# Chapter 7: Transport and Accessibility

| TRANSPORT AND ACCESSIBILITY | |
|---|---|
| **AUTHOR** | Steer |
| **SUPPORTING APPENDIX** | ES Volume 3, Appendix: Transport and Accessibility:<br>Annex 1: Legislation and Policy Context.<br><br>Other Planning Application Documents:<br>Transport Assessment (TA) – standalone document submitted alongside the OPA. |
| **KEY CONSIDERATIONS** | The assessment will address the potential for the following effects with regard to traffic and transport:<br>• Short- or medium-term disturbance to receptors arising from the construction works and associated traffic including an assessment of vehicle trips, movements and safety during the enabling works and construction works period;<br>• Changes to the flows of traffic on the local highway network when the Proposed Development (Maximum Transport Scheme) is operational and any consequential effects on driver delay and highway safety;<br>• Change in the demand arising from the completed Proposed Development on Public Transport services;<br>• Effects on pedestrian and cycling journeys, accessibility and facilities; and<br>• Effects on pedestrians in terms of severance, delay, amenity, fear and intimidation |
| **CONSULTATION** | . LBTH's Transport Planning Team Lead was consulted and agreed to the suggested approaches on 6 April 2020. Further details are provided in **ES Volume 1, Chapter 2: EIA Methodology**) with key points agreed comprising:<br>• Assessment of the Proposed Development against a future traffic baseline and not against the existing baseline;<br>• A combination of both 2019 traffic survey data and future traffic flow data from TfL strategic LoHAM highway model has been obtained and used for the assessment;<br>• It will be assumed all construction freight will be by road; and<br>• The setting of targets for river bus use will not be provided in the assessment.<br>**Other Consultation**<br>The assessment presented in this ES chapter has been undertaken following additional consultation with LBTH and TfL in respect of the TA, in particular the approach to trip generation, assessment scenarios, highway and public transport modelling. Further details of the consultation with these key stakeholders, inclusive of their comments, are presented in the TA.<br>The preparation of this ES Chapter has taken into consideration the consultation comments and feedback received. |

## ASSESSMENT METHODOLOGY

### *Outline Application Methodology*

**7.1** Due to the outline nature of the OPA, the assessment presented in this chapter focuses on the reasonable worst-case scenario for transport and accessibility; that is a scenario which would generate the maximum number of trips based on the proposed use classes and their respective trip rates and mode shares, as well as the maximum proposed floor space areas. It was agreed with TfL and the LBTH that the land uses and floor areas within the Development Specification submitted as part of the OPA, which generate both the maximum quantum of vehicular trips ('Maximum Traffic') and public transport trips ('Maximum Public Transport') would be assessed. In working through the trip generation calculations, it transpired that both scenarios are generated from the same quantum and mix of development, comprising the maximum office and retail floorspace, with the remainder (up to the maximum site-wide floorspace) formed by serviced apartments. This is referred to as the 'Maximum Transport Generating' i.e. Maximum Transport Scheme which has been assessed to provide a worst-case assessment across all modes of transport. The trips associated with the Maximum Transport Scheme are also considered to present a reasonable worst-case assessment for the pedestrian analysis, as the walking trips also account for those using public transport.

**7.2** An Indicative Scheme has also been developed which demonstrates one interpretation of the Parameters and which represents a proportionate and realistic assessment for a quantum and mix of development which would be likely to come forward. The Indicative Scheme is considered within this ES chapter in terms of trip generation, but only to demonstrate that both the 'Maximum Traffic' and 'Maximum Public Transport' scenarios provide a reasonable worst-case for assessment purposes.

**7.3** Further details on the scenarios tested are provided in Table 7.2 of this Chapter.

### *Defining the Baseline*

*Baseline Condition*

**7.4** This ES chapter assumes the year 2019 as the Baseline year. This represents the year within which the traffic and pedestrian count surveys (which have been confirmed as being representative of baseline conditions by TfL) were undertaken and provides a full calendar year of other transport data. Present-day transport baseline conditions around the Site have been characterised by means of desktop research, surveys and a number of site visits. The following elements have been reviewed for the purpose of establishing the baseline conditions:

- Collision data for the most recent publicly available three-year period up to and including December 2018, for roads within the vicinity of the Site and key routes forming part of the agreed Active Travel Zone;
- A Public Transport Accessibility Level (PTAL) assessment of the Site;
- The existing level of Public Transport capacity in the vicinity of the Site;
- Traffic survey data (refer to Table 7.1); and
- Pedestrian survey data conducted in 2016 and 2019 (refer to Table 7.1)

**7.5** The existing transport networks within the vicinity of the Site have been reviewed, with primary focus on Hertsmere Road to the west, Upper Bank Street to the east and Aspen Way to the north of the Site, as these are the roads expected to be affected and form the agreed study area for junction capacity analysis with TfL. Pedestrian and cycle routes to key destinations forming the Active Travel Zone (ATZ) were agreed with TfL and the LBTH, however, as per correspondence and agreement with TfL Spatial Planning their assessment has not been carried out due to the interruption caused by COVID-19 restrictions. Desktop research and previous Site observations have therefore been used to qualitatively assess pedestrian and cycle routes within the vicinity of the Site.

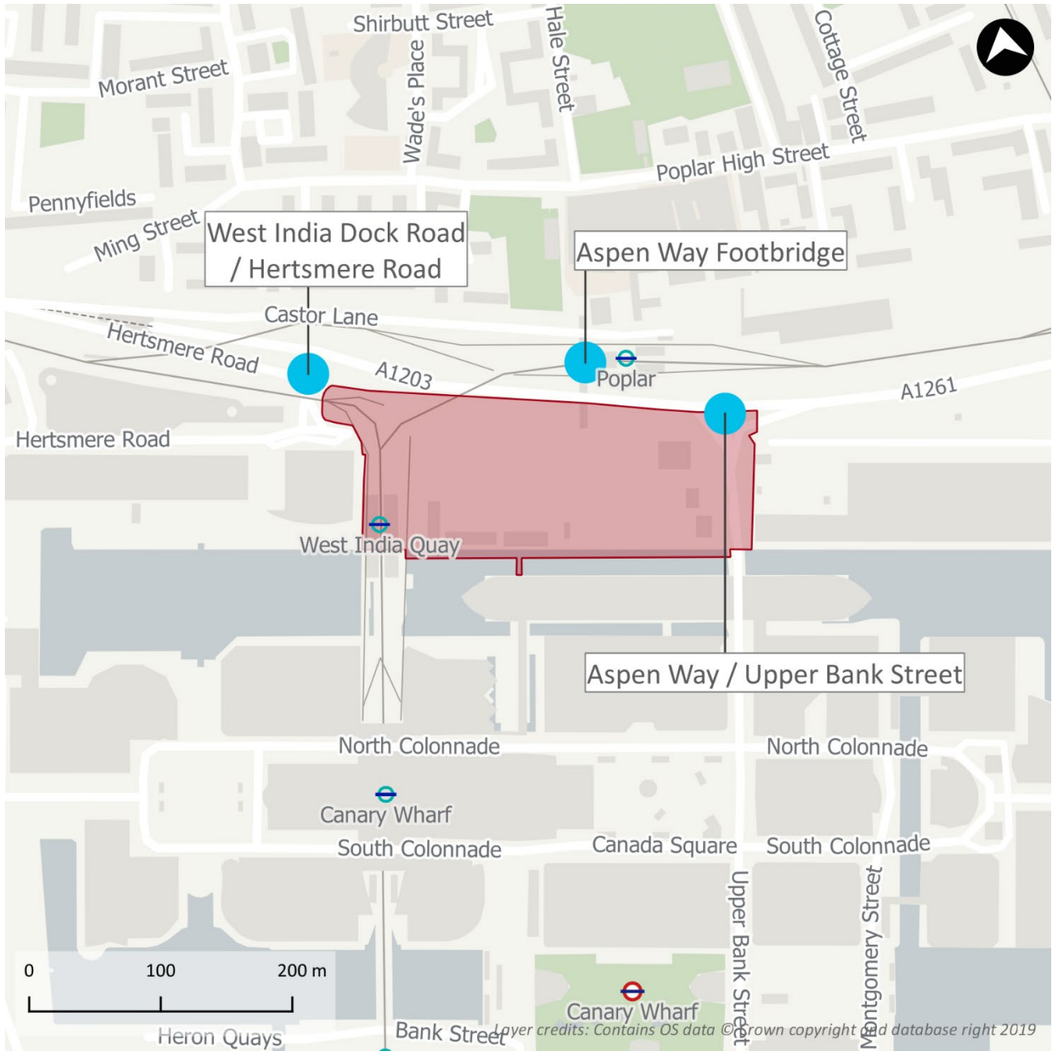
**7.6** The traffic survey data used for the assessment has been analysed to determine the weekday AM and PM peak hours of 08:00 to 09:00 and 17:00 to 18:00 respectively. Therefore, the highway and public transport impact assessments have focused on these hours to provide a reasonable worst-case assessment.

**7.7** A summary of the surveys and timing undertaken is presented in Table 7.1. A plan showing the locations of the surveys is presented in Figure 7.1. These survey dates and timings were confirmed as acceptable with TfL's Network Performance Modelling Liaison.

**Table 7.1 Transport Survey Summary**

| Type of Survey | Survey Locations | Dates | Time Periods |
|---|---|---|---|
| Manual Classified Counts (MCCs) | Aspen Way / Upper Bank Street | Tuesday 3rd December 2019 | 07:00 – 10:00<br>16:00 – 19:00 |
| | West India Dock Road / Hertsmere Road | Tuesday 17th December 2019 | |
| Pedestrian Counts | Aspen Way Footbridge | Thursday 16th June 2016 | 07:00 – 10:00<br>16:00 – 19:00 |
| | Aspen Way / Upper Bank Street | Tuesday 3rd December 2019 | 07:00 – 10:00<br>16:00 – 19:00 |

**Figure 7.1 Survey Location**




**7.8** The Public Transport study area comprises all buses serving the local area within an 8 minute walk of the Site, which comprises the services on East India Dock Road to the north and on South and North Colonnade to the south. Impact on the following rail lines was assessed:

- Jubilee Line, Canary Wharf Station;
- Elizabeth Line, Canary Wharf Station (future assessment based on published service information); and
- DLR, West India Quay and Poplar Stations.

*Traffic and Transport – Assessment Years*

**7.9** For the purposes of assessing the Public Transport rail network (Jubilee Line / DLR / Elizabeth Line) and highway network in the future, it was agreed with TfL that Railplan v7.2 and the LoHAM (London Highway Assessment Model) strategic traffic model data should be used.

**7.10** The Proposed Development is expected to be completed and operational by 2029, which forms the development's future baseline, however the above strategic model outputs used in the assessment are provided for 2031 and 2041. The future transport baseline year of 2031 has therefore been used as it represents the first intersectional year for which strategic model outputs are provided and the Proposed Development is likely to be completed (i.e. 2029).

**7.11** For the purposes of the future baseline assessment, it has been agreed with TfL that all cumulative schemes (as presented in **ES Volume 1, Chapter 2: EIA Methodology** and **ES Volume 3, Appendix: Introduction and EIA Methodology**) are included within the 2031 data provided. Both the Railplan v7.2 and LoHam model uses population and employment forecasting from the London Transportation Study (LTS) v7.2 model. It is not possible to disaggregate the cumulative schemes from the 2031 Railplan v7.2 and LoHAM future baseline, so no future baseline with development assessment (excluding cumulative schemes) could be undertaken.

**7.12** Additionally, the future baseline provided by these models also includes 2007 North Quay Consented Scheme (the 2007 Consent), which was lawfully implemented in 2016. In order to assess the impact of the Proposed Development in isolation and without double counting of the 2007 Consent and the proposed scheme (Proposed Development) in the future baseline, the 2007 Consent's trips have been removed from the local transport network prior to the Proposed Development trips being added. A robust methodology for removing the 2007 Consent's trips from the future baseline within the strategic public transport and highway models has been agreed in principle with TfL

**7.13** The impact of the Proposed Development trips on the public transport network and highway network has then been assessed using the outputs from the Railplan and LoHAM models. This approach has been agreed with TfL during pre-application discussions.

**7.14** On this basis, the following assessments have been considered, as agreed with TfL and the LBTH.

**Table 7.2 Traffic and Transport Assessment Scenarios**

| Scenario | Description |
|---|---|
| Scenario 1 – 2019 Baseline Assessment | Based on survey data and excluding 2007 Consent and the Proposed Development |
| Scenario 2a – 2031 Reference Case Base | Including cumulative schemes and the 2007 Consent, but excluding the Proposed Development |
| Scenario 2b – 2031 Reference Case Base Minus | Including cumulative schemes, but excluding 2007 Consent and the Proposed Development |
| Scenario 3 – 2031 Future Baseline (Do Something) Maximum Traffic | 'Reference Case Base Minus' plus the Proposed Development (maximum traffic generating scheme )<br>*Note: this uses the Maximum Transport Generating scenario. See paragraph 7.1* |
| Scenario 4 – 2031 Future Baseline (Do Something) Maximum Public Transport | 'Reference Case Base Minus' plus the Proposed Development (maximum public transport generating scheme)<br>*Note: this uses the Maximum Transport Generating scenario. See paragraph 7.1* |

*Evolution of the Baseline*

**7.15** The EIA Regulations require that the likely evolution of baseline is considered in the event that the Proposed Development were not to come forward.

**7.16** In terms of the future baseline traffic flows and public transport demand, Scenario 2b corresponding with the 2031 Reference Case Base Minus scenario (as presented in Table 7.2) represents the future baseline upon which the impact of the Proposed Development trips are assessed. This scenario also represents how the baseline could evolve.

### *Impact Assessment Methodology*

*IEMA Guidance – Overview of Assessment Approach*

**7.17** The 'Guidelines for the Environmental Assessment of Road Traffic, IEMA, 1993'[1] set out a number of potential environmental effects relating to highways and transport considerations which potentially require assessment. Using the guidance as a starting point, and drawing upon best practice and recent trends in the industry, those which relate to this assessment are:

- Severance;
- Delay (Driver, Pedestrian, Cycle, Public Transport);
- Amenity;
- Fear and Intimidation;
- Accidents and Safety; and
- Hazardous Loads.

**7.18** Each of the above environmental impacts are discussed in turn below.

[1] *Guidelines for the Environmental Assessment of Road Traffic, IEMA, 1993'*

*Severance*

**7.19** Severance is defined by the IEMA Guidance as (refer paragraph 4.27):

*"…the perceived division that can occur within a community when it becomes separated by a major traffic artery. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to quite minor traffic flows if they impede pedestrian access to essential facilities".*

**7.20** Severance has been assessed by considering the existing and future baselines, and the predicted change in traffic flows on each road link within the study area, defined as the links which are likely to be affected by the Proposed Development and those forming part of the network study area agreed with TfL, including Aspen Way, Upper Bank Street, Hertsmere Road and Limehouse Link.

