East of the Borough AAP Transport Report

Final Report December 2020

London Borough of Tower Hamlets



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10 Fleet Place London EC4M 7RB United Kingdom T +44 (0)20 7651 0300 D +44 (0)20 7651 0300 www.mottmac.com london@mottmac.com

Tower Hamlets Council Town Hall Mulberry Place 5 Clove Crescent E14 2BG

Prepared	F.Iranpur
Checked	C.Woodcock
Approved	C. Greenwood

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Executive Summary





This report documents the findings of the transport study for the East of the Borough Area Action Plan (AAP), undertaken by Mott MacDonald in conjunction with the London Borough of Tower Hamlets (LBTH) and Transport for London (TfL). It considers the transport impacts of 10,882 homes and 992 jobs proposed within the AAP area.

The transport network in this eastern part of Tower Hamlets must be planned and delivered to support the needs of existing and future communities living, working and visiting the area. Transport provision across all modes should be exceptional, enabling high quality, safe and accessible movement networks that reduce the need to travel, prioritise sustainable transport modes and enable people to live healthy and active lifestyles. Delivering a high-quality transport network will support the Mayor's target for 80% of Londoner's trips to be made by walking, cycling or public transport and LBTH's transport vision to provide a healthy, safe and environmentally friendly transport system that is accessible and affordable for all who live, work, study and do business in the borough.

There is also a need to manage construction traffic, given the scale of delivery of development and infrastructure envisaged, and to support effective and sustainable freight and servicing.

This report recommends a range of transport interventions to help mitigate the issues identified and to support the planned employment and population growth in the area. These have been developed through qualitative assessment and through the use of strategic transport modelling.

The interventions proposed to mitigate the impact of development and to increase Public Transport Accessibility Level (PTAL) of the site allocation locations include enhancements to bus services, increases to DLR frequency, uplifts in gateline capacity and many others. Increases in private car usage are not expected due to local policy which dictates that new development sites will be car free, thereby excluding highway interventions from this study. The Movement and Connectivity study being produced by We Made That and Urban Movement identifies walking and cycling interventions at length, therefore this study only recommends walking and cycling interventions which enhance PTAL to improve interchange between these and other transport modes.











Study Scope & Methodology

This report documents the findings of the transport study for the East of the Borough Area Action Plan (AAP), undertaken by Mott MacDonald in conjunction with London Borough (LB) Tower Hamlets and Transport for London. It considers the transport impacts of 10,882 homes and 992 jobs being proposed within the AAP area.

The stages involved in developing the transport strategy are shown adjacent. They include the identification of transport issues and opportunities, for both current day and future year and interventions to address these. Data used to undertake the study has been drawn from a wide variety of sources, including using LTS and Railplan.

It should be noted that a separate Connection and Movement study has been produced for LB Tower Hamlets and this report should be read in conjunction with that study. Therefore, walking and cycling interventions were largely outside of the scope of this study.

The report is structured as follows:

- Section 2: introduces the AAP core study area;
- Section 3: describes the national, regional and local policy context;
- Section 4: describes the current transport infrastructure serving the study area and any existing issues identified
- Section 5: describes the strategic modelling work that has been undertaken to understand the reference case, the 2031 no development growth scenario and the 2031 with development growth scenario
- Section 6: identifies the interventions required to mitigate development and ensure the transport provision is fit for purpose
- Section 7: proposes an indicative time frame for the delivery of the interventions and high level (qualitative) costs
- · Section 8: presents the conclusions.

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Recommendations and Next Steps





Study Area

The London Borough of Tower Hamlets is preparing an Area Action Plan for the east of the borough which will identify development sites and planning policies for this area. The boundary of the AAP and the potential development sites are shown adjacent.

The area covered by the AAP is designated as an Opportunity Area in both the current and the new London Plans. In the new London Plan it is described as the Poplar Riverside Opportunity Area. The Opportunity Area Planning Framework for this area is now well out-of-date, with the Lower Lea Valley OAPF being published in 2007. The AAP falls within part of the two sub areas in the new Tower Hamlets Local Plan 2031, Lower Lea Valley and the Isle of Dogs and South Poplar.

The existing land use across the AAP area is town centre, residential, mixed, employment and industrial uses. This area contains many severance features which act as barriers to movement. These include the A12, A13 and Aspen Way which are major strategic roads in the area, the DLR and Underground lines which operate at surface level in this area, and the River Lea and Limehouse Cut.

The development sites indicated in the figure adjacent are proposed to deliver 10,882 homes and 992 jobs by 2031. The majority of these sites are currently occupied by industrial uses which are bordered by one or more of the severance features. Improving connectivity to and from these sites is paramount in ensuring the uptake of sustainable transport.



Policy Review

The purpose of this section is to undertake a comprehensive review of the national, regional and local policy context. This will ensure that the recommendations that are developed as part of the transport study are compliant with the policy objectives that have been identified in the national, regional and local policy documents.

National Policy

National Planning Policy Framework (NPPF) (2019):

The NPPF sets out the Government's planning policies for England providing a framework within which locally prepared plans can be produced. Chapter 9 'Promoting Sustainable Transport' outlines that planning policies should:

- Support an appropriate mix of uses across and area, and large sites, to minimise the number and length of journeys (paragraph 104a):
- Align strategies and investment for supporting sustainable transport and development patterns with key stakeholders e.g. local highways authorities (paragraph 104b);
- Identify and protect sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development (paragraph 104c);
- Provide high guality walking and cycling networks and supporting facilities, e.g. cycle parking (paragraph 104d); and
- Provide for any large-scale transport facilities that need to be located in the area (paragraph 104e).

Regional Policy

The London Plan (2016):

The London Plan sets out policies to support the objective that London should have 'an efficient and effective transport system which actively encourages more walking and cycling'.

Table 6.1 in the London Plan provides an indicative list of transport schemes including the following in the vicinity of the study area:

 Jubilee line upgrade to provide additional capacity and improve journey times;

- · Circle, District, Hammersmith & City and Metropolitan line upgrades to provide additional capacity and improve journey times:
- Central line upgrade including high capacity rolling stock;
- DLR North Route Double tracking;
- DLR Additional Rolling Stock to support large scale developments;
- DLR station improvement and capacity work (including congestion relief at Canning Town);
- DLR Extensions to support the Mayor's ambition for enhanced rail access to Bromley and southeast London, including Overground, rail and DLR improvements;
- Implement River Action Plan to achieve Mayoral target of 12 million passenger journeys on the river by 2020;
- · New vehicle ferry between Gallions Reach &Thamesmead:
- Promote the use of Thames and other waterways for freight movement;
- New walk / cycle Thames crossings including links to access the Isle of Dogs from east and west:
- New and enhanced road vehicle crossing(s) in east London.

Furthermore, Policy 6.4 "Enhancing London's Transport Connectivity" notes that the Mayor will work with strategic partners to provide new river crossings and enhance the Docklands Light Railway.

It is noted 'the Mayor is developing proposals for further new and enhanced river crossings in East London to improve accessibility and the resilience of local transport networks, support economic growth in the area and link local communities. These will include:

A new road-based tunnel crossing between

the Greenwich Peninsula and Silvertown:

- · Consideration of ferry-based options east of a crossing at Silvertown; and
- Consideration over the longer term of a fixed link at Gallions Reach.
- Additionally, Policy 6.9 Cycling notes the Mayor will work with partners to:
- · Identify, promote and implement a network of cycle routes across London which will include Cycle Superhighways and Quietways; and Continue to operate and improve the cycle hire scheme.
- Finally, Policy 6.12 Road Network Capacity states 'the Mayor will support the need for limited improvements to London's road network, whether in improving or extending existing capacity, or providing new links, to address clearly identified significant strategic or local needs' which includes investigating the possibility of additional road-based river crossings in East London.

Mayors Transport Strategy (MTS):

The Mayors overall aim is to reduce Londoner's dependency on cars and for '80 percent of all trips in London to be made on foot, by cycle or using public transport by 2041'.

Proposal 93 is of importance to this study and indicates the Mayors intention to introduce user charges on the Blackwall and Silvertown (once complete) tunnels to address traffic congestion and associated air pollution. The figure adjacent illustrates the proposed bus routes through the Silvertown tunnel. Furthermore, Proposal 95 notes that following the delivery of the Silvertown Tunnel, Lower Thames Crossing and DLR extension to Thamesmead the Mayor will consider further road crossings of the river in east London.

The significant levels of growth in Inner East London to 2031 are noted in the MTS, highlighting the potential to deliver 100,000+ new homes and 170,000 new jobs, with crowding predicted to worsen on all routes in the area. Consequently, the MTS states that further investment is needed to support growth and serve existing communities so options for enhancement and new connections must be considered. The figure on the overleaf summarises the proposals in proximity to the study area, which includes:

Policy 16 Rail:

- Investigate feasibility of Crossrail 2 eastern branch into Hackney;
- Deliver Four-Line Modernisation programme Metropolitan, District, Hammersmith & City and Circle;
- Deliver DLR upgrades;
- Deliver DLR station upgrade programme;

Policy 19 River Freight:

- Publish a joint Port of London Authority/TfL pier strategy for London;
- · Investigate extended river services to the east;
- Investigate feasibility of pedestrian/cycle ferry between North Greenwich and Canary Wharf;
- Encourage the use of the river for freight;

Policy 21 Good Growth:

- Investigate feasibility for DLR extension from Gallions Reach to Thamesmead;
- Deliver Silvertown Tunnel and associated bus services;
- Investigate feasibility for other new public transport river crossings in east London; and
- Deliver a new pedestrian and cycle crossing between Rotherhithe and Canary Wharf.





Figure: Transport Proposals for homes and jobs in inner east London and the Isle of Dogs. Source | Mayors Transport Strategy (2018)



Local Policy

As seen in the figure on the overleaf, there are a number of local policy documents relevant to the AAP core areas.

Tower Hamlets Local Plan 2031: Managing Growth and Sharing Benefits :

Tower Hamlet's Local Plan outlines how the borough plans to accommodate growth, which will be primarily concentrated in the City Fringe, Lower Lea Valley, Isle of Dogs and South Poplar areas in addition to key locations along transport corridors The population is expected to increase to nearly 400,000 inhabitants by 2031. The Local Plan highlights the need to share the benefits of growth across the borough.

