APPENDIX A

Medway Council
Serving You

Strood Waterfront

Development Brief

October 2017

Contents

Executive Summary

The council, its partners and other stakeholders have come together to agree a vision for a new waterfront community with a range of homes to meet the needs of Medway's population – all set within new and improved public spaces that take advantage of these sites' superb setting.

Map 1: Waterfront Sites

Strood Waterfront consists of a number of sites, which together make up the waterfront of Strood District Centre. Much of this area is in the control of Medway Council who now wishes to work with development partners to regenerate these sites and transform Strood's waterfront.

The Waterfront has the potential to become a stunning new face for Strood, transforming perceptions of the area and contributing to wider regeneration initiatives for the Town Centre and across the Medway conurbation.

Strood has a vibrant High Steet and locational advantages including high-speed rail services and ease of access to Kent's countryside including the Hoo Peninsula.

Moreover, the potential of Strood's location on the sweep of the River Medway with potential south-facing views across to Rochester's Cathedral and Castle has yet to be realised. Despite the Town Centre's proximity to Rochester, Strood currently sees little direct benefit from Rochester's tourism and evening economy.

This Development Brief is a supplementary planning document (SPD), which will set the council's intentions and guide planning and investment decisions for the Waterfront's regeneration. Medway Council is both the local planning authority and the landowner for the majority of the Waterfront sites.

The Waterfront sites benefit from a series of important assets:

- Proximity to the newly improved Strood station with both convenient local services across Medway and High-Speed services into London St. Pancras;
- Highly sustainable location within easy access of Town Centre facilities;
- South facing aspect looking across the River Medway to the impressive historic sites of Rochester Castle and Cathedral;
- The council has undertaken land assembly to consolidate ownership;
- The council is investing in flood defence to prepare land for development;
- Close to Rochester's historic centre, which is a major tourist attraction;
- Waterfront development will have a positive impact on the vitality and sustainability of Strood's District Centre, helping to diversify Strood's retail and leisure offer and attracting new markets by providing greater choice. Development will improve the public realm and make the river more accessible for all Strood's residents, it will attract investment and raise property values.
- Potential for stronger connection both north and south that could reinforce the sites' assets, linking to the North Kent Marshes, Upnor, Temple Marsh and the Medway Valley.
- A development-friendly policy environment that will encourage and facilitate appropriate investment.

This Development Brief shows how Strood's Waterfront can be transformed with up to 1,600 new homes, including affordable houses and apartments, along with new businesses and public spaces. The Waterfront sites can be better connected to each other, to the Town Centre, Strood station, Medway City Estate and Frindsbury.

The Waterfront sites offer an exceptional opportunity that demands an exemplar of sustainable, waterfront development.

In recognition of the Waterfront's unique assets, Medway Council has existing and emerging policy and guidance to facilitate the aspirations for high quality development of this exceptional well positioned waterfront site with outstanding views. Medway Council's Development Plan policy for the authority is set out in the current 2003 and emerging Medway Local Plans.

This SPD sets out a clear and positive policy context with principles to guide development proposals. It is accepted that viability will be a key consideration of deliverability. The Development Brief aims to facilitate a commercially viable redevelopment which will ensure market confidence and, hence, can be delivered.

The council will expect consistency of proposals with the principles of the SPD but will exercise flexibility where the developer's proposals are responding to changing circumstances beyond their control including but not limited to national policy, the economic climate and varying market conditions. However, deviations from the SPD and the recommended land uses will need robust justification on viability, planning or other grounds.

In preparing this Development Brief, the council has consulted residents, businesses and other stakeholders.

An Illustrative Masterplan has been prepared as part of this Development Brief to show the possible scale and form of development envisaged, with the consideration of transport issues (IBI Group March 2017).

1.0 Introduction

1.1 Medway Council's Local Plan Policy

This Strood Waterfront Development Brief has been prepared as an update and expansion on the council's adopted 2006 Strood Riverside Development Brief SPD. The 2017 Development Brief seeks to achieve the Strood Waterfront vision by reinforcing the planning framework and providing more detailed guidance to inform any future planning application for these sites.

The council's development plan consists of the adopted 2003 Local Plan and various supplementary planning documents. The Local Plan provides the policy basis for the various supplementary planning documents including the 2006 Strood Waterfront Development Brief and the 2009 Strood Town Centre Masterplan, both of which have relevance to this development brief. More specifically policy S1, S2, S3 and H1, H3 relate.

Strood Riverside was identified in the adopted Medway Local Plan (May 2003) as a potential development opportunity designated between two allocated housing sites (Canal Road and Commissioners Road) with the capacity for a total of approximately 200 dwellings. Following the Local Plan adoption it was felt that the Local Plan significantly underestimated the true development potential and strategic importance of the area. This resulted in the preparation of the Strood Riverside Development Brief 2006. In 2009 the Civic Centre and the Strood Riverside Development Brief areas were considered as part of the 2009 Strood Town Centre Masterplan.

National and local planning policy objectives have changed since the adoption of these SPD's and therefore planning policy for the sites requires a further update to take forward development and ensure compliance with these changes. This document (Strood Waterfront Development Brief 2017) will provide an update to the Strood Riverside Development Brief and inclusion of the former Civic Centre site. Inclusion of the former Civic Centre site provides a wider development context and the opportunity to enhance connections from the riverfront to the defined Town Centre to the north.

The council is currently preparing its new Local Plan, which will include site allocations and development management policies when finalised. Once adopted, the new Local Plan will supersede the 2003 Local Plan. It is therefore pertinent that linkage to the emerging Local Plan is also clear, which may include a designation on a proposals map and accompanying development management policies. Guidance contained in this document is therefore subject to change following the adoption of the new Local Plan.

Emerging Local Plan Key Issues

Medway benefits from a stunning landscape setting, rich heritage, high-speed train links (since the 2003 Local Plan), universities, a strategic location in the Thames Gateway, and a diverse offer of services and businesses. However there are areas which need addressing. Medway's economy and skills levels are weaker than competing areas. There are marked inequalities in health, with life expectancy shorter for our residents. Medway is often unfairly associated with negative perceptions. The town centres are not always seen as attractive destinations and vibrant hubs for community activities. Changes in the economy and how people respond to retailing has changed significantly, which requires a different response to the traditional. The scale of growth Medway is experiencing is challenging and will place increasing pressure on infrastructure, services and facilities and open spaces.

A key task for the Local Plan is to manage growth to achieve a more successful, attractive Medway with healthier communities that share in the benefits of development. Development should be seen to deliver benefits – better housing for local people, higher quality jobs, new services and facilities such as schools and parks. Growth can boost the economy, improve our town centres, turn derelict and underused land into attractive modern places to live, work and visit, and achieve the city scale facilities that Medway warrants.

Growth does not mean losing the character of the area. Medway's history, countryside and the river provide the context for future development. The natural and built environment defines Medway, and will be at the core of the Local Plan. The development strategy must show how we can provide land for housing, jobs, infrastructure and services, whilst protecting important environmental and heritage assets, retaining and strengthening the green infrastructure links for people and wildlife.

There have been much change since the 2003 Local Plan, which has relevance for Strood, i.e. introduction of HS1, demolition of the Civic Centre, changes in retail patterns, changes in the economic climate, increased housing need, etc. The Local Plan will support the regeneration of Strood to capitalise on its stunning location overlooking Rochester Castle and Cathedral, its accessibility to high speed rail and motorway links and the availability of redevelopment sites. Redevelopment of the sites presents an opportunity to address many economic and social issues whilst making the most of the waterfront.

1.1.1 Background to Regeneration

Strood Riverside was first identified as a strategic development project in 1995 and a set of development guidelines were approved by the then Rochester upon Medway Council in 1996 to guide future proposals. At this time, public funding was invested in the adjacent housing development off Canal Road using social housing grant, a scheme that has since been delivered (Kingswear Gardens Estate).

The council also began to acquire land and made a Compulsory Purchase Order (CPO) on the grounds of regeneration. The former scrap yards and car breakers on the riverside were acquired, a new river wall constructed and the Watermill Gardens open space laid out. The open space was intended to serve not just the first phase of housing, but also the site to the north when it was developed.

A previous Development Brief, which was adopted as a Supplementary Planning Document (SPD) in September 2006, was prepared to reinforce masterplan proposals for the site and to elaborate upon key planning policy guidance including the Local Plan and the Medway Waterfront Renaissance Strategy.

The 2006 Development Brief has formed the basis for this Development Brief, acting as a starting point for the analysis required to update the Development Brief. We have retained previous analysis where appropriate, however new analysis has been undertaken for the sites and where more recent data is available, baseline information has been updated.

1.2 *Strategic Context and Planning Guidance*

1.2.1 Corporate Guidance

The 2003 Local Plan and the emerging Local Plan fits into the context of a series of strategies, documents and plans that map out ambitions for Medway to achieve its potential as a successful vibrant modern city, that celebrates its heritage and close links to the river and countryside.

Council Plan
The Council Plan 2016-2021 sets out three key priorities for the area:

- A place to be proud of
- Maximising regeneration and economic growth
- Supporting Medway's people to realise their potential

The Council Plan promotes Medway as a great place to work, live, learn and visit, supported by strategies for culture, tourism and regeneration. The council priorities provide a strong basis for the Local Plan in planning positively for Medway's needs, boosting the economy, improving access, delivering new homes, improving residents' health and wellbeing, and caring for the environment.

Medway Regeneration Strategy
Medway has a long standing commitment to regeneration, and a number of strategies, development briefs and masterplans have informed the transformation of the waterfront and urban areas over recent decades. As the regeneration programme continues, strategies and plans need to be refreshed. A new Regeneration Strategy is being drafted for publication in 2017, and this shares the emerging evidence base and strategic objectives. It will promote and support the realisation of the ambitions set for Medway's successful growth by 2035.

1.2.2 Planning Policy

Whilst not a comprehensive list of relevant policies, the following highlights those policies in the Local Plan that will have the most influence on the use and form of development at Strood Waterfront. The emerging Local Plan policies will also need to be taken into account as it gains weight through the stages of preparation and at adoption, at which point it will replace the 2003 Local Plan.

Policy S1 (Development Strategy)
Policy S2 (Strategic Principles)
Policy S3 (River Medway)
Policy H1 (New Residential Development)
Policy H3 (Detail on the council's affordable housing requirements)
Policy H10 (Provision of a range and mix of house types and sizes)
Policy BNE1 (General principles for built development)
Policy BNE2 (Amenity Protection)
Policy BNE3 (Noise Standards)
Policy BNE4 (Energy Efficiency)
Policy BNE6 (Landscape Design)
Policy BNE8 (Security and Personal Safety)
Policy BNE22 (Environmental Enhancement)
Policy BNE 22 (Environmental Enhancement)
Policy BNE 23 (Contaminated Land)
Policy BNE 24 (Air Quality)
Policy L3 (Existing Open Spaces)
Policy L4 (Provision of Open Space in New Residential Developments)
Policy CF 13 (Flood Risk)
Policy L11 (Riverside Path and Cycleway)
Policy T3 (Provision of safe and convenient footpaths)
Policy CF2 (Provision of new community facilities)

MEDWAY COUNCIL EMERGING LOCAL PLAN
Medway Council is preparing a refreshed Local Plan, which has been through two stages of consultation, i.e. 'Issues & Options' and 'Development Options' (Regulation 18), which took place in Jan/Feb 2016 and Jan/Feb 2017 respectively. The council will consult on the next version of the Local Plan in early 2018, with a view to adopt in 2019.

MEDWAY REGENERATION FRAMEWORK 2006-2016 (2006) The Framework provides the strategic context for regeneration in Medway to 2016.

Supplementary Planning Documents

A BUILDING HEIGHT POLICY FOR MEDWAY PART 1 AND 2 (2006)
In 2006 the council adopted a Building Height Policy for Medway as a supplementary planning document. Part 1 is a general guide policy on higher buildings laying down a range of detailed criteria on design quality. Part 2 is a policy on locations, identifying where higher buildings might/might not be appropriate. Part 2 also illustrates key strategic views that need to be protected.

The key elements of the guidance that relate to Strood Waterfront are that new higher buildings should be at appropriate locations, of first-class design quality and enhance the qualities of their location and setting. Higher buildings are advocated as a means of achieving an intensity of development that encourages a mix of uses and facilities. The policy also requires that buildings that stand out as landmarks have active uses at ground floor level.

MEDWAY COUNCIL INTERIM RESIDENTIAL PARKING STANDARDS (2010)
In 2010, the council adopted an interim document for Residential Parking Standards. This document stipulates the minimum number of car and cycle parking spaces required per dwelling, dependent on size. The guidance recognises that reductions to the standard can be considered for developments within an urban area, provided that good links to sustainable transport are available and day to day facilities are within an easy walking distance.

MEDWAY HOUSING STANDARDS
Medway Council has adopted National Housing Standards for internal residential space standards (Medway Housing Design Standards 2011).

The document provides developers, landowners and their advisors with guidance on the main principles and minimum layout and space standards that are expected in the design of new housing and in the conversion of existing properties. The Standards apply to proposals that include new dwellings of any tenure.

They do not apply to specialist housing such as student accommodation, sheltered housing for the elderly, and housing for wheelchair users.

The standards provide baseline and good practice guidance for a series of spaces and standards including those relating to Outdoor Amenity Space and Parking Provision; Shared Access and Circulation; Cycle Storage, Refuse and Recycling; Management; Dwelling Space Standards; Internal Floor Areas; Visual Privacy and Private Open Space; and Environmental Comfort.

1.2.3 Wider Guidance

MEDWAY LOCAL TRANSPORT PLAN 2011-2026 MOVING FORWARD TOGETHER (2011)
This document replaces the Medway Local Transport Plan Framework and aims to address wider social, economic and environmental challenges for the area and is closely aligned with Medway's Sustainable Communities Strategy.

KENT AND MEDWAY GROWTH AND INFRASTRUCTURE FRAMEWORK (2015)
The Kent and Medway Growth and Infrastructure Framework provides a collaborative approach to growth and infrastructure planning for the region and has been developed with Medway Council and Kent's twelve district authorities.

MEDWAY WATERFRONT RENAISSANCE STRATEGY 2004
This place-based strategy provides a 20-year framework for the regeneration of 14 key sites along the River Medway corridor. The Waterfront sites fall within the Strood Riverside and Strood Centre quarters, which, have the objective of "building waterfront communities around a distinctive centre".

Other Relevant Guidance:
Joint Health and Wellbeing Strategy 2012 – 17
Medway Preliminary Flood Risk Assessment 2011
Medway Strategic Flood Risk Assessment 2006 (updated 2011)
Medway Local Flood Risk Management Strategy 2015
Medway Surface Water Management Plan 2016
Medway SuDs Masterplanning Document 2013
Medway Air Quality Planning Guidance 2016
Dementia Friendly Communities the Built Environment Guidance 2006

1.3 The Status and Purpose of this Document

The 2017 Strood Waterfront Development Brief SPD will provide a planning framework to bridge the gap between the current Local Plan and the emerging Local Plan, recognising that time has moved on and so too have national and local objectives. It is intended that this will be adopted by the council as an SPD and thereby provide a vision and guidance for the consideration of development proposals along the Strood Waterfront area as delineated in Map 1. It will be a material consideration in the determination of any future planning application for the site; the updated SPD will therefore be used by Medway Council for development management purposes and will also be a key document when the council markets the development site opportunity.

There are four specific objectives in preparing a Development Brief for Strood Waterfront:

- The first is the need to amplify and update the 2003 Local Plan policy applicable to the site. There have been a number of significant changes in national and strategic planning guidance since the site was originally allocated for development and current expectations for the redevelopment of Strood Waterfront exceed those envisaged within the Local Plan.

- The second is to facilitate and shape the redevelopment of Strood Waterfront to ensure its long-term physical, economic, social and environmental regeneration.

- The third purpose of this Development Brief, the need to establish a coherent set of land use and design parameters to guide the future regeneration of the site. These guidelines seek to provide a deliverable strategy that will encourage private sector investment.

- Delivery of the vision and ambitions for the regeneration of Strood as part of a wider urban developmet strategy.

The development principles outlined in the council's 'Vision' for Strood Waterfront have formed the basis of an Illustrative Masterplan to test and confirm the council's aspirations for these sites can be translated into deliverable development. The Illustrative Masterplan is described in Section 6.

This Development Brief has been developed in consultation with key stakeholders and therefore represents a robust and endorsed vision for Strood Waterfront. It provides the parameters as to the scale and mix of future development and the standards for future design quality.

1.4 Format of the Development Brief

For convenience, the SPD for Strood Waterfront consists of two separate volumes:

1. The Supplementary Planning Document (this document);

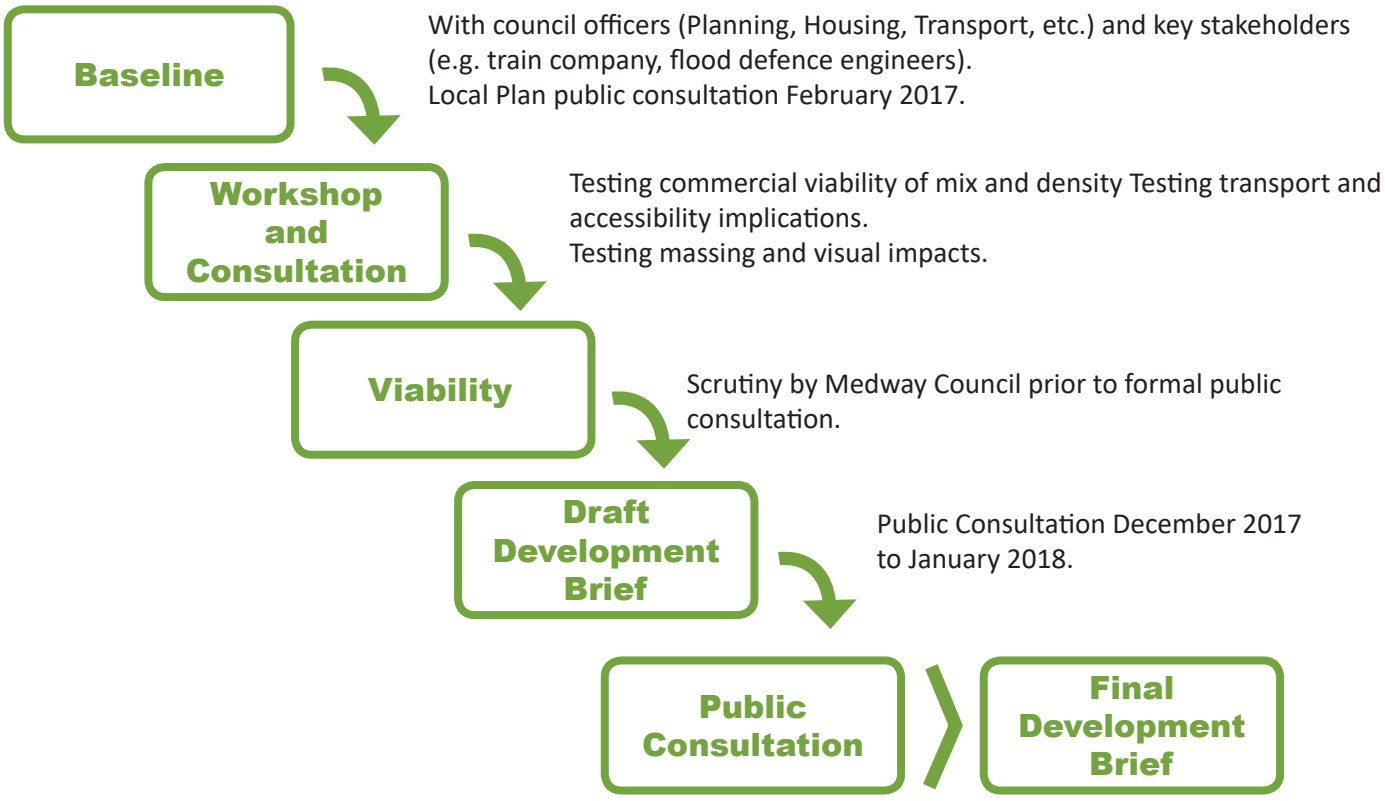
2. Appendices consisting of technical reports informing the preparation of the SPD:
- Flood Defence Measures
- Transport Statement.

Each of these documents is available for inspection from Medway Council upon request.

This document seeks to establish a clear and positive policy context in which the redevelopment objectives for the area can be seen as achievable and desirable.

1.5 Process for Preparing this Document

This Development Brief has been prepared through a rigorous process of drafting and testing as outlined in the diagram below:



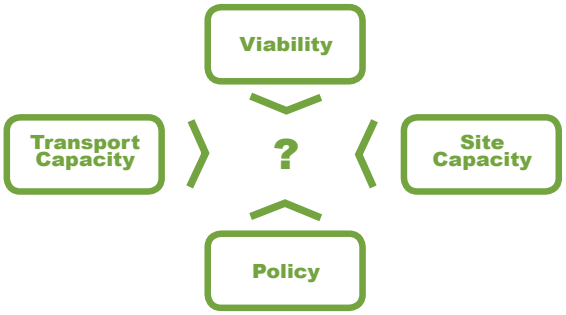
Option Testing

To confirm the deliverability of Strood Waterfront, the emerging, non-detailed options for development quantum and mix have been tested against:

- Council policy
- Accessibility and impacts on transport systems including highways
- Commercial viability

An Illustrative Masterplan was developed to test project site capacity including:

- Mix of uses and housing types including houses and apartments;
- Impacts of height and massing on key views;
- Provision of open spaces; and
- Car parking provision.



The conclusions from this testing have determined that a viable development meeting the council's policies and aspirations for the sites is deliverable.

1.6 Issues Raised as Part of Medway Local Plan Public Consultation

In association with consultation on the emerging Local Plan in February 2017, Medway Council consulted with residents, businesses and other stakeholders to identify local issues to inform the emerging planning and design principles for Strood Waterfront. Respondents emphasised the following issues:

- Improve access to Strood station and sense of arrival.
- Existing road capacity and impact of new homes.
- Improvements to the road network in front of Morrisons.
- Integration of existing Canal Road bus route.
- Majority of Strood residents said the best view is of the white cliff and All Saints Church, Frindsbury Hill.
- Maintaining existing residents' view, especially Wingrove Road.
- Boundary treatment to Cranmere Court and Wingrove Road.
- Residents are upportive of river walk/cycle route connecting to Frindsbury Hill.
- Residents are supportive of development of the former Civic Centre site, recognising that it is currently underutilised.
- Residents from wider Strood also supported Strood Waterfront.
- Residents are in support of regenerating Kingswear Garden, third-party land on Canal Road and Strood Pier.

In addition, local stakeholders that have been consulted regarding flood risk mitigation measures include:

- Southeastern Rail
- Rochester Bridge Trust
- Environment Agency

Strood Station Approach

All Saint's Church viewed from Commissioners' Road.

Local people will be provided further opportunities to comment as more detailed proposals are brought forward.

Any planning application for the Waterfront sites must be prepared with public consultation consistent with Medway's Statement of Community Involvement.

2.0 The Vision and Opportunity

The vision for Strood Waterfront is for the creation of a residential-led development with appropriate supporting commercial uses including leisure and food/drink opportunities to enliven street frontages and public spaces.

Strood Waterfront represents a significant brownfield redevelopment opportunity, the delivery of which has the potential to assist the wider regeneration of the town. Fundamental to this being achieved is addressing the flood risk issues in this area.

Once protected, these sites will be transformed into an area of prime, high quality residential land with potential for premium housing, offering fantastic views and access to the River Medway, Rochester Castle and Rochester Cathedral. Workspace at Watermill Wharf is the first step at creating this high quality environment. The council is investing in flood defence improvements for the former Civic Centre and Riverside sites.

The council has prepared flood risk mitigation measures for the first two phases, the details of which form a planning application in 2017 (appended as Appendix 2). It is the council's intention that agreed measures are implemented to prepare the sites for development.

Development at Strood Waterfront is a vital and complementary component to other regeneration projects elsewhere within Medway, through early delivery, it is envisaged that the sites will set benchmarks for good quality urban design and architecture.

New development will provide housing and other benefits for local people. The Waterfront development will have a positive impact on the vitality and sustainability of Strood's District Centre, helping to diversify Strood's retail and leisure offer and attracting new markets by providing greater choice. New and improved linking routes will better integrate development with the Town Centre and help consolidate the High Street shopping south of Station Road. Development will contribute to attracting investment and uplifting property values.

Our vision is based on not just transforming the Waterfront sites but also the relationship of Strood and its Town Centre to the wider Medway conurbation, better linking Strood's High Street, the River and the residential areas east and west of the Town Centre including the Frindsbury Conservation Area. Waterfront development will improve the public realm and make the river more accessible for all Strood's residents and open views to the River and to landmarks including the Castle, Cathedral and All Saints Church on its iconic hilltop setting.

The inclusion of the former Civic Centre site within the Strood Waterfront development area provides a further development context. The former Civic Centre site has the opportunity to enhance connections from the riverfront to the defined Town Centre to the north. The former Civic Centre site provides the opportunity to create lively daytime uses including cafes.

Moat Homes and Orbit Homes aspire to bring forward the redevelopment of the Kingswear Gardens estate.

The Vision for Strood Waterfront is a part of redefining Strood within the wider Medway conurbation - its role and character, so as to play a stronger role as one of Medway's best residential locations, benefitting from excellent local shopping, transport and facilities, and a first class setting by the river.

2.1 The Opportunity

The Sites and their Status, Location, Area and Access

1. Former Civic Centre – Site Area: 3 Ha. This brownfield site is situated west of the A2 High Street and is currently used as a surface car park. Medway Council has identified the site as a residential-led, mixed-use regeneration site to meet the high demand for housing. The site contains the following uses, which will be retained:

- Pumping station
- CCTV facility
- Ambulance Service crew accommodation building

2. Land in third-party ownership including properties on Canal Road, the High Street and land adjacent to Strood railway station is also included within this Development Brief to ensure that Strood Waterfront contributes to the wider regeneration of Strood District Centre. The station is undergoing improvements to facilities including a new station building. The station site and other third-party land also offer opportunities for public realm improvements and, in conjunction with Medway Council, further development opportunities. Medway Council encourages appropriate regeneration opportunities along the High Street including creating additional routes through to the former Civic Centre site. Medway Council will hold further consultation with stakeholders as proposals are brought forward.

Map 1: Waterfront Sites

Kingswear Gardens Estate

Watermill Gardens with Frindsbury visible in distance

Riverside Tavern and Strood Riverside

Former Civic Centre Site

3. Watermill Wharf – Site Area: 0.2 Ha. Watermill Wharf is owned by Medway Council and has been developed to deliver 15 office and 18 storage units aimed at local small and medium enterprises (SMEs) and start-up businesses. The development is a satellite of the Innovation Centre Medway near Junction 3 of the M2.

4. Kingswear Gardens – Site Area: 1.5 Ha. Kingswear Gardens is situated adjacent to Strood Riverside and Strood railway station and is currently owned by Moat Homes and Orbit Homes, who are working with Medway to regenerate the site. The site is currently in use as the Kingswear Gardens housing estate.

5. Watermill Gardens – Site Area: 0.9 Ha. Public open space including sport and play facilities. The council own the freehold of part of the site and a long lease on the areas outside of the council's ownership.

6. Strood Riverside – Site Area: 5.9 Ha. Partially industrial in use. The site is owned by the council following a series of compulsory purchases. The Riverside site wraps around the Riverside Tavern public house.

7. The Riverside Tavern is in private ownership and not included in this Development Brief. This Development Brief assumes that the Tavern will continue as a public house.

8. An additional area of land in the council's ownership/long lease hold lies south of Jane's Creek. This land is currently considered to be unsuitable for development due to access constraints and flood risk. However, open space uses may be appropriate if more direct pedestrian access can be provided across Jane's Creek.

2.2 Delivering Change

Workspace at Watermill Wharf is complete and represents the start of the wider regeneration programme envisaged for Strood Waterside.

Medway Council will work with neighbouring landowners including Moat, Orbit, Network Rail / South Eastern and the Rochester Bridge Trust to deliver regeneration in a phased programme of development.

Moat Homes and Orbit Homes ambition is to bring forward redevelopment of Kingswear Gardens, therefore this land has been included within the masterplan. South Eastern Trains with Network Rail are undertaking the modernisation of facilities at Strood station including a new ticket hall.

Third party land along the southern side of the High Street adjacent to the former Civic Centre site offers potential for regeneration improvements in the longer term including additional or improved connections between the former Civic Centre site and the High Street.

To optimise development sites and deliver comprehensive regeneration, the council wishes to see development of land on Canal Road, which is currently in third-party ownership.

Medway Council will encourage proposals for temporary or 'meanwhile' uses as part of the phased delivery of the Waterfront sites. Such uses might include sport or recreational activity. Parts of the site might be used for garden nursery space to grow the trees and other plants that will be required for the later development phases.

Together, these sites represent a connected sweep of Strood Waterfront, totalling over 11 Ha of development potential and which can provide better links both along the riverside and to Strood; its town centre and its railway station.

2.3 Related Proposals

The following projects are ongoing at time of adoption:

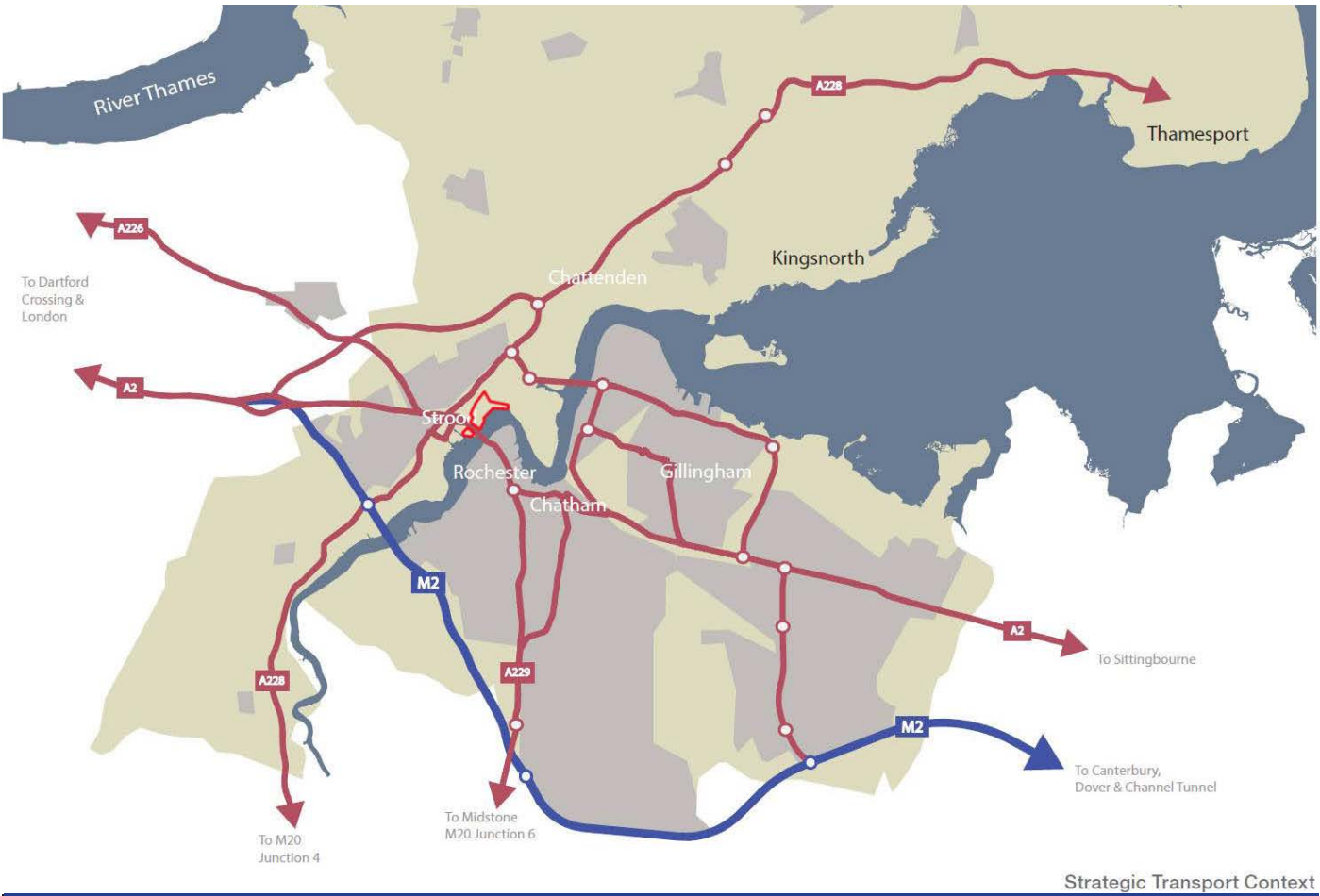
- Strood railway station – New station building including forecourt access and landscaping.
- Commissioner's Road – planning permission for new homes and access from Commissioner's Road.
- Strood Waterfront Flood Defence Works – Planning application for construction of flood defences including realignment of Canal Road and Station Approach.

3.0 Strood Waterfront Today

3.1 Strategic Importance

The redevelopment of Strood Waterfront is considered to be of both local and strategic importance for the following reasons:

- Strood Waterfront is located within the Thames Gateway, an area identified by the Government as an important growth area in which the focus is upon the speed of delivery of development projects whilst ensuring sustainable and well-integrated communities. In doing so it also provides a unique opportunity to promote local ownership for site development, given its location along the waterfront, alongside an established residential area, in close proximity to a rail station, bus links and Strood District Centre.
- The Government has invested significant capital resources in Strood to bring forward development and to increase the supply of housing. Investment includes a £9m Local Growth Fund (LGF) scheme in the Strood District Centre, HCA funding for the Riverside site and will include £3.5m LGF for the former Civic Centre site for flood protection works.
- The site is directly adjacent to the River Medway and located within a 5-10 minute walking distance of Strood District Centre and 10-15 minute walking distance from Rochester.



Map 3 : Strategic Location Plan

- The Riverside site is adjacent to a mainline railway station with frequent (every 30 minutes off-peak London service) and high-speed services to London (32 minutes) and East Kent (72 minutes).

- The sites have excellent road links via the M2 to North Kent including Ebbsfleet International and the Bluewater Shopping Centre, London and the M25/Dartford river crossing, and via the M20 to Ashford and Folkestone. On 12 April 2017 the Secretary of State for Transport announced the preferred route for a new Lower Thames Crossing under the Thames, east of Gravesend and Tilbury, which will improve access to Essex and relieve congestion at the Dartford crossing.

- The site is close to areas with significant history and character and has panoramic views across the river to historic Rochester, including the castle and cathedral, and down the river towards Chatham.

- Strood Waterfront's visibility and position in relation to Rochester and Chatham Dockyard makes its development influential as part of the wider economy, character and future of the Medway area.

- Opportunity to deliver a highly sustainable development, and establish modern quality character to Strood.

3.2 Land Form and Topography

Strood Waterfront is located on the north bank of the River Medway and lies within the historic floodplain between ridges of higher ground to the north and east, and the historic settlement of Rochester to the south. The Waterfront sites are effectively flat and require improvements to flood defences to facilitate development. Former chalk quarries around Frindsbury have left a backdrop of dramatic chalk cliffs. The Waterfront sites lie at a bend in the River Medway and the confluence with Jane's Creek, a smaller tributary.

3.3 History

The history of Strood Waterfront is best understood in the context of the history of the wider conurbation. Rochester has an ancient history associated both with the Romans and the nineteenth century writer, Charles Dickens, as well as a number of notable medieval and historic buildings. Nearby Chatham Dockyard dates back to the sixteenth century and since its closure in 1984 has been the focus of considerable regeneration work.

Strood's Waterfront has a long history of industrial usage associated with the docks and wharfage afforded by the Thames and Medway Canal and the River Medway and has also included mills, cement works, agricultural livestock markets and meat processing.

Since the arrival of the railway, the Riverside site was predominantly used for sidings and materials storage.

Map 4: 1909 Map of Strood

3.4 Land Use and Development Form

Strood railway station lies adjacent to the northern boundary of the Riverside site. Network Rail and Southeastern, the station operating company, are currently implementing an upgrade of station facilities including a new station building and an associated retail concession (as of 2017).

Strood Town Centre lies within a 5-10 minute walk of the site and there is a clear relationship between the activities in the Town Centre and those at Strood waterfront, especially with regard to the potential offered around the railway station.

Strood Town Centre is defined as an Urban District Centre. Although it provides everyday basic needs, the general quality of the town centre environment is currently poor. The town is dominated by a traffic system which has evolved to deal with issues around the river crossing rather than encouraging the centre to become a place to enjoy.

Medway Council has commissioned a Retail & Commercial Leisure Needs Assessment for the authority, which includes a health check and guidance for Strood District Centre.

Further south of the town centre is a retail park consisting of large warehouse outlets. A large foodstore opened in 2005 south of the retail park.

The former Civic Centre site previously accommodated administrative services for the council. The Civic Centre services have now been relocated and the buildings will be demolished and the site cleared. A CCTV control centre, a pumping station and an Ambulance Service crew facility will remain on site.

Adjoining the site to the east is the 'Medway City Estate'. Fronting onto the water, the estate provides a significant concentration of employment and industrial uses. Opportunities to enhance movement patterns for those working in the industrial estate towards Strood station are to be encouraged.

Rochester City Centre, which has developed niche retailing around arts and tourist-related uses, is within a 5 minute walk of the southern edge of the Waterfront and a 10 minute walk of the centre of the Waterfront. Rochester City Centre has a vibrant evening economy including pubs, bars and restaurants.

In close proximity to the northern boundary of the site lies Cranmere Court, a more recent residential cul-de-sac development of predominantly two-storey detached dwellings.

Kingswear Gardens, which lies to the south west of the Riverside site and Strood station, is a residential development currently comprising 77 homes. Adjacent to this development, along Canal Road are several older, disused two-storey properties which formerly accommodated a mix of commercial and residential uses. Collectively there is a poor visual quality to the built environment at this end of Canal Road.

Station Road, immediately to the north of the Riverside site and the railway, consists mainly of Victorian terrace blocks of smaller two-storey houses. More recent development includes apartment buildings of up to five storeys. Further north, this pattern of Victorian terraces merges into a looser arrangement of semi-detached, detached and smaller terraced houses dating from the 1920's and 1930's.

3.5 Views and Vistas

Medway Council's Tall Buildings Strategy identifies the importance of the landscape 'bowl' that forms Strood's establishes the principle of allowing taller buildings within that bowl. Strood Waterfront represents an exceptional opportunity to enhance the waterfront prospect and benefit from the accessibility afforded by excellent public transport infrastructure. For these reasons, the Waterfront sites are considered an exception to the blanket height restriction set out in the Tall Budings Strategy, subject to the following considerations.

Views in and out of the sites vary considerably within the wider context. Development should be managed to ensure that it responds positively to its setting, and the historic environment. The sites' visual boundaries should be considered at two scales.

1. Longer views out from the sites.

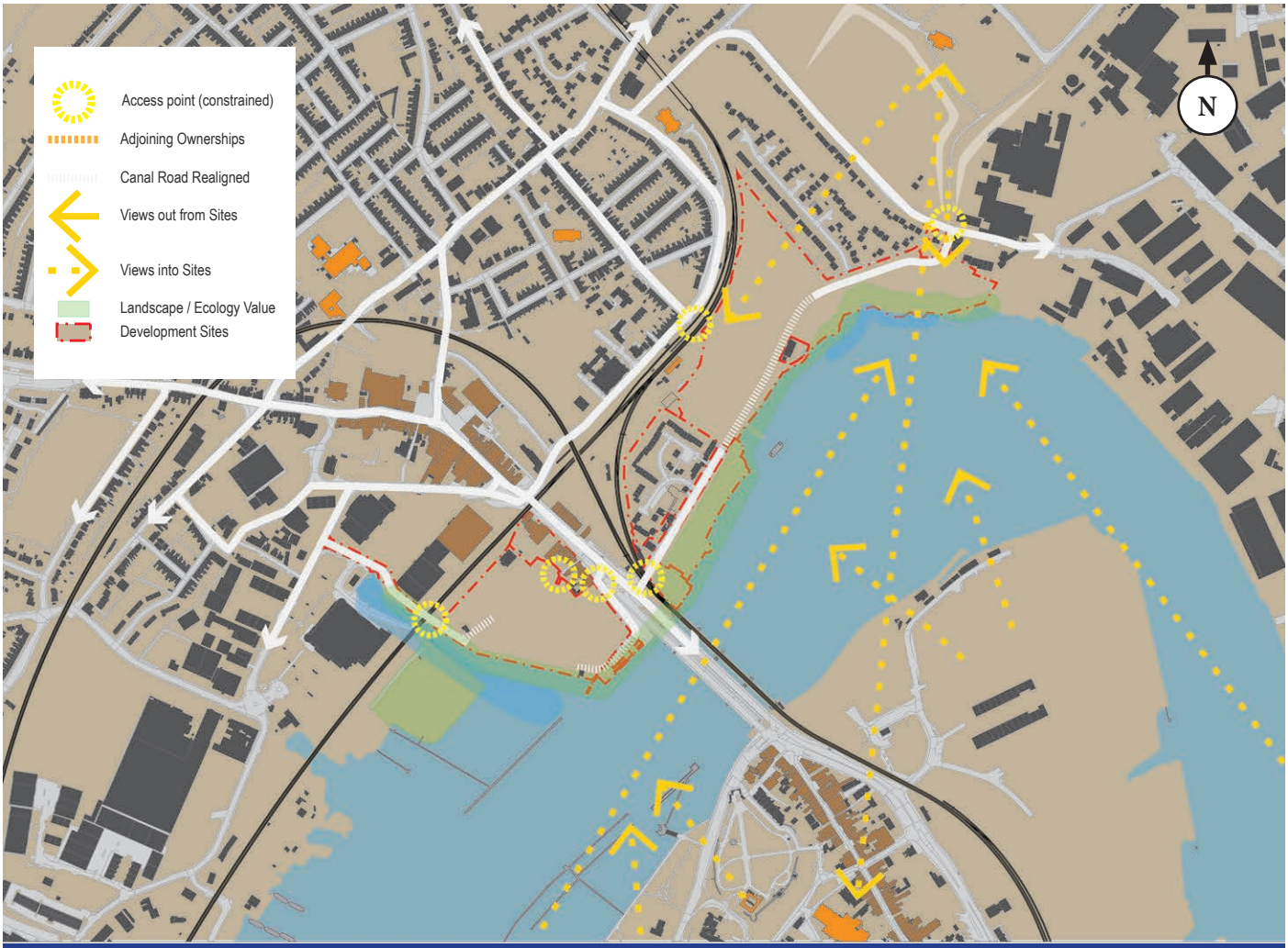
The sites sit within a natural bowl thus affording excellent views to Rochester Bridge and up and down the Medway. They are enclosed locally at a low level by the surrounding railway line, Medway Bridge, the future development of Rochester Riverside, the Frindsbury Ridge, and the white chalk cliffs of the former quarry to the north east. The sites benefit from an open river frontage, sitting on a raised terrace at a higher level than existing water levels in the River Medway.

Views out are primarily of:

- The River, including potential views across the Riverside site from Strood railway station, the entrance of which currently has no visual connection to the river,
- Significant views of Rochester Castle and Cathedral.
- Rochester Bridge.
- Views from within the Waterfront sites looking north-east to Frindsbury Church and north-west to the spire of St Mary's Church. Views from All Saints Church and Church Green, Frindsbury looking across the Riverside site to Rochester Castle and Cathedral.
- Views to Kent Downs to the north and west.
- The site's location on a bend in the River Medway provides dramatic views up and downstream including longer views to Chatham, Fort Pitt Hill/ Jacksons Field, Fort Amherst and the high ground of 'the lines'.
- Long views into the site from Chatham and the Rochester Marina and the adjacent river bank and river activity.

