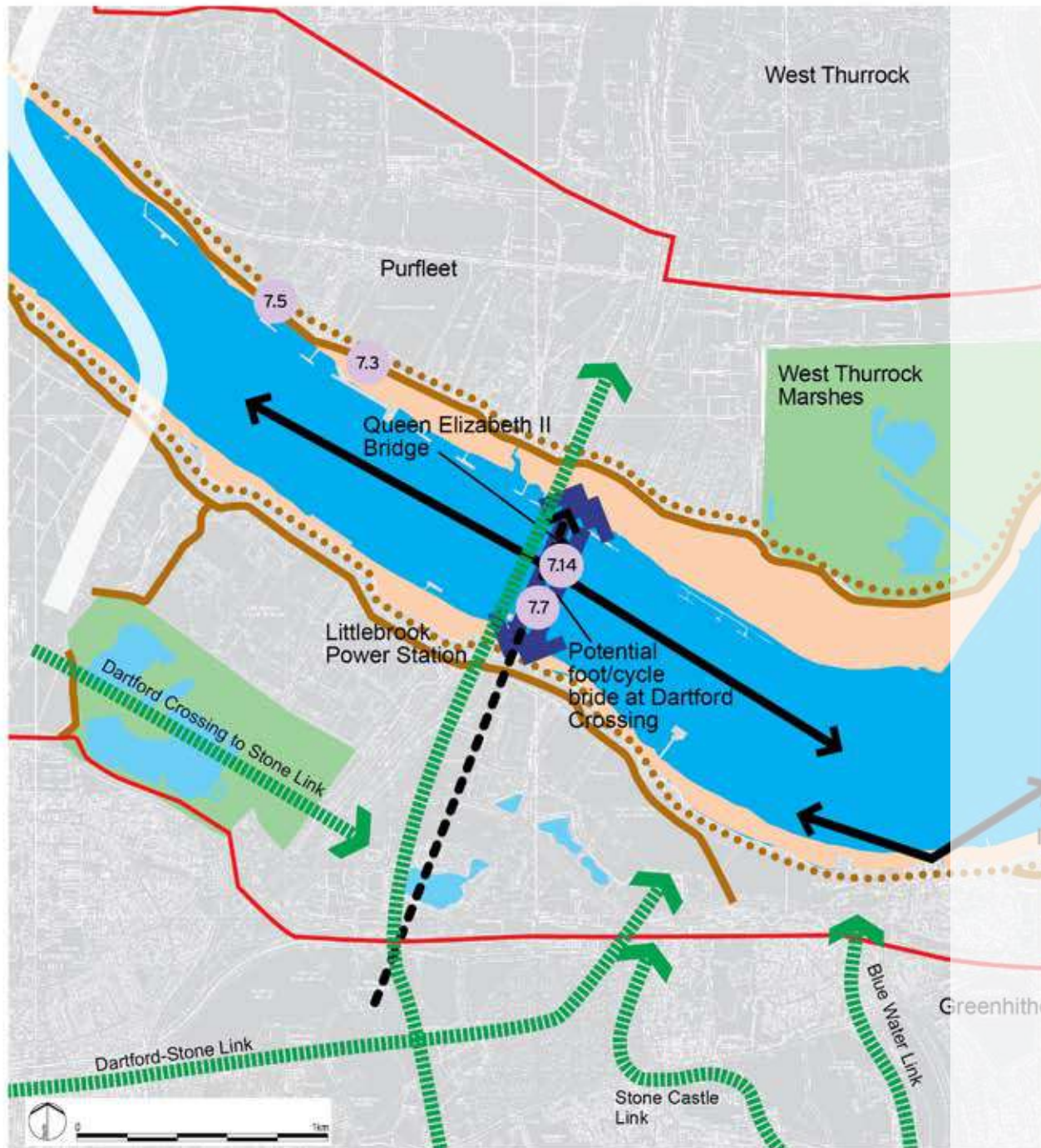


BIODIVERSITY, BUILT HERITAGE AND TOURISM

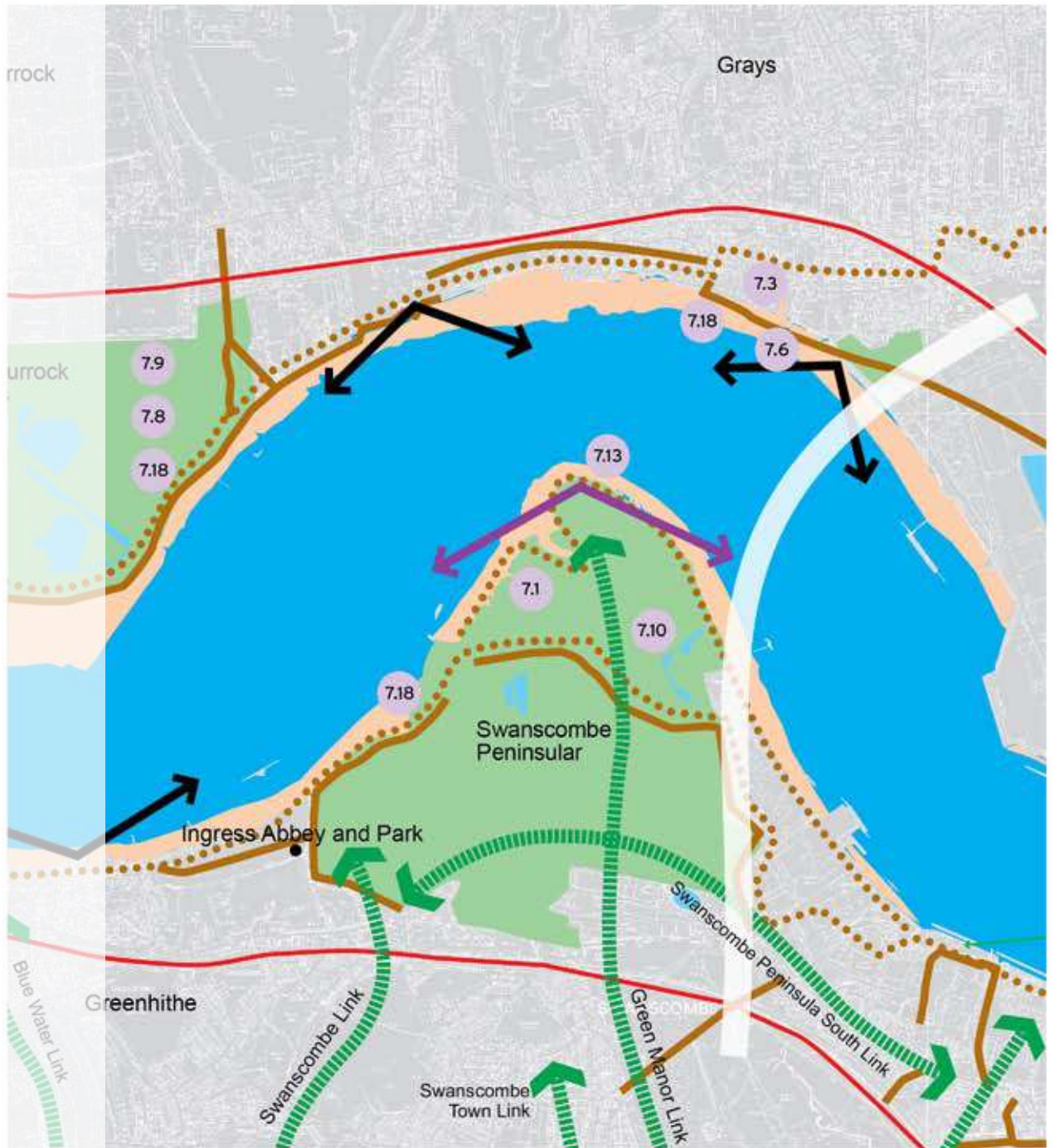


ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE

FIGURE 3.7.2 REACH 7: GUIDANCE PLAN



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# REACH 8 NORTHFLEET HOPE

## 3.8.1 CHARACTERISATION

This Reach stretches from Grays Beach Riverside Park to the eastern extent of Tilbury Docks on the northern bank and from Swanscombe Peninsula to Northfleet and Rosherville on the southern bank. This characterisation should be read in conjunction with Figure 4.109. The river turns sharply south-east around Swanscombe Peninsula and then turns due east around Tilbury Ness. The river narrows in width in this Reach from over 1000m opposite Swanscombe Marshes down to 500m at Tilbury Ness before gradually widening again towards Gravesend.

The Reach is characterised by shipping activity, dock cranes, large warehouses and depots around Tilbury Docks on the northern bank and heavy industry including a large cement works at Northfleet on the southern bank. For detailed characterisation see Appendix 3.

The riverfront is very active with freight and container ships loading and unloading, both at Tilbury Docks and at the industrial complexes at Northfleet. Wharves and jetties with travelling cranes line the river banks almost continuously and dock cranes dominate the skyline on the northern bank. The use of the riverfront is purely industrial and commercial. The riverfront has a unique 'raw' industrial character, particularly along Northfleet, due to the massive scale and intensity of the heavy industry.

Tilbury Docks dominates the northern bank in this Reach providing a key economic driver. Tilbury Docks were built on former marshland, consequently, the northern bank in this Reach is flat. The coming and going of large ships provides a characteristic river-related scene along with the water berths, cranes, the bulk grain terminal and containers. Tilbury is the main container port for London and comprises three large docks leading off the main dock,

vast warehouses, stacks of multi-coloured containers, cranes and car and van depots surrounded by security fencing. The largest container ships moor up at the Riverside Wharf where the travelling cranes are the most dominant vertical features of the Docks.

There are impressive open views across the dock basins although these are not available to the public as there is strictly no public access to the Docks. Tilbury Bulk Grain Terminal is located adjacent to the docks by the riverfront. The London International Cruise Terminal, located to the east of Tilbury Docks, is a notable feature which is described in more detail in Reach 9. Little Thurrock Marshes is located to the north of the Docks.

Land use on the southern bank at Northfleet is predominantly industrial with 9 deep water cargo terminals. However, a development of large-Georgian villas and terraces lies between the industrial area and a retail park with superstores to the west of Gravesend town centre. The development was laid out by Jeremiah Roshier, a chalk merchant, who also laid out Rosherville Gardens, which were very popular with day trippers from London in the past. Residential areas of terraced housing are located to the south of the A226 which runs along the top of a chalk cliff which resulted from extensive chalk quarrying. The chalk cliff separates the residential area from the industry.