The planned growth will significantly increase movement within and through Tower Hamlets consequently adding to an already pressured transport network which suffers from congestion and overcrowding. Thus, the predicted growth is reliant on the successful implementation of a sustainable transport network. Numerous strategic and local transport improvements are underway or planned. These include:

- Delivery of the Elizabeth line;
- Enhancements to bus services and the Docklands Light Railway;
- Improved river services and potential new piers at Wapping, Canary Wharf East and Trinity Buoy Wharf;
- New cycle infrastructure, including the Mayor of London's cycle hire network;
- New pedestrian and cycle connections, including a new pedestrian bridge and cycle crossing between Canary Wharf and Rotherhithe and other river crossings.

However, further infrastructure investment is required to accommodate the predicted population and employment growth and development could be hindered without improvements to the transport network.

The Lower Lea Valley is identified as an area

of growth in the Local Plan and will experience comprehensive regeneration and redevelopment of former and underused industrial areas by 2031. It is envisioned that connectivity in the area will be transformed with a series of new bridges and riverside walkways across the River Lea, and crossings along the A12 and A13, which will integrate existing and new communities in the area.

The Isle of Dogs and South Poplar is also an identified area of growth which will provide a cohesive mix of housing, employment and leisure uses by 2031. In particular, the area will need to overcome the current barriers to movement, especially across the A13, Aspen Way and the waterways to ensure existing and new communities are connected by sustainable modes. The severance caused by Aspen Way could be addressed by new bridges or decking connecting the site to Billingsgate Market thus strengthening active travel routes to Poplar DLR Station, Poplar High Street, East India Dock Road and Canary Wharf station. Additionally, the area would support the extension of river services with a new pier at Canary Wharf East and additional crossings between Leamouth and Canning Town and between Canary Wharf and Canada Water.

Tower Hamlets Transport Strategy 2019-2041:

The borough's vision is to have a healthy, safe and environmentally friendly transport system that is accessible and affordable for all who live, work, study and do business in the borough. There are six key outcomes noted in the strategy:

- Tower Hamlets is one of the best places to walk and cycle in London;
- Car use is reduced in favour of active, efficient and sustainable transport:
- Transport services meet the needs of residents, visitors, businesses and supports growth and the economy;
- People feel safe and confident when

This OAPF sets out the planning framework required to enable a population increase of 70,000 residents per annum (reaching 10.5m by 2041), 66,000 homes per annum and space for tens of thousands of new jobs. The overarching objective is to ensure the benefits of growth are shared equally amongst the local communities.

• Sharing the benefits of good growth;

travelling in the borough;

· Air quality is improved, and our surroundings are quieter and more appealing; and • Travel in Tower Hamlets is accessible and affordable for all.

Isle of Dogs and South Poplar OAPF:

Movement is currently restricted due to the physical constraints of Aspen Way, the DLR, and the river Thames, and the historic docks, essential to the areas character, tend to be impermeable. There are only two principle highway access points off the island. A key driver is to overcome the physical severance barriers through proposals for better connections. The Elizabeth Line station at Canary Wharf is expected to have a catalyst effect and continue the popularity to live and work in the area. The OAPF outlines the following vision and objectives:

- Improving transport capacity and connectivity;
- Providing social infrastructure alongside development;
- Joining up development across ownerships; and
- Managing delivery and construction impacts.
- The Transport and Movement Strategy highlights the following sustainable transport initiatives:
- New, higher capacity DLR trains every 2mins in peak hours:
- Bus service and reliability enhancements; and • Opening of the Elizabeth Line.
- Delivering better, healthier, streets;



Figure: Local transport policy document areas



- · Investing in the cycle network, including connections to CS3;
- New links across Aspen Way, South Dock and the Rivers Lea and Thames;
- A new pedestrian and cycle bridge between Rotherhithe and Canary Wharf;
- Silvertown tunnel:
- A new bus interchange at Crossharbour; and
- Station upgrades across the area.

Emerging Royal Docks and Beckton Waterfront OAPF:

This is one of the largest regeneration areas in London with large investment in recent years resulting in rapid change. It has the potential to accommodate over 30,000 new homes, therefore better local and strategic connections through public transport and active modes is crucial. Numerous new development centres are planned in addition to the DLR extension to Thamesmead via Beckton Riverside which will unlock benefits in both locations. The following actions are outlined in the OAPF:

- Improve connections locally and strategically to places elsewhere in London;
- Overcome obstacles and promote safe, accessible routes for sustainable travel;
- · Work with other OAs across London to meet the Mayor's target;
- Build on strategic connections through the opening of the Elizabeth Line, enhancements to the DLR network and upgrades to stations and stops;
- Major capital investment in delivering healthier streets:
- · Improve accessibility for active modes within the area and linking to the wider network in Stratford, Isle of Dogs and Lea Valley Park which could be joined through the Thames Path:
- Short to medium term initiatives to promote active modes in a post-Covid-19 environment.

Furthermore, several points were made as part of the Summer 2019 Consultation with the following noted from a transport perspective:

- Suggestion for Low Emission Zone in Canning Town due to car pollution;
- Improve links through North Woolwich foot tunnel maintenance;
- Connect neighbourhoods to the Greenway with cycle and pedestrian routes; and
- Improve DLR capacity and frequency on the Beckton and Royal Arsenal branches.

Newham Infrastructure Delivery Plan:

The London Borough of Newham is adjacent to Tower Hamlets and experiences many of the same connectivity problems. The Infrastructure Delivery Plan identifies the following improvements:

- · Upgrade interchanges in the vicinity of all Elizabeth Line stations;
- · Stratford Gyratory Scheme (improve multimodal interchange. Completion in 2019)
- · Further capacity work in Stratford and Canning Town stations;
- · Need to improve station capacity and platform lengths to accommodate longer trains along the DLR to Beckton and Woolwich:
- · New piers for river boat services are identified requirements on Thameside sites;
- London City Airport is collating a case for the development of a new Elizabeth Line station;
- Royal Wharf pier completed in 2019;
- Potential for a Crossrail 2 eastern branch serving Newham;
- Assess extending the DLR network to Gallions Reach and Thamesmead:
- A package or river crossings to improve transport connectivity across the sub-region;
- · Phase 1 of the DLR depot expansion expected to be completed in 2022;
- Improve bus stop accessibility and protect

bus journey times via bus priority schemes; Investment in a proposed network of 33 panborough strategic cycling routes (includes delivery of the Leaway walking and cycle route from Stratford to Canning Town and extension of TfL cycle hire in Newham);

 Reactivate Peruvian Wharf and consolidate other wharfs on a new site at Royal Primrose Wharf; and

• Potential for a strategic boatyard at Albert Island supporting maintenance and commercial use.

London Legacy Development Corporation (LLDC) Transport Study

The transport study highlights the problems of congestion and crowding in the area particularly on the A12 and underground links to Central London. It predicts a population growth of 70,000 between 2017 and 2031 and employment growth of 213,500 jobs in Tower Hamlets by 2030. The following local schemes are identified:

 TfL cycle hire scheme has low coverage in the area compared to the rest of London and could be extended to under served areas:

 A12 and lack of river crossings present a barrier to movement in Bromley-by-Bow and Sugar House Lane area thus additional crossing would enhance permeability;

 Enhanced bus connections, opportunities exist for the creation of a new route using the Bromley-by-Bow to Sugar House Lane bus bridge; and

 Bromley-by-Bow Underground Station upgrade.

Summary

A range of policy documents and existing studies have been reviewed to inform this document. At the national level the NPPF provides a mandate for development to support sustainable transport proposals, particularly high quality walking and cycling routes. This is supported by regional policy: the London Plan and the Mayor's Transport Strategy which both echo the need to provide an effective transport system which actively encourages walking and cycling and the use of public transport. The London Plan and the Mayor's Transport Strategy provide details of transport interventions that are either in the area or in the vicinity which will impact the way people travel to, through and from the study area.

The Tower Hamlets Local Plan and transport strategy outlines how the borough's forecast growth will be accommodated to ensure a healthy, safe and environmentally friendly transport system which is accessible and affordable for all who live, work, study and do business in the borough.

Opportunity Area Planning Frameworks have been produced for the Isle of Dogs and South Poplar, the Royal Docks and Beckton Waterfront and the London Legacy Development Corporation area. These describe the specific active travel and public transport interventions proposed to ensure the sustainable transport objectives for the areas can be achieved.

The key interventions that are indicated in the regional and local policy documents include congestion relief at Canning Town, new walking and cycling links to reduce severance, DLR upgrades and expansion, and the construction of the Elizabeth Line and Silvertown tunnel.

East of the Borough Area Action Plan









CANARY WHA Contractors



Existing Transport Infrastructure & Issues

This section summarises the current transport infrastructure and issues identified within the AAP area. Various existing data sources have been used to present an overview of the existing transport network, travel patterns and conditions.

Highway Network

A number of strategic highway routes are located within the vicinity of the study area. The A12 runs north - south through the AAP area causing major severance. To the south, the A12 joins the Blackwall Tunnel and to the north it connects with the A11, which runs east to west, at the Bow Interchange junction. The A11 provides links to Stratford in the east and to Whitechapel and the City in the west. At the southern edge of the study area, the A13, which runs east – west, connects to the A12 at East India Dock Road, providing links east to Canning Town and the Royal Docks and west to Whitechapel and the City. More strategically, the A12 and A13 provide links to the A406 North Circular and the M25, which are major strategic corridors carrying significant and constant traffic volumes and causing major severance. South of the A13 is Aspen Way, another major road which runs parallel to the A13 and provides connections to the Isle of Dogs. The A13 and A1261 (Aspen Way) are run by the DBFO contract within the study area.

The other roads within the study area are generally used for local traffic and can sometimes be used as rat runs by people wanting to avoid congestion on the A13 and A12. The added pressure brought about by rat running increases the stress on the network. The canal and surface level tracks of the DLR and Underground lines limits opportunities to traverse east- west and north-south, further increasing severance in the area.

Silvertown Tunnel

The Silvertown Tunnel will provide a new connection between the A102 Blackwell Tunnel Southern Approach and the A1020 Lower Lea Crossing/ Silvertown Way (London Borough of Newham), to the East of the existing Blackwall Tunnel. Construction is proposed to start in 2020 and the tunnel is proposed to open in 2025.

The scheme also includes the introduction of free-flow user charging on both the Blackwall Tunnel and newly built Silvertown Tunnel. The Silvertown Tunnel will be built to accommodate large goods vehicles, including double-deck buses, with a dedicated bus, coach and goods vehicle lane.