2. Longer views into the site from sensitive viewpoints.

- Views from the historic built environment of Rochester, including the Castle and Cathedral.
- From Rochester Bridge.
- From the Rochester Riverside regeneration area



Map 9: Constraints Plan

including Rochester station and multi-storey car park.
- From Frindsbury Ridge which overlooks the whole site.
- From Broomhill Park looking south.
- From The 'Great Lines' / Naval Memorial.
- Potentially from the M2 Medway Viaduct.
- Potentially from Jackson's Field / A229 City Way.
- Potentially from higher ground to the north of the A289 Hasted Road.

In the longer term the aspect of Strood Riverside will also be influenced by its visual relationship with development envisaged for Rochester Riverside, located directly opposite the site.

In addressing these opportunities and constraints a comprehensive visual impact assessment is required to accompany all development proposals coming forward for Strood Waterfront.

3.9 Movement

3.9.1 Accessibility

Strategic Connections
The site's strategic location is an important asset with excellent transport links. It is well placed for access to the M2; the M20 with access to Ebbsfleet International, Ashford International, and the M25 London Orbital.

The new Lower Thames Crossing under the Thames, east of Gravesend and Tilbury will improve access to Essex and relieve congestion at the Dartford crossing. Strood railway station serves High-Speed services to London St. Pancras International and the Medway Valley and North Kent. Strood station is near the junction of these lines plus the North Kent Coast Mainline from Chatham to Victoria, which is served from nearby Rochester station.

Local Connections
At the local level, Strood Town Centre sits at the hub of three major roads:

- The A228 giving access to Grain to the north and the M2 motorway, and West Malling and Kings Hill to the south;
- The A2 giving access to London and the M25 to the west and Rochester to the east; and
- The A226 to Gravesend.

The River Medway provides part of an important leisure and commercial waterway stretching from Tonbridge to the south to the Thames Estuary to the north.

Sustrans National Cycle Route 1 between Inverness in Scotland to Dover, runs north-south through the site on Wingrove Drive and Canal Road. The route provides a strategic leisure cycle route designed for use by families. Much of the route through the site is currently on the carriageway. From the Canal Road junction with the A2 High Street, National Cycle Route 1 heads east bound along the Rochester Bridge towards Rochester. From Wingrove Drive to the north the cycle route heads uphill to Parsonage Lane and Upnor Road.

3.9.2 Local Connectivity

The sites have a network of walking and cycling routes which link to recreational opportunities and encourage active travel. Improvement of these routes will encourage healthy lifestyles by connecting to good quality green and blue spaces. Medway Council has initiated a recreational Medway cycle route passing through the Waterfront area, offering excellent opportunity to explore links both north and south.

The main highway access into the site is via the Canal Road junction with the A2. The junction is fairly complex, allowing access to the A2 from Canal Road and from the former Civic Centre, all within a restricted amount of carriageway space necessitating a complex arrangement of central reservation vehicle crossings, as well as provision for U-turns to be undertaken by east bound traffic.

Access to the north onto Commissioner's Road is currently via a priority junction to the east of the HGV width restriction gate adjacent to the Wingrove Drive junction. The width restriction was put in place in order to prevent heavy vehicle movements to Medway City Estate from taking place via Commissioner's Road. Access to Canal Road from Commissioner's Road is restricted to buses, taxis and bicycles only.

At present Strood railway station is located within the site with the main access to the ticket hall from Canal Road.

The railway lines serve to isolate the site, both visually and physically, from surrounding areas of residential development. There is no immediate vehicular access to the station from Station Road on the west side of the rail line.

Pedestrian and cyclist access from Station Road can be gained via the narrow subway to the north side of the railway station. The subway is lit but there are no CCTV cameras in the subway, only on the east side approach. There is a fairly steep ramp from the subway leading to the station ticket hall.

In general, signage to Strood station is poor.
Customer car parking is provided adjacent to the ticket hall building for a total of approximately 100 cars.

Bus services run along Station Road and Canal Road to serve the railway station. A taxi rank is located outside the Station.

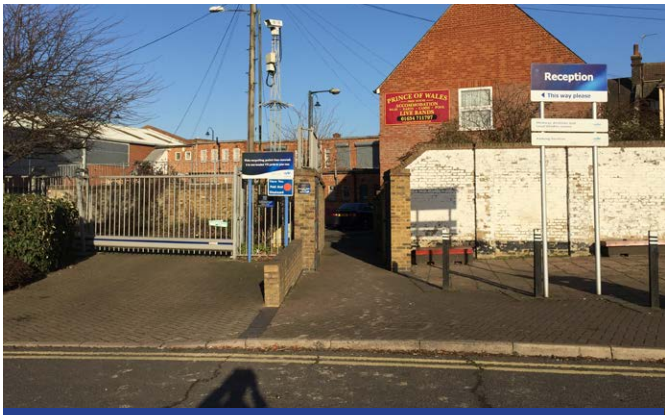
Commissioner's Road junction with Canal Road

Canal Road

Pedestrian underpass to Strood Station from Station Road

The Saxon Shore Way footpath / National Cycle Route 1 run adjacent to much of the site's riverside frontage linking Wingrove Drive and the Canal Road junction with the A2 High Street.

The former Civic Centre site is accessed from the east via the esplanade, which also serves business units in the undercroft of Rochester Bridge and provides maintenance access to the existing pumping station. The former Civic Centre site is also accessible from Knight Road although vehicular access is constrained by the spans of the existing rail bridge.



Pedestrian Link from Civic Centre site to High Street

Pedestrian access is also available from the former Civic Centre site to the High Street.

Pedestrian links from the former Civic Centre to Canal Road across the High Street / Rochester Bridge are complicated by the carriageway layout and traffic signal phasing. A potential pedestrian link under Rochester Bridge is currently closed.

3.9.3 Highways Issues

Medway Council has commissioned a Medway Strategic Transport Model and assessment work to deepen understanding of the highways network including Strood Waterfront.

The Waterfront should form a part of the council's transport strategy that supports lower use of cars and greater use of public transport and active travel modes (walking and cycling).

The appended Transport and Movement Appraisal addresses transport capacity issues with a view to informing the overall design process and identifying potential impact mitigations.

The key insights gained during the appraisal include:

- Accesses for the scoped development potential at Strood Waterfront currently have light traffic and are under capacity;
- The surrounding road network is congested during peak hours;
- The proposed development will need to rely heavily on sustainable modes of transport. Current policies and best practice encourage and support this;
- Medway residents living in close proximity to a train station have lower levels of car ownership and tend to make fewer trips by car or van;
- In combination with progressive parking standards, lower parking provision rates are justified. Emerging trends and technologies can be used to further lower parking provision;
- Strood Town Centre is often congested, especially at peak times, and therefore measures will need to be identified to mitigate the impacts of development. The council has commissioned a Strategic Transport Assessment to support the new Local Plan. This will provide the evidence base for strategic infrastructure needs and mitigation requirements for each site allocation, including the Strood Waterfront sites.

3.10 Open Space

Strood Waterfront includes existing public open spaces: Watermill Gardens provides play and recreational uses and a smaller, landscaped space lies next to Rochester Bridge at the Esplanade.

Moreover, the river represents a substantial open space, which although it provides limited leisure activity, does open up long views and provides both a contrast to Medway's urban areas and a wildlife habitat.

Strood Pier is in the ownership of Port of Sheerness Ltd and has been inactive in recent years. Medway Council encourage the future use of the pier for leisure activities. Strood is currently underprovided with open spaces.

Former Civic Centre site access from Knight Road

Strood Riverside Shoreline

3.11 Heritage

The survival of the historic built environment within the proposed development area is low due to the intensive mid-late twentieth century development of the site for commercial and light industrial usage. As a consequence, little built evidence of significant nineteenth and early-twentieth century activity survives.

There are no statutory constraints relating to the preservation or protection of any historic buildings or structures within the site, nor does the site lie within a Conservation Area.

However, there are a number of built heritage features that are of potential local significance, which might be positively integrated into the masterplan or preserved in some other way. The few surviving fragments of these elements are described below:

- Rochester Bridge is a Grade II Listed structure. There has been a river crossing in this location since medieval times. The current bridge dates back to the 1850s with subsequent alterations and additions. The bridge is owned by the Rochester Bridge Trust, a registered charity created by Act of Parliament.

- The outer lock gates of the Thames and Medway Canal. These are in poor condition and are fenced off from the public. A section of shoreline separates the gates from the present walkway/ cycle route to the north.

- Strood Pier. The pier was originally intended for the unloading of cargo and is now used for the mooring of fishing vessels and other light craft. It is owned by Medway Ports.

- The Railway Tavern Public House. A two-storied Victorian public house with typical features.

- Nineteen Second World War pimples. These are concrete anti-vehicle obstacles located in-situ on the riverside walkway north of Strood Pier and ex- situ east of the approach road to the station.

- A former Russian submarine is currently anchored offshore.

A number of historic assets are located nearby, including Rochester Castle and Rochester Cathedral to the south, and the Frindsbury and Manor Farm Conservation Area, including All Saints Church, to the north east. These assets are all visible from the Development Brief sites.

Although there are no Scheduled Ancient Monuments on the site, a recent archaeological assessment for Strood Riverside indicates that there is potential for evidence of archaeological importance, including:

- Possible remains of Roman and prehistoric date in the alluvial and peat layers located approximately 2m and further below ground level.

- The remains of nineteenth century industrial buildings on the site particularly those relating to the railway and the canal.

- Flood defences of all periods may survive along the current river frontage and these may be impacted upon by new flood prevention measures.

3.12 Environment

A range of environmental issues are relevant including green infrastructure, landscape and ecology. In 2017, environmental assessments were carried out in support of flood defence works. Environmental issues that have been identified are listed below and need to be adressed as part of any planning application:

- Suitable habitat for reptile species in north-eastern presence of the Strood Riverside site, and two buildings with potential to support roosting bats.

- Medway Estuary Marine Conservation Zone (MCZ) and inter-tidal mudflat habitat adjacent to site.

- Potential archaeological remains present on both sites, including possible remains of a medieval bridge abutment on the former Civic Centre site.

- Contamination hotspots including hydrocarbons and some asbestos containing material within shallow Made Ground deposits on the Riverside site.

- Social impacts to residents during construction that could affect local people and properties, public access and amenity space, and river users.

3.12.1 Air Quality

Strood Riverside lies within the Central Medway Air Quality Management Area (AQMA), which has been declared for exceedances of the nitrogen dioxide annual mean air quality objective. Air quality will therefore be a material consideration for the development, and the impacts upon the AQMA and future occupiers of the development will require careful consideration. In response to the NPPF, Medway has developed and introduced new Air Quality Planning Guidance (2016) which provides guidance on the assessment and mitigation of air quality impacts associated with developments. The main focus of the guidance is road traffic emissions, but other sources of air pollution, such as industrial emissions, combined heat and power (CHP) plant and biomass burning may also require consideration.

The guidance has been developed to:

- Introduce a method for assessing the air quality impacts of a development which includes the quantification of impacts, calculation of damage costs and the identification of mitigation measures to be implemented to negate the impact of development on air quality.
- Tackle cumulative impacts.
- Provide clarity and consistency of the process for developers, the local planning authority (LPA) and local communities.

A detailed assessment of air quality will be required with the planning application for the Strood Waterfront Development. This shall consider impacts on future occupiers and the Central Medway AQMA, associated with all relevant sources, including transport, other combustion sources and emissions associated with construction of the development itself. The air quality assessment shall also include an air quality emissions mitigation assessment, which will determine the scale of mitigation to be provided to offset the associated increase in emissions created by the development, using the approach provided in the Medway Air Quality Planning Guidance (2016).

3.12.2 Water

Flood risk

The Environment Agency Flood Map for Planning shows that the Waterfront sites are (currently) classified as Flood Zone 3, which are areas which have a high probability of flooding. Specifically, this is land which has a 1 in 200 or greater annual probability of river flooding. This flood risk will change following ongoing flood risk mitigation measures, which aim to change the risk classification to Flood Zone 1 ('low risk' where the risk of flooding has no more than a 1 in 1,000 annual probability). All development proposals will therefore need to agree and respond to flood risk issues.

Medway Council has prepared flood defence proposals for the former Civic Centre and Riverside sites. These proposals, which include new sheet-piled river walls, raised land levels and associated realignments of highways and utilities infrastructure, are the subject of a planning application submitted in May 2017. Canal Road and the Station Approach Road will be realigned to optimise the requirement for temporary roadways and optimise developable site areas to the south of Canal Road and the Station Approach Road. Details of proposals are included in Appendix 2.

The Waterfront sites are located within and adjacent to areas which are at high risk of surface water flooding. This flood risk will not be mitigated by the currently proposed flood defence measures. Instead appropriately designed sustainable drainage systems (SuDs) informed by relevant policy and national and local guidance will be encouraged/sought. All development proposals will therefore need to agree and respond to flood risk issues via liaison with the lead local flood authority.

Water Quality

In consultation with the Environment Agency, the council will expect that development accords with the objectives of the Water Framework Directive (WFD) to ensure that there is no deterioration in water quality. Strood Riverside is located in a Source Protection Zone (level 2), which indicates a potential risk from development to sensitive ground-waters and to surface waters. Accordance with the WFD provides a legal framework against which to protect surface and ground-waters using a common management approach and following common objectives, principles and measures. The core objectives are to ensure that any development on the site prevents deterioration to

the aquatic ecosystem and to restore polluted surface waters and ground-waters to 'good' status in terms of ecological and chemical parameters.

3.12.3 Biodiversity

The inter-tidal area is an important habitat under the Kent Biodiversity Action Plan and any encroachment on this will need special justification or mitigation. Developers should consult with the Environment Agency on this matter.

The mudflats located adjacent to the site are priority habitats within the Kent Biodiversity Action Plan. Careful consideration should be given to the effect of any development on the mudflats and any changes to the retaining wall, forming the boundary of the site, should not alter the natural accumulation of mud and silt within the area. In accordance with Environment Agency guidelines, there should be no net loss in the existing inter-tidal habitat including both mudflats and saltmarshes.

Medway Council has prepared the Medway Wildlife Countryside and Open Space Strategy, which provides guidance on open space requirements for the Waterside sites.

While the habitats identified within the site itself are considered to be common and of low conservation value, it will be necessary prior to site clearance for specialist surveys to be undertaken and for necessary works to be implemented to protect existing bats, reptiles and nesting birds that may be present on the site.

Further details on the biodiversity of the site are provided in the Phase 1 Habitat Survey prepared as part of the flood defence planning application for the Strood Riverside and former Civic Centre sites.

3.12.4 Noise

NPPF policies are supplemented by additional advice contained in national Planning Practice Guidance (PPG). Revised and updated advice on how planning can help to manage potential noise impacts was published in 2014. The long term vision and aims of the Government's policy on noise is contained in the Noise Policy Statement for England (NPSE).
It is considered that the principal noise source to the northern and eastern parts of the site is generated by industrial activities, the majority of which will cease as part of the redevelopment of the area. Road traffic noise and trains also contribute to noise levels. The adjacent railway and busy surrounding roads dominate noise levels in the southern and western parts of the site, although industrial noise from the adjacent industrial estate also influences background noise levels.

The development itself is likely to generate noise, for example noise created during construction activities, noise from additional traffic movements on the local road network during operation of the development, and any commercial noise sources introduced as part of the development. These additional noise impacts will need to be considered. A noise impact assessment will be required with any planning application.

3.12.5 Ground Conditions

Past land uses at Strood Waterfront have included a range of industrial activities, some of which have caused contamination. Site investigations have been undertaken in support of flood defence measures and localised contamination has been identified and will be managed, as part of the flood defence works. Risk assessments will need to be carried out by any developer, in line with the Department for Environment, Food and Rural Affairs and the Environment Agency's technical guidance. Any area outside of the flood defence works, being developed, would need to be investigated and dealt with accordingly.

3.12.6 Utilities

A 24" medium pressure steel gas main traverses the site. Appropriate access to the easement will need to be maintained and this may have to be achieved by relocating the gas main.

In addition there is a large diameter surface water pumping mains crossing the site. An easement of 4 metres width on either side of the mains is required.

The developer will need to consult with the relevant utility bodies in formulating their proposals (including Southern Water and Southern Gas Networks) to ensure that there is adequate service to support proposed development, the routing of all utilities pipes is addressed and to provide the appropriate protection or diversion of apparatus.

4.0 Planning and Design Principles

4.1 Urban Quality

In the background of the current development plan and the emerging Local Plan, the following will provide further guidance on how the council wishes to pursue the delivery of Strood Waterfront. The 2003 Local Plan and national policy and guidance will provide the policy link until the emerging Local Plan is adopted. The guidance below is therefore subject to change.

Development at Strood Waterfront must be designed to realise the vision for these sites as a new, sustainable and healthy waterfront community and a place that contributes to the image and vitality of Strood. To realise this vision, development will need to:

- Integrate the new community with Strood's existing community and High Street.
- Former Civic Centre, Riverside and Kingswear Gardens sites should create a series of distinctive character areas, each with its own sense of place and identity. The residential areas, the setting around the railway station and the riverside walkway should each be clearly legible and contribute to the overall sense of place.
- Be accessible and well-connected, especially for journeys by sustainable travel modes that promote healthy activity and social interaction.
- Provide enhanced public access to the river including waterside pedestrian and cycle routes.
- Provide variety and interest, with a mix of appropriate uses, building types, landscape and architectural design. Distinctive character areas should be created that respond to each site's varying context along the River Medway.
- Provide a welcoming, attractive and safe public realm that encourages activity for all ages and is well overlooked by surrounding development so as to deter crime and anti-social behaviour.
- Create a visually coherent, dramatic and memorable waterfront prospect when viewed from Rochester and that engages with the River yet respects the scale of Rochester's historic landmarks and the wider topography of river and surrounding hills.

Map 6: Opportunities Plan

- Establish and protect visual connections at a range of scales from the local and across the Medway (e.g. between All Saints Church and Rochester Cathedral).

- Be sustainable with regard to social cohesion, economic regeneration, use and reuse of resources and materials including land and water, protection and promotion of biodiversity, and minimising energy usage and carbon emissions.

- Support the health and wellbeing of residents and visitors through well designed homes that enjoy good light and air, have access to green spaces and the ability to grow food and generally support healthy lifestyles including play and exercise and active travel. Particular care should be given to appropriate design to meet the needs of those with dementia. This will include design and location of signage and the inclusion of wayfinding and legibility cues in architectural and landscape design.

The proposal should set the standard for future development within the area and beyond. The design principles that are to be respected in redeveloping the site are set out below.

4.2 Land Use

Land uses should reflect the Waterfront's unique assets and location including the Medway setting, dramatic views and proximity to public transport and a District Centre. Land uses should contribute to delivering the waterfront vision through the transformation of these sites into an attractive, vibrant and highly sustainable waterfront community.

From consultation with Medway Council officers, the following land uses are considered appropriate for each site:

- A variety of new homes including apartments and houses, to suit a variety of tenures and household sizes.
- A minimum of 3 Ha on site provision of open spaces including upgraded Watermill Gardens, along with circa 10 ha provision for sport, play and other activities e.g. allotment gardening, which may be provided off-site.
- Station-related retail and/or A3 food/beverage but excluding takeaway food.
- Local shops to complement existing retail along the High Street, south of Station Road.
- Potential for a hotel with associated restaurant and bar on the former Civic Centre site.
- Appropriate supporting commercial uses on the former Civic Centre site.
- Retained Council uses on the former Civic Centre site only (CCTV control centre).
- Could include provision for a new care home to meet local needs will also be supported.

Land uses are subject to sequential testing in respect of flood risk in accordance with the Strategic Flood Risk Assessment (SFRA) 2006. Currently the sites exist within an area considered to be at a high risk of flooding but the planned flood mitigation measures will reduce the risk and therefore in (flood risk) policy terms the land uses listed above would be acceptable.

4.2.1 Development Quantum

Based on the densities below and applied within the known site constraints described in Section 3, a mix of apartments and houses along with other uses is proposed. This results in the following maximum site capacities identified as appropriate for each site.

These site capacities have been assessed against known constraints by preparing an Illustrative Masterplan described in Section 6.

4.3 Housing Mix and Tenure

Medway Council's Strategic Housing Market Assessment (SHMA) 2015 provides information on housing mix needs. Local Plan Policy H10 states that on sites larger than 1 Ha in size, the provision of a range and mix of housing types and sizes will be sought. The policy continues by stating that this "will include smaller units of accommodation suited to the needs of one and two person households, the elderly or persons with disabilities and housing that can be adapted for such use in the future."

The supporting text to Policy H10 sets out the council's stance with regard to the provision of smaller dwellings noting that:

"The provision of smaller dwellings, including flats, can help to meet the continuing demand from small households that will form a significant proportion of

Site	Residential (Use Classes (C2 and 3 only)	Use Classes A1, 2, 3 and 4 only)	Employment (Use Classes C1 Hotel, B1 Business only)	Public Open Space
Former Civic Centre	✓	✓ Only as continuation of existing ground floor retail parade along west side of High Street. Restaurant/bar on ground floor (associated with Hotel)	✓ Includes retention of existing CCTV and Ambulance Service crew facilities. Hotel	✓
Kingswear Gardens	✓	×	×	✓
Watermill Wharf	×	×	B1 Business space only	✓
Watermill Gardens	×	× (A small café or beverage kiosk could be included as ancillary to open space usage)	×	✓
Strood Riverside	✓	×	×	✓

housing demand during the plan period. It will also provide cheaper accommodation and, because it will often be provided at higher densities within the urban areas, will help to reduce the demand for the development of greenfield sites."

The Waterfront sites offer potential for extra care accommodation as part of mix of housing to accommodate a broader mix of household needs.

4.4 Affordable Housing

Medway Council's Local Plan Policy H3 affordable housing requirements 2003 states that for development "within the urban area, developments which include 25 or more dwellings or where the site area is 1 hectare or more." Medway normally expects that 25% of new homes will be provided as affordable housing, of which provision should include 60% affordable to rent and 40% shared ownership. Subject to viability, assessed on a site-by-site basis. Refer to Medway Council's Developer Contributions Guide.

4.5 Open Space, Habitat and Landscape

The existing Watermill Gardens are designated as an open space, the loss of which is protected by Local Plan Policy L3.

The Local Plan's policies for leisure seek to fulfil the following objectives:

- To protect existing open spaces, buildings and facilities which serve a leisure purpose;
- To provide land for open space for formal and

Site	Site Area	Residential Capacity - up to (Dwellings)	Other uses
Former Civic Centre	3 Ha	565	Hotel, retail and bar/ restaurants
Kingswear Gardens	1.5 Ha	445	
Watermill Wharf	0.2 Ha	0	Employment
Watermill Gardens	0.9 Ha	0	Public Open Space
Strood Riverside	5.9 Ha	600	
TOTAL		1,610	

informal recreation to meet identified needs;
- To improve the quality and accessibility of existing leisure facilities and open spaces; and
- To ensure that within new developments, provision is made for accessible, quality open space and play provision;

New residential development will also be expected to provide new areas of open space in accordance with Policy L4 (Provision of Open Space in New Residential Developments). Where there is a proven deficiency, residential development proposals shall make open space provision, within an agreed timescale, in accordance with the following:

- Residential development likely to be occupied by 100 people or more shall include well located local open space for formal recreation on-site.

- Strood Waterfront does fall within an area of open space deficiency and thus the council will seek to apply the provisions of Policy L4 in respect of any development proposal.

- A mix of on-site and off-site provision will be sought. On-site provision should include a range of spaces including children's play spaces, informal amenity spaces and a riverside walkway. In the context of Strood Waterfront, the existing open space facilities at Watermill Gardens were provided with the expectation that additional housing would be provided on the site. For this reason, it is considered appropriate to include this existing open space facility within any open space calculation.

It is not considered reasonable to expect formal sports provision to be provided on-site and any such contributions are to be met by means of a financial contribution.

Site planting and design should also, where practicable, contribute towards a wider green open space network which should incorporate elements of habitat creation including, for example, native tree planning.
Strood Waterfront is to provide a range of attractive, publicly and accessible open spaces, including an enhanced riverside walkway, linked by a high quality public realm. Watermill Gardens is to be upgraded including new planting, lighting and play equipment. A minimum of 3 Ha of new and improved public spaces are to be provided including:

- An arrival space linking Strood station to the river
- A focal space within the former Civic Centre site with views across the Medway to Rochester Castle.
- Waterfront spaces including improvements to the land owned by the Rochester Bridge Trust, south of the former Civic Centre site.
- A waterside space alongside Jane's Creek with buildings set-back a minimum of 10m from the river wall.
- Local and incidental pocket parks and play areas.
- Communal gardening or allotment area within the Riverside site.
- Street trees are to be included to new routes and along the realigned Canal Road. Other, incidental planting and seating areas are to be included throughout.

In addition and to encourage a sustainable development in the town centre location where there

is a deficiency of greenspace, it would be preferable for the land adjacent to Jane's Creek to be made accessible by a pedestrian and cycle bridge, utilising this area for greenspace and improving public use. However, the council will consider alternative solutions, including offsite provision, subject to consultation at an early stage with regard to its quality and function.

Strood Waterfront is to be a safe, secure and welcoming environment for all. Buildings facing onto public areas are to provide passive surveillance to deter crime and anti-social behaviour and blank elevations are to be avoided. Public spaces are to be activated by inclusion of active frontages including entrances facing directly onto the street rather than onto parking areas.

Medway Council will encourage the inclusion of water features and public art within public spaces.

Design of public and communal open spaces should support and promote healthy lifestyles for all ages thus improving the physical and mental wellbeing of their residents, workers and visitors and encouraging social integration thereby reducing social isolation:

- Open spaces should be designed to encourage activity and tackle social isolation by providing a meeting place and supporting social interaction.
- Outdoor gyms in communal areas.
- Multipurpose garden space/s to encourage social integration, and promote healthy lifestyles. These should include sensory gardens, gardening areas for residents, communal food growing areas.
- Sheltered and extra care housing should include informal spaces such as a sensory garden, along with food growing spaces for residents' activity.
- Dementia-friendly design.

Guidance on existing open spaces and future requirements are set out in the following:

- Medway Wildlife, Countryside and Open Space Strategy 2008-16.
- Planning and Design for Outdoor Sport and Play.
- Open Space PPG17 Study 2012.
- Guidance for Outdoor Sport and Play: Beyond the Six Acre Standard 2015.

Jane's Creek looking towards Rochester Castle

4.6 The River Front, Environment and Management

Policy S3 (River Medway) states that proposals which are consistent with nature conservation, landscape, and hydrological policies and have no adverse impact upon coastal archaeology will be permitted for development by the River Medway for:

- Existing public access along the riverbank is intermitant and of poor quality. There is potential for enhanced access through the construction of riverside walks and cycleways;
- Use as a transportation corridor, both for freight and passengers;
- Appropriate commercial, tourism, leisure, and recreational development of a high quality design along the river's edge.

Policy BNE 22 (Environmental Enhancement) states that development leading to the protection and improvement of the appearance and environment of existing and proposed areas of development, transport corridors, open spaces and areas adjacent to the River Medway will be permitted.

Policy BNE 23 (Contaminated Land) comments that development on land known or likely to be contaminated or affected by adjacent or related contamination must be accompanied by the findings of a detailed site examination to identify contaminants and the risks that these might present to human health and the wider environment.

4.7 Movement and Connectivity

Policy T3 seeks to encourage the development of safe and convenient footpaths to link houses, schools, town centres, work places, recreation areas and public transport routes.

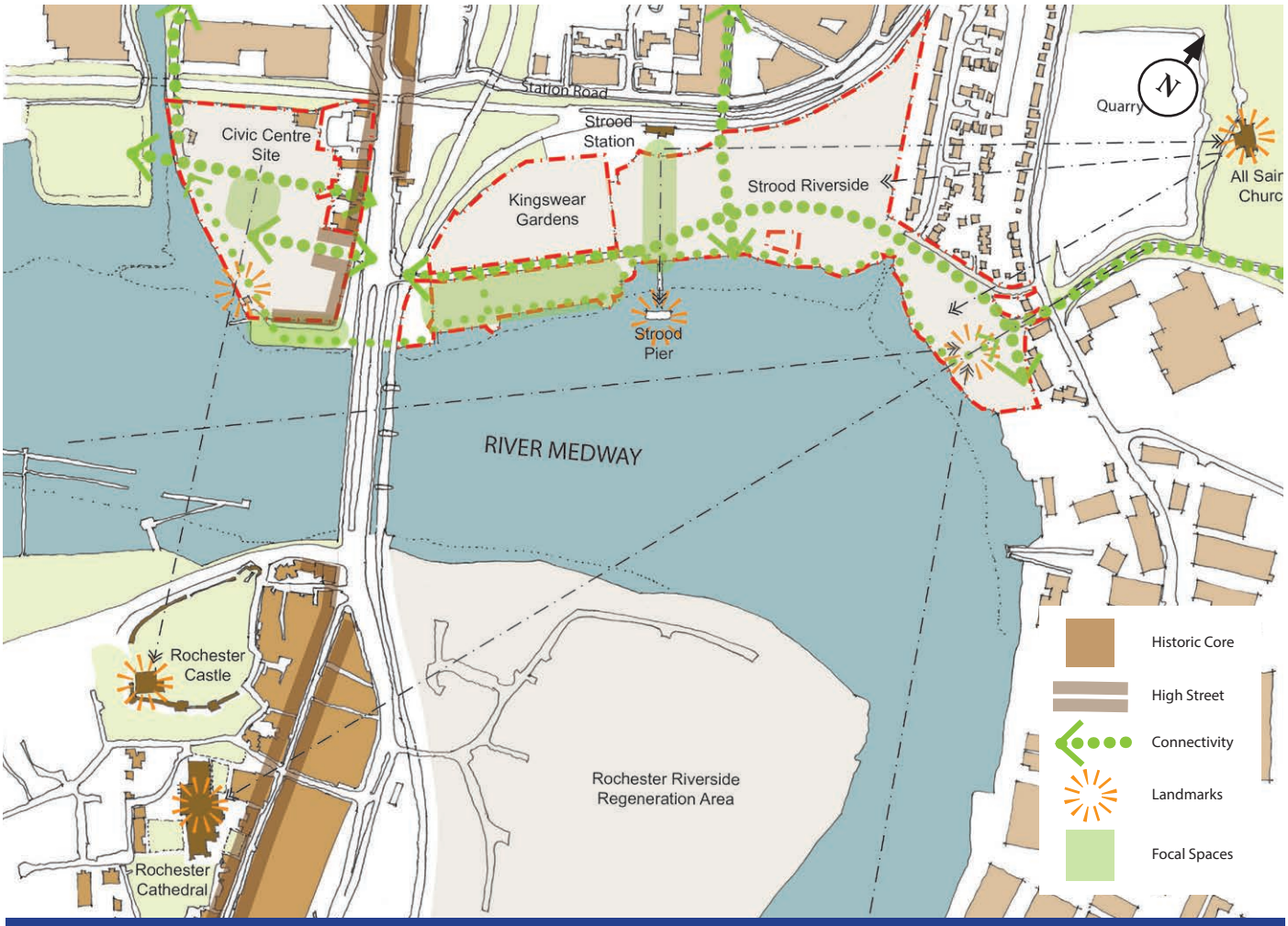
In accordance with Policy L11 (Riverside Path and Cycleway), development on sites fronting the river will not be permitted unless the proposals include a riverside walkway and cycleway. The walkway or cycleway should provide continuity for users by connecting to, or facilitating future connections to, walkways on adjoining sites. The riverside footpath at Strood Waterfront should be designed and routed to minimise the impact on ecology, nature conservation and landscape, and take into account the integrity and operational requirements of flood defences.

Access for maintenance vehicles will be required to the full extent of new flood defence walls.
Potential to provide pedestrian connectivity across Jane's Creek and if possible, on to Temple Marsh should be included.

The combination of committed infrastructure improvements, justified lower parking standards, and modal shift to sustainable modes of transports could potentially allow the road network to accommodate additional traffic as a result of the proposed development Strood Waterfront is to be a pedestrian-priority environment that promotes active mobility (walking and cycling) both within and across the Waterfront sites.

The Waterfront will have a network of pathways and cycle routes connecting to amenities and new and existing open spaces throughout the development, to provide easy, attractive active travel options. This requires:

- Active travel is to take priority through new and improved walking and cycling routes including routes to rail and bus services and Strood town centre.



Map 7: Strood Waterfront Design Principles

- All streets should be stimulating, attractive and safe environments for all users and therefore are to be designed to provide interest, animation and passive surveillance with front doors and active frontages addressing public spaces.

- Canal Road should become an attractive, tree-lined main street for the area with numerous views to and across the river. Through-routing of motor vehicles will be constrained and design speed should reflect the road's function for local access. To accommodate through bus routes, vehicle speeds will be managed by carriageway width and surfacing in preference to speed ramps. Canal Road will provide a through connection for cyclists, linking to the wider Medway cycle route.

- Development should be serviced by a network of interconnected streets providing a choice of routes. Routes are to be legible with clear lines of sight to entry and exit points. Cul-de-sacs will only be acceptable where their termination is visible from their entrance junction.

Routes should provide vistas to local landmarks and landscape features including:

- Rochester Castle
- Rochester Cathedral
- All Saints Church, Frindsbury
- Strood Pier and the Medway
- Jane's Creek

- Trees should provide shade, shelter and interrupt the visual dominance of parked cars. Public seating with arms should be provided on all routes at intervals of not more than 60m so that the elderly and people with disabilities can rest.

- Walking and cycling routes should be provided along the riverside linking the former Civic Centre, Watermill Gardens and Riverside sites, and connecting with existing walking routes where possible e.g. to the Frindsbury Conservation Area. Maintenance and pedestrian access should be provided alongside Jane's Creek where buildings should be set back a minimum of 10m from the river wall.

- Improved pedestrian crossing of Canal Road from Kingswear Gardens to Watermill Gardens and from Strood station to Strood Pier.

- Existing walking routes between Canal Road and Strood railway station and the station and Station Road should be upgraded with hard and soft landscape and lighting and to provide easier interchange between bus and rail.

- Walking routes from the site of the former Civic Centre to High Street and Knight Road should be upgraded with hard and soft landscape and lighting. New routes to the High Street should be opened up if possible.

- Existing vehicular access to the Rochester Bridge undercroft and former Civic Centre pumping station must be maintained.

4.7.1 Car Parking and Servicing

Appendix 6 of Medway Council's Local Plan applies an average residents' car parking standard of 1.5 spaces per dwelling, irrespective of tenure or size. However, a lower ratio can be justified in an urban area with good links to sustainable transport and where day-to-day facilities are within easy walking distance. Planning applications will need to make the case for lower car parking provision based on the sites' uniquely sustainable locations including excellent accessibility to public transport and local amenities.

Car parking may be provided as a mix of on plot, on-site (undercroft) and include some on-street parking spaces.

On-street charging points should be provided for electric cars and e-bikes. Reserved parking spaces should be included for car clubs.

Secure bicycle storage and washing facilities should be provided for all homes including apartment buildings.

4.8 Community Infrastructure

Local Plan Policy CF2 encourages the provision of new community facilities. In light of this guidance, there will be a requirement at Strood Waterfront to provide new or upgraded accommodation for the community including healthcare. Facilities must be of an appropriate scale, have minimal impact on

neighbouring amenity, and be accessible by a variety of means of transport. Community infrastructure requirements are considered in Medway Council's Medway Infrastructure Position Statement (January 2017)

Some existing primary schools in the locality have the capacity to expand to accommodate the additional children that will reside at Strood Waterfront, subject to Section 106 contributions. Similarly, additional secondary school places will be required to meet demand from the development and S106 contributions will aid the expansion of local schools.

4.9 Flood Risk Mitigation

Flood risk mitigation measures should be prepared in accordance with the following:

- Policy CF 13: Tidal Flood Risk Areas.
- Policy CF12: Water Supply
- Medway Strategic Flood Risk Assessment 2006 (updated 2011)
- Medway Local Flood Risk Management Strategy 2015
- Medway Surface Water Management Plan 2016
- Medway SUDs Master-planning Document

4.10 Air Quality Mitigation

The Medway Air Quality Planning Guidance (2016) provides a method for assessing the local emissions associated with a development, and to determine the appropriate level of mitigation required to reduce the potential effect on health and the environment. The damage costs approach used in the guidance assigns a monetary value to the associated traffic emissions generated a development, and determines the scale of mitigation to be.

A fully detailed and costed air quality mitigation scheme is likely to be required for the Strood Waterfront Development. The Medway Air Quality Planning Guidance provides examples of mitigation measures which should be considered, and requires the implementation of standard mitigation measures for certain types of development, including electric vehicle charging points, low NOx gas fired boilers, and construction dust mitigation.

Some examples in the guidance include:

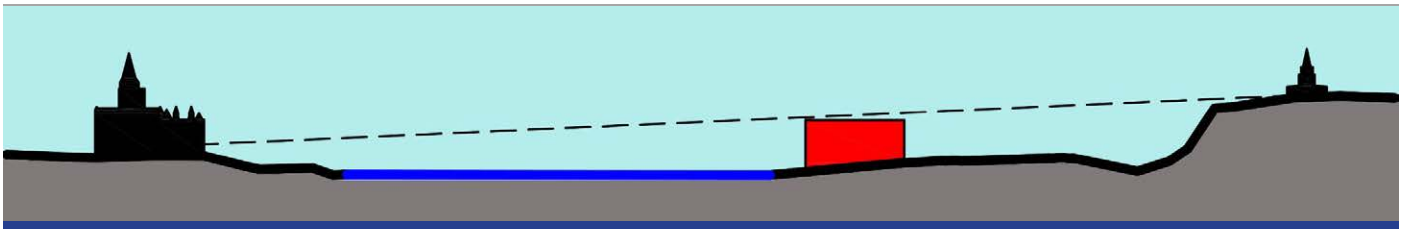
- Travel plan including mechanisms for discouraging high emission vehicle use and encouraging the uptake of low emission fuels and technologies;
- A Welcome Pack for new residents containing information and incentives to encourage the use of sustainable transport modes;
- Eco-driver training;
- Electric vehicle charging infrastructure;
- Car club provision;
- Designations of parking spaces for low emission vehicles;
- Improved cycle paths to link cycle network,
- Secure cycle storage;
- Green infrastructure;
- Ultra-low emission service vehicles;
- Bike/e-bike hire schemes

The examples provided in the guidance are non-exhaustive, and the council welcomes innovative mitigation measures to reduce emissions, reduce the need travel and result in a modal shift to more sustainable means of travel.

4.11 Archaeology

Further evaluation and assessment are necessary to determine the significance of any archaeological potential. A full programme for this assessment should be agreed with Kent County Council, in consultation with Medway Council and undertaken prior to agreeing the development layout. Where it is found that important archaeological and historical remains exist, it is considered that the impacts could be minimised through:

- Archaeological monitoring of any further geo-technical work taking place on the site to establish the extent of archaeological remains.
- Careful foundation design.
- Careful siting of development. The areas close to the Canal and the 'Old Terminal' are where the more important post-medieval remains are likely to be. The proposed development layout should take these areas into account and perhaps incorporate them into areas of lower potential impact such as green spaces.
- Careful flood risk design. Flood defences should be kept to a minimum width and depth to limit the impact on archaeological deposits in the alluvial and peat layers whilst also minimising the need for



Site Section between All Saints Church and Rochester Cathedral indicating maximum height and massing at north end of Riverside site - shown in red.

extensive archaeological mitigation strategies.
- Impact on possible remaining Roman and medieval waterfront and flood defences may occur during construction of flood prevention measures.
- Mitigation strategies for any development which will impact on the buried archaeological resource.

Following evaluation, there may be a need for a more detailed investigation of any important archaeological remains prior to development. The information gathered from any subsequent excavation works will be beneficial to the understanding of the development of the Strood area, especially as little archaeological investigation has taken place in the vicinity of the development site. However, all intrusive investigation or development will have an adverse effect on any archaeological deposits in the development area. NPPF recommends that the best mitigation strategy is always to preserve archaeology in situ.

4.12 Health and wellbeing

Proposals will need to demonstrate how they contribute to the health and wellbeing of those that live in, work and visit Strood Waterfront. This should include access to green spaces and contact with nature, mitigation of air and noise pollution, homes and public spaces that benefit from good standards of daylight and sunlight, promotion of active travel, accessibility for all users including provision for those with disabilities and/or chronic conditions (e.g. dementia, diabetes).

Design should follow the recommedations of 'Active Design' (2016) publised by Sport England and supported by Public Health England.
Planning applications for Waterfront sites should be supported by Health Impact Assessments.

4.13 Urban Form and Scale

4.13.1 Scale, Height and Massing

Strood Waterfront represents a unique location within Medway where development proposals must balance visual impacts on valued assets including Rochester Castle and Cathedral with the opportunity for highly sustainable and transformatory development to create a new waterfront.

Medway Council has adopted a Building Height Policy for Medway (2006), which defines buildings over five storeys as tall buildings. The guidance generally supports the heights for Strood Waterfront as one of the areas with particular emphasis on heights being appropriate closer to the District Centre, subject to carefull consideration of strategic views and context.

The scale of development should be reflective of the site's accessible location, whilst also responding to the openness of the River Medway and respecting important views and vistas. In particular the following constrain maximum heights:

- Development should not break the ridge line of land north of Strood in long views from Rochester Castle battlements, Rochester station car park or Sun Pier, Chatham.

- New development should not interrupt mutual sight lines between Rochester Cathedral and All Saints Church, Frindsbury.

- Building massing should be proportionate to the scale of spaces that they address – whether intimate mews lanes or the sweep of the Medway.

The site sections and massing studies prepared for the Illustrative Masterplan show that development of up to 12 storeys will sit within the 'bowl' of surrounding hills without intruding into the natural ridge line in key views.

4.13.2 Landmark Buildings and Spaces

Any proposals should include visual reference points to reinforce the structure of development, add character and enhance the overall identity of the site. Opportunities have been identified for local land marking in the following locations:

- The south side of the former Civic Centre site, overlooking the Medway;
- Along the riverside near Strood station and Strood Pier; and
- At the eastern part of the Riverside site at the confluence of views south-west from the public footpath to Frindsbury, views east from Rochester Marina, and views north from Chatham.

Local landmarks can be achieved by creating distinctive and memorable buildings and the landmark term does not always imply additional building height.

4.13.3 Urban Form

Development is to be laid out to create coherent urban blocks where public and private spaces are clearly defined, public routes and spaces are overseen and rear gardens are secure.

Entrances to residential development including ground floor apartments and communal entrances should be visiable and entered from the public realm. Houses and ground floor apartments should be provided with landscaped front areas to provide privacy to ground floor rooms without negating passive surveillance of public spaces from those dwellings.

To activate the public realm, support viability and aid legibility, ground floor non-residential uses should be located to face onto public spaces or routes benefitting from higher footfall.

4.13.4 Relationship to Existing Development

New development is to respect existing adjacent homes. New development should create secure blocks with clearly defined public fronts and private backs including backing on to existing rear gardens. Back to back distances to existing properties should be proportionate to building heights and not less that 20m In general, the height of new development should scale down in proximity to existing two and three storey properties including:

- Cranmere Court
- Wingrove Road
- Riverside Tavern

4.14 Sustainability

The layout and design of buildings should maximise energy efficiency and sustainability. To ensure all homes get some direct sunlight, north-facing single-aspect homes should be avoided and to prevent overheating, solar shading should be provided for south-facing single- aspect homes.

The scheme design, which is to include limited non-residential uses, should enhance public transport options and promote sustainable and active travel modes. This includes new and improved facilities for walking, cycling and public transport including public and private bicycle parking and real-time information on bus services.

Design should preserve and enhance ecological values including:

- Protection of the ecological value of the river.
- In order to promote biodiversity, increase contact with nature and create a more attractive and varied environment, opportunities to 'green' buildings through integrated planting design should be pursued including roof areas and building elevations (e.g. green walls and climbing plants). Planting should be used to contribute to solar shading and filtration of air pollutants.

Sustainable Urban Drainage System (SUDS) should be provided including sufficient storm water attenuation to accommodate tide locking of existing drainage outfalls. Design should aim to reduce surface water flood risk to the site and the surrounding area. SUDS infrastructure is to be integrated with both hard and soft landscaped areas. Proposals should be prepared in liaison with Medway Council (as LLFA and highway authority) and Southern Water.