*Delay (Driver, Pedestrian, Cycle, Public Transport)*

**7.21** The IEMA guidance refers to potential delays to drivers and to pedestrians. Users of other modes can also experience delays, such as cyclists and those travelling by bus and rail.

**7.22** Drawing upon the IEMA Guidance and professional experience, driver delay and delay to bus users may change where:

- Traffic flows change at junctions;
- New junctions are introduced;
- Existing junctions are changed;
- Speeds on existing roads or accesses are changed;
- Existing roads or accesses are closed;
- New roads or accesses are opened;
- Frequency of use of controlled pedestrian or cycle crossings change; and
- New controlled pedestrian or cycle crossings are introduced.

**7.23** Driver delay has been assessed using a combined LinSig model of both the Upper Bank Street/Aspen Way and Hertsmere Road/West India Dock Road junctions and which considers the change in traffic flows on each resulting from the Proposed Development. These two junctions are expected to be affected by all vehicular traffic generated by the Proposed Development during both construction and operation and constitute the only significant junctions within the highway study area, as agreed with TfL's Network Performance Modelling Liaison. The LinSig results provide a Degree of Saturation, which is the percentage of the junction capacity which is being used and the Mean Maximum Queue, which is the expected maximum length of the queue on each lane, measured in Passenger Car Units (PCU). 1 PCU is equivalent to 5.75m length.

**7.24** The IEMA Guidance notes that the Department of Transport has assumed 30%, 60% and 90% changes in traffic levels should be considered as "low", "medium", and "high" impacts respectively.

**7.25** The IEMA Guidance also notes that increases in traffic of as little as 5% may be considered significant in terms of the capacity criteria of a highway, but not its impact, and the criteria set out within the IEMA Guidance make the higher thresholds more relevant to the assessment of the potential impact of traffic increases.

**7.26** The potential impact of pedestrian and cycle delay has been assessed by considering the number of additional trips anticipated to be generated by the Maximum Transport Generating Scheme, and review of the proposed facilities and infrastructure to be provided by the Proposed Development, relative to the existing baseline. The pedestrian demand analysis also accounts for existing demand, as surveyed during a pedestrian count in June 2016 and shown in Table 7.1, trips from the Poplar Business Park and Blackwall Reach cumulative schemes, estimates for the increased number of trips through the Site due to the improved connectivity to the DLR and wider Canary Wharf Estate, and trips generated by the Elizabeth Line station and Crossrail Place to/from the Poplar area and not associated with the Proposed Development.

**7.27** In particular, pedestrian capacity on the main north/south connections including the Aspen Way Footbridge, Elizabeth Line footbridge and Upper Bank Street has been assessed using a static spreadsheet-based assessment and the following assessment methodologies:

- Passenger Comfort Level ("PCL") analysis – based on TfL's PCL guidance for London's streets, an analysis was undertaken to calculate the expected PCL values given the forecast demand; and
- London Underground station planning analysis – based on LU's station capacity planning guidance, an analysis was undertaken to calculate the expected Fruin's Level of Service ("LoS") values given the forecast demand.

**7.28** The above assessments have been based on the existing widths of the two footbridges and the Upper Bank Street footways.

**7.29** The capacity of the proposed stairs and lifts in the Poplar Plaza pubic realm (the area where the southern end of Aspen Way Footbridge lands within the development) has also been assessed using LU's station planning analysis. This assumes that the existing stair and lift leading to Aspen Way at the southern end of the footbridge are removed. The width of the Poplar Plaza stairs has been taken from the Indicative Scheme to provide a reasonable basis for what may be delivered. For the lifts, two layout options have been assessed; the 'Indicative Scheme' which has two single lifts separated by a series of plazas, and the 'Alternative Option' which has a double lift configuration where both lifts are accessed at the upper level only.

**7.30** Pedestrian and cyclist delay may change where:

- Pedestrians and cyclists cross existing roads where motorised traffic flows are projected to change;
- Pedestrians and cyclists are required to cross new roads;
- Existing roads which pedestrians and cyclists would have crossed are removed;
- Road speeds change;
- Pedestrian and cycle volumes change;
- New crossing facilities are provided; and
- Existing pedestrian crossing facilities change.

**7.31** Delay to bus users may also change where bus routes or bus stops are proposed to be changed, where demand for a bus exceeds capacity and where worsened traffic conditions on bus routes may delay services.

**7.32** Rail delay may change where:

- Passenger areas within stations become congested; and
- Demand for a train exceeds capacity.

*Amenity, Fear and Intimidation*

**7.33** Amenity is defined by the IEMA Guidance as (refer paragraph 4.39):

"*…the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition, and pavement width/separation from traffic. This definition also includes pedestrian fear and intimidation and, can be considered to be a much broader category including consideration of the exposure to noise and pollution, and the overall relationship between pedestrians and traffic.*"

**7.34** The consideration of fear and intimidation is defined by the IEMA Guidance as (refer paragraph 4.40):

"*The impact of this is dependent on the volume of traffic, its HGV composition, its proximity to people or the lack of protection caused by such factors as narrow pavement widths.*"

**7.35** Amenity, fear and intimidation has been considered for pedestrians, cyclists, bus passengers and rail passengers.

*Accidents and Safety*

**7.36** The key issue in assessing accidents and safety is in understanding the potential for change. For example, there can be some small changes in prevailing road safety conditions arising simply due to having a greater number of journeys being made on a network; hence, the more people that are travelling, the more people that are liable to become involved in an accident. By far, the more important issue to consider is how travel and the design of the transport networks interrelate to affect prevailing road safety.

**7.37** In that context, prevailing road safety may change where:

- Material changes are proposed to the form or nature of a transport network; such changes may include changes to the geometry or form of a junction; and
- Material changes are proposed to prevailing travel patterns on transport networks not designed to cater for them; such changes may include introducing pedestrian demand to a rural road without footways or introducing pedestrian demand across a heavily trafficked and/or high-speed road without suitable crossing provision.

*Hazardous Loads*

**7.38** Hazardous loads are considered in the IEMA Guidance as (refer paragraph 4.43):

*"Some developments may involve the transportation of dangerous or hazardous loads by road and this should be recognised within any Environmental Statement. Such movements should include specialist loads which*

*might be involved in the construction or decommissioning phases of the development, in addition to movement associated with the operation of the establishment".*

**7.39** Hazardous loads could include, for example:

- Explosives;
- Gases;
- Flammable liquid;
- Flammable solids;
- Oxidising substances;
- Toxic substances;
- Radioactive material; and
- Corrosive substances.

### *Enabling and Construction*

**7.40** Construction vehicle numbers have been forecast based on the proposed enabling and construction activities and associated programme and is discussed in **ES Volume 1, Chapter 5: Enabling and Construction Works**, outlining the estimated vehicles to the Site throughout the construction programme.

**7.41** Construction vehicles accessing the Site will be managed in accordance with a Construction Logistics Plan (CLP). An outline CLP is being submitted with the planning application, as a standalone chapter within the TA. It is proposed that these plans will be prepared in detail and submitted for approval by the LBTH and TfL prior to commencement of enabling works and construction.

**7.42** The detailed CLP is expected to be secured by planning condition and therefore the measures presented within the outline CLP (forming part of the TA) are considered as mitigation measures and have been accounted for and are detailed within the construction assessment.

**7.43** From the IEMA Guidance, the following potential impacts have been considered for the enabling and construction works.

#### *Severance*

**7.44** The assessment considers that there could be potential impacts generated as part of the enabling and construction traffic. The assessment of severance has been quantitatively assessed.

#### *Driver Delay*

**7.45** The assessment considers that there could be potential impacts generated as part of the enabling and construction traffic. Driver delay has been quantitively assessed.

#### *Public Transport Delay*

**7.46** As part of the CLP being prepared, it is proposed that there will be no parking for construction workers on-site and so workers will be assumed to travel by non-car modes of transport.

**7.47** The volume of construction staff travelling by bus or rail is not expected to materially increase the baseline demand and, where possible, staff on-site will be encouraged to travel outside of peak network times, particularly given that core working hours are 08:00-18:00 during weekdays and 08:00 to 13:00 on Saturdays. The assessment of Public Transport delay will be qualitatively assessed.

#### *Pedestrian and Cycle Delay*

**7.48** The assessment considers that there could be potential impacts generated as part of the enabling and construction traffic. The assessment of pedestrian and cycle delay has been qualitatively assessed.

#### *Amenity, Fear and Intimidation*

**7.49** The assessment considers that there could be potential impacts generated as part of the enabling and construction traffic. The assessment of amenity, fear and intimidation has been qualitatively assessed.

#### *Accidents and Safety*

**7.50** Construction vehicle activity is not expected to result in changes which could affect accidents and safety, as it is considered that road safety will be managed and mitigated through the Construction Logistics and Community Safety (CLOCS) scheme[2], use of contractors registered on the Considerate Contractors Scheme[3] and the CLP.

**7.51** Therefore, potential impacts in connection with accidents and safety during the period of the enabling and construction works are not expected to give rise to significant effects and therefore this matter has been scoped out of this assessment.

#### *Hazardous Loads*

**7.52** The Proposed Development is not expected to generate or attract hazardous loads during the period of the enabling and construction works.

**7.53** Therefore, potential impacts in connection with hazardous loads are not expected to give rise to significant effects and therefore this matter has been scoped out of this assessment.

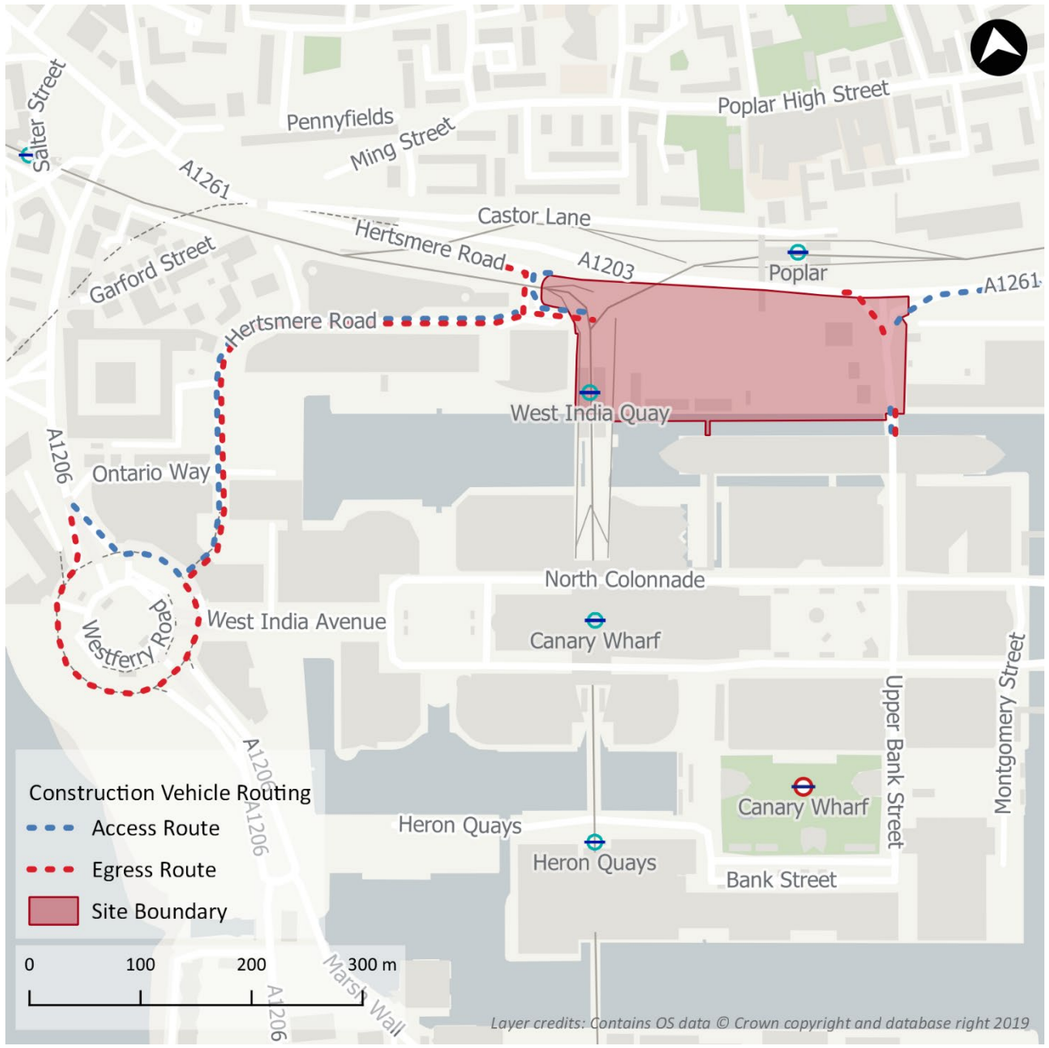
#### *Assumptions*

**7.54** There are multiple possible routes for construction vehicles accessing the Site. These are directly to/from Aspen Way via Hertsmere Road, Upper Bank Street or, in rare cases, to/from Aspen Way via Westferry Circus/Hertsmere Road. The construction vehicle routing is assumed to be distributed among the first two. It is also assumed that vehicle movements, along the westbound/eastbound axis, are distributed with a 3:1 ratio (which has taken into account the anticipated forms of construction material and their source locations, as well the relative location of the Site to the Strategic Road Network (SRN) and the Transport for London Road Network (TLRN) which are suitable for heavy vehicle movements). Construction vehicle routing is presented in Figure 7.2.

[2] *CLOCS is a national standard for ensuring safety is maximised as part of construction vehicle movements - https://www.clocs.org.uk/*

[3] *CCS is a voluntary scheme which sets out a 'Code of Considerate Practice' for developers to follow beyond statutory requirements - https://www.ccscheme.org.uk/*

**Figure 7.2 Construction Vehicle Routeing**




**7.55** The detailed CLP is expected to be secured by planning condition and therefore the measures presented within the outline CLP would be adopted.

**7.56** Industry best practice will be adopted wherever possible to support the construction phase of the Proposed Development. This will be achieved by ensuring that, through the procurement process, the main and sub-contractors employed will be members of or signed up to relevant best practice schemes and initiatives, and will include:

- Safety and environmental standards and programmes;
- Adherence to designated routes;
- Delivery scheduling;
- Use of holding areas;
- Wheel washing facilities; and
- Re-use of material on-site.

**7.57** These measures will also be secured in a CEMP which a contractor and the Applicant would have to comply with as part of the planning conditions and contractual arrangements.

*Phasing*

**7.58** The Proposed Development is expected to come forward in phases. Table 7.3 shows an indicative phasing per structure, complete with the forecast duration. The phasing is based on the Indicative Scheme and therefore represents the reasonable expected phasing at the present time.

