
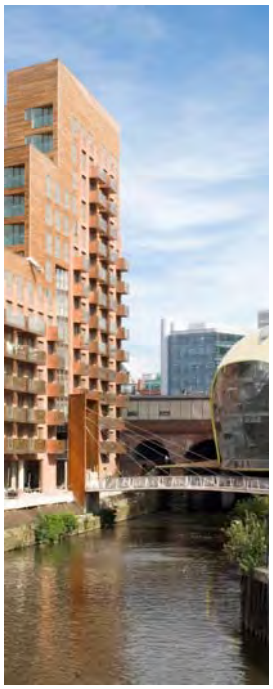


The Leeds Railway Station (Southern Entrance) Order Environmental Statement

Traffic and Access Technical Appendix
296480RPT27

May 2012
Metro & Network Rail

METRO

Network Rail

Mott MacDonald

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Abbreviations

CTMP	Construction Traffic Management Plan
CoCP	Construction Code of Practice
DaSTS	Delivering a Sustainable Transport System
EA	Environment Agency
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ES	Environmental Statement
GRIP	Governance for Railway Investment Projects
km	kilometre
LCC	Leeds City Council
LSSE	Leeds Southern Entrance Station
NPPF	National Planning Policy Framework
PPG	Pollution Prevention Guidance
PPS	Planning Policy Statement
TRO	Traffic Regulation Order
TS	Transport Statement
TWAO	Transport and Works Act Order
TA	Technical Appendix
TaSTS	Towards a Sustainable Transport System
UDP	Unitary Development Plan
UK	United Kingdom

1. Introduction

1.1 Introduction to Traffic and Access

This Technical Appendix (TA) of the Environmental Statement (ES) for the Leeds Station Southern Entrance (LSSE) scheme describes the methodology and scope for assessing impacts and associated effects of the proposed scheme on transport resources and receptors. This includes existing users of public transport services, private and commercial vehicle users of the highway network, the emergency services, pedestrians and cyclists, equestrians and people with disabilities. This TA is in accordance with an updated Transport Statement (TS) for LSSE (Report 296480RPT10) produced for the purposes of a Transport and Works Act Order (TWAO) application. The updated TS supersedes that previously produced (October 2009) and submitted as part of an application to Leeds City Council for planning permission in October 2009. The updated TS has been included for reference in Volume IV of this ES.

1.2 Scheme Design in Context of Traffic and Access

The LSSE scheme is intended to provide a new direct pedestrian link between the Leeds City Station and redevelopment to the south of the railway viaduct. It comprises a concourse deck situated over the River Aire within an enclosed building which provides pedestrian access via stairs, escalators and lifts to the station western footbridge and upper concourse. The building is supported on piers within the river and has link bridges to either bank and also to Dark Neville Street within the railway viaduct structure itself.

In October 2009, a planning application for the LSSE scheme was submitted to Leeds City Council (LCC) and permission was granted in May 2010. In June 2011, the Department for Transport (DfT) confirmed that in order to authorise the construction and maintenance of the scheme, an application could be submitted for an order under the Transport and Works Act 1992 ("the 1992 Act"). Accordingly, an application has been prepared to be submitted to the Secretary of State for an order under sections 1 and 3 of the 1992 Act.

As part of the LSSE scheme it is proposed that a number of amendments to the local highway network will be made, which are summarised below. These amendments are also described in more detail in Section 3 of the updated TS (prepared by Mott MacDonald).

- Little Neville Street:
  - is to become a pedestrianised zone, which will be reinforced with signage, a change in surface type and level, and the trafficked area will be defined by a minimal kerb upstand and street furniture;
  - it will have a prohibition of driving with specified exemptions to permit access to the users of the UKI underground car park, the Blue Apartments, the Hilton Hotel and general service access;
  - vehicular access onto Dark Neville Street from Little Neville Street and vice-versa will be blocked via a physical means of access control (exact details to be determined at the detailed design stage); and
  - a turning head will be provided on Little Neville Street in the immediate vicinity of the Railway Viaduct.
- Dark Neville Street:
  - vehicular access onto Dark Neville Street from Neville Street and vice-versa will be blocked via a physical means of access control (exact details to be determined at the detailed design stage);
  - it is proposed that a 3m wide, pedestrian route / 'safe space' is to be provided along the south side of Dark Neville Street between LSSE and Little Neville Street;

  - the pedestrian route surfacing on Dark Neville Street would be consistent with that used on Little Neville Street and would connect the two areas via a demarcated pedestrian route through the viaduct arch; and
  - further safety and security improvements along Dark Neville Street including: additional lighting, signage, tactile paving and delineators for assisting blind and visually impaired users would be a possible enhancement to the scheme and are therefore considered as Supplementary Mitigation.
- Granary Wharf:
  - a right of access for pedestrians and maintenance vehicles will be taken (within the TWA Order) over the Granary Wharf site between LSSE and the adopted highway (to the west) on Wharf Approach.
- Wharf Approach:
  - will have no waiting and no loading restrictions (through Traffic Regulation Orders) introduced to help prevent this road from becoming an informal drop-off area for LSSE and creating congestion.
- Canal Wharf
  - will have no waiting restrictions (through Traffic Regulation Orders) introduced to help minimise the impact of any informal drop-offs for LSSE; and
  - will have no waiting and no loading restrictions (through Traffic Regulation Orders) introduced at any junctions and accesses to protect these areas from informal drop-offs for LSSE.

It is not proposed to provide a formal drop-off / pick-up facility for passengers using LSSE. It is assumed that passengers will continue to be dropped off / picked up at the existing facilities on Princes Square, to the north of the station. Passengers will be discouraged from being dropped off on Little Neville Street by the aforementioned Traffic Regulation Orders (TRO) which would not allow vehicles to stop in the carriageway on Little Neville Street.

It is considered that LSSE will not have a significant impact on the highway network since it does not generate any new vehicular trips. Implementation of the proposed TRO on Little Neville Street will reduce the through movement of traffic (i.e. those vehicles not accessing any of the premises on Little Neville Street) since it restricts vehicular access between Little Neville Street and Dark Neville Street. Therefore, there is likely to be a reduction in traffic flows travelling along Little Neville Street and Dark Neville Street.

As described within the Environmental Impact Assessment (EIA) Scoping Report for the scheme (Mott MacDonald, October 2011), it is predicted that the main traffic effects of the scheme will result from any disturbances caused by construction vehicle movements (on land and water). Once the proposed scheme is operational, it is considered that there would be very little impact in terms of road traffic within the study area. This is because the LSSE scheme is focused on serving pedestrian movements to the railway station and is unlikely to generate vehicle trips to the LSSE site and would therefore have a minimal impact on vehicular traffic.

Currently there are two construction methodologies under consideration to implement LSSE, one scenario uses a self erecting crane on west bank of the River Aire, and the other scenario uses a tower crane on the east bank of the of the River Aire. For the purpose of this assessment neither offers a single worst case scenario, therefore the worst case attributes of each scenario have been combined and assessed within this technical appendix.

The layout of the proposed barge loading/launch site on Water Lane is shown in Figure 12 in Volume III of this ES. The proposed layout and routes in the immediate vicinity of LSSE for both construction methodologies is shown in Figures 13 and 14 in Volume III of this ES. Construction access routes are shown in Figure 15 in Volume III of this ES.

1.3 Legislation and Policy

National, regional and local policies which are relevant to traffic and transportation have been reviewed. This includes a consideration of the West Yorkshire Local Transport Plan 3 and other local policies which are relevant to Leeds City Centre.

The following sections provide a brief overview of these policies and their reference to this study.

1.3.1 National policy

1.3.1.1 National Planning Policy Framework (NPPF)

The NPPF was published on 27th March 2012 and has replaced majority of the Planning Policy Statements (PPS) and Planning Policy Guidance (PPG).

Paragraph 9 states that sustainable development involves seeking improvements in the quality of the built, natural and historic environment as well as in people's quality of life, including (but not limited to):

- making it easier for jobs to be created in cities, towns and villages;
- moving from a net loss of biodiversity to achieving net gains for nature;
- replacing poor design with better design;
- improving the conditions in which people live, work, travel and take leisure; and
- widening the choice of high quality homes.

The NPPF further states in paragraph 19 that the Government is committed to ensuring that the planning system does everything it can to support sustainable economic growth. Planning should operate to encourage and not act as an impediment to sustainable growth. Therefore significant weight should be be placed on the need to support economic growth through the planning system.

The NPPF promotes sustainable transport modes and states in paragraph 31 that local authorities should work with neighbouring authorities and transport providers to develop strategies for the provision of viable infrastructure necessary to support sustainable development.

Paragraph 35 states that development should be located and designed to:

- give priority to pedestrian and cycle movements, and have access to high quality public transport facilities;
- create safe and secure layouts which minimise conflicts between traffic and cyclists between traffic and cyclists or pedestrians; and
- consider the needs of people with disabilities by all modes of transport.

1.3.2 Sub-regional policy

1.3.2.1 Leeds City Region Local Enterprise Partnership (LEP) Proposal

The LEP will provide a framework for regenerating and growing the local economy through collaboration between the private and public sectors by attracting investment, building its business and employment base, targeting identified business sectors and promoting spatial development in housing and transport. Specific actions are amplified later in this proposal.

Improving transport links is essential to support access to and development of the main business locations, regeneration and development areas and to improve the City Region's links to London, other major cities.