The council prefers the inclusion of:

- Carbon Neutral energy strategy including if possible on-site renewable energy generation.
- Facilities for car club parking and electric vehicle charge points.
- Superfast fibre-optic broadband infrastructure should serve all homes and businesses.

4.15 Additional Areas for Development

Opportunities for creating synergy and maximising the regeneration benefits of development at Strood Waterfront are to be exploited, including the potential for environmental improvements or redevelopment at High Street (south of Station Road), Watermill Wharf and Station Road car park.

4.16 Phasing

Flood defence works and therefore the ensuing development work is envisaged to be comprised of at least three construction phases starting with the former Civic Centre site, then Riverside and culminating with Kingswear Gardens.

4.17 Case Studies

To provide inspiration and exemplify the quality of place that is sought at Strood Waterfront, we have included some international examples to illustrate our Planning and Design Principles.

Cranfields Mill: Ipswich's waterfront has introduced taller buildings along with older, historic elements to create variety. The waterfront provides a dramatic entry to the town visible from the main bridge entering from the south.

Urban SUDs: This example from Canada shows how effective and sustainable drainage can introduce planting into hard landscaped areas to deal with surface water flooding.

Southampton Waterfront: is being developed with a mix of luxury apartments and leisure facilities including public access to the city's waterfront. The City's vision, supported by coordinated policy and guidance including a Tall Buildings Policy, will bring £3 billion of investment, create 24,000 jobs and bring 5,000 new homes by 2030.

Vancouver: Apartment blocks can be mixed with town houses to add variety and ensure coherent street blocks. Houses present front doors onto streets and use landscaped front areas to maintain privacy and enrich the interface between public and private.

Stuttgart: Intimate, shared surface lanes provide an attractive setting for town houses whilst retaining the potential for rich landscaping.

Dublin Docks: Public art and inventive landscape design have been combined to create memorable public waterside spaces.

Hammerby: Apartment blocks take advantage of waterside setting and views by providing generous balconies. Waterside public routes are designed with a more natural character.

5.0 Highways and Transportation

A Transport Statement has been prepared to assess the potential impacts of development at Strood Waterfront and suggest appropriate mitigation measures. The Transport Statement is included in Appendix 3. To minimise the impact of the development a number of mitigation measures have been put forward for consideration, these include:

5.1 Council-wide Foundational Policies and Suggested Initiatives

Overall Strategic Transport Plan	Developing an integrated strategic plan to take account of strategic capacity considerations, the optimal use of current assets and the overall citizen experience. Other specific council-wide initiatives supporting the strategic transport plan are outlined below.
Enhancement of sustainable modes	Bus routing and headways should be further investigated, discussion with train operators regarding frequency should be held, with bike share schemes to be revisited to encourage public transport usage.
Parking Strategy Planning	The transformation of Medway into an increasingly urban place with greater land use intensity necessitates the development of robust, context sensitive parking standards that align with transportation and development objectives.
Travel Behaviour for Travel Demand Management	Use a combination of marketing and communication strategies, improved use of information technology, and the better use of existing or new channel to reach customers to elicit travel behaviour change. The proposition should be adapted to distinct traveller user groups.

5.2 Suggested Initiatives to be Implemented around the Site Area

Timeslots for Business Deliveries	Scheduled business deliveries and pick-ups within time slots can mitigate the impact of parked vehicles along high street.
Expansion of Traffic Monitoring	The ability to view traffic conditions is vital to successful traffic management. Expanded CCTV coverage is necessary to cover blind spots on what will become important traffic corridors.
Traffic Signal Control System	Signal and pavement changes mean that the SCOOT system will need to be updated, recalibrated, and potentially expanded to accommodate growing traffic volumes and ensure efficient traffic flow within Strood.
Parking Guidance	Parking guidance could be enhanced to reduce circling and maximise parking assets through technology (parking rental platforms, parking sensors, cashless payments, better wayfinding).
Electric Charging Points	Electric charging points should be provided around the area for hybrid and electric vehicles (low or zero emission) to help maintain high air quality.
Junction Modifications	1. Conversion of Esplanade to a one-way relief road. 2. Signalising the Knight Road / Access intersection, or banning right-turning traffic. 3. Removal of footways and relocation of pedestrian access to convert Access Road leading to Knight Road into a two lane roadway. 4. Operating Right-out only at the High Street / Canal Road / Esplanade intersection.
Car club Schemes	The introduction of car club schemes to minimise the amount of parking provision at the development site

5.3 Site Specific Strategies

Access and car parking location	Vehicular access to the Riverside development can be divided so that the western section of Riverside and Kingswear Gardens are accessed via the High Street and the eastern section of Riverside is accessed via Commissioner's Road. This will prevent commuters from Medway City Estate from 'rat-running' through the development site thereby limiting impacts to the High Street / Canal Road / Esplanade intersection.
Further Traffic Data Analysis	Further Origin Destination data should be reviewed for all trip types to ensure a thorough analysis. The proximity of the potential development to local amenities may see the proportion of car or van trips reduced due to journeys made on foot; ultimately lowering the expected number of additional vehicles and impact on the network.
Cycle Share Scheme	An agreed cycle share scheme can be established with bicycle parking stations in visible public locations at the former Civic Centre and Riverside sites.

In summary, there is no single measure that will be able to solve the existing transport issues or those generated as a result of this new development. The solution is dependent on numerous individual measures and improvements across the Medway Towns, the area and the sites. There are opportunities to encourage interaction with strategic walking and cycling routes and to promote alternative modes of transport as follows:

- Greater use of the waterfront for leisure purposes. Creating synergy with the Saxon Shore Way and National Cycle Route 1 and promoting the site as a place to stop and spend time.
- Potential for cycle and walking leisure journeys to better link to Strood Town Centre.
- Encourage access from the former Civic Centre site to Temple Marsh. Pedestrian access along the riverfront between the former Civic Centre site and Watermill Gardens would also be encouraged.
- Improvements to the attractiveness and security of the route to Medway City Estate.
- Use of Strood Pier for ferry services or river leisure.
- Promoting a safer access route to Strood railway station, including access by bus, and ensuring that the station conforms to disability standards.

6.0 Illustrative Masterplan

An Illustrative Masterplan has been prepared to show one way that development based on the planning and design principles set out in this Development Brief might be delivered at Strood Waterfront.

The Illustrative Masterplan reflects the council's aspirations for the site and has been used as a vehicle to test the deliverability of development and confirm that the requirements of this Development Brief will be commercially attractive and viable and that likely impacts will be acceptable. It is however, acknowledged that proposals may take other forms provided that they meet the planning and design principles set out in this document.

The Illustrative Masterplan also illustrates the potential of including development on land controlled by third- party owners where this can be delivered.

The Illustratve Masterplan has been designed so as not to compromise future change on adjacent sites including Strood station and at the High Street.

The Illustrative Masterplan assumes the use of Watermill Gardens to provide the necessary open space for the new developments.

The Illustrative Masterplan has been used to test and confirm development parameters for:

- Development quantum and mix;
- Building scale, height and massing;
- Car parking and servicing; and
- Open space provision.

A 3D Massing Model has been prepared to test potential visual impacts and the legibility of the Illustrative Masterplan. The Massing Model is not intended to convey the desired architectural character of the future development.

The Illustrative Masterplan shows one way in which a complementary mix of uses can be created within a high quality environment for residential living. The Masterplan would provide the following:

Site	Houses	Apartments	Other Uses	Open Space
Former Civic Centre	52 (4-bed)	512 (1, 2 & 3-Bed)	Hotel, Retained reprovided existing Council CCTV facility and Ambulance Service crew facility. Retail	1.38 Ha
Kingswear Gardens	27 (4-bed)	418 (1, 2 & 3-Bed)	None	0.33 Ha
Watermill Wharf	-	-	Employment	-
Watermill Gardens				0.87 Ha
Strood Riverside	134 (4-bed)	468 (1, 2 & 3-Bed)	Station-related retail.	1.55 Ha
TOTAL	**213**	**1,398**		

Illustrative Masterplan: Development Schedule

Map 8: Illustrative Masterplan


N
ation Road
Strood
Station
Strood
Riverside
Riverside
Tavern
Commissioner's
Road

Former Civic Centre Site Section

6.1 Design Approach

The Masterplan would be delivered in phases, each with a distinct character. This will create a coherent waterfront prospect when viewed from Rochester and Rochester Bridge as well as longer views up and down the Medway.

The design of the Illustrative Masterplan takes inspiration from the two, contrasting building forms represented by Rochester's historic sites: the Castle, with enclosed keep, towers, and castellation overlooking the Medway; and the Cathedral sitting as a free-standing object against the backdrop of the surrounding townscape.

The former Civic Centre site is therefore about enclosure - the inside and the outside, and about commanding views out across the Medway. The designs of the Riverside and Kingswear Gardens sites are about a series of objects against a backdrop of urban blocks.

6.2 Former Civic Centre

The Masterplan features a central public space, located at the meeting of routes from the High Street and Knight Road into the site, partially enclosed by new homes and opening up to provide views across Jane's Creek and framed views across to Rochester Castle.

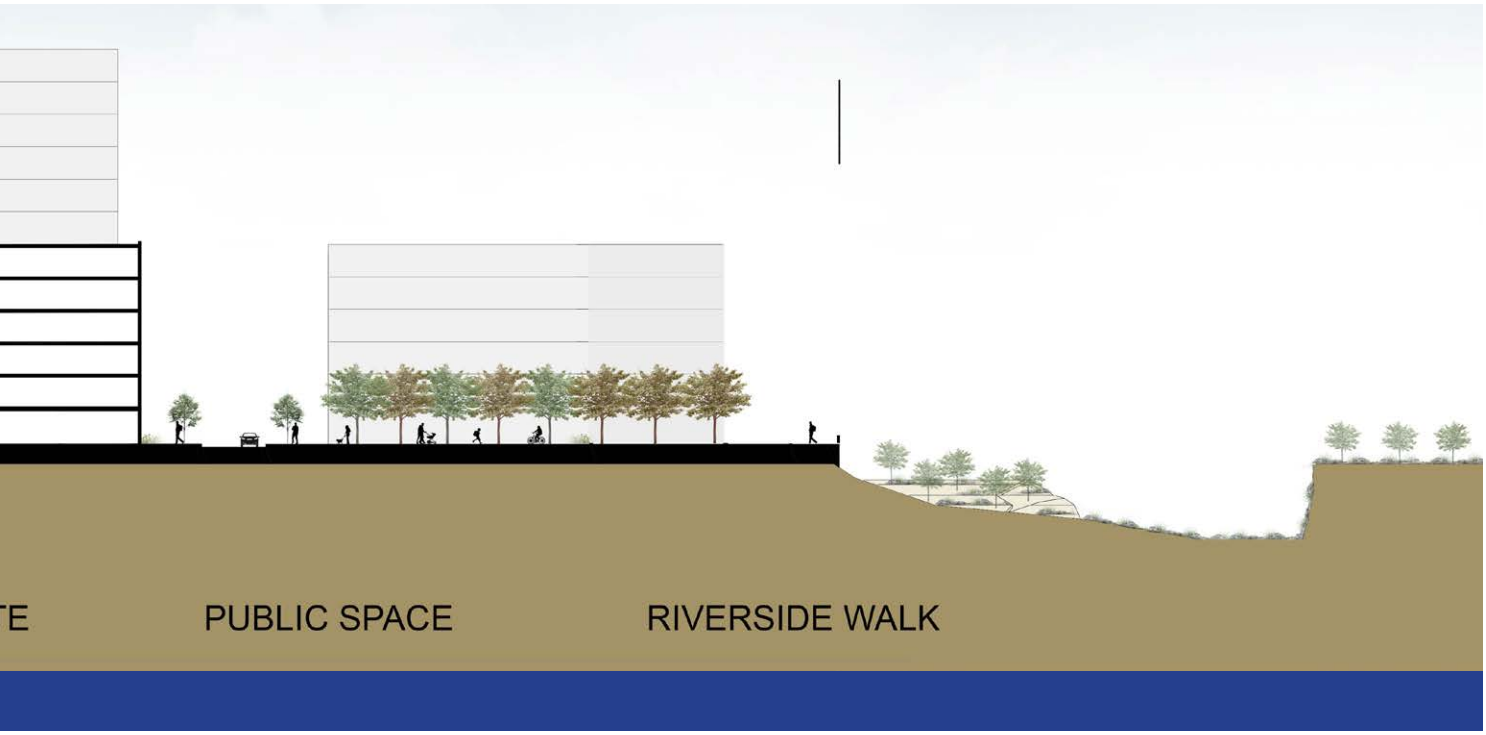
The riverside walk links a series of uses including a potential hotel with its café and restaurant, new homes and public spaces. Alongside Jane's Creek, the riverside walk widens with buildings set back 10m from the river wall to provide additional public space. Buildings help to shelter the central space from prevailing winds.

This arrangement means that the majority of homes have views of either the water (direct or oblique) or landscaped space.

A new footbridge could link across Jane's Creek to extend the riverside walk, access existing open space and provide potential for further extension of walking routes to Temple Marsh.

A mix of 4-11 storey apartment buildings and two and three-storey town houses sit along shared surface access lanes to create more intimate street spaces, while residents' parking is mostly kept out of view at the rear of the buildings. Communal amenity spaces with informal provision for children's play are created within residential blocks. Some blocks have communal spaces above car parking. These spaces include seating and planting and are shown in the sections with apertures to provide natural light and ventilation to car park areas as well as providing opportunities to include larger trees.

Small shop units are included at the junction of Esplanade



to connect the development to the shopping parade along the west of the High Street. As an alternative to some of the proposed housing, a hotel could be included facing onto Rochester Bridge with its café and restaurant at ground level looking across the river to further enliven the central public space and this stretch of the High Street, and help attract people across from Rochester.

Blocks are arranged to allow for future regeneration along the High Street and retain the potential for new and enhanced movement connection to the High Street.

6.3 Riverside

The illustrative layout responds to views into and out from the site including views from Canal Road to the Medway and from the station to Strood Pier and All Saints Church.

A new public space creates an enhanced sense of arrival at Strood station by opening up views to the Medway and making interchange with bus services along Canal Road more legible.

A series of other public spaces area created, all with a visual connection to the river.

A riverfront walk and cycle route is suggested, connecting between an improved Watermill Gardens and the existing public footpath up to Frindsbury. This route relates to a shoreline of more natural landscape treatment along the eastern end of the Riverside site.

A new north-south route through the site connects to the existing underpass to Station Road and creates a vista aligned on All Saints Church, Frindsbury.

To maximise the number of homes with a river view, let in sunlight to courtyards gardens and create long views across the site, apartment blocks are orientated perpendicular to the river. This also creates a waterfront prospect with the buildings' slimmer end elevations on view.

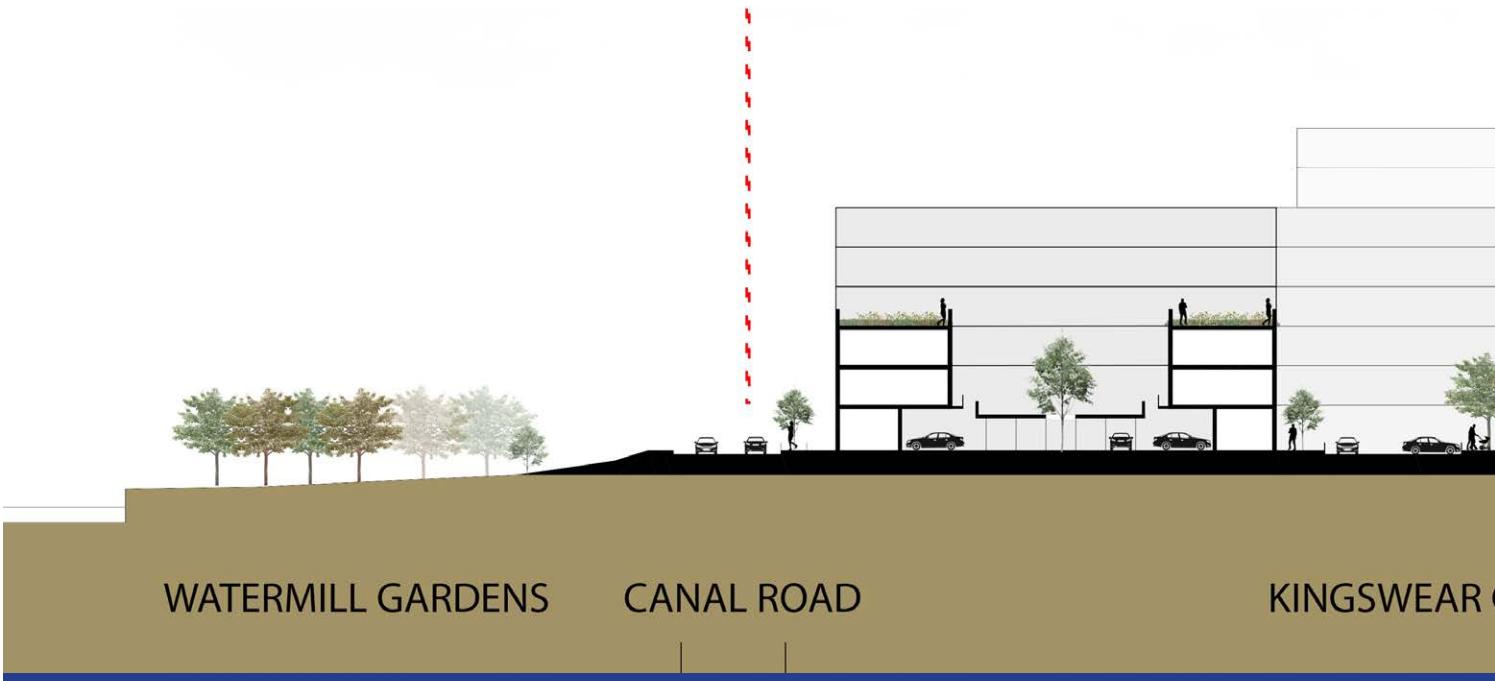
To provide diversity and choice, a variety of residential building types are suggested, in addition to apartments, town-houses and house groups of two or four homes are arranged as ‘pavilions’.

These pavilions are formed of groups of four houses with roof terraces providing views across the Medway. They provide a rhythm of buildings along the waterfront and contrast with a backdrop of taller elements nearer the station and mediate with the scale of the retained Riverside Tavern.

Larger apartment buildings of up to seven storeys are set back from the waterfront to gain river views above the lower pavilions. The raised land levels created by the flood defence measures are exploited to provide discrete undercroft car parking below apartment buildings.

Massing of buildings is scaled down with a greater proportion of houses to the east of the site in order to mediate with existing houses along Cranmere Court and avoid interrupting views across the Medway from All Saints Church.

Allotment gardens are suggested for the north of the site alongside the railway.



Kingswear Gardens Site Section

6.4 Kingswear Gardens

The Illustrative Masterplan envisages that the existing estate will be replaced and the site combined with third-party ownerships along Canal Road.

Blocks are arranged to create a clear definition of public, private and communal spaces, maximise views of the river and face onto landscaped spaces.

The blocks combine a variety of size and type of new homes. New development could combine 5-8 storey apartment buildings with three-storey town houses with roof terraces, grouped around landscaped communal courtyards at first floor level above residents' car parking.

A focal public space sits at the confluence of a route and vista across Canal Road to a re-landscaped Watermill Gardens providing views across and along the Medway, and a new route providing more direct access to Strood station.

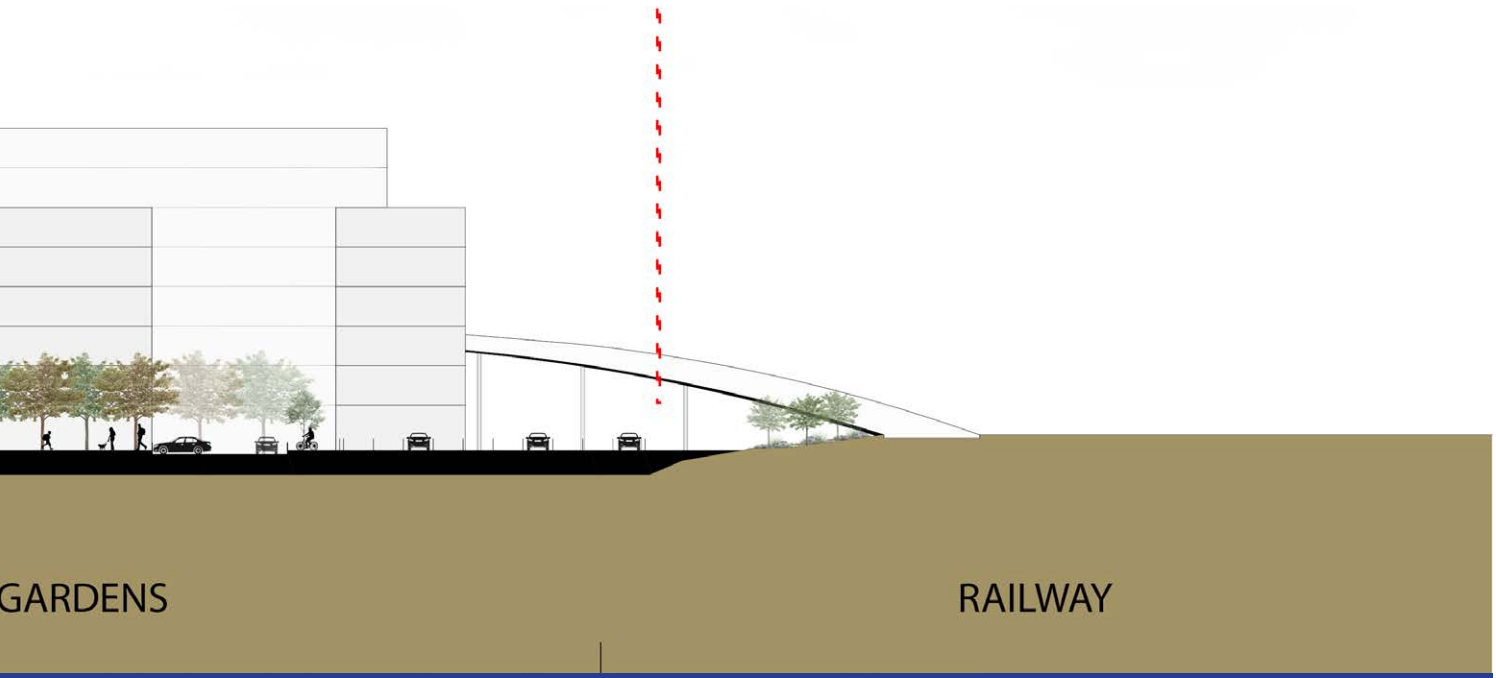
The plan includes new public and communal open spaces which can include play equipment and designed to accommodate sustainable urban drainage systems.

All homes also benefit from private open space in the form of gardens, terraces or balconies.

The illustrative plan also suggests how a disused part of the station site could be developed in conjunction with council owned land to provide additional new homes (not included in figures above).

6.5 Watermill Gardens

The Illustrative Masterplan suggests that the existing open space should be retained but substantially improved with new landscaping and facilities to serve the increased population of Kingswear Gardens and the Riverside sites. Facilities could include new play equipment, a café, public toilets and drinking water fountain as well as places to just sit and enjoy the view.



Map 9: Illustrative Amenity Space Provision

6.6 Massing Studies

The Illustrative Masterplan has been modelled in digital 3D to test the likely visual impact of the Masterplan's height and massing. The Illustrative Masterplan avoids breaking the green ridge line that forms the backdrop to Strood in long views from the south and east and from important locations including Rochester Castle and Chatham and therefore confirms the maximum height guidance set out in Section 4.14.

6.7 Car and Cycle Parking

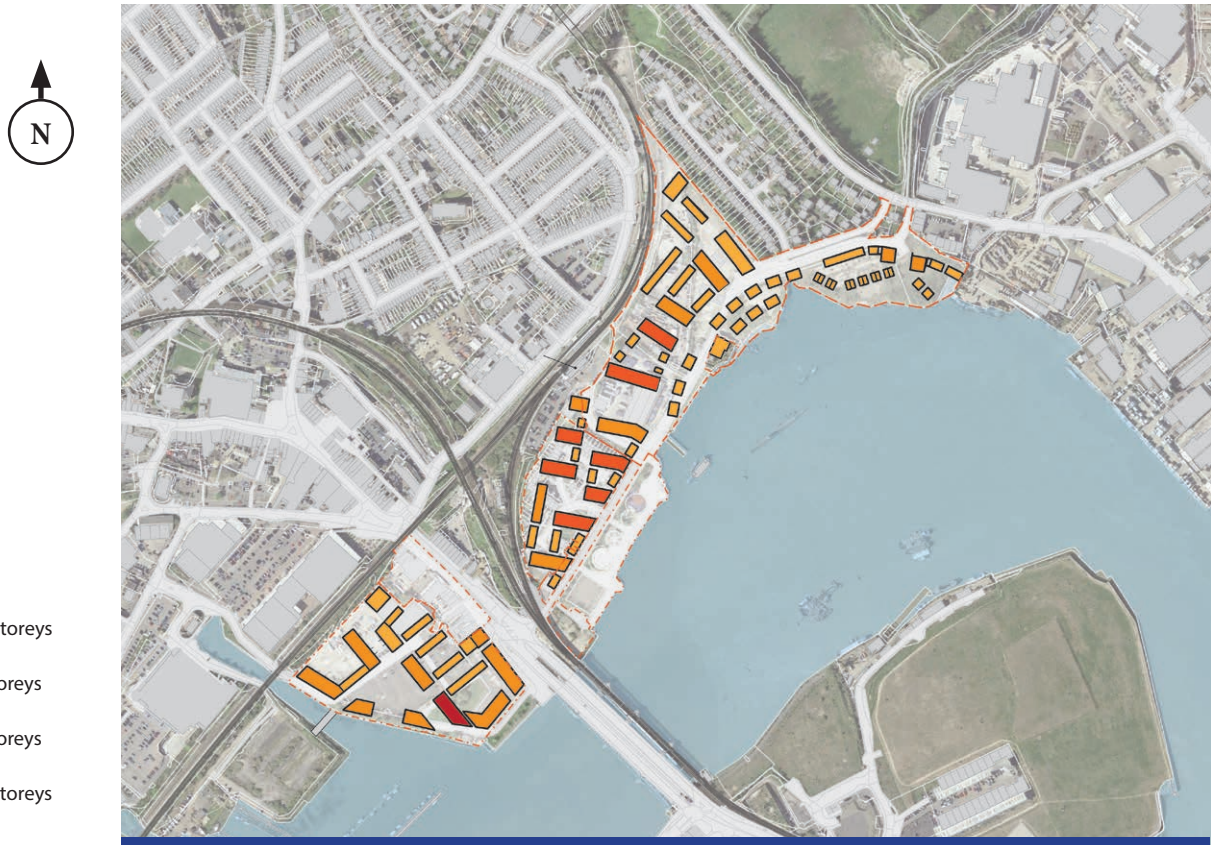
The Illustrative Masterplan achieves a parking provision averaging 0.6 spaces per dwelling. Map 11 shows locations of a combination of on-plot parking, on-street parking, small group parking areas and undercroft car parking that utilises changes in site level resulting from flood defence works.

All apartment buildings will be provided with secure communal bicycle storage and washing areas. An allocation of car parking spaces will be reserved for car club vehicles and for electric vehicle charging.

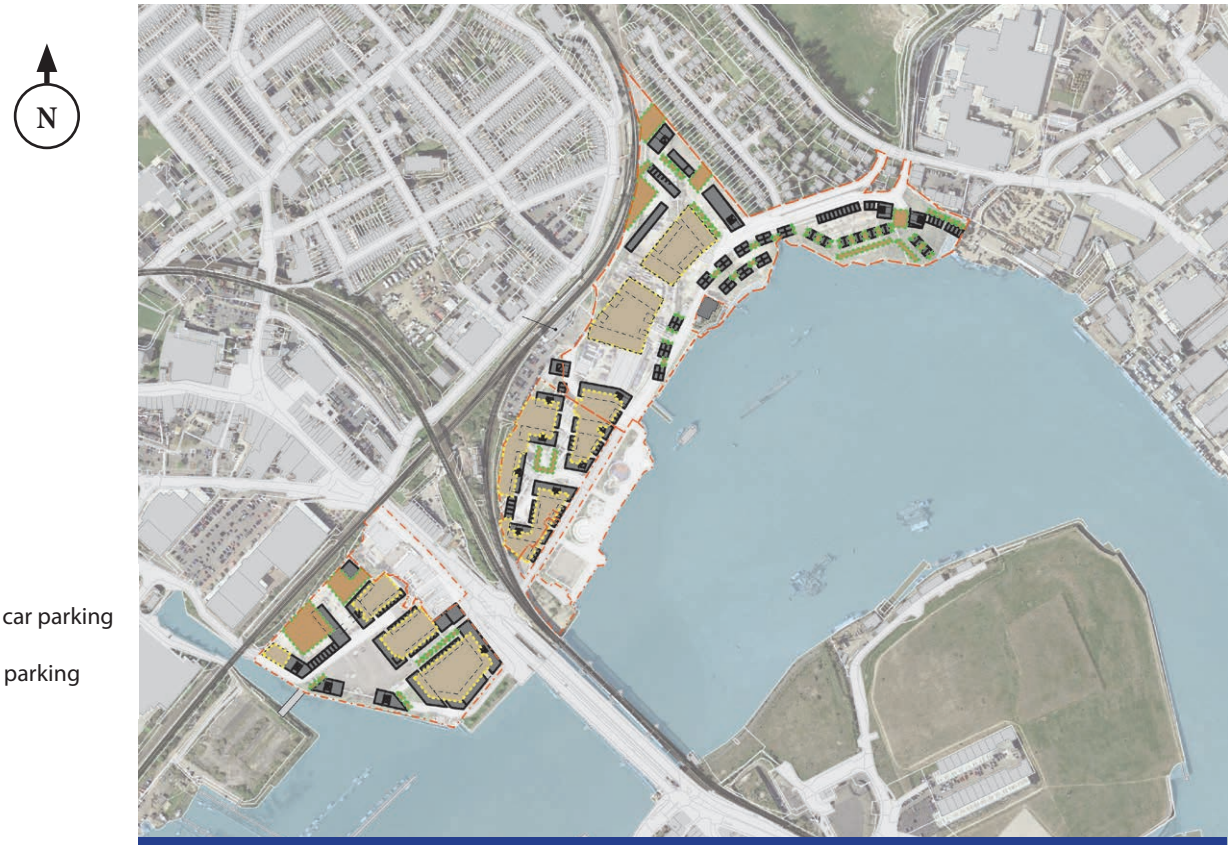
Cycle loan hubs are included within the Riverside arrival space that links Strood station to the waterfront and within the former Civic Centre public space.

Massing Study - View from Rochester Castle

Massing Study - View from Chatham



Map 10: Illustrative Building Heights Plan



Map 11: Illustrative Parking Arrangement

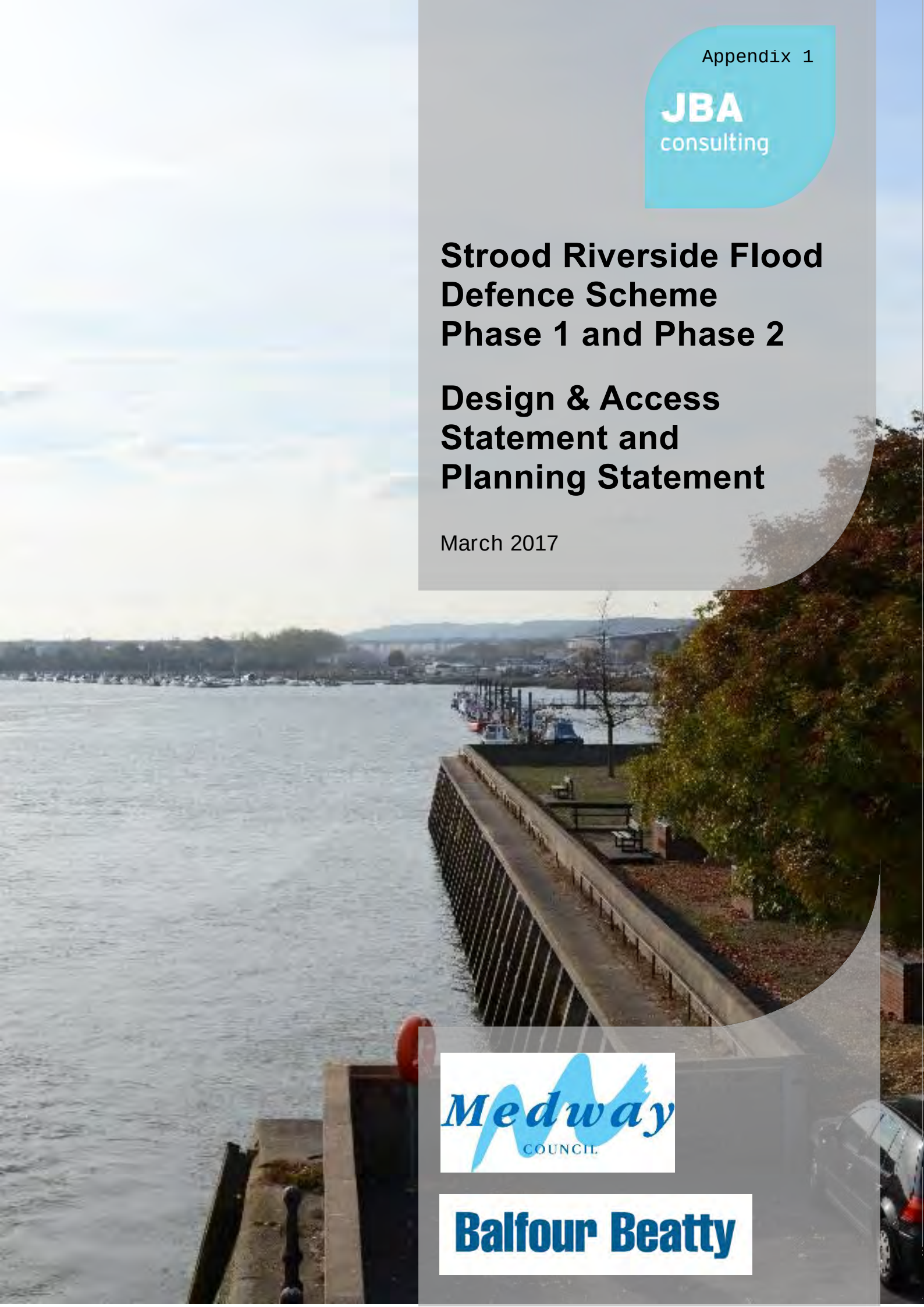
Appendix 1

JBA consulting

Strood Riverside Flood Defence Scheme Phase 1 and Phase 2

Design & Access Statement and Planning Statement

March 2017



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Revision history

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V1-1 / 13 March 2017		Balfour Beatty
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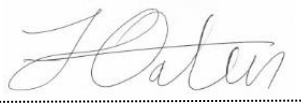
Contract

This report describes work commissioned by Balfour Beatty on behalf of Medway Council an order placed on the 16th September 2016. Balfour Beatty's representative for the contract was Paul Wright. Jamie Oaten and David Revill of JBA Consulting carried out this work.

Prepared by:  Jamie Oaten MEnvSci PhD
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Purpose

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1 Introduction

1.1 Background

Medway Council wishes to develop a scheme that will improve the level of flood protection at Strood Riverside. This will support policies within the Medway Local Development Plan to allow the eventual redevelopment of land running along Strood Waterfront.

1.2 Purpose of the Design & Access Statement and Planning Statement

This Design & Access Statement and Planning Statement has been prepared to support Full Planning Applications for the proposed scheme. It has been produced in accordance with the requirements and recommendations of the Commission for Architecture and the Built Environment (CABE), the Government's advisor on architecture, urban design and public space. CABE has produced a guidance document on *Design and access statements: How to write, read and use them* (2006)[1]. Medway Council's guidance document *Validation of planning applications* (2011)[2] has also been used in the production of this document.

The purpose of this document is to present information on the design concepts and principles of the proposed scheme and explain the reasoning behind how the design has been developed. In addition, it identifies the need for the proposed scheme and describes how it accords with relevant national, regional and local planning policies.

It provides information in relation to:

- The scheme objectives;
- The key features of the scheme;
- The character and context of the scheme area including opportunities and constraints;
- Relevant planning policy guidance;
- Details of consultations with stakeholders that have informed the design and development of the scheme;
- The design proposals including design principles and concepts and how these have evolved; and
- How access requirements are being met.

The design of this scheme has been based on an understanding of the site and its key features, which have informed the development of a set of design principles that ensure that the proposed scheme delivers an appropriate standard of design, whilst meeting the overarching project objective of reducing flood risk to the Strood area.

2 Project description

2.1 Scheme rationale

The proposed scheme aims to improve the standard of flood protection for two sites in Strood, bordering the River Medway. This will facilitate the future development of each site and forms a key element of Medway Council's Strood Riverside development project. However, the future redevelopment proposals themselves are not part of this scheme; they will be developed separately and will be subject to a separate consent application in due course.

2.2 Site description

The scheme proposes to construct flood defence structures to better protect two sites, situated adjacent to the River Medway in Strood, from flooding. The location of these two sites is shown in Figure 2-1. The two sites are referred to as:

[1] CABE. 2006. *Design and access statements: How to write, read and use them.*

[2] Medway Council. 2011. *Validation of planning applications.*

- Phase 1 (Civic Centre)
- Phase 2 (Strood Riverside)

The Phase 1 (Civic Centre) site is a 34,374m^2 in size and is located to the south of Rochester Bridge. It is bordered by the A2 (High Street) to the north, the River Medway to the east, Jane's Creek, a small inlet of the River Medway, to the south, and the Medway Valley railway line to the west.

The Phase 2 (Strood Riverside) site is 62,720m^2 in size and is situated approximately 250m to the north of Rochester Bridge. The site is bordered by Kingswear Gardens housing estate, which is not included in the scheme, to the south, the River Medway to the east, the North Kent Line railway to the west, and houses along Cranmere Court to the north.

Figure 2-1: Strood flood defence scheme site plan

The Phase 1 site comprises Strood Civic Centre and associated car parking area. Medway Archives and Local Studies Centre is the main building on the site, and is located next to the Medway Council Work Depot Yard. Immediately adjacent to the archives is a building used to manage CCTV operations across the town, whilst a small building for ambulance drivers to rest during shifts is situated towards the north-western corner of the site. Several commercial properties situated on the A2 (High Street) border the east of the site, including a petrol station, vehicle repair/servicing garage, and a public house. Rochester Bridge is Grade II listed and borders the east of the site, close to the river frontage. Next to this, to the east of the Esplanade, is a small area publicly accessible green space. There is also an area of publicly accessible amenity land on the river frontage within the southern part of the site, which comprises open space with trees. To the west of this area is a Pump House operated by Southern Water.

The Phase 2 site contains a large storage warehouse and adjacent brownfield land. Canal Road runs along the river frontage of this site, before turning eastwards and uphill into Riverside Link. The Riverside Tavern public house is located on Canal Road. A short distance to the south of the pub, next to Canal Road, is Strood Pier, which is used for mooring by a small number of boats. Strood Railway Station and associated car park is situated off Canal Road next to the western boundary of the site. The Riverside Tavern, Strood Pier and Strood Railway Station are to remain and do not form part of the Phase 2 site.

Towards the east of the site are the Thames and Medway Canal lock gates, which are currently disused, with a new sheet pile defence with reinforced concrete capping beam constructed across it. The gates are located next to an area of brownfield land bordering the River Medway, which is backed at the eastern end by Medway Metals Ltd recycling centre.

2.3 Flood risk and existing flood defences

Both the Phase 1 and Phase 2 sites are at significant risk of flooding. The main risk is tidal flooding from the River Medway although the Phase 1 site is also at significant risk of surface water flooding.

Both sites are protected by existing flood defence structures. The main defence structure protecting the Phase 1 site consists a timber piled defence with a reinforced concrete flood wall built on top of the capping beam. Along the Jane's Creek frontage, the defence becomes less uniform and comprises sections of timber piles with mass concrete infill with a continuation of the reinforced concrete flood wall. The site is low lying with much of the site less than 4.0m Above Ordnance Datum (AOD).

The Phase 2 site can be split into two distinct sections separated by the former Thames and Medway Canal. The existing river frontage in the western portion of the site comprises a masonry pitching revetment between Strood Pier and the Riverside Tavern. The Riverside Tavern itself is protected by a low height flood wall.

There is no formal frontage for the eastern portion of the site although land levels through this section are generally higher than those in the west. A new sheet pile defence with reinforced concrete capping beam was installed across the former canal as part of the works to construct the Riverside Link road. Much of the site is relatively low lying with ground levels typically between 4.0mAOD and 4.5mAOD, although the recently constructed Riverside Link was constructed to a level above 6.0mAOD.

Flood modelling was carried out to inform the design and development of the scheme. Flood extents from the Environment Agency's North Kent Coast Model[3] are shown in Figure 2-2.

It is evident that the existing defences are overtopped by a 1 in 20-year flood event and this affects almost the entirety of both sites. In larger events, residential properties to the north and east of the Phase 2 site in Cranmere Court and Wingrove Drive are also flooded by water flowing across the site. Flood levels for a 1 in 200-year event with the effects of climate change are shown in Table 2-1and demonstrate the significant depth of flooding possible in an extreme event.

The current flood defences are inadequate. Discussions with the Environment Agency concluded that to permit future regeneration of these sites both sites would need to be ground raised above the flood level for a 1 in 200-year tidal flood in 2115 (6.01mAOD).

[3] North Kent Coast Model - Simplified version, JBA Consulting 2014

Figure 2-2: Flood extents from the North Kent Coast Model (contains Ordnance Survey data © Crown copyright and database right 2015)

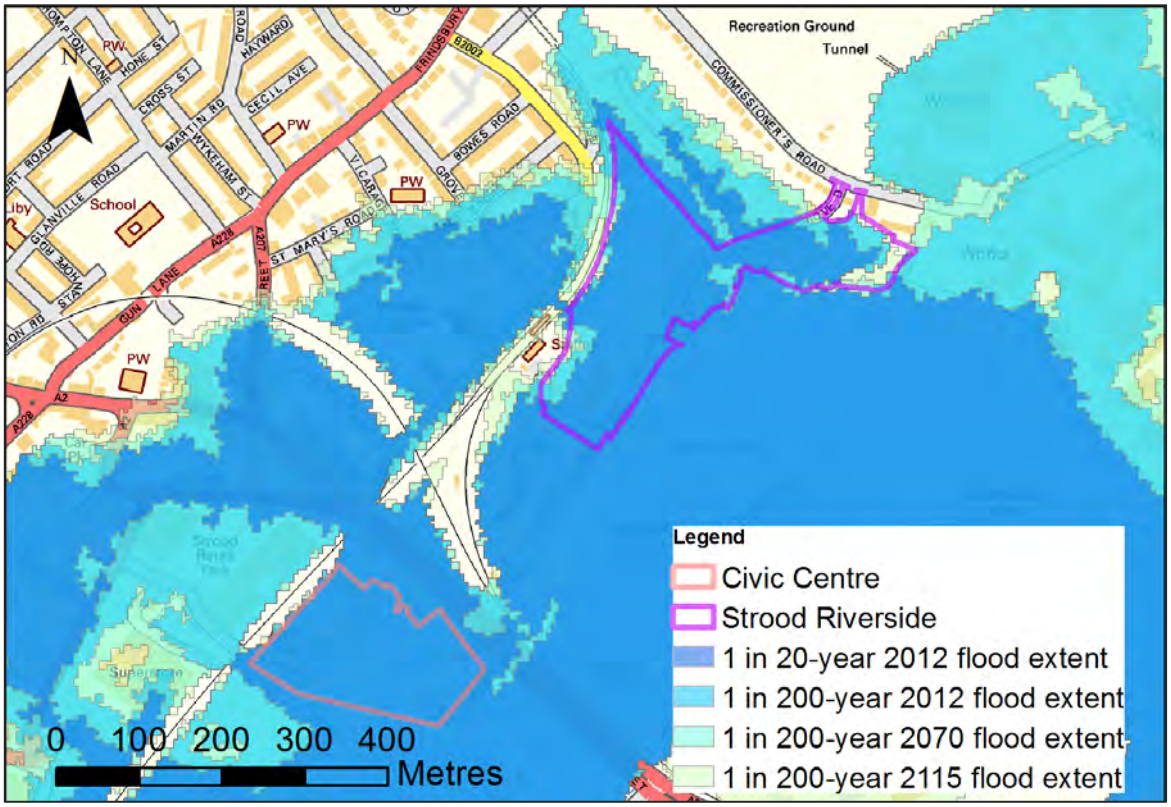

Table 2-1: Still water levels within climate change predictions during a 1 in 200-year flood event

Year	Phase 1 (Civic Centre)	Phase 2 (Strood Riverside)
Present Day*	5.03mAOD	5.04mAOD
2070	5.44mAOD	5.46mAOD
2115	5.97mAOD	6.01mAOD

*using 2012 water levels

2.4 Proposed scheme

Approximately 1,025m of new sheet pile wall will be constructed across the Phase 1 and Phase 2 sites. Ground levels across much of the two sites will also be raised to 6.0mAOD.