The scheme will help reduce notable highway congestion issues occurring at the entrance of Blackwall Tunnel, which are particularly prevalent in the northbound direction in the AM peak period and in the Southbound direction in the PM peak period. It will also help alleviate the impact of the high number of traffic incidents and closures that occur at Blackwall Tunnel, that currently cause an additional strain on journey time reliability.

The proximity of the planned tunnel to the existing one means the overall distribution of cross-river trips on the corridor is not expected to change drastically, and with user charging built in to manage demand, it is not expected that the overall highway strategic network will be placed under significant additional stress. However, due to the likely evolution of the London road network by the scheme completion date, junction-specific mitigations were not considered appropriate and junction monitoring across the extensive area has been considered instead.

One of the key considered impacts of the scheme is the increased potential for bus routes to serve cross-river movements efficiently in the East and South-East Region of London. These are currently limited by the congestion issues for vehicles using Blackwall Tunnel, but additionally by the height restriction on the tunnel which only allows single deck vehicles to be used. Once Silvertown Tunnel is operational, more bus routes will be able to provide cross-river movements, more reliably, and with additional capacity.

Car Parking

Parking is managed using controlled parking zones (CPZ) and residential permits. These are used to protect residents who live near stations and town centres and discourages short distance intra-borough journeys by car. There are three parking zones that cover the study area which are all in operation from Monday to Friday from 8.30am to 5.30pm, and an additional restriction is in operation in the Chrisp Street Market Area zone on Saturdays from 8.30am to 5.30pm.



Figure: Proposed Silvertown Tunnel routing

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Public Transport

Access to public transport

Public Transport Accessibility Levels (PTALs) give an indication of a geographical location's access to public transport, by measuring the distance to public transport services from a given point and the frequency of services. The results are expressed on a scale of 0 to 6. This includes sub-divisions 1a, 1b, 6a and 6b, where 1a indicates extremely poor accessibility to the location by public transport and 6b indicates excellent access. It should be noted that PTALs do not measure service capacity or physical accessibility for those with disabilities.

The public transport provision in this study area is a mixture of Docklands Light Railway, London Underground and Bus network. The figure adjacent indicates the existing PTAL for the study area. It shows that the study area varies from very low to very high PTAL level. There are some locations where the PTAL score is particularly low, including at some of the identified site allocation areas. It is important that interventions are developed to increase the PTAL of the development sites so that they can enable people to travel sustainably.





London Underground and DLR

The core study area is served by three DLR stations: All Saints, Langdon Park and Devons Road. These stations provide DLR connections to Canary Wharf and Stratford with services every 10 minutes in each direction. Within the wider area there are a number of additional DLR stations including East India, Poplar and West India Quay which provide connections to Bank, Woolwich Arsenal, Tower Gateway and Beckton, also at a frequency of six trains per hour (tph). There are also London Underground stations within the wider area including Canning Town providing Jubilee Line services to Stratford and central London; Bromley by Bow, Bow Road and Mile End providing Circle, District and Hammersmith and City Line services to Central London and West Ham which provides Jubilee Line, Circle, District and Hammersmith and City Line services as well as C2C trains to Fenchurch Street and Southend.

The fact that there are a range of services to a variety of destinations in the immediate vicinity of the area, highlights the importance of high-quality walking and cycling routes and reliable and frequent bus routes from the core study area to the stations, as well as infrastructure at the stations including wayfinding, secure cycle parking, close bus stops and pedestrian crossing facilities. The stations in the study area and surrounding area are shown in figure adjacent.

DLR Capacity Enhancements

As a result of Housing Infrastructure Funding, DLR frequencies will increase from 6 tph to 15 tph along the north-south route between Canary Wharf and Stratford. The Bank to Woolwich Arsenal Line will increase from 6tph to 22.5 tph. This is committed and being planned for delivery by 2031.

The Elizabeth Line

The Elizabeth Line will also run close to the area with new stations at Custom House and Canary Wharf. When these stations open, they will provide 12 trains per hour per direction to central London, Paddington, Reading, Heathrow and Woolwich Arsenal. These stations are likely to generate additional demand for bus, walking and cycling trips from the core study area to the stations.



Figure: London Underground and DLR stations

Bus Network

The core study area is served by seven bus routes as shown in the figure adjacent. The 108 routes north-south running parallel to the DLR line, along the Chrisp Street corridor. Similarly, the D8 routes north- south along the A12. Aside from these services there is limited north- south bus connectivity. Routes 115, D6 and 15 provide east to west connectivity along East India Dock Road and route 323 provides east- west connectivity along Devas Street. Route 309 traverses through the middle of the area providing another east-west route but this is convoluted due to the severance caused by the canal, the A12 and the DLR track. In the wider area there are further bus services.

KEY		
	Bus Route 8	Bus Route D3
	Bus Route 15	 Bus Route D6
	Bus Route 25	Bus Route D7
	Bus Route 108	Bus Route D8
	Bus Route 115	Bus Route 241
	Bus Route 135	Bus Route 474
	Bus Route 205	 Bus Route 147
	Bus Route 276	Bus Route 300
	Bus Route 277	Bus Route 330
	Bus Route 309	Bus Route 5
	Bus Route 323	 Bus Route 69
	Bus Route 425	Development Sites
	Bus Route 488	



The figure on adjacent indicates the cumulative bus frequencies on corridors, generated by summing the routes that serve those locations. It is clear from this figure that the core study area has lower bus coverage, served by one bus route, with frequencies of 4, 5 and 6 buses per hour. Coverage improves on the east to west and north to south corridors on the periphery of the study area: East India Dock Road has up to 30 buses per hour, the A11 has up to 50 buses per hour and Burdett Road has up to 30 buses per hour.



Figure: Approximate bus frequency for one hour AM peak

The figure adjacent indicates that the whole study area is within 400m of a bus route. However, there is a lack of bus stops westbound on East India Dock Road between the flyover and the Blackwall Tunnel (there are three bus stops eastbound and only one bus stop westbound). This limits the bus access for residents of the Aberfeldy development and visitors and employees to the Town Hall.



Figure: Bus Stop and Network Coverage. Source | Map provided by Transport for London Bus Planning team

There are a number of bus stands in the area that are critical for the operation of the bus network. There is one bus stand within the core area on Leven Road and there are other stands just outside the core study area, as shown in figure adjacent.

It is critical that these bus stops are retained and that any future urban realm and development proposals consider the potential need to extend stand space at these locations in the future.

In addition, development should be sensitively designed to ensure that residents are not impacted by the view and noise associated with buses using the stand space and the stand space is a pleasant environment for bus drivers and passengers using the stops.



Figure: Bus Infrastructure Source | Map provided by Transport for London Bus Planning team

There is limited bus priority provided in the area as indicated by the figure adjacent. Bus priority helps to minimise journey times and protect journey time reliability which in turn encourages bus uptake and use and reduces operating costs.

It is important that the bus priority measures are protected to ensure bus use is equally or more appealing than private vehicle usage.

In addition, there may be opportunities to provide more bus priority measures by reducing the number of on street parking spaces within the study area on roads such as Violet Road, Morris Road and Chrisp Street.



Figure: Bus Priority Source | Map provided by Transport for London Bus Planning team

Walking and Cycling Interventions

The walking and cycling networks have been analysed and assessed in a parallel study, The Connections and Movement study, and therefore should be referred to for these elements. The recommended walking and cycling interventions are shown in the figure adjacent. The proposed walking and cycling interventions improve east to west movements from the River Lea to Langdon Park station, from Devas Street to Twelvetrees Crescent and from the Aberfeldy development to Chrisp Street Market. North- south cycle only interventions are recommended along the Chrisp Street/ Morris Road/ Violet Road corridor and along the A12 from Zetland Street to Bromleyby-Bow station. In order to achieve these improvements, major junction interventions will be required at two locations on the A12 and three locations on the Chrisp Street/ Morris Road/ Violet Road corridor.

A number of pedestrian and cycle bridge crossings over the River Lea were explored in a Lower Lea Valley Connectivity Study and then further explored as part of this study. This study also recommends a pedestrian and cycle connection linking the Aisla and Islay Wharf development sites to the adjacent area in LB Newham.



Figure: Top Priority walking and cycling interventions Source | We Made That & Urban Movement Lower Lea Valley Connection & Movement Study Recommendations Report atabase right (2020) @ Environment

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Existing elements:

Existing Cycle Superhighway Existing National Cycle Network Existing pedestrian subways below A12 Existing pedestrian crossings over A12 and A13 Eight key stations Borough boundaries



Canning Town



Bow Creek

Orchard Pl





Future Year Transport

This section summarises the strategic modelling undertaken to understand the future transport network and the impact of the development identified for this area.

Strategic models have been used to forecast local and strategic network conditions for two scenarios:

- A 2031 Do Minimum scenario representing Transport for London's trip making and service provision projections.
- A 2031 AAP Growth scenario representing additional land use change (additional homes and jobs) in the AAP core area, with no changes to the transport network.

The study scenarios have been run for a 2031 forecast year and analysis has focussed on the morning peak period (3 hours, 07:00 to 10:00).

The strategic modelling has been undertaken using models that are part of Transport for London's (TfL) strategic modelling suite, namely the LTS demand model and Railplan public transport assignment model. The scope of this study does not include the use of the highway assignment models (HAMs) or cycling assignment model (Cynemon).

LTS is used to forecast growth in multimodal trip making based on various demand drivers and is aligned with Greater London Authority (GLA) projections. LTS will be used to model the impact of land use defined in the AAP Growth scenario on trip generation, trip distribution and mode choice. Railplan is a more disaggregate network assignment model that utilises outputs from LTS to provide detailed analysis and metrics of the impacts of changes in trip making on the transport network. The model allows us to assess the impact of Growth on different public transport sub-modes, lines and stations.

LTS Demand Modelling

Inputs:

The scope of this study includes one new LTS test to represent the AAP Growth scenario. LTS can represent numerous demand driver changes which vary in their impact on trip making and their complexity to specify. The top table on the overleaf summarises these input variables and notes whether they have been specified in this study.

Tower Hamlets have provided detailed specifications of land use changes at the required geographies; by LTS zone and by individual development site. As LTS required inputs to be aggregated to LTS zone level, and development sites are usually (and as is the case for this study) substantially smaller, the following assumptions have been implemented.

LTS zonal inputs consist of:

- "Growth" uplift in homes/jobs based on planning assumptions.
- "Existing and Unaffected" units that fall within a development site boundary that are not subject to any land use change.
- "Rest of Zone" assumptions for the rest of the LTS zone outside of development sites, based on area based proportions applied to LTS reference case assumptions.