1.3.2.2 West Yorkshire Local Transport Plan (LTP3)

LTP3 is the statutory plan for transport in West Yorkshire and sets out the needs, objectives, ambitions and strategy over the medium to long term 2011 to 2026, as well as detailed spending proposals in its first three years.

The three key objectives of the plan are as follows:-

- **Economy**. To improve connectivity to support economic activity and growth in West Yorkshire and the Leeds City Region;
- **Low Carbon**. To make substantial progress towards a low carbon, sustainable transport system for West Yorkshire, while recognising transport's contribution to national carbon reduction plans; and
- **Quality of Life**. To enhance the quality of life of people living in, working in and visiting West Yorkshire.

1.3.3 Local policy

1.3.3.1 Unitary Development Plan / Leeds Unitary Development Plan Review 2001-2026

The Unitary Development Plan is the statutory development plan for the whole of the Leeds district. The original UDP was approved in 2001, and following public consultation and a public inquiry a review was approved in 2006

Leeds UDP has nine strategic aims to deliver the plan's goals. Three of which are reflected in the main aims and objectives of this study:

- **Environment**; to secure the highest possible quality of the environment throughout the District, by protecting existing good environment, conserving and enhancing where there is scope for improvement, including initiating the renewal and restoration of areas of poor environment;
- **Transport**; to encourage development in locations that will reduce the need for travel, promote the use of public transport and other sustainable modes, reduce the journey lengths of those trips which are made by car, whilst promoting safe travel, economic development and protection of the environment; and
- **Access for All**; to ensure that all sections of the community, irrespective of income, disability, age, race, religion, gender, travelling way of life, caring responsibility or place of residence have safe and easy access to housing, employment, shops, social, community and leisure facilities, places of worship and other necessary facilities, by maintaining and enhancing the current levels of provision in appropriate locations

1.3.4 Other relevant guidance

1.3.4.1 A New Deal for Transport

In this document the Government set out its integrated transport policy to reduce the need to travel, to tackle congestion and pollution, and to support a strong economy, a sustainable environment and a healthy and inclusive society.

As such, the Government is committed to developing an integrated transport policy for the various regional areas throughout the United Kingdom. There is a widely recognised need to reduce the dependence on the private car through encouraging the use of public transport.

1.3.4.2 The Future of Transport White Paper

This document considers the factors that will shape travel and transport over the next thirty years and sets out how the Government will respond to the increasing demand for travel, maximising the benefits of transport while minimising the negative impact on people and the environment.

The Future of Transport White Paper looks at the factors that will shape travel and transport over the next thirty years. The White Paper looks at how local travel can be enhanced by looking at ways to make services more accessible so that people have a real choice about when and how they travel.

1.3.4.3 Transport Ten Year Plan

The ten year plan for transport sets out a vision for transport in the United Kingdom. Transport should provide “a modern, safe, high quality network that better meets people's needs and offers more choice to individuals, families, communities and businesses”.

For example, the plan identifies the need for modern and high quality transport networks, and the need to reduce the impact of transport on the environment. This scheme will help to reduce the environmental impact of transport in terms of emissions.

1.3.4.4 Towards a Sustainable Transport System (TaSTS)

In October 2007 The Department for Transport (DfT) published ‘Towards a Sustainable Transport System’, which outlined the Department’s approach to long-term transport planning. The document outlines five goals for transport:

- to support national economic competitiveness and growth, by delivering reliable and efficient transport networks;
- to reduce transport’s emissions of carbon dioxide and other greenhouse gases, with the desired outcome of tackling climate change;
- to contribute to better safety, security and health and longer life-expectancy by reducing the risk of death, injury or illness arising from transport and by promoting travel modes that are beneficial to health;
- to promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society; and
- to improve quality of life for transport users and non-transport users, and to promote a healthy natural environment.

The DfT acknowledge that there is a need to strike a balance between the different goals, such as supporting economic growth while reducing greenhouse gas emissions, or encouraging behavioural change while maintaining freedom of choice.

1.3.4.5 Delivering a Sustainable Transport System (DaSTS)

DaSTS is a consultation document describing how the Government will take Towards a Sustainable Transport System (TaSTS) forward. In DaSTS, the Government continues its commitment to long term

transport planning and identifies the priorities for transport investment in England from 2014 across all transport networks.

The biggest challenge is considered to be tackling climate change and growth together. DaSTS builds on the goals identified in TaSTS and there is an expectation that there will be a strong synergy between goals, for example, measures encouraging a modal shift to public transport will help tackle congestion and are therefore likely to make a positive contribution to economic growth, cutting emissions and enhancing the local environment, as well as improving health.

2. Approach and Methodology

2.1 Introduction

This section sets out the approach that has been taken for the assessment of effects on traffic and access as a result of the proposed scheme, including the use of any baseline information.

2.2 Scope of Assessment

The scope of the assessment has been followed by reference to the scope set out in the EIA Scoping Report (Mott MacDonald, October 2011).

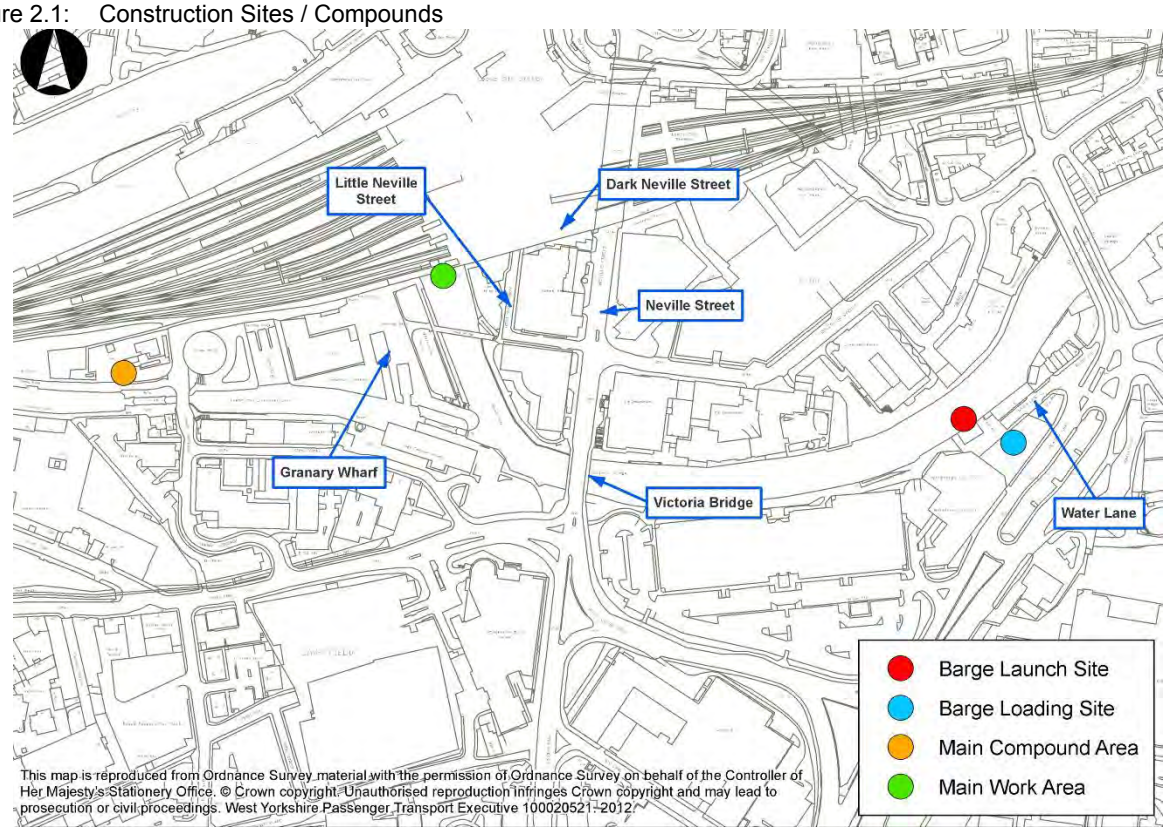
2.2.1 Spatial Scope

The spatial scope of the assessment with regard to traffic and access differs between scheme construction and operation. These are described in more detail in Sections 2.2.1.1 and 2.2.1.2 respectively.

2.2.1.1 Construction Spatial Scope

The spatial scope of the traffic and access assessment during construction comprises the main work area, the main compound site, the barge loading/launch site and the road and river network to transport the construction materials which are described in more detail below.

Figure 2.1: Construction Sites / Compounds



Source: Mott MacDonald

Main Work Area:

- This comprises the area around LSSE, including:-
  - the River Aire between the Dark Neville Street road bridge and the pedestrian footbridge (also known as the ISIS footbridge);
  - the land between the Blue Apartments and railway viaduct;
  - Little Neville Street,
  - the arches within the viaduct on the south side of Dark Neville Street; to the west of Little Neville Street; and
  - the western bank of the River Aire between Waterman's Place apartments and the railway viaduct.

Main Compound Area:

- this site is located adjacent to the railway on the raised structure at the end of Wharf Approach and will be used as the main site offices.

Barge Loading/Launch Site:

- this site is located at the end of a spur on Water Lane near Bridge End. It compromises a derelict site adjacent to the River Aire, the ASDA surface car park and a further car park (owned by ASDA but leased to others) immediately adjacent to the Old Red Lion Public House.