The proposed layout of the scheme on the Phase 1 and Phase 2 sites is shown in Figure 2-3 and Figure 2-4, respectively.

2.4.1 Phase 1 (Civic Centre) site

At the Phase 1 site, a new steel sheet pile wall will be constructed along the river frontage to a height of 6.0mAOD. A reinforced concrete capping beam will be positioned on top of the sheet pile wall taking the overall defence height to 6.1mAOD (exceeding the predicted 1 in 200-year flood event level).

Along Jane's Creek, a short (3m to 4m) length of sheet pile wall will be installed in-front of the existing flood defence wall adjacent to the railway embankment/bridge. This is needed to tie the new flood defence structure into high ground on the railway embankment and ensure protection to the entire site. Along the remainder of Jane's Creek, the new sheet pile wall will be located 2m landward of the existing concrete flood wall.

The new sheet pile wall will then divert landward at the point where the current river wall also diverts landward (a short distance east of the Pump House) and continue along the landward side of the Esplanade towards Rochester Bridge. This is to avoid raking piles, which are piles that extend

diagonally downwards, located behind the existing timber wall defence in this area. As it approaches Rochester Bridge, the new wall sheet pile will divert northwards and continue to follow the Esplanade towards its junction with the A2 (High Street).

Two lines of secondary sheet piles will also be installed adjacent to Jane's Creek. This secondary line is required to ensure the stability of the primary sheet pile wall and will be connected using tie rods (metal rods buried below ground that connect the two lines of sheet piles together). These will be positioned parallel to the new steel sheet pile wall, 10 m and 19m landward for western and eastern sections, respectively. They have been separated and aligned in this way in order to avoid an ambulance driver rest centre. The tie rods will be placed at 3.2m intervals for the western section, and 4.2m intervals for the eastern section, between the secondary line of piles and new steel sheet pile wall. Both the secondary line of sheet piles and the tie rods will be buried below existing ground levels and will not be visible.

A section of the current flood wall along Jane's Creek between the Pump House and the railway embankment/bridge will be cut off just below silt level once the new sheet pile walls have been installed. This is because this section of wall is in a very poor state of repair and is at risk of collapsing.

The current flood defence structures alongside the Pump House and the amenity area next to the Esplanade will be retained. The amenity area will be raised to 5.1mAOD with light weight fill material. This area will be landscaped with pedestrian and cycle access provided from the east and west.

Ground raising will be undertaken across much of the Phase 1 site. In addition, the Civic Centre building will be demolished, whilst the CCTV building and ambulance drivers building will be retained. A cycle path and footpath through the site will be constructed linking between the Esplanade and access road beneath the railway bridge.

Vehicular access ramps will be installed to enable vehicular access to the ground raised area from both east and west, and to the Pump House building.

2.4.2 Phase 2 (Strood Riverside) site

At the Phase 2 site, a new steel sheet pile wall will be constructed to a height of 6.0mAOD between Strood Pier and land adjacent to Medway Metals Ltd. The new sheet pile wall will have a reinforced concrete capping beam, which will take the overall defence height to 6.1mAOD. The new sheet pile wall will be located between 2m and 10m landward of the existing river wall and will not extend into the River Medway at any point.

The new sheet pile wall will follow the alignment of the existing wall from Strood Pier to the Riverside Tavern public house. It will then break and restart to the east of Riverside Tavern, continuing in a north-eastern direction where it will tie-into the Thames and Medway Canal lock gates. From here the wall will continue in a north-eastern direction before terminating at raised ground to the east of Medway Metals Ltd recycling centre. Between the Riverside Tavern and Medway Metals Ltd the new sheet pile wall will typically be set back between 5m and 10m to provide space for riparian habitats to develop.

Small-scale maintenance works to the existing masonry flood wall between Strood Pier and the Riverside Tavern may also be undertaken to ensure the stability of the structure.

All buildings on the Phase 2 site except the Riverside Tavern will be demolished, with most of the site ground raised to 6.0mAOD. A graded slope will be constructed around Riverside Tavern up to the raised ground level.

The proposed scheme also involves the raising and realignment of Canal Road from Watermill Gardens to the Riverside Link. Vehicular access to the Riverside Tavern will be provided. Vehicular access to Strood Railway Station will also be realigned and raised to 6.0mAOD. In order to prevent adverse settlement, the new highways will be constructed on top of a Geogrid platform supported on a regular grid of precast concrete bearing piles. Utilities within the existing Canal Road will be diverted to the new road alignment.

The landward boundary of the raised land on the Phase 2 site along the existing railway embankment and the boundary of the adjacent residential properties on Cranmere Court and Wingrove Drive will comprise a graded slope of reinforced earth. These will be positioned a minimum of 5m from the property and railway boundaries.

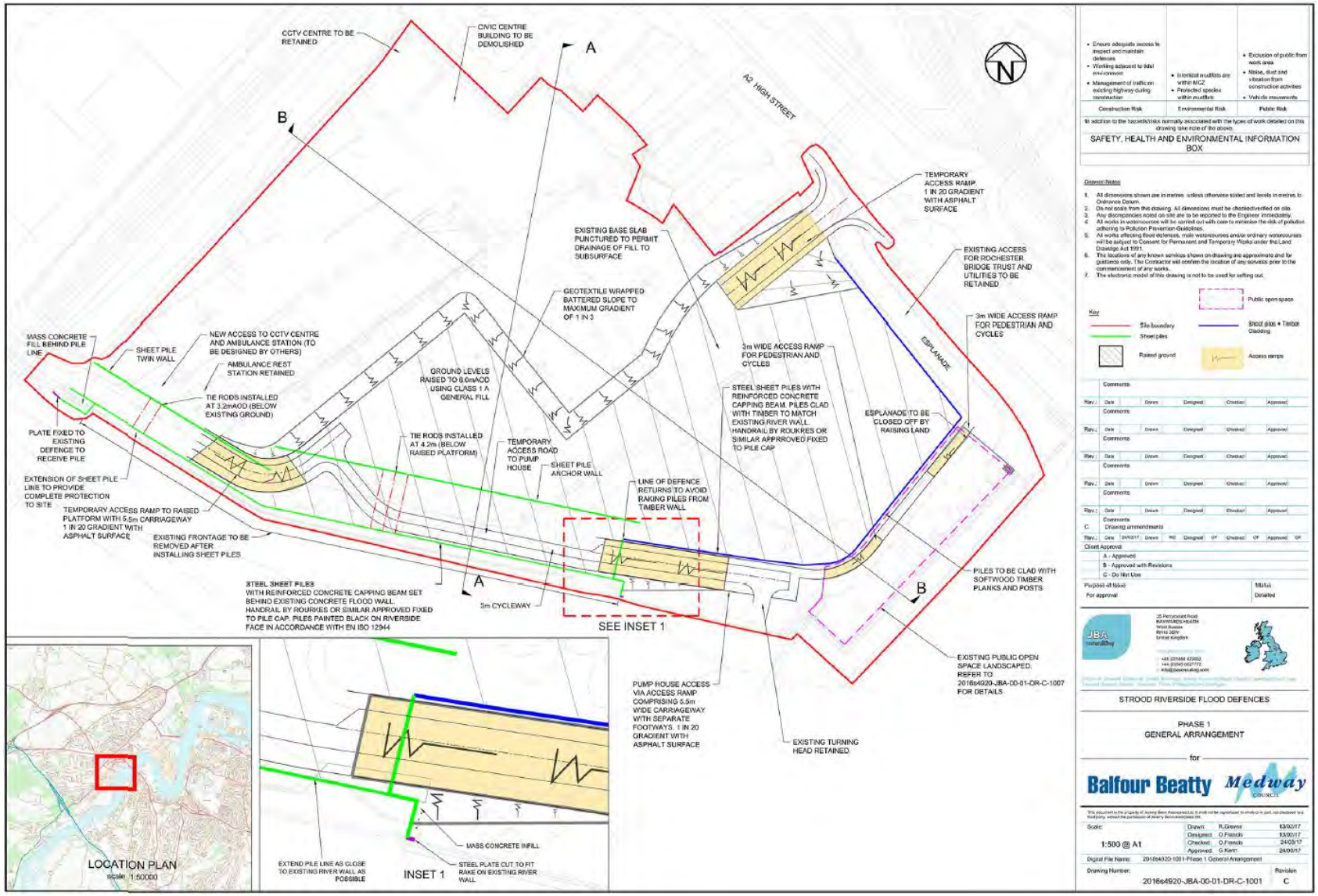

Figure 2-3: Proposed general arrangement of scheme for Phase 1

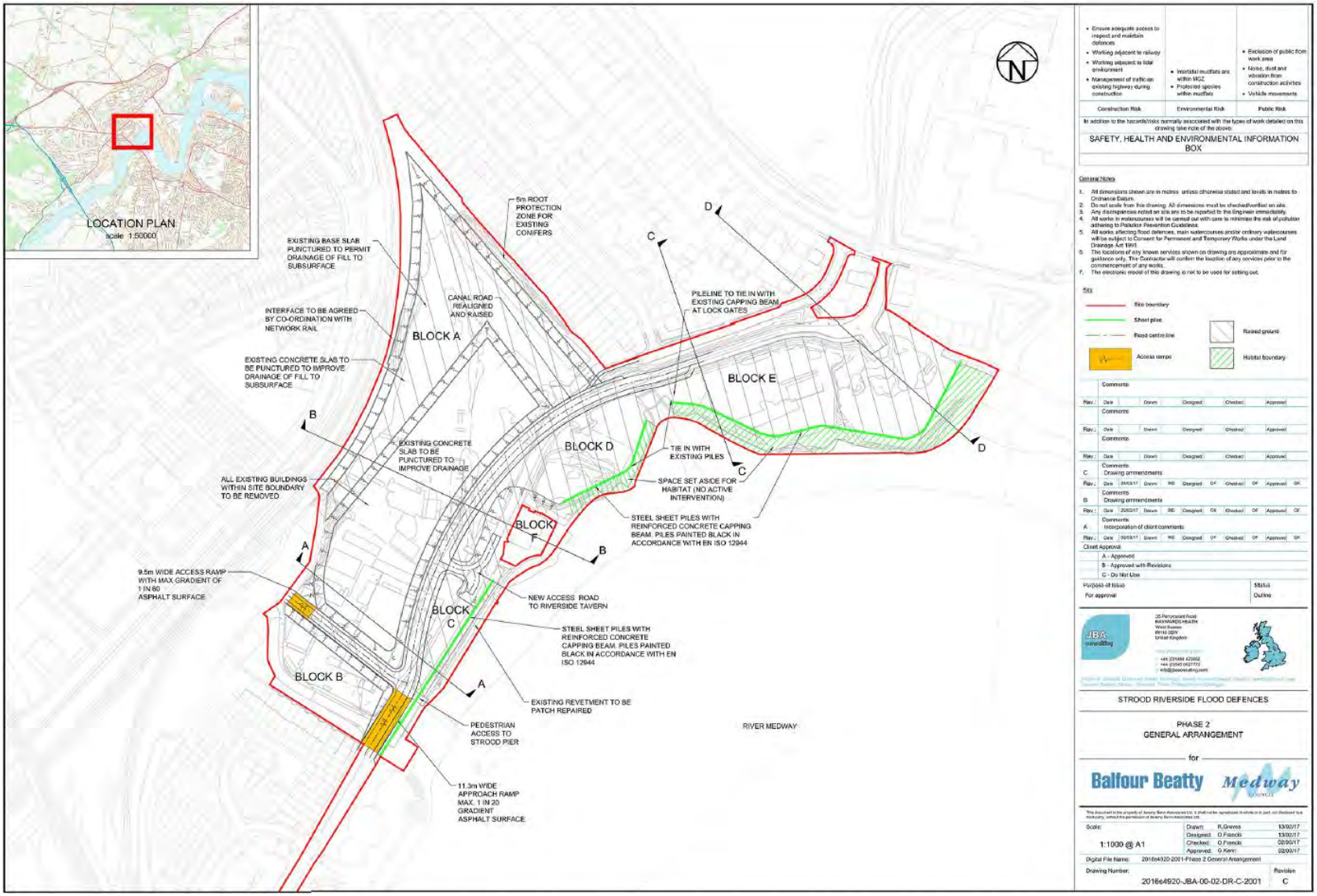

Figure 2-4 Proposed general arrangement of scheme for Phase 2

2.5 Environmental baseline

The environmental context of the sites is shown in Figure 2-5, and summaries the proceeding text, detailing the current landscape character, environmental features and designations, and social and economic context of the sites.

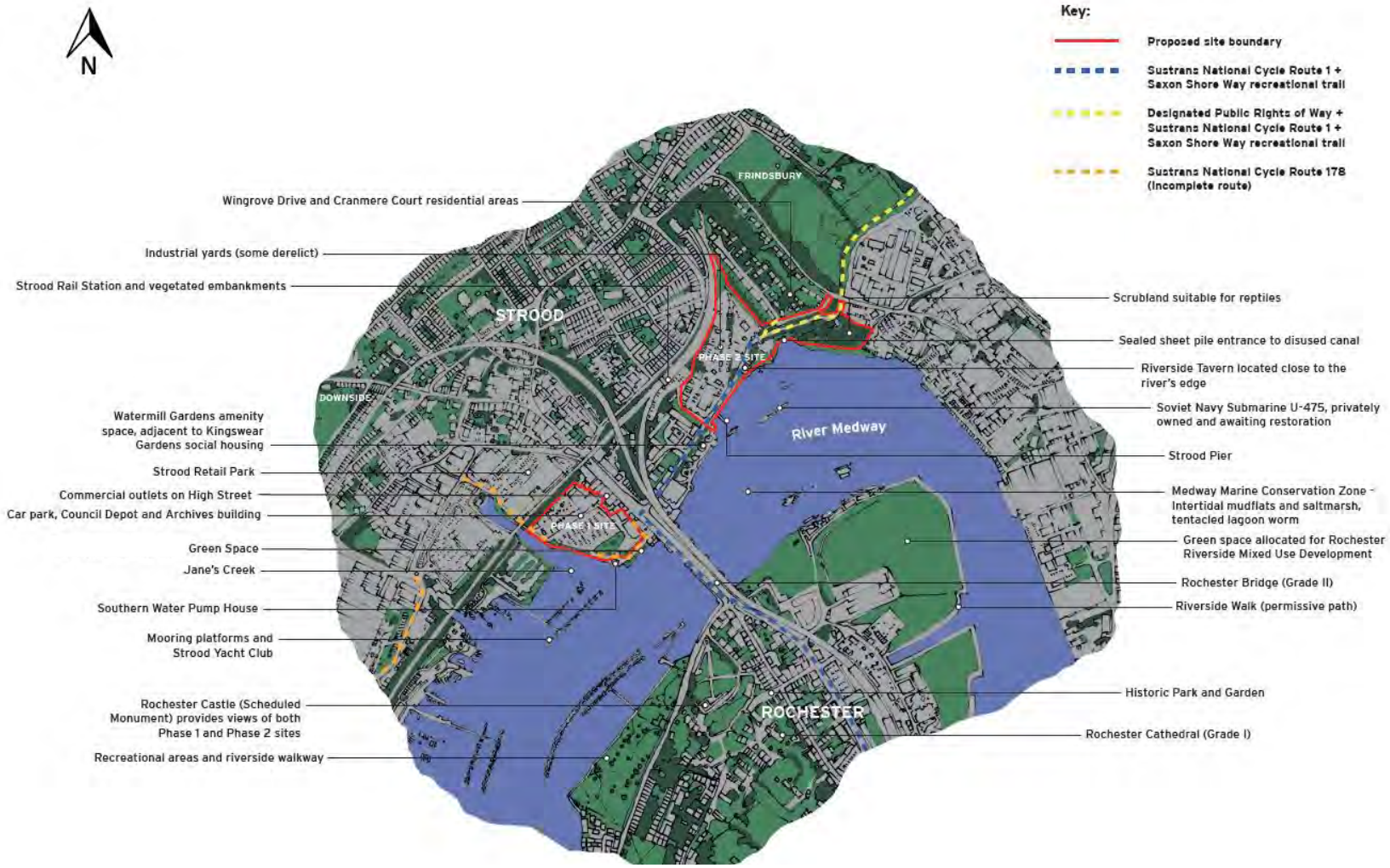

Figure 2-5 Environmental baseline of Strood

2.5.1 Landscape character

Figure 2-6 shows the current broad landscape character areas and land use of the two sites.

The overall landscape character of the Phase 1 site is an urban patchwork of hardstanding areas and a car park, light industrial buildings, retail units and open green spaces with a riverside setting (Figure 2-7). Views of Rochester Castle and other historic buildings and grounds are available across the River Medway. A large proportion of the Phase 1 site provides car parking facilities for visitors to Medway. To the north of the site is the Medway Council Work Depot Yard and Medway Archives building, which has an industrial character that blends with the small row of retail outlets to the north-east of the site. Within the east of the site is a large area of disused hard standing forming a patchwork of concrete and asphalt areas left from the demolition of the former Civic Centre and iconic Aveling and Porter building. Towards the south-west part of the site, the small river inlet of Jane's Creek has been subject to illegal tipping and has shopping trolleys and other unwanted waste scattered in the mudflats (Figure 2-8). Along the southern and eastern extents there are several landscaped amenity spaces with several ornamental semi-mature trees, as well as the Pump House owned by Southern Water (Figure 2-9).

The overall landscape character of the Phase 2 site area is predominantly industrial with a few areas of riverside scrubland. Canal road which passes through the proposed site, and forms a section of National Cycle Route 1, provides a link between the surrounding residential communities to the south-west and north-east (Figure 2-10) and to Strood Railway Station (Figure 2-11). Open views across the River Medway of industrial areas, residential areas, boats and other maritime elements are available between Watermill Gardens, a landscaped promenade and play area, and the Riverside Tavern, a local public house. Large industrial buildings and derelict hard standing areas surrounded by palisade fencing dominate the area west of Canal Road and limit views beyond (Figure 2-12). East of Canal Road is a thin strip of land featuring grass strips, benches, a pier, and areas of derelict land and scrubland (Figure 2-13). Beyond the Riverside Tavern there are areas of derelict land and scrubland leading down to the riverside edge, vegetation in these areas filter some views of the river (Figure 2-14).

2.5.2 Environmental context

The River Medway adjacent to the sites is designated as Medway Marine Conservation Zone (MCZ). The MCZ encompasses the section of the river from Rochester downstream to its mouth at Sheerness. The MCZ protects one species, the nationally scarce Tentacled Lagoon Worm *Alkmaria romijni*, and eight habitats including intertidal and subtidal sediments. Mudflat and saltmarsh habitat in the river adjacent to both the Phase 1 and Phase 2 sites are protected as priority habitats, designated under Schedule 41 of the Natural Environment and Rural Communities Act (2006).

A Preliminary Ecological Assessment (PEA) has been carried out to identify habitats present within and surrounding the sites, and potential for protected and notable species. Much of the two sites comprise scrubland, amenity grassland and trees, with bare ground and buildings. Scrubland may provide suitable habitat for reptile species within the Phase 2 site, and the Pump House and Riverside Tavern have potential to support bat roosts. Adjacent to the sites are estuarine habitats within the Medway MCZ, which are likely to support high numbers of fish and overwintering birds.

Rochester Bridge is Grade II listed and intersects the Phase 1 and 2 sites, joining Strood and Rochester over the River Medway (Figure 2-15). The proposed flood defence scheme will not require works to the bridge structure. Across the River Medway in Rochester is Rochester Castle, a Scheduled Monument, and Rochester Cathedral, a Grade I listed building, which sit within a Historic Park and Garden. There are a number other historic features within the site areas, including the remains of Second World War defence infrastructure and several maritime wreck sites.

2.5.3 Social and economic context

Residential areas close to the proposed development site include Kingswear Gardens, Cranmere Court and Wingrove Drive. Adjacent to the Phase 1 site, situated on the A2 (High Street), is a petrol station, vehicle repair/servicing garage, restaurants/food outlets, and retail outlets. Immediately adjacent to the Phase 2 site is the Riverside Tavern public house, Watermill Gardens children's play area, and Strood Railway Station.

Recreation activities and usage of the River Medway include sailing and motor cruising, rowing, angling and other water sports. There are multiple activity centres and user groups situated on the River Medway who use the section of river adjacent to the scheme area.

There are several permissive public access routes that cross through and around the Phase 1 site. The Sustrans National Cycle Route 178 is located close to the river. This is currently an incomplete route; however, there are plans to connect it with the Sustrans National Cycle Route 1 'Garden of England' long distance cycle route that follows Canal Road and Wingrove Drive within the Phase 2 site (Figure 2-16). Close to the Phase 2 site, there is a public right of way (PRoW) connecting Cranmere Court with Commissioner's Road to the north-east of the site (RR8). There are also two local cycle routes that follow the boundary of the site to the south-east; one along the road between Canal Road and the train station, and another along the path, which follows the riverside edge of the pier.

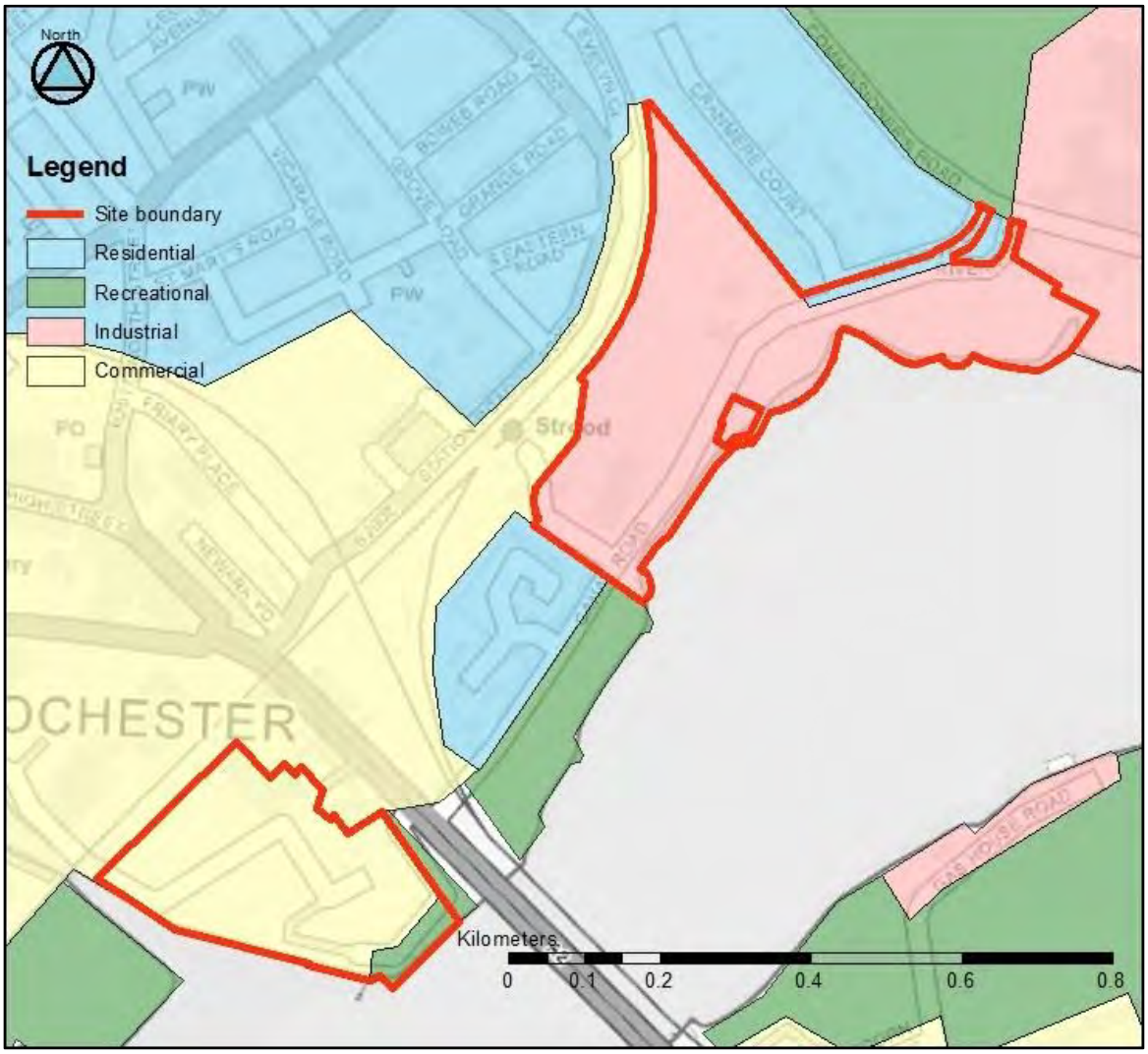

Figure 2-6: Existing land use and landscape character of the Phase 1 and Phase 2 sites

Figure 2-7: Phase 1 site from Rochester Bridge, with Civic Centre car park and buildings, publicly accessible green space, and Esplanade

Figure 2-8: Phase 1 site from the railway embankment bridge to the west, looking along the western boundary of the site, adjacent to Jane's Creek

Figure 2-11: Pump House on the Phase 1 site

Figure 2-9: Residential properties on Cranmere Court

Figure 2-10: View of Phase 2 site from Strood rail station

Figure 2-12: Phase 2 site waterfront looking west from the Riverside Tavern towards Strood Pier

Figure 2-13: Strood Pier and industrial storage areas to the west of the Phase 2 site

Figure 2-14: Scrubland and Riverside/Canal Road to the east of Riverside Tavern on Phase 2 site, with Thames and Medway Canal lock gates just visible on the left

Figure 2-15: Rochester Bridge and publicly accessible green space from Phase 1 site

Some existing land uses within the Phase 1 and Phase 2 sites will remain.

The CCTV building and associated access located towards the western boundary of the Phase 1 site needs to remain as it provides an important service within Strood and cannot easily be relocated. This is also the case for the adjacent ambulance station; a small building for ambulance drivers to rest during shifts.

The public amenity along the waterfront of the Phase 1 site to the west of Rochester Bridge will also remain publicly accessible open space. This area will be ground raised and will then be landscaped and terraced to provide open green space and trees.

The Riverside Tavern situated on the waterfront of the Phase 2 site is also not incorporated into the proposed scheme and will remain.

Strood Waterfront, encompassing the Phase 1 site, is designated as an Action Area in the Medway Local Plan (2003). Therefore, it is allocated for regeneration purposes to include residential dwellings and community amenities such as riverside walks.

Creation of new residential development and the provision of affordable housing is stated in policies H1 and H3 within the Local Development Plan.

Land along Canal Road within the Phase 2 site, reference ME254 in the Local Development Plan, meets the appropriate size thresholds for development.

Figure 2-16: National Cycle Route 1 from the east along Riverside on the Phase 2 site

2.5.4 Movement and access

Highways access

The A2 (High Street) provides vehicular and pedestrian access to the east of the Phase 1 site and links Strood with Rochester across Rochester Bridge (Figure 2-17). Access to the Phase 1 site off the A2 is vis the Esplanade, which runs parallel to the bridge and the river frontage of the Phase 1 site. An access road running from the A228 (Knight Road) past Strood Retail Park, also provides vehicular and pedestrian access to the west of the Phase 1 site.

The Phase 2 site is accessed via Canal Road, which connects into the A2 250m to the west. To the east of the Phase 2 site, Canal Road connects into Commissioner's Road.

Figure 2-17: Proposed point of access to the Phase 1 site via the A2 (High Street)

Pedestrian and cycle access

Further pedestrian and cycle access to the Phase 1 site is provided by National Cycle Route 178. To the Phase 2 site, the National Cycle Route 1 'Garden of England' runs over Rochester Bridge (A2/High Street) and along Canal Road. A PRoW, (RR8), joins Commissioner's Road and Cranmere Court to the north-east and two local cycle routes run from Strood rail station to Canal Road, and along the waterfront.

2.5.5 Opportunities and constraints

The landscape appraisal and other environmental and site assessment work undertaken to inform the scheme (detailed in section 4.3) has identified a range of constraints and opportunities. Key constraints and opportunities are described below in Table 2-2.

Table 2-2: Opportunities and constraints for the scheme arising from the baseline environment

Opportunities	Constraints
Set back line of defence to provide space for new intertidal habitat creation at the northern end of the Phase 2 site.	The River Medway and its range of important and protected habitats and species.
Removal of current defences on Phase 1 site provides space for new intertidal habitat creation along Jane's Creek.	Existing site users that are to remain such as the CCTV building, ambulance drivers rest centre, and the Riverside Tavern.
Improve amenity value of the green open space area on the Phase 1 site.	Adjacent site users/owners such as the Pump House and Kingswear Gardens residential properties.
Improve public access routes including the Sustrans National Cycle Route 178 (Phase 1) and National Cycle Route 1 (Phase 2).	Maintaining public access across the sites during construction.

3 Planning policy context

3.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) forms the basis of development plan making in England and is a material consideration in planning decisions. The NPPF details the Government requirements for the planning system, as well as providing a framework within which councils and local communities should produce planning documents, reflecting the priorities and needs of the relevant community.

A core theme of the NPPF is the delivery of sustainable development and it confirms the three dimensions to sustainable development as economic, social and environmental. Paragraph 14 emphasises this by stating *"At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development".*

Paragraph 17 of the NPPF sets out 12 core planning principles that should underpin plan making and decision taking.

- Proactively drive and support sustainable economic development to deliver the infrastructure that the country needs.
- Support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change.
- Encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value.

The NPPF also outline Government policy relating to 13 key theme set out across separate sections of the guidance. Those applicable to the proposed development are as follows are describe in **Table 3-1**.

Table 3-1: Themes within the NPPF of relevance to the proposed scheme

Theme	Summary	Relationship to proposed development
Building a strong, competitive economy	The Government is committed to securing economic growth, and the planning system should do everything it can to support sustainable economic growth.	The proposed scheme allows economic growth by facilitating future development of land for building businesses, infrastructure, services or housing.
Meeting the challenge of climate change, flooding and coastal change	Planning plays a key role in reducing greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change. Local planning authorities should adopt proactive strategies to mitigate and adapt to climate change, taking full account of flood risk, coastal change and water supply and demand considerations.	The proposed scheme will reduce the flood risk to the site, allowing future development, and surrounding infrastructure to be resilient to flooding due to climate change.
Conserving and enhancing the natural environment	The planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible. Planning policies and decisions should encourage the effective use of brownfield land, provided it is not of high environmental value.	The proposed scheme facilitates the re-use of previously developed land for future development, preventing the use of undeveloped land to future economic and social infrastructure needs. It also allows room for intertidal habitat to retreat due to sea level rise in the face of climate change, due to the setting back of flood defences.

Section 10 of the NPPF concerns meeting the challenge of climate change, flooding and coastal change. In paragraph 100, it states that where development is necessary, it should be made safe

without increasing flood risk elsewhere. The proposed scheme's primary objective is to reduce flood risk to site and elsewhere, in order to allow future use of the site to be made safe, and be resilient to climate change.

3.2 Medway Local Plan

Medway Council are currently in the process of updating their Local Plan for 2012 – 2035, which is anticipated to be adopted in 2019. It will contain strategic level and development management policies, land allocations, minerals and waste, and a policies map. This will provide for the number of homes and jobs, supporting infrastructure, such as transport, health facilities, schools, and parks that an area and its growing population needs over this time. It will replace the Medway Local Plan 2003.

The Medway Local Plan 2003 sets out the strategy, objectives and detailed policy for guiding development in Medway. The overarching development strategy for the plan area is to prioritise re-investment in the urban fabric. This is to include the redevelopment and recycling of under-used and derelict land within the urban area, with a focus on the Medway riverside areas and Chatham, Gillingham, Strood, Rochester and Rainham town centres, in accordance with Policy S1.

Strood Waterfront, encompassing the Phase 1 site, is designated as an action area in the Medway Local Plan 2003, as per Policy S10. Therefore, it is intended for regeneration to include residential dwellings, and community amenities such as riverside walks. Creation of new residential development and the provision of affordable housing is stated in policies H1 and H3 within the Local Development Plan. Land along Canal Road within the Phase 2 site, reference ME254 in the Local Development Plan, meets the appropriate size thresholds for development and has been earmarked to have the potential to contribute to these policies within Medway. Another section of land along Commissioner's Road, reference ME375 has also been identified to provide 100 units of housing. The Medway Strategic Land Availability Assessment (SLAA) 2014 has further identified Strood Waterfront along Canal Road as potential sites for employment between 2018 and 2023, and for housing development and retail between 2023-2028. Therefore, the proposed scheme is required in order to allow for the redevelopment of this land to achieve the policies set out by Medway Council in the Local Development Plan.

3.3 Supplementary Planning Documents (SPDs)

3.3.1 Strood Riverside Development Brief

The Strood Riverside Development Brief, which was adopted as SPD in 2006, was prepared to reinforce the masterplan proposals and to market development opportunity for the area. It details substantial plans for the Phase 2 site, describing a regeneration agenda, which is intended to facilitate the redevelopment of the site into a vibrant residential community with a mix of new homes and tenure types. The brief recognises that the delivery of a comprehensive scheme for the entirety of the site requires creating flood protection along a significant stretch of the riverside.

The brief reports that the Environment Agency have indicated that land raising would be their preferred option for providing defence from tidal flooding through removing the site from the floodplain. This approach would also provide a safe means to 'cap' any potential contamination risk on-site whilst maintaining the existing riverside biodiversity. In accordance with the Planning Policy Guidance Note 25 (PPG25), a Government produced document on development and flood risk practice, the development must accord with the following requirements:

- Defence of a residential site to a 1 in 200-year flood level (5.5mAOD).
- Ground floor finished floor level of 5.8mAOD for normal housing where living accommodation is provided at ground level, and 6.1mAOD for normal housing where sleeping accommodation is provided at floor level.
- Mixed uses or car parking may be provided at lower levels of protection as long as a safe exit is provided to the 5.8mAOD level.
- Open maintenance access has to be provided to a width of 15m from the flood defence/embankment top, or 10m if agreed with the Environment Agency.
- A 'dry' access route of 5.5mAOD, ideally 5.8Maod, is to be provided to the protected area.

The development brief also state that any proposed flood defence works must respect the site's biodiversity, and there should be no net loss of existing inter-tidal habitat. furthermore, a detailed flood risk assessment will be required to support any planning application for development on the site. All the necessary flood alleviation measure will need to put into place prior to the first occupation of any development.

4 Design

4.1 Options appraisal

An options appraisal process was undertaken in 2015 to identify a preferred option for the scheme. This process considered a range of key issues associated with the various scheme options including design requirements, technical feasibility, cost and environmental constraints and opportunities. Options were assessed against technical, environmental, social, economic and climate change adaptation criteria.

All options involved raising the ground level to the design flood level of 6.0mAOD.

It was realised that there were fewer feasible options available for the waterfront defence for the Phase 1 site due to its geometry and waterfront on both sides. A sloping frontage (e.g. revetment) would mean large loss of developable land. Therefore, the use of piling was considered the only viable option, either along the existing line of defence, set back from the line, or on a line to cut off Jane's Creek. These allow a large enough area for developable land to be created.

The following options for the Phase 2 site were identified during the appraisal stage:

- Option 1: Repair and replacement of existing revetment along the alignment of the existing defence or bank line, with slopes of 1:5 (1A), 1:10 (1B), and 1:20 (1C).
- Option 2: Similar to Option 1 but with the line of defence directed landward of Riverside Tavern to allow it to remain, in the western part of the site.
- Option 3A: Construction of new revetment with rock armour or blockwork along the alignment of the existing defence or bank line.
- Option 3B: Similar to Option 3A, but with the revetment topped by a 1.5m high reinforced concrete flood wall, and with a smaller extent of rock armour toe protection.
- Option 4A: Construction of a sheet pile wall following the existing line of defence or bank line, with concrete cap, designed to a height of 6mAOD.
- Option 4B: Similar to Option 4A, but with the alignment set back from the existing line of defence or bank line, landward of Riverside Tavern, in the western part of the site.
- Option 5: A combination of repair and replacement of existing revetment (Option 1) to the east of the site, and a setback sheet pile wall (Option 4B) to the west.

Option 5 was recommended as the preferred option for the Phase 2 site, as it allows the Riverside Tavern to remain precluding the need for land purchase, as well as maximising the developable area of land in the western portion of the site. It also provides a gentler gradient and more natural frontage over the eastern section of the site.

4.2 Design evolution

Due to various design constraints identified during the subsequent detailed design process, the proposed scheme has now shifted away from option 5 for the Phase 2 site. It is now more similar to option 4A and 4B.

In the eastern part of the site, the revetment will not be replaced to avoid in river works. Instead a new defence line setback from the river will be constructed in the form of a steel sheet pile wall. This will allow room for the retreat of intertidal habitat due to climate change induced sea-level rise, decreasing the severity of any future coastal squeeze impacts.

The line of defence will extend behind the Riverside Tavern, in the form of a graded slope, to allow it to remain. Access will be provided from the raised ground behind. Portions of land will also be left at current levels to allow it to be used as under croft parking in future developments.

The design for the Phase 1 site has also undergone minor design iterations. The alignment of the flood wall has moved landward of the existing line of defence. It largely follows the direction

of alignment, apart from along the southern edge, where the alignment returns landward, just before the Pump House, and continues along the landward side of the Esplanade before terminating at an intended access point at the junction of the A2 (High Street). This is to avoid raking piles, which are piles extending diagonally downwards behind the existing timber wall defence. It also diverts around the amenity area along the waterfront of the Phase 1 site, allowing it to remain as publicly accessible open space. To the west of the site, the sheet pile line has been extended towards the railway bridge, with a short section (3 to 4m) riverwards of the existing line of defence, to provide complete protection to the site. The northern portion of land on the Phase 1 site will also be left at current level to allow it to be used as undercroft parking in future developments. The CCTV building will also remain as it is an important asset to the Medway area and not easily relocated. A secondary line of piles has also been included to provide extra stability to the new sheet pile wall via ties, and has been aligned to allow the ambulance driver rest centre to remain.

4.3 Environmental assessment

Environmental assessments have been undertaken to identify sensitive environmental features in the scheme area. Medway Council confirmed that a statutory Environmental Impact Assessment (EIA) would not be required for the scheme.

The environmental assessments were integrated into the design process and influenced many aspects of the detailed design. They are summarised in **Table 4-1**.

Key environmental issues that have been identified include:

- Suitable habitat for reptile species in north-eastern presence of Phase 2 site, and two buildings with potential to support roosting bats.
- Medway MCZ and intertidal mudflat habitat adjacent to site.
- Potential archaeological remains present on both sites including possible remains of a Medieval bridge abutment on the Phase 1 site.
- Contamination hotspots including hydrocarbons and some asbestos containing material within shallow Made Ground deposits on the Phase 2 site.
- Social impacts to residents during construction that could affect local people and properties, public access and amenity space, and river users.

Mitigation measures were identified to address any significant environmental issues. In addition, some environmental enhancement measures were developed and incorporated into the scheme to ensure it achieved the overarching project objectives.

Consultation was undertaken with various departments of the Environment Agency, including flood risk, contaminated land, biodiversity and fisheries departments, on the outcomes of the assessments. Other stakeholders consulted during the environmental assessment process included the Marine Management Organisation (MMO), Sustrans, Royal Society for the Protection of Birds (RSPB), Kent Wildlife Trust and Kent County Council.

Table 4-1: Summary of environmental assessments as part of this project and planning application

Environmental assessment	Purpose and scope
Ecological Appraisal	An Ecological Appraisal has been undertaken following CIEEM guidance. It assesses the impacts of the proposed scheme to the ecology of the scheme area and surrounding land. Considers all ecological aspects but focus on potential impacts on reptiles, bats and the Medway MCZ.
Landscape and Visual Assessment (LVA)	A LVA has been prepared based upon guidance in Guidelines for Landscape and Visual Impact Assessment, 3rd edition (GLVIA3), published by the Landscape Institute and the Institute of Environmental Management and Assessment (IEMA). It assesses the potential changes to the local landscape and the sensitivity of the landscape to these changes. It also considers impacts on visual amenity as a result of the proposed scheme.
Heritage Desk-Based Assessment (DBA))	A DBA has been prepared following CIfA guidance. It takes into consideration all known records relating to the scheme area to gauge the archaeological potential of the site. Information on designated sites, local Historic Environment Records, historical maps and photographs, and other sources, are used to create a comprehensive overview of the history and prehistory of

Environmental assessment	Purpose and scope
	the site. This is supplemented with information gained through an archaeological Watching Brief of the Ground Investigation works. Potential impacts associated with the scheme and its construction to archaeological and heritage features have been assessed.
Hydromorphic Audit and Water Framework Directive (WFD) Impact Assessment	The Hydromorphic Audit assesses the current hydromorphology of the river system and any possible impacts that the proposed scheme may cause. The audit includes a WFD Impact Assessment, which assesses the potential impacts of the scheme on the WFD status of the adjacent surface water and groundwater bodies.
Phase I Preliminary Risk Assessment and Piling Risk Assessment	A Phase I Preliminary Risk Assessment has been carried out to identify potential sources of contamination, receptors and pathways. It draws upon the results of recent Ground Investigation surveys, water sample analysis and gas monitoring, as well as historic information regarding the site and its use. A Piling Risk Assessment has been prepared to assess the potential for the piling operations to cause land and water contamination.
Construction Environmental Management Plan (CEMP)	A CEMP has been produced that sets out the proposed measures to be implemented during construction to avoid, minimise or mitigate any construction effects on the environment and the surrounding community.
Flood Risk Assessment (FRA)	A FRA has been prepared following guidance published by the Environment Agency. It describes the results of flood modelling with and without the proposed new flood defences, and assesses whether there is a risk of increased flooding to third parties as a result of the proposed scheme.

4.4 Stakeholder engagement

A Stakeholder Engagement Plan (SEP) was developed to guide and record stakeholder engagement during the design process. The plan followed *Building Trust with Communities* guidance developed by the EA, which encourages the project team to engage with stakeholders early on to understand their concerns, interests, and priorities. Each stakeholder has different levels of influence on the direction and outcomes of the scheme. The guidance identifies four discrete engagement levels depending upon the level of interest and influence individual stakeholders have in the scheme. These include: partnership, where the stakeholder is part of the project team and decisions cannot be taken forward without their agreement; involve, where the stakeholder is regularly involved in the decision-making process and has influence over decisions; consult, where advice is actively sought from the stakeholder on specific subjects or issues, and; inform, where stakeholders are informed of the project and invited to provide comments or information. Considerable focus was applied identifying and evaluating an appropriate approach to be adopted for engagement level.

Stakeholders were grouped and a range of engagement methods and approaches were assigned for each group to gain their input effectively. A variety of engagement methods were used including statutory consultation meetings, site visits and meetings, and delivery of an environmental scoping letter to provide information on the proposed scheme and facilitate a means of communication. A communications record for the consultations has been kept throughout the project, which includes records of meetings and other communications.