**Table 7.3 Proposed Development Indicative Phasing (Indicative Scheme)**

| Phase | Buildings/Structures | Duration (Months) | Dates Works Commence | Dates Works Completed |
|---|---|---|---|---|
| Phase 1 | Marine Promenade<br>Basement<br>NQ.A1 (Residential)<br>NQ.A4 (Residential) | 62 | 10/2021 | 11/2026 |
| Phase 2 | Basement<br>NQ.A5 (Retail)<br>NQ.D3 (Commercial and Retail)<br>NQ.D4 (Serviced Apartments and Retail) | 45 | 10/2022 | 06/2028 |
| Phase 3 | Basement<br>NQ.B1 (Commercial and Retail) | 57 | 02/2024 | 10/2028 |
| Phase 4 | Basement<br>NQ.D1 (Commercial and Retail) | 59 | 09/2024 | 07/2029 |

*Completed Development*

**7.59** As set out in Table 7.2, Scenario 3 '2031 Future Baseline (Do Something) Maximum Traffic' and Scenario 4 '2031 Future Baseline (Do Something) Maximum Public Transport' are those being assessed to determine the impacts of the Proposed Development.

**7.60** A comprehensive trip generation exercise considering multi-modal trips as well as those generated by servicing and delivery vehicles has been carried out to determine the land use classes included within the Development Specification of the OPA which generate the greatest quantum of trips and therefore provide a robust worst-case assessment.

**7.61** Having completed the trip generation exercise, it is clear that Scenario 3 and Scenario 4 are derived from the same set of land use mixes and floor areas within the limits of the Development Specification. This is the Maximum Transport Scheme which comprises the following land uses and floor areas:

**Table 7.4 Worst-Case Development Scenario**

| Land Use | Floor Area (GIA) |
|---|---|
| Retail | 20,000m$^2$ |
| Office | 240,000m$^2$ |
| Serviced Apartments | 95,000m$^2$ (1,617 rooms) |
| **TOTAL** | **355,000m$^2$** |

**7.62** The following matters have been considered as part of the assessment of the completed Proposed Development, based on the IEMA Guidelines and professional judgment as relevant to this ES chapter assessment, to consider the transport and accessibility related environmental effects in line with the EIA Regulations.

**7.63** The Indicative Scheme trip generation is presented in Table 7.20 of this ES chapter. The Indicative Scheme has been outlined for comparative purposes to demonstrate that the Maximum Transport Scheme does provide a robust reasonable worst-case for assessment purposes.

*Severance*

**7.64** The assessment considers that there could be potential impacts generated as part of the completed Proposed Development. Severance has been quantitatively assessed for both Scenario 3 and Scenario 4.

*Driver Delay*

**7.65** The assessment considers that there could be potential impacts generated as part of the completed Proposed Development. Driver delay has been assessed quantitatively for Scenario 3 based on queue lengths from the highway modelling results.

*Public Transport Delay*

**7.66** The assessment considers that there could be potential impacts generated as part of the completed Proposed Development. Public transport delay has been quantitatively assessed for Scenario 4.

*Pedestrian and Cycle Delay*

**7.67** The assessment considers that there could be potential impacts generated as part of the completed Proposed Development. Pedestrian and cycle delay has been quantitatively assessed for Scenario 3 and Scenario 4

*Amenity, Fear and Intimidation*

**7.68** The assessment considers that there could be potential impacts generated as part of the completed Proposed Development. Amenity, fear and intimidation has been qualitatively assessed for Scenario 3 and Scenario 4.

*Accidents and Safety*

**7.69** The assessment considers that there could be potential impacts generated as part of the completed Proposed Development. Pedestrian safety has been quantitatively assessed for Scenario 3 and Scenario 4.

*Hazardous Loads*

**7.70** The completed Proposed Development is not expected to generate or attract hazardous loads when completed, as there are no land uses or activities that would give rise to hazardous materials.

**7.71** Therefore, potential impacts in connection with hazardous loads are not expected to give rise to significant effects and this matter has been scoped out of this assessment.

## *Assumptions and Limitations*

*Mitigation*

**7.72** Where appropriate, mitigation measures are proposed. Some of the measures proposed form part of assessment reports prepared in support of the planning application(s) and form part of the TA, including the following:

- Residential Travel Plan (RTP) – will encourage Public Transport use, walking and cycling amongst residents of the Proposed Development with the aim of reducing private car use;
- Framework Travel Plan (FTP) – will encourage Public Transport use, walking and cycling amongst employees and visitors of the Proposed Development with the aim of reducing private car use; and
- Delivery and Servicing Plan (DSP) – will manage delivery and servicing vehicles and their activities when on-site.

*Trip Generation*

**7.73** In addition to the floor area assumptions provided in Table 7.4 to provide a reasonable worst-case scenario for the purposes of assessments within this ES Chapter, a number of other assumptions have been made in deriving the reasonable worst-case trip generation for the Proposed Development, a description of which follows.

**7.74** A 10% reduction to the floor areas set out in Table 7.4 has been applied for trip generation purposes to account for basement, plant and car/cycle parking that would inherently be required with any scheme to come forward within the Development Specification and Parameters of the OPA. The Indicative Scheme floor areas have been used as a proxy to demonstrate this requirement in Table 7.5 and this assumption has been confirmed as robust by Allies and Morrison as the Applicant's Architects.

**Table 7.5 Indicative Scheme Floor Areas**

| Land Use | Floor Area (GIA) | Percentage of Site-Wide Floorspace |
|---|---|---|
| Office | 174,653 | 49% |
| Residential | 81,744 | 23% |
| Serviced Apartments | 44,081 | 12% |
| Retail | 13,681 | 4% |
| Basement | 28,047 | 11% |
| Internal play space | 2,992 | |
| Plant (roof and mid level) | 9,730 | |
| Total | 354,927 | 100% |

**7.75** As demonstrated, the Indicative Scheme, which is just under the total permitted site-wide floorspace (355,000m$^2$) dedicates 11% of total floor area for basement, internal play space and plant uses. A 10%

reduction to the 'Maximum Transport Scheme floor areas presented in Table 7.4 is therefore considered to provide a robust worst-case assessment for trip generation purposes.

**7.76** The retail land uses are forecast to generate the most vehicular trips of any other land use owing to those associated with deliveries. The delivery trip rates used from surveyed Canary Wharf sites vary between different retail types; A1 retail land uses are forecast to generate 0.7 daily trips per 100 $m^2$ NIA; A3 retail land uses are forecast to generate 2.6 daily trips per 100 $m^2$ NIA. For the purposes of the assessment, a split of 30% for A1 uses and 70% for A3 uses has been applied as that likely to come forward based on the Applicant's experience of retail provision. This is considered to provide an overestimate for A3 uses, but given the higher delivery trip rates associated with this land use, this provides a robust worst-case.

**7.77** A pedestrian capacity assessment has also been carried out for Scenarios 3 and 4. Given that the Elizabeth Line footbridge and Upper Bank Street both provide routes south from the Site, the following distribution scenarios for the southern connections have been tested.

**Table 7.6 Southern Pedestrian Connection Distribution Scenarios**

| Scenario | Elizabeth Line Footbridge | Upper Bank Street |
|---|---|---|
| 1 | 60% | 40% |
| 2 | 75% | 25% |
| 3 | 90% | 10% |

### *Assessment Type – Summary*

**7.78** Table 7.7 sets out the types of assessments that have been undertaken for each potential environmental impact for the enabling and construction works, and completion and operation of the Proposed Development based on the preceding text.

**Table 7.7 Summary of Assessments**

| Potential Environmental Effect | Assessment Scenario | Enabling and Construction | Completed Development |
|---|---|---|---|
| Severance | Scenario 3 | Quantitative | Quantitative |
| | Scenario 4 | | |
| Driver Delay | Scenario 3 | Quantitative | Qualitative and Quantitative |
| Pedestrian / Cyclist Delay | Scenario 3 | Qualitative | Qualitative and Quantitative |
| | Scenario 4 | | |
| Public Transport Delay | Scenario 4 | Qualitative | Qualitative and Quantitative |
| Amenity, Fear and Intimidation | Scenario 3 | Qualitative | Qualitative |
| | Scenario 4 | | |
| Accidents and Safety | Scenario 3 | Scoped Out | Qualitative |
| | Scenario 4 | | |
| Hazardous Loads | Scenario 3 | Scoped Out | Scoped Out |
| | Scenario 4 | | |

### ***Methodology for Defining Effects***

**7.79** The IEMA Guidelines have been used to identify the impact / effect criteria applicable to the assessment. The IEMA Guidance states (paragraph 4.5) that:

*"For many effects there are no simple rules or formulae which define thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed-up by data or quantified information wherever possible*."

### *Receptors and Receptor Sensitivity*

**7.80** The potential receptors are the users of the transport networks (i.e. road, rail, bus, etc) within the study area defined. The criteria that have been used to assess receptor sensitivity are described in Table 7.8.

**Table 7.8 Receptor Sensitivity Criteria**

| Sensitivity | Criteria |
|---|---|
| **High** | Modes of transport which are heavily used (by all users or particularly by vulnerable road users*) relative to other modes within the study area or those which have a low capacity to accommodate change without significant effects arising. |
| **Medium** | Modes of transport which are used (by all users or particularly by vulnerable road users) to an average level relative to other modes within the study area or those which have a moderate capacity to accommodate change without significant effects arising. |
| **Low** | Modes of transport which are lightly used (by all users or particularly by vulnerable road users) relative to other modes within the study area or those which have a high capacity to accommodate change without significant effects arising. |
| **Very Low** | Modes of transport which are very lightly used (by all users or particularly by vulnerable road users) relative to other modes within the study area, based on professional judgement, or those which have a very high capacity to accommodate change without significant effects arising. |

** Vulnerable road users encompass pedestrians, cyclists and subgroups like children and elderly people.*

### *Magnitude of Impact*

**7.81** The criteria used to assess the magnitude of impact are described in Table 7.9 and Table 7.10.

**Table 7.9 Magnitude of Impact Criteria – Delay to all Modes, Amenity, Fear and Intimidation, Accidents and Safety**

| Magnitude | Criteria |
|---|---|
| **High** | Changes which are likely to be perceptible and which would significantly change conditions which would otherwise prevail to the extent that it would significantly affect travel behaviour. |
| **Medium** | Changes which are likely to be perceptible and which would considerably change conditions which would otherwise prevail to the extent that it may affect travel behaviour to a measurable degree. |
| **Low** | Changes which are likely to be perceptible but not the extent that it would considerably change conditions which would otherwise prevail. |
| **Very Low** | Changes which are unlikely to be perceptible. |

**Table 7.10 Magnitude of Impact Criteria – Severance**

| Absolute Change in Flow (or HDV) | Percentage Change in Flow (or HDV) | | | |
|---|---|---|---|---|
| | **0-30%** | **30.01-60%** | **60.01-90%** | **>90%** |
| **<30 vehicles** | Very Low | Very Low | Very Low | Very Low |
| **<60 vehicles** | Very Low | Low | Low | Low |
| **<90 vehicles** | Very Low | Low | Medium | Medium |
| **>90 vehicles** | Very Low | Low | Medium | High |

**7.82** These criteria reflect the guidance set out in paragraph 4.31 of the IEMA Guidelines which state the following:

*"Changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes in severance respectively. These figures have been derived from studies of major changes in traffic flow and therefore should be used cautiously in any environmental assessment."*

**7.83** The inclusion of the absolute change criteria in the leftmost column of Table 7.10 reflects the fact that the percentage change criteria are derived from studies of major changes in traffic flow. This aims to prevent counterintuitive 'default' results such as an increase of four vehicles on a road with an existing flow of three vehicles being classified as a 'high' change.

### *Scale of Effect*

**7.84** The scale of a likely effect has been considered using both the sensitivity of the receptor (Table 7.8) and the magnitude of impact (Table 7.9 and Table 7.10), displayed in Table 7.11.

**Table 7.11 Effect Scale Matrix**

| Receptor Sensitivity | Magnitude of Impact (From Tables 7.9 and 7.10) | | | |
|---|---|---|---|---|
| | **High** | **Medium** | **Low** | **Very Low** |
| **High** | Major | Major | Minor | Minor |
| **Medium** | Major | Moderate | Minor | Negligible |
| **Low** | Moderate | Minor | Minor | Negligible |
| **Very Low** | Minor | Negligible | Negligible | Negligible |

**7.85** In terms of whether an effect is or is not 'significant'; Major and Moderate effects are considered to be 'significant'.

**7.86** Effects that are Minor and Negligible are considered 'not significant'.

### *Effect Duration*

**7.87** Effects are also described by their timescales and outcomes, as follows:

- Permanent or temporary;
- Short- (<5 years), medium- (5-10 years) or long-term (10+ years);
- Direct or Indirect.

**7.88** Temporary, short- and medium-term effects are those associated with the enabling and construction works, and permanent and long-term effects are those associated with the Proposed Development once completed and operational.

**7.89** It is acknowledged that the enabling and construction works are expected to last approximately 8 years which is considered to be long-term. However, as the peak vehicle movements are only expected during the most intensive construction period, the impacts are considered to be short-term.

**7.90** Direct effects result without any intervening factors whilst indirect or 'secondary' effects are not directly caused by an action or trigger or result from something else.

### *Effect Nature*

**7.91** The nature of effects is described as either:

- **Beneficial** – meaning that the changes produce benefits in terms of transport and access (such as reduction of traffic, travel time or patronage, or provision of a new service, access or facility); or
- **Adverse** – meaning that changes produce dis-benefits in terms of transport and access (such as increase of traffic, travel time, patronage or loss of service, access or facility).

## BASELINE CONDITIONS

**7.92** This section provides an overview of the baseline transport conditions within the study area, with regard to the existing highway network, Public Transport accessibility and pedestrian and cyclist facilities and access.

**7.93** The baseline analysis (existing and known future improvements) provides the benchmark against which the future transport movements of the completed Proposed Development has been assessed.

### ***Highway Network***

### *Existing Baseline*

**7.94** The A1261, Aspen Way, is an east-west road link forming part of the Transport for London Road Network (TLRN). Aspen Way diverges into West India Dock Road and the Limehouse Link Tunnel in the west. West India Dock Road provides connections with Westferry Road at the junction next to Westferry DLR station, and the east-west A13 East India Dock Road. The A13 is a major London through route connecting central and east London and south Essex. The road is subject to 40mph speed limits.

**7.95** Upper Bank Street is a north-south internal road link within the Canary Wharf estate. It runs northbound from South Dock along the east of the Canary Wharf estate connecting with the A1261 Aspen Way in the north. It is located east of the Site and passes though the Canary Wharf Elizabeth Line station at North Dock. The road is subject to 20mph speed limits.

**7.96** Hertsmere Road connects to the west of the Site and provides connections with West India Dock Road and Poplar High Street to the north, and Ontario Way and Westferry Circus gyratory to the south.

