06 Baseline and Environmental Impacts: Westbourne Park to Pudding mill Lane
Baseline and Environmental Impacts: Westbourne Park to Pudding Mill Lane

6.1 Introduction

6.1.1 The central area works comprise a new tunnel across London that will connect existing railways to the west and east. The route will comprise two (“twin bore”) tunnels that will accommodate west and east bound Crossrail trains. At a point beneath Stepney Green, the new alignment will branch: one route will continue north-east towards Stratford, the other will head south-east towards the Isle of Dogs.

6.1.2 Crossrail stations will be provided at Paddington, Bond Street, Tottenham Court Road, Farringdon, Liverpool Street and Whitechapel. Each station will have two entrances and ticket halls to provide access to the east and west ends respectively. A further station will be provided on the southeast branch, at Canary Wharf.

6.1.3 The tunnel portals will be located at Royal Oak (Paddington) in the west and Pudding Mill Lane (Stratford) in the east, with the south-eastern branch continuing in tunnel beyond the Isle of Dogs. The tunnels will require access and/or ventilation shafts. The twin bore tunnels will be excavated using tunnel boring machines with excavated material removed at the west and east portals. Excavated material will also be removed via a temporary tunnel linking Hanbury Street shaft to a temporary shaft on Pedley Street. It will then be taken by conveyor to a holding site in Mile End Park waiting for removal by rail.

6.2 Royal Oak Portal (Route Window C1)

Baseline

6.2.1 The Royal Oak route section is dominated by the elevated A40 Westway, the Grand Union Canal, and the Mainline and London Underground tracks into Paddington Station. There are various commercial land uses to the north of the railway which include: a concrete batching plant, taxi garage and Westbourne Park Bus Garage. The rest of the area is residential with large areas of social housing including high and medium-rise blocks to the north and more traditional rows of terraces to the south.

6.2.2 Neighbourhood shopping facilities are provided on the Harrow Road to the north and Westbourne Park Road to the south. There are a number of community facilities to the south of the railway which include: St Mary the Angel Roman Catholic Primary School, the Brunel Family Centre, St Stephens Church of England Primary School, the West London Buddhist Centre, St Stephen’s Church, Westbourne Park Baptist Church, Westbourne Park Family Centre, Paddington Children’s Library, Harrow Road Health Centre and Warwick Community Centre.

6.2.3 Facilities to the north are also quite varied and include: Parkview Lodge pre School, Our Lady of Dolous School, Our Lady of Sorrows Church, Warwick Nursery, Paddington Community Mental Health Service, St Mungo’s Association, post offices (on Harrow Road and Sutherland Avenue), doctors