The run undertaken for this study is reference A231th03, and pivots from the LTS reference case A231ie02 which also represents the Do Minimum for this study.

The figure on the overleaf summarises the land use inputs by LTS zone and development site.

Outputs:

- The bottom table on the overleaf illustrates the impact on multimodal trips of the AAP Growth scenario over the Do Minimum in the morning peak period. This figure represents the headline change in trip generation and mode choice within the GLA area (noting that LTS, and indeed Railplan, do capture demand and movements outside the GLA) resulting from the additional 10,822 Homes and 992 Jobs, therefore it reflects the travel demand of the new trips only.
- Sense checking observations of the results shown in the outputs table include:
- Trip generation is highest in public transport, which aligns with expectations of a wellconnected Inner London area.
- The impacts on active travel, align with patterns seen in comparable growth studies also tested using LTS.
- Trip rates are within a sensible range across all modes in comparison to similar growth studies using LTS.
- Overall trip generation is relatively high but aligns with the large population increase derived from the high household occupancy assumption applied.
- Mode share reflects the car free nature of the development assumptions – despite being located near arterial road corridors - and the large variety of public transport options in the vicinity of the development.

Summary of LTS Input Variables			
Input		Notes	
Households	Trip Generation and Distribution	Specified for this study.	
Population	Trip Generation and Distribution	Specified for this study. Derived from households using an occupancy factor or 2.47 (defined by Tower Hamlets)	
Employment	Trip Generation and Distribution	Specified for this study, split by white collar and blue-collar jobs.	
Parking	Mode Choice	Not specified for this study (no change from LTS reference case)	
Schools	Attractions, Mode Choice	Not specified for this study (no change from LTS reference case)	
Car Ownership	Mode Choice	Specified for this study. Specified as a unit of cars per head, derived from population assumptions and assuming car free development (i.e. number of cars is fixed to that assumed in the LTS reference case).	
Retail Floorspace	Attractions	Not specified for this study (no change from LTS reference case)	
Transport Network	Mode Choice	No change from LTS reference case. Network changes to be represented in Railplan only.	

Summary of LTS Trip Impacts				
Mode	Change in Morning Peak Person Trips¹	Morning PeakTrip Generation Trip Rate (per new population)	Change in Daily Person Trips²	Change in Daily Trips Mode Share
Public Transport	8,000	0.29	26,300	56.2%
Highway	1,300	0.05	4,100	8.7%
Active	5,600	0.21	16,400	35.1%

¹Top Line Stats table 2.1a A231th03 – A231ie02 ²Top Line Stats table 1.1 A231th03 – A231ie02



Figure: AAP Growth Scenario LTS Input Assumptions

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Railplan Modelling – Core Scenarios

Overview:

Railplan is used to assess the impacts of the AAP Growth on local and strategic public transport services that serve the AAP vicinity, and the effectiveness of mitigations in alleviating any negative impacts.

Railplan analysis focusses on metrics including::

- 3 hour (07:00 10:00) morning peak passenger volumes on services;
- 3 hour (07:00 10:00) morning peak passenger boarding and alighting at stations/ stops; and
- Morning peak hour crowding, measured in standing passengers per square metre.

The scenarios analysed in this section are:

- 2031 AM Do Minimum (run reference THP2001A02431A); and
- 2031 AM AAP Growth (East of Borough AAP Land Use assumptions, no network changes) (run reference THP2004A04831A).

Network Supply

The transport networks in the Do Minimum and AAP Growth scenarios are identical. The hourly average frequency of bus, DLR, Underground and Elizabeth Line services during the morning peak are summarised in the tables adjacent.

For the purpose of RailPlan modelling bus analysis is aggregated to North, South, East and West cordons, which capture passenger flows into and out of the AAP core area. Cordons have been used to aid interpretation of general patterns of movements that best align with Railplan's strengths as a strategic model. The points on the network captured in each cordon are shown in the figure adjacent.

Do Minimum / AAP Growth Scenario Bus Service Summary (average per buses hour)				
Cordon	Into AAP Core Area	Out of AAP Core Area	Total BPH (both directions)	
North	11	11.3	22.3	
South	41.8	35.5	77.3	
East	18.5	18.5	37	
West	38	38	76	

Do Minimum / AAP Growth Scenario DLR Service Summary (average trains per hour)			
Service	Direction	Total TPH	
DLR (West Ham -> Canning Town)	SB	22.5	
DLR (Canning Town -> West Ham)	NB	22.5	
DLR (Poplar -> Canning Town)	EB	15.0	
DLR (Canning Town -> Poplar)	WB	15.0	
DLR (Poplar -> Bow Church)	SB	15.0	
DLR (Bow Church -> Poplar)	NB	15.0	

Do Minimum / AAP Growth Scenario Underground Service Summary (average trains per hour)			
Service	Direction	Total TPH	
Jubilee Line (Canning Town, EB)	NB	25.6	
Jubilee Line (Canning Town, WB)	SB	25.6	
Central Line (Mile End, EB)	EB	25.0	
Central Line (Mile End, WB)	WB	28.0	
Hammersmith & City / District Line (Mile End -> West Ham)	EB	32.0	
Hammersmith & City / District Line (West Ham -> Mile End)	WB	32.0	

Do Minimum / AAP Growth Scenario Elizabeth Line Service Summary (average trains per hour)			
Service	Direction	Total TPH	
Elizabeth Line (Canary Wharf)	EB	11.7	
Elizabeth Line (Canary Wharf)	WB	11.3	



Figure: Bus Cordon Points



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2031 AM Do Minimum Scenario

The purpose of this scenario is to understand network conditions prior to the inclusion of any AAP Growth, for example, where the most heavily used stations and lines are forecast to be. This scenario will form the comparator to the AAP Growth scenario, allowing us to highlight what parts of the network are impacted by growth and quantify the relative scale of the impact.

Bus:

Bus passenger flows are presented at cordon points representing travel into and out of the AAP Core Area to/ from the North, South, East and West. The first table below shows these aggregated movements. As expected the east - west corridor along the A13, B140 and Cordelia Street is the most heavily travelled.

The last table below shows the aggregate boarding and alighting figures at all bus stops within the AAP Core Area. There is a larger number of alighters than boarders, indicating more attraction as opposed to generation activities in the area.

The figure adjacent illustrates the patterns of Do Minimum bus usage. The red link bars represent three-hour passenger flows, and the pie charts show boarding and alighting information for stops within the AAP Core Area. It should be noted that Railplan is a strategic tool and is not intended to accurately model individual bus stop usage, so the patterns of activity below should be considered as an indication of where bus activity may occur.

The red link bars indicate the predominant movement in the area is east to west travel along the A13 which provides connections to the City of London from East London and Essex. Most bus passengers can be seen in the vicinity of Canning Town which is to be expected as this is a key transport hub offering connectivity between bus, DLR and Underground. There is also a notable north to south movement along the A1025 which provides connections into Canary Wharf, another key hub in the area.

Bus stop activity in the AAP Core Area is concentrated along East India Dock Road and the A12 where bus frequency is highest and most accessible from the development sites.

Do Minin	num AM Peak Flows at	Do Minimum A Bus Boarding	M Peak Period and Alighting		
Cordon	Into AAP	Out of AAP	Total	Boarders	Alighters
	Core Area	Core Area		1100	1500
North	600	600	1,200	1,100	1,000
South	1,200	1,100	2,300		
East	2,000	500	2,500		
West	1,100	2,100	3,200		
Total	4,900	4,300			

Initial boardings Transfer boardings Transfer alightings Final alightings netery Park



Figure: Do Minimum AM Peak Period Bus Activity



DLR:

DLR boarding and alighting data for each branch running within and around the AAP Core Area is shown in the table below activity may occur.

The figure adjacent illustrates the patterns of Do Minimum DLR usage. The green link bars represent three-hour passenger flows, and the pie charts show boarding and alighting information for stops within and surrounding the AAP Core Area.

The largest volumes of DLR passenger activity can be seen at Canning Town and West Ham stations, with this branch of the DLR the busiest in the AAP Core Area. Three quarters of DLR passengers at Canning Town stations are transfer alighting, once more indicating this station as a key multi-modal transport hub in the area with Underground and bus services also available. The majority of DLR passengers alight from Canning Town DLR and transfer to London Underground services.

Likewise, at West Ham Station over half of DLR passengers are transfer alighting, with two thirds also transfer boarding indicating this station as another key hub in the area.

Poplar is the third busiest station in the area, with a high number of passengers transferring between services. This is due to it also being a key interchange station on the DLR network, connecting East to West services with the North to South line between Lewisham and Stratford.

Over three quarters of passengers at East India and Blackwall DLR Station are boarding services indicating that the areas surrounding these stations are trip generation areas. All Saints, Langdon Park and Devons Road Stations experience an even split between boarding and alighting.

Do Minimum AM Peak Period I	OLR Branch Bo	arding and A	lighting
Service	Board	Alight	Total
DLR (West Ham <> Canning Town)	16,200	18,400	34,600
DLR (Canning Town <> Poplar)	11,800	13,300	25,100
DLR (Poplar <> Bow Church)	7,500	7,000	14,500
Total	35,500	38,700	



Figure: Do Minimum AM Peak Period DLR Activity

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Underground:

London Underground boarding and alighting data for each branch running within and around the AAP Core Area is shown in the table below.

The figure adjacent illustrates the patterns of Do Minimum Underground usage. The grey link bars represent three-hour passenger flows, and the pie charts show boarding and alighting information for stops within and surrounding the AAP Core Area. Likewise, at West Ham Station over half of DLR passengers are transfer alighting, with two thirds also transfer boarding indicating this station as another key hub in the area.

Mile End Underground Station experiences the greatest number of passengers who are mostly transferring services, with Central, District and Hammersmith and City Lines all servicing this station.

Canning Town Underground Station is also a busy station to the east of the Core AAP. In particular, Canning Town Westbound experiences a lot of interchange from the DLR heading into London as illustrated by the high number of transfer boardings.

West Ham Station also experiences a large number of passengers transferring services, connecting the Jubilee Line to District and Hammersmith & City Lines in addition to the DLR. Bow Road and Bromley-by-Bow Underground Stations, which are both served by District and Hammersmith and City Lines, both experience approximately two thirds of passengers boarding services.