Construction access routes are shown in Figure 15 in Volume III of this ES and are likely to include the following roads:

- Neville Street;
- Little Neville Street;
- Dark Neville Street;
- Wharf Approach;
- Granary Wharf
- Water Lane; and
- Meadow Lane.

It is envisaged that the Water Lane site (near Bridge End) will be the main site for delivery of materials by road, where they will then be transferred to barge and sailed up the river to the main work area of LSSE. The construction layout of the Water Lane site is shown in Figure 12 in Volume III of this ES.

2.2.1.2 Operation Spatial Scope

The spatial scope of LSSE during operation is considered to include:

- Dark Neville Street;
- Little Neville Street; and
- Granary Wharf area.

Only the above streets are included in the operation spatial scope as LSSE will only have an impact on these streets, therefore the additional streets shown in 2.2.1.1 have been scoped out.

2.2.2 Temporal Scope

The construction programme assumes an overall 62 week construction period commencing in summer 2013. It is anticipated that LSSE will become operational in the late summer of 2014.

2.3 Sensitive Receptors

Prediction of construction impacts has focussed on activities that directly and indirectly affect the integrity of receptors within the zone of influence. This includes activities such as:

- impact of construction on traffic routes;
- construction – associated disturbance;
- travel along and construction of any access routes with associated disturbance;
- construction and use of site compounds leading to disturbance; and
- road safety impacts.

The effects are assessed based on the importance or value of each receptor and the importance of the effects of those receptors. The receptors assessed within this TA include:-

- motor vehicles (including private, commercial and emergency);
- Leeds City Station passengers and staff
- Non-motorised users (pedestrians, cyclists and disabled persons) who do not access the station;
- Businesses in the Granary Wharf Area;
- Commercial Properties in the Arches of the Railway Viaduct including the private car park; and
- Staff at Asda House and the patrons of the Old Red Lion Inn.

2.4 Methodology

2.4.1 Consultation

2.4.1.1 EIA Scoping Report

An EIA scoping report was prepared and submitted to the Department for Transport on 3rd October 2011, and a Scoping Opinion was subsequently received on 11th November 2011. This scoping opinion was sent to British Waterways, English Heritage, the Environment Agency, Leeds City Council and Natural England for consultation. Responses were received from all of the above consultees but no specific comments relating to traffic and access were received. In relation to traffic and access, comments on Noise and Air Quality raised in the Scoping Opinion have been included in the relevant technical appendices.

2.4.1.2 Public and Statutory Consultation

Metro and Network Rail have undertaken consultation for the scheme to help ensure that all those who have a view on the proposals have had the opportunity to express their views. Stakeholder groups were contacted at an early stage and every effort has been made to continue to build and maintain dialogue throughout the development of the scheme. During the consultation process there has been on-going dialogue with key stakeholders, in particular Network Rail, LCC and local ward members. Further details of the consultation undertaken for the scheme are included in a Consultation Report produced by Metro (February 2012), however key consultations relating to traffic and access are summarised below:

Environment Agency

The Environment Agency were consulted during Network Rail's GRIP studies circa September 2006 to April 2009 and during this time the flood risk level changed from 1% AEP (1 in 100 year) plus 20% for climate change to 1 in 200 years to align with the emerging Leeds Flood Alleviation Strategy. In terms of access, this had significant implications to the scheme as additional ramps were required to be routed through the arches to provide step free access to the entrance.

Leeds City Council

LCC, in their capacity as the local highway authority, have been consulted on the highway amendments (including TROs) on Little Neville Street, the revised access arrangements on Little Neville Street and Dark Neville Street, and the proposed TRO's on Canal Wharf and Wharf Approach.

Granary Wharf

Representatives of the Granary Wharf development have been consulted with regards to pedestrian access through Granary Wharf including discussions relating to access rights during construction.

2.4.2 Desk Study

The assessment of potential impacts of construction has been informed by the DfT Guidance on Transport Assessments ("the DfT Guidance"); these include:

- changes in road traffic levels and amenity as a result of road closures/diversions due to construction traffic. Also changes to traffic levels, the environment and amenity from transportation of materials, waste and staff will be considered;
- changes to transport trips and amenity for the general public for all modes as a result of the construction; and
- consideration of potential severance caused by temporary closure/diversion of roads.

The method for determining and appraising baseline conditions has been based on that proposed in best practice guidance for EIAs and the DfT Guidance. This has involved both a desk study and additional survey work which was undertaken by others. Sources examined in the desk study have included historical studies undertaken as part of the previous planning application which included the following documents:-

- AECOM's LSSE Transport Statement – September 2009;
- Steer Davis Gleave LSSE Major Scheme Business Case – November 2009.
- Bauman and Lyons Architects Planning, Design and Access Statement – September 2009;
- AECOM's LSSE GRIP4 Report and associated designs – April 2009;
- Hyder LSSE 'DRAFT' Pedestrian Modelling and Assessment; and
- Carillion LSSE Constructability Review, Rev 02 – 31st January 2012

2.4.3 Site Survey

Site reconnaissance to observe baseline conditions was previously undertaken as part of the original TS in 2009. As part of the updated TS additional surveys were conducted to update and validate the findings of the studies carried out as part of the previous LSSE planning application (as outlined in Section 2.4.2 above).

AECOM undertook AM and PM peak kerbside surveys in March 2009 observing drop-offs and pick-ups in Bishopgate Street, Wellington Street (outside Queens Hotel) and in Princes Square. In addition, AECOM also undertook AM and PM peak surveys of the interchange at New Station Street in March 2009. These surveys established the total number of bus services arriving during the peak periods. AECOM also undertook a car park capacity survey off Princess Square which included the multi-storey, surface and short stay car parks. A summary of the observations is provided in the TS for the scheme (Report 296480RPT10 Revision B, April 2012) which has been included in Volume IV of this ES.

Previous pedestrian count surveys were undertaken and have been used in the previous pedestrian modelling undertaken by Halcrow and reported in AECOM's LSSE Transport Statement – September 2009. These surveys include:-

- Northern Count 2006 (Monday) – used in the Halcrow ATG model;
- Northern Count 2006 (Friday);
- Count-on-Us Count 2007 (Thursday); and
- Jacobs footfall count (2008).

Updated pedestrian count surveys were undertaken by Metro in late 2011 and these informed the updated pedestrian modelling undertaken by Hyder and reported in the report titled 'LSSE Pedestrian Modelling and Assessment'. In addition boarding and alighting counts for 2008 and 2011 were obtained by Hyder to update the pedestrian modelling.

Traffic surveys were undertaken by Metro on Little Neville Street on Wednesday 7th December 2011 during the AM and PM peak periods to observe traffic movements including parking, loading and through movements. An analysis of the traffic surveys is provided in the TS for the scheme (Report 296480RPT10 Revision A, February 2012).

2.5 Assessment Criteria

2.5.1 Background

The assessment criteria for the predicted effects are outlined in the following sections. The prediction of traffic and access effects is based on information from desk studies, surveys and site visits.

The assessment has considered the construction and operation phases of the scheme and the following aspects have been considered:

- extent – the geographical range of the effects;
- magnitude – the scale of effect;
- severity;
- duration – indicating temporary effects from construction or travel behaviour adjustments;
- frequency – where the frequency of the impacts on receptors will affect the overall effects; and
- timing – whether the effects will compound with other seasonal or long term transport or traffic forecasts.

The identification of sensitive receptors as outlined in Section 2.3 used a geographical frame of reference, baseline data and the assessors' professional judgement.

2.5.2 Importance of Receptor

Low importance

Any transport effects are insignificant with regard to the construction of the LSSE project. The transport network continues to operate as normal.

Medium importance

Any transport effects which lead to degradation of performance of the transport network as a result of the construction or operation of the LSSE project, which leads to temporary difficulties, annoyance or delay that may be incurred by any third party or member of the public.

High importance

Any transport effects lead to degradation of performance of the transport network as a result of the construction or operation of the LSSE project, in such a way that leads to permanent or substantial difficulties, annoyance, delay or injury that may be incurred by any third party or member of the public.

2.5.3 Magnitude of Effect

Low magnitude

Any transport effects that happen infrequently and so are usually accepted as a rare occurrence e.g. fault conditions.

Moderate magnitude

Any transport effects that happen more frequently.

High magnitude

Any transport effects that occur regularly during the construction or operation of the LSSE project.

2.5.4 Level of Effect

Each type of effect will be allocated a level of significance as shown in Table 2.1.

Table 2.1: Evaluation of Significance

		Importance of Receptor		
		Low Importance	**Medium Importance**	**High Importance**
Magnitude of Effect	**Low magnitude**	Not significant	Not significant/ Potentially significant	Potentially significant
	Moderate magnitude	Not significant/ Potentially significant	Potentially significant	**Significant**
	High magnitude	Potentially significant	**Significant**	**Significant**

The assessment will also consider cumulative effects, where possible, where several types of effect act on the same resources and/or receptors. In some cases it may be that several "slight" effects may, individually, be insignificant but acting together may produce a significant effect on a sensitive resource.

2.6 Assumptions and Limitations

The current scheme proposal does not include a drop-off facility in the immediate vicinity of the proposed new entrance and it is assumed that passengers will continue to be dropped off on Aire Street and Princes Square (i.e. at the current drop-off facility).