Historically, the main industries at Northfleet were shipbuilding and cement and paper production. A cement works still exists at 42 Wharf and Bevan's Wharf. Two football grounds are located within the industrial area, close to Robins Creek, although the ground to the north of Wallis Park is disused. Robins Creek connects the Ebbsfleet river with the Thames and is the only tributary found in this Reach.

In the longer term it is likely that Northfleet will be considered for mixed-use rather than the purely industrial development that exists presently - the Lafarge Cement works is an example of a site that may be released for redevelopment soon. The production of cement at Northfleet works is set to continue with a new import facility under construction and an aggregates

terminal planned. A steering group comprising SEEDA, Gravesham Borough Council, Kent County Council and Kent Thameside Delivery Board and Lafarge is currently looking at a master planning strategy to maximise regeneration potential of the wider Embankment from Rosherville Pier in the east, to Robin's Creek and Tower Wharf in the west.

A distinctive feature of Northfleet is the Church of Our Lady of the Assumption designed by Giles Gilbert Scott. The church is strategically located on high ground on the chalk ridge adjacent to a dramatic vertical chalk cliff of a quarry. The brick faced church tower can be seen clearly from the river. The historic hamlet of Northfleet, located close to the parish church of St Botolphs on the A226 is also notable. It is designated as a Conservation Area and includes some charming timber framed buildings and back of pavement development.

#### RIVER BANKS

Both the northern and southern banks in this Reach are hard and vertical, as they are almost continuously lined with wharfs and jetties.

#### THAMES PATH

There is strictly no public access to Tilbury Docks and no access along the riverfront. Access to the riverfront at Northfleet is very restricted, but there are two public footpaths that give access to a small section close to Tower Wharf and at the east end of Northfleet Embankment along the shore leading to a public footpath adjacent to Red Lion Wharf.

#### RIVER INFRASTRUCTURE

The Port of Tilbury has twenty one terminals comprising over seventy berths. On the southern bank there are nine commercial wharves. The Tilbury to Gravesend Ferry sits just to the east of the Reach and is covered in detail in Reach 9. There are no public piers, launching sites, riverside steps or watersports centres in this Reach. The

landing stage for London International Ferry Terminal is covered in Reach 9.

#### BIODIVERSITY

Other than the River itself, there are no statutory or non-statutory sites of nature conservation interest in this Reach. There has been extensive loss of natural wildlife habitat through industrialisation and reclamation of marshland. Little Thurrock Marshes situated to the north of Tilbury contains a network of ditches which support water voles and reedbeds and is identified as an important site for invertebrates. Further information regarding biodiversity can be found in Appendix 3 - Characterisation, and Appendix 6 - Biodiversity.