Landowners were a focus for engagement on the alignment of the scheme, particularly on the Phase 1 site where the CCTV building, ambulance drivers' building and amenity area are to be retained, and on the Phase 2 site surrounding the Riverside Tavern and Strood Railway Station. The Environment Agency was also engaged to inform on the design and construction of the scheme, and to identify any associated environmental issues.

Key comments received as a result of the consultation process included:

- Requirement of characterisation of made ground and any contamination present, which is to be managed appropriately (Environment Agency).
- Consideration to be given future use of land, and to create suitable land drainage (avoiding standing water on made ground) and outfalls (Environment Agency).
- Obligation to prevent loss and where possible enhance biodiversity and habitat, particularly regarding mudflat and saltmarsh within the Medway Estuary (EA).

- Effects to environmentally designated sites, including the Medway MCZ, are not anticipated (Natural England)
- The sites are outside Ministry of Defence (MoD) safeguarding area (MoD)

4.5 Design principals and concepts

The following design principles have been developed for key aspects of the design.

4.5.1 Use

This scheme will be used to alleviate the risk of flooding to both sites, which is required to satisfy national and local planning guidance and policies (NPPF, PPG25), to facilitate the future development of the sites as part of the wider aspirations for the area. The location of the two sites within a long-established neighbourhood means that there is a broad range of community facilities within walking distance. The location of the sites close to an established community, retail and open space facilities, adjacent to the town centre and close to public transport nodes such as the railway are positive characteristics which need to be maximised through the provision of safe, direct, convenient and interesting pedestrian routes.

Parts of the Phase 1 site's current land use will remain. This includes the Pump House, which is used to pump surface water to the River Medway, and ambulance driver rest centre, and the CCTV building. These are important infrastructure in the area and will therefore be integrated into this scheme.

Within the Phase 2 site, the Riverside Tavern will remain. The scheme is sensitive to the continued use of this asset, providing appropriate vehicular and pedestrian access to it. The flood defences in the north-eastern part of the Phase 2 site will also be set back from the river's edge to enable the development of new inter-tidal habitats in the future.

4.5.2 Amount

Approximately 97,094m^2 of land is within the site boundaries. Approximately 1,025m of steel sheet pile wall be constructed. The amount of development being undertaken in this scheme is in accordance with relevant national planning policy, that dictates the level of flood protection required before future redevelopment. Generally, the amount of development has been limited as much as possible in order to allow any future regeneration on site the flexibility to produce the most efficient and suitable development.

4.5.3 Layout

In making adjustments to the alignment of the defences, a balance has been achieved between a range of factors. The scheme has sought to set back defences from the water's edge in the north-eastern part of the Phase 2 site so as to protect and enhance the biodiversity value of the habitat within the Medway Estuary. This has been balanced against providing more space for future development on site in the south-western part of the Phase 2 site. Furthermore, in order to maintain access to Riverside Tavern and to not encroach into its boundary, a graded slope around the southern, western and northern boundaries will be constructed. To ensure the stability of the Phase 1 scheme over its 100-year design life it is necessary to construct the flood wall with large steel sheet piles, and anchor them to secondary sheet piles further inland. The removal of parts of the current flood wall which are at risk of failing is also necessary. Other constraints that have dictated the layout of the Phase 1 site include the land uses which are to remain. The secondary line of piles has been split to avoid the ambulance drivers rest centre, provisions have been made to allow access to the Pump House, and the amenity area has been accommodated by diverting the sheet pile wall landward.

4.5.4 Scale

The scale, in terms of height, of the defences is determined by the required standard of flood protection they must deliver, and is similar in scale to adjacent sections of river wall. To deliver the required standard of protection (1 in 200-year) the finished heights of the flood walls across the scheme is 6.1mAOD, and the finished height of raised ground is 6.0mAOD. The overall length of the flood wall is approximately 1,025m.

4.5.5 Landscaping

Much of this scheme will be left as bare ground. This is to increase the efficient use of resources, as any significant amounts of landscaping put in place in this scheme is likely to be removed

during future regeneration. However, the amenity area fronting the Medway Estuary on the Phase 1 site will be landscaped and reinstated as open green space following ground raising (Figure 4-1).

Paving surfaces will be resin-bound aggregate to provide a smooth, even and well-laid surface to avoid tripping.

Figure 4-1: Indicative photomontage of landscape works as part of the scheme to the publicly accessible green space on the Phase 1 site

4.5.6 Appearance

The form and appearance of the defences have been developed in order to respect the characteristics of the areas within which they are located.

Key examples of this are in relation to the scheme design on the Phase 1 site close to the publicly accessible green space, and the diversion of the flood wall landward. The steel sheet piles are to be painted black, with anti-corrosive paint, in accordance with EN ISO 12944 (international standard on corrosion protection of steel structures using protective paint).

Hand rails topping the flood walls will also be the same, or very similar, to the ones used in nearby developments in Rochester. This will give a consistent appearance to the Medway area, giving it a 'sense of place'.

Figure 4-2 to Figure 4-6 show a series of indicative photomontages of the scheme.

Figure 4-2: Indicative photomontage of ground raising and access ramp from the A2 (High Street) on the Phase 1 site

Figure 4-3: Indicative photomontage of the Phase 1 site from the A2 (High Street)

Figure 4-4: Indicative photomontage of the Phase 2 site from Watermill Gardens

Figure 4-5: Indicative photomontage of the Phase 1 site from Rochester Castle

Figure 4-6: Indicative photomontage of the Phase 2 site from Rochester

5 Proposed detailed design

This section provides an overview of the key elements of the scheme. It also explains the engineering, environmental, and landscape considerations that have informed the proposed design elements. Please refer to section 2.3 for the overall general arrangement of the scheme.

5.1 Phase 1 (Civic Centre) site

5.1.1 Railway embankment to Pump House bordering Jane's Creek

The relevant general arrangement for this part of the scheme is shown in Figure 5-1. A steel sheet pile wall will be constructed 2m landward of the existing line of defence. This will consist of AZ38-700 steel sheet piles with a crest level of 6.0mAOD, and a toe level of -8.0mAOD. A reinforced concrete capping beam will create an overall height of 6.1mAOD. Two secondary lines of piles, or anchor walls, will be constructed approximately 10m and 19m landwards of the new sheet pile wall, for western and eastern sections, respectively, in a parallel alignment. They have been split into two, and the western section aligned closer to the new sheet pile wall towards the railway embankment, in order to avoid the ambulance driver rest centre. Ties rods at 3.2m intervals (for the western section) and 4.2m intervals (for the eastern section), buried 1m below existing ground levels, will help anchor the new wall in place. Crest level of these piles will be 4.0mAOD and toe level -1.0mAOD. Anchor walls will be installed first, followed by the new sheet pile wall, which will be tied back to the anchor wall as construction progresses. At the western end of the new sheet pile wall, a short section of sheet piling is necessary within Jane's Creek to protect more of the site, with a mass concrete fill behind the pile line. A small section of road will remain unprotected from flooding. A steel plate will be fixed to the existing defence in order to receive the first pile of the new wall. The existing concrete wall and earth is to be removed after driving sheet piles. The existing wall ties for the current wall will be removed prior to the installation of sheet piles, and the wall will be broken just below silt level and lifted out after the new sheet pile wall is complete. The new steel sheet piles are to be painted black, with anti-corrosive paint, in accordance with EN ISO 12944 (international standard on corrosion protection of steel structures using protective paint).

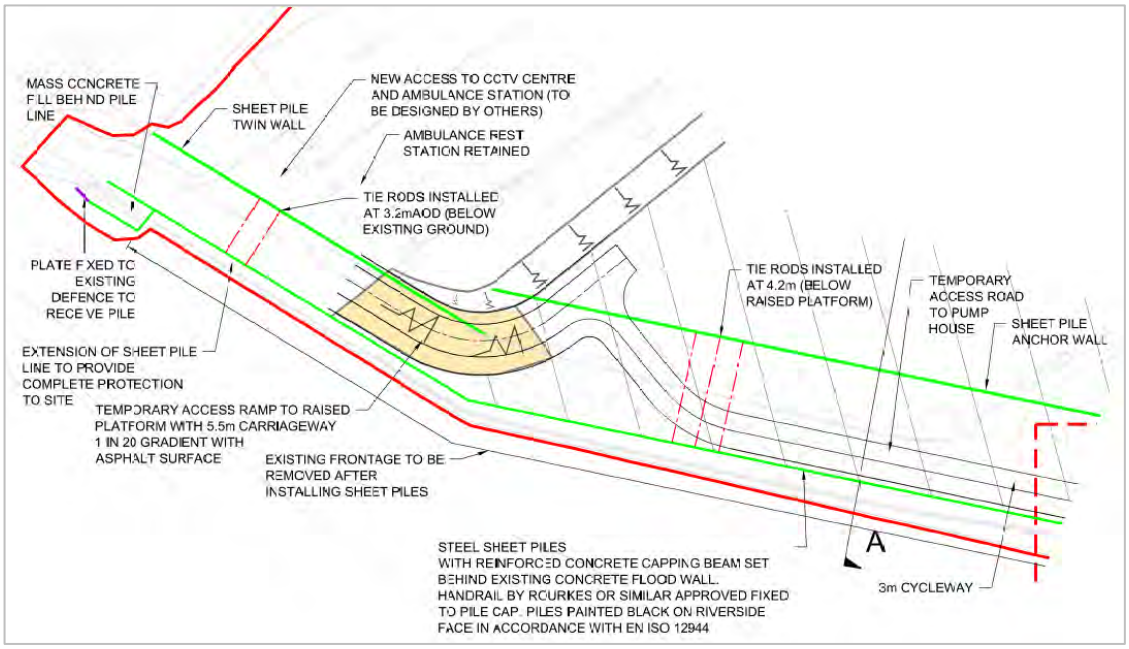

Figure 5-1: Clip of general arrangement between railway embankment and Pump House on the Phase 1 site

5.1.2 Pump House

The relevant general arrangement for this part of the scheme is shown in Figure 5-2. The alignment of the steel sheet pile wall will move landwards where the current alignment also shifts landwards, at a point just east of the Pump House. The new sheet pile wall, consisting of three pairs of 7m long AZ20-700 pile between one pair of 11m long AZ26-700 piles, will follow the landward alignment of the Esplanade. This is to avoid raking piles associated with the current timber flood wall along this section of river. Before the new wall returns landwards, piles will extend as close to the existing river wall as possible. A mass concrete infill behind a steel plate fitted on the rake of the existing river wall will also be constructed at this junction. A reinforced concrete capping beam will top the steel sheet pile wall, with a finished height of 6.1mAOD. Hand rails designed by Rourkes, or a similar, approved, alternative will be fixed to the pile cap.

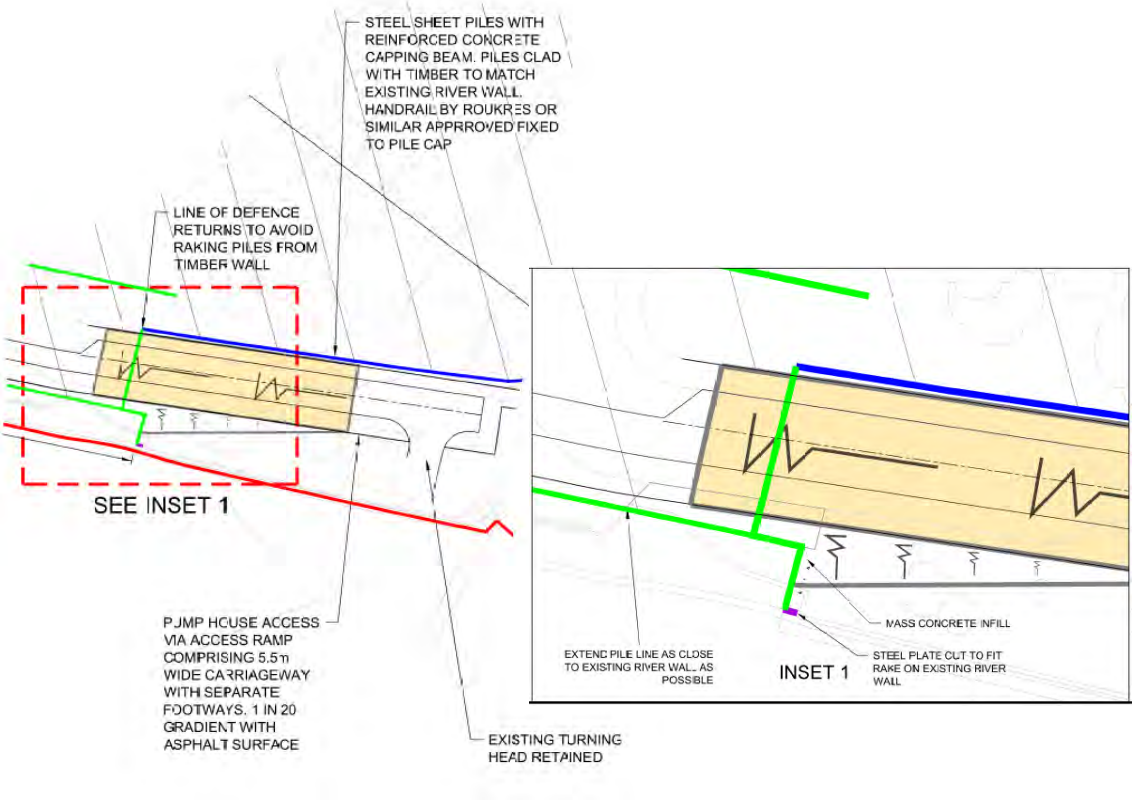

Figure 5-2: Clip of general arrangement around the Pump House on the Phase 1 site

5.1.3 Pump House to Rochester Bridge

The relevant general arrangement for this part of the scheme is shown in Figure 5-3. The alignment of the new wall will follow the landward alignment of the Esplanade towards Rochester Bridge.

A more detailed general arrangement for the amenity area is shown in Figure 5-4. The existing amenity area will be raised to 5.1mAOD with a light weight fill material and finished with a layer of topsoil. The finished level will be 100mm below the height of the current concrete wall, which will be strengthened with a concrete ground beam and act as a retaining wall. Timber retaining walls will be constructed at the eastern and western edge of the amenity area. The amenity area will be reinstated with approximately 8 native trees, 507m2 of amenity grass seed mix and 320m2 of low maintenance planting. Steps in the southeast corner of the amenity area will be constructed and lead to an asphalt footpath along the waterfront. Hand rails designed by Rourkes, or a similar, approved, alternative will be fixed to the concrete ground beam and steps. The existing railings on the riverside of the concrete wall will be removed and the existing steps to the south west of the amenity area, that provide access to and from the river, will be retained and incorporated into the scheme design. An asphalt cycle path and footpath with ramped access will run along the northern extent of the amenity area adjacent to the new sheet pile wall. The sheet pile wall will be clad with timber to match the existing timber retaining wall along the river frontage.

The frontage of new sheet pile wall, constructed from three pairs of 7m long AZ20-700 pile between one pair of 11m long AZ26-700 piles, will be clad with timber extending up to 6.1mAOD to the raised land behind. This area will be landscaped to a design to be agreed with Medway Council and Rochester Bridge Trust.

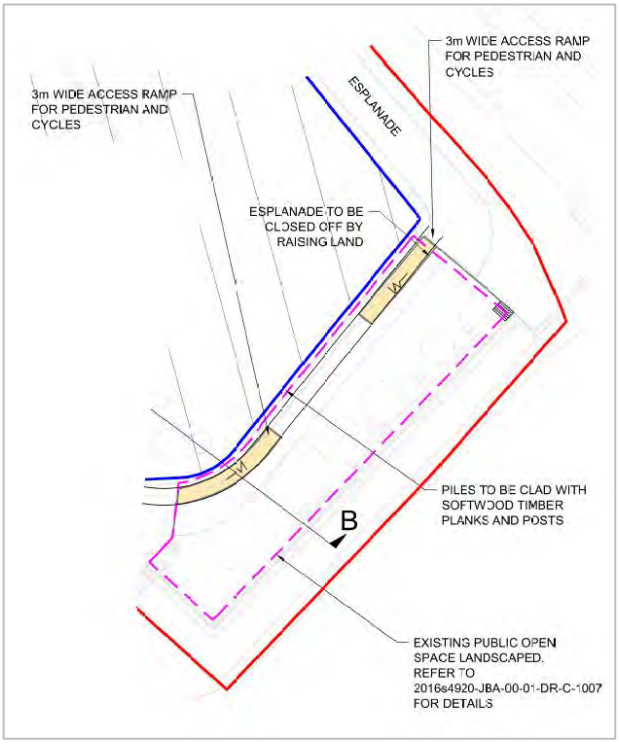

Figure 5-3: Clip of general arrangement between Pump House and Rochester Bridge on the Phase 1 site

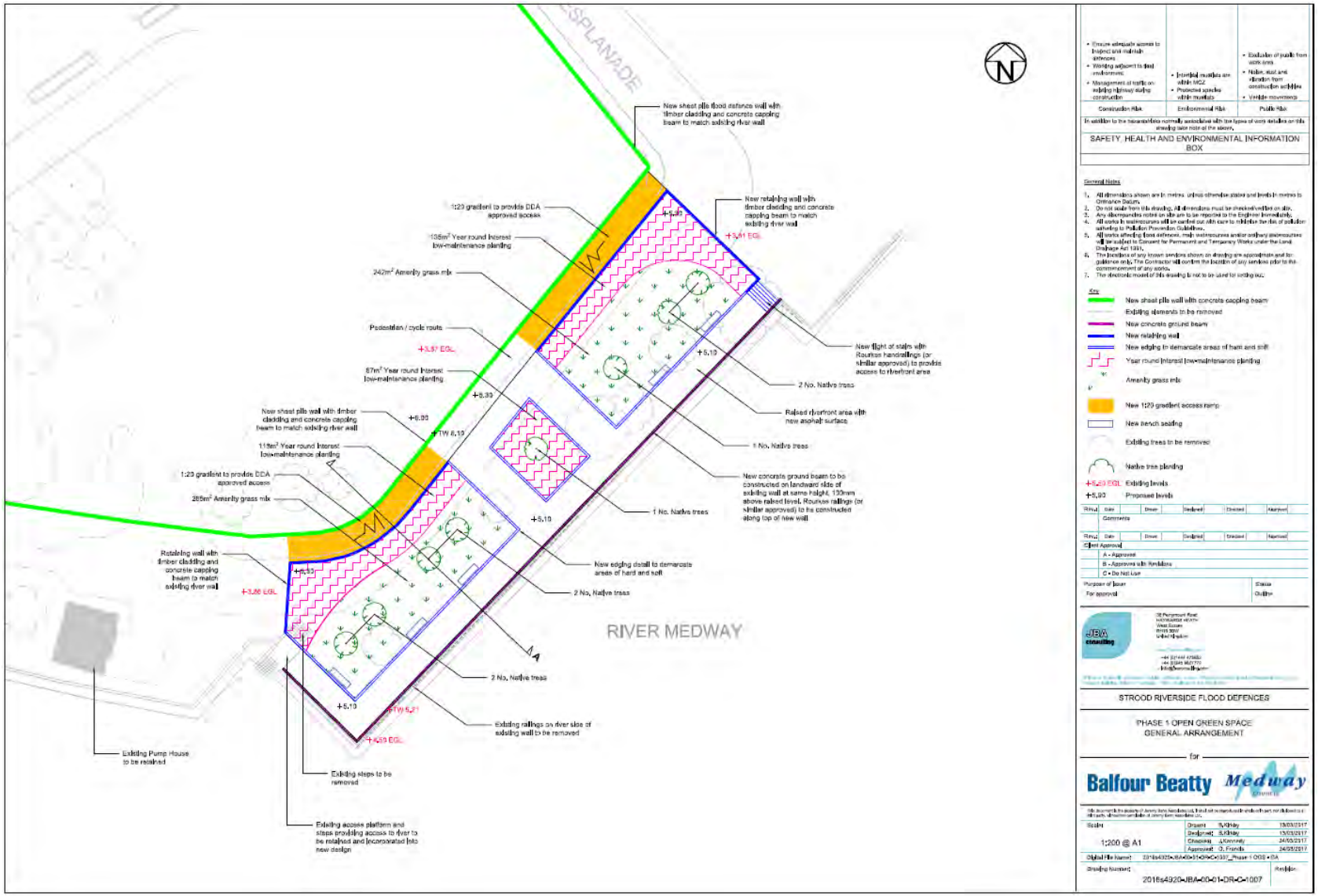

Figure 5-4 Proposed general arrangement for amenity area on Phase 1 site

5.1.4 Rochester Bridge to High Street (A2)

The relevant general arrangement for this part of the scheme is shown in Figure 5-5. The new steel sheet pile wall (three pairs of 7m long AZ20-700 pile between one pair of 11m long AZ26-700 piles) will continue along the current alignment of the Esplanade as it turns northwards at the point where it meets Rochester Bridge. It will terminate at the intended access point to the Phase 1 site from High Street (A2).

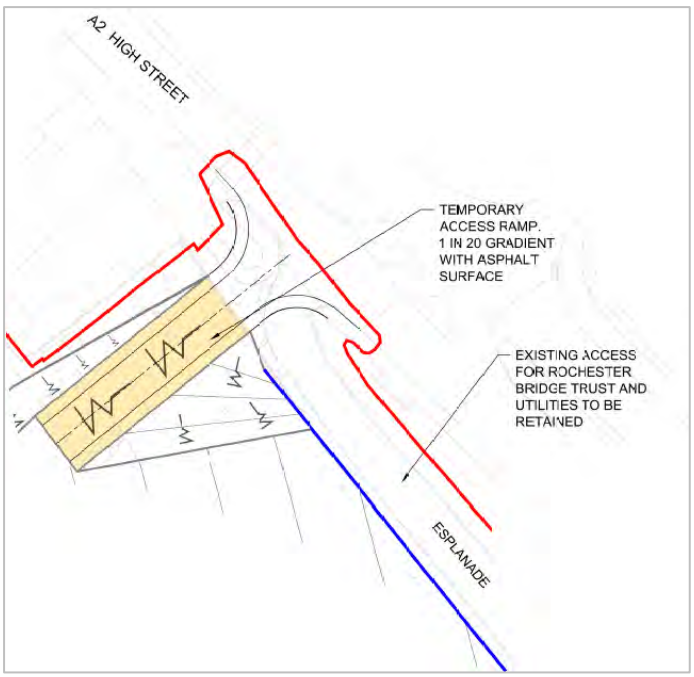

Figure 5-5: Clip of general arrangement between Rochester Bridge and High Street (A2) on the Phase 1 site

5.1.5 High Street (A2) to Jane's Creek and central portion of site

The relevant general arrangement for this part of the scheme is shown in Figure 5-6. The landward boundary of raised ground will consist of a geotextile wrapped battered slope, with a maximum gradient of 1 in 3. The boundary will extend westwards through the area currently occupied by the Medway Archives building before connecting into the steel sheet pile wall adjacent to Jane's Creek. The CCTV building and associated access will remain. The ambulance driver rest centre will be removed, but relocated following agreement with Medway council.

The ground within the Phase 1 site will be raised by approximately 1.8m to 6.0mAOD. Fill material will be Class 1A General Fill. Prior to this, the existing base slab will be punctured to permit drainage through the fill and into the subsurface.

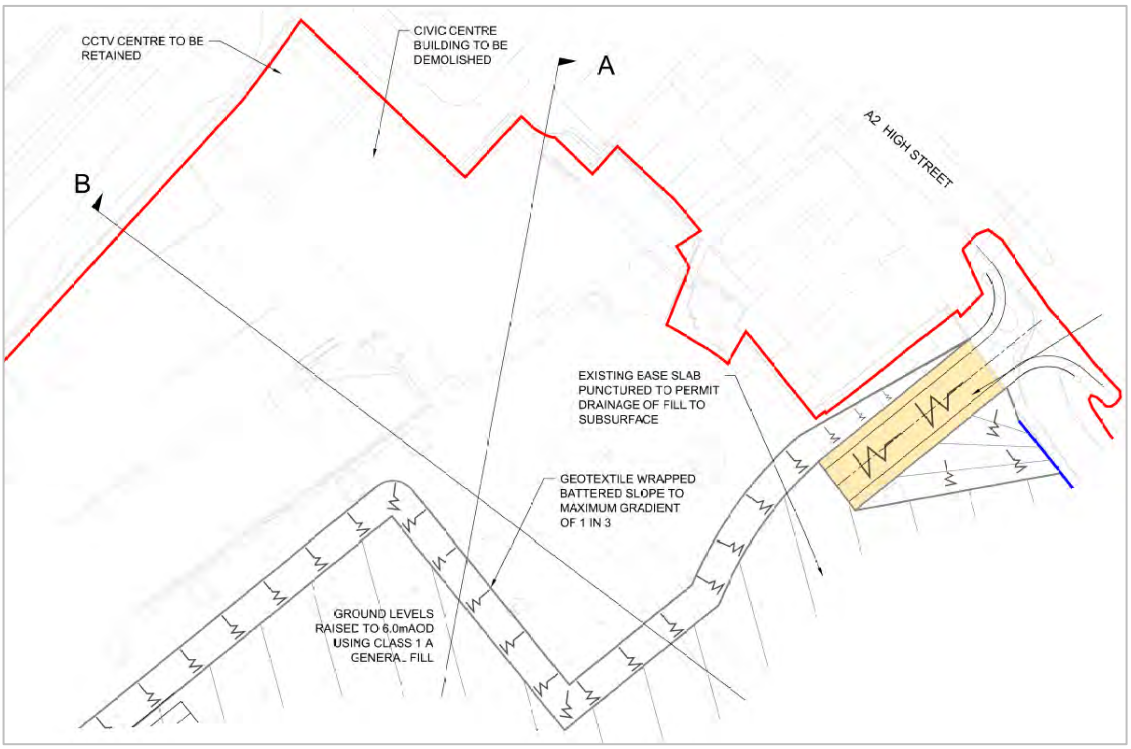

Figure 5-6: Clip of general arrangement between High Street (A2) and Jane's Creek on the Phase 1 site

5.2 Phase 2 (Strood Riverside) site

5.2.1 Strood Pier to Riverside Tavern

The relevant general arrangement for this part of the scheme is shown in Figure 5-7. A steel sheet pile wall will be constructed with in a kingpost arrangement, consisting of three pairs of 7m long AZ20-700 pile between one pair of 11m long AZ26-700 piles, with reinforced concrete capping beam. This will be along the alignment of a buried former concrete wall, approximately 4m back from the current flood wall, through Block C. The crest level of the wall will be 6.0mAOD and the toe level will be -5.0mAOD, with an overall height of 6.1mAOD including the concrete capping beam. The existing flood wall will be patch repaired where necessary, following a condition survey. This may involve excavating small patches of damaged wall, and refilling with mass concrete, finished in keeping with the existing wall.

The line of piles will terminate west of the Riverside Tavern. A graded slope leading up to raised ground will border behind Riverside Tavern, and access will be provided to it, from Block F. The slope will then tie in to another line of steel sheet piles on the east side of Riverside Tavern.

5.2.2 Riverside Tavern to Medway Metals Ltd

The relevant general arrangement for this part of the scheme is shown in Figure 5-8. A steel sheet pile wall will be constructed through Block D, from the eastern boundary of the Riverside Tavern to the Thames and Medway Canal lock gates. The wall will restart on the east side of the Thames and Medway Canal lock gates and continue towards Medway Metals Ltd, through Block E. Steel sheet piles will be set back from the river frontage in these sections to allow space for approximately 2925m^2 intertidal habitat. For the majority of this stretch of riverside, the arrangement will consist of three pairs of 7m long AZ20-700 pile between one pair of 11m long AZ26-700 piles. A reinforced concrete capping will also top the steel sheet piles, with a finished height of 6.1mAOD. They will tie in to either side of the Thames and Medway Canal lock gates. At the end of the steel sheet pile wall, close to Medway Metals Ltd, 3.5m long AZ26-700 steel sheet piles will provide a cut-off.

To ensure the long-term maintenance of the flood defence over its 100-year design life, anti-corrosive black paint will be applied to the piles, before piling. This will be in accordance with EN ISO 12944 (international standard on corrosion protection of steel structures using protective paint).

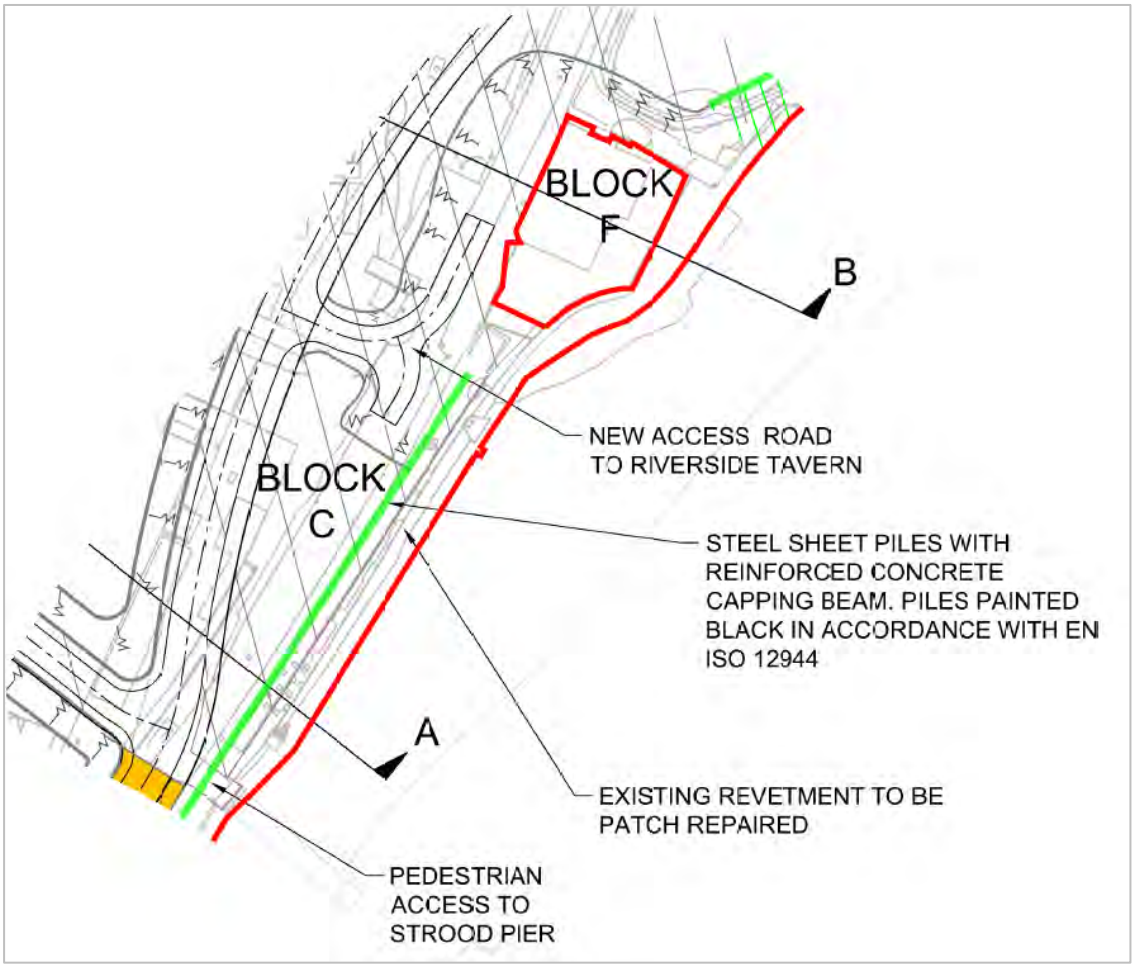

Figure 5-7: Clip of general arrangement between Strood Pier and Riverside Tavern on the Phase 2 site

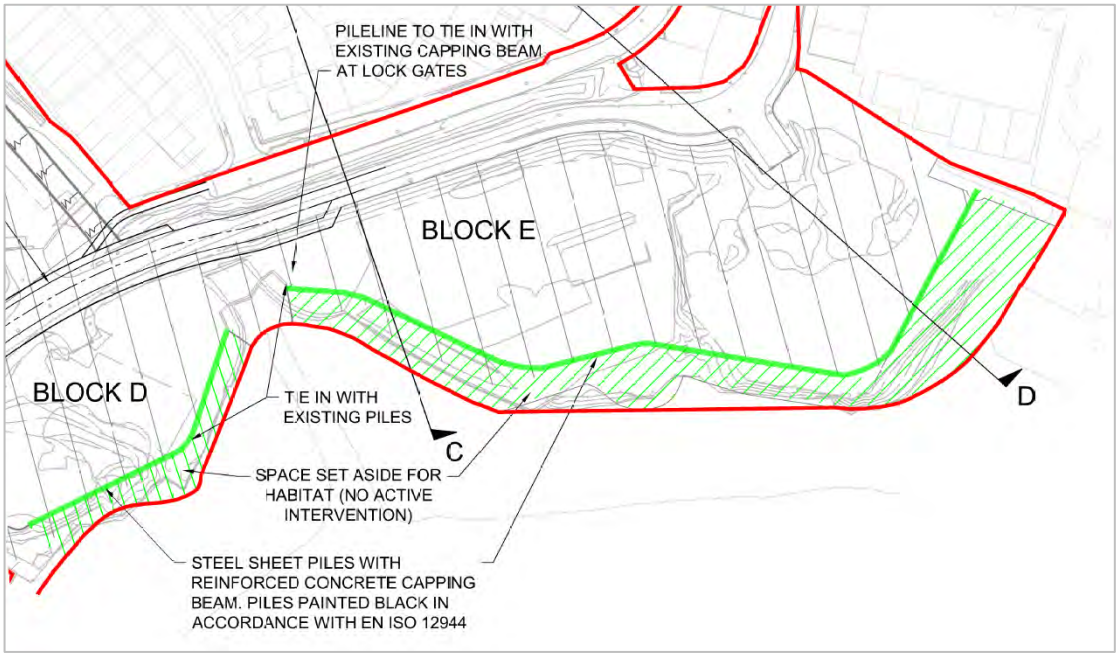

Figure 5-8: Clip of general arrangement between Riverside Tavern and Medway Metals Ltd on the Phase 2 site

5.2.3 Rear boundary and central portion of site

The relevant general arrangement for this part of the scheme is shown in Figure 5-9. Block A, C, D, E, and F will be raised to a height of 6.0mAOD. The existing base slab will be punctured to allow drainage into the subsurface below the raised ground. Block B will be left un raised for under croft parking in a future development, but the concrete slab will also be punctured to improve drainage. The rear boundaries of Block C, D, and F will abut against Canal Road, which will be raised and realigned landward, early on in the construction programme. The rear boundary of Block E will abut against the already higher ground along Riverside. The rear boundary of Block A is to be in coordination with Network Rail, but is likely to be either a graded slope of reinforced earth or a concrete retaining wall. These will offset approximately 5m from the property and railway boundaries, to allow space between residential properties and the root protection zones of coniferous trees. The road linking Canal Road and Strood Railway Station car park will be realigned north-east, and raised, and abut against Block B. This road will therefore ramp down to the car park from a height of 5.0mAOD. Canal Road will be ramped up on the west side of the site to meet this junction to a height of 4.5mAOD. The road embankment will comprise fill material on a geogrid raft supported on a grid of precast concrete pile at 2.5 C/C.

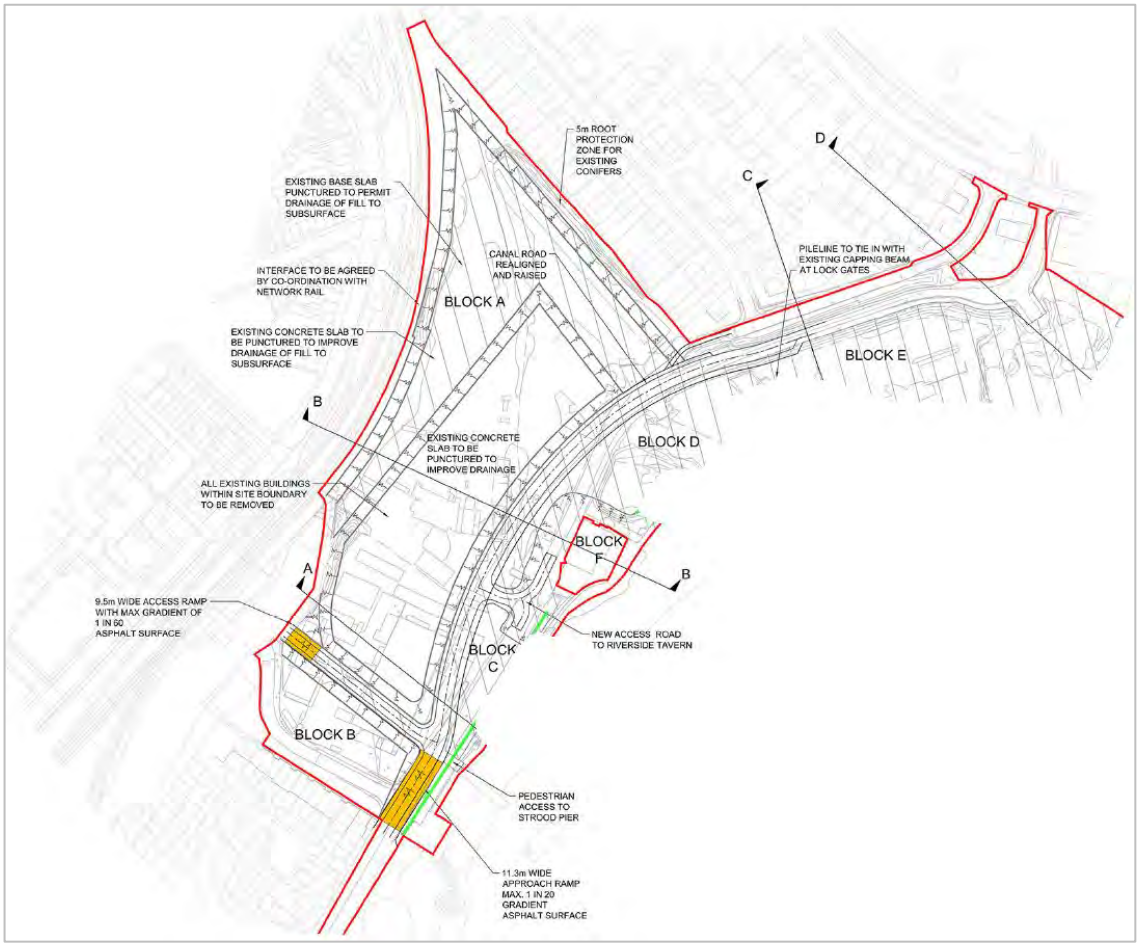

Figure 5-9: Clip of general arrangement of rear boundary and central portion of the Phase 2 site

6 Access and movement

The proposed scheme interacts with a variety of existing access routes, both highway and pedestrian, and the design has sought to maintain this connectivity across the sites.

The scheme will guarantee equal and safe access to all users to public areas that will be affected by the scheme. It will facilitate the ease of movement of authorised vehicular users, pedestrians, cyclists, disabled people, the elderly and people with young children. Minimum standards for disabled access for such items as steps and ramps will be adhered to. Safe access for personnel carrying out maintenance and inspections of the defences has also been incorporated within the design proposals.

A brief explanation of how the needs of different users has been considered is provided below.

6.1 Vehicular access

6.1.1 Phase 1

Three access points will be created to the Phase 1 site, accommodating access to the site and publicly accessible green space. Currently, access into the site area is via the Esplanade. This will be closed off by raising land as part of this scheme. However, the stretch of road bordering the site area to the east will be retained, to allow access for the Rochester Bridge Trust and utilities. The primary vehicular access into the Phase 1 site will be via a 1 in 20 gradient ramp, with asphalt surface, from the A2 (High Street). It will slope up to the raised ground to the east of the site. A secondary point of access will be provided to the west of the site via a 1 in 20 gradient slope, with asphalt surface, which will lead to the raised platform with a 5.5m carriageway. This will join from the A228 or Knight Road, past Strood Retail Park and under the railway bridge. This will lead into a temporary access route to the Pump House along the frontage of Jane's Creek.

Vehicular access to the Pump House will be via a ramp with a 1 in 20 gradient and asphalt surface, comprising a 5.5m wide carriageway with separate footways. The existing vehicle turning head will be retained.

6.1.2 Phase 2

Both Canal Road and the access road to Strood Railway Station will be raised and will be accessed via a single ramp on Canal Road to the west of the site. This will be 11.3m wide, with a maximum gradient of 1 in 20 and with an asphalt surface. The road will then branch north-west to the Strood Railway Station car park, and Canal Road will continue north-east and tie into Riverside at its exiting level, exempting the need to construct ramps.

Canal Road will be realigned landward of its current position. This is to allow space for future riverside development. The new alignment will be constructed before the original road is altered, to allow continued access through the site. It will therefore be completed at an early stage of construction, and the new offline road will sit on an embankment, until the land is raised in Block C, D, and F.

Traffic will be controlled by traffic lights as construction progresses, and offline sections of road are tied in to Riverside and western sections of Canal Road. Access to the Riverside Tavern will be provided by an access route from Canal Road. The station car park access road will also be realigned to the east.

Again, the newly aligned road will be constructed prior to works to remove the redundant road, to allow continued access to Strood railway station car park. The ramp down to the car park will be 9.5m wide, with a maximum gradient of 1 in 60 and asphalt surface.

6.2 Pedestrian and cycling access

6.2.1 Phase 1

A pedestrian footpath and cycle path will be created along the alignment of the former Esplanade, through the publicly accessible green space. This will be via a 3m wide graded slope ramp, facilitating disabled access into and out of the publicly accessible green space. Access will continue along the river frontage, past the Pump House, and out of the west side of the site, via a 3m wide cycle way and the 1 in 20 gradient ramp. This will adjoin the National Cycle Route 178, which is currently not complete/connected along this section.

6.2.2 Phase 2

Pavements on Canal Road and the access road to the railway station car park will be constructed to allow continued pedestrian use. Temporary fencing will be used during construction to segregate pedestrian access and construction activities. Canal Road pavements will tie into PRoW RR8 to the north-east of the site.

National Cycle Route 1 will also be maintained along Canal Road. The local cycle route along the road between Canal Road and the train station will remain and then be diverted onto the new access road once completed. Another local cycle route along the path, which follows the riverside edge of the pier, will be temporarily removed until it is reinstated after construction. However, National Cycle Route 1 will still allow access through the site at all times.

6.3 Parking

No parking provision is to be provided as a result of the scheme. Any subsequent parking provision will be subject to a separate application.

6.4 Access provision

To summarise, the scheme includes the following access provisions:

- Ramped vehicular access from the A2 (High Street) to the Phase 1 site.
- Ramped vehicular, pedestrian, and cycle access from the A228 (Knight Road) to the Pump House in the Phase 1 site.

- Ramped pedestrian and cycle access to the publicly accessible green space in the Phase 1 site, from the east and west, adjoining National Cycle Route 178 past the Pump House adjacent to Jane's Creek.
- Ramped vehicular, pedestrian, and cycle access along Canal Road to the west of the Phase 2 site, forming part of National Cycle Route 1.
- Ramped vehicular, pedestrian, and cycle access to Strood rail station from Canal Road via ramp, to the west of the Phase 2 site.
- Canal road will tie in to the already raised ground of Riverside, to the east of the Phase 2 site.

7 Sustainability and climate change

Sustainable development has been an important factor influencing the design of the scheme, which has sought to minimise its environmental impact. As a result, important wildlife habitats have been protected and ecological enhancements have been incorporated into the final scheme design. Key to this has been the desire to deliver a scheme that minimises the potential effects on riverine habitats and species, which has been achieved by setting back the flood defences away from the river frontage. Furthermore, direct impacts on the estuarine habitats have largely been avoided by eliminating the need for construction within the River Medway.