Carillion has prepared a Constructability Review (Carillion's LSSE Constructability Review Revision 02 – 31st January 2012) which includes for two alternative methodologies in terms of cranage for the construction of LSSE and each would have different implications for construction traffic. It is assumed that both crane options within the construction methodology may be adopted and that neither has been ruled out at this stage.

3. Baseline

3.1 Introduction

Baseline conditions have been reviewed from the desk top studies, site visits, surveys and taking cognisance of studies undertaken as part of the previous planning application. Information gathered relating to the baseline conditions is presented below.

3.2 Baseline Conditions

3.2.1 Existing Site Use

The proposed LSSE scheme is to be located over the River Aire (Aire & Calder Navigation) to the immediate south of Leeds City Station. The structure is to be joined to the existing station viaduct and connected via pedestrian foot bridge to the east and west banks of the River Aire and via a new footbridge to Dark Neville Street. The site is currently unused as it is located over a river and not part of the navigation.

Figure 3.1: Proposed LSSE Location (over the River Aire)

Source: Mott MacDonald

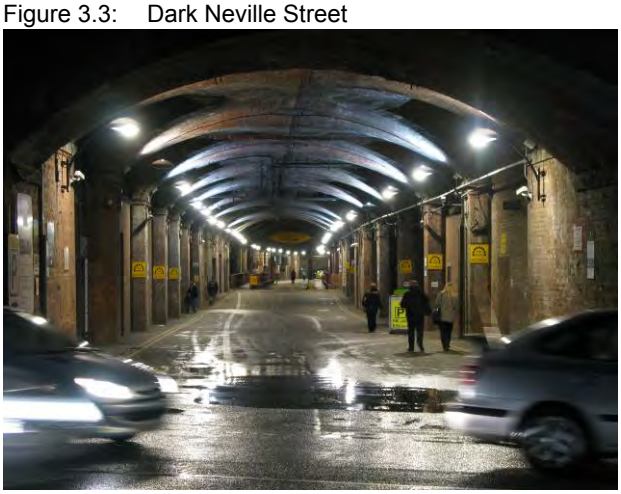
3.2.2 Road Network

Figure 3.2: Granary Wharf

Source: Mott MacDonald

Granary Wharf is a pedestrianised area with servicing and loading to the properties in Granary Wharf via Dark Neville Street and Wharf Approach permitted. However, there is currently no right of way across Granary Wharf area except for access to the parking areas under the station for the Double Tree by Hilton Hotel and the residential developments.

Figure 3.3: Dark Neville Street



Source: Mott MacDonald

Dark Neville Street is a private road situated within the railway station under croft and is owned by Network Rail. It has gated access at its junction with Little Neville Street although it is understood that the gates are not generally closed. At its west end it crosses the River Aire on a bridge which has a weight restriction of 3 tonnes and appears to be currently closed to all vehicular traffic. At its east end it forms a priority junction with Neville Street. Dark Neville Street is primarily used to access the car parking spaces within the arches in the under croft, situated on either side of the road. From observations it would appear that Little Neville Street is used in conjunction with Dark Neville Street as a loop route for some vehicles searching for car parking spaces.

There are in the order of 100 car parking spaces within the arches on Dark Neville Street. Observations of the private car park have shown that it is well used.

Figure 3.4: Little Neville Street

Source: Mott MacDonald

Little Neville Street is adopted highway under the control of the local highway authority (Leeds City Council) and connects to Neville Street at its eastern end, and Dark Neville Street at its northern end. It provides pedestrian links to a footbridge over the River Aire leading to Granary Wharf. Vehicular access is provided to an underground car park (UKI Partnerships Building), the Blue Apartments and the rear of the Hilton Hotel. There are 5 on-street, pay and display car parking spaces on Little Neville Street.

A traffic survey was undertaken by Metro on Thursday 7th December 2011 to identify the existing use of Little Neville Street. During the periods 0700-1200 and 1300-1800 just short of 400 vehicle movements were recorded on Little Neville Street.

The traffic flows occurring in the AM and PM peak periods were dominated by cars parking at the UKI underground car park (i.e. arriving in the morning peak, and leaving in the evening peak).

A review of the traffic flows on Little Neville Street throughout the day shows that over one-third of the traffic is either passing through to/from Dark Neville Street or is u-turning presumably because they cannot park or have taken a wrong turn (less likely).

Over 40% of traffic using Little Neville Street is accessing the UKI underground car park and 12% is loading by HGVs and LGVs. These two 'classes' of activity will remain with a Pedestrian Zone scheme and they contribute over 50% of the street's vehicle movements. Observations suggest that HGVs either reverse into Little Neville Street (to service the southern side of the Hitlon Hotel) or use Dark Neville Street to enter or exit. It has also been observed that LGV's tend to proceed from Little Neville Street to Dark Neville Street and vice-versa due to of the difficulties turning round on these narrow streets.

Approximately 10% of movements are for 'non-goods vehicle loading' and 'parking' (other than in the UKI Partnerships Building car park) although as noted many of the 'drive through' movements are probably seeking parking spaces, so the parking activity could be much higher.

Figure 3.5: Water Lane

Source: Mott MacDonald

Water Lane (near Bridge End) is a cul-de-sac which is accessed from Meadow Lane and provides access to the car park which is leased to the Old Red Lion Inn. This short length of road is the remnant of Water Lane that is severed by the ASDA House development.

Water Lane (near Bridge End) does not benefit from a turning head to allow vehicles to safely undertake a three-point turn.

The Old Red Lion Inn unloads deliveries from Dray vehicles on this stretch of Water Lane.

Pay and display on-street parking is provided in marked bays on the northwestern side of Water Lane.

Figure 3.6: Wharf Approach and Canal Wharf

Source: Mott MacDonald

Wharf Approach and Canal Wharf are adopted highway under the control of the local highway authority (Leeds City Council) and provide pedestrian and vehicular links to Granary Wharf from Water Lane. A bridge over the canal provides access between Wharf Approach and Granary Wharf and this is a Grade II listed structure. A sign on the bridge states that it has a 5 tonne weight restriction but it is understood that the bridge was strengthened as part of the Granary Wharf development to accommodate construction traffic although the new weight restriction it is not currently known.

3.2.3 Pedestrians

The main entrance to Leeds City Station on New Station Street provides links to all directions of the city, albeit with indirect routes to the south. The pedestrian routes from this entrance are along New Station Street towards City Square or onto Bo ar Lane. Further links are provided by the Rotunda steps located opposite the station entrance leading down to Bishopgate Street/Neville Street, and the Swinegate shortcut which is accessed via the steps off New Station Street between the NCP car park and the railway viaduct. The main entrance to Leeds City Station entrance leads to the taxi rank, cycle parking, and bus stops on New Station Street.

Formal pedestrian crossing facilities on routes to the south of the city are provided at the following junctions:

- Bishopgate Street with Neville Street;
- Neville Street with Water Lane;
- Victoria Road with Great Wilson Street; and
- Water Lane with Canal Wharf.

3.2.4 Cycle Provision

On-road cycle routes along Neville Street (to the south Leeds City Station) tie into the National Cycle Network (NCN) routes to the west (Route no. 66) and to the east (route no. 67) at the junction with Water Lane, with further links to local routes serving southern city areas. A local cycle route on Park Row (to the north of Leeds City Station) provides further links to West Park, Headingley, Alwoodley and Potternewton.

Cycle parking is provided at the following locations:

- inside the station, located on Platform 1;
- within the short stay parking area on Princes Square;
- secure cycle parking is provided at Leeds Cycle Point on New Station Street immediately opposite the main station entrance; and
- in Granary Wharf on the west bank of the River Aire between the railway viaduct and Waterman's Place apartments.

3.2.5 Loading and Servicing

No formal loading provision is provided on Little Neville Street and double yellow lines are present, indicating no waiting at any time, however the loading regime is not specified as tabs on the kerbs are not present and plates indicating the loading restrictions are not provided. It is understood that servicing vehicles for the Hilton Hotel reverse into Little Neville Street from the junction with Neville Street, to enable them to pull up along side the southern side of the hotel. A loading bay is provided adjacent to the Blue Apartments on Little Neville Street and it is understood that this is used for servicing of the Golf Bar and the residential apartments.

3.2.6 Buses and Coaches

Bus stops are provided on Neville Street, immediately south of the railway viaduct which serve southbound buses.

Match day coaches are provided for Leeds United football games, which are queued in the southbound direction on Neville Street within Leeds City Station underpass. It should be noted that during local events such as home games at Leeds United Football Club, that Leeds City Station sees an increase in passenger volumes. Leeds City Station Management Plan which includes match day and local event scenarios will need to be updated to take account of LSSE.

3.2.7 Taxis

One of the busiest taxi ranks in Leeds is located on New Station Street and is situated to the east side of a traffic island (outside the main station entrance) and passengers are picked up from the offside. Due to its popularity the queue of taxis previously extended back to the junction of New Station Street with Boar Lane

causing congestion which affected bus movements along Boar Lane. To overcome this issue, a marshalling system was implemented which stacks taxis on Lower Briggate and Meadow Lane. The taxi marshalling scheme works, utilising marshalls at all ranks who facilitate the movement of taxis from Meadow Lane to Lower Briggate to New Station Street once space becomes available at New Station Street.

Consultant, AECOM undertook AM and PM peak surveys of the interchange in New Station Street in March 2009. The total number of taxis arriving during the AM and PM peak periods is shown in Table 3.1 below.