#### HERITAGE

The main sites of built heritage importance are the church of St Botolph and Church of Our Lady of the Assumption at Northfleet, Henley's Telegraph Works Company factory and research laboratories, Tilbury Docks, the PLA London International Passenger Cruise Terminal including the Tilbury Riverside Station (now Tilbury Riverside Arts and Activity Centre) and Aspdin's Kiln, a Scheduled Ancient Monument that lies close to Robin's Creek at the westerly end of Northfleet Embankment. There are three Conservation Areas: The Hill, Northfleet; Landsdowne Square, Rosherville; and Overcliffe.

There is a wealth of intangible heritage in this Reach, for example the Tilbury brick works was owned by Daniel Defoe, author of Robinson Crusoe; Rosherville was named after Jeremiah Rosher, a chalk merchant who laid out Italianate villas and terraces and Rosherville Gardens. Further information on built heritage can be found in Appendix 3 - Characterisation, and Appendix 5 - Built Heritage.

Northfleet has long been famous for the thousands of Palaeolithic artefacts found here. The Ebbsfleet Valley to the south west is important for Mesolithic and Neolithic remains, including a type of early Neolithic pottery known as Ebbsfleet Ware. On the northern side of the Thames a number of Neolithic

and Bronze Age burials and Roman occupation debris and burials were uncovered, at depth, during the construction of Tilbury Docks in 1883. Further information on archaeology can be found in Appendix 3 - Characterisation, and Appendix 4 - Archaeology.

#### RIVER ECONOMY

This reach contains the main focus of port activity within the Port of London, Tilbury Docks, together with numerous other wharves this dominates this reach.

#### KEY CHARACTERISTICS AND INFLUENCES

- Both banks of this Reach are dominated by shipping activity and its associated infrastructure and land uses
- The chalk ridge that runs close to the river has been extensively quarried and the resulting chalk pits and cliffs are a characteristic feature of Northfleet
- The main landmarks in the area are Tilbury Bulk Grain Terminal; Tilbury Docks Riverside Wharf; the London International Cruise Terminal; chimneys at Northfleet; and Church of Our Lady of the Assumption, Northfleet.

#### 3.8.2 REACH GUIDANCE

This Reach Guidance (RG) corresponds to figure 4.110 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

#### PLANNING AND DESIGN

RG8.1 Redevelopment proposals for this Reach should seek to restore the lost river related features of this Reach including biodiversity, river views, access to the river and foreshore, opportunities to enjoy the water, tree planting along the chalk ridges of Northfleet and provision for flood risk management and economic potential.

RG8.2 The strong dockland character and harbour activity of Tilbury Docks should be promoted as an asset characterising the Reach.

RG8.3 Promote, protect and enhance the strategic green space connections to the Thames including to Tilbury, Northfleet and Ebbsfleet train stations, the Tilbury connection and City to Sea/Shoreline connections as proposed in the South Essex Green Grid; and Swanscombe Peninsula, Swanscombe Peninsula South, Ebbsfleet Valley Corridor and Botany Marshes to Gravesend corridors as proposed in the Kent Thameside Green Grid.

RG8.4 Improve foot and cycle routes along the Thames by improving the route where it passes adjacent to the river and where the route deviates from the Thames ensuring that it is well signposted and of a good quality.

RG8.5 Protect and enhance the limited views to the Thames within the Reach including:

- views from the A226 on the chalk ridge, particularly from the picnic area to Tilbury Docks
- views of the Church of Our Lady of the Assumption, Northfleet
- London International Cruise Terminal
- views of chimneys at Northfleet
- create a river prospect at Tower Wharf, the Seacon Terminal.

RG8.6 Jetties that become redundant and no longer commercially viable or capable of being made viable for cargo handling, should be redeveloped first to incorporate water based passenger transport, leisure, and recreation facilities and water transport support facilities before non-river related uses that do not require a riverside location.

## BIODIVERSITY

- RG8.7 Opportunities should be sought to enhance the biodiversity along the river edge, marshlands and the urban fringe environment through planting, appropriate management and protection of the foreshore.

including the Port of Tilbury, heavy industry, housing, business and river-related tourism linked to the London International Cruise Terminal.

## ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES

- RG8.8 Enhance understanding of the existing known and potential archaeological resource including prehistoric, Roman and early medieval settlement and burials, later medieval settlement and marshland reclamation and post-medieval industry.

- RG8.9 Protect and enhance key sites of built heritage importance including Henley's Telegraph Works Co. factory and research laboratories, Tilbury Docks, St Botolph's Church and Church of our Lady of the Assumption at Northfleet, Aspdin's Kiln, the London International Cruise Terminal, Tilbury Riverside Station (Tilbury Riverside Arts and Activity Centre) and the Conservation Areas of the Hill at Northfleet, Landsdowne Square, Rosherville and Overcliffe.

## FLOOD RISK MANAGEMENT/CLIMATE CHANGE

- RG8.10 Seek opportunities for creative realignment of flood defences and making space for water in all riverside development proposals, where defences are being replaced and at riverside open spaces. This will be particularly relevant where heavy industry is being replaced with mixed-use development.

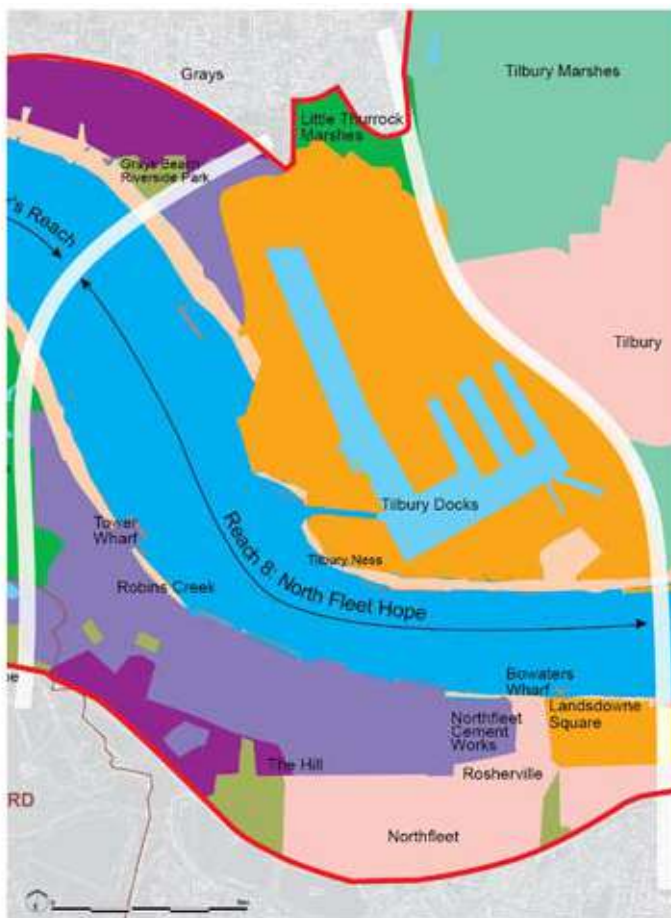
## ECONOMY

- RG8.11 Protect and enhance the existing diverse economic uses of the river including river-based transport, and the mix of riverside uses