In addition, a range of controls will be placed on the construction phase of the scheme to effectively manage the potential risks associated with issues such as noise disturbance and water contamination. These aspects will be carefully managed throughout the construction phase through implementation of construction good practice and a wide range of controls specified in the project Construction Environmental Management Plan (CEMP).

The amenity and recreation value of the area has also been an important consideration, and the scheme has managed to limit impacts on public footpaths and cycle paths. Two national cycle routes pass through the scheme sites and the scheme will deliver enhancements to the cycle network, including completing a currently broken a section of cycle path through the Phase 1 site, and improve public footpaths and green space through resurfacing improvements and landscaping.

Although the scale of the works is relatively large, every opportunity has been taken to propose materials with a low environmental impact (embodied energy) and materials that can be sourced locally (to reduce transport emissions and encourage the local economic growth). This process has been guided by EA's sustainable procurement policy. We have also specified a range of material finishes, favouring styles in-keeping with the local character and nearby developments and offers a tangible landscape enhancement.

The project also delivers a scheme that will make an important contribution to managing the future risks associated with climate change. In the future, flood risk is predicted to increase due to the effects of climate change and sea level rise. This would have a range of negative impacts on local people and property, causing greater damage and increasing community stress and anxiety. The proposed scheme combats this issue by incorporating an allowance for climate change into the defence design level, helping to safeguard the Strood area into the future.

8 Conclusion

This document has been prepared to accompany Full Planning Applications for the proposed Strood Riverside Flood Defence Scheme. It presents information on the design concepts and principles of the proposed scheme and explains the reasoning behind how the design has been developed.

The general scale of the flood scheme has been dictated by the existing tidal flood risk and the requirement to provide a specific standard of flood defence (protection against a 1 in 200-year flood event). However, through a detailed appraisal and understanding of the site and context, a sustainable and comprehensive scheme has been prepared.

Care has been taken to use appropriate materials and design techniques that contribute to developing a 'sense of place' for the Strood area. This includes the use of a consistent palette of

material finishes that reinforce existing characteristics of the area and allow the scheme to blend into its surroundings. For example, hand rail finishes will be matched to nearby recent development in Rochester, across the River Medway.

A key consideration has also been to ensure that the scheme does not adversely affect the landscape character of the river corridors or impact upon the high biodiversity value of these environments.

Maintaining and improving public amenity has also been an important influence on the design process. Existing access routes have been carefully incorporated into the scheme where necessary, whilst ensuring they remain accessible to all users. This includes authorised vehicular users, pedestrians, cyclists, disabled people, the elderly and people with young children. Safe access for personnel carrying out maintenance and inspections of the defences has also been incorporated within the design proposals.

This scheme allows any future development on the sites the flexibility to create an efficient and suitable area, with a reduced risk of flooding, in line with local and national development policies and aspirations. Overall, it is clear that the site offers the opportunity to deliver a well-designed, high quality flood defence for the Strood area. The proposed flood alleviation scheme has clear socio-economic benefits and delivers high levels of accessibility and environmental sustainability.

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Strood Waterfront Regeneration

Transport Statement

Submitted to Medway Council
by IBI Group
March 10, 2017

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Executive Summary

IBI Group was commissioned by the Regeneration Team of Medway Council to update the adopted 2006 Strood Riverside Development Brief, which was extended to include the Civic Centre site. It was recognised that the development brief is influenced by a number of factors including the interaction between viability (cost/benefit), site capacity, planning and housing policy, and transport capacity issues. This report, in the form of a Transport Statement, seeks to address the transport capacity issues with a view to informing the overall design process.

The key insights gained during the study are:

- Accesses for the proposed development have light traffic and are under capacity currently. The surrounding road network is congested during peak hours;
- The proposed development will need to rely heavily on sustainable modes of transport. Current policies and best practice encourage and support this;
- Residents living in close proximity to a train station have lower levels of car ownership and tend make fewer trips by car or van. In combination with progressive parking standards, lower parking provision rates are justified. Emerging trends and technologies can be used to further lower parking provision;
- Given that Strood Town Centre is generally congested and junctions operate at capacity, any additional traffic would result in further congestion. At this time, a future baseline which accounts for the benefits of committed infrastructure improvements cannot be established. Consequently, analysis of the future base scenario with development traffic cannot be analysed; and
- The combination of committed infrastructure improvements (in-flight initiatives), justified lower parking standards and modal shift to sustainable modes of transports and the proposed measures, could potentially allow the road network to accommodate the proposed development.

To minimise the impact of the development a number of mitigation measures have been put forward for consideration, these include:

a. Council-wide Foundational Policies and Initiatives

Overall Strategic Transport Plan	Developing an integrated strategic plan to take account of strategic capacity considerations and the optimal use of current assets . The Council has commissioned a Strategic Transport Assessment (STA) to evaluate the existing context and determine the transport implications of future developments.
Enhancement of sustainable modes	Bus routing and headways should be further investigated, discussion with train operators regarding frequency should be held, with bike share schemes to be revisited to encourage public transport usage.
Parking Strategy Planning	The transformation of Medway into an increasingly urban place with greater land use intensity necessitates the development of robust, context sensitive parking standards that align with transportation and development objectives.
Travel Behaviour for Travel Demand Management	Use a combination of marketing and communication strategies, improved use of information technology, and the better use of existing or new channel to reach customers to elicit travel behaviour change. The proposition should be adapted to distinct traveller user groups.

b. Initiatives to be Implemented around the Site Area

Timeslots for Business Deliveries	Scheduled business deliveries and pick-ups within time slots can mitigate the impact of parked vehicles along high street.
Expansion of Traffic Monitoring	The ability to view traffic conditions is vital to successful traffic management. Expanded CCTV coverage is necessary to cover blind spots that will become important traffic corridors.
Traffic Signal Control System	Signal and pavement changes mean that the SCOOT system will need to be updated, recalibrated, and potentially expanded to accommodate growing traffic volumes and ensure efficient traffic flow within Strood.
Parking Guidance	Parking guidance could be enhanced to reduce circling and maximise parking assets through technology (parking rental platforms, parking sensors, cashless payments, better wayfinding).
Electric Charging Points	Electric charging points should be provided around the area for hybrid and electric vehicles (low or zero emission) to help maintain high air quality.
Junction Modifications	1. Conversion of Esplanade to a one-way relief road. 2. Signalising the Knight Road / Access intersection, or banning right-turning traffic. 3. Removal of sidewalks and relocation of pedestrian access to convert Access Road leading to Knight Road into a two lane roadway. 4. Operating Right-out only at the High Street / Canal Road / Esplanade intersection.
Car club Schemes	The introduction of car club schemes to minimise the amount of parking provision at the development site

c. Site Specific Strategies

Parking Design	Dividing parking access at the main development will prevent commuters from Medway City Estate from ‘rat-running’ through the development site thereby limiting impacts to the high street / canal road / esplanade intersection.
Further Traffic Data Analysis	Further Origin Destination data should be reviewed for all trip types to ensure a thorough analysis. The proximity of the potential development to local amenities may see the proportion of car or van trips reduced due to journeys made on foot; ultimately lowering the expected number of additional vehicles and impact on the network.

In summary, there is no single measure that will be able to solve the existing transport issues or those generated as a result of this new development. The solution is dependent on numerous individual measures and improvements across the Medway Towns, the area and site specific.

1 Introduction

1.1 Background

IBI Group was commissioned by the Regeneration Team of Medway Council to update the adopted 2006 Strood Riverside Development Brief, which was extended to include the Civic Centre site. This Transport Statement follows the updated Development Brief in providing context of the transport needs for the site.

The Strood Waterfront Regeneration project is a high quality residential development on a riverside location with excellent public transport accessibility and proximity to the town centre. The development covers two locations, the Civic Centre west of High Street and Strood Riverside east of High Street, as illustrated in Figure 1. The east location development is composed of 1,150 units, with an estimated additional 500 units in the location of the existing Kingswear Gardens. The west location development is a development of 525 units. There are currently plans for a portion of the development to be affordable housing.

Figure 1: Site Location

This new development is seen to be imperative to the regeneration of the wider Medway Waterfont and in helping to secure considerable private sector investment in the area. This development is also a vital and complementary component to other high profile regeneration projects elsewhere within Medway and, through early delivery, it is envisaged that the site will set the parameters for good quality urban design and architecture.

1.2 Scope

A Transport Statement, over a Transport Assessment, was chosen as part of this planning development framework stage given the nature of the development, current phase, and timescale. The Transport Statement provides further information in the following chapters:

- Existing Site and Proposed Development (Chapter 2) – Characteristics of the existing land use and of the proposed development;

- Existing Travel Network (Chapter 3) – Characteristics of the local travel network;
- Existing Conditions (Chapter 4) – Detail of the existing travel network and conditions based on the review of background developments and initiatives in the area;
- Background Developments (Chapter 5) – Providing context of developments in the area and current / expected traffic network operations;
- Relevant Policies (Chapter 6) – Understanding local and regional transport goals;
- Relevant In-flight Initiatives (Chapter 7) – Review of infrastructure improvements that are expected to encourage a modal shift, resulting in lower background traffic demand, and improving capacity of junctions;
- Parking Provision (Chapter 8) – Understanding local and regional parking standards and best practices that have pushed the lower boundary of parking standards to promote and achieve sustainable transport;
- Trip Generation and Distribution (Chapter 9) – An approximation of the number of site trips and their distribution along the road network;
- Mitigation Measures (Chapter 10) – Measures that could be used to reduce the impact of vehicle trips associated with the development;
- Impact on the Travel Network (Chapter 11) – A discussion of the impact of the development on the surrounding travel network;
- Conclusions (Chapter 12) – Summarise key findings; and
- Recommendations (Chapter 13) – As the planning phases, infrastructure improvements, and other in-flight initiatives progress, consideration should be given to completing a full Transport Assessment to understand the impact of the development on the travel network. This section outlines the steps that would be undertaken in carrying out such an assessment and further steps to be taken to progress the potential development.

It is critical to understand that this Transport Statement is to form the policy for which developments at this site will follow and is not intended to serve as the Transport Statement or Transport Assessment for planning application.

2 Description of Existing Site and Proposed Development

To set the context of the development, this chapter details the existing site, size and purpose of the proposed site, and the accessibility of the site at a local and regional scale.

2.1 Existing Site Information

This subsection gives context to the existing site and its location as well as the travel network that surrounds the site area.

2.1.1 Site Location

The site itself is positioned directly adjacent to the River Medway and is located within 5 to 10 minutes walking distance of Strood Town Centre, and 10 to 15 minutes walking distance from Rochester. The site includes a mainline railway station within its boundaries.

2.1.2 Site Transport Links

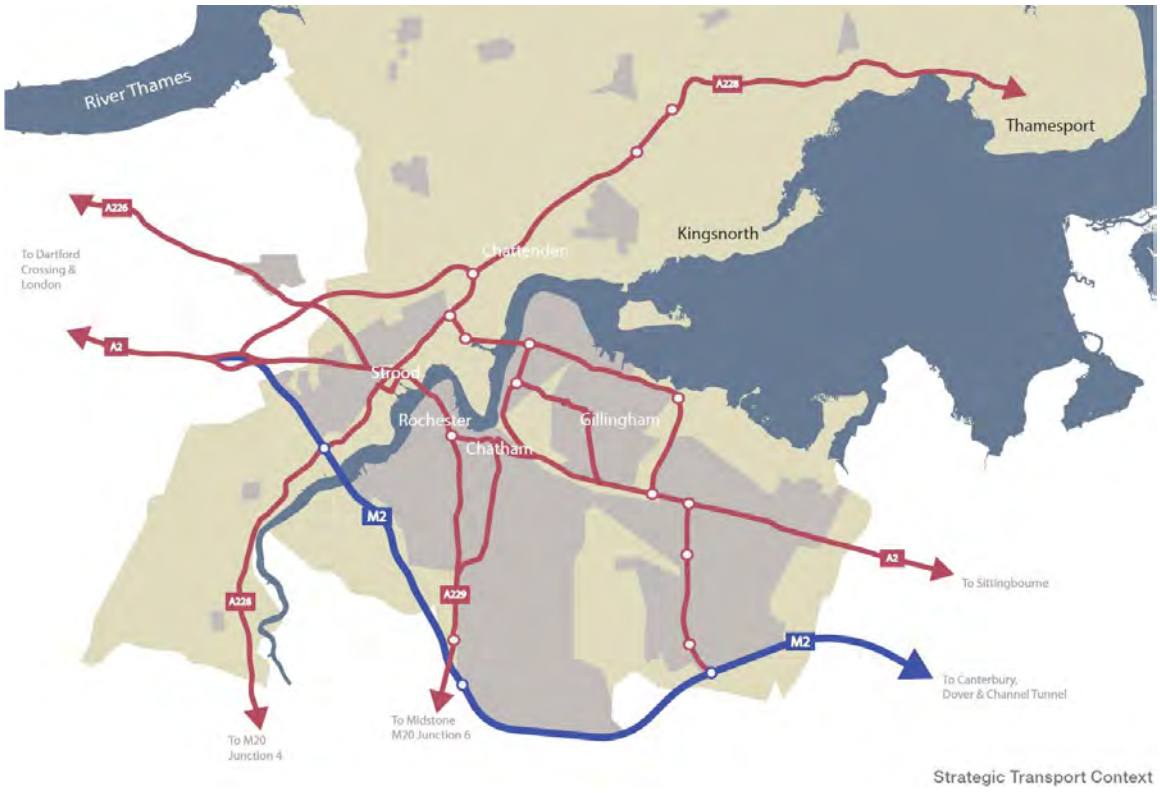
The site has excellent transport links as illustrated in Figure 2. It is well placed for access to:

- The M20 with access to Ashford International and the M25 London Orbital; and
- The Channel Tunnel Rail Link (CTRL) will provide new domestic services for Medway to London via the North Kent line's junction with the CTRL at Ebbsfleet.

At the local level, Strood Town Centre acts as a hub for three major roads:

- The A228 to Grain to the north and the M2 motorway and West Malling to the south;
- The A2 giving access to London and the M25 to the west and Rochester to the east; and
- The A226 to Gravesend.

Figure 2: Site Transport Links

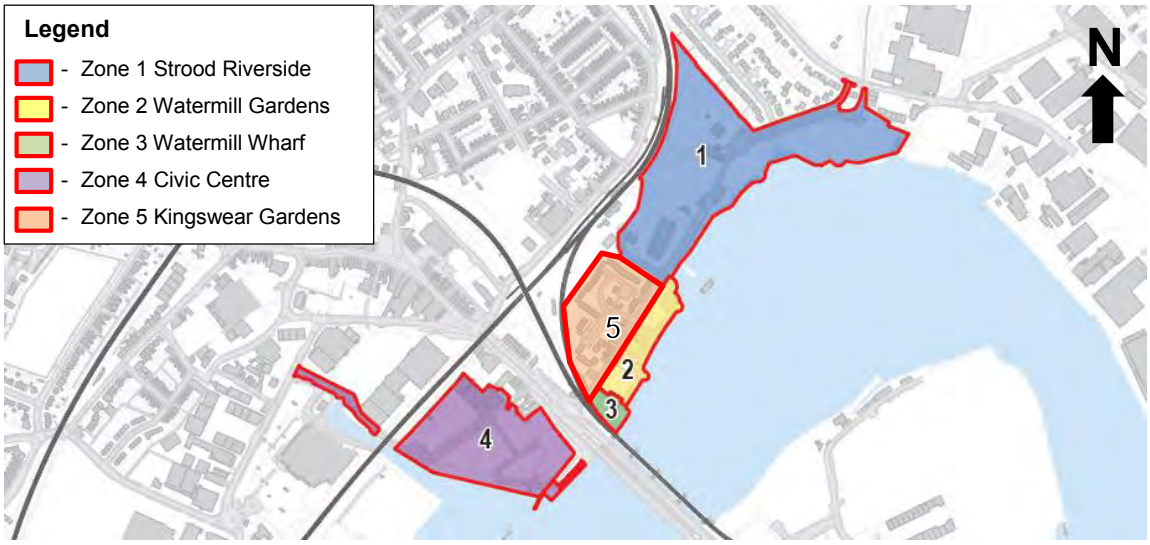


2.1.3 Existing Site Use

Strood Waterfront is a brownfield development site lying adjacent to the River Medway and within walking distance of the town centre. The site is divided into two distinct parts, the eastern waterfront and the former Civic Centre site to the west. The masterplan site is bounded by the River Medway to the south, by the operational railway lines to the west, by the Medway City industrial estate to the east and by residential land around Cranmere Court to the north.

The masterplan area, excluding the existing housing development at Kingswear Gardens and Crescent House Foyer, includes a total developable area of 10.25 hectares. The existing site is divisible into five distinct areas as illustrated in Figure 3.

Figure 3: Existing Site Use



The different areas are further discussed below:

ZONE ONE: STROOD RIVERSIDE

Along Canal Road are currently scrap yards, motor workshops, chemical mixing firms, historically occupied by railway marshalling yards, transport storage depots, builder's merchants, and storage operators.

The riverside frontages include a landscape park opposite Kingswear Gardens, Strood Pier, the Riverside Tavern, industrial buildings and a grassed area situated above the tidal shoreline.

ZONE TWO: WATERMILL GARDENS

Watermill Gardens is the strip of land adjacent to Watermill Wharf situated on the edge of the river and is currently owned by Medway Council with some spaces leased from Peel Ports. These are currently on an 80 year lease and may remain as public realm or open space as part of the masterplan developing upon subsequent negotiations. This area also includes the landscaped area providing children's facilities.

ZONE THREE: WATERMILL WHARF

Watermill Wharf is a brownfield site owned by Medway Council being developed to deliver 15 business units and storage units aimed at local SMEs and start-up businesses. Occupation is expected to begin April 2017.

ZONE FOUR: CIVIC CENTRE

The Civic Centre is dominated by a large car park and delivery and servicing area which service Medway Council buildings. The area lies behind a small number of local high street shops.

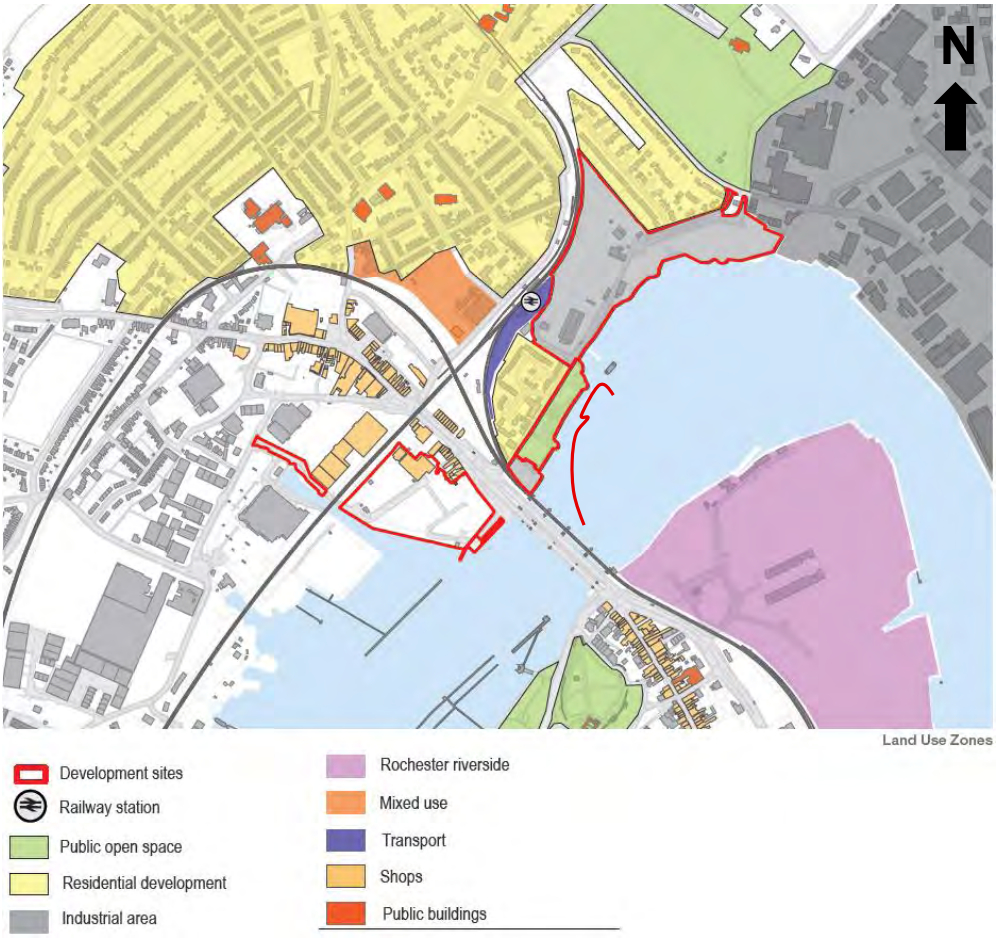
ZONE FIVE: KINGSWEAR GARDENS

Kingswear Gardens is currently a residential housing development just to the north of Canal Road and east of High Street and is adjacent to the railway station.

2.1.4 Adjacent Site Uses

The primary land uses in the vicinity of the site, illustrated in Figure 4, are retail, leisure, residential, industrial, office (Civic Centre site), and transport.

Figure 4: Land Uses within Adjacent to Site



2.1.5 Site Access

The following explores the existing situation in further detail in respect of the various movement types, as illustrated in Figure 5. A description of the different site accesses can be found in Table 1.

Figure 5: Access to Site

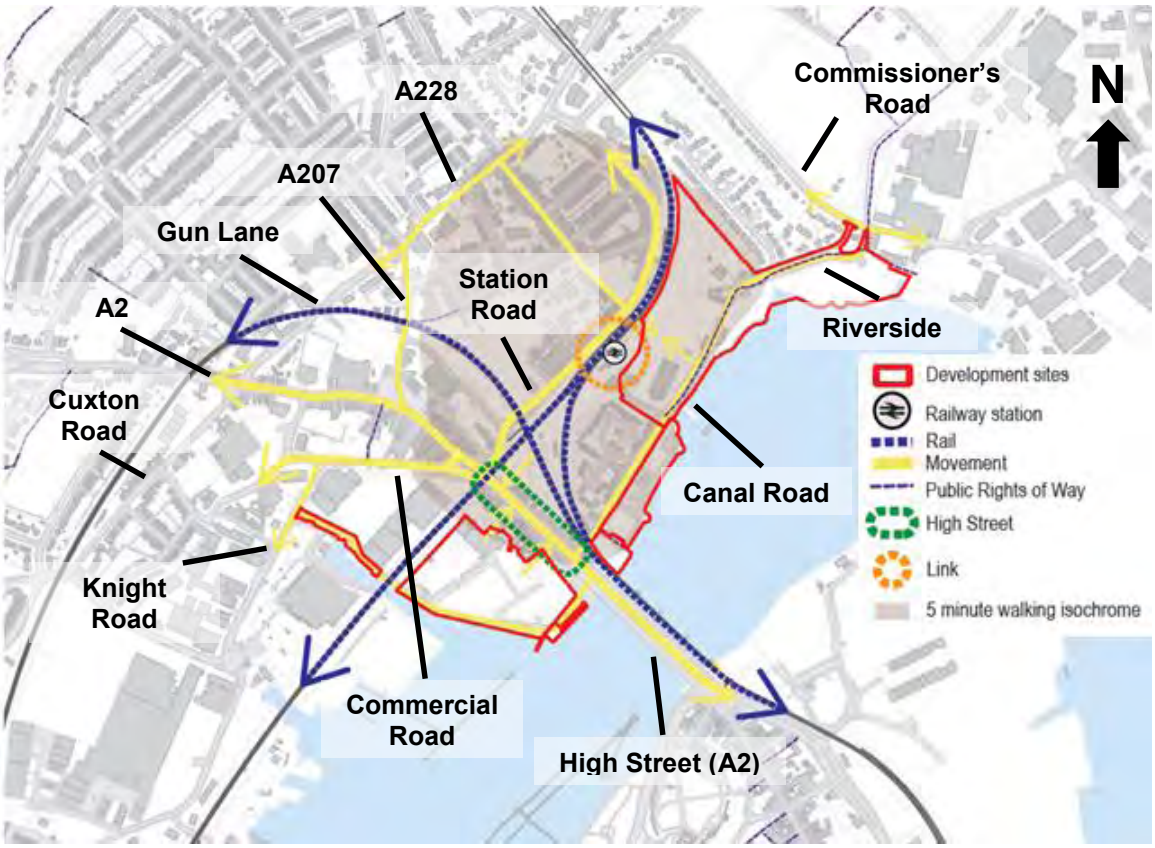
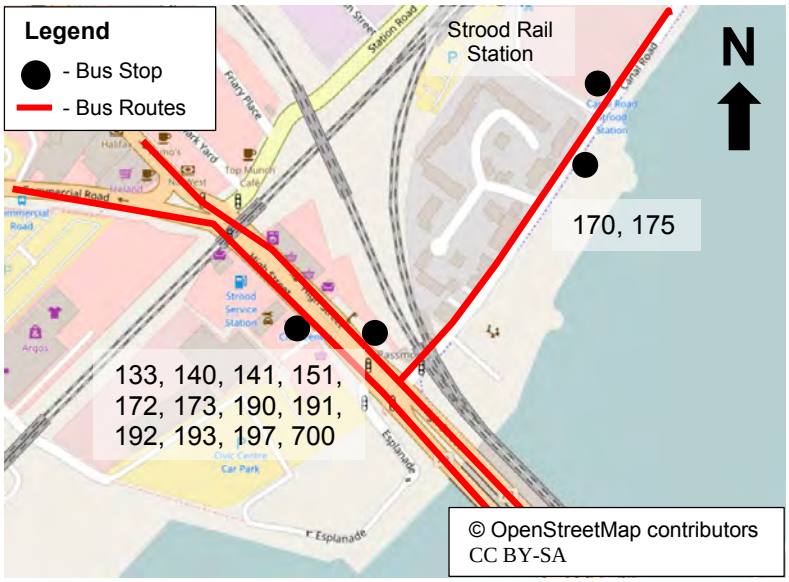


Table 1: Access to Site Description

ACCESS	
VEHICLE	The main highway access into the north of the masterplan area is via the Canal Road junction with the A2 Strood High Street. Access to the south of the masterplan area is available via The Esplanade. The A2 continues north through Strood towards the M2 and south through Rochester and Chatham. Through the Strood Town Centre, the A2 splits into two one-way two-lane carriageways north of Station Road. Commercial Road allows for northbound traffic while High Street allows for southbound traffic. Additionally, there is an access from the north site onto Commissioners Road is currently via a priority junction to the east of the HGV width restriction gate adjacent to the Wingrove Drive junction. The width restriction was put in place in order to prevent heavy vehicle movements to Medway City Estate taking place via Commissioners Road. Carpooling exists but is currently only promoted to Medway Council employees and University staff and students.

ACCESS	
BUS	Bus service, illustrated in Figure 6, is provided through the development on both Canal Road and High Street. The routes along Canal Road include routes 170 and 175 which stop near the Rail Station. Along High Street there is also a number of bus routes that include the 133, 140, 141, 151, 172, 173, 190, 191, 192, 193, 197, and 700. There is no bus service on Station Road. These bus routes provide services to most town centres across Medway and Kent. Figure 6: Bus Routes  Despite the number of routes serving the site, the current perception of public transport is quite poor, largely attributable to: • High tariffs for short journeys; • Lack of punctuality; • Congestion and the lack of bus lanes and bus priority; • Obsolete infrastructure; and • Lack of thought leadership from main operator. Bus priority only exists along Corporation (within Rochester) and not within the study area. Due to limited resources, future improvements from the Bus bill for Medway will depend on Kent County Council.

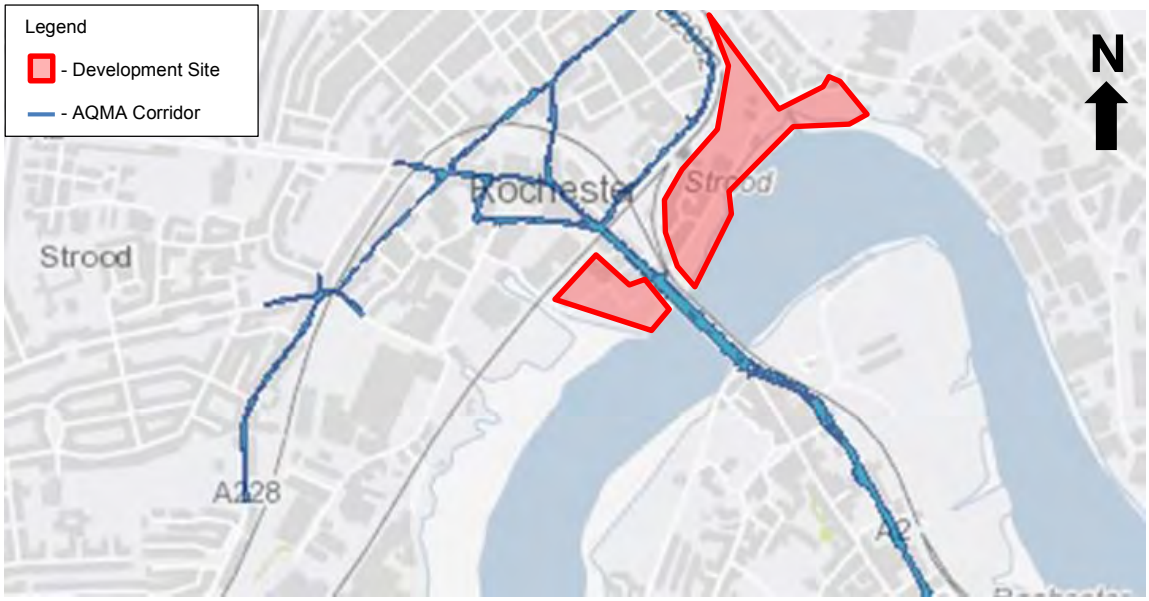
ACCESS	
RAIL	Strood Station is served by three Southeastern rail services including the Northern Kent Line, the Medway Valley Line, and the Southeastern High Speed line. From this station, a number of stations can be reached directly, including: • London St. Pancras via the High Speed line; • London Charing Cross via Gravesend and Dartford; • London Cannon Street via Greenwich (during peak hours); • Tonbridge via Maidstone West; and • Ramsgate via Faversham and Gillingham. During the morning peak hour 0800 hrs to 0900 hrs, three trains run direct to London: two to London St. Pancras and one to Charing Cross. The journey time ranges from 35 minutes to 1 hour 25 minutes. Chatham and Rochester Stations nearby also provide frequent services to numerous central London Stations. Although travel times from Strood to Rainham or Chatham by train are faster than by vehicle, train frequency is a factor of consideration.
RAIL STATION	Customer car parking is provided adjacent to the ticket hall building for a total of approximately 115 cars. Pedestrian and cyclist access from Station Road can be gained via the narrow subway to the north side of the railway station. The issue of personal security is the greatest constraint to the use of this facility, particularly during the hours of darkness.
TAXI	A taxi rank is located along Station Road (on the opposite side of the rail tracks from the station hall).
ON-STREET PARKING	There are currently no on-street parking restrictions within the site. Kingswear Gardens has a number of parking courts with unallocated parking taking place on a random basis. Off-street parking in the area is limited to the railway station car park and adjacent to the basketball court area situated off Canal Road. Additional off-street parking is available at the Medway Council car parks. One can be accessed off of Station Road and another off of Friary Place.
PEDESTRIAN AND DISABLED ACCESS	The Saxon Shore Way walk runs north-south through the site alongside the waterfront and links with Wingrove Drive, Commissioner's Road, and the Canal Road junction with the A2 High Street. Strood Town Centre lies less than half a mile to the west of the site. This is an important local centre giving access to a number of retail and community facilities and is generally quite vibrant throughout the week. It is the nearest retail centre to the site and has the potential to provide for a good number of retail needs of future residents at Strood Waterfront.
CYCLE ROUTES	The Sustrans National Cycle Route 1, which extends from Inverness in Scotland to Dover, runs north-south through the site on Wingrove Drive and Canal Road. The route provides a strategic leisure cycle route designed for use by families. Much of the route through the site is currently on the carriageway. A bicycle lane exists from the High Street / Canal Road heading east along the Rochester Bridge. From Wingrove Drive to the north, the cycle route heads uphill to Parsonage Lane and Upnor Road. Medway had at one point considered a bike share scheme, but operators did not feel it would be viable. However, this consideration was before the opening of three university campuses.

ACCESS	
WATERFRONT ACCESS	The Medway River extends along the eastern boundary of the site and provides part of an important leisure and commercial waterway from Tonbridge (south) to the Thames Estuary (north). Currently the usage of the River Medway from Strood Pier is restricted by Medway Ports.

2.1.6 Air Quality Management Areas

Strood Riverside lies within the Central Medway Air Quaility Management Area (AQMA), which has been declared for exceedances of the nitrogen dioxide annual mean air quality objective. Air quality will be a material consideration for the development. The STA will be supplemented by an Air Quality Assessment (AQA), programmed for completion in Spring/Summer 2018.

Figure 7: Air Quality Management Area (AQMA) Near the Site



2.2 Proposed Development

The land use of the Strood Waterfront regeneration development is predominantly residential, including up to 25% affordable housing. The development is divided into two areas over a total site area of 8.96 hectares. Site statistics of the preliminary design of the proposed development are summarised in Table 2.

Table 2: Site Statistics

APPROXIMATE SITE STATISTIC	EAST DEVELOPMENT	WEST DEVELOPMENT
Number of flats	1,051 + approximately 500 for Kingswear Garden site	462
Number of houses	115	57
Maximum parking provision	0.66:1	0.75:1
GDA (sq. m)	80250	42342

The access points of the sites remain the same as in the existing conditions except with an additional access for the east development to Canal Road east of the bus only lane. This allows a part of the car park facilities to have access to Commissioner's Road. In addition,

the redevelopment of the industrial area within the east development will vastly improve pedestrian and cyclist access. The development proposes a number of improvements to site accessibility via sustainable modes of travel including:

- Establishing a visual connection between the rail station and bus stop serving the station. This will ensure that those arriving at the rail station have convenient interchange between the two modes of transport;
- Extension of walking and cycling routes to connect to the west development, Janes Creek, and the retail park / Knight Road; and
- Introduction of a promenade along the riverside. This will provide an inviting environment leading to a good experience to people walking, thereby providing a safe and pleasant route for pedestrians.

The majority of the parking is provided within the structures themselves (highlighted in blue in Figure 8 and Figure 9) with a few surface car parks (Kingswear Gardens were not a development at the time the drawings were developed). Access to building parking would be secured and accessible only by permit. Additional station parking could potentially be provided within the structures adjacent to the rail station, subject to agreements between relevant organisations. On-street parking could also be provided for visitors. The parking facility must meet the minimum requirements for disabled parking and cycle parking.

Figure 8: East Development

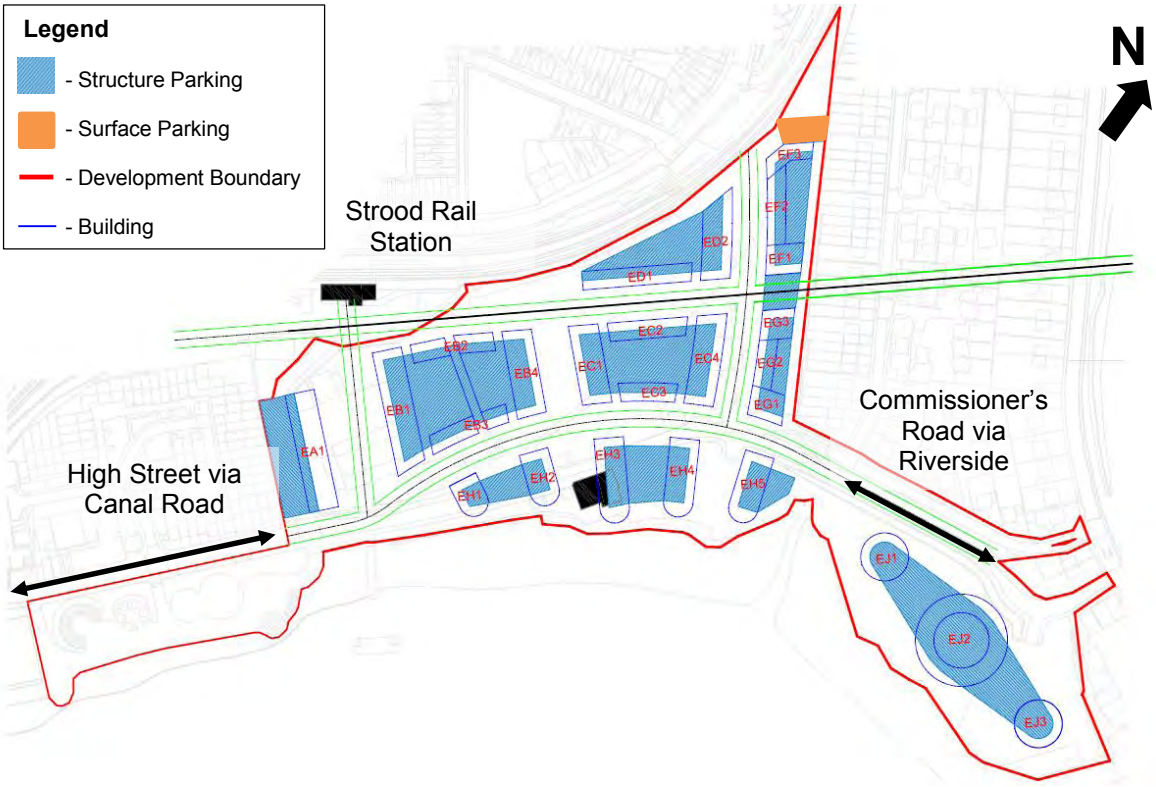
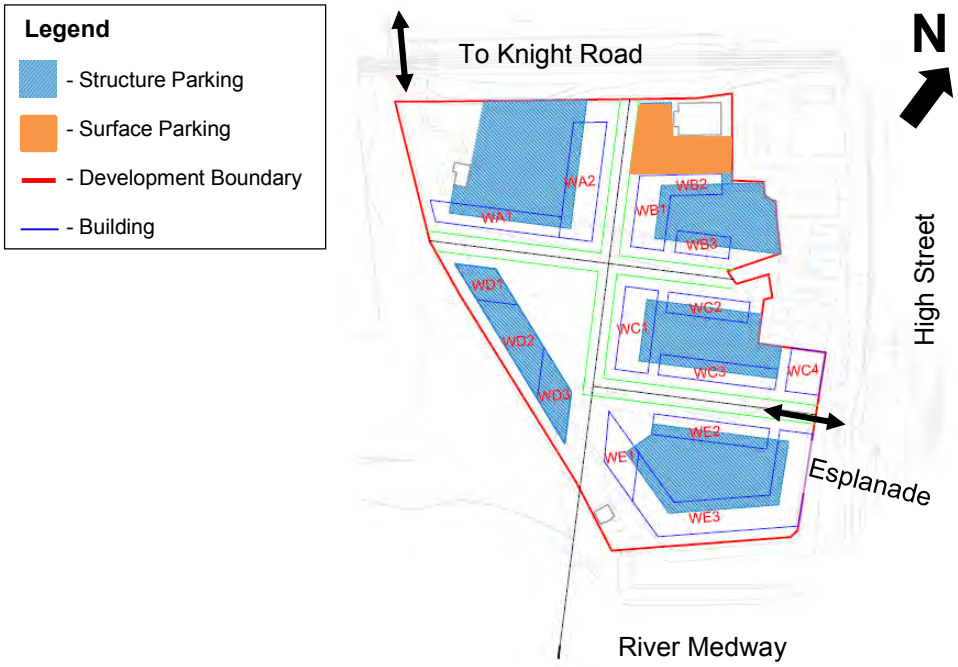


Figure 9: West Development



It is noted that for the development, construction shipments would be made by truck and barge shipments. Barge shipments will have minimum effect on the road network. Shipments made by truck will require careful consideration and planning given the height restriction of the rail bridge adjacent to High Street, narrow width of Commissioner's Road due to on-street parking, and general congestion along High Street.

Regular trips generated by the west development site are due to the Civic Centre, CCTV bunker, and businesses beneath the bridge arches. Despite the removal of the Civic Centre and the trips generated by it, there will be a net increase in trips due to the additional trips generated by the site. Kingswear Gardens and the Strood Rail Station car park are the only land uses expected to generate regular trips. The developments that will replace the industrial areas and Kingswear Gardens will result in a net increase in trips generated for the area.

Access to the proposed site is not significantly different than the existing site. The east development will have two accesses as well, one to Canal Road west of the bus-only lane and another to Canal Road east of the bus-only lane. This will facilitate ingress and egress to the site from High Street and Commissioner's Road both via Riverside. This will limit the impact the development will have on High Street while maintaining the operations of the bus only lane (Figure 8).

For the west development, there will be two accesses. One to a realigned Esplanade which allows for direct access to High Street and another access aligned with the existing Knight Road access (Figure 9).

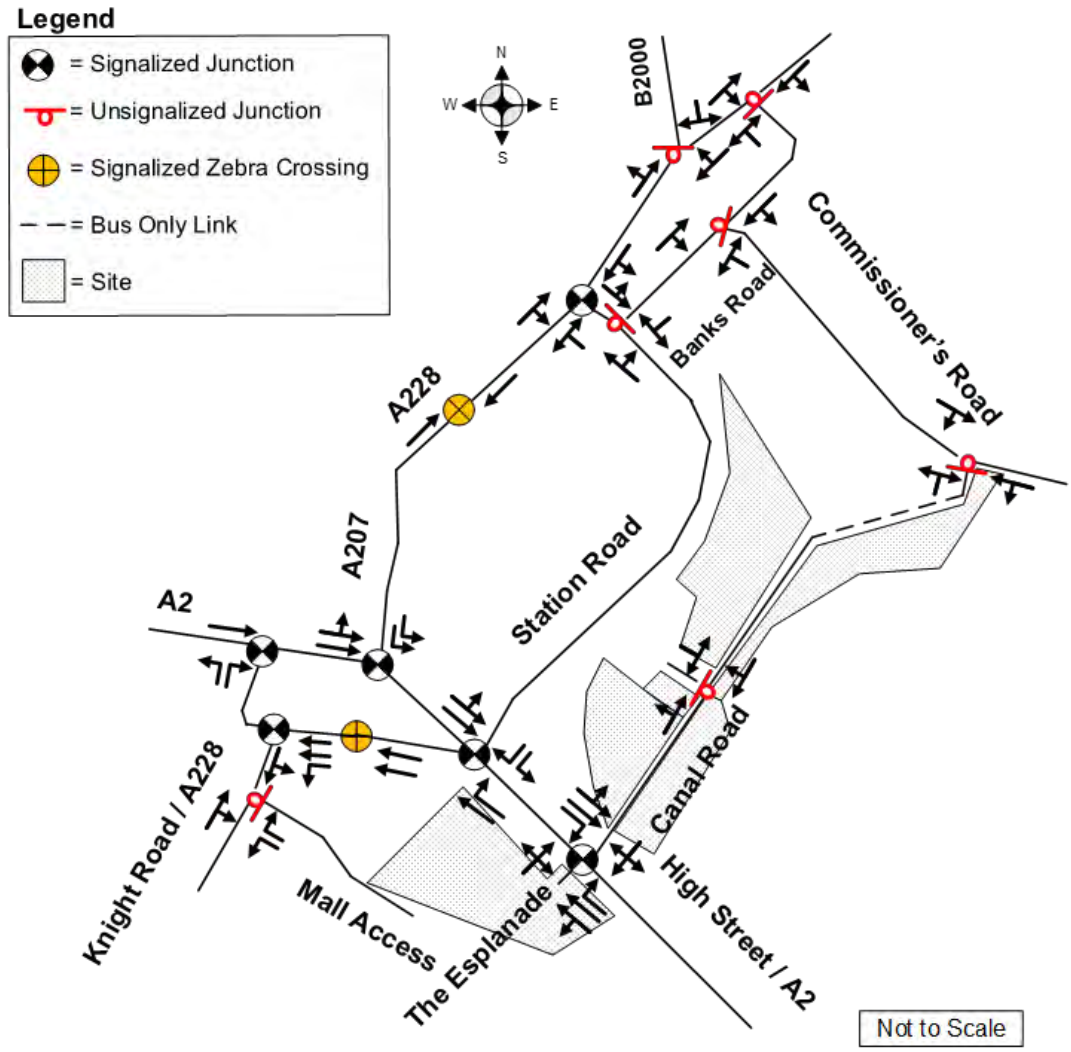
3 Description of Existing Travel Network

The following sections outline the road, bicycle, and pedestrian networks to understand what facilities are available to travellers within the area.