Table 3.1: Taxis arriving on New Station Street AM and PM peak

	Collecting passengers	Driving through without picking up	Dropped off then drove through	Totals
08:00 to 09:00	111	9	3	123
17:00 to 18:00	104	17	0	121

Source: Leeds Station Southern Entrance Transport Statement September 2009 - AECOM

3.2.8 Existing Passenger Usage

2008 'Base' Leeds City Station entry/exit counts were reported in Consultant Hyder's Pedestrian Modelling and Assessment Report and are summarised in Table 3.2 below. The exiting values were taken from 2008 boarding and alighting counts, and Consultant Hyder derived the entering values from assumed entry/exit splits.

Table 3.2: 2008 'Base' Total Leeds City Station Entry/Exit Flows

	AM (7am – 10am)		PM (4pm – 7pm)	
Movement	Entering	Exiting	Entering	Exiting
Pedestrian Numbers	4,846	19,382	16,269	5,423
Total (3 hour peak)	24,228		21,692	

Source: Table 1.2 Hyder LSSE Pedestrian Modelling and Assessment Report

4. Works Affecting Traffic and Access

4.1 Construction Phase

4.1.1 Background

The following section includes a description of key construction and operational activities which will effect traffic and access, which includes construction traffic on access routes and road closures to facilitate the construction methodology. Consideration is also given to noise and air quality conditions in the site area of the scheme.

4.1.2 Construction programme

Carillion has prepared a Constructability Review which makes mention of two alternative methodologies in terms of craneage for the construction of LSSE and each would have different implications for construction traffic. Both crane options are to be considered at this stage and require materials and equipment delivery to the LSSE main site via the highway network and barges along the Aire and Calder Navigation. The key transportation difference between the methodologies is that a self erecting crane on the west bank would require a greater number of barge trips with associated traffic at Meadow Lane and Water Lane. Whilst a tower crane on the east bank would have the option of reducing the number of barge trips by increasing highway deliveries directly to the LSSE main site via Little Neville Street and Dark Neville Street.

The construction programme assumes an overall 62 week construction period commencing in summer 2013 with completion anticipated by late summer 2014.

4.1.2.1 Road Routes

The primary route to the main work area is via Neville Street and Little Neville Street, with Dark Neville Street offering an alternative route to Little Neville Street and the LSSE works. No access for construction delivery vehicles to the main work area is assumed across Granary Wharf.

Access for vehicles to the main compound area, to the west of the main site, is via Wharf Approach, with further limited access over the cobbled area between the railway viaduct and Waterman's Place apartments for the self erecting crane and for construction workers. Construction access routes are shown in Figure 14 and site access in Figure 13 in Volume III of this ES.

Large deliveries will be routed to the barge loading/launch site on Water Lane (Bridge End) where they will be transferred onto barges in the river to be sailed upstream to the main work area.

4.1.2.2 Numbers of Construction Vehicles

At this early stage it is not possible to make an accurate assessment of the number of vehicular deliveries per hour to Little Neville Street (main work site) or Water Lane (barge loading site). As an initial indication, Carillion has provided a provisional estimate which is as follows:-

- a maximum of 20 construction vehicles per day may visit the main work area (Little Neville Street)
- a maximum of 5 construction vehicles per day may visit the main compound area (Granary Wharf); and
- a maximum of 6 large delivery wagons per day may visit the barge loading / launch site (Water Lane).

Barges will be moored in the vicinity of the Water Lane site (Bridge End) where they will then be loaded and sailed up river to the main work area, where they will either be unloaded and returned to the Water Lane site or moored until the materials are needed. It is unlikely that more than 6 barges will be used at any one time during the construction programme. This may include 3 barges moored at the main work area and 3 barges being loaded at the barge loading site on Water Lane at any one time.

4.1.2.3 Public access during construction

The work site in the vicinity of Granary Wharf will be surrounded by solid hoarding to prevent unauthorised access as shown in Figure 13 in Volume III of this ES. Where it is safe to do so, Heras Hoarding will be used following the request of an adjacent Stakeholder. The exact alignment and layout of the hoarding will be agreed locally with site owners and occupiers to provide the least disruptive but safe solution. Clear signage will be affixed to the hoarding to direct the public around the work area and to describe the scheme and to highlight the hazards and risks that are associated with the project. Similar measures to the ones described above will be employed at the Water Lane barge loading site, where secure fencing or hoarding will be erected around the perimeter of the site and a footpath diversion will be established.

4.1.2.4 Railway Possessions

A series of railway possessions have been identified that allow the works over the operational railway to be constructed and which will require further consultation with the appropriate parties. It is anticipated that railway possessions will include overnight periods due to the time requirements of certain construction operations and the disruptive effects of daytime possessions on large numbers of station users. This solution represents a balance between the safety requirements of the operational railway and the efficient construction of the new footbridge, roof and access.

There will be 4 main 18 hour disruptive possessions required for the installation of the main steelwork forming the footbridge extension. The possessions are necessary to allow the works above the overhead lines and platforms 15 and 16 to be undertaken safely.

Six Rules of the Route (ROTR) possessions are proposed which affect the operation of Platforms 15, 16 and 17. These would be available overnight and at weekends to minimise the impact of the LSSE construction on the operation of Leeds City Station, In addition, further specific possessions of part of Leeds City Station will be required to facilitate the construction works. These possessions are described in greater detail in Carillion's LSSE Constructability Review Revision 02 – 31st January 2012.

4.2 Operational Phase

The following section includes descriptions of key operational activities which will affect traffic and access.

4.2.1 Traffic Impacts

The current LSSE proposal does not include a drop-off / pick-up facility in the immediate vicinity of the proposed station southern entrance and it is assumed that passengers will continue to be dropped-off on Aire Street and Princes Square (i.e. at the current facility). It is therefore considered that no vehicle trips will redistribute on the wider highway network and therefore this has been scoped out of any further assessment.

The vehicle movement between Little Neville Street and Dark Neville Street is proposed to be blocked by the provision of physical means of access control. Little Neville Street is proposed to be converted to a pedestrian zone with a pedestrian friendly environment. It is considered that there will be a slight reduction to current traffic flows on Little Neville Street and Dark Neville Street as a result of the proposed access control measures and pedestrian zone. The pedestrian zone will be achieved through the making of a traffic regulation order.

4.2.2 Non Motorised User Impacts

4.2.2.1 Pedestrians

Pedestrian modelling was previously undertaken in 2006 by Halcrow and reported on in AECOM's LSSE Transport Statement in 2009. The modelling reported the following key points:

- the location with the highest attraction in the AM peak is the Central Riverside zone along Neville Street and Sovereign Street. Other significant areas include the Campfield and Eastern Gateway zones (Marshall's Mill, City Walk and Victoria Place);
- in the AM peak period, the two principal concentrations of demand for access to the station are from the Hilton Hotel and Blue Apartments Building and the Sweet Street Car Park, with smaller concentrations located at City Walk and other commercial office locations; and
- during the PM peak period the pedestrian demand to the station effectively represents the returning flows from the AM peak movements with some additional concentration in the Central Riverside zone.

Further pedestrian modelling has been undertaken by Hyder to provide a current estimate of passenger demand and pedestrian flows for LSSE. The 2031 Leeds Transport Model (LTM) has forecast a usage for LSSE of 22% in the AM peak, and 24% in the PM peak of the total passenger entries/exits from the station. This is a higher percentage than envisaged in previous modelling work and strengthens the case for LSSE. Further analysis by Hyder, has established the following IN and OUT splits:-

- AM Peak In – 34% and Out – 21%; and
- PM Peak In – 22% and Out – 39%.

The total modelled flows entering/exiting from LSSE in 2029 is provided in Table 4.1 below.