Do Minimum AM Peak Period Undergro	ound Branch E	Boarding and A	lighting
Service	Board	Alight	Total
Jubilee Line (Canning Town)	23,000	13,000	36,000
Central Line (Mile End)	20,700	17,100	37,900
Hammersmith & City / District Line (West Ham <> Mile End)	32,200	36,700	68,900
Total	76,000	66,800	



Figure: Do Minimum AM Peak Period Underground Activity

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Crowding

The figure adjacent shows future year do minimum levels of crowding on rail services. Unlike other metrics in this report crowding is presented for the AM peak hour. TfL's standard Railplan crowding output process has been followed, and the results represent the number of standing passengers per square metre.

The analysis shows that prior to the AAP Growth there are severe crowding constraints on lines in our study area including the Jubilee Line and Hammersmith & City / District Line, and on DLR around Poplar. Crowding levels on the core strategic Underground Lines (Central Lines, Jubilee Line, Elizabeth Line) are very high.



Figure: Do Minimum AM Peak Hour Crowding (Standing Passengers Per Square Metre)

2031 AM AAP Growth Scenario

The AAP Growth scenario represents the impact on the local transport network of the growth assumptions outlined in LTS Demand Modelling Section. The transport network in this scenario is identical to the Do Minimum, and the activity on each public transport sub-mode in the area are shown in the sections below.

Public Transport Demand

The Growth scenario utilises public transport demand derived from the AAP Growth scenario run using TfL's LTS demand model. The figures below show the change in origin and destination trip ends resulting from the Growth assumptions.

In the AM peak we would associate changes in trip origins with the change in residential population and would expect a corresponding increase in destinations in key employment centres such as the Isle of Dogs, City of London, the West End and Stratford. We would associate the change in trip destinations in the AAP area with jobs and would expect the corresponding origins to be a mixture of those in the local vicinity and a broad and widespread corresponding with accessibility.



Figure: AAP Growth Scenario – Change in AM Peak Period Origin Trip Ends

Figure: AAP Growth Scenario – Change in Destination AM Peak Period Trip Ends



Bus:

The first table below shows the bus passenger flows across the AAP core area cordons. As expected, given that we have increased population within the core area significantly, the number of bus passengers travelling outward has increased. The direction of travel of these new bus trips is relatively evenly spread between those to the west, north and south, with eastbound movements lower.

The second table below, AAP Growth Scenario AM Peak Bus Boarding and Alighting, shows the aggregate boarding and alighting figures at all bus stops within the AAP Core Area. Boarding numbers increase by 72%, and alighters by 12%, which aligns with the large change in resident population.

The figure adjacent illustrates the patterns of Growth scenario bus usage. The patterns of bus boarding and alighting are similar to the Do Minimum – remembering that service provision is unchanged – but the Growth scenario sees a larger scale of activity and particularly boarders. It should be noted that Railplan is a strategic tool and is not intended to accurately model individual bus stop usage, so the patterns of activity below should be considered as an indication of where bus activity may occur.

AAP Growth Scenario AM Peak Bus Passenger Flows at Cordons				
Cordon	Into AAP Core Area	Out of AAP Core Area	Total	
North	700	900	1,600	
South	1,300	1,300	2,600	
East	2,200	600	2,800	
West	1,200	2,500	3,700	
Total	5,400	5,300		

AAP Growth	Scenario AM
Peak Period E	Bus Boarding
and Ali	ghting
Boarders	Alighters
1,900	1,700

Passenger Activity at Stops

Initial boardings Transfer boardings • Transfer alightings Final alightings Aspen Way **Bus Boarding and Alighting** Scale: 7.5

Figure: AAP Growth Scenario AM Peak Period Bus Activity



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The figure adjacent shows a peak hour load factor³ across all bus services in the AAP Core Area. The figures shown are the percentage of total capacity utilised. The plot indicates that with the additional AAP growth trips, the existing bus services on the network in the core area are not exceeding capacity. However the increased demand generated by the proposed growth will inevitably lead to the need to tweak capacities along specific corridors and that bus capacity enhancements are likely to be required in some locations where they are isolated or to cater for demand generated by specific development sites.

³Peak Hour Load Factor derived using total capacity and a three hour to peak hour conversion factor of 42% (for buses only, other modes use different factors). Passenger volume and capacity are aggregated to a link level accounting for all individual services on a each link.



Figure: AAP Growth Scenario AM Peak Hour Bus Load Factor



DLR:

DLR boarding and alighting data for each branch running within and around the AAP Core Area is shown in the table below, AAP Growth Scenario AM Peak DLR Branch Boarding and Alighting. Overall boarding and alighting across all branches increases by 4,300(12%) and 1,300 (3%) respectively, with the largest changes occurring on the Poplar <> Bow Church branch, followed by Canning Town <> Poplar, and the smallest changes occurring on the Canning Town <> West Ham branch

The figure adjacent illustrates the patterns of Growth Scenario DLR usage. The most significant individual station changes include increases in southbound boarders at Langdon Park, All Saints and Devons Road, and westbound boarders at East India and Blackwall.

AAP Growth Scenario AM Peak	DLR Branch B	oarding and A	lighting
Service	Board	Alight	Total
DLR (West Ham <> Canning Town)	16,600	18,700	35,300
DLR (Canning Town <> Poplar)	13,500	13,800	27,300
DLR (Poplar <> Bow Church)	9,700	7,600	17,300
Total	39,800	40,100	



Figure: AAP Growth Scenario AM Peak Period DLR Activity

Underground:

London Underground boarding and alighting data for each branch running within and around the AAP Core Area is shown in Table 5.13. Percentage change in boarding and alighting is relatively small given the large baseline Underground numbers, though there are notable increases in boarding particularly, at Canning Town (Jubilee Line, 1,200 increase) and along the Hammersmith & City / District Line corridor between West Ham and Mile End which sees an increase of 1,600 (across the four stations covered).

The figure adjacent illustrates the patterns of Growth Scenario Underground usage. The most significant individual changes occur at Bromley-by-Bow station, where westbound boarders increases by 1,300 (35%) and eastbound boarders by 200 (33%), and at Canning Town where northbound and southbound boarders (many of which will have interchanged from other services) increases by 400 (15%) and 800 (4%) respectively.

Do Minimum AM Peak Period Underg	ound Brancl	h Boarding and	d Alighting
Service	Board	Alight	Total
Jubilee Line (Canning Town)	24,200	13,100	37,300
Central Line (Mile End)	21,100	17,200	38,300
Hammersmith & City / District Line (West Ham <> Mile End)	33,800	37,100	70,900
Total	79,100	67,400	



Figure: Do Minimum AM Peak Period Underground Activity



Crowding

The figure adjacent shows AAP Growth scenario levels of crowding on rail services. The analysis shows that despite the large population and increases in station and line activity, the impacts on TfL's crowding metric is very low. The only section that changes category is between West Ham and Star Lane (DLR southbound) which changes from 1-2 standing passengers (which is a low figure) to 2-3 standing passengers).

Overall little change can be seen in the crowding level of services, thus the change in bands can only be observed in a few links. However small increases of around 0.2-0.3 standing passengers per square metre can be seen on the DLR network, particularly between Poplar and All Saints (0.31), West India Quay and Poplar (0.31), and Poplar and Blackwall (0.29).



Figure: AAP Growth Scenario AM Peak Hour Crowding (Standing Passengers Per Square Metre)

Interchange at Major Hubs:

Canning Town has been identified through wider engagement as a potentially sensitive pinch point on the network. Whilst Railplan itself cannot quantify or assess station conditions, we can use board, alight and interchange movements to indicate how the AAP Growth might affect already stressed areas within the station. The change in passenger movements (3hr AM Peak) in the AAP Growth scenario is shown in the top table adjacent. Access to the Jubilee Line, predominantly for westbound travel, is the primary attraction for new users of the station. The vast majority of these additional trips are entering the station through the entrance, suggesting that access is either by walking or from a first transit leg using bus, and that consideration should be given to the impact of the increase of approximately 1,100 passengers on gateline capacity. By comparison, interchange from DLR services (which permeate the study area reasonably well) is low.

The area surrounding Canary Wharf has been identified as a key destination for AAP Growth trips and the area accommodates key public transport stations at Canary Wharf (Jubilee Line and DLR) and Isle of Dogs (Elizabeth Line) that are anticipated to be highly utilised in the future. The last two tables adjacent show the change in station entries, exits and interchange for the aforementioned stations.

The change in activity at Canary Wharf is dominated by two primary movements; from the AAP Core area to Canary Wharf via Jubilee Line and to a lesser extent DLR, where passengers alight out of the station, and boarding Westbound Jubilee Line services from the station entrance suggesting walk, bus and cycle access to Canary Wharf from the AAP Core area. Given the high levels of station usage in the Do Minimum the majority of the changes shown below represent around a 4% change, with the exception being alighting from Southbound DLR services which is a change of approximately 30%.

The change in activity at the Isle of Dogs Elizabeth Line station is relatively balanced between an increase in passenger alighting (eastbound) and access via the station entrance to Westbound services. In relative terms compared to Do Minimum patterns of movement, only the increased use of the Billingsgate Market station entrance and overall boarding of Westbound services are significant (+30% and +8% respectively).

We have also undertaken a station interchange assessment of West Ham station, the results of which have shown minimal change (average 1%) across all movements including station entry/exit and interchange between DLR, c2c rail and, Jubilee Line and District Line services.