3.1 Local Road Network

The existing local road network configuration is illustrated in Figure 10 below.

Figure 10: Existing Local Road Network



A further description of the different roads are discussed in the sub-sections below.

3.1.1 Canal Road

Canal Road is a two lane carriageway which permits two-way travel. The road can be accessed by all vehicles from the south junction at High Street. The northern part of Canal Road leading to Commissioner's Road and Medway City Estate is a single lane carriageway for buses only. The southern portion of Canal Road allows for access to two sites, the Kingsway Garden residential development and the Strood Rail Station.

3.1.2 High Street (A2)

High Street (A2) is a four lane carriageway that provides access to Canal Road from Strood Town Centre to the northwest and Rochester and Chatham to the southeast. This road

continues and connects to the M2 motorway to the northwest. Through Strood Town Centre, this road splits into two one-way two lane carriageways, Commercial Road towards the northwest and High Street towards the southeast. This split occurs north of the junction with Station Road.

There are bicycle lanes on either side of the carriageway from Rochester beginning and ending south of the junction at High Street / Station Road / Commercial Road. At the High Street / Canal Road / Esplanade junction, the southeast bound nearside lane is a bus lane.

3.1.3 Esplanade

The Esplanade is a two lane carriageway that provides access from High Street (A2) to the Civic Centre parking lot. It is connected to High Street via the same junction as Canal Road. This roadway is primarily used for access to the Civic Centre, businesses beneath arches, and pump station. Occasionally, traffic will use this access to travel through the Civic Centre parking to Knight Road in order to bypass congestion along Commercial Road.

3.1.4 Commissioner's Road

Commissioner's Road is a north/south two lane carriageway with on-street parking connecting the Medway City Estates to Bank Street which leads to A228. Commissioner's Road is connected to the site through Canal Road. Commissioner's Road is also used by traffic to access the A289 (via Berwick Way) as an alternative to the congested tunnel.

3.1.5 Station Road

Station Road is a two lane carriageway that connects High Street (A2) to A228 just north of the site. It also has a junction with Bank Road that leads to Commissioner's Road. On-street parking and a taxi rank are provided opposite the mixed use development adjacent to National Tyres and Autocare.

3.1.6 Banks Road

Station Road is a two lane carriageway, with on-street parking, connecting Station Road to A228 as well as Commissioner's Road to those roadways. It is located north of the site.

3.1.7 A228

A228 is a two lane carriageway north of the site that connects the site to the east and west. The west section of A228 leads to the M2 motorway while the east section of the A228 leads further towards the Thames estuary. The roadway provides connections leaving Strood to the east and southeast.

3.2 Cycle Network

The existing cycle network around the site include cycle lanes on High Street A2 on the bridge over River Medway. This leads to Canal Road which is a signed National Cycle Route extending from Commissioner's Street to High Street. In addition, there are also signed cycle routes along Esplanade from High Street (A2) through the existing car park towards Knights Road.

3.3 Pedestrian Network

The pedestrian network in the area includes sidewalks on most roadways within the study area. The site is well connected to both Strood Town Centre and Rochester via High Street (A2). As well, for the development east of High Street (A2), pedestrian access is provided from High Street to Commissioner's Road on the south side. This sidewalk makes up part of the National Route Saxon Shore Way. On the north side of the street, pedestrian access is provided up until Strood Rail Station. From the railway station, there is a tunnel that provides access to Station Road under the rail tracks.

4 Existing Conditions

To understand current issues within the local travel network, the existing traffic conditions were established through a review of surrounding transport studies (outlined in Chapter 5), supplemented by a site survey and SCOOT system examination carried out on 8 March 2017.

4.1 Review of Surrounding Transport Studies

The findings for the existing conditions are:

- High Street to the west of the development operates at or near capacity with heavy movements travelling along the roadway;
- Long queues were observed at the Canal Road / High Street / The Esplanade junction along high street. Queued vehicles typically took more than one cycle to clear the intersection;
- The majority of traffic exiting Canal Road performs right turns onto High Street. Canal Road typically operates under capacity for all periods;
- The number of vehicles exiting Canal Road is typically higher in the AM peak period rather than the PM peak period;
- The number of vehicles exiting The Esplanade is generally low;
- Traffic along Commissioner's Road and Banks Road was observed to be free flowing with no congestion;
- Speeds along Commissioner's Road were generally above the posted speed limit of 30 mph based on an ATR count. It can be concluded that Commissioner's Road operates well through all periods;
- In the three year period for which collision data were provided, only two collisions were reported, both of which were categorised as "slight" and between only motor vehicles. There were not enough collisions to identify any collision trends under existing collisions;
- Collisions presented in the business case for the Strood Town Centre Local Growth Fund shows that Strood Town Centre has a high number of pedestrian collisions and significant delays. Although there were a number of collisions involving pedestrian and cyclist within the Strood Town Centre (centred around High Street), there is not enough detail to draw conclusions about collision trends. 31 slight and 3 serious collisions occurred between the years of 2011 and 2014 in the town centre. In order to improve pedestrian and cyclist safety in the town centre, a number of initiatives are being undertaken as part of the Strood Town Centre Improvements project; and
- As part of the business case for the Strood Town Centre Local Growth Fund, a number of ATCs were used to measure the speed in and around the town centre. The results of this survey for the PM period showed that the main problem areas include the northbound approach towards the junction of High Street / Canal Road / The Esplanade, westbound approach of Station Road to the High Street / Station Road junction; and traffic travelling west along Banks Street.

4.2 Site Survey

Observation of the road network through CCTV revealed:

- Generally,
    - AM peak period traffic is lighter than PM peak period traffic;

  - Right-turn lane from High Street to Station Road queue was frequently observed to be at capacity and prevent traffic from the upstream Canal Road intersection from progressing. However, the majority of the queue will clear the intersection in one cycle;
  - No queueing issues were observed for movements exiting Canal Road or Esplanade; and
  - Vehicles changing lanes along High Street / Commercial Road between Canal Road / Esplanade and Knight Road could result in significant traffic disruptions.
- During the AM peak period,
  - Queues along Station Road were observed to extend beyond the Grove Road Car Park, but dissipated within a few cycles;
  - Traffic along Commercial Road was observed to be generally light; and
  - Traffic from London Road to Canal Road was observed to be heavy, but moving.
- During the PM peak period,
  - Queues along Station Road were frequently observed to extend beyond the Grove Road Car Park;
  - Queues along High Street were observed to frequently extend from Station Road to beyond the London Road junction. Subsequently, the queue would prevent traffic from Commercial Road from progressing onto High Street;
  - Consistent queues were observed at the A207 / High Street intersection but the extent of queueing could not be determined; and
  - Queues from the intersection of Knight Road / Commercial Road were frequently observed to extend to the High Street / Commercial Road / Station Road; and
  - The ahead lanes on Commercial Road were frequently observed to be blocked due to vehicles trying to access the nearside lane from the channelized right-turn north of Station Road.

Further consultation with Council staff revealed:

- Taxi drop-offs as well as delivery and security vehicles parking along High Street can cause significant congestion issues;
- Vehicles turning right from the retail park onto Knight Road can result in congestion;
- The Strood local market in Commercial Road car park every Tuesday and Saturday, from 9 AM to 3 PM, can cause congestion;
- Vehicles turning right onto Station Road from Aldi occasionally block through traffic;
- To avoid turning right at Station Road, which is frequently congested, drivers turn left and then make a U-turn at High Street / Canal Road / Esplanade;
- Traffic issues can be partly attributed to vehicle alignment and tracking, which are to be addressed by the town centre infrastructure improvements (Chapter 7);
- The pedestrian crossing on Commercial Road west of High Street / Commercial Road / Station Road is frequently actuated, which can cause congestion;
- The junctions of High Street / Station Road / Commercial Road and High Street / Canal Road / Esplanade are pinch points for traffic. Morning delivery, roadworks, or broken down vehicles can bring traffic flow to a standstill; and
- During festivals, the Medway Civic Centre car park is heavily utilised.

4.3 SCOOT System Examination

The Split Cycle Offset Optimisation Technique (SCOOT) traffic control system was examined briefly to show:

- There is a high availability of detectors;
- The validation and calibration of the system are outdated and could use a review;
- Canal Road at High Street is not on the SCOOT system;
- SCOOT is only activated in the event of an incident at the junction at Station Road / A228;
- Advanced SCOOT techniques (e.g. gating) could be employed to assist traffic flow; and
- The change in road systems (following town centre improvements as per Chapter 7) will necessitate new detector loops and re-calibration of the SCOOT system.

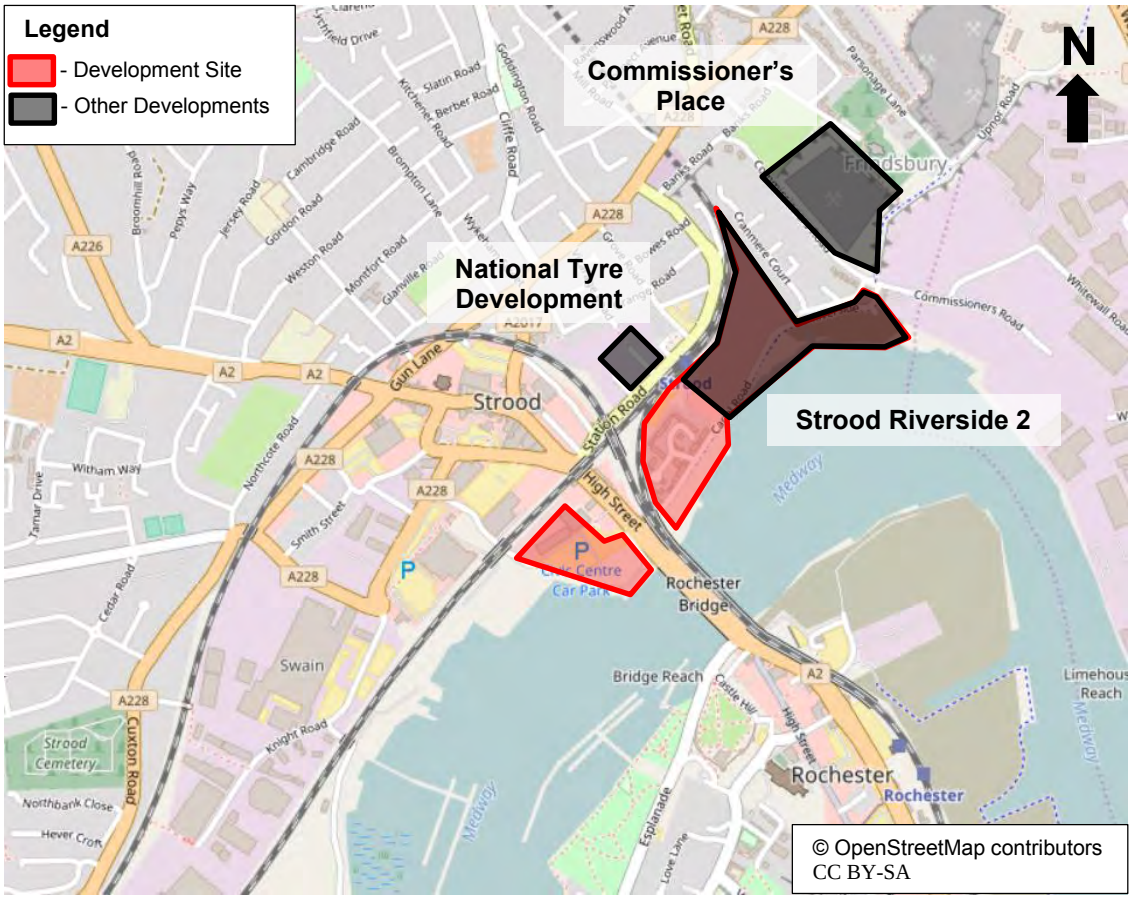
5 Insights from Surrounding Transport Studies

The following section reviews the work of transport studies in the vicinity of the proposed development and summarises their findings. The methods and findings of the studies and their implication on the proposed development will be discussed. The studies include:

- Strood Riverside 2;
- Commissioner's Place;
- National Tyre Development.

The location of the planned developments in relation to the Strood Riverside Regeneration (SRR) project is illustrated in Figure 11.

Figure 11: Background Developments



Further detail regarding the different developments can be found in Appendix A.

5.1 Strood Riverside 2

Project Centre Limited (PCL) was commissioned by Medway Council to carry out a traffic impact assessment of a potential residential development east of the junction of Canal Road and A2 High Street. The study examined the base (existing) and future (with development) operations at two junctions, High Street at Canal Road and High Street at Station Road / Commercial Road. The number of auto trips generated by the development were determined using TEMPRO and TRICS, which were then added to existing counts and modelled with LINSIG. The intersections modelled were High Street / Canal Road / Esplanade and High Street / Station Road / Commercial Road.

Based on the Development Traffic and the Existing Conditions volumes, a Future Conditions scenario was produced and analysed based on the summation of the existing conditions and development traffic. No changes were made to intersection geometry or signals (with the exception of optimising stage durations). Analysis results showed that in general:

- Operations along High Street would worsen during both peak periods; and
- Turning movements from Canal Road will operate over practical capacity with significant queueing in both peak periods;

The modelling results show that the development further saturates the existing network leading to additional traffic delays and queueing at signalised junctions. In order to mitigate impacts of the development, the report recommends:

- Decrease the overall size of the development;
- Creating a less car dependent development;

- Improving public transport service and facilities for sustainable transport modes;
- Allowing site traffic to access Commissioner's Road through Canal Road by removing and widening the bus-only lane; and
- Junction improvements to High Street / Canal Road / Esplanade.

5.2 Commissioner's Place

The Traffic, Transport & Highway Consultancy (TTHC) was commissioned by Medway Preservation and Development Ltd. to carry out a Transport Assessment (TA) as part of a proposal for the development of 130 residential dwellings on Commissioner's Road, Strood. The development was approved on 16 February 2017. Planned parking provision was as per the Medway Council Interim Residential Parking Standards. The proposed development has a high proportion of flats (46%) and 25% of affordable housing units, both of which typically have lower trip rates. However, no reductions to trip rates were made. The report acknowledges that given the development's proximity to Strood Rail Station, the number of trips made by public transport may be higher than that used in analysis (based on TRICS). The proposed access junction was tested using PICADY, and showed that the junction would operate well within capacity. Traffic impacts at the A228 / Station Road Junction and A289 / Anthony's Way Junction were evaluated by comparing the development flows to background flows. The impact of the development was determined to be minimal as the traffic added to the junctions by the development would fall within the limit of daily traffic variation. Furthermore, infrastructure improvements in the area were assumed to improve capacity of the local highway network in the vicinity of the development.

The proposed development with car parking in accordance with the parking standards is not expected to significantly impact the local road network, especially with respect to future committed improvements. No further recommendations were given.

5.3 National Tyre Development

Bellamy Roberts LLP was commissioned by Bellway Homes to provide a Transport Statement for a three/four storey building with 142 square metres of commercial space with 20 flats above (5 one-bedroom flats and 15 two-bedroom flats), with a total parking demand of 14 spaces.

As the site is in close proximity to Strood and Rochester Town Centres and public transport, the development was considered to be "Central" (as opposed to "Town Centre" and "Edge of Centre"). The provision of 1 parking space per unit was acceptable. Furthermore, no onsite parking provision was justified for the office space of the site based on:

- The sustainable location of the site;
- Public car parks within close proximity of the site; and
- Promoting sustainable transport choices as per PPG 13 and the Kent and Medway Structure Plan.

Moreover, the "site provides the opportunity for potential purchasers/tenants to live in a property which provides limited parking space. Clearly, if a potential occupier wanted a flat with more than one space, they have the choice to purchase a flat elsewhere".

5.4 Guiding Transport Statement of Proposed Development

The different transport statements and assessments showed a number of common themes including:

- The Strood Riverside 2 shows that generally High Street is at capacity and very limited development traffic can be added without significant improvements. This leads to the conclusion that this development will have to

rely heavily on sustainable modes of transport and committed future infrastructure improvements.

- The Commissioner's Place development illustrates that development and additional traffic along Commissioner's Road is tolerated. In addition, this development noted that the modal splits in this area could be facilitated by more public transport and rail usage due to proximity to public transport. The development noted that other sustainable modes of transport could be used due to the development's proximity to town centre. These policies could also be adopted for this development as it is relatively close to town centre.
- The National Tyre development demonstrates that the site is recognised as being proximal to the town centre and encourages sustainable modes of transport, which is reflected in its parking policy. Furthermore, the approval of the National Tyre proposal promotes sustainable developments within Strood. Similar to the other developments, this development leads to the conclusion that sustainable modes of transport are possible due to the proximity to rail, public transport, and town centre.

6 Policies Relevant to Development

To understand local and regional goals and to support the transport analysis and plans for the development, a number of different relevant planning documents in the area were reviewed. These documents include:

- The National Planning Policy Framework (NPPF);
- The Medway Local Plan;
- The Medway Local Transport Plan; and
- The "Fixing our broken housing market" white paper prepared by the Department of Communities and Local Government.

The relevance of each document to the site development include:

- As noted in the NPPF, the site should be accessible to all, take into account sustainable modes of transport, and provide mitigation measures to reduce the impact of the development. The development currently being planned satisfies all of the different policy framework notes. Development mitigation measures will look into sustainable and safe modes of transportation to ensure access to all modes of transport.
- The Medway Local Plan noted numerous policies. The development meets a number of these policies including:
    - POLICY T1: IMPACT OF DEVELOPMENT and POLICY T2: ACCESS TO THE HIGHWAY: The development will provide safe access to the development from the highway network that will not generate significant HGV movements while maximizing the use of the surrounding highway capacity.
    - POLICY T3: PROVISION FOR PEDESTRIANS, POLICY T4: CYCLE FACILITIES, and POLICY T22: PROVISION FOR PEOPLE WITH DISABILITIES: The development will have safe access for pedestrians of all abilities as well as cyclists. The facilities for the development will also include pedestrian access to the Strood Rail Station. It should be noted that the development is in very close proximity to Strood Town Centre, and therefore will provide very good connections to the cycling and pedestrian networks in Strood.

  - POLICY T6: PROVISION FOR PUBLIC TRANSPORT: The development is located adjacent to numerous bus routes and the Strood Rail Station. Service along Canal Road could be improved to further service the development. This will be discussed as part of the recommendations.
  - POLICY T12: TRAFFIC MANAGEMENT: The development will include road layouts designed to be inclusive of all modes of transport. This includes traffic management measures in order to reduce vehicle speeds if required.
  - POLICY T13: VEHICLE PARKING STANDARDS and POLICY T15: PARKING STRATEGY: The vehicle parking standards for the development has reviewed different parking standards of the surrounding area and will provide adequate parking for the development. This will include both parking for short and long stays. The goal of this project is to reduce the parking requirements, and this will be done through a variety of measures indicated below. It should be noted that with the increase of other modes in the area (pedestrians, cycling, public transport), parking provisions for this site can be lowered.

- The Medway Local Transport Plan encourages the improvement of safety while making the local travel network more efficient along highways and public transport. This will include:
  - Better information dissemination to all modes of transport and improve traffic management;
  - Improving the infrastructure capacity through finding solutions to congestion hotspots; as well as improved car park and freight management;
  - Improve public transport by providing travel by train, developing Fastrack-style bus links to Chattenden and other sites across Medway, and improving taxi service;
  - Encouraging active transport to provide more facilities and connections with public transport; and
  - Improving road safety for all users.
- Through these different initiatives, the plan encourages and improves other modes of transport other than car, especially sustainable modes. As noted previously, the site is focused on sustainable modes of transport that aligns with the policies noted in the Local Transport Plan. The development will encourage public transport and include facilities for active transport.
- The fixing our broken housing market white paper noted that government needed to “address the particular scope for higher-density housing in urban locations that are well served by public transport (such as around many railway stations); that provide scope to replace or build over low-density uses (such as retail warehouses, lock-ups and car parks);”. This development perfectly fits this description as it replaces a low density area with higher density residential. The development also is well situated to the town centre and to public transport. With the focus on higher density developments near public transport facilities, the government policies are moving away from car oriented developments which would encourage reduced parking provisions.

A further detailed summary of the different policy documents and white papers can be found in Appendix B.

7 In-flight Initiatives Relative to Development

In-flight initiatives were reviewed to gain insight as to how they would impact the travel network serving the development. During 2014, Medway compiled a number of schemes as part of the Local Enterprise Partnerships (LEP) bid for the governments Local Growth Fund (LGF). Medway received £28.6 million for five schemes, including:

- Chatham Town Centre and Public Realm Package. These improvements are expected to shift mode splits from automobile to other sustainable modes (i.e. walking and cycling) which will divert vehicles from town centre areas (including that of Strood) which would impact the road network adjacent to the development;
- A289 Four Elms Roundabout to Medway Tunnel Journey Time and Network Improvements. The scheme is expected to reduce traveller congestion through road junction delay savings and improve journey reliability. As a result of these improvements, it is anticipated that the A289 would become a more attractive option to drivers travelling west rather than via Rochester and Strood Town Centres. Consequently, this would provide additional capacity at the junctions along High Street (A2) which are operating near capacity currently;
- Medway City Estate Connectivity Improvement Measures. The measures from this improvement will help to shift the modal split away from travelling by car, thereby reducing traffic to and from Medway City Estate which uses the same road networks as the site development would. This decreased usage would provide additional traffic buffer capacity that could accommodate the potential development traffic;
- Strood Town Centre Journey Time and Accessibility Enhancements. This scheme improves accessibility and creates a more sustainable network through modal shift will help to establish conditions that will act as a catalyst to increase capacity of current and future development opportunities. This will support development's goals for reduced parking provisions to promote sustainable transport. The improvements to the town centre will encourage residents of the future development to use sustainable modes of transport, therefore reducing the parking requirements. Furthermore, one of the primary purposes of this scheme is to provide sustainable access to the proposed development. Specifically, this scheme will decommission the traffic signal at Knight Road / Commercial Road and resurface the town centre, which will necessitate a recalibration of SCOOT systems;
- Medway Cycling Action Plan. This plan will support the traction that cycling is gaining as a mode of transport in Medway. This is expected to increase further with Medway Cycling Action Plan. Consequently, a modal shift towards cycling will reduce the traffic impact of the regeneration development; and
- The Public Rights of Way Improvement Plan. This plan will further enhance the facilities for all users, therefore increasing the use of sustainable modes of transit other than car. This will lead to lowering the effect of the development on the traffic network as users would be encouraged to use other modes of transport other than car.

In addition to the above schemes, Medway is working to improve path access for walkers around Medway, as per the Public Rights of Way Improvement Plan.

A summary of the different in-flight initiatives can be found in Appendix C.

Generally, the in-flight initiatives in the area surrounding the site fall in line with the goals of the Local Transport Plan. There are a number of initiatives that are changing the priorities of the transport system in the surrounding area to be more sustainable including an expansion of the cycling network as well as improvements to the right-of-way for not just cars but pedestrians. These improvements to sustainable transportation are focused in and around the Strood Town Centre, improving these modes for future site users. In addition, capacity

on the roadways at key junctions which will serve development traffic are increased through Intelligent Transportation Systems such as SCOOT and improvements to the by-pass roads (A289) will provide more capacity along roadways near the site. As a whole, these different improvements will provide better access to the site for all modes of transportation in the area.

8 Parking Provision

This section provides an overview of parking standards and other measures used to lower parking rates at developments. These measures are relevant for the context of the development currently being proposed.

8.1 Parking Standards

Development parking standards for Medway Council and surrounding regions will be reviewed to identify regional trends.

Parking standards for developments in Medway, other local councils, and Kent are summarised in Appendix D.

In general, councils within Kent County adopt some form or another of Kent County Council's parking standards, with the exception of Medway Council. Although Medway parking standards mention that lower parking rates would be considered if the development were "within an urban area that has good links to sustainable transport and where day-to-day facilities are within easy walking distance", no lower limits are expressed and were not found in the other developments reviewed. In lieu of lower parking provision rates, the Interim Guidance provided by Kent County Council can be used as "the previously adopted standards for residential parking in Kent are a reasonably accurate guide to the upper levels of expected ownership in the county". Given the proximity (maximum walking distance of approximately 800 m to the town centre), the development should be considered to be within the "City/Town Centre". Therefore, the parking guidance rates which show that a maximum of 1 space per unit should be provided with the further provision that **"reduced, or even nil provision is encouraged in support of demand management and the most efficient use of land"**. Moreover, it is generally recognised that flats, which the site development is primarily comprised of, have lower parking rates than individual homes.

8.2 Car Clubs

Due to challenges of congestion, population growth, and the emissions, car clubs have provided a flexible and cost-effective alternative to addressing these challenges. Furthermore, the Kent County Council has found that "'Car Clubs' are a particularly useful feature of residential travel plans where travel flexibility without high car ownership is sought". Global and local experiences with car clubs and their impact on parking provision are summarised in the following sections.

8.2.1 Local Experience

Car clubs have also been successfully used in the UK to reduce parking provision, emissions, and impact of private vehicle trips from developments. Furthermore, car clubs have contributed to reaching policy objectives including modal shift.

A car club operator will need to be consulted to assess the viability of a car club operation. However, case studies around the UK have shown that car clubs have shown potential for the reduction of parking provision in the case studies found in Table 3.

Table 3: Car Club Case Studies

DEVELOPMENT (PARKING RATIO)	PARKING PROVISION	SUCCESS FACTORS
259 City Road Islington **(Total 0:26:1)**	• High rise, high density mixed tenure residential development (retail, parking, parks, walkways) • 304 units private and affordable housing, 78 parking spaces	• Incentives (free 2-year membership and £60 free credit) • Promotion before move-in and within welcome packs • Shared between business and residents • High number of vehicles within proximity to development
New River Village Haringey **(Affordable apartments 0:26:1)** **(For sale 0:78:1)** **(Total 0.65:1)**	• High-density residential development (restaurant, bar, gallery) • 465 units for sale, 157 units affordable housing, 406 parking spaces	• Large number of units with limited parking • Incentives (free 1-year membership & 20% discount for first 12 months) • Shared between business and residents High number of vehicles within proximity to development

8.2.2 International Experience

In 2009, IBI Group examined the impacts of car share programs (car clubs in Canada) on parking standards in Toronto, Canada. Through review of literature, best practices, existing policy, by-laws in the City of Toronto, and a survey, the following analysis results showed that:

- The presence of dedicated car share (car clubs in Canada) vehicles was shown to have a significant negative influence on the average auto ownership and parking demand of building residents, providing justification to reduce parking requirements for multi-unit residential buildings providing dedicated car share vehicles.
- For any apartment or condominium development, the minimum parking requirement should be reduced by up to 4 parking spaces for each dedicated car share stall. The limit on this parking reduction is calculated as the greater of:
  - 4 * (Total number of units / 60), rounded down to the nearest whole number; or
  - 1 space.
- Where a maximum parking ratio is specified, dedicated car share parking spaces should not count towards the maximum allowable parking supply, up to 10% of the maximum number of parking spaces.

The report also includes implementation considerations and other requirements for car sharing.

8.3 On-Street Parking

8.3.1 Technology

Non-allocated parking can capitalise on different types of ownership to use parking spaces in the most efficient way. They can also be used to satisfy visitor parking based on different occupancy parking patterns throughout the day (e.g. a person who commutes can rent out

their space to a shopper). Furthermore, Kent County Council found that "where effectively enforced on-street parking controls (or positively managed covenants/agreements) limit the opportunities for residents to own cars that they cannot accommodate in dedicated parking areas, lower levels provision will not cause problems". Several developers have pursued developments with non-allocated parking (mostly houses).

Another strategy to limit the need for parking would be to use space renting platforms (e.g. JustPark). JustPark provides an online platform for residents to rent out their parking spaces, has several spaces around Strood and Rochester listed. It is one example of many that can be used to streamline parking operations around the site and increase overall parking efficiency within Medway. Other successes have included:

- Implementation of sensors into individual parking bays in Milton Keynes which can detect whether the bay is occupied or not. The information collected from the sensors can be used to provide parking customers with real-time information; and
- Online, mobile phone, and cashless parking management in Westminster. Furthermore, enforcement is carried out by Automatic Number Place Recognition (ANPR) technology and a number of parking stewards.

Using technologies and methods discussed above, a lower provision for visitor parking would be recommended.

8.3.2 Permits

On-street parking can be potentially provided. Currently, on-street resident parking permits for Medway cost £27 per year. In order to address on-street parking issues, Sevenoaks District Council has implemented a sliding scale of charges to address issues with parking, maintenance, and enforcement. Sevenoaks District Council believes "those who park more cars on the road have a bigger impact on the parking issues in the area [and hence] will pay more for their permits". The cost of a resident on-street parking permit can cost from £35 per permit to £250. Non-resident on-street parking ranges from £270 per year, up to £765 for those who can park near the Sevenoaks rail station.

Furthermore, if on-street parking is provided for, some form of parking control will be required in order to maintain smooth vehicle access (visitor and emergency vehicle) to the site. Controlled parking zones, which permit parking only during certain periods can be implemented. Controlled parking zones are designated through signage and pavement markings.

8.4 Car Ownership

2011 Census car ownership data of areas in the vicinity (1000m) of Strood, Rochester, and Chatham rail stations (Figure 12) were reviewed. Isochrones of 1000m (approximately 15 minute walk) were chosen as they are the "suggested acceptable walking distance" as per the 2000 CIHT Guidelines for Providing for Journeys on Foot. The data, summarised in Table 4, showed that the areas adjacent to Strood Rail Station, 28% of households do not have a car or van. Based only on car ownership census data, the development could have a parking provision of 0.72 if 28% of residents do not own vehicles, and vehicle-owning residents are limited to one space per household or flat (to align with sustainable parking provision as per Kent County Council guidelines). However, the parking provision reductions could be pursued beyond the status-quo as 39% of households within the Rochester and Chatham isochrones do not own cars (translating into a parking ratio of 0.61). Furthermore, the proximity of the developments to Strood and Rochester rail stations is likely to attract a train commuter market, which would further reduce the need for regular private vehicle trips and parking space. Occasional private vehicle trips by these train commuters could be made using car club vehicles. Similar to the approved National Tyre Development, those wishing to make regular trips by private vehicle and needing more than one parking space may not find

these developments suitable and will be able to seek out developments that cater more to their needs. The low overall car ownership rates discussed above would lead to a conclusion that lower parking rates could be feasible for this development.

Figure 12: Walking (15 minutes/1 km isochromes) from Rail Stations

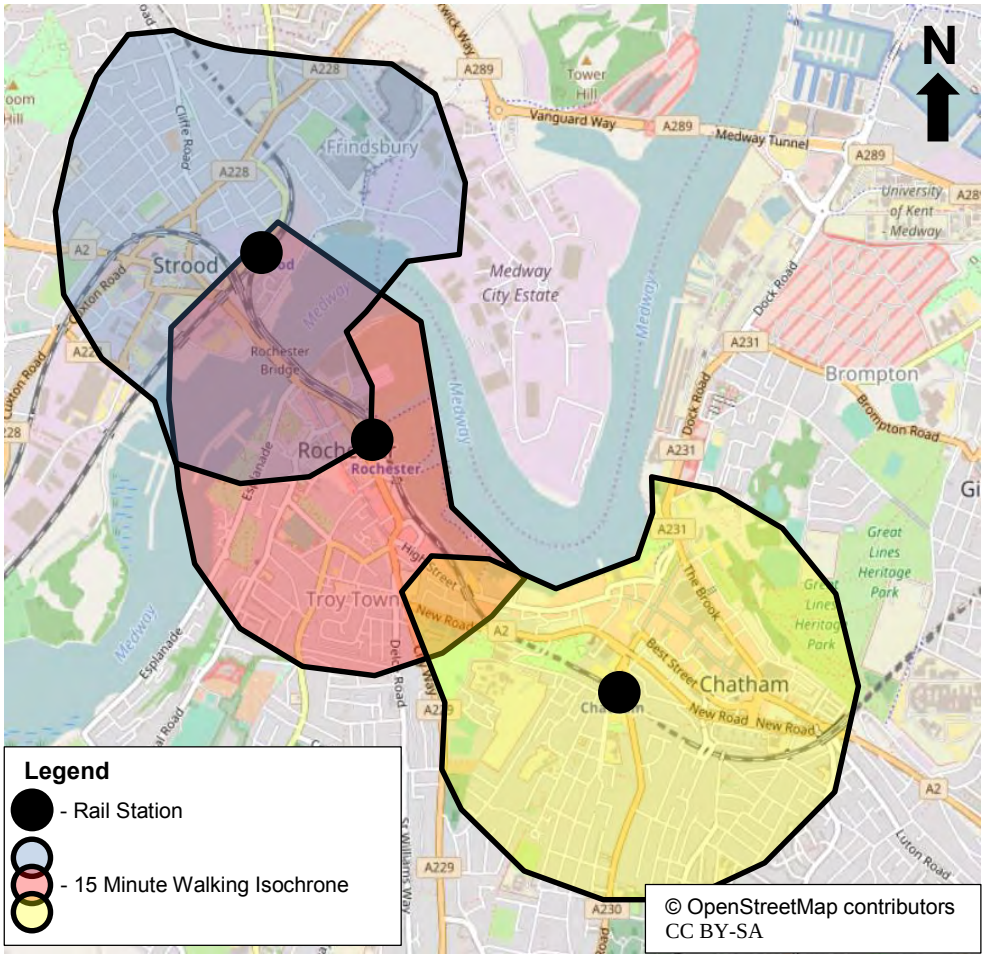


Table 4: Car Ownership

CAR OWNERSHIP	AREA		
	CHATHAM & ROCHESTER	STROOD	TOTAL
All categories: Car or van availability	7,729	3,181	10,910
	100%	100%	100%
No cars or vans in household	3,008	878	3,886
	39%	28%	36%
1 car or van in household	3,350	1,419	4,769
	43%	45%	44%
2 cars or vans in household	1,155	704	1,859
	15%	22%	17%
3 cars or vans in household	169	141	310
	2%	4%	3%
4 or more cars or vans in household	47	39	86
	1%	1%	1%

8.5 Strood Waterfront Parking Provision

To align with current standards, available technology, and goals of transport plans in the area, the parking provision for the Strood Waterfront development could be less than one space per unit as:

- Parking standards indicate a maximum of one space per unit;
- Developments with car clubs have been approved and successfully implemented with parking provision of less than one space per unit;
- On-street parking can accommodate both visitor and resident parking if occupancy parking patterns permit; and
- A previous development was accepted with no provision for non-residential parking due to proximity and access to local transport links.

It is recommended that a minimum parking provision be sought below a ratio of 0.61, with further reductions pending car club feasibility study, technology implementation (e.g. online platforms, parking sensors, etc.), and parking surveys of the existing area.

9 Site Generated Traffic

This chapter discusses trip generation and distribution in order to understand in general terms, how many vehicles are being generated by the development and what routes on the network they will take. It should be noted that the modal splits are only for work trips (commuting) as this is the only data Census 2011 provides. Furthermore, it was assumed that the parking of the east development would be able to access either only Canal Road or Commissioner's Road as accessing only Canal Road would not be feasible given the results from the Strood River 2 traffic impact assessment.

9.1 Modal Splits

Census 2011 data was further examined to determine what modes were taken to travel to work for those living in vicinity to a rail station. Previous analysis in the Strood Town Centre Local Growth Fund showed that "rates of walking are lower than in neighbouring Rochester and lower than in Medway as a whole, and significantly lower than the South-East average". The travel data of the areas immediately surrounding the Strood, Rochester, and Chatham rail stations was analysed and summarised in Table 5.

Table 5: Modal splits of those living in vicinity of a rail station

LIVING ADJACENT TO	MODAL SPLIT				
	DRIVING A CAR OR VAN	TRAIN	BUS	BICYCLE	WALKING
Strood rail station	59%	12%	5%	2%	14%
Rochester rail station	53%	21%	4%	2%	14%
Chatham rail station	43%	17%	9%	2%	19%
Average	*52%*	*17%*	*6%*	*2%*	*16%*

The analysis shows that in comparison to the modal splits summarised in Figure 13, modal splits by non-car or van made by residents adjacent to rail stations are generally higher, especially for trips made by train or on foot. Therefore, lower automobile trip rates for the Strood Waterfront regeneration development is justified. An average of the three areas will

be used as it would be expected that an increase in population immediately adjacent to a rail station would decrease the proportion of residents travelling by car.

Figure 13: Modal Splits as per the business case for Strood Town Centre Local Growth Fund

Area	Total travelling to work	Modal Splits (other modes not included here)				
		Bicycle	Bus, minibus or coach	Driving a car or van	On foot	Train
South East	3,758,139	3.3%	4.9%	70.4%	11.1%	8.0%
Medway	116,767	1.2%	5.0%	72.2%	10.0%	9.4%
Rochester	14,829	1.3%	4.7%	69.0%	10.9%	11.9%
Strood	19,189	1.0%	4.9%	76.9%	7.7%	7.4%

9.2 Trip Generation

The rate used to generate automobile trips is the total trip rates per dwelling by all modes used in Commissioner's Place development (1.061 and 0.950 trips per dwelling in the AM and PM peak periods, respectively) adjusted using modal splits derived from the Census 2011 data. The trip rate is summarised in Table 6.

Table 6: Automobile trip rates

MODE	TRIP GENERATION RATE (PER DWELLING)					
	AM PEAK PERIOD			PM PEAK PERIOD		
	ARRIVE	DEPART	TOTAL	ARRIVE	DEPART	TOTAL
Automobile	0.141	0.410	0.552	0.319	0.176	0.494
All Modes			1.061			0.950

Based on the assumed number of units for each development site, the number of trips is summarised in Table 7.

Table 7: Total number of automobile trips

DEVELOPMENT	NUMBER OF UNITS	AM PEAK PERIOD		PM PEAK PERIOD	
		DEPARTING	ARRIVING	DEPARTING	ARRIVING
West development	500	205	70	88	160
East Development (to Canal Road)	750	308	106	132	239
East Development (to Commissioner's Road)	750	308	106	132	239

9.3 Trip Distribution

Trip distribution was carried out using a combination of:

- Census 2011 Origin Destination data [trips originating from E02003319 : Medway 006 (2011 super output area - middle layer) divided by mode as per WU03EW];
- Peak travel times estimated by Google Maps;
- Congestion and traffic issues in Existing Conditions; and

- Anticipated driver behaviours and preferences.

Trip distribution diagrams based on approximate unit numbers for the AM and PM peak are available in Appendix E.

10 Mitigation Measures

The potential mitigation options to reduce the number of car trips and/or the impact of site generated traffic are separated into different “levels” in terms of scale (geographical). It is important to note there is no single influence or measure that will be able to solve either background or development transport issues. The solution lies in combining the benefits of numerous individual measures and improvements.

10.1 Council-wide Foundational / Policy Initiatives

At this stage, council-wide foundational policies and initiatives are not within the scope of this Transport Statement. However, it is expected that these will need to be undertaken at some point given the anticipated growth of Medway.

10.1.1 Review of Car / Van Mode Alternatives

In order to encourage more public transport use and limit the use of the Strood Station car park, service on Canal Road should be improved. Bus routing and headways should be further investigated in a future study. Furthermore, discussion with train operators regarding frequency may be warranted given the significant increase in the number of homes in the area. Although previously considered unviable, the possibility of bike share schemes could be revisited since the opening of three university campuses in the Medway campus.

10.1.2 Parking Strategy Planning

It is an ambition of Medway Council to undertake a parking strategy. Medway continues to evolve into an increasingly urban place with greater land use intensity. This growth necessitates the development of robust parking standards that are context sensitive and will balance a variety of transportation and development objectives.

10.1.3 Overall Strategic Transport Plan

The current Local Transport Plan recognises the need for further river crossings, especially one that could encourage “movement across the river by more sustainable means”. As more residences are constructed in Medway, an additional river crossing will become essential.

Until then, the Local Transport Plan could be updated to harness “smart” technology to fully utilise current assets as well as enhance citizen experience of transport.

10.1.4 Travel Behaviour for Travel Demand Management

Using customer communication strategies to a meet the requirement and desire to manage demand on the road which results from recurring increases in demand (e.g. during peak periods), a sustained growth in demand over an extended period (e.g. population growth) or the reduction in available capacity, is not new.

In recent years, however, there has been an increased focus on the strategic approach to achieving demand management, whether that is an attempt to achieve an overall reduction or a change in the profile of that demand.

These strategic approaches have considered a range of interventions that include marketing and communication strategies, an improved use of information technology and the better use

of existing or new channels to reach customers (including operator owned and third party owned) to elicit some travel behaviour change.

What has unified these strategic approaches is a commonality in how they seek to understand the range of customers and adapt a proposition to these distinct customer groups to achieve marginal, and in limited cases, substantial changes in travel behaviour resulting in reduced demand.

In each case these projects/programme attempted to quantify the impact to road users and the subsequent interventions targeted the objective of reducing the impact to the customer. Whilst the quantification of the problem differed (e.g. delay, journey time, customer experience) it formed the backbone of the proposition to road users.

For instance, 'As a result of congestion between 8 am and 9am journey times will be by 15 minutes more than outside these times.' Additionally there was an understanding of how much change was required to achieve a level of success. For instance, a 5% reduction to achieve a delay of no more than 10 minutes.

Analysis of the different customer groups who would be impacted was completed with the purpose of understanding what would motivate a travel behaviour change (e.g. articulating the likely extent of a delay). This allowed project teams to refine the proposition which could be provided to each customer group. Whether that was that there was a better time to travel or that other modal options were available.

Accepting that different channels reached different customer groups, attempts were made to provide appropriate messages for different channels. For instance, channels that would reach customer prior to commencing a journey would proposition the possible modal or directional alternatives whereas on-system information may have described better times of travel, accepting that a behaviour change might result in subsequent days.

A process of monitoring the impact of interventions was instigated that would allow for the reporting of the success or otherwise of the project but also informing the need for any adaptation in the extent or tone of information and advice.

Acknowledging these broad principles a possible mitigation of existing and future road congestion may be to apply some form of demand management through travel behaviour change. In order to understand the capability of achieving this, a number of key questions should be answered:

1. **Understand the customer profile and segments.** Is there an understanding of the customer and the purpose of their journey?
    a. Who are the drivers/rood users (e.g commuters, residents, etc.)?
    b. Why are they travelling (e.g. work, home-work, etc.)?
    c. Where are starting/ending their trips?
2. **Understand the detail of congestion.** During what times are roads congested?
    a. Is there a concentration during particular time periods? E.g. 8 am to 9am
    b. Outside of the busiest period, how much road capacity exists?
    c. What about roads around the town centre, what is the level of congestion?
3. **Customer options.** What the other modal or journey route options exist?
    a. Are there realistic modal options?
    b. Are there realistic route options?
    c. If so what are the current barriers to their use?
4. **Understand the customer proposition**. Is the customer proposition understood?
    a. Based on what is known about the customer segments is it possible to identify target groups?

b. What might motivate travel behaviour change?

c. What is the proposition to these customer groups? Better experience, reduced journey time?

5. **Defining a target**. How much travel behaviour change (manifesting as a reduction in demand during the congested period) is required for this to be successful?

    a. Is a very small change in short term travel behaviour change likely to make a larger cumulative impact?

    b. Is the strategy to focus on the peak of peak or a broader time shift or reduction?