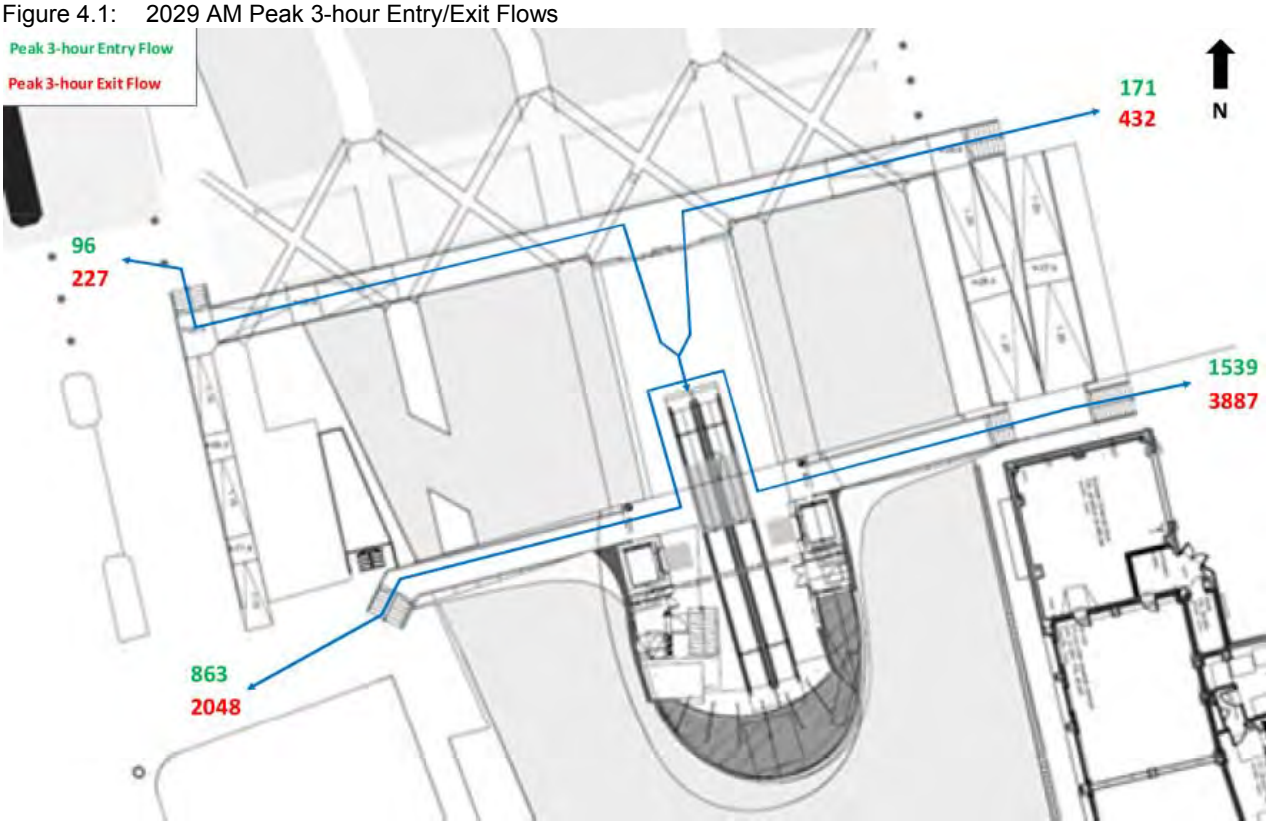
Table 4.1: LSSE Total Entry / Exit Passenger Distribution (2029)

	West		East	
	Enter	Exit	Enter	Exit
AM Peak Period	959	2,275	1,710	4,319
PM Peak Period	2,244	1,797	3,551	1,629

Source: Hyder - Draft Pedestrian Modelling and Assessment 2012

Figure 4.1 below illustrates the modelled 2019 AM peak 3-hour entry/exit flows to/from LSSE.

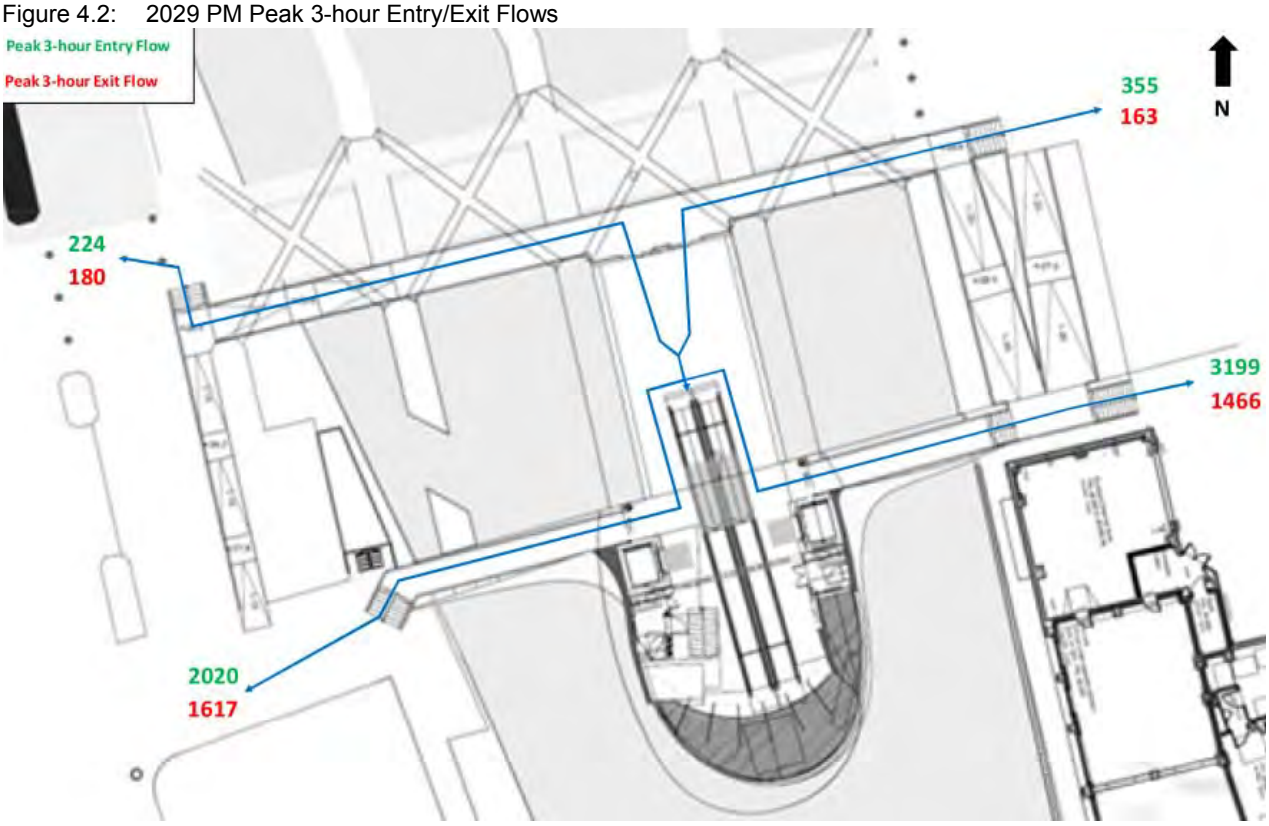
Figure 4.1: 2029 AM Peak 3-hour Entry/Exit Flows



Source: Figure 3.1 Hyder LSSE Pedestrian Modelling and Assessment Report

Figure 4.2 below illustrates the modelled 2019 PM peak 3-hour entry/exit flows to/from LSSE.

Figure 4.2: 2029 PM Peak 3-hour Entry/Exit Flows



Source: Figure 3.2 Hyder LSSE Pedestrian Modelling and Assessment Report

4.2.2.2 Cycle Provision

The cycle parking stands (No. 8) provided in Granary Wharf on the west bank of the River Aire between the railway viaduct and Waterman Place will be remove d prior to the comme ncement of con struction works. The cycle stands will be replaced by 20 cycle lockers located in one of the arches on Dark Neville Street.

5. Mitigation & Prediction of Effects

5.1 Introduction

This chapter outlines the effects on traffic and access which are predicted to occur during both construction and operation of the LSSE scheme assuming implementation of incorporated mitigation (i.e. mitigation that is inherent to the scheme and that Metro and Network Rail is committed to undertaking). The effects are described below and summarised in Table 5.1 along with the predicted effect.

5.2 Construction Phase

5.2.1 Incorporated Mitigation

The following incorporated mitigation measures have been taken into account when predicting the subsequent effects of the construction phase of works.

5.2.1.1 Construction Traffic Management Plan

The main mitigation measures involve the minimisation and appropriate scheduling of construction traffic from the vicinity of receptors and limiting their impact on the road network. The contractor will be required to produce a Construction Traffic Management Plan in line with Network Rail's Contract Requirements – Environment documentation, which will identify the following:

- temporary or permanent road closures and diversions;
- any interference with a carriageway or footway, including control of tracking of mud;
- temporary traffic control measures;
- temporary and permanent access to the works;
- temporary road layouts;
- routes to be used by construction traffic and any restrictions which may be applied, e.g. area within which materials must be sourced and routes for waste disposal;
- means on monitoring lorry use; and
- site specific controls.

Abnormal loads are to be delivered where possible outside of highway peak hours to minimise the impact on congestion during these periods.

Temporary signing will be provided to direct construction traffic onto the agreed routes with no access to other local roads.

Temporary TRO's would be implemented on Water Lane during construction to facilitate the movement of large vehicles along water lane to the barge loading/launch site.

5.2.1.2 Liaison Manager

A Liaison Manager will be employed to consult with any relevant third parties and will compile a Community Engagement Plan that would detail the measures that would be undertaken to help mitigate the disruptive impact that the scheme may have on the local area and its residents. The Liaison Manager will attend local residents meetings and forums to keep people updated on progress and future activities; and they will attempt to engage the local community in the scheme development and consider factors such as the environment and sustainability.

5.2.1.3 Emergency Contact

A 24 hour emergency number will be operated by Network Rail and will be available for any urgent or emergency action. Detailed incident and emergency management plans will be developed by the construction contractor in conjunction with Network Rail, and in line with the Network Rail's Contract Requirements.

5.2.1.4 Granary Wharf/Water Lane Hoarding

It is acknowledged that the Granary Wharf area is a very busy public space with high levels of residents, business people and tourists using the existing pedestrian routes which link Dark Neville Street to the river area and the offices/hotels and apartments in Granary Wharf. For this reason solid hoarding will be used to enclose the work site adjacent to Granary Wharf to prevent unauthorised access. Where it is safe to do so, Heras type hoarding will be used following feedback from the consultation exercises. The exact alignment and layout of the hoarding should (where possible) be agreed with local stakeholders to provide the least disruptive but safe solution. Clear signage will be affixed to the hoarding to direct the public around the work area and to describe the scheme and to highlight the hazards and risks that are associated with the project.