**7.97** The Site is situated within a Controlled Parking Zone (CPZ) "D". The CPZ restrictions apply Monday to Friday, between 8.30AM and 5.30PM.

**7.98** The Site is not located within the Congestion Charge Zone. The Site will be included within the expanded Ultra-Low Emission Zone, which the Mayor is proposing to expand to cover all areas contained within the North Circular and South Circular by October 2021[4].

*Existing Baseline Traffic Flows*

**7.99** Table 7.12 sets out the existing baseline (2019) two-way traffic flows for selected links that are likely to be affected by the Proposed Development and those which form part of the network study area agreed with TfL.

**Table 7.12 Existing Baseline (2019) Traffic Flows**

| Location | AM Peak (08:00-09:00) Flow | PM Peak (17:00-18:00) Flow |
|---|---|---|
| Aspen Way Eastbound | 2,049 | 3,202 |
| Aspen Way Westbound | 3,600 | 2,699 |
| **Aspen Way 2-Way** | **5,649** | **5,901** |
| Upper Bank Street Northbound | 239 | 502 |
| Upper Bank Street Southbound | 291 | 183 |
| **Upper Bank Street 2-Way** | **530** | **685** |
| Hertsmere Road Northbound | 35 | 157 |
| Hertsmere Road Southbound | 370 | 188 |
| **Hertsmere Road 2-Way** | **405** | **345** |
| Limehouse Link | 2,178 | 1,928 |
| **Limehouse Link (1-way only)** | **2,049** | **3,202** |

**7.100** As shown in Table 7.11, Aspen Way Eastbound and Westbound are among the busiest links in the vicinity of the Site during both the AM and PM peaks, reflecting Aspen Way's strategic nature as a key distributor road. Upper Bank Street and Hertsmere Road by comparison are lightly trafficked. A high proportion of the westbound traffic on Aspen Way continues onto the Limehouse Link, and consequently the flows on this link are also high during the peak hours.

**7.101** An assessment of the collisions occurring within the vicinity of the Site and on key routes forming the ATZ has been conducted and it has been observed that no qualifying Killed Seriously Injured (KSI) events were noted in the assessment area, as per the TA.

*Future Opening Year Baseline – Traffic Flows*

**7.102** Table 7.13 sets out the Future Baseline traffic flows (Scenario 2b). These flows have been derived using the growth factors derived from LoHAM. The 2007 Consent's traffic flows have been deducted in accordance with the percentage reductions provided by TfL.

**Table 7.13 Future Baseline Traffic Flows (2031) (Scenario 2b)**

| Location | AM Peak (08:00-09:00) Flow | PM Peak (17:00-18:00) Flow |
|---|---|---|
| Aspen Way Eastbound | 2,361 | 2,956 |
| Aspen Way Westbound | 3,637 | 3,047 |
| Aspen Way 2-Way | 5,998 | 6,003 |
| Upper Bank Street Northbound | 238 | 463 |
| Upper Bank Street Southbound | 312 | 204 |
| Upper Bank Street 2-Way | 550 | 667 |
| Hertsmere Road Northbound | 54 | 154 |
| Hertsmere Road Southbound | 447 | 224 |
| Hertsmere Road 2-Way | 501 | 378 |
| Limehouse Link | 2,022 | 1,981 |
| Limehouse Link (1-way only) | 2,361 | 2,956 |

## *Public Transport Accessibility*

*Existing Baseline*

**7.103** A 'Public Transport Accessibility Level' (PTAL) assessment has been undertaken using TfL's WebCAT PTAL portal.

**7.104** The Site's currently has a PTAL of 5 ('very good'). The score is expected to improve to 6a ('excellent') by 2021 according to TfL's forecast owing to the planned opening of the Elizabeth Line, immediately south of the Site.

**7.105** Canary Wharf underground station is the closest London Underground station and is served by the Jubilee line. Currently, there are 30tph in the peak hours, in the direction of both Stanmore and Stratford. The line offers a 24-hour service on Friday and Saturday nights.

**7.106** West India Quay and Poplar Stations are located within the immediate vicinity of the Site. Line frequencies during the busiest periods are shown in Table 7.14.

[4] *Website ref - https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/ulez-where-and-when?intcmp=52227*

**Table 7.14 Existing Peak DLR Frequencies (tph)**

| From | To | AM peak (08:00-09:00) | PM peak (17:00-18:00) |
|---|---|---|---|
| West India Quay | Stratford | 15 | 15 |
| | Bank | 15 | 15 |
| | Lewisham | 7 | - |
| | Canary Wharf | 15 | 15 |
| Poplar | Stratford | 15 | 15 |
| | Woolwich Arsenal | 7 | 8 |
| | Bank | 7 | 8 |
| | Tower Gateway | 8 | 7 |
| | Beckton | 8 | 7 |
| | Lewisham | 8 | - |
| | Canary Wharf | 15 | 15 |
| Stratford | West India Quay | 15 | 15 |
| Bank | | - | - |
| Lewisham | | 8 | - |
| Canary Wharf | | 15 | 15 |
| Stratford | Poplar | 15 | 15 |
| Woolwich Arsenal | | 8 | 7 |
| Bank | | 8 | 7 |
| Tower Gateway | | 7 | 7 |
| Beckton | | 7 | 8 |
| Lewisham | | 8 | - |
| Canary Wharf | | 15 | 15 |

**7.107** The Site is located within the vicinity of 8 daytime and 4 dedicated overnight bus routes, connecting the Site to the wider Canary Wharf area, as well as key locations around London – City of London, the West End and Stratford.

**7.108** The bus routes are indicated, and a summary of these services is provided in Table 7.15.

**Table 7.15 Local Bus Services**

| Bus Route | Route | Nearest Bus Stop | Peak Hour Headway (mins) |
|---|---|---|---|
| 135 | Old Street – Crossharbour | Canary Wharf Station (Stop F) | 9-12 |
| 277 | Dalston Junction – Mudchute | | 5-9 |
| D3 | Bethnal Green – Leamouth | | 9-11 |
| D7 | Poplar – Mile End | | 5-7 |
| D8 | Stratford – Crossharbour | | 11-14 |
| N277 | Angel – Mudchute | | Two to four services per hour between 00:52 and 06:08 (towards Mudchute) and 00:23 and 04:45 (towards Angel) |
| N550 | Trafalgar Square – Canning Town Station | | Two to four services per hour between 00:54 and 05:52 (towards Canning Town) and 23:59 and 06:00 (towards Trafalgar Square) |
| 15 | Trafalgar Square – Blackwall Station | Upper North Street (Stop F Westbound; Stop C Eastbound) | 6-10 |
| 115 | Aldgate – East Ham | | 7-11 |
| D6 | London Fields – Mudchute | | 6-8 |
| N15 | Oxford Circus – Romford | | Four to eight services per hour between 01:04 and 05:48 (towards Romford) and 01:06 and 05:19 (towards Oxford Circus) |
| N551 | Trafalgar Square – Beckton | | Two services per hour between 00:38 and 06:04 (towards Beckton) and 23:48 and 06:21 (towards Trafalgar Square) |

**7.109** Currently, there are multiple River Services operating from Canary Wharf Pier to Doubletree Docklands Nelson Dock, North Greenwich and Westminster piers and limited services to Woolwich Arsenal and Battersea Power Station. According to the TfL's (2013) "River Action Plan", TfL is actively looking to increase the passenger numbers on the river services suggesting ample capacity.

*Future Opening Year Baseline*

**7.110** At present time, there are no formal timed commitments to increase the frequency or capacity of Jubilee Line trains by 2029, when the Proposed Development is expected to be operational and/or 2031, which is the future assessment year based on the availability of data in TfL's strategic models.

**7.111** While TfL is currently commissioning new rolling stock for the DLR, expected to be put in service by 2022[5], the DLR capacity assessment has been based on present-day frequencies and rolling stock, as it is unknown whether the new rolling stock will serve the West India Quay and Poplar branches.

**7.112** Canary Wharf Elizabeth Line station is expected to open in 2021, prior to completion of Phase 1. There are 12tph planned in peak times, both in the westbound and eastbound direction. This has been factored in to Scenario 2a and Scenario 2b and forecasts are included in the TfL data which has been used.

**7.113** The Public Transport passenger flows for the 2031 Future Baselines have been acquired from TfL's Railplan strategic model for the Scenario 2b and Scenario 4.

**7.114** Additional information on the public transport assessment methodology is included in chapter 7 of the TA as follows:

- Full methodology and corridor capacities; and
- Line loadings and trips per train based on the TfL Railplan outputs are detailed for the Proposed Development and Scenario 2b – 2031 Future Baseline Minus and Scenario 4 – 2031 Future Baseline with Proposed Development trips.

**7.115** Using professional judgement, it is considered that the Public Transport receptors have a moderate capacity to accommodate change without significant effects arising.

*Pedestrian Accessibility*

*Existing Baseline*

**7.116** There is a relatively comprehensive pedestrian network surrounding the Site with the main routes connecting:

- North via the Aspen Way Footbridge to the Poplar DLR Station and South Poplar;
- East across Upper Bank Street to the Billingsgate Market;
- South across the North Dock to the Canary Wharf Elizabeth Line Station, Canary Wharf Underground Station and the wider Canary Wharf Estate; and
- West to West India Quay Station.

**7.117** All pedestrian routes, bar the eastern route are accessible without the immediate necessity to cross roads. Upper Bank Street can be crossed via a staggered signalised crossing.

**7.118** All pedestrian crossings in the area are suited for people with mobility impairments; they have lowered kerbs, tactile paving, and where signalling is present, there are rotating cones.

*Future Opening Year Baseline*

**7.119** There are no significant changes to the future baseline (Scenario 2b) pedestrian networks within the vicinity of the Site which are considered as part of this assessment. Nonetheless, the impact of cumulative schemes on key routes, including the Aspen Way Footbridge and Elizabeth Line footbridge is considered in relation to the Proposed Development.

*Cycling Accessibility*

*Existing Baseline*

**7.120** The area surrounding the Site is well served by designated cycle routes, both those that are part of the wider London Cycle Network, and other routes, on and off road, with the main routes being:

- Cycleway 3: Barking to Tower Gateway (previously Cycle Superhighway 3) operates in an east-west direction north of the Isle of Dogs, running along Poplar High Street at the northern boundary of the Site; and
- National Cycle Network (NCN) Route 1, a long-distance cycle route ultimately connecting Dover and the Shetland Islands via the east coast of England.

**7.121** There are 10 Santander Cycle Hire stations present within a 10 minutes' walk of the Site, with a total capacity of 346 cycles. These are supplemented by 1,134 free cycle parking spaces located at street level within the Canary Wharf Estate.

*Future Opening Year Baseline*

**7.122** In 2019 consultations began to assess cycling and walking improvements between Hackney and Isle of Dogs, a scheme led by TfL in partnership with the LBTH and London Borough of Hackney. The proposed Cycleway 37 would connect with Cycleway 3 at West India Dock Road, approx. 400m west of the Site, Cycleway 2 at Mile End Road and former Quietway 2 north of Victoria Park.[6][7]

**7.123** Using professional judgement, it is considered that the cyclist receptors have a moderate capacity to accommodate change without significant effects arising.

## RECEPTORS AND RECEPTOR SENSITIVITY

**7.124** There are no new receptors introduced as part of the Proposed Development. Whist the quantum of journeys is expected to increase, the type of people travelling and methods by which they travel are expected to remain consistent during construction, the phased delivery and post completion are as per the existing baseline.

**7.125** The existing Site and the immediate surrounding area is largely commercial in nature and therefore there are not any receptors in the surrounding area considered to be sensitive. Aspen Way / West India Dock Road immediately north of the Site provide a significant barrier and buffer to pedestrian movement and the residential properties in South Poplar. No accident clusters nor particularly congested junctions/links have been identified in the immediate area which would otherwise be identified as a sensitive receptor.

[5] *Website reference - https://tfl.gov.uk/info-for/media/press-releases/2017/november/new-generation-of-dlr-trains-en-route*

[6] *Transport for London (2019) Cycling and walking improvements between Hackney and the Isle of Dogs (website reference - https://consultations.tfl.gov.uk/cycling/hackney-to-isle-of-dogs/results/cyclingandwalkingimprovementsbetweenhackneyandtheisleofdogsconsultationreport.pdf)*

[7] *For the proposed route see - https://consultations.tfl.gov.uk/cycling/hackney-to-isle-of-dogs/results/cyclingandwalkingimprovementsbetweenhackneyandtheisleofdogsconsultationreport.pdf*

**7.126** In terms of sensitive receptors within the study area agreed with TfL for capacity testing, three locations have been identified and their relevant users e.g. vehicles, pedestrian and cyclists considered:

- Upper Bank Street / Aspen Way Junction;
- Hertsmere Road / West India Dock Road Junction; and
- Aspen Way Footbridge.

**7.127** The receptors identified are in line with the worst-case assessment scenarios set out in the preceding sections.

**7.128** The potential receptors considered for assessment include:

- Vehicle drivers;
- Public Transport users (rail, including Underground, DLR and forecast Elizabeth Line users);
- Pedestrians; and
- Cyclists.

**7.129** It is considered that all receptors accounted for within the assessment will be 'medium sensitivity' as each is considered to have '…*a moderate capacity to accommodate change without significant effects arising*.'

**7.130** The following receptors are identified for each impact (as per IEMA Guidelines) for both construction and the completed Proposed Development.

**Table 7.16 Sensitive Receptors for Assessment**

| Potential Environmental Effect | Receptor Description | Construction | Completed Development |
|---|---|---|---|
| Severance | Pedestrians, Cyclists<br>*Impacted by being separated by a major traffic artery; affected by difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself – caused the change in traffic flows* | ✓ | ✓ |
| Driver Delay | Drivers<br>*Delays experienced as a result of the change in traffic flows on the highway network* | ✓ | ✓ |
| Pedestrian / Cyclist Delay | Pedestrians, Cyclists<br>*Delay experienced as a result of additional trips, relative to facilities and infrastructure on the highway network* | ✓ | ✓ |
| Public Transport Delay | Public Transport Users (bus and rail)<br>*Delays experienced as a result of the change in trips relative to the capacity on the Public Transport network* | ✓ | ✓ |
| Amenity, Fear and Intimidation | Pedestrians, Cyclists, Bus and Rail Passengers<br>*The relative pleasantness of a journey, affected by traffic volumes and composition along with pavement width and activity* | ✓ | ✓ |
| Accidents and Safety | Pedestrians, Cyclists<br>*Change introduced by development (i.e. road infrastructure, journeys), which may increase or decrease the risk of accidents* | Scoped Out | ✓ |

# POTENTIAL EFFECTS

## *Enabling and Construction*

**7.131** An overview of information related to the construction works has been provided within **ES Volume 1, Chapter 5: Enabling and Construction Works** of this ES which includes an indicative construction programme, predicted construction traffic flows, vehicle routing and the proposed hours of working. Information relevant to the assessment carried out in this chapter has been presented where necessary.