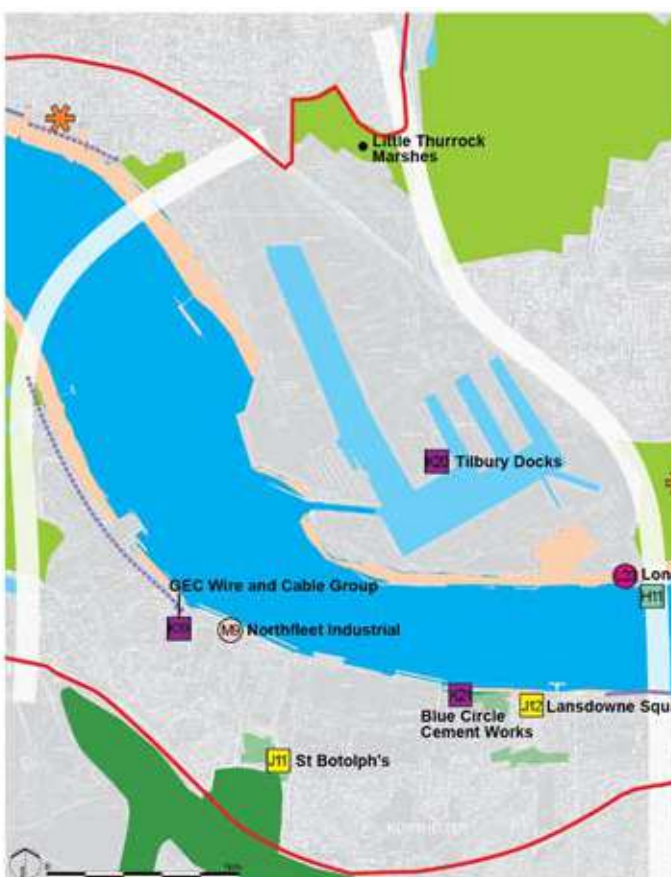


**FIGURE 3.8.1 REACH 8: SUMMARY DATA**  
NORTH FLEET HOPE

CHARACTERISATION

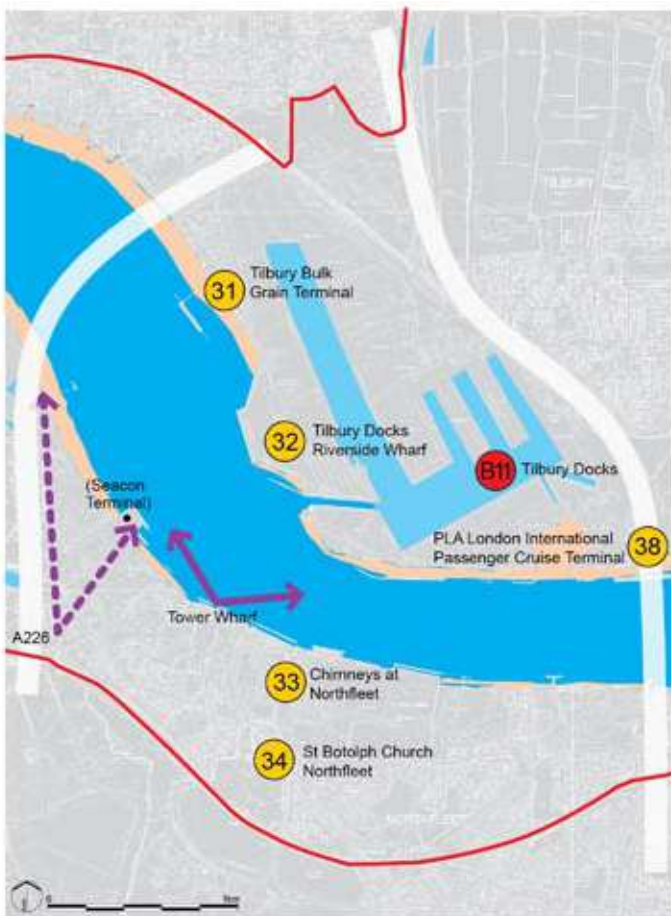


BIODIVERSITY, BUILT HERITAGE  
AND TOURISM



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VIEWS, LANDMARKS AND MAJOR LANDMARKS



ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE

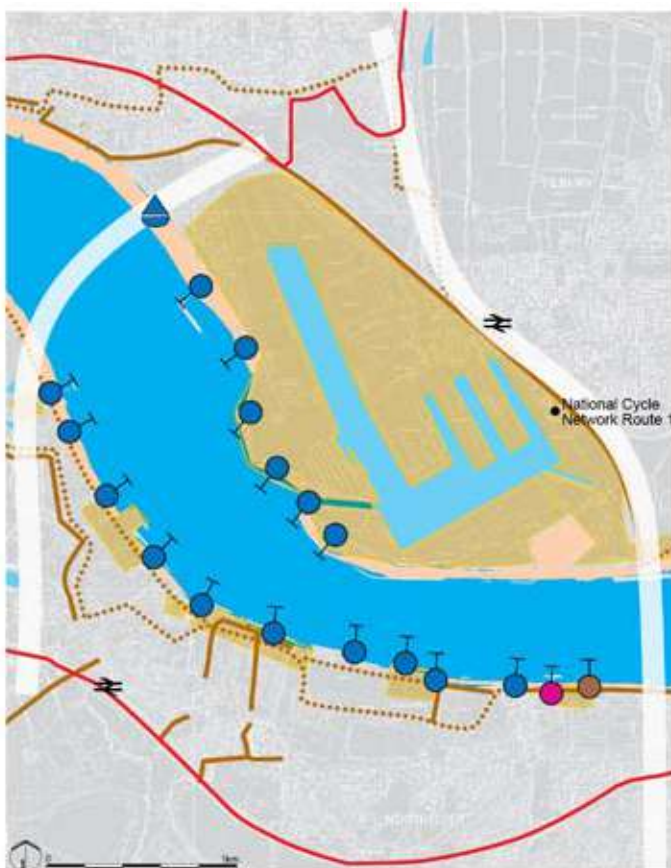
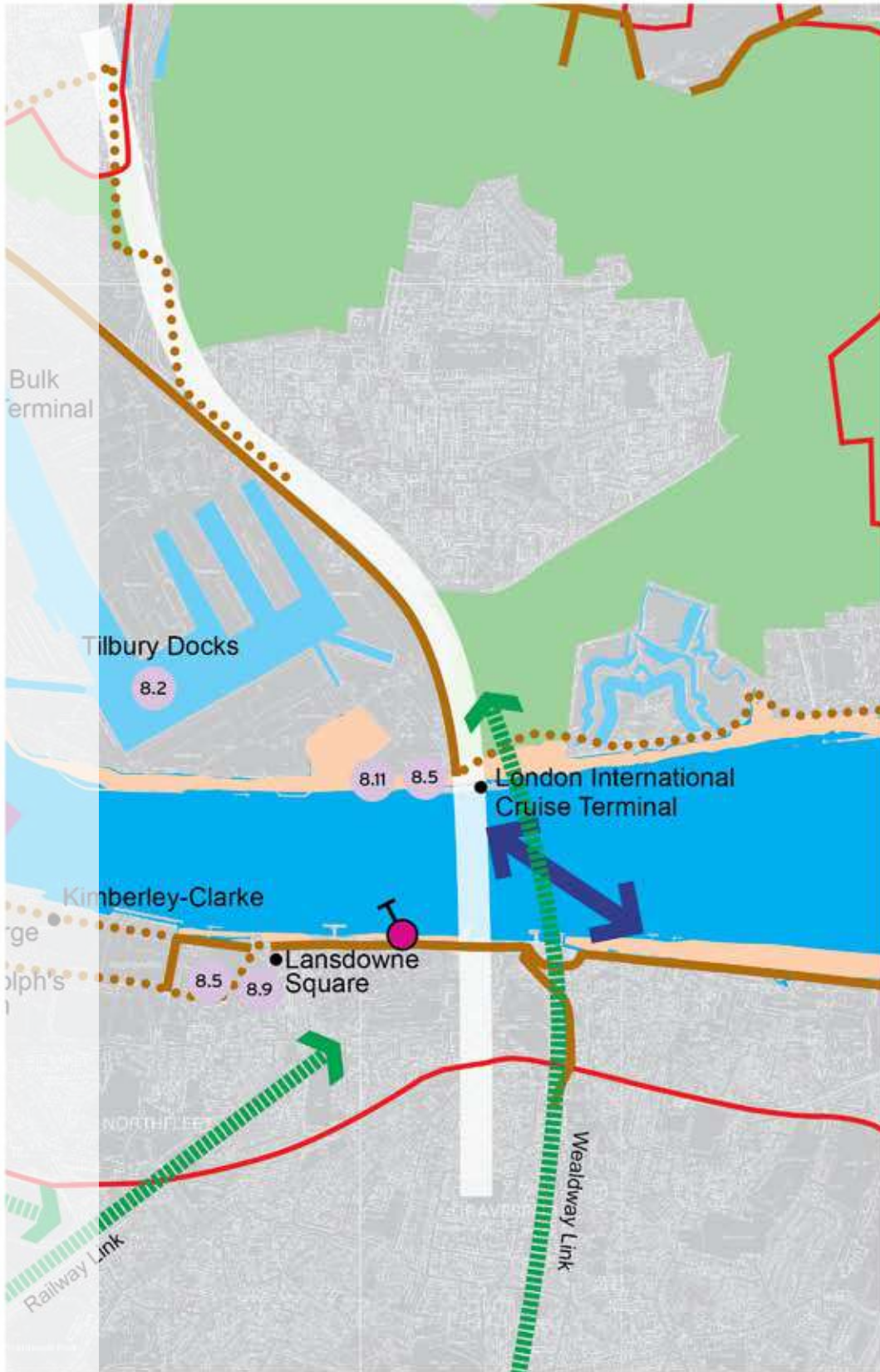


FIGURE 3.8.2 REACH 8: GUIDANCE PLAN



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SCENES FROM  
REACH 9



# REACH 9 GRAVESEND REACH

## 3.9.1 CHARACTERISATION

This Reach stretches from the eastern extent of Tilbury Dock to Tilbury Power Station on the northern bank and from Gravesend town centre to the National Sea Training College adjacent to Eastcourt Marshes on the southern bank. This characterisation should be read in conjunction with Figure 4.117. Here the River Thames runs due east, widening from approximately 700m by Gravesend town centre, to almost twice that width, 1300m including the mudflat areas, at the eastern extent of the Reach. The northern bank has a mixed character with grazing marsh extending down to the river around Tilbury Fort but with the imposing Tilbury Power Station to the west. In contrast, the southern bank has an urban character with Gravesend town centre overlooking the Thames from rising ground.

Gravesend Town Centre and Tilbury Power Station mark the gateway to the developed part of the Thames: westwards from here, almost continuous urban and industrial developments line the banks of the river. To the east the character changes dramatically to a more rural and truly estuarine character where flat, open salt marsh and grazing marsh provide the setting for the river which continues to widen, with mud flats becoming more extensive.

Land use on the northern bank of the river is predominantly reclaimed agricultural marsh land surrounding Tilbury town, a small settlement consisting mainly of low rise residential development with a few high rise blocks. Tilbury town was founded to serve Tilbury Docks and has grown in response to the expansion of the Docks since the 1930s. The southern edge of the town is sharply defined by the railway line that has been recognised as limiting accessibility within the East of England Plan that has identified the need to create a new rail crossing at Tilbury.

Along the riverfront, Tilbury Fort, is an excellent example of 17th century military engineering and one of Britain's best examples of a star-shaped bastion fortress. It is the main historic attraction of the Reach and affords fine views across the river to Gravesend.

A small sewage works separates the Fort from Tilbury Power Station. The Power Station is the largest feature within the Reach with its large jetty protruding into the river, large scale block buildings and two tall chimneys that are visible for miles around. Further inland beyond the reclaimed marshland, the land rises steeply and forms a notable ridge line from where there are impressive elevated panoramic views. The historic village of West Tilbury is located on the higher ground close to the ridge to the north east of Tilbury town. The spire of the village church provides an important landmark and is visible from most of West Tilbury Marshes. Chadwell St Mary is also located on the higher ground behind the ridgeline to the north of Tilbury Marshes.