Some existing footpaths and walkways would have to be closed or have access restricted along them as shown in Carillion's LSSE Constructability Review Revision 02 – 31st January 2012. Figures 13 and 14 in Volume III of this ES show the two potential crane options with differing access routes. These closures/restricted accesses are provided for within the TWAO. When a closure is in place, clear signage and information boards will be erected providing clear direction for the diversion. Temporary pedestrian barriers will also be erected to create an obvious walkway, and if uneven ground conditions are encountered temporary membranes will be rolled out to provide a better walking surface.

Similar measures to the ones described above will be employed at Water Lane where secure fencing or hoarding will be erected around the perimeter of the site, and a footpath diversion will be established with temporary pedestrian barrier if necessary.

Temporary works are required on Meadow Lane to safely facilitate the egress of construction vehicles via Old Red Lion Inn and Asda car parks after unloading their cargo on Water Lane.

5.2.1.5 Passenger Movements within Leeds City Station

It is considered that the accommodation of passenger facilities will not provide significant difficulties in respect of construction whilst maintaining station operation. The main issue will be the interface and connection with the existing station facilities and the need to maintain passenger movements. Consultation with the station management would be crucial through the planning and construction of the works to time in key operations to minimise any disruption to the travelling public.

5.2.2 Predicted Effects

An assessment of the predicted effects on traffic and access during the construction phase, following implementation of the incorporated mitigation outlined in Section 5.2.1 above, has been undertaken in accordance with the criteria outlined in Section 2.5 and is summarised within Table 5.2.

5.2.2.1 Motor Vehicles and Emergency Vehicles

Vehicular access would be restricted on Little Neville Street and Water Lane during the construction of LSSE. All such restrictions and associated impacts would be managed and mitigated in accordance with the Contractor's CTMP. Whilst the transport effect on Water Lane is considered of low importance, Little Neville Street will temporarily be obstructed during the construction and removal of the tower crane on the east bank of the River Aire, during unloading of vehicles and during the resurfacing of Little Neville Street. Therefore the transport effect on Little Neville Street is considered as medium importance. Although in the event of an emergency, any road closure could be immediately removed to allow access to the emergency services in a relatively short period of time.

The impact on Water Lane is considered as low importance and the effect is of low magnitude because there are low vehicle numbers already utilising this area. Therefore, in line with Table 2.1 this is considered not significant.

Little Neville Street is considered as medium importance and the effect is of moderate magnitude. Therefore, in line with Table 2.1 this is considered potentially significant. However, it is acknowledged that this assessment is based on the worst case scenario for the number of delivery vehicle trips as specified in Carillion's Constructability Review Rev 02 – 31st January 2012. The number of construction trips will be better defined in later GRIP stages of the design process as a consequence this effect may be less onerous that the worse case and in reality this may downgrade the effect to 'not significant'.

5.2.2.2 Leeds City Station Passengers

The passengers of Leeds City Station would be affected (temporarily) during the construction of LSSE by hoarding on platforms to segregate the construction area and consequently reducing the effective width of platforms, however access would be maintained. This receptor is considered as medium importance and the effect is of moderate magnitude.

In line with Table 2.1 this receptor would be considered as potentially significant, however it is considered that the impacts on Leeds City Station Passengers would be mitigated with by Leeds Station Management Plan and the CTMP which would co-ordinate pedestrian movements effectively, minimising the disruption and delay. Therefore, this receptor is considered as not significant.

5.2.2.3 Non-motorised Users (including Pedestrians, Cyclists and Disabled People)

Non motorised users (NMUs) are likely to be affected during the construction of LSSE with the provision of hoarding to segregate the general public from the construction site and compounds, which may include the reduction of footway widths or temporary footway closures with diversions. Where it is safe to do so, Heras type hoarding will be used following feedback from the consultation exercises. All such restrictions and associated impacts would be managed and mitigated in accordance with the Contractor's CTMP and as such would reduce any inconvenience or disruption.

Cycle parking stands (no.8) in Granary Wharf would be removed during construction to accommodate the link bridge adjoining the west bank of the River Aire. Once the construction phase is complete, these will be replaced by 20 new cycle storage lockers within one of the arches on Dark Neville Street. Therefore there will be no cycle parking provision during the construction period.

This receptor is considered as low importance and the effect is of moderate magnitude. Therefore, in line with Table 2.1 this is considered not significant.

5.2.2.4 Businesses in the Granary Wharf Area

Small delivery vehicles will deliver consumables to the main site and welfare facilities via Wharf Approach, which will consist of at least 3 vehicles per day, but no more than five. Granary Wharf will be used to provide access to the IGO50 self erecting crane during the delivery and removal of the crane. A walking route for site staff is provided across Granary Wharf between the main site and welfare facilities, and the main work site.

5.2.2.5 Commercial Properties in the Arches of the Railway Viaduct including the Private Car Park

Vehicular and pedestrian access would be temporarily limited to the properties in the arches of the railway viaduct when Little Neville Street or Granary Wharf has temporary closures/restrictions in place. However, access would be maintained along Dark Neville Street.

Four of the arches (currently used for car parking) will be temporarily used for storage and for the provision of welfare facilities during construction. As a consequence, a relatively small number of car parking spaces will be lost during construction, and alternative car parking could be found in the near vicinity. It should be noted that two of the arches will be kept on a permanent basis as part of the LSSE scheme but their loss and impact is assessed in Section **Error! Reference source not found.** in the operational phase.

This receptor is considered as low importance and the effect is of low magnitude. Therefore, in line with Table 2.1 this is considered not significant.

5.2.2.6 Staff at Asda House and the patrons of the Old Red Lion Inn

Staff at Asda House would temporarily lose a small proportion of their car park to accommodate the barge loading/launch site on Water Lane. Additionally, the patrons of Old Red Lion Inn would also temporarily lose the use of their leased car park. This receptor is considered as low importance and the effect is of moderate magnitude. Therefore, in line with Table 2.1 this is considered not significant because of the relatively small number of vehicles affected.

5.3 Operational Phase

5.3.1 Incorporated Mitigation

The LSSE scheme has been developed through consultations with various stakeholders during Network Rail's GRIP studies, stages 1 to 4. .

5.3.1.1 Little Neville Street.

Little Neville Street will remain as two-way operation and is to become a pedestrianised route including a prohibition of driving with specified exemptions to permit access to the users of the UKI underground car park, the Blue Apartments, the Hilton Hotel and general service access. Vehicular access onto Dark Neville Street from Little Neville Street and vice-versa will be blocked via means of physical means of access control (exact details to be determined). This is to prevent the through movement between these two roads which would facilitate a drop-off / pick-up movement which is to be discouraged. It is also to

prevent access and egress to the car parking spaces within the station undercroft via Little Neville Street in order to reduce potential conflicts in the pedestrian zone.

A turning head will be provided on Little Neville Street in the immediate vicinity of the Railway Viaduct. It would not be delineated by a kerb, but by street furniture, bollards and trees. This would mean that during general operation the turning head space would be part of the wider public realm improvements.

5.3.1.2 Dark Neville Street

A 3m wide, pedestrian route / 'safe space' will be provided along the south side of Dark Neville Street connecting LSSE with Little Neville Street.

5.3.1.3 Granary Wharf Cycle Parking Stands

Cycle parking stands that are located in Granary Wharf between the railway viaduct and Watermans Place, will be removed and replaced by 20 cycle lockers situated in one of the arches on Dark Neville Street once the construction phase is completed.

5.3.1.4 Leeds City Station Management Plan

The Leeds Station Management Plan will be updated to reflect that LSSE is likely to become the choice of access/egress for those passengers attending local events in Leeds or Leeds United Football Club matches due to improved access to the bus stops and temporary coach stands on Neville Street and Sovereign Street.

5.3.2 Predicted Effects

An assessment of the predicted effects on traffic and access during the operation phase, following implementation of the incorporated mitigation outlined in Section 5.2.1 above, has been undertaken in accordance with the criteria outlined in Section 2.5 and is summarised within Table 5.2.

5.3.2.1 Motor Vehicles and Emergency Vehicles

It is considered that there would be a reduction to current traffic flows on Little Neville Street due to the proposed improvements as part of the LSSE scheme and as a result of the proposed access control measures where Little Neville Street meets the railway viaduct. There would be no effect on the wider transport network as a result of LSSE. This receptor is considered as low importance and the effect is of low magnitude. Therefore, in line with Table 2.1 this is considered not significant.

5.3.2.2 Leeds City Station Passengers

Leeds City Station passengers would benefit from improved accessibility (step free) to the south of the city, with reduced pedestrian journey times. The new entrance would also help reduce congestion during peak periods in the station during peak periods by providing alternative means of access/egress.

5.3.2.3 Non-motorised Users (including Pedestrians, Cyclists and Disabled People)

There will be an increase in secure cycle parking provision from 8 cycle stands that will be replaced by 20 cycle lockers which will situated in one of the arches on Dark Neville Street. Furthermore the new cycle lockers would benefit from increased passive surveillance due to the footfalls generated by LSSE.

5.3.2.4 Businesses in the Granary Wharf Area

This receptor would be unaffected during the operation phase of this scheme and therefore it has not be assessed.

5.3.2.5 Commercial Properties in the Arches of the Railway Viaduct including the private car park

The commercial properties would gain greater exposure as a result of the increased footfalls passing their properties, which in turn may encourage other commercial activity and redevelopment of the dark arches.