**7.132** The Proposed Development is expected to come forward in four phases, outlined in Table 7.3, with works planned to begin in autumn 2021 and lasting until summer of 2029. Due to the phased construction, the impacts are expected to vary throughout this period. Hence, the worst-case assessment defined by the highest number of HGV movements expected is presented as part of this sub-section.

### *Construction Vehicle Movements*

**7.133** Enabling works and construction would generate short to medium-term increases in vehicle movements on the highways in the vicinity of the Site. It should also be noted that these increases would not be constant throughout the construction period and consideration has only been given to the highest peak frequency of vehicle movements.

**7.134** An assessment of the anticipated potential effects of construction traffic has been based upon experience of such analysis undertaken for similar schemes within London.

**7.135** The anticipated construction traffic flows associated with the Site are shown in Table 7.17.

**Table 7.17 Estimated Construction Vehicle Trips by Year**

| Year | Number of Vehicles | Approx. Vehicles per week | Approx. Movements per week | Approx. Movements per hour |
|---|---|---|---|---|
| 2021 | 100 | 8 | 15 | 2 |
| 2022 | 11,056 | 213 | 426 | 8 |
| 2023 | 12,460 | 240 | 480 | 8 |
| 2024 | 23,027 | 443 | 886 | 14 |
| 2025 | 19,731 | 380 | 760 | 12 |
| 2026 | 17,988 | 346 | 692 | 12 |
| 2027 | 13,690 | 263 | 526 | 10 |
| 2028 | 5,980 | 115 | 230 | 4 |
| 2029 | 1,755 | 45 | 90 | 2 |

| Year | Number of Vehicles | Approx. Vehicles per week | Approx. Movements per week | Approx. Movements per hour |
|---|---|---|---|---|
| **Total** | **105,787** | **228** | **456** | **8** |
| **Peak Traffic** | **4,000 per month** | **924** | **1,848** | **30** |

**7.136** Due to uneven working hours across the week, (typically 08:00 to 18:00 Monday to Friday and 08:00 to 13:00 on Saturdays), the vehicle movements were calculated on a weekly basis. Based on a 65-hour week it is considered that there would be an average of 8 and a maximum of 30 Heavy Goods Vehicle (HGV) movements (15 into the Site, 15 out) attributed to the construction works during any given daytime hour, or an estimate in order of magnitude of 200 HGV vehicles per day. This represents a worst-case assessment as it considers only the peak operational periods; at other times of construction traffic movements would be less.

### *Construction Vehicle Distribution*

**7.137** Construction vehicles would enter and exit the Site via the A1261 Aspen Way/West India Dock Road using entrances located off Upper Bank Street and Hertsmere Road. The A1261 Aspen Way/West India Dock Road links to strategic arterial routes in the vicinity, thereby avoiding any local roads where the impact of construction traffic would be more pronounced. It should be noted that construction vehicle movements are temporary in nature.

**7.138** As discussed in **ES Volume 1, Chapter 5: Enabling and Construction Works** of this ES, a secondary route via the lower roundabout of Westferry Circus and Hertsmere Road would enable access to the Site in the event that Aspen Way is not traversable. The use of this secondary route is unlikely to be a common occurrence only ever being used when access and egress from Aspen Way is not possible and therefore the assessment of construction vehicle trips on the network considers movements via Aspen Way/West India Dock Road only.

**7.139** The Site was used as a construction compound during the construction of Canary Wharf Elizabeth Line station in the adjacent dock. The existing Site accesses via Hertsmere Road and Upper Bank Street therefore already accommodate HGV movements and are suitable access points for construction traffic. The assessment of the distribution of construction generated traffic takes into account the anticipated forms of construction material and their source locations. Consideration has also been given to the relative location of the Site to the Strategic Road Network (SRN) and the TLRN which are suitable for heavy vehicle movements.

**7.140** The construction traffic distribution used is as follows:

- 75% from/to east, arriving/departing via Aspen Way; and
- 25% from/to west, arriving/departing via West India Dock Road.

**7.141** It has been assumed that 50% of HGVs would use the Hertsmere Road Site access, with the other 50% of HGVs using the Upper Bank Street Site access.

### *Impacts on Vehicle Drivers*

**7.142** The predicted increases in traffic flows during construction above baseline traffic are shown in Table 7.18, using the construction vehicle quantum shown for the peak presented in Table 7.17. The net increases reflect the estimated additional traffic generated by the construction works above the baseline traffic flows which constitute 'Scenario 1'.

**Table 7.18 Construction Vehicle Peak Hour Impact**

| Link | 2019 Base AM Traffic Flow (Two-Way) | Two-Way Construction Movements Per Hour | Percentage Change |
|---|---|---|---|
| Hertsmere Road | 405 | +15 | 3.7% |
| Upper Bank Street | 530 | +15 | 2.8% |
| Aspen Way | 5,649 | +30 | 0.5% |

**7.143** From the above analysis, it can be seen that construction vehicle activity would have a slight impact on traffic volumes in the vicinity of the Site. The greatest change in traffic due to construction would be on Hertsmere Road with an increase of 3.7% during the AM Peak. It should be noted that Upper Bank Street and Hertsmere Road both have low traffic flows at present.

**7.144** The highway capacity assessments presented in this report for 'Scenario 3' show the highway network operates within capacity and as such the level of construction vehicle movements is not considered to have a material effect upon the highway network or cause driver delay. Based on the significance criteria there would be a **Very Low** impact on car drivers of medium sensitivity resulting in a direct, temporary **Negligible** effect on link flows, junction capacity and driver delay. The effect is '**not significant**'.

### *Impacts on Pedestrians and Cyclists*

**7.145** Potential traffic and transportation related effects could arise causing temporary disruption to road users and pedestrians from vehicles (particularly HGVs) entering and leaving the Site. These could include temporary footway closures and diversion of pedestrian and cyclist movements.

**7.146** This may affect pedestrian movement, capacity, severance, delay, fear and intimidation and amenity, however it is considered to be local to immediately outside the Site on Hertsmere Road and Upper Bank Street. No long-term road closures are anticipated and any disruption to pedestrian and cycle routes will be programmed as far as possible and be temporary. Agreement from the local highway authority will be sought, and measures implemented such as diversions and signage.

**7.147** Another potential effect as a result of construction would be mud and dirt on road surfaces. This effect is considered to be temporary and **Negligible** (Not Significant) to pedestrians and cyclists in the presence of inherent mitigation measures set out in **ES Volume 1, Chapter 5 Enabling and Construction Works** which would form part of a CEMP, such as wheel washing.

**7.148** It should be noted that there is currently a low level of pedestrian footfall close to the Site, and so the number of pedestrians affected will be low. The key cycle routes in the vicinity of the Site such as Cycleway 3 (previously Cycle Superhighway 3) would not interact with construction vehicle movements to and from the Site.

**7.149** Based on the effects criteria there would be a:

- Low impact on pedestrians and cyclists receptors of medium sensitivity resulting in a direct, temporary **Minor Adverse** effect on pedestrian and cycle delay;
- Very Low impact on receptors of medium sensitivity resulting in a direct, temporary **Negligible** effect on severance; and

- Low impact on receptors of medium sensitivity resulting in a direct, temporary **Negligible** effect on amenity, fear and intimidation.

**7.150** These effects are 'Not Significant'.

### *Impacts on Public Transport*

**7.151** During the construction period there would be an increased number of workers in the local area who would use the Public Transport network. However, based on the proposed working hours stated in **ES Volume 1, Chapter 5: Enabling and Construction Works,** which would be 08:00 to 18:00 Monday to Friday and 08:00 to 13:00 on Saturdays, the majority of the construction workers would be travelling outside of the peak periods. Based on the significance effects criteria there would be a Very Low impact on a receptor of medium sensitivity resulting in a direct, temporary **Negligible** effect (Not Significant) on public transport delay.

## *Completed Development*

**7.152** Once occupied, the Proposed Development will generate additional movements on the surrounding highway, pedestrian and public transport networks relative to the future baseline (i.e. Scenario 2b).

**7.153** Table 7.19 summarises the Maximum Transport Generating Scheme trip generation giving the trips for the Scenario 3 and Scenario 4 assessments.

**Table 7.19 Proposed Development Trip Generation**

| Mode | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total |
| London Underground | 3,182 | 688 | 3,870 | 587 | 2,480 | 3,066 | 13,800 | 13,649 | 27,450 |
| DLR | 1,470 | 405 | 1,875 | 316 | 1,161 | 1,477 | 6,706 | 6,656 | 13,362 |
| Elizabeth Line | 1,457 | 421 | 1,878 | 335 | 1,145 | 1,480 | 7,111 | 7,004 | 14,116 |
| Bus | 248 | 87 | 335 | 70 | 193 | 263 | 1,450 | 1,406 | 2,856 |
| Taxi | 51 | 22 | 74 | 18 | 39 | 58 | 374 | 357 | 732 |
| Motorcycle | 32 | 5 | 37 | 4 | 25 | 30 | 119 | 119 | 238 |
| Car Driver + Passenger | 11 | 29 | 41 | 17 | 12 | 30 | 194 | 193 | 387 |
| Cycle | 280 | 64 | 344 | 54 | 218 | 273 | 1,248 | 1,233 | 2,481 |
| Walk | 436 | 372 | 808 | 248 | 370 | 618 | 3,723 | 3,642 | 7,365 |
| Other (inc River Bus) | 68 | 27 | 96 | 18 | 56 | 75 | 320 | 323 | 643 |
| **Total** | **7,235** | **2,121** | **9,357** | **1,669** | **5,700** | **7,369** | **35,047** | **34,583** | **69,630** |

**7.154** For comparative purposes only, to consider the trips likely to be generated by the type of mixed-use scheme which could come forward and to demonstrate that a reasonable worst-case is being used for assessment purposes, the trips associated with the Indicative Scheme floor areas are set out in Table 7.20.

**Table 7.20 Indicative Scheme Trip Generation**

| Mode | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total |
| London Underground | 2,586 | 570 | 3,157 | 481 | 2,019 | 2,500 | 11,196 | 11,086 | 22,282 |
| DLR | 1,196 | 342 | 1,538 | 263 | 948 | 1,211 | 5,478 | 5,444 | 10,923 |
| Elizabeth Line | 1,183 | 354 | 1,537 | 277 | 933 | 1,210 | 5,773 | 5,696 | 11,469 |
| Bus | 200 | 72 | 272 | 57 | 156 | 214 | 1,164 | 1,131 | 2,295 |
| Taxi | 41 | 18 | 60 | 15 | 32 | 47 | 297 | 284 | 581 |
| Motorcycle | 26 | 4 | 30 | 4 | 21 | 24 | 97 | 97 | 194 |
| Car Driver + Passenger | 9 | 26 | 35 | 15 | 11 | 26 | 165 | 164 | 329 |
| Cycle | 228 | 53 | 281 | 44 | 178 | 222 | 1,012 | 1,001 | 2,013 |
| Walk | 353 | 323 | 676 | 210 | 305 | 515 | 3,057 | 3,003 | 6,060 |
| Other (inc River Bus) | 56 | 24 | 80 | 16 | 46 | 62 | 268 | 271 | 538 |
| **Total** | **5,879** | **1,786** | **7,665** | **1,383** | **4,648** | **6,031** | **28,506** | **28,177** | **56,683** |

**7.155** As shown in Table 7.20, the Indicative Scheme would generate significantly fewer trips than the 'Maximum Transport Generating Scheme'. The latter is therefore taken forward in the following assessment to provide a reasonable worst-case assessment.

### *Scenario 3 - 2031 Future Baseline (Do Something) Maximum Traffic*

**7.156** Scenario 3 – 2031 Future Baseline (Do Something) Maximum Traffic shows the reasonable worst-case vehicle traffic generating scenario, with results presented below.

**7.157** As part of the Proposed Development, changes are proposed to the Upper Bank Street/Aspen Way junction to reduce the Upper Bank Street approach from three lanes to two to improve pedestrian connections around the Site and the toucan crossing. These changes to the junction would not come forward without the Proposed Development implemented, therefore the proposed junction modifications are only accounted for in Scenario 3 in the tables below, whereas Scenario 2b considers the existing junction arrangement.

*Severance*

**7.158** The potential changes to the local highway flows as a result of Scenario 3 on the Future Baseline (2031) are presented in Table 7.21.

**Table 7.21 Proposed Development – Link Flow Analysis**

| Link | 2019 Baseline (Scenario 1) | | 2031 Baseline Minus (Scenario 2b) | | 2031 + Proposed Development (Scenario 3) | | % Change between 2031 Baseline Minus and 2031 + Proposed Development | |
|---|---|---|---|---|---|---|---|---|
| | AM Peak | PM Peak | AM Peak | PM Peak | AM Peak | PM Peak | AM Peak | PM Peak |
| Aspen Way Eastbound | 2,049 | 3,202 | 2,361 | 2,956 | 2,421 | 2,986 | 3% (60) | 1% (30) |
| Aspen Way Westbound | 3,600 | 2,699 | 3,637 | 3,047 | 3,775 | 3,093 | 4% (138) | 2% (46) |
| **Aspen Way 2-Way** | **5,649** | **5,901** | **5,998** | **6,003** | **6,196** | **6,079** | 3% (198) | 1% (76) |
| Upper Bank Street Northbound | 239 | 502 | 238 | 463 | 274 | 500 | 15% (36) | 8% (37) |
| Upper Bank Street Southbound | 291 | 183 | 312 | 204 | 331 | 212 | 6% (19) | 4% (8) |
| **Upper Bank Street 2-Way** | **530** | **685** | **550** | **667** | **605** | **712** | 10% (55) | 7% (45) |
| Hertsmere Road Northbound | 35 | 157 | 54 | 154 | 156 | 205 | 189% (102) | 33% (51) |
| Hertsmere Road Southbound | 370 | 188 | 447 | 224 | 577 | 289 | 29% (130) | 29% (65) |
| **Hertsmere Road 2-Way** | **405** | **345** | **501** | **378** | **733** | **494** | 46% (232) | 31% (116) |
| Limehouse Link | 2,178 | 1,928 | 2,022 | 1,981 | 2,029 | 1,990 | 0% (7) | 0% (9) |
| **Limehouse Link (1-way only)** | **2,178** | **1,928** | **2,022** | **1,981** | **2,029** | **1,990** | 0% (7) | 0% (9) |

**7.159** As shown in the table above, Aspen Way will experience a small increase in vehicle flows as a result of the Proposed Development, with a maximum 4% increase (westbound) during the AM peak and a 2% increase (westbound) in the PM peak. This shows that the change in traffic flows on Aspen Way due to the Proposed Development will be relatively minor compared to the predicted traffic levels.