		Change in A	M Peak Station	Activity at Can	ning Town			
	Canning Town Main SE(1)	Canning Town Jubilee (WB)	Canning Town Jubilee (EB)	Canning Town DLR (EB)	Canning Town DLR (WB)	Canning Town DLR (SB)	Canning Town DLR (NB)	Total
Canning Town Main (SE) 1		645	307	1	-24	24	162	1,115
Canning Town Jubilee (WB)	31			0	9	0	0	40
Canning Town Jubilee (EB)	75			-48	15	33	-2	73
Canning Town DLR (EB)	13	17	54			0	32	116
Canning Town DLR (WB)	5	39	26			1	-5	66
Canning Town DLR (SB)	44	-11	0	0	33			66
Canning Town DLR (NB)	14	115	-1	0	-96			32
Total	182	805	386	-47	-63	58	187	1,508

	Cha	ange in AM	Peak Station	Activity at C	anary Whar					
	Canary Wharf One Canada Sq SE [1]	Canary Wharf Jubilee West SE [2]	Canary Wharf Jubilee East SE [3]	Canary Wharf Jubilee (WB)	Canary Wharf Jubilee (EB)	Canary Wharf DLR (EB)	Canary Wharf DLR (WB)	Canary Wharf DLR (SB)	Canary Wharf DLR (NB)	Total
Canary Wharf One Canada Sq SE [1]		0	0			0	18	0	-13	5
Canary Wharf Jubilee West SE [2]	0			271	5					276
Canary Wharf Jubilee East SE [3]	0			417	37					454
Canary Wharf Jubilee (WB)		650	-57							593
Canary Wharf Jubilee (EB)		50	-44							6
Canary Wharf DLR (EB)	121							0	5	126
Canary Wharf DLR (WB)	-4							0	0	-4
Canary Wharf DLR (SB)	348					0	0			348
Canary Wharf DLR (NB)	3					0	0			3
Total	468	700	-101	688	42	0	18	0	-8	1,807

	Chang	ge in AM Peak S	tation Activity a	at Isle of Dogs			
	Isle Of Dogs Canada Sq SE [1]	Isle Of Dogs Billingsgate Market SE [2]	Isle Of Dogs Churchill PI SE [3]	lsle Of Dogs Upper Bank St SE [4]	Isle Of Dogs Crossrail (EB)	lsle Of Dogs Crossrail (WB)	Total
Isle Of Dogs Canada Sq SE [1]		0	0	0	5	32	37
Isle Of Dogs Billingsgate Market SE [2]	0		0	0	14	573	587
Isle Of Dogs Churchill PI SE [3]	0	0		2	12	11	25
Isle Of Dogs Upper Bank St SE [4]	0	0	5		6	128	139
Isle Of Dogs Crossrail (EB)	403	34	-40	-25			372
Isle Of Dogs Crossrail (WB)	8	-1	-6	15			16
Total	411	33	-41	-8	37	744	1,176



Summary of Findings from the Strategic Modelling

The AAP Growth scenario has illustrated the impact of growth assumptions on the local transport network compared to the Do Minimum scenario.

The increased population in the core area has resulted in the number of bus passengers increasing. The large change in resident population has also seen bus boarding numbers increase by 72%, with alighters increasing by 12%. Despite these increases bus services are forecast to continue to run with some spare capacity. However, the increased demand generated by the proposed growth will inevitably lead to the need to tweak capacities along specific corridors and that bus capacity enhancements are likely to be required in some locations where they are isolated or to cater for demand generated by specific development sites.

In regard to rail travel, whilst the population in the area is increasing this is spread amongst several lines on the transport network, some of which have a high capacity resulting in the change in patronage being relatively low compared to overall flows.

On the DLR, boarding increases by 4,300 (12%) and alighting by 1,300 (3%) with the largest changes occurring on the Poplar to Bow Church branch, followed by the Canning Town to Poplar branch. There are notable increases in southbound borders at Langdon Park, All Saints and Devons Road stations whilst westbound boarders increase at East India and Blackwall Stations.

The percentage change in boarders and alighters on Underground services is relatively low given the very large background patronage on the lines of interest. Notable increases were identified at Canning Town (1,191 increase, Jubilee Line) and along the Hammersmith & City / District Line corridor between West Ham and Mile End (1,600 increase across four stations). Bromley-by-Bow station experiences the largest individual increase, with westbound boarders increasing by 35% (1,300) and eastbound boarders by 33% (208).

The analysis of crowding on rail services shows that despite the large population and increases in station and line activity, the impact on TfL's crowding metric is low. Only one section of the network changes category, between West Ham and Star Lane (DLR southbound) from 1-2 standing passengers to 2-3 standing passengers. Further analysis has shown that generally the increases in standing passengers is around 0.2 to 0.3 which is a modest change.

Modelling the impact of AAP Growth shows a spread of impacts across bus, DLR and Underground services. Given the geography of the area and large number of public transport service choices, there is not an evident strong concentration of usage of a single particular line, service or station. The cumulative impact of increased trip making does not appear to add significant pressure to future baseline crowded conditions.

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Interventions to increase PTAL:

As a key priority, this section explores the interventions that are required to increase the PTAL of the proposed development sites to a minimum of level 3 which will provide greater employment opportunities, reduce dependence on cars and ensure new residents, employees and visitors are better connected to other amenities. The figure adjacent indicates the development sites and their current and future PTAL scores. The future PTAL scores are based on the delivery of committed improvement schemes such as the increase in frequency of the DLR. The full PTAL calculations can be found for each site in Appendix C.

For each of the sites that falls under PTAL 3, shown in green in the figure adjacent, PTAL calculations have been undertaken. Interventions have been identified that would increase the PTAL to 3. For the intervention to be considered it needs to be accessible within 960m for rail, London Underground and DLR interventions and within 640m for bus interventions.

Development sites	and PTAL sc	ores
Site Allocation Location	Current PTAL	Future PTAL 2031 without further interventions
Aberfeldy estate	3-4	3-4
Teviot estate	2-3	3-4
Orchard Wharf/ Castle Wharf	3	3
Gilender Street	3	4
Islay Wharf	1b-2	1b-2
Ailsa Wharf	1b-2	1b-2
Leven Road Gasworks	1a-2	1a-2
Trinity Buoy Wharf	2	2
Blackwall Trading Estate	1b-3	1b-3
London City Island	2-6a	3-6a
Bow Enterprise Park	3	4



Figure: Development sites which do not meet minimum PTAL

Ailsa Wharf and Islay Wharf:

To increase the PTAL to 3 at Ailsa and Islay Wharfs, the following interventions indicated in the figure adjacent are required:

- Increase the frequency of bus route 309 from 5bph to 6bph;
- Add a new route similar to the routing of 309 (i.e. traversing through the site) with a frequency of 7bph;
- Extend route 488 south from Bromley by Bow to the Leven Road bus stand;
- Create a new direct pedestrian and cycle crossing at Twelvetrees Crescent and remove the guard railing at this location which impedes pedestrian and cycle movements and creates long journey times for these modes for north-south movements. A study will need to be undertaken to develop the design of this crossing facility to ensure it is a safe provision and does generate adverse traffic conditions on the A12;
- Ensure the sites are penetrable with a street network which creates more direct walking and cycling routes; and
- Create a more direct crossing on the A12 just north of Zetland Street.



Aberfeldy Estate, Leven Road Gasworks and Blackwall Trading Estate:

To increase the PTAL to 3 at these site locations, the following interventions indicated in the figure adjacent are required:

- Increase the frequency of bus route 309 from 5bph to 6bph;
- Add a new route similar to the routing of 309 (i.e. traversing through the site) with a frequency of 7bph; and
- Extend route 488 south from Bromley by Bow to the Leven Road bus stand.

A Lower Lea Valley connectivity study was completed by TfL in collaboration with LB Tower Hamlets and LB Newham in 2019. The study sought to improve connectivity between the Leven Road Gasworks and the main entrance to Canning Town station. Four options were shortlisted and the preferred option is indicated in the figure adjacent. This pedestrian and cycle bridge, know as the Gasworks to Electra Business Park connection enhances connectivity to Canning Town and Star Lane as well as the area immediately adjacent to the River Lea in LB Newham. It is recommended that this link is safeguarded and that sufficient land is secured in the Electra Business Park site for the bridge delivery.



London City Island:

To increase the PTAL to 3 at London City Island, the following intervention indicated in the figure adjacent is required:

 A walking and cycling route through the development site to increase permeability and connect to the new pedestrian and cycle bridge to Canning Town Station.

Trinity Buoy Wharf:

To increase the PTAL to 3 at Trinity Buoy Wharf, the following interventions indicated in the figure adjacent are required:

- A new walking and cycle bridge over the River Lea linking Limmo Peninsula development site and Canning Town station to Trinity Buoy Wharf and the River Thames
- An improved walking and cycling route along the River Lea which leads to Canning Town Station.
- A new walking and cycle bridge over the mouth of the River Lea.
- A new walking and cycling route along the Thameside West development which connects to Lower Lea Crossing and Silvertown Way.
- Alternatively, if the Thameside West development does not come forward in due time, an additional bus route similar to the D3 would uplift the site's PTAL score.

The purpose of this scenario is to understand network conditions prior to the inclusion of any AAP Growth, for example, where the most heavily used stations and lines are forecast to be. This scenario will form the comparator to the AAP Growth scenario, allowing us to highlight what parts of the network are impacted by growth and quantify the relative scale of the impact.

DLR, London Underground and Elizabeth Line:

Intervention 1: DLR Frequency Increases

As a result of the Housing Infrastructure Funding DLR frequencies will increase from 6 tph to 15 tph along the north-south route between Canary Wharf and Stratford. This increase in capacity is supported given the modelling suggested there were small increases in standing passengers generated by demand from development.

Intervention 2: Gate Line Capacity Increases

Increases in gate line capacity at Canning Town may be required to cater for increased usage associated with the study area development. A further study to explore the options of increasing gate line capacity at this station will be required. The modelling also indicates that Langdon Park, All Saints and Devons Road DLR stations would have increased southbound boarders, and East India and Blackwall would have increased westbound boarders, however these stations do not have gate lines. Therefore, sufficient oyster tap in machines should be provided at convenient locations to reduce congestion pinch points at these stations on route to the platforms.

Intervention 3: Capacity enhancements at Canning Town station

The AAP development results in increased demand at Canning Town station predominantly westbound journeys on the Jubilee Line during

the AM peak. The station has already been highlighted by Transport for London as requiring capacity enhancements. The design of capacity enhancements at this station will be subject to a further study and funding availability.

Intervention 4: Provision of lit and covered, secure cycle parking at stations in the study area

Sufficient cycle parking facilities which are covered, well lit and secure should be provided at the stations in the study area.

Intervention 5: Consistent Wayfinding

Throughout the area there are a range of inconsistent signs, many of them directing users incorrectly. A consistent wayfinding strategy, such as Legible London totems and fingerposts, is proposed. A wayfinding strategy is a fundamental element of the approach to encourage walking across the area and will enable easy wayfinding to public transport services.

Buses:

A number of specific bus frequency interventions and new routes have been described in the PTAL interventions section to ensure that the development sites identified have sufficient PTAL. The following more general interventions are also proposed:

Intervention 1:

Additional bus stops on East India Dock Road to provide better facilities for the Aberfeldy development area and the Town Hall.

Intervention 2:

Stand space and driver facilities to be maintained at existing locations and these facilities to be sensitively designed with developments.