Gravesend town occupies the southern bank. Land use includes Gravesend town centre, low rise residential development, a small area of commercial and light industrial development east of the town centre, a small sewage works and marshland. Gravesend town centre is located on higher ground close to the riverfront. It is an attractive and bustling town centre with a pedestrianised high street, recently restored traditional shop fronts and narrow lanes running north-south towards the river front. The town has good examples of Georgian architecture and there is a spectacular elevated panoramic view of the town, river and northern bank from Windmill Hill. The historic character of the town is reinforced by the church spires and the town hall that dominate the skyline. The town was a popular holiday resort for Londoners in the 17th and 18th century and the resort character is retained through the distinctive Town and Royal Terrace Piers, New Tavern Fort Gardens and Gordon Promenade by the riverfront.

Gravesend is an historic settlement that relates well to the River Thames and has real vitality. It has recently rediscovered

its sense of history and place through an ambitious and successful regeneration programme. This is a rich and diverse leisure, recreational and heritage attraction with excellent potential. Key National Cycle Network routes, the Wealdway and the Saxon Shore Way run through Gravesend. Gravesend also has a sailing club, a rowing club and a marina. Gordon Promenade is an excellent riverside park with an open, seaside character.

#### RIVER BANKS

The riverbanks are predominantly hard and vertical on both side of the river throughout this Reach. To the east of this Reach, outside the Strategy Area both river banks take on a rural estuarine character with mainly soft and sloping edges.

#### THAMES PATH

There are opportunities to provide a high quality continuous foot/cycle path along both banks of the Reach that support the Thames Cycle Route (NCN route 1 & 13). On the northern bank, there is public access to the riverfront except in front of Tilbury Power Station which has a commercial terminal to receive imported coal. On the southern bank, there is access to the riverfront by Town Pier and along Gordon Promenade adjacent to New Tavern Fort. East of New Tavern Fort and the Marina, there is a small area of industrial development with no access to the riverfront. East of Denton Wharf, the Saxon Shore Way long distance footpath follows the riverfront to Cliffe Fort (beyond the Strategy Area). NCR1 runs inland of the Thames along the Thames and Medway Canal. Steps lead down to the foreshore by Gordon Promenade.

#### RIVER INFRASTRUCTURE

River related infrastructure includes two launching sites at New Bridge Causeway and Gravesend Canal Drawdock. There are no watersports centres on the northern bank but there are several facilities on the southern bank; J and R Starbucks (Marine Centre), Gravesend Yacht Club, Denton Slipway (Marine Centre) and Denton Wharf (Marine Centre). In Gravesend there are

three piers: Town Pier, Royal Terrace Pier and a commercial terminal with jetties owned by Clubb Ltd that handle imports of sea dredged aggregates. A ferry for pedestrians, cyclists and motorcycles runs between Tilbury Riverside Pier and Gravesend West Street Pier. This is a regular service that runs every half hour from 5.40am to 7.00pm. There is only one set of riverside steps in this Reach at Gordon Promenade.

#### BIODIVERSITY

This part of the Thames Estuary supports a large variety of marine and estuarine species reflecting the inter-tidal mud and sand flats. There is a more obvious connection here between the aquatic and terrestrial habitats including salt marsh, reed beds, mudflats and grazing marshes.

Sites of biodiversity importance include the South Thames Estuary and Marshes SSSI, the Canal and Grazing Marsh Site of Interest for Nature Conservation (SINC), Tilbury Marsh SINC, Hall Hill SINC and Gun Hill SINC. For further information regarding biodiversity refer to Appendix 3 - Characterisation, and Appendix 6 - Biodiversity.

#### HERITAGE

Tilbury Fort and Gravesend town centre and piers are the key sites of importance for built heritage, and are also the main tourist attractions. There are several Conservation Areas in Gravesend town centre. West Tilbury is also designated as a Conservation Area. Further information on built heritage can be found in Appendix 3 - Characterisation and Appendix 5 - Built Heritage.

A number of archaeological finds have been made in the area. Prehistoric remains include an area of Scheduled Earthworks to the north west of Tilbury town and Roman burials have been found in Tilbury Marshes. Gravesend was the site of an early Romano-British settlement and both West Tilbury and Gravesend are mentioned as manorial holdings in the Domesday Book (1086). This part of the Thames was clearly important for defence reasons, in particular for protecting access to London and the royal

dockyards of Woolwich and Deptford. Further information on archaeology can be found in Appendix 3 - Characterisation, and Appendix 4 - Archaeology.

#### RIVER ECONOMY

This reach has limited freight uses compared to reach 8 but does have a wealth of support industries as well as the Tilbury-Gravesend ferry. London River House contains the PLA's Port Control Centre, primarily responsible for ensuring navigational safety on the River Thames and its Estuary. Information from the PLA's extensive network of radars, tide gauges and CCTV are collated and provided for the benefit of those commercial and other vessels navigating within the Port of London. London River House also serves as the hub of the PLA's Pilotage Service.

#### KEY CHARACTERISTICS AND INFLUENCES

- This Reach marks the eastern extent of the more or less continuously urbanised estuary
- The Reach is particularly important for its strategic defence position. Tilbury Fort and New Tavern Fort historically were part of the defences of the river route into London
- Gravesend, a historic market town and former holiday resort, is positioned strategically on the first area of high ground in the Estuary, and characterised by church spires and piers
- The main landmarks in the Reach are Tilbury Fort, Tilbury Power Station, the Church at West Tilbury, Gravesend Town Pier, New Tavern Fort and the Church of St George, Gravesend.

#### 3.9.2 REACH GUIDANCE

This Reach Guidance (RG) corresponds with Figure 4.118 and sits within the Strategic Guidance for the whole Strategy Area provided in Part 2.

#### PLANNING AND DESIGN

RG9.1 Promote the preparation development frameworks for major development sites that address flood-risk management as set out in the recently published

Strategic Flood Risk Assessment for Kent Thameside and promote the principles of this Strategy. This would include the future development of north-east Gravesend, New Tavern Fort, Gordon Promenade and the Thames and Medway Canal basin.

RG9.2 Protect the rural marshland setting of Tilbury Fort and the openness of Tilbury Marshes and prevent coalescence of the urban areas of Tilbury and Grays.

RG9.3 Promote and enhance the historic character of Gravesend by:

- continuing the compact historic character and fine-grained structure of Gravesend town centre
- promoting tourism opportunities in the area through the 'seaside character' of Gordon Promenade and Fort Gardens, particularly the riverfront walk and open spaces
- protecting the historic skyline of Gravesend with its numerous church spires
- promoting stronger links between Gravesend town centre and the riverfront
- extensive street tree planting.