**7.160** During the AM peak, Upper Bank Street experiences a maximum 15% increase (northbound) in vehicle flows, lowered to 8% in the PM peak, however this equates to an increase of just 36 and 37 vehicles in the respective peaks. The higher percentage increase in traffic on Upper Bank Street compared to Aspen Way is the result of lower future year (Scenario 2b) traffic flows on this link.

**7.161** Given that Hertsmere Road is the main Site access for the Proposed Development, it unsurprisingly experiences the biggest change in link flows during both peak hours. The single biggest change will be on Hertsmere Road northbound, where flows will increase by 189% during the AM peak and 33% during the PM peak. However, similar to Upper Bank Street, the percentage increase should be considered in the context of even lower future baseline (Scenario 2b) traffic flows on this link.

**7.162** Limehouse Link is forecast not to experience a perceived change in flows (0% change in both AM and PM peak), due to the high baseline traffic and low additional number of vehicles.

**7.163** Based on the above analysis, the Proposed Development would have a Very Low impact on receptors of medium sensitivity resulting in a direct, permanent **Negligible** effect (Not Significant) on severance on Aspen Way, Limehouse Link and Upper Bank Street.

**7.164** The Proposed Development would have a High impact on receptors of medium sensitivity resulting in a direct, permanent **Major Adverse** effect (Significant) on severance on Hertsmere Road. However, whilst the increase in the 'Scenario 3' (with development) traffic on Hertsmere Road is high in comparison with 'Scenario 2b' (without development), the roads have adequate spare capacity to accommodate the additional vehicular demand without detriment to road users. It is worth noting that the Site is an allocated site and that Hertsmere Road would form the main vehicular access for any scheme which comes forward. Therefore, any reasonable quantum of development on the Site would be expected to have a similar impact on Hertsmere Road.

*Driver Delay*

**7.165** Table 7.22 shows the predicted potential effect the Proposed Development vehicle and servicing trips would have on the Upper Bank Street/Aspen Way junction during the AM peak, which represents the reasonable worst-case scenario as Proposed Development trips are greater during this period. The results provided are Degree of Saturation, which is the percentage of the junction capacity which is being used and the Mean Maximum Queue, which is the expected maximum length of the queue on each lane, measured in Passenger Car Units (PCU). 1 PCU is equivalent to 5.75m length.

**7.166** On Aspen Way East, the distribution of traffic over the three lanes was changed in Scenario 3 to make better use of the capacity of the approach.

**Table 7.22 Effect of Proposed Development on Junction Capacity (Degree of Saturation) – AM Peak Hours – Upper Bank Street/Aspen Way (Degree of Saturation and Mean Maximum Queue)**

| Arm | Lane | 2031 Baseline Minus (Scenario 2b) | | 2031 Base Minus + Proposed Development (Scenario 3) | | 2031 Base + Proposed Development % (Scenario 3 compared to Scenario 2b) | |
|---|---|---|---|---|---|---|---|
| Measure | | DoS (%) | MMQ (PCU) | DoS | MMQ | DoS | MMQ |
| Aspen Way (W) | 1 | 63 | 9 | 66 | 10 | +3 | +1 |
| | 2 | 53 | 8 | 55 | 8 | +2 | 0 |
| | 3 | 53 | 7 | 55 | 8 | +2 | +1 |
| Aspen Way (E) | 1 | 86 | 0 | 93 | 0 | +7 | 0 |
| | 2 | 86 | 18 | 93 | 23 | +7 | +5 |
| | 3 | 86 | 19 | 93 | 25 | +7 | +6 |
| | 4 | 86 | 23 | 93 | 31 | +7 | +8 |
| Upper Bank Street | 1 | 31 | 1 | 90 | 7 | +59 | +6 |
| | 2 | 45 | 2 | 90 | 0 | +45 | 0 |
| | 3 | 44 | 0 | 0 | 0 | 0 | 0 |

**Table 7.23 Effect of Proposed Development on Junction Capacity (Degree of Saturation) – AM Peak Hours – Hertsmere Road/West India Dock Road (Degree of Saturation and Mean Maximum Queue)**

| Arm | Lane | 2031 Baseline (Scenario 2b) | | 2031 + Proposed Development (Scenario 3) | | 2031 Base + Proposed Development % (Scenario 3 compared to Scenario 2b) | |
|---|---|---|---|---|---|---|---|
| Measure | | DoS | MMQ | DoS | MMQ | DoS | MMQ |
| West India Dock Road (E) | 1 | 33 | 3 | 45 | 5 | +12 | +2 |
| | 2 | 62 | 4 | 65 | 5 | +3 | +1 |
| | 3 | 62 | 4 | 65 | 5 | +3 | +1 |
| Hertsmere Road | 1 | 12 | 1 | 37 | 2 | +25 | +1 |
| | 2 | 12 | 1 | 37 | 2 | +25 | +1 |
| West India Dock Road (W) | 1 | 15 | 1 | 20 | 1 | +5 | - |

**7.167** Due to the reduction from 3 lanes to 2, Upper Bank Street shows the biggest increase in Degree of Saturation (+59%), although this equates to a queue of just 7 PCU's in Scenario 3, an increase of 6 PCU's from Scenario 2b and a queue length which can comfortably be contained within Upper Bank Street.

**7.168** As shown in Table 7.23, the Degree of Saturation increases on Hertsmere Road by 25% and West India Dock Road (E) by 12% as a result of the Proposed Development. Despite these increases, they would still be operating well within capacity during AM Peak.

**7.169** Based on the mean maximum queue length increases presented above and the effects criteria, there would be a Low impact on receptors of medium sensitivity resulting in a direct, permanent **Minor Adverse** effect (Not Significant) on driver delay.

**7.170** It should be noted that the traffic flows in this scenario assume that there will be no traffic reassignment on the wider network as a result of the Proposed Development. It could be that as the Upper Bank Street junction becomes more congested, traffic will move away from the area, reducing delays. For example; traffic exiting Canary Wharf might choose to use the Preston's Road or Westferry Circus accesses rather than continue to use Upper Bank Street.

*Scenario 4 – 2031 Future Baseline (Do Something) Maximum Public Transport*

**7.171** Scenario 4 – 2031 Future Baseline (Do Something) Maximum Public Transport shows the reasonable worst-case Public Transport generating scenario, with results presented below.

**7.172** The rail links are split into four corridors, considering movements on rail links in relation to the Proposed Development, with the Site being the focal point. As a way of example, the Western Rail Corridor is located west of Canary Wharf, Poplar and West India Quay stations (e.g. Jubilee Line stations between Canary Wharf and Stanmore). The Western and Eastern corridors served by all rail lines – the Jubilee Line, Elizabeth Line and DLR are aggregated in dedicated tables, while the Northern and Southern corridors served only by DLR are presented in a separate table.

*Public Transport Delay*

*Rail Network*

**7.173** Tables 7.24 and 7.25 show the operating capacity of the Jubilee Line, DLR and Elizabeth Line for the western rail corridor in an eastbound and westbound direction of travel for the AM peak hour, as this represents the worst-case peak scenario. The forecast trips generated only by the Proposed Development can be calculated by deducting Scenario 2b values from Scenario 4 results. The impact of the Proposed Development (Scenario 4) against Scenario 2b (without development and without 2007 Consent) is given in the final column.

**Table 7.24 Proposed Development impact on Western Rail Corridor – 2031 AM Peak (Eastbound)**

| Service | 2031 Baseline (Scenario 2a) (08:00-09:00) | 2031 Baseline (Scenario 2b) (08:00-09:00) | 2031 Base + Proposed Development (Scenario 4) Demand (08:00-09:00) | Demand / Capacity | 2031 Base + Proposed Development % (Scenario 4 compared to Scenario 2b) |
|---|---|---|---|---|---|
| Jubilee Line | 24,955 | 21,044 | 23,488 | 80.5% | 8.4% (2,444) |
| DLR | 3,834 | 3,054 | 3,567 | 44.0% | 6.3% (513) |
| Elizabeth Line | 12,890 | 11,161 | 12,326 | 68.5% | 6.5% (1,165) |
| **Total** | **41,679** | **35,260** | **39,382** | **-** | **-** |

**Table 7.25 Proposed Development impact on Western Rail Corridor – 2031 AM Peak (Westbound)**

| Service | 2031 Baseline (Scenario 2a) (08:00-09:00) | 2031 Baseline (Scenario 2b) (08:00-09:00) | 2031 Base + Proposed Development (Scenario 4) Demand (08:00-09:00) | Demand/ Capacity | 2031 Base + Proposed Development % (Scenario 4 compared to Scenario 2b) |
|---|---|---|---|---|---|
| Jubilee Line | 22,699 | 22,112 | 22,641 | 77.6% | 1.8% (529) |
| DLR | 5,510 | 5,452 | 5,522 | 34.1% | 0.4% (71) |
| Elizabeth Line | 17,194 | 16,930 | 17,267 | 95.9% | 1.9% (337) |
| **Total** | **45,404** | **44,494** | **45,430** | **-** | **-** |

**7.174** Tables 7.24 and 7.25 show that the Proposed Development would have the greatest impact on the eastbound services in the AM peak hour; the largest impact being an 8.4% increase in trips on the Jubilee Line (Canada Water to Canary Wharf link). The impact of the Proposed Development would be lower on the westbound services during the AM peak; the largest impact would be a 1.9% increase in trips on Elizabeth Line (Canary Wharf to Whitechapel link).

**7.175** Tables 7.26 and 7.27 show the operating capacity of the Jubilee Line, DLR and Elizabeth Line for the eastern rail corridor in an eastbound and westbound direction of travel for the AM peak hour.

**Table 7.26 Proposed Development impact on Eastern Rail Corridor – 2031 AM Peak (Eastbound)**

| Service | 2031 Baseline (Scenario 2a) (08:00-09:00) | 2031 Baseline (Scenario 2b) (08:00-09:00) | 2031 Base + Proposed Development (Scenario 4) Demand (08:00-09:00) | Demand/ Capacity | 2031 Base + Proposed Development % (Scenario 4 compared to Scenario 2b) |
|---|---|---|---|---|---|
| Jubilee Line | 7,468 | 7,290 | 7,450 | 25.5% | 0.5% (160) |
| DLR | 3,144 | 3,124 | 3,148 | 38.9% | 0.3% (24) |
| Elizabeth Line | 12,890 | 12,828 | 12,913 | 71.7% | 0.5% (84) |
| **Total** | **23,502** | **23,243** | **23,510** | **-** | **-** |

**Table 7.27 Proposed Development impact on Eastern Rail Corridor – 2031 AM Peak (Westbound)**

| Service | 2031 Baseline (Scenario 2a) (08:00-09:00) | 2031 Baseline (Scenario 2b) (08:00-09:00) | 2031 Base + Proposed Development (Scenario 4) Demand (08:00-09:00) | Demand/ Capacity | 2031 Base + Proposed Development % (Scenario 4 compared to Scenario 2b) |
|---|---|---|---|---|---|
| Jubilee Line | 23,308 | 22,127 | 22,865 | 78.4% | 2.5% (738) |
| DLR | 5,195 | 5,065 | 5,151 | 31.8% | 0.5% (85) |
| Elizabeth Line | 15,268 | 14,836 | 15,127 | 84.0% | 1.6% (291) |
| **Total** | **43,771** | **42,028** | **43,143** | **-** | **-** |

**7.176** The impact of the Proposed Development would be less pronounced on the eastern rail corridor during the AM peak, with the largest increase experienced on the Jubilee Line and Elizabeth Line services in both directions (respectively 2.5% increase on the westbound link from North Greenwich to Canary Wharf and to 1.6% from Custom House to Canary Wharf).

**Table 7.28 Proposed Development impact on North and South Corridors – 2031 AM Peak**

| Service | 2031 Baseline (Scenario 2a) (08:00-09:00) | 2031 Baseline (Scenario 2b) (08:00-09:00) | 2031 Base + Proposed Development (Scenario 4) Demand (08:00-09:00) | Demand/ Capacity | 2031 Base + Proposed Development % (Scenario 4 compared to Scenario 2b) |
|---|---|---|---|---|---|
| North Route Northbound | 1,600 | 1,535 | 1,613 | 19% | 1.0% |
| North Route Southbound | 4,965 | 4,537 | 4,818 | 37% | 2.3% |
| South Route Northbound | 1,688 | 791 | 1,381 | 10% | 7.3% |
| South Route Southbound | 4,191 | 4,056 | 4,219 | 34% | 1.4% |

**7.177** On the North and South Corridors served by the DLR and depicted in Table 7.28, the largest increase in number of passengers (7.3%) will occur on the southern section, northbound route (Canary Wharf to West India Quay link). Despite the increase, the link is expected to have ample capacity.

**7.178** Based on observations made on 2019 Canary Wharf Employee Survey data, the AM peak hour has a more concentrated arrival/departure profile than the PM peak hour. During the PM peak hour, trips to/from Canary Wharf are spread over a longer period. In addition, as shown in Tables 7.24 to 7.27, the western rail corridor is the busier rail corridor approaching Canary Wharf, therefore the AM peak hour eastbound on the western rail corridor is therefore considered the worst-case scenario. Based on this, the impact of the Proposed Development on Jubilee Line, DLR and Elizabeth Line services is considered to have a Minor Adverse effect on the western corridor, eastbound direction. It should be noted that the tables show the Jubilee Line, DLR and Elizabeth Line services to operate within capacity in the peak directions of travel during the AM peak hour. The incremental effect of the Proposed Development is Negligible on the western corridor, westbound direction and the eastern corridor in both directions. Jubilee Line, DLR and Elizabeth Line services will have adequate spare capacity to accommodate additional trips generated by the Proposed Development.

**7.179** Based on the significance criteria there would be a Low impact on a receptor of medium sensitivity resulting in a direct, permanent **Minor Adverse** effect (Not Significant) on public transport delay.

*Bus Network*

**7.180** The Proposed Development (Scenario 4) is forecast to generate a total of 248 additional passengers travelling to the Site during the AM (08:00-09:00) peak hour, with 87 additional passengers departing during the AM peak hour above the future baseline (Scenario 2b).

**7.181** Forecast additional bus passengers and the distribution to each service has been assessed to calculate the average additional number of passengers per route and service. The patronage by service is shown in Table 7.29 and Table 7.30 respectively (based on existing service frequencies), which show that there will be an average of four additional inbound passengers and two additional outbound passengers per bus in the AM (08:00-09:00) peak hour.