Intervention 3:

Introduction of bus gates and bus priority where possible to minimise bus journey times and protect journey time reliability. Further work should be undertaken to explore opportunities to introduce bus priority with other infrastructure such as cycle lanes and to remove parking where it is not required to enable the introduction of bus lanes.

Walking and Cycling:

Some specific walking and cycling interventions are recommended in the PTAL interventions section. In addition, a range of walking and cycling interventions are recommended in the "connections and movement study" to create high quality walking and cycling networks across the study area. These include interventions that are required to improve walking and cycling trips to stations in and surrounding the study area.

Future proofing for appropriate freight services:

With the amount of development planned within the area, there will be a corresponding increase in the amount of construction traffic and the number of servicing trips to and from the area. Setting out a framework to manage both construction logistics and servicing activity will help minimise the impacts and reduce the number of vehicles in the area and associated pressure on the highway network.

The following interventions are proposed:

- Requirement for site-specific Construction Logistics Plans (CLPs)
- Provision of Delivery and Servicing Plans (DSPs); and
- Re-timing deliveries to outside of peak periods.

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Delivery

This report has recommended a range of interventions including quick wins, medium term and longer-term projects. Each intervention measure will be subject to further planning and assessment. The following table indicates the indicative delivery timescales, high level cost estimates (described qualitatively) and the likely responsible authority for each intervention.

Key

Delivery Time

C	Short Term (0-2year
C	Medium Term (2-10 y
C	Long Term (10+ year
Expe	cted Cost
£	Very Low Cost (Und
£	Low Cost (£100k-£1r
££	Medium Cost (£1m- '
£££	High Cost (£10m-£5
£££	Very High Cost (£50

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10m)

50m)

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INCREASE FREQUENCY OF BUS ROUTE 309

ADDITIONAL HIGH FREQUENCY EAST-WEST ROUTE THROUGH DEVELOPMENT SITE

EXTENSION OF BUS ROUTE 488

PEDESTRIAN AND CYCLE BRIDGE ACROSS THE RIVER LEA TO LINK THE LEVEN ROAD DEVELOPMENT SITE WITH THE BUSINESS PARK

PROVISION OF A PEDESTRIAN AND CYCLE CROSSING AT TWELVETREES CRESCENT TO ENABLE A MORE DIRECT CONNECTION TO BROMLEY-BY-BOW STATION

ENSURE NEW DEVELOPMENT SITES ARE PENETRABLE WITH A STREET NETWORK TO CREATE MORE DIRECT WALKING AND CYCLING ROUTES

A NEW WALKING AND CYCLE BRIDGE OVER THE RIVER LEA LINKING THE LIMMO PENINSULA DEVELOPMENT SITE AND CANNING TOWN STATION TO TRINITY BUOY WHARF AND THE RIVER THAMES

AN IMPROVED WALKING AND CYCLING ROUTE ALONG THE RIVER LEA WHICH LEADS TO CANNING TOWN STATION

A NEW WALKING AND CYCLE BRIDGE OVER THE MOUTH OF THE RIVER LEA

A NEW WALKING AND CYCLING ROUTE ALONG THE THAMESIDE WEST DEVELOPMENT WHICH CONNECTS TO LOWER LEA CROSSING AND SILVERTOWN WAY

ALTERNATIVELY, IF THE THAMESIDE WEST DEVELOPMENT DOES NOT COME FORWARD IN DUE TIME, AN ADDITIONAL BUS ROUTE SIMILAR TO THE D3 WOULD UPLIFT THE SITE'S PTAL SCORE

INCREASE IN FREQUENCY OF RIVER SERVICES FROM TRINITY BUOY WHARF TO NORTH GREENWICH AND INTRODUCTION OF SERVICES INTO CENTRAL LONDON

DLR FREQUENCY INCREASES

GATELINE AND CAPACITY INCREASES AT CANNING TOWN

PROVISION OF LIT AND COVERED, SECURE CYCLE PARKING AT STATIONS IN THE STUDY AREA (per station)

PROVISION OF CONSISTENT WAYFINDING

ADDITIONAL BUS STOPS ON EAST INDIA DOCK ROAD TO PROVIDE BETTER FACILITIES FOR THE ABERFELDY DEVELOPMENT AREA AND THE TOWN HALL

STAND SPACE AND DRIVER FACILITIES TO BE MAINTAINED AT EXISTING LOCATIONS AND THESE FACILITIES TO BE SENSITIVELY DESIGNED WITH DEVELOPMENTS

INTRODUCTION OF BUS GATES AND BUS PRIORITY WHERE POSSIBLE TO MINIMISE BUS JOURNEY TIMES AND PROTECT JOURNEY TIME RELIABILITY

SITE-SPECIFIC CONSTRUCTION LOGISTICS PLANS (CLPS)

PROVISION OF DELIVERY AND SERVICING PLANS (DSPS)

RE-TIMING DELIVERIES TO OUTSIDE OF PEAK PERIODS

TIME	COST	RELATED SITE ALLOCATION AREA	LIKELY RESPONSIBLE AUTHORITY
	£	ALL	TfL
\bigcirc	£	ALL	TfL
\bigcirc	£	LEVEN ROAD, ABERFELDY AND ADJACENT SITE AREAS	TfL
\bigcirc	33	LEVEN ROAD, ABERFELDY AND ADJACENT SITE AREAS	TOWER HAMLETS
0	£ £	ALISA WHARF AND ISLAY WHARF	TfL
\bigcirc	£	ALL	TOWER HAMLETS
0	33	TRINITY BOUY WHARF	TOWER HAMLETS AND TfL
\bigcirc	£	TRINITY BOUY WHARF	TOWER HAMLETS
\bigcirc	££	TRINITY BOUY WHARF	TOWER HAMLETS
\bigcirc	£	TRINITY BOUY WHARF	TOWER HAMLETS
\bigcirc	£	TRINITY BOUY WHARF	TfL
\bigcirc	33	TRINITY BOUY WHARF	TfL
	223	ALL	TfL
\bigcirc	333 333 33	ALL	TfL
	£	ALL	TfL
	£	ALL	TOWER HAMLETS
	£	ALL	TfL
$\bigcirc \bigcirc \bigcirc$	£	ALL	TfL
0	£	ALL	TOWER HAMLETS AND TfL
	£	ALL	TOWER HAMLETS
\bigcirc	£	ALL	TOWER HAMLETS
0	£	ALL	TOWER HAMLETS

Conclusion

This Transport Study has analysed the existing transport provision and issues and the challenges faced in the context of future development and trip generation related to the projected housing growth in the Area Action Plan.

The Study proposes a range of transport interventions to help mitigate the issues identified and to support the planned employment and population growth in the area. These have been developed through qualitative assessment and strategic transport modelling.

The interventions proposed to mitigate the impact of development and to increase PTAL of the site allocation locations include enhancements to buses, DLR frequency increases, gateline capacity increases and many others. Highway interventions were not part of the scope of this study due to the policy that new development will not allow parking and therefore increases in private car usage are not expected as a result of development. In addition, walking and cycling interventions were not part of the scope of this study as they have been identified at length in the Movement and Connectivity study. However, some walking and cycling interventions have been recommended to enhance PTAL and to improve interchange between these and other transport modes. Indicative costs and delivery programmes for the recommended interventions were also included. The recommended interventions are listed adjacent.

Intervention Increase frequency of route 309 Additional high frequency east-west route through development site Extension of route 488 Pedestrian and cycle bridge across the River Lea to link the Leven Road development site with the **Business Park** Provision of a pedestrian and cycle crossing at Twelvetrees Crescent to enable a more direct connection to Bromley-by-Bow station Ensure new development sites are penetrable with a street network to create more direct walking and cycling routes A new walking and cycle bridge over the River Lea linking the Limmo Peninsula development site and Canning Town station to Trinity Buoy Wharf and the River Thames An improved walking and cycling route along the River Lea which leads to Canning Town Station. A new walking and cycle bridge over the mouth of the River Lea. A new walking and cycling route along the Thameside West development which connects to Lower Lea Crossing and Silvertown Way. Alternatively, if the Thameside West development does not come forward in due time, an additional bus route similar to the D3 would uplift the site's PTAL score. Increase in frequency of river services from Trinity Buoy Wharf to North Greenwich and introduction of services into central London DLR Frequency Increases Gateline and capacity increases at Canning Town Provision of lit and covered, secure cycle parking at stations in the study area Provision of consistent wayfinding Additional bus stops on East India Dock Road to provide better facilities for the Aberfeldy development area and the Town Hall Stand space and driver facilities to be maintained at existing locations and these facilities to be sensitively designed with developments. Introduction of bus gates and bus priority where possible to minimise bus journey times and protect journey time reliability. Site-specific Construction Logistics Plans (CLPs) Provision of Delivery and Servicing Plans (DSPs); Re-timing deliveries to outside of peak periods

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Appendix A: Strategic Modelling Run Records

LTS Inputs

This study utilises 2031 TfL reference case run A231ie02 as the Do Minimum and pivot point for the derivation of the new AAP Growth scenario LTS run A231th03.

Key inputs to A231th03 include:

- Network: N231IE01
- Trip Ends: T231th02

Revised zone disaggregation parameters (v02_InnerEast) consistent with the Inner East study have been implemented in a post-LTS re-run of the assignment model (cycle 7 only).

Railplan Inputs:

This study utilises 2031 AM TfL reference case inputs as the Do Minimum. A new Do Minimum assignment has been run utilising network RSX1300 and matrix A02431A; the reference for this scenario is THP2001A02431A.

The AAP Growth scenario also utilises network RSX1300, paired with matrix A04831A; the reference for this scenario is THP2004A04831A.