RG9.4 Strengthen the character of Tilbury by:

- creating a denser and stronger central core
- promote the town as a 'Garden City'
- extensive street tree planting
- improving pedestrian and cycle links between Tilbury station, town centre, riverfront, the Fort and the Thames Path
- promoting tourism opportunities in the area.

RG9.5 Promote, protect and enhance the strategic connections to the River including Tilbury Corridor, Thames Path, City to Sea/ Shoreline as proposed in the Thames Gateway South Essex Green Grid; and Botany Marsh to Gravesend, Gravesend to Shorne

Marshes, Thames and Medway Canal basin and the Wealdway as proposed in the Kent Thameside Green Grid.

RG9.6 Protect, enhance and interpret the impressive estuarine views within the reach including:

- the river prospect of the open estuary from Tilbury Fort
- the river prospect of the open estuary from Gordon Promenade
- townscape views from Windmill Hill in Gravesend
- views to the river from Gravesend High Street and Town Pier
- Tilbury Fort viewing area.

RG9.7 Promote the completion of the Thames Path on both banks of the river by creating links between the existing sections and Saxon Shore Way and filling in missing sections.

#### BIODIVERSITY

RG9.8 Protect and enhance the marine zone extending east beyond Gravesend, for its importance as a breeding and nursery area for several key fish species including Dover sole.

RG9.9 Protect and enhance the biodiversity of the Reach's valuable marshland habitats of:

- Tilbury Marshes SINCA, which include a network of ditches with water voles and reed beds, grazing marsh and salt marsh, key nationally scarce plant grasses and sedges, invertebrates, such as the Hornet robber-fly and grassland invertebrate communities, particularly burrowing hymenoptera
- South Thames Estuary and Marshes SSSI, which contains extensive areas of grazing marsh, salt marsh, mudflats and shingle, supporting internationally and nationally important numbers of

waterfowl, nationally rare and scarce invertebrates, plants and breeding birds including rare species like avocet and bearded tit

- the salt marsh and inter-tidal mudflats which provide a rich feeding ground for birds such as shelduck, oystercatcher, redshank, dunlin and wigeon.

#### ARCHAEOLOGY, HISTORICAL AND CULTURAL RESOURCES

RG9.10 Enhance understanding of the existing known and potential archaeological resource including a possible Iron Age hill fort or early medieval palace, to the north-east of where Tilbury Town stands today; Roman settlement and burials; early medieval settlement; later medieval settlement; ferry and marshland reclamation and post-medieval settlement and fortifications.

RG9.11 Protect, enhance and provide interpretation at key sites of built heritage importance including Gravesend Town Centre, Gravesend Town Pier, Tilbury and Tilbury Fort.

RG9.12 Protect and enhance the conservation areas at West Tilbury, High Street Gravesend, King Street, Queen Street, Harmer Street, Milton Place, Gravesend and Gravesend Riverside and the listed buildings within this Reach.

#### FLOOD RISK MANAGEMENT/CLIMATE CHANGE

RG9.13 Seek opportunities for creative flood defence realignment and making space for water in all development proposals, where defences are being replaced and at riverside open spaces. This is particularly important at Gravesend where the flood defences form a barrier between the town and the riverfront.

## ECONOMY

- RG9.14 Protect and enhance the existing diverse economic uses of the river including the piers providing Tilbury to Gravesend river crossing, the London International Cruise Terminal, river-based transport and the mix of riverside uses including housing, business, and tourism.
- RG9.15 Promote Gravesend and Tilbury Piers as part of the wider strategic ferry service for leisure, recreation and commuting.
- RG9.16 Promote tourism to the area by improving and publicising a series of tourist attractions connected with the cultural heritage, particularly the area's strategic importance in the defence of London through Tilbury Fort, New Tavern Fort, Coalhouse Fort and Shornemead Fort (outside Strategy Area) but also with Historic Gravesend and the Thames and Medway Canal.
- RG9.17 Examine the opportunity to utilise surplus land at Tilbury Power Station for additional cargo handling.