**Table 7.29 Forecast Bus Demand for the Site – AM Peak Hour (Inbound), Proposed Development**

| Service | Route Assignment (%) | Passengers per hour | Buses per hour | Passengers per bus |
|---|---|---|---|---|
| 15 | 10% | 25 | 8 | 3.3 |
| 115 | 10% | 25 | 7 | 3.7 |
| 135 | 10% | 25 | 6 | 4.3 |
| 277 | 20% | 50 | 9 | 5.8 |
| D3 | 10% | 25 | 6 | 4.1 |
| D6 | 10% | 25 | 9 | 2.9 |
| D7 | 10% | 25 | 10 | 2.5 |
| D8 | 20% | 50 | 5 | 10.3 |
| **Total** | **100%** | **248** | **58** | **4.28 (average)** |

**May not sum due to rounding*

**Table 7.30 Forecast Bus Demand for the Site – AM Peak Hour (Outbound), Proposed Development**

| Service | Route Assignment (%) | Passengers per hour | Buses per hour | Passengers per bus |
|---|---|---|---|---|
| 15 | 10% | 9 | 8 | 1.2 |
| 115 | 10% | 9 | 7 | 1.3 |
| 135 | 10% | 9 | 6 | 1.5 |
| 277 | 20% | 17 | 9 | 2.0 |
| D3 | 10% | 9 | 6 | 1.4 |
| D6 | 10% | 9 | 9 | 1.0 |
| D7 | 10% | 9 | 10 | 0.9 |
| D8 | 20% | 17 | 5 | 3.6 |
| **Total** | **100%** | **87** | **58** | **1.5 (average)** |

**May not sum due to rounding*

**7.182** Given the minor increases in bus patronage resulting from the Proposed Development and in accordance with the effects criteria, there would be a Very Low impact on a receptor of medium sensitivity resulting in a direct, permanent **Negligible** effect (Not Significant) on public transport – bus delay.

*River Services*

**7.183** As shown in Table 7.19, Proposed Development trips forecast to be made by river bus are combined with 'other' modes of transport which fall outside of the categories recorded by Census data. Nonetheless, for the purposes of providing a robust worst-case assessment, all 'other' trips are assumed to be river bus trips.

**7.184** The Proposed Development (Scenario 4) is forecast to generate 96 two-way trips in the AM (08:00-09:00) peak hour, 75 two-way trips in the PM (17:00-18:00) peak hour and 643 two-way daily trips on river services to/from central London and Greenwich from Canary Wharf pier. The Proposed Development would also increase the number of people using the existing ferry to Rotherhithe.

**7.185** Sufficient capacity is expected to be available for river bus service passengers and the Proposed Development is not expected to affect the operation of the river services, apart from increasing its financial viability which is considered beneficial to river bus services.

**7.186** In addition, TfL's (2013) "River Action Plan" is actively seeking to encourage an increase in passenger journeys on the Thames to 12 million a year by 2020, with the Mayor of London and TfL *"recognising that London's river passenger services are not yet reaching their full potential and that action is required to bring about transformational change*".

**7.187** Given the above and in accordance with the effects criteria, there would be a **Very Low** impact on a receptor of medium sensitivity resulting in a direct, permanent **Negligible** effect (Not Significant) on public transport – river delay.

*Pedestrian and Cycle Delay*

**7.188** Once completed and operational, the Proposed Development is expected to enhance the permeability and connectivity of the local area for new and existing pedestrians and cyclists.

**7.189** Walking trips to/from the Site comprise those making dedicated walking trips to/from the local area as well as walking to bus stops and the adjacent DLR, Elizabeth Line and Jubilee Line stations for public transport services. The total two-way walking trips to and from the Proposed Development, based on Scenario 3 and 4 is estimated to be 9,206 and 7,252 in the AM and PM peak hours respectively, with a daily total of 68,273 trips. This is calculated by summing walk trips and public transport trips. Of these, 8,054 and 6,361 two-way person trips during the AM and the PM peak hours respectively would be walking trips and trips between the Site and transport access points.

**7.190** In terms of cycling trips, as per Scenario 3 and Scenario 4, a daily total of 2,481 two-way cycle trips is expected, with 344 trips made in the morning peak and 1,233 made in the afternoon peak.

**7.191** The provision of 4,227 cycle spaces in line with the Draft London Plan for all land uses (except retail short-stay cycle parking) and the Adopted London Plan for retail short-stay parking assumes provision 70% higher than the daily number of cycle trips generated by the Proposed Development under Scenario 3 and Scenario 4. This will be further supplemented by a new Santander Cycle Hire station which would also benefit the wider public within the area.

**7.192** A high-quality, coherent and connected public realm environment will be implemented as part of the Proposed Development, with dedicated pedestrian routes to local public transport nodes including Poplar DLR and Crossrail at Canary Wharf.

**7.193** The benefits local to the Site would be:

- Elimination of pedestrian severance given the Proposed Development would facilitate improved movement to Poplar High Street and Canary Wharf;
- Reduced levels of pedestrian delay due to increased connectivity and permeability of the Site, and quicker north-south connections;
- Lower levels of pedestrian fear and intimidation due to provision of active frontages, lighting and CCTV and improvements to and creation of public amenity spaces; and
- Improved pedestrian amenity due to public realm enhancements, provision of active frontages, seating, landscaping and improvements to open spaces which is considered significant.

**7.194** A pedestrian capacity assessment has been carried out for Scenarios 3 and 4, as outlined in the methodology section. This considers the main north/south connections including the Aspen Way Footbridge, Elizabeth Line footbridge and Upper Bank Street as those likely to be impacted most by the Proposed Development.

**7.195** In the PCL methodology, a maximum PCL of C+ is recommended. In the LU station planning methodology, a maximum flow rate of 40 people per minute per metre is recommended for flat surfaces and 28 people per minute per metre is recommended for stepped surfaces, when experiencing two-way flows.

**7.196** The results for Aspen Way Footbridge using the PCL and LU station planning methodologies are shown in Table 7.31 and Table 7.32 respectively.

**Table 7.31 Aspen Way Footbridge PCL Analysis Results**

| Period | Peak Hour Demand [ppl] | Width (PCL) [m] | Target LoS (PCL) | PCL | Description | Spare Capacity [ppl/hour] |
|---|---|---|---|---|---|---|
| AM | 2,710.60 | 4.3 | C+ | B+ | 31% Restricted Movement | 2,707.40 |
| PM | 2,389.85 | 4.3 | C+ | B+ | 31% Restricted Movement | 3,028.15 |

**Table 7.32 Aspen Way Footbridge LU Station Planning Analysis Results**

| Period | Peak Hour Demand [ppl] | Width (Fruin) [m] | Target LoS (Fruin) [ppl/min/m] | Flow Rate [ppl/min/m] | Description | Spare Capacity [ppl/hour] |
|---|---|---|---|---|---|---|
| AM | 2,710.60 | 4.7 | 40 | 10.38 | LoS A. Free circulation. | 7,733.84 |
| PM | 2,389.85 | 4.7 | 40 | 8.81 | LoS A. Free circulation. | 8,456.30 |

**7.197** Whilst the LU station planning analysis is considered to be the most applicable to the Aspen Way Footbridge, both sets of results show that the width of the footbridge is sufficient to accommodate the forecast demand whilst maintaining pedestrian flow rates that are within the recommended values. TfL's target PCL is C+ (59% Restricted Movement) whereas the analysis demonstrates that PCL B+ (31% Restricted Movement) will still be achieved.

**7.198** The results for Elizabeth Line footbridge using the PCL and LU station planning methodologies are shown in Table 7.33 and Table 7.34 respectively.

**Table 7.33 Elizabeth Line Footbridge PCL Analysis Results**

| Scenario | Distribution | Period | Peak Hour Demand [ppl] | Width (PCL) [m] | Target LoS (PCL) | PCL | Description | Spare Capacity [ppl/hour] |
|---|---|---|---|---|---|---|---|---|
| 1 | 60% | AM | 5,340.63 | 4.91 | C+ | C+ | 59% Restricted Movement | 845.97 |
| 1 | 60% | PM | 4,378.65 | 4.91 | C+ | B | 41% Restricted Movement | 1,807.95 |
| 2 | 75% | AM | 6,675.79 | 4.91 | C+ | C | 69% Restricted Movement | -489.19 |
| 2 | 75% | PM | 5,473.31 | 4.91 | C+ | C+ | 59% Restricted Movement | 713.29 |
| 3 | 90% | AM | 8,010.95 | 4.91 | C+ | D | 100% Restricted Movement | -1,824.35 |
| 3 | 90% | PM | 6,567.97 | 4.91 | C+ | C | 69% Restricted Movement | -381.37 |

**Table 7.34 Elizabeth Line Footbridge LU Station Planning Analysis Results**

| Scenario | Distribution | Period | Peak Hour Demand [ppl] | Width (Fruin) [m] | Target LoS (Fruin) [ppl/min/m] | Flow Rate [ppl/min/m] | Description | Spare Capacity [ppl/hour] |
|---|---|---|---|---|---|---|---|---|
| 1 | 60% | AM | 5,340.63 | 5.01 | 40 | 19.19 | LoS A. Free circulation. | 5,792.70 |
| 1 | 60% | PM | 4,378.65 | 5.01 | 40 | 15.15 | LoS A. Free circulation. | 7,182.89 |
| 2 | 75% | AM | 6,675.79 | 5.01 | 40 | 23.98 | LoS B. Free circulation for one-directional flows. Minor conflicts for reverse and crossing flows. | 4,457.54 |
| 2 | 75% | PM | 5,473.31 | 5.01 | 40 | 18.94 | LoS A. Free circulation. | 6,088.23 |
| 3 | 90% | AM | 8,010.95 | 5.01 | 40 | 28.78 | LoS B. Free circulation for one-directional flows. Minor conflicts for reverse and crossing flows. | 3,122.38 |
| 3 | 90% | PM | 6,567.97 | 5.01 | 40 | 22.72 | LoS A. Free circulation. | 4,993.57 |

**7.199** The PCL analysis for the Elizabeth Line footbridge has been carried out for consistency with the Aspen Way Footbridge and Upper Bank Street analysis, however the PCL analysis is not considered relevant as this is typically applied to streets, whereas the LU station planning analysis applies to station access for TfL infrastructure.

**7.200** The results of the LU station planning analysis, show that the width of the footbridge is sufficient to accommodate the forecast demand whilst maintaining pedestrian flow rates that are within the recommended values in all three scenarios.

**7.201** The results for Upper Bank Street using the PCL and LU station planning methodologies are shown in Table 7.35 and Table 7.36 respectively.

**Table 7.35 Upper Bank Street PCL Analysis Results**

| Scenario | Distribution | Period | Peak Hour Demand [ppl] | Width (PCL) [m] | Target LoS (PCL) | PCL | Description | Spare Capacity [ppl/hour] |
|---|---|---|---|---|---|---|---|---|
| 1 | 40% | AM | 3,560.42 | 3.98 | C+ | B | 41% Restricted Movement | 1,454.38 |
| 1 | 40% | PM | 2,919.10 | 3.98 | C+ | B | 41% Restricted Movement | 2,095.70 |
| 2 | 25% | AM | 2,225.26 | 3.98 | C+ | B+ | 31% Restricted Movement | 2,789.54 |
| 2 | 25% | PM | 1,824.44 | 3.98 | C+ | A- | 22% Restricted Movement | 3,190.36 |
| 3 | 10% | AM | 890.11 | 3.98 | C+ | A | 13% Restricted Movement | 4,124.69 |
| 3 | 10% | PM | 729.77 | 3.98 | C+ | A | 13% Restricted Movement | 4,285.03 |

**Table 7.36 Upper Bank Street LU Station Planning Analysis Results**

| Scenario | Distribution | Period | Peak Hour Demand [ppl] | Width (Fruin) [m] | Target LoS (Fruin) [ppl/min/m] | Flow Rate [ppl/min/m] | Description | Spare Capacity [ppl/hour] |
|---|---|---|---|---|---|---|---|---|
| 1 | 40% | AM | 3,560.42 | 4.38 | 40 | 14.63 | LoS A. Free circulation. | 6,172.91 |
| 1 | 40% | PM | 2,919.10 | 4.38 | 40 | 11.55 | LoS A. Free circulation. | 7,188.60 |
| 2 | 25% | AM | 2,225.26 | 4.38 | 40 | 9.14 | LoS A. Free circulation. | 7,508.07 |
| 2 | 25% | PM | 1,824.44 | 4.38 | 40 | 7.22 | LoS A. Free circulation. | 8,283.26 |

| Scenario | Distribution | Period | Peak Hour Demand [ppl] | Width (Fruin) [m] | Target LoS (Fruin) [ppl/min/m] | Flow Rate [ppl/min/m] | Description | Spare Capacity [ppl/hour] |
|---|---|---|---|---|---|---|---|---|
| 3 | 10% | AM | 890.11 | 4.38 | 40 | 3.66 | LoS A. Free circulation. | 8,843.23 |
| 3 | 10% | PM | 729.77 | 4.38 | 40 | 2.89 | LoS A. Free circulation. | 9,377.92 |

**7.202** Whilst the PCL analysis is considered to be the most applicable to Upper Bank Street, both sets of results show that the width of the footway is sufficient to accommodate the forecast demand whilst maintaining pedestrian flow rates that are within the recommended values.

**7.203** Stair and lift capacity analysis for Poplar Plaza has also been carried out for Scenario 3 and Scenario 4 demand, but based on the Indicative Scheme layout. For the stairs, a single layout option with a stair width of 2 × 1.87m between handrails (giving a total clear width of 3.74m) was assessed. For the lifts, two layout options were assessed, the 'Indicative Scheme' and an 'Indicative Scheme Alternative Option', which incorporate different lift assumptions. The Indicative Scheme has two single lifts separated by a series of plazas, whereas the Alternative Option has a double lift configuration where both lifts are accessed at the upper level only.

**7.204** The results of the Poplar Plaza stair analysis are shown in Table 7.37.

**Table 7.37 Poplar Plaza stair analysis results**

| Period | Peak Hour Demand [ppl] | Width [m] | Target LoS [ppl/min/m] | Flow Rate [ppl/min/m] | Description | Spare Capacity [ppl/hour] | Additional Width [m] |
|---|---|---|---|---|---|---|---|
| AM | 2,684.31 | 3.74 | 28 | 12.93 | LoS A. Free circulation. | 3,130.36 | - |
| PM | 2,334.65 | 3.74 | 28 | 10.83 | LoS A. Free circulation. | 3,703.66 | - |

**7.205** **Table 7.37** shows that there is sufficient stair capacity to accommodate the forecast demand whilst maintaining pedestrian flows rates that are within the recommended values.

**7.206** The results of the Poplar Plaza lift analysis are shown in Table 7.38.

**Table 7.38 Poplar Plaza lift analysis results**

| Layout | Period | Peak Hour Demand [ppl] | No. of Lifts | Loading Capacity [ppl/lift] | Cycle Time [mins/lift] | Total Capacity [ppl/min] | Utilisation [%] | Spare Capacity [ppl/hour] |
|---|---|---|---|---|---|---|---|---|
| Indicative Scheme | AM | 20.58 | 1 | 3.76 | 4.00 | 0.94 | 39.40% | 31.65 |
| Indicative Scheme | PM | 40.85 | 1 | 3.76 | 4.00 | 0.94 | 75.33% | 13.38 |
| Alternative Option | AM | 20.58 | 2 | 3.76 | 8.00 | 0.94 | 39.40% | 31.65 |
| Alternative Option | PM | 40.85 | 2 | 3.76 | 8.00 | 0.94 | 75.33% | 13.38 |

**7.207** Table 7.38 shows that there is sufficient lift capacity in both layout options to accommodate the forecast demand. The assumed lift cycle times used in the analysis (4 minutes per cycle) are significantly above those expected to be employed on the scheme (ca. 72 seconds per cycle). Despite the worst-case assumptions, the assessment shows that there is ample capacity.