All Railplan assignments have been run with the following parameters:

- Boarding penalties stored in the attribute "@nielbp" have been implemented derived from the 2031 Inner East model (Railplan scenario DLR31amie31am).
- Number of iterations fixed to 60
- Relative Gap stopping criteria = 0.0001
- Normalised Gap stopping criteria = 0.0001

Appendix B: Station Activity

Station	Direction	Change in Boarders	Change in Alighters	% Change in Boarders	% Change in Alighters
	NB	10	116	0%	3%
West Ham	SB	117	6	3%	0%
Star Lana	NB	19	6	1%	1%
Star Lane	SB	-5	-2	-1%	0%
Copping Town (DLD <> Stratford)	NB	188	32	10%	1%
	SB	57	67	1%	2%
Capping Town (DLP <> Contral London)	EB	-47	118	-4%	12%
	WB	-64	65	-2%	2%
Fast India	EB	72	38	43%	6%
East maia	WB	643	25	38%	6%
Blackwall	EB	172	91	41%	4%
Blackwall	WB	724	62	26%	6%
Poplar	NB	43	30	7%	3%
Γοριαι	SB	24	135	3%	11%
Poplar	EB	149	21	15%	1%
Fopiai	WB	41	85	4%	6%
All Spints	NB	253	35	60%	8%
All Saints	SB	344	53	68%	9%
Langdon Bark	NB	408	46	50%	7%
Languon Park	SB	745	113	52%	21%
Dovons Bood	NB	113	40	13%	6%
Devons Road	SB	254	32	26%	8%
Bow Church	NB	-16	118	-9%	13%
Bow Church	SB	20	-7	2%	-2 %
Capping Town (Jubilee)	Canning Town (Jubilee) NB 387 74 15%		15%	1%	
	SB	804	40	4%	2%
Mile End	EB 74 -8 2%	2%	0%		
	WB 303 72		2%	1%	
West Ham	EB	26	76	2%	3%
west ham	WB	-46	42	-1%	0%
Bromley, by Bow	EB	208	73	33%	5%
Biolilley-by-bow	WB	1310	56	35%	4%
Row Poad	EB	18	-22	3%	-2 %
	WB	9	-12	0%	-1%
Mile End	EB 10 9 0% 0%				
WITE ETU	WB	63	229	0%	1%

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Appendix C: PTAL Interventions

Ailsa Wharf and Islay Wharf:

PTAL REPORT Site Details Ailsa Wharf, Ailsa St Grid Ce Descriptio 87451 Standard PTAL calculation Coordinat 538338 18185 2031 forec Date **Calculation Parameters** Day of Week Time Perio M-F AM Peak Walk Speed Bus Walk Access Time (BUS Reliability LU Max. Walk Access Time LU Reliability 4.8 12 0.75 Rail Walk Access Time 12 Rail Reliability 0.75 PTAL Intervention Data uency (v SWT TAT 불 5 2.78 8.00 10.7 2.78 0.5 1.3 6 3.2 7.00 10.2 2.92 0.5 1.4 Increase frequency from 7.5 3.2 6.00 9.27 3.24 1 3.24Add bus route similar 5 5.88 8.00 13.8 2.1 0.5 1.0 Extend the 488 to Leva Bus Bus Bus Bus Lochnagar StrD8 222.25 Poplar Baptis 309 Poplar Baptis NEW ROUTE (similar to Levan Roa 488 261.4 1.4 Increase frequency from 261.4 470 LUL LUL Langdon Par STRATF-LEWISHAM 7.58.604.713.32.2517.58.604.713.32.250.5 688.36 688.36 2.25 1.1 Create a new direct ped Langdon Par STRATF-CNRYWH' and cycle crossing at Twelvetrees Crescent and Bromley-by-Bow Barking-Hammersmith' Bromley-by-B 'Hammersmith-Barki Bromley-by-B EalingBwy-Upmins Bromley-by-B Upminster-Ealing Bromley-by-B Richmond-Upminste Bromley-by-B Upminster-Richmo Bromley-by-B Wimbledon-Barki Bromley-by-B Barking-Wimbled 4.50 15.88 1.89 0.5 4.50 15.8 1.8 0.5 4.50 15.8 1.8 0.5 4.50 15.8 1.8 0.5 4.50 15.8 1.8 0.5 4.50 15.8 1.8 0.5 4.50 15.8 1.8 0.5 4.50 15.8 1.8 0.5 4.50 15.8 1.8 0.5 4.50 15.8 1.8 0.5 910 910 910 910 910 910 910 LUL LUL LUL LUL LUL LUL LUL 0.94 remove the guard r 0.94 0.94

Aberfeldy Estate, Leven Road Gasworks and Blackwall Trading Estate:

Site Details 28 Leven Rd, Aberfeldy Village, London E14 0GY Grid Cell 86437 Description: Standard PTAL calculation Coordinates 538354 181659 Date: 2031 forecast Standard PTAL calculation Calculation Parameters Day of Week: M-F Time Period: AM Peak Walk Speed: 4.8 Bus Walk Access Time (mins): 8 BUS Reliability Factor: 0.75 Nail Nalk Access Time (mins):12 Rail Walk Access Time (mins):12 Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75
Calculation Parameters Day of Week: M-F Time Period: AM Peak Walk Speed: 4.8 Bus Walk Access Time (mins): 8 BUS Reliability Factor: 2 LU Max. Walk Access Time (mins):12 Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75 Data Calculati A B C D E M ogo 00 00 00 00 Mode 00
Calculation Parameters Standard calculati Day of Week: M-F Time Period: AM Peak Walk Speed: 4.8 Bus Walk Access Time (mins): 8 BUS Reliability Factor: 2 LU Max. Walk Access Time (mins):12 Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75 Data Calculati A B C D E F Max B B C D E F B B C <td< th=""></td<>
Day of Week: M-F Time Period: AM Peak Walk Speed: 4.8 Bus Walk Access Time (mins): 8 BUS Reliability Factor: 2 LU Max. Walk Access Time (mins):12 Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75 Data Calculation Calculation A B C D E F Value Calculation
Time Period: AM Peak Walk Speed: 4.8 Bus Walk Access Time (mins): 8 BUS Reliability Factor: 2 LU Max. Walk Access Time (mink2): LU Reliability Factor: 0.75 Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75 Data Calcule A B C D E F Tree Valk A B C D E F Mode S B C D E F S B C D E F S C D E F S C D E F S C D E F S C C C C C C C C C C C C C C C C C C C
Bus Walk Access Time (mins): 8 BUS Reliability Factor: 2 LU Max. Walk Access Time (mins2: LU Reliability Factor: 0.75 Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75 Pata Calcula A B C D E F Variable Calcula B C D E F Variable Calcula C
Bus Reliability Factor: 2 LU Max. Walk Access Time (mink2: LU Reliability Factor: 0.75 Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75 Data Calcula A B C D E F Image: State of the sta
LU Reliability Factor: 0.75 Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75 Data Calcula A B C D E F Valk Time No calcula B C D E F Free Lue Rail Reliability Factor: 0.75
Rail Walk Access Time (mins):12 Rail Reliability Factor: 0.75 Data Data Calcula A B C D F Mode Value Frequency (rp.) Galaxie
B C D E F A B C D E F Mode Stop Route Time Time
Data Calcula A B C D E F Mode Stop Route Calcula Route Calcula B C D E F Mode C D E F Naik Time (mins Calcula B C D E F Mode C D E F Mode C D C D C C C C C C C C C C C C C C C
Data Data Calcula A B C D E F Mode Stopp Route F Walk Time (mins)
A B C D E F Walk Time (mins) D Distance (meters) Stop
Frequency (vph) Distance (meters Route Stop
1010 170 0 E 3 E
Bus ABROTI ROAD A309 312.9 6 3.
Bus Levan Road 488 312.9 5 3.
Bus ABBOTT ROAD ANEW ROUTE (similar to 309) 312.9 7.5 3.
Lungdon Park STRATF-LEWISHAM 7/9 7.5 9.1

16 Street Ives Pl, London 85931 Standard PTAL calculation 538577 18157 2031 forec **Site Details** Grid Ce Descriptio Coordinat Date **Calculation Parameters** Day of Week Time Perio Walk Speed Bus Walk Access Time (BUS Reliability LU Max. Walk Access Time LU Reliability Rail Walk Access Time Rail Reliability M-F AM Peak 4.8 2 12 0.75 12 0.75 Data PTAL Intervention I Mode Leven Roa 309 Abbott Road D8 Brunswick Roall Levan Roa 488 Leven Roa NEW ROUTE (similar to Bus Bus Bus Bus Bus 7.5 11.6 4.7 16.4 1.8 0.5 0.9 7.5 11.6 4.7 16.4 1.8 0.5 0.9 Add Option 2 pedestrian across River lea & to get to Star 7.5 6.88 4.75 11.63 2.58 1 2.58Lane DLR stat LUL LUL BANK-WWARS 'TWRGWAY-BECKTON East In East In 934. 934. Star Lane WWARSL-STRATINT ' 1 550 7.5 6.88 4.75 11.63 2.58 13.57 Sum of Al's PTAL 3

Aberfeldy Estate, Leven Road Gasworks and Blackwall Trading Estate:

PTAL REPORT

Trinity Bouy Wharf Site

PTAL REPORT										
Site Details Grid Ce Descriptio Coordinat	Fittingshop E 81905 Standard PTAL c 539419 180736	uilding 79 Trinity Buoy alculation								
Date	2031 forec									
Calculation Parameters										
Day of Nook	ME		Stand	ard cald	culation					
Time Perio	M-r AM Peak									
Walk Speed	4.8		This is	s a stan	dard PTA	L calcua	altion for	a sample	e locatio	on.
Bus Walk Access Time (8									
BUS Reliability	2									
LU Max. Walk Access Time	12									
LU RELIADILITY	0.75									
Rail Reliability	0.75									
harr herrability	0175									
Data				,	alculation	-				PTAL Intervention
A	в	с	D E	F	G	, +	1 1	J	к	L
Mode	Stop	Route	stance (meter		SWT (mins)		TAT (mine)	Weight	₽	
Bus	Leamouth Road	D3	321.2	8	4.02	5.75	9.7	3.07	1	3.07 A new walking and cycle
										over the mouth of the Rive and a new walking and cyc route along the Thameside
Bus	SILVERTOWN WV	474	560	5	7.00	8.00	15.00	2.00	0.5	1.00West developme
LUL	East In	BANK-WWARS	859.03	7.5	10.7	4.7	15.4	1.9	0.5	0.97
LUL	East In	'TWRGWAY-BECKTON	859.03	7.5	10.7	4.7	15.4	1.9	0.5	0.97
										A new Walking and cycle over the River Lea linking Limmo Peninsula development site and Canning Town stat: to Trinity Buoy Wharf and t
LUL	Canning Town	'WembleyPark-Stratfo '	855	7	10.69	5.04	15.72	1.91	0.5	0.95River Tham
LUL	Canning Tow	'Stratford-Will	855	7.63	10.6	4.68	15.3	1.9	0.5	0.98
LUL	Canning Tow	'Stanmore-Strat	855	20.34	10.6	2.22	12.9	2.32	1	2.32
						_	Sum	of Al's		10.26
							Þ	τΔι		3