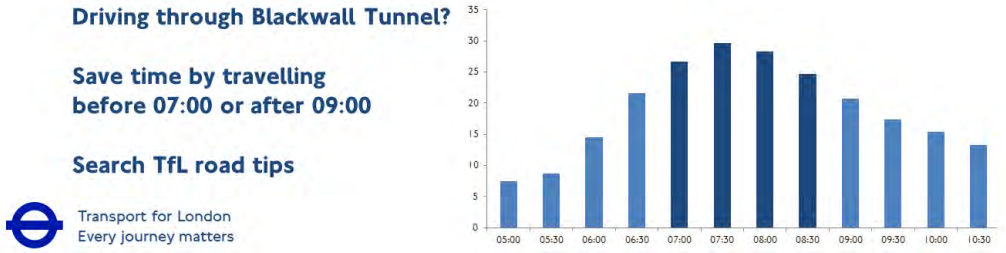
6. **Reaching customers.** What mechanisms exist to reach customers?

    a. Having understood target groups, options and propositions and success criteria which information channels should be used?

    b. What is the strategy for information channel use?

An example of a travel demand management campaign from TFL is shown in Figure 14.

Figure 14: Travel demand management example



10.2 Measures for the Surrounding Area

10.2.1 Time Slots for Business Deliveries

To mitigate the impact of vehicles parking along High Street which cause congestion, a system where deliveries and pick-ups are scheduled within certain time slots should be implemented.

10.2.2 Expansion of Traffic Monitoring

The ability to view traffic conditions is crucial to successful traffic management. Medway Commercial Group and Medway Council both have CCTV cameras within Strood. However, the monitoring is limited to the town centre, Civic Centre, and several car parks (Strood Rail Station, Grove Road, and Commercial Road). Due to the infrastructure improvement schemes and the potential SRR development, CCTV coverage will likely need to be expanded to cover blind spots which will become important traffic corridors such as Knight Road, Canal Road, Cuxton Road, Gun Lane, A228, and Commissioner's Road.

10.2.3 Traffic Signal Control System

Due to the signal and pavement changes from committed infrastructure improvements, it is recommended that the SCOOT system be updated and recalibrated in order to ensure efficient traffic flow within Strood. The system may also require expansion to accommodate for growing traffic volumes.

10.2.4 Parking Guidance

Drivers who circle around an area looking for a parking space can increase congestion as well as emissions. The parking guidance around Medway could be enhanced to maximise

parking assets through technology, such as parking rental platforms, parking sensors, cashless payments, and better wayfinding to and within parking lots.

10.2.5 Electric Charging Points

Site traffic will travel along AQMA routes which will in turn increase emissions. Electric charging points should be provided around the area for hybrid and electric vehicles (low or zero emission) that will aid in maintaining high air quality for residents.

10.2.6 Junction Modifications

It should be noted that these junction modifications are not mutually exclusive.

10.2.6.1 Conversion of Esplanade to a one-way relief road

The introduction of a by-pass through Esplanade to shift traffic off the main A2 corridor and onto Knight Road as illustrated in Figure 15.

Figure 15: Esplanade relief road

Considerations will need to be given to preventing flooding, Environmental Agency requirements, impacts to residents (e.g. noise, pollution), and the impact on the development value. A left-in left-out relief line could also be constructed, but would require appropriating the shops on the north-east corner of the land.

10.2.6.2 Knight Road / Access

Knowing that right-turning traffic from the Access onto Knight Road can cause congestion, signalising the intersection may be required to accommodate traffic turning onto Knight Road. As the signal at Commercial Road / Knight Road is being decommissioned, it is not expected that “relocating” the signal to Knight Road / Access would cause significant issues.

Alternatively, the right-turn could be banned to avoid the issue altogether. However, westbound volumes on Knight Road might make turning right into the Access difficult, would which result in all traffic returning to that access of the development to travel along High Street / Commercial Road.

10.2.6.3 Widening Access Road leading to Knight Road

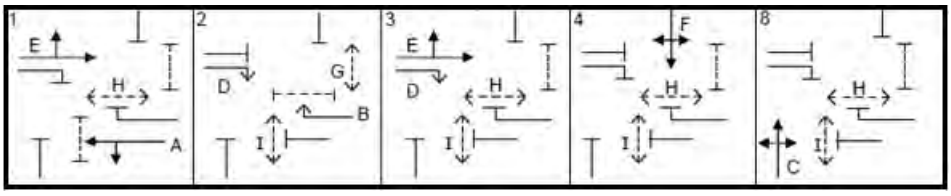
The road currently allows only one vehicle to pass at a time (vehicles heading towards Knight Road must yield to those heading towards the Civic Centre), and widening is unlikely to be an option due to the rail track supports on either side of the roadway, as pictured in . However, if the sidewalk(s) were removed and a pedestrian access relocated under the rail tracks then the roadway could potentially be converted to a two lane roadway. Further geometric study and right-of-way would need to be carried out. Furthermore, a pedestrian crossing would need to be added north of the rail overpass.

Figure 16: Underpass leading from Civic Centre to Knight Road

10.2.6.4 Operating Right-out Only at the High Street / Canal Road / Esplanade intersection

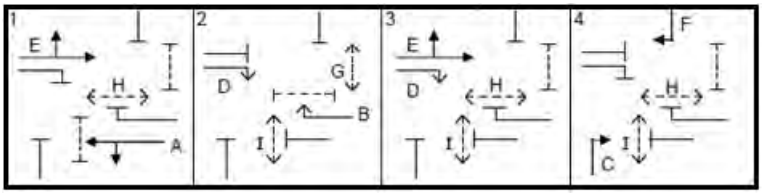
Currently, a simplified version of the traffic signals operates as shown in Figure 17 (left-right is travel along High Street, up and down is Esplanade and Canal Road, respectively).

Figure 17: Simplified High Street / Canal Road / Esplanade signal phasing diagram



By converting the intersection to a right-out only for Canal Road and Esplanade, the intergreen between stages 4 and 8 can be eliminated (combining stages 4 and 8), as illustrated in Figure 18. This would increase the capacity of the intersection.

Figure 18: Combined stages at High Street / Canal Road / Esplanade



Esplanade would be converted to restricting Esplanade to only emergency and maintenance vehicles, more time can be given to the exit on Canal Road while allowing full movement. A method of preventing general traffic from activating the Esplanade phase would be required and could come in the form of either transponders that would be recognised by the intersection or a physical barrier.

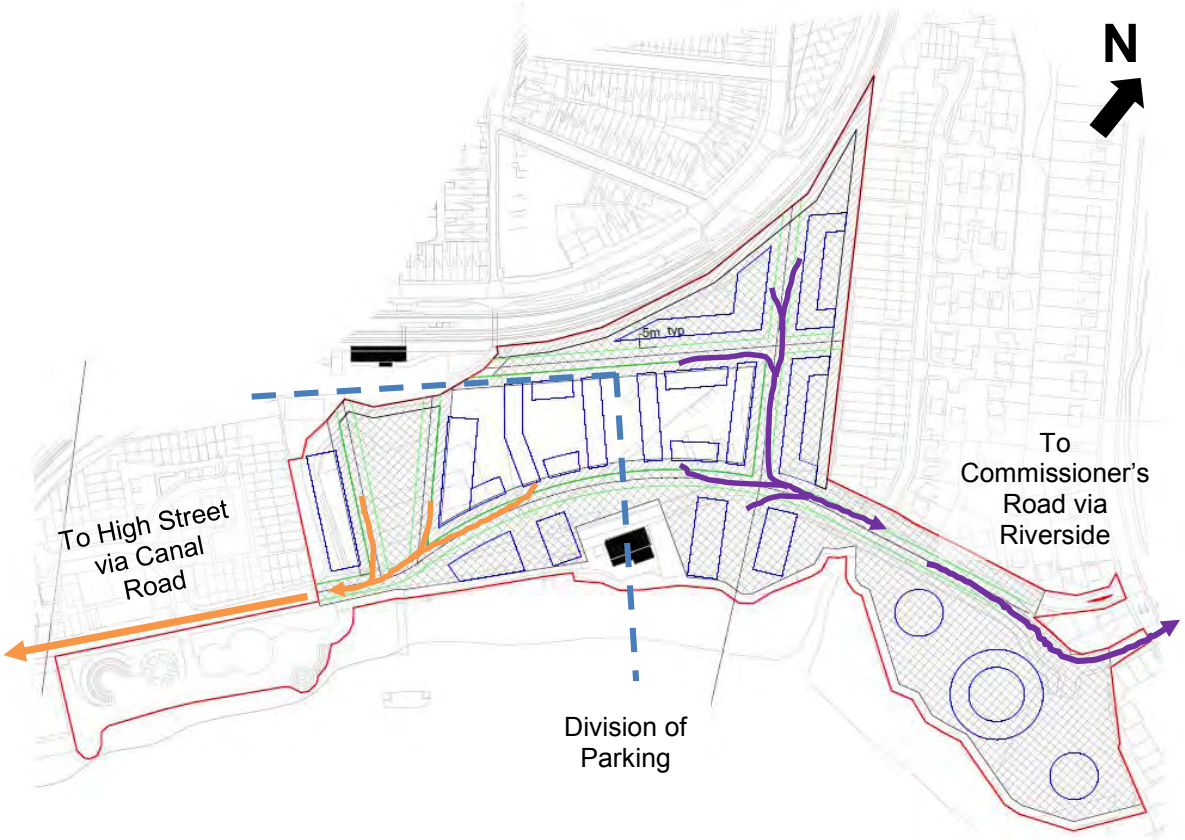
Traffic for the site west of High Street will enter/exit the site using the access intersecting Knight Road.

10.3 Site Specific Strategy

10.3.1 Parking Design

Divide Strood Riverside parking (east of High Street) such that a portion will access their parking via High Street and the remaining portion will access their parking via Commissioner's Road. This does not necessitate the conversion of Canal Road to become a two way road, which will prevent commuters from MCE from infiltrating the neighbourhood. The division of parking access will help to limit the impact to the High Street / Canal Road / Esplanade intersection while still maintaining access to the site.

Figure 19: Division of parking



10.3.2 Further Origin Destination Data Analysis

As census data only provides information regarding commute trips, further origin destination data should be reviewed for all types of trips to ensure a thorough analysis. Given the proximity of the potential development to local amenities, the proportion of car or van trips made could decrease (as errands and school trips could be made on foot). A lower modal share of trips by car or van would decrease the expected number of vehicles generated by the development which would equate to a lower impact on the network.

11 Impacts to the Travel Network

This section provides an overview of impacts of the development on the travel network based on proposed mitigations and the parking re-provisioning. The effects of the development are as follows:

- The adjacent highway network will experience a significant number of additional vehicle trips due to the development during peak hours;
- Preliminary trip generation and distribution show that trips from the site add significant volumes which would likely result in further congestion at the existing traffic chokepoints:
    - High Street / Canal Road / Esplanade;
    - High Street / Station Road / Commercial Road; and
- The following intersections are currently under capacity, but traffic volume increases could potentially cause delays include:
    - Commissioner's Road at Canal Road (during the PM peak period only);
    - Knight Road / Access;
    - A2 / Cuxton Road / Gun Lane;
    - A228 / Station Road; and
    - Station Road / Banks Road.
- Given that Strood Town Centre is generally congested and junctions operate at capacity, any additional traffic would result in further congestion and capacity issues. However, infrastructure improvements in the surrounding area are expected to divert traffic from the A2, reduce the modal share of automobiles, and improve traffic flow within Strood Town Centre. Without the quantitative knowledge of how much these improvements are expected to make, a base future scenario cannot be established. Consequently, analysis of the future base scenario with development traffic cannot be analysed.
- However, the combination of committed infrastructure improvements (in-flight initiatives), justifiably lower parking standards and automobile modal share, as well as mitigation measures, suggests that the road network would arguably be able to accommodate the proposed development.
- The impact to the public travel network will be moderate. With additional public transport trips expected, the rail and bus network in the surrounding area would need to be enhanced in order to accommodate this. A further study of the public transport enhancements would be required.
- The impacts to pedestrian and cycling will be an improvement as the additional connections provided by the site will enhance pedestrian and cycling facilities.

12 Conclusions

The conclusions of the report are as follows:

- Currently, the accesses for the proposed development have light traffic and are under capacity. However, the surrounding road network is generally congested during peak hours especially along High Street and its junctions at Canal Road and Station Road;
- The site is generally well connected due to its proximity to the town centre and the Strood Rail Station;

- A review of Transport Statements and Transport Assessments of the surrounding area shows that the proposed development will need to rely heavily on sustainable modes of transport (which is achievable given the site's proximity to non-automobile modes of transport);
- Policies, plans, and research indicate that developments should encourage and provide sustainable transport (active and public transport) and "address the particular scope for higher-density well connected by public transport". Future plans for Medway include the improvement of public transport service and active transport facilities;
- Regardless of the development, there are significant efforts that must be made to improve the travel experience for those accessing Medway;
- In-flight initiatives in the region show a number of committed future infrastructure improvements. This includes improvements to the roadway capacity surrounding the site area and improvements to the town centre for pedestrian and cycling access. In conjunction with these other initiatives, the development has the potential to establish an ongoing trend of sustainable developments in Medway;
- A review of census data reveals that up to 39% of those living within proximal to a train station do not own cars. This, in combination with a thorough review of parking provisions for Kent and Medway point to a parking ratio of 0.61. This rate can be further lowered through emerging trends and technologies such as Car Clubs, low car ownership in the surrounding area, and improved technologies to maximize available parking for the development and in the surrounding areas; and
- The impact on the future network based on trip distribution shows that there will be additional trips on the High Street that may result in worse operations. However, in order to do an adequate and in-depth analysis of the traffic impacts of the development, future base conditions must be approximated. This requires the effects of the in-flight infrastructure initiatives to be quantified in terms of their impact on traffic. This information is currently unavailable at this time, however this can be tested through Medway Council's Strategic Transport Model (STM) in the future. It is possible that proposed mitigation and committed initiatives by Medway could accommodate the additional development traffic.

13 Recommendations

To thoroughly understand and anticipate the impacts of the proposed development, the following should be performed:

- Trip and mode survey of developments adjacent to Strood Rail Station to reflect current travel trends (to supplement initial origin destination data analysis findings);
- Establish future base conditions for the development by either performing turning movement counts at key intersections after the completion of infrastructure improvements or by critically assessing and modelling infrastructure improvement impacts on relevant portions of the road network; and
- Analyse the impact of the proposed development on the traffic network with mitigation measures to inform the design of the development in an iterative process.

Beyond the steps needed to complete a thorough Transport Assessment, it is recommended that the mitigation measures be further examined irrespective of the development as they will support other developments and benefit other areas within Medway. Key mitigation measures include:

- A review of bus facilitation, train frequencies, and bike share schemes;
- A parking strategy for Medway;

- Interim review of the Local Transport Plan;
- Maximising parking assets through parking guidance technological solutions;
- Travel behaviour studies to understand key traffic issues and how Medway can better serve its residents;
- Expansion of traffic monitoring capabilities; and
- Upgrades to the traffic signal control system.

Appendix A – Surrounding Developments

Strood Riverside 2

Existing Conditions

In this Transport Assessment, an overview of the traffic counts were analysed as well as a more in-depth analysis using LINSIG.

Based on the report, the observed traffic patterns and traffic counts showed that:

- The heaviest movements within the area are the east / west through movements along High Street and approach or operate over practical capacity during peak periods. Significant westbound queues were observed at the Canal Road / High Street / Esplanade intersection, which were due to high volumes. Queueing vehicles often waited more than one cycle to clear the intersection;
- The left turn from Station Road to High Street also carries significant volumes and operates at practical capacity during the PM peak period;
- The majority of traffic exiting Canal Road (~80%) turns right onto High Street. Canal road operates below capacity in both peak periods;
- The total number of vehicles entering Canal road was higher during the AM peak period than the number of vehicles exiting during the PM peak period. This suggests that pattern of those parking at the station is more dominant than the residential traffic at Kingswear Gardens; and
- The number of vehicles exiting Esplanade is generally low.

Development, Trip Generation, and Trip Distribution

The development involves 350 homes with access to Canal Road. In generating trips, the following assumptions were made:

- Trips generated by the development are added to the network based on existing flows (i.e. if 30% of existing traffic exiting Canal Road turned left, then 30% of future volumes would also turn left);and
- Existing site has no trips.

The parameters input to TRICS were:

- Land Use: 03-Residential
- Days: Monday – Friday
- Year: 2008 to Present
- Category: A – Houses Privately Owned
- Size: 100 to 400 units

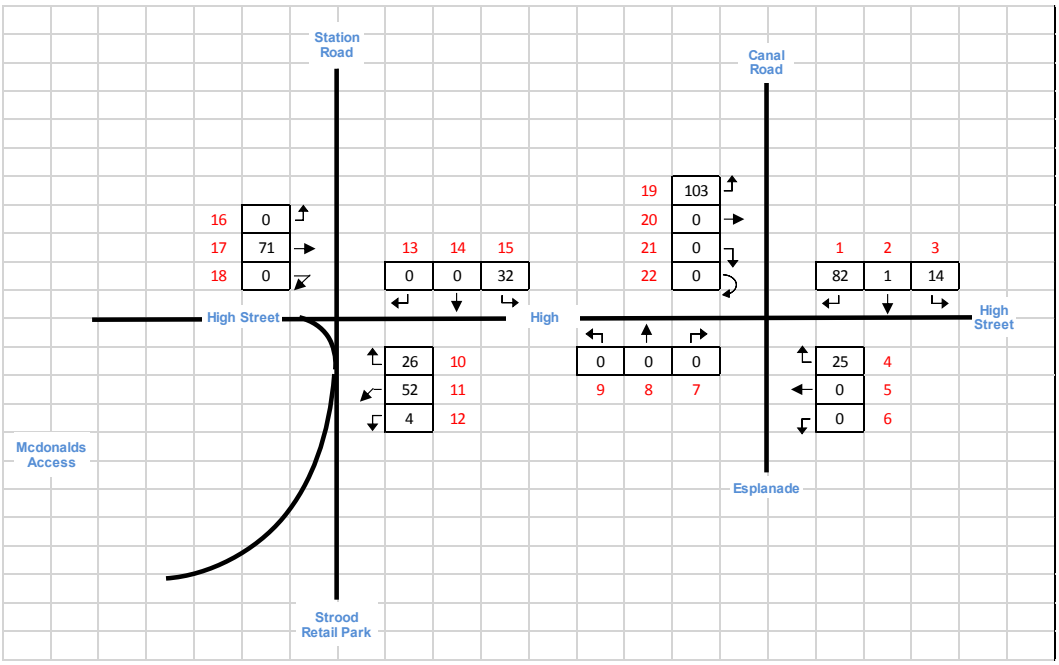
Which resulted in peak period trip rates per dwelling:

			ARRIVALS			DEPARTURES			TOTALS
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
08:00-09:00	6	196	0.148	6	196	0.433	6	196	0.581
17:00-18:00	6	196	0.364	6	196	0.233	6	196	0.597

The resulting trips generated for the development are summarised in:

Site	n of dwellings	Am Peak		Pm Peak	
		in	out	in	out
Strood riverside (Canal rd)	350	52	152	127	82

It was found that the actual number of vehicles used in the analysis was greater than those in the turning movement count. The number of “in” trips corresponds with 350 dwellings but the number of “out” trips corresponds with 414 dwellings. The distribution of these trips are shown below.



Future Conditions

Based on the Development Traffic and the Existing Conditions volumes, a Future Conditions scenario was produced and analysed based on the summation of the existing conditions and development traffic. No changes were made to intersection geometry or signals (with the exception of optimising stage durations). The analysis results showed that in general:

- Operations along High Street would worsen during both peak periods; and
- Turning movements from Canal Road will operate over practical capacity with significant queueing in both peak periods;

Commissioner's Place

Existing Conditions

The site visit found that 85th percentile speeds (both directions) were between 35.5 mph and 36.2 mph, which is over the posted speed limit of 30 mph. Morning and afternoon peak periods were found to be from 07:30 to 9:00 and 16:15 to 17:45, respectively.

In the three year period for which collision data were provided, only two collisions were reported, both of which were categorised as "slight" and between only motor vehicles. There were not enough collisions to identify any collision trends under existing collisions.

Development & Trip Generation

The 130 dwelling development is composed of 70 houses and 60 flats. The site is to be accessed via Commissioner's Road, with pedestrian and cycle access to adjacent side streets to reduce travel distance to local amenities. An additional entry to the site is provided for emergency vehicle access, but has a barrier to prevent general traffic access.

Traffic calming measures along Commissioner's Road, in the form of new buildouts, are proposed to address excessive speeding.

Cycle and vehicle parking provisions are as per Medway Council Interim Residential Parking Standards. Parking for flats are provided by parking courts, while house parking is provided by individual plots. Visitor parking bays are provided for on-street.

The site is currently empty and generates no vehicle trips. TRICS was used to determine the number of trips using the following criteria:

- Sites in England outside Greater London, Wales and Scotland
- 70 to 190 units
- Surveys from 2008 onwards
- Excludes sites with a high proportion of bungalows
- Surburban area (out of town centre)

The development will have a high proportion of flats (46%) and up to 25% of the total development will include affordable housing units. Both of these factors would typically lead to lower trip rates than houses but were not discounted to ensure a robust assessment. The resulting trip rates per dwelling by mode, based on four sites, are as follows:

MULTIMODEL AVERAGE TRIP RATES						
	AM Peak			PM Peak		
Trips per dwelling	Arriving	Departing	Total	Arriving	Departing	Total
Car Drivers	0.139	0.403	0.542	0.347	0.191	0.537
Car Passengers	0.027	0.134	0.161	0.091	0.051	0.142
Pedestrians	0.081	0.243	0.323	0.149	0.045	0.194
Cyclists	0.004	0.011	0.014	0.027	0.011	0.038
Public Transport	0.002	0.018	0.021	0.036	0.003	0.039

The report recognises that given the proximity of the development to Strood Rail Station, the likelihood of a trip being made by rail may be higher; however, the public transport trip rate was not altered.

Census 2011 travel-to-work data was used to determine trip distribution for vehicles. Other trip distributions were based on Google Maps suggested routes.

Future Conditions

The future horizon analysed was 2021, which is the expected completion date for the development. “Tempro” factors (1.0666 and 1.0700 for AM and PM peak periods, respectively) were applied to 2016 count data to establish 2021 background traffic. The AM and PM peak periods analysed were 07:30 to 9:00 and 16:15 to 17:45, respectively. The traffic impacts at three junctions were tested using PICADY including:

- Commissioner’s Road / Site Access;
- A228 / Station Road; and
- A289 / Anthony’s Way.

The PICADY results showed that impact of the development would be minimal and fall within the limit of daily traffic variation. The report also mentions that capacity improvements at the roundabouts will be in place by 2018 which will provide additional capacity for the local highway network servicing the development.

Conclusions & Recommendations

The proposed development with car parking in accordance with the parking standards is not expected to significantly impact the local road network, especially with respect to future committed improvements. No further recommendations were given.

Appendix B – Policy Summaries

Chatham Town Centre and Public Realm Package

The aim of the scheme is to improve access, especially for people with mobile difficulties, on links between Chatham railway station, Chatham centre, and the waterfront area and areas of employment, retail, and education. Furthermore, it will serve as an attractive gateway to the centre of Medway for visitors, students, employees, and residents. The 0.5 km corridor between Chatham centre and railway station will see improved cycling and pedestrian routes, traffic management measures, and way-finding. Additionally, the scheme integrates with recently complete improvements such as the Chatham Waterfront Bus Station, reconfiguration of the road network to improve accessibility to the river, and the refurbished Sun Pier and Pontoon.

Medway Council has been identified as the Most Improved Local Authority in terms of cycling, walking, and public transport (especially through real-time information at bus stops), and among the top five in combatting road congestion and safety. The Chatham Town Centre aims to carry on the momentum of the improvements achieved so far while connecting to other growth projects such as the river taxi from the Sun Pier and Pontoon as well as the river walk works. These improvements are expected to shift mode splits from automobile to other sustainable modes (i.e. walking, cycling, river taxi) which will divert vehicles from town centre areas (including that of Strood) which would impact the road network adjacent to the development.

A289 Four Elms Roundabout to Medway Tunnel Journey Time and Network Improvements

The scheme consists of three roundabouts (Four Elms, Sans Pareil, and Anthony's Way) on the A289 corridor between Junction 1 of the M2 and Medway Tunnel. This corridor intersects the A228 from the Hoo Peninsula, which has been established as an area of growth by SEEDA's vision for the Thames Gateway. Currently, the roundabouts serve approximately 5000 vehicles per hour during peak periods. In order to accommodate future growth, the scheme will enlarge each roundabout to provide additional carriageway space with entry lanes and free flow slips. The scheme also includes installing new traffic signals on the eastbound entrance to Medway Tunnel and adjusting traffic signals on Maritime Way to operate in conjunction with the new signals.

The scheme is expected to reduce traveller congestion through road junction delay savings and improve journey reliability. As a result of these improvements, it is anticipated that the A289 would become a more attractive option to drivers travelling west rather than via Rochester and Strood Town Centres. Subsequently, traffic at the intersections that would serve the Strood River Regeneration developments would be decreased. The impact of this scheme would need to be confirmed by transport model.

Medway City Estate Connectivity Improvement Measures

The current access situation to Medway City Estate (MCE), where approximately 5,000 people are employed, is not considered sustainable. There is only one main entrance to its north side and a smaller alternative entrance to the west side. Key goals include instigating greener and more efficient modes of transport to the Estate while maintaining continued growth of MCE, as well as reducing the impact of peak-time traffic flow.

One option under consideration is a river taxi from MCE to Chatham town centre, which would also include a new landing stage on the River Medway at MCE. The taxi would use the Sun Pier in Chatham town centre, which underwent refurbishment in 2013 to enable it to accommodate river vessel / taxi passengers. Additionally, the scheme will provide new and enhanced routes through MCE for pedestrians and cyclists, along with cycle parking, benches, and a riverside walk with traffic management to connect the Sun Pier and Chatham town centre. This scheme also integrates with other LEP projects such as the Chatham Town Centre, Chatham Railway Station Improvements, and A289 Four Elms Roundabout to Medway Tunnel.

Of the approximately 5,000 people employed within MCE (Census 2011 Travel to Work), a tremendous proportion travel by car (87%), while 3% arrive by bus and 3% arrive by train. These improvements will help to shift the modal split away from travelling by car, thereby reducing traffic to and from MCE which uses the same road networks as the potential SRR development would. This decreased usage would provide additional traffic buffer capacity that could help to accommodate the potential development traffic.

Strood Town Centre Journey Time and Accessibility Enhancements

Mobility issues (inefficient operation of the transport network, MCE traffic, limited cycling facilities, and inconvenient pedestrian access) are a barrier to growth for Strood resulting in deprivation and unemployment. Improving accessibility and creating a more sustainable network through modal shift will help to establish conditions that will act as a catalyst to increase capacity of current and future development opportunities. The scheme addresses issues through an integrated package of improvements including:

- Access improvements to regeneration sites at Strood Riverside and the former Civic Centre site, to facilitate development of these sites,
- Urban realm and environmental improvements;
- Town Centre traffic management improvement measures;
- Pedestrian and cycling accessibility;

Upgrades and recalibration of the SCOOT system, introduction of VMS, and road capacity improvements are expected to reduce delays by 5 to 12% and accommodate higher volumes. Improvements to public transport such as bus real-time information, bus stop improvements, and train station improvements which are passenger focused are expected to increase usage and improve user experience.

Improvements to walking and cycling are aimed at encouraging increased use of these modes and include: the completion of a main cycle route through the town (including commuter links), cycle parking, wider footpaths, better signing, additional lighting on walking routes, improved walk/cycle links to the station, and improved crossing facilities. Subsequently, these improvements are expected to result in safety benefits.Travel to work 2011 data showed that 72% of those living in Strood travel less than 20 km to work. However, in Strood Town Centre, 44% of the population will travel to work by driving a car or van, 8% by public transport, 6% by foot, and 1% by cycling. The data suggests that there is a current over-dependence on the car as a mode of transport and that other more sustainable modes have a strong potential.

Key preliminary design details include:

- Conversion of Cuxton to a two-way road so that vehicles travelling east to west can avoid High Street; and
- Removal of signals at Commercial Road at Knight Road and provision of dedicated slip for vehicles entering Commercial Road from Knight Road. The slip is expected to reduce traffic queues.

As it is one of the main objectives of £9 million Strood Town Centre Journey Time and Accessibility Enhancements to facilitate the Strood Riverside Regeneration and former Civic Centre developments, it would be unreasonable to assume that it would not have a significant positive impact on transport and accessibility of the sites. The infrastructure plan is expected to encourage mode shift towards non-car modes as well as provide additional capacity for those whom making a trip by car is necessary.

Medway Cycling Action Plan

Following the Cycling Delivery Plan published by the Department for Transport in October 2014, Medway Council is providing leadership and vision at a local level to develop a cycling culture in Medway. The Action Plan aims to expand and improve the cycling network to provide safe and attractive facilities that will result in reduced journey times and safety

improvements. In addition to health and environmental benefits, the Plan aims to contribute to local economic growth by making the local road network operate more efficiently during periods of congestion. Funds will be used towards improvements to the National Cycle Network, utility cycling, cycle parking (with a focus at rail stations), promoting Active Medway Cycle Groups, school training, regional facilities, as well as information and promotion.

Historic data has demonstrated a 17% increase in cycle journeys on Medway's cycle network between 2009 and 2014. Furthermore, data has shown that cycle parking at rail stations has increased significantly and is generally at capacity. These trends indicate that cycling is gaining traction as a mode of transport in Medway, which are expected to increase further with Medway Cycling Action Plan. Consequently, a modal shift towards cycling will reduce the traffic impact of the regeneration development.

Public Rights of Way Improvement Plan

The Public Rights of Way Improvement Plan (RoWIP), beginning in 2007, aims to ensure that the Rights of Way meets current and future needs whilst promoting access for all. The priorities for delivery include:

- Clean and green environment – improving quality and public realm as well as access to the countryside;
- Safer communities – reducing fear of crime by opening up enclosed routes where possible;
- Providing opportunities for exercise and access to the countryside for youth, elderly, and vulnerable populations;
- Improve accessibility and easy travelling in Medway;
- Regeneration through improvements to existing routes and creation of new routes in conjunction with developments.

The plan is scheduled to be completed in 2017, which means that by the time the development is completed, the Public Rights of Way (PROW) should be more attractive for users of all modes, including cycling, pedestrians, and transit. This could reduce the overall car demand in the area, lowering the DOS found at key intersections near the development.

Appendix C – In-flight Initiatives Details

Chatham Town Centre and Public Realm Package

The aim of the scheme is to improve access, especially for people with mobile difficulties, on links between Chatham railway station, Chatham centre, and the waterfront area and areas of employment, retail, and education. Furthermore, it will serve as an attractive gateway to the centre of Medway for visitors, students, employees, and residents. The 0.5 km corridor between Chatham centre and railway station will see improved cycling and pedestrian routes, traffic management measures, and way-finding. Additionally, the scheme integrates with recently complete improvements such as the Chatham Waterfront Bus Station, reconfiguration of the road network to improve accessibility to the river, and the refurbished Sun Pier and Pontoon.

Medway Council has been identified as the Most Improved Local Authority in terms of cycling, walking, and public transport (especially through real-time information at bus stops), and among the top five in combatting road congestion and safety. The Chatham Town Centre aims to carry on the momentum of the improvements achieved so far while connecting to other growth projects such as the river taxi from the Sun Pier and Pontoon as well as the river walk works. These improvements are expected to shift mode splits from automobile to other sustainable modes (i.e. walking, cycling, river taxi) which will divert vehicles from town centre areas (including that of Strood) which would impact the road network adjacent to the development.

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Appendix D – Parking Standards

Medway Parking Standards

C3 Residential dwellings *		
Dwelling size	**Minimum number of car parking spaces per dwelling**	**Minimum number of cycle parking spaces per dwelling**
1 bedroom	1.0 (1) (2)	1.0 (4)
2 bedrooms	1.5 (1) (2)	1.0 (4)
3 bedrooms & above	2.0 (1) (2)	1.0 (4)
Visitor parking	0.25 (3)	0

Notes

1 Reductions of the standard will be considered if the development is within an urban area that has good links to sustainable transport and where day-to-day facilities are wthin easy walking distance.

2 Excludes garage if less than 7m x 3m internal dimension.

3 Applies to a minimum threshold of 4 residential units. Requirement for provision is rounded down, i.e. 5 to 7 units require 1 visitor space, 8 to 11 units require 2 spaces, etc. Visitor or unallocated vehicle parking can, subject to appropriate design, be located on or near the road frontage.

4 Not required if garage or secure area is provided within curtilage of dwelling

Gravesham Parking Standards

Maximum Vehicle Parking Standards

	Car Parking
1 bedroom	1 space per dwelling
2 and 3 bedrooms	2 spaces per dwelling
4 or more bedrooms	3 spaces per dwelling
Sheltered Accommodation	1 space per resident warden + 1 space per 2 units
Notes:	1. For 1-bedroom dwellings the parking will usually be provided as communal spaces. For other dwelling sizes part or all of the parking can be provided on a communal basis. 2. The level of car parking provision includes any garages, provided as an integral part of the dwelling or within its curtilage, and/or driveways provided within the curtilage, subject to the preferred sizes set out in Appendix B.

Minimum Cycle Parking Standards

Individual residential dwellings [1]	1 space per bedroom
Flats & maisonettes [2]	1 space per unit
Sheltered accommodation [2]	1 space per 5 units
Notes:	1. Cycle parking provision should normally be provided within the curtilage of the residential dwelling. Where a garage is provided it should be of a suitable size to accommodate the required cycle parking provision. 2. Parking provision should be provided as a secure communal facility where a suitable alternative is not available.

Kent County Council Parking Standards

GUIDANCE TABLE FOR RESIDENTIAL PARKING

LOCATION	CITY/TOWN CENTRE	EDGE OF CENTRE	SUBURBAN
ON-STREET CONTROLS	On-street controls preventing all (or all long stay) parking	On-street controls, residents' scheme and/or existing saturation (Note 3)	No, or very limited, on-street controls
NATURE OF GUIDANCE	MAXIMUM (Note 1)	MAXIMUM	MINIMUM (Note 6)
1 & 2 BED FLATS	1 space per unit	1 space per unit	1 space per unit
FORM	Controlled (Note 2)	Not allocated	Not allocated
1 & 2 BED HOUSES	1 space per unit	1 space per unit	1 space per unit
FORM	Controlled (Note 2)	Allocation possible	Allocation possible
3 BED HOUSES	1 space per unit	1 space per unit	1.5 spaces per unit
FORM	Controlled (Note 2)	Allocation possible	Allocation of one space per unit possible
4+ BED HOUSES	1 space per unit	1.5 spaces per unit	2 independently accessible spaces per unit
FORM	Controlled (Note 2)	Allocation of one space per unit possible	Allocation of both spaces possible (Note 7)
ARE GARAGES ACCEPTABLE? (Note 4)	Yes, but with areas of communal space for washing etc.	Yes, but not as a significant proportion of overall provision	Additional to amount given above only
ADDITIONAL VISITOR PARKING (Note 5)	Public car parks	Communal areas, 0.2 per unit maximum	On-street areas, 0.2 per unit

NOTES

1. Reduced, or even nil provision is encouraged in support of demand management and the most efficient use of land.
2. Parking/garage courts, probably with controlled entry.
3. Reduced, or even nil provision acceptable for rented properties, subject to effective tenancy controls.
4. Open car ports or car barns acceptable at all locations, subject to good design.
5. May be reduced where main provision is not allocated. Not always needed for flats.
6. Lower provision may be considered if vehicular trip rate constraints are to be applied in connection with a binding and enforceable Travel Plan.
7. Best provided side by side, or in another independently accessible form. Tandem parking arrangements are often under-utilised.

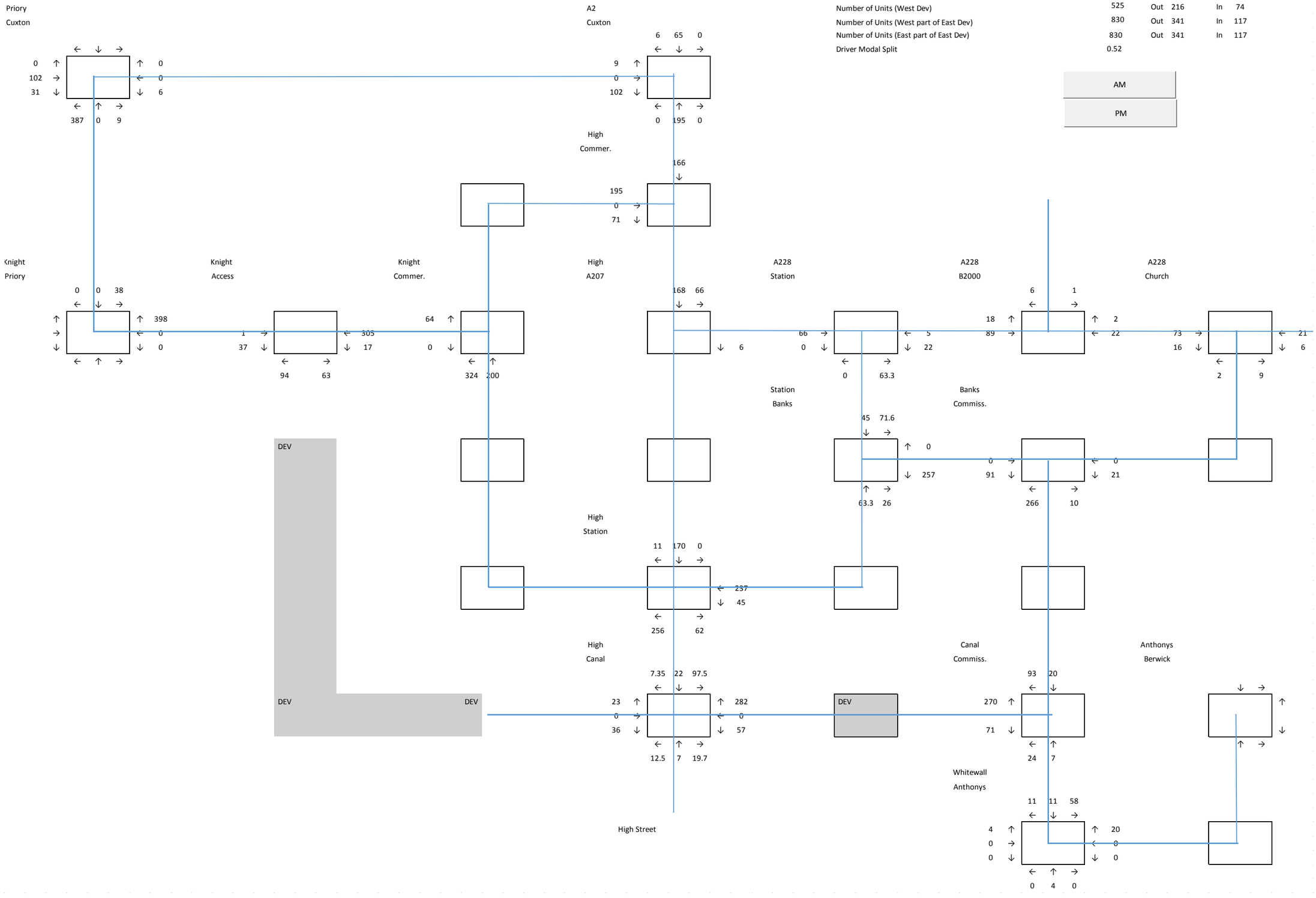
Appendix E – Trip Distribution

AM PEAK – Note: trips can also be distributed to Gun Lane.

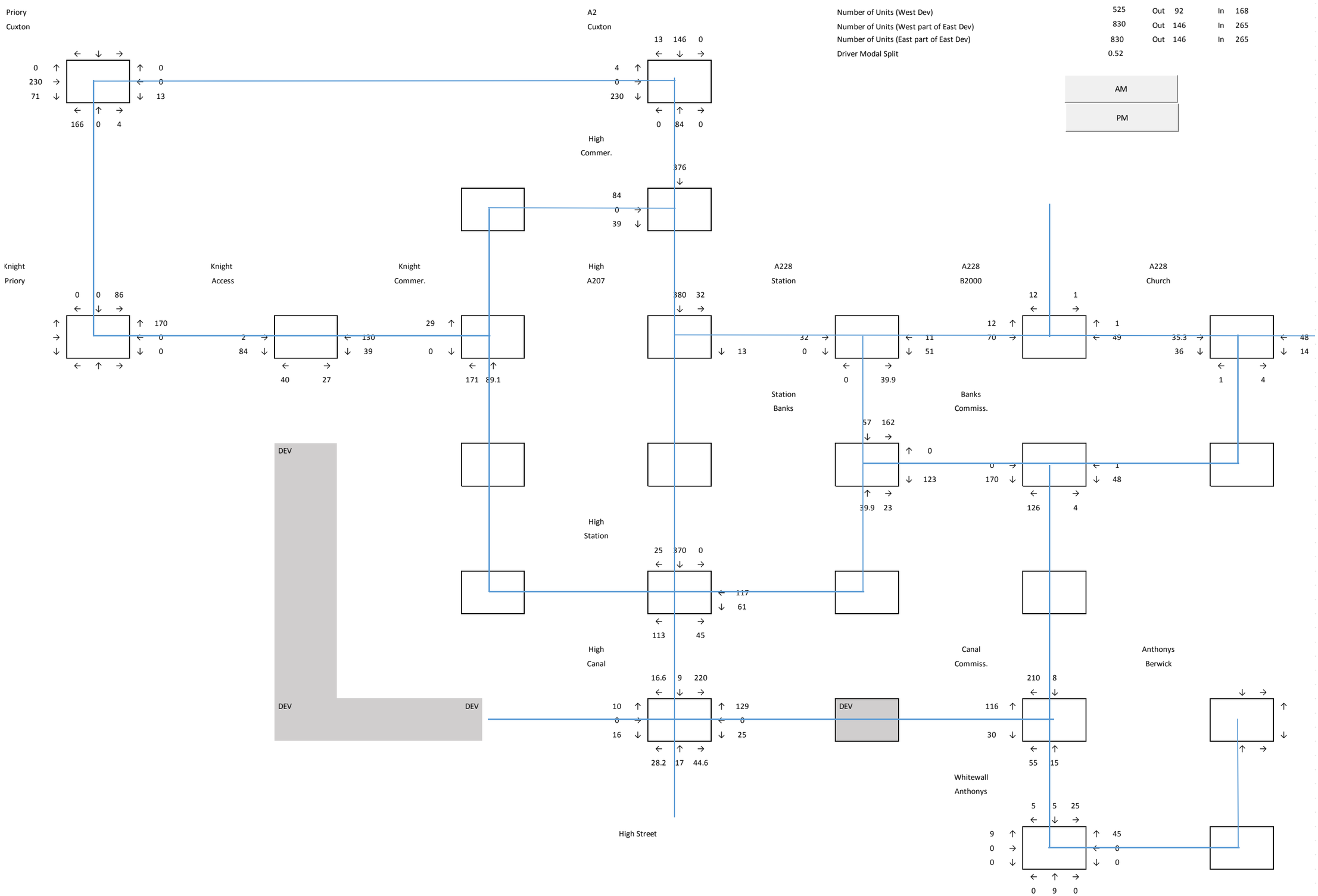
Number of Units (West Dev)	525	Out	216	In	74
Number of Units (West part of East Dev)	830	Out	341	In	117
Number of Units (East part of East Dev)	830	Out	341	In	117
Driver Modal Split	0.52				

AM

PM



PM PEAK


Priory
Cuxton
A2
Cuxton
Number of Units (West Dev) 525 Out 92 In 168
Number of Units (West part of East Dev) 830 Out 146 In 265
Number of Units (East part of East Dev) 830 Out 146 In 265
Driver Modal Split 0.52
AM
PM
High
Commer.
Knight
Priory
Knight
Access
Knight
Commer.
High
A207
A228
Station
A228
B2000
A228
Church
Station
Banks
Banks
Commiss.
DEV
High
Station
High
Canal
Canal
Commiss.
Anthonys
Berwick
Whitewall
Anthonys
High Street