**7.208** Given that the Proposed Development significantly improves the permeability and connectivity to and through the Site, and given that sufficient spare capacity is forecast on the main north-south pedestrian routes, the Proposed Development would have a Medium impact on receptors of medium sensitivity resulting in direct, permanent **Moderate Beneficial** effects (Significant) on pedestrian and cycle delay.

*Amenity, Fear and Intimidation*

**7.209** The provision of new high-quality pedestrian and cycle connections through the Site is expected to create a substantially more permeable and attractive place to travel to, from and through. The Proposed Development (Scenarios 3 and 4) comprises significant improvements to the pedestrian and cycle environment relative to the current provision which is expected to benefit not only users of the Proposed Development, but also existing residents and visitors to the Site and surrounding local area. The changes are considered to result in a potential impact of low magnitude.

**7.210** Based on the significance criteria there would be a **Low** impact on receptors of medium sensitivity resulting in a direct, permanent **Moderate Beneficial** effect (Significant) on amenity, fear and intimidation.

*Accidents and Safety*

**7.211** The Proposed Development (Scenarios 3 and 4) has been designed to provide a safe and secure environment. New routes, including the new North Quay Way in particular are designed with suitable visibility and geometry across the highway network, together with appropriate pedestrian and cycle provision.

**7.212** Based on the significance criteria there would be a **Low** impact on receptors of medium sensitivity resulting in a direct, permanent **Minor Beneficial** effect (Not Significant) on accidents and safety.

## MITIGATION MEASURES, MONITORING AND RESIDUAL EFFECTS

### *Enabling and Construction Mitigation*

**7.213** There are no significant adverse effects identified for the period of the construction works. Nonetheless, mitigation measures (no specific monitoring measures have been recommended) are proposed to reduce all adverse effects.

**7.214** It should be noted that the Site has been used as a construction Site in recent years for the construction of the Elizabeth Line Canary Wharf Station. The LBTH is therefore already familiar with how the Site operates with construction vehicles, and the mitigation set out in this ES chapter builds on best practice and previous measures used on the Site.

*Construction Traffic Vehicular Movements*

**7.215** Consideration has been given to the likely numbers of construction vehicles and the routes to and from the Site. The construction vehicles would be managed in accordance with the CLP and auxiliary documents. These documents would be agreed with the LBTH prior to the commencement of works and secured via a planning condition.

**7.216** Based on the measures outlined in the preceding sections, to be implemented via the documents, the residual effects of construction traffic are considered to be **Negligible** (Not Significant) on link flows, junction capacity and driver delay on Aspen Way, Hertsmere Road, Upper Bank Street and the surrounding road network and are temporary in nature.

### *Pedestrians and Cyclists*

**7.217** The impact of construction traffic and activity on pedestrians and cyclists is considered to have a **Negligible** effect (Not Significant) on severance, as well as amenity, fear and intimidation. On the basis that pedestrian and cycle routes could be temporarily closed or diverted to accommodate construction activity, there would be **Minor** effects (Not Significant) on pedestrian and cycle delay.

**7.218** Measures to control and manage pedestrian and cycle movements within the vicinity of the construction site would be set out in the detailed CLP which is to be secured by planning condition. Details on the management of walkways, closures and routing would also be agreed with the LBTH post-planning and prior to commencement of the Proposed Development as part of discharging the expected planning condition(s) or Section 106 Obligation(s).

**7.219** The residual effects of construction traffic and activity on pedestrian and cycle delay would therefore be **Negligible** (Not Significant) with the management measures to be set out through the CLP and auxiliary documents.

## ***Completed Development Mitigation***

### *Traffic Flows and Highways*

**7.220** There is predicted to be a **Negligible** effect (Not Significant) on severance on Aspen Way, Limehouse Link and Upper Bank Street resulting from the Proposed Development. However, there would be a **Major** (Significant) effect on severance on Hertsmere Road.

**7.221** Whilst the absolute increases in vehicle flows in Scenario 3 on Hertsmere Road are high in comparison with the future baseline (Scenario 2b), the road and its junction with West India Dock Road has adequate spare capacity to accommodate the additional vehicular demand without detriment to road users. The Site is an allocated site and Hertsmere Road would form the main vehicular access for any scheme which comes forward. Therefore, any reasonable quantum of development on the Site would be expected to have a similar impact on Hertsmere Road.

**7.222** Further, the completed Proposed Development will be subject to Residential and Framework Travel Plans, a Parking Design and Management Plan and a Delivery and Servicing Plan. These documents encourage further shifts towards more sustainable modes of travel and set out strict management protocols for reducing the impact of vehicles within the Proposed Development and surrounding highway network, as summarised below:

- Residential and Framework Travel Plans – Travel Plans will encourage public transport use, walking and cycling amongst occupants of the Proposed Development with the aim of reducing private car use;
- Parking Design and Management Plan – this will set out the management and operation of the on-site parking provision. This would be in combination with a permit-free agreement; and
- Delivery and Servicing Plan – this will manage the arrival and departure of delivery and servicing vehicles and their activities when on-site.

**7.223** Each of these will be secured via planning conditions or Section 106 Obligations within any planning consent for discharge post-planning.

**7.224** As a result of these measures the residual effects of the Proposed Development are considered to be **Moderate Adverse** (Significant) on severance on Hertsmere Road.

**7.225** Based on the predicted maximum queue length increases, there would be a **Minor Adverse** effect (Not Significant) on driver delay at the Upper Bank Street/Aspen Way junction and the Hertsmere Road/West India Dock Road junction. The measures set out above including the Residential and Framework Travel Plans, Parking Design and Management Plan and Delivery and Servicing Plan will encourage further shifts towards more sustainable modes of travel and set out strict management protocols for reducing the impact of vehicles within the Proposed Development and surrounding highway network which will help to mitigate the effects on driver delay resulting from the Proposed Development.

**7.226** No further mitigation is required as the proposed modifications to the junction are designed to improve pedestrian and cycle amenity in favour of vehicles which is a key aspiration of TfL's healthy streets principles. The residual effect on driver delay is expected to remain **Minor Adverse** (Not Significant) in respect of the Upper Bank Street/Aspen Way and the Hertsmere Road/West India Dock Road junctions.

### *Public Transport*

**7.227** There is predicted to be a **Negligible** effect (Not Significant) on bus services and river transport and a **Minor Adverse** effect (Not Significant) on the Jubilee Line, DLR and Elizabeth Line service capacities. TfL may require contributions towards improving bus frequencies as part of the Proposed Development to accommodate the additional patronage predicted. However, it is considered that the level of increase in passengers predicted could be adequately accommodated on the network.

**7.228** Whilst the changes on the Jubilee Line, DLR and Elizabeth Line service capacities as a result or the Proposed Development are expected to be perceptible, they are not anticipated to considerably change conditions which would otherwise prevail and each service would remain within capacity. Therefore, no mitigation is necessary and the residual effect on public transport delay is expected to remain **Minor Adverse** (Not Significant).

## ***Residual Effects***

**7.229** All of the residual effects resulting from the Proposed Development are presented in Table 7.39, identifying whether the effect is significant or not.

**Table 7.39 Summary of Residual Effects**

| Receptor | Residual Effect (Nature and Scale) | Effect Significance | Geo | D I | P T | St Mt Lt |
|---|---|---|---|---|---|---|
| **Enabling and Construction** | | | | | | |
| **Severance** | | | | | | |
| Pedestrians, Cyclists | Negligible | Not Significant | L | D | T | MT |
| **Delay** | | | | | | |
| Car Drivers | Negligible | Not Significant | L | D | T | MT |
| Pedestrians, Cyclists | Negligible | Not Significant | L | D | T | MT |
| Public Transport | Negligible | Not Significant | L | D | T | MT |
| **Amenity, Fear, Intimidation** | | | | | | |
| Pedestrians, Cyclists | Negligible | Not Significant | L | D | T | MT |
| **Completed Development** | | | | | | |
| **Severance** | | | | | | |
| Pedestrians, Cyclists (*Hertsmere Road*) | Moderate Adverse | Significant | L | D | P | LT |
| Pedestrians, Cyclists (*other road links*) | Negligible | Not Significant | L | D | P | LT |
| **Delay** | | | | | | |
| Car Drivers | Minor Adverse | Not Significant | L | D | P | LT |
| Pedestrians, Cyclists | Moderate Beneficial | Significant | L | D | P | LT |
| Public Transport – Bus and River | Negligible | Not Significant | L | D | P | LT |
| Public Transport - Rail | Minor Adverse | Not Significant | L | D | P | LT |
| **Amenity, Fear, Intimidation** | | | | | | |
| Pedestrians, Cyclists | Moderate Beneficial | Significant | L | D | P | LT |
| **Accidents and Safety** | | | | | | |
| Pedestrians, Cyclists | Minor Beneficial | Not Significant | L | D | P | LT |

**Notes:**
Residual Effect = Beneficial / Adverse
Scale = Negligible / Minor / Moderate / Major, Nature = Beneficial or Adverse
Geo (Geographic Extent) = Local (L), Borough (B), Regional I, National (N), D = Direct / I = Indirect, P = Permanent / T = Temporary, St = Short Term / Mt = Medium Term / Lt = Long Term, N/A = not applicable / not assessed

## CLIMATE CHANGE

**7.230** The climate change variants applicable to this project (as set out in **ES Volume 3, Appendix Introduction and EIA Methodology, Annex 6**) would not have a direct effect on severance, delay or amenity, fear and intimidation. However, changing travel behaviours in response to climate change concerns are expected to result in a switch to more sustainable modes of travel, lower and zero-emission vehicles and sharing of vehicles. At the same time, advances in technology which support improved telecommuting and flexible working will reduce the scale of background peak hour travel across the borough and London. A reduction in vehicle emissions and traffic volumes would have a benefit for pedestrian and cyclist amenity, fear and intimidation.

**7.231** The Proposed Development has been designed based on current behaviour patterns and is therefore considered to be resilient. Any future changes in travel patterns would serve to improve beneficial impacts to users of the Site, as well as visitors and employees of the local area. Although, this benefit is not expected to be of a scale that would change the overall likely residual effects.

## ASSESSMENT OF THE FUTURE ENVIRONMENT

### *Evolution of the Baseline Scenario*

**7.232** When considering the likely evolution of the baseline conditions, other nearby committed developments/cumulative schemes have been accounted for as part of the strategic models which have been used to calculate the Future Baseline (Scenario 2a and Scenario 2b), as explained in this ES chapter. Therefore, an evolved baseline with regards to cumulative schemes is embedded within the assessment undertaken.

**7.233** As set out within the Baseline Conditions section of this ES chapter, the following presents a summary of the known future strategic developments that are expected to come forward in the future:

- Elizabeth Line – Elizabeth Line is expected to open in 2021, before the planned completion of Phase 1 of the Proposed Development. Canary Wharf Elizabeth Line station, located in Crossrail Place is located immediately to the south, within a one-minute walk. The new service will facilitate connections to key destinations including Paddington and Tottenham Court Road within central London and Reading and Shenfield outside Greater London. All Elizabeth Line station will be accessible for all users, with step-free access; and
- Cycle Route - TfL in partnership with the LBTH and London Borough of Hackney are currently considering Cycleway 37 which would connect with Cycleway 3 at West India Dock Road, approx. 400m west of the Site. The route would offer future users of the Site a safe and direct connection across East London, linking the Site with Cycleway 2 at Mile End Road and former Quietway 2 north of Victoria Park.

**7.234** These have been factored into this assessment.

### *Cumulative Effects Assessment*

**7.235** As discussed earlier in this chapter, the transport effects of cumulative schemes are included within both the 2031 Railplan v7.2 and LoHam models provided by TfL, which form the bases of the future baseline Scenarios. Given the strategic nature of the 2031 Railplan v7.2 and LoHam models it is not possible to disaggregate individual cumulative schemes from the strategic models. Therefore, a separate cumulative impact assessment of highways and rail effects has not been undertaken. The main impact assessment is considered a robust and provides worst-case approach.

#### *Enabling and Construction*

**7.236** Given that there is uncertainty over when the various cumulative schemes would come forward in the area, the methods of construction that would be employed; the management measures that would be adopted at each site; and the periods of peak construction, it is difficult to predict the cumulative impacts of construction activities, particularly where the intensive operations are of short duration.

**7.237** It is anticipated that each site coming forward would be required to develop their own CLP and auxiliary documents, and therefore agree vehicular numbers and vehicular routes with the LBTH and TfL. It is therefore considered that on this basis and subject to the implementation of best practice construction traffic management measures (secured through planning condition or planning obligations), the residual cumulative effects on all modes of transport would be **Negligible** (not significant) and that the cumulative increase would still leave capacity on the local roads.

### *Completed Development*

**7.238** Each of the cumulative schemes would generate their individual number of pedestrian trips, but as with the Proposed Development, they would be required to deliver schemes that would enable easy pedestrian movement, not restrict capacity, provide high environmental and design quality and improved public realm.

**7.239** These would translate as mitigation measures and when considered collectively would be expected to result in **Negligible to Minor Beneficial** effects (not significant) on pedestrian movement, capacity, severance, delay, fear and intimidation, and amenity.

## LIKELY SIGNIFICANT EFFECTS

**7.240** The Proposed Development is likely to have significant residual effect in the following categories:

- Moderate Beneficial effect on delay for pedestrians and cyclists;
- Moderate Beneficial effect on amenity, fear and intimidation for pedestrians and cyclists; and
- Moderate Adverse effect on severance (on Hertsmere Road only).

**7.241** All effects being direct and permanent, referring to the Completed Development stage.

## INDICATIVE SCHEME COMPARISON

**7.242** This chapter has presented the likely impacts of the Proposed Development based on the worst-case trip generating scheme - Maximum Transport Scheme. As presented, the trips associated with the Indicative Scheme, which represents the type of mixed-use development which could come forward, are significantly lower than the scheme assessed. Therefore, any effects which are based on quantitative assessment (i.e. severance and delay) are expected to be less pronounced with the Indicative Scheme.

**7.243** The Moderate Beneficial residual effects on delay, as well as amenity, fear and intimidation for pedestrians and cyclists associated with the Maximum Transport Scheme (Scenarios 3 and 4) would also be realised if the Indicative Scheme were to come forward.