It should be noted that four arches will be used during the construction of LSSE, where two arches will return to their previous use, two arches currently used for car parking will be taken on a permanent basis. One arch will be used to accommodate the proposed ramps to provide step free access to LSSE from the east bank of the River Aire, and the other will be used to accommodate the aforementioned cycle storage lockers.

This receptor is considered as low importance and the effect is of low magnitude. Therefore, in line with Table 2.1 this is considered not significant.

5.3.2.6 Staff at Asda House and the Patrons of the Old Red Lion Pub

This receptor would be unaffected during the operation phase of this scheme and therefore it has not be assessed.

Table 5.1: Summary of incorporated mitigation and prediction of effects

Project Phase	Receptor	Summary of impact & resulting effect	Incorporated Mitigation	Residual effect (i.e. following mitigation)			Significance following mitigation
				Level of effect	Adverse/ Beneficial	Permanent/ Temporary	
Construction	Motor Vehicles and Emergency Vehicles	Temporary closure or restricted access on Little Neville Street and Water Lane to allow delivery of materials, accommodation of a tower crane and the re-surfacing of the highway. Affects the service and access to a number of commercial properties. Loss of on-street parking on Water Lane. Little Neville Street temporarily obstructed during the construction and removal of the tower crane. It is acknowledged that this assessment is based on the worst case scenario for the number of delivery vehicle trips as specified in Carillion's Constructability Review Rev 02 – 31st January 2012. The number of construction trips will be better defined in later GRIP stages of the design process as a consequence this effect may be less onerous that the worse case and in reality this may downgrade the effect to 'not significant'.	The associated impacts would be managed and mitigated in accordance with the Contractor's CTMP. In the event of an emergency, any road closure could immediately removed to provide access to the emergency services.	Moderate	Adverse	Temporary	Potentially significant
	Leeds City Station Passengers	Providing hoardings within Leeds City Station to temporarily segregate every day station operation from construction activity	Consultation with the station management would be crucial through the planning and construction of the works to time in key operations to minimise any disruption to the travelling public	Moderate	Adverse	Temporary	Not Significant
	Non Motorised Users	Non motorised users are likely to be affected by the provision of hoarding to segregate the general public from the construction site and compounds, which may include the reduction of footway widths or temporary footway closures with diversionary routes.	The associated impacts would be managed and mitigated in accordance with the Contractor's CTMP	Moderate	Adverse	Temporary	Not Significant
	Businesses in the Granary Wharf Area	Provision of hoardings surrounding the main site to segregate the general public from construction.	Diversionary signing to alternative routes	Minor	Adverse	Temporary	Not Significant
	Properties in the	Limited vehicular and pedestrian access to the	The associated impacts would	Minor	Adverse	Temporary	Not Significant

Project Phase	Receptor	Summary of impact & resulting effect	Incorporated Mitigation	Residual effect (i.e. following mitigation)			Significance following mitigation
				Level of effect	Adverse/ Beneficial	Permanent/ Temporary	
	Arches of the Railway Viaduct including the Private Car Park	properties situated in the Arches on Dark Neville Street when Granary Wharf or Little Neville Street is closed or restricted to facilitate construction.	be managed and mitigated in accordance with the Contractor's CTMP				
	Staff at Asda House and Patrons of the Old Red Lion Pub	Temporary loss of car parking at Asda House and temporary loss of use of car parking at Old Red Lion Inn to accommodate barge loading and launch site on Water Lane.	None	Minor	Adverse	Temporary	Not Significant
Operation	Motor Vehicles and Emergency Vehicles	Likely to be a reduction in traffic flows on Little Neville Street due to the proposed access restrictions.	N/A	Minor	Beneficial	Permanent	Not Significant
	Leeds City Station Passengers	Benefit from improved accessibility (step free) to the south of the city, with reduced pedestrian journey times. The new entrance would also help reduce congestion during peak periods in the station during peak periods.	N/A	High	Beneficial	Permanent	Significant
	Non Motorised Users	Non motorised users would benefit from stepped and step-free access from Leeds City Station to the south of the city. Relocated cycle parking stands would benefit from increased passive surveillance due to the footfalls generated by LSSE. Improved urban realm and creation of a pedestrianised zone	N/A	High	Beneficial	Permanent	Significant
	Properties in the Arches of the Railway Viaduct including the Private Car Park	The commercial properties would gain greater exposure as a result of the increased footfalls passing their properties, which in turn may encourage other commercial activity and the redevelopment of the dark arches.	N/A	Minor	Beneficial	Permanent	Not Significant

6. Significant Residual Effects

6.1 Significant Residual Effects

This section provides a summary of the residual effects which remain after implementation of incorporated mitigation; and are considered to be significant in terms of the assessment methodology presented in Chapter 2.

There are two residual effects that remain following implementation of incorporated mitigation, both of which are present during the operational phase.

6.1.1 Construction Phase

Little Neville Street will be temporarily obstructed during the construction and removal of a tower crane on the east bank of the River Aire. Vehicular access to Little Neville Street will be maintained via Neville Street and Dark Neville Street, however through movements along Little Neville Street will not be physically possible. The temporary closure on Little Neville Street will be managed and mitigated by the CTMP. It is considered that the effect of this receptor is of as medium importance and the effect is of moderate magnitude. Therefore, in line with Table 2.1 this is considered potentially significant.

However, it is acknowledged that this assessment is based on the worst case scenario for the number of delivery vehicle trips as specified in Carillion's Constructability Review Rev 02 – 31st January 2012. The number of construction trips will be better defined in later GRIP stages of the design process as a consequence this effect may be less onerous that the worse case and in reality this may downgrade the effect to 'not significant'.

6.1.2 Operational Phase

LSSE would improve pedestrian accessibility by providing stepped and step-free access to Leeds City Station from the south of the city. This improved accessibility will have a significant beneficial effect for users of the Leeds City Station and non-motorised users.

6.2 Supplementary Mitigation

Carillion has suggested that incorporation of vision panels into the hoarding in Granary Wharf would offer some mitigation to those affected by providing views of the on-going construction and to make the hoarding less imposing.

The contractor may wish to appoint a Traffic Officer who would also oversee all matters pertaining to construction traffic and safety. This role could be combined with the Liaison Manager's Duties. They would be responsible for traffic issues arising from the construction, including timing of deliveries, stacking of vehicles, the effect on junctions and control of vehicles onto and off site. They would also monitor the condition and cleanliness of the highway and liaise with the highway authority over any traffic or signing concerns and address other issues should they arise.

It is recommended (although not provided for in the current promoted scheme) that the demarcated pedestrian route (3m wide, pedestrian route / 'safe space') on the south side of Dark Neville Street is extended between Little Neville Street and Neville Street.

6.3 Compliance with Planning Policy

6.3.1 National Policy

The proposed scheme improves access for all to public transport and reduces people's reliance on access by car which is in accordance with the guidance in the NPPF. LSSE meets the main objectives of promoting more sustainable choices for people, promoting accessibility to public transport, and reducing the need to travel by car.

6.3.2 Sub-regional Policy

Leeds Local Enterprise Partnership (LEP) states that it is essential to improve transport links to support access to developments and regeneration areas. LSSE will improve pedestrian journey times between the development areas to the south of the city and Leeds City Station.

6.3.3 Local Policy

The LSSE scheme aligns well with three of nine strategic aims of Leeds UDP, namely environment, transport and access for all.

6.3.4 Other Relevant Guidance

A New Deal for Transport asserts that vehicles must continue the trend to being cleaner, quieter and less harmful to the environment, and these aims are supported by the proposed scheme.

The ten year plan for transport identifies the need to reduce the impact of transport on the environment. This scheme will help to reduce the environmental impact of transport in terms of emissions.

The proposed scheme seeks to meet the goals of TaSTS and DaSTS at a local level and encourage more sustainable modes of transport by reducing journey times and emissions

7. References

- Mott MacDonald's Transport Statement (ref: 296480 RPT10 rev A). February 2012;
- Planning Policy Statement (PPS) 1: Delivering Sustainable Development and Planning Policy Statement: Planning and Climate Change
- Planning Policy Statement 4: Planning for Sustainable Economic Development
- Planning Policy Guidance (PPG) 13: Transport
- Regional Spatial Strategy for Yorkshire and the Humber and Regional Spatial Strategy 2009 Update
- Leeds City Region Local Enterprise Partnership (LEP) Proposal
- West Yorkshire Local Transport Plan (LTP3)
- Unitary Development Plan / Leeds Unitary Development Plan Review 2001-2026
- A New Deal for Transport
- The Future of Transport White Paper
- Transport Ten Year Plan
- Towards a Sustainable Transport System (TaSTS)
- Delivering a Sustainable Transport System (DaSTS)
- Carillion's LSSE Constructability Review Revision 02 – 31st January 2012
- Metro's Consultation Report (February 2012)
- AECOM's LSSE Transport Statement – September 2009
- Bauman and Lyons Architects Planning, Design and Access Statement – September 2009
- Corus LSSE GRIP1 – September 2006
- Corus LSSE GRIP2 – April 2007
- Corus LSSE GRIP3 – October 2007
- AECOM's LSSE GRIP4 – April 2009
- Hyder LSSE 'DRAFT' Pedestrian Modelling and Assessment
- Steer Davis Gleave LSSE Major Scheme Business Case – November 2009
- DfT Guidance on Transport Assessments
- Mott MacDonald's RPT 18 Scheme Location and Design Rationale Report, February 2012