**FIGURE 3.9.1 REACH 9: SUMMARY DATA**  
GRAVESEND REACH

CHARACTERISATION

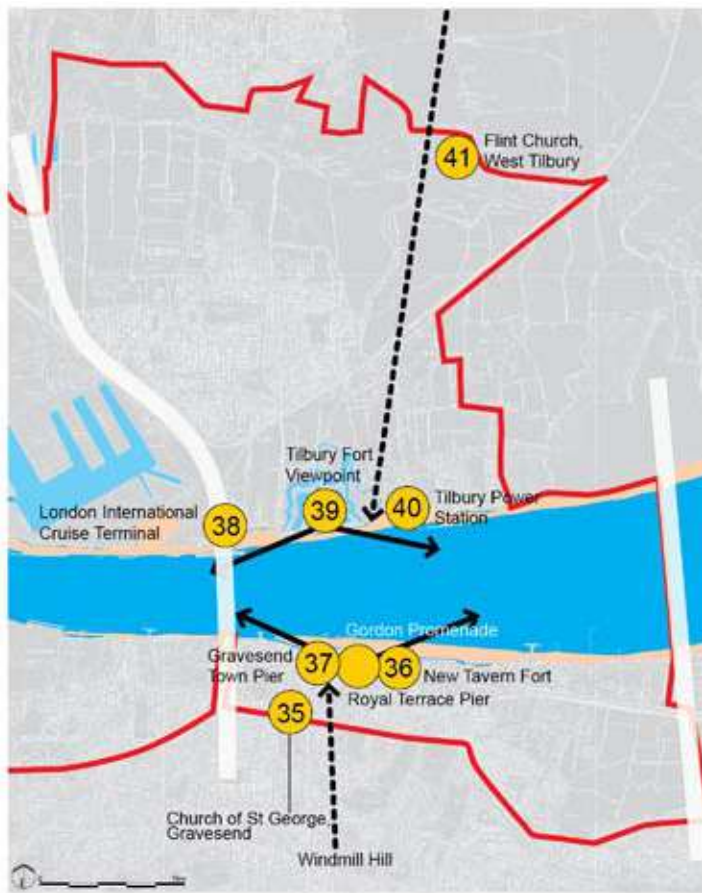


BIODIVERSITY, BUILT HERITAGE AND TOURISM





VIEWS, LANDMARKS AND MAJOR LANDMARKS



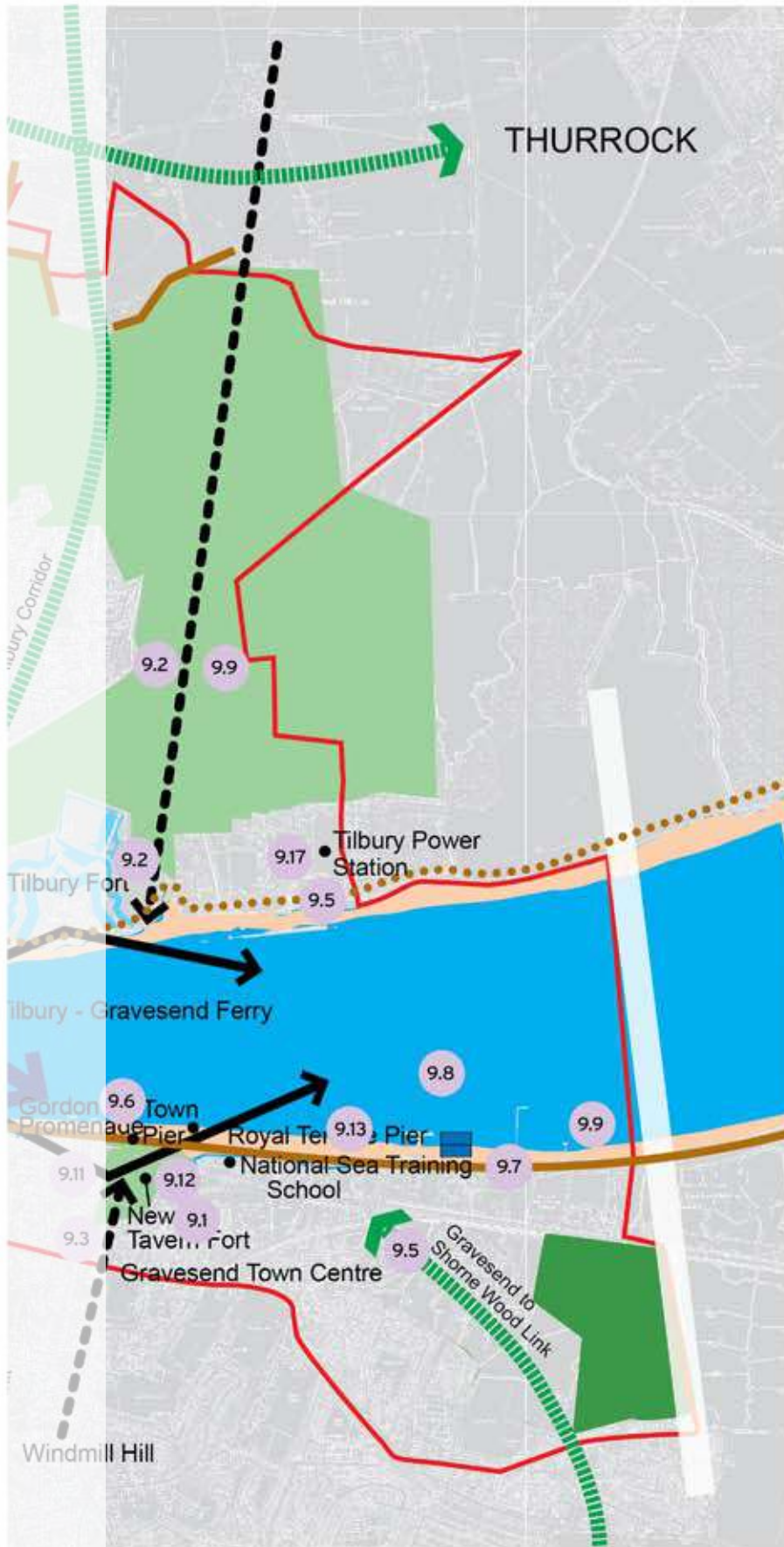
ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE








FIGURE 3.9.2 REACH 9: GUIDANCE PLAN
















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## GENERAL KEY

















-  River Thames and its tributaries
-  Water bodies
-  Thames Strategy East boundary area
-  Borough boundaries
-  Reach boundaries
-  Mud flats

## CHARACTERISATION











-  High rise office development
-  High rise residential and institutions
-  Town centre
-  Industry
-  Commercial/distribution/warehouse
-  Wharf
-  Historic building/monument
-  Low rise residential and institutions
-  Sewage works
-  Recreational greenspace
-  Marsh
-  Agricultural land
-  Semi natural green space
-  Leisure/Entertainment
-  Previously developed land (Derelict/vacant/construction site)
-  Active landfill site

## BIODIVERSITY, BUILT HERITAGE AND TOURISM





















-  Existing park or open space in public/private ownership (Green spaces have been taken from East London Green Grid and Kent Thameside Green Grid, where appropriate. Other open space has not been verified)
-  Proposed park or open space in public/private ownership (Green spaces have been taken from East London Green Grid and Kent Thameside Green Grid, where appropriate. Other open space had not been verified)

-  SSSI
-  County Wildlife Site
-  Site of importance of invertebrates
-  Site of Local Biodiversity Importance
-  Site of Borough Biodiversity Importance (Grade 1)
-  Site of Borough Biodiversity Importance (Grade 2)
-  Site of Metropolitan Biodiversity Importance
-  World Heritage Site
-  Major Historic Area
-  Proposed Development
-  Industry and trade site
-  Traditional settlement site
-  Military and defence site
-  Power and infrastructure site
-  Existing tourist destination site
-  Potential tourist destination site

## VIEWS, MAJOR LANDMARKS AND LANDMARKS

-  Existing major landmark
-  Existing landmark
-  Proposed major landmark
-  London Plan - London Panorama
-  London Plan - River Prospect
-  London Plan - Townscape View
-  Existing Panorama
-  Existing River Prospect
-  Proposed Panorama
-  Proposed River Prospect

## ACCESS, PUBLIC TRANSPORT AND RIVER RELATED INFRASTRUCTURE

-  Existing footpath/cycleway (including all existing footpath/cycleways, existing Thames Path, National Cycle Network developed by Sustrans)
-  Proposed footpath/cycleway (including opportunities to create new sections Thames Path, Thames Path City to Sea, National Cycle Network developed by Sustrans)
-  Existing river crossing
-  Proposed river crossing
-  Potential river crossing
-  Mainline railway station
-  DLR station
-  Proposed DLR station
-  Tube station
-  Channel Tunnel Rail Link (under construction)
-  Safeguarded wharf
-  Yacht club
-  Steps
-  Deep water terminal
-  Commercial terminal
-  Pier
-  Mooring
-  Launching Site
-  Proposed pier
-  Watersports Facilities and Marine Centres

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The Thames estuary is our  
estuary. Working together for the  
sustainable future of our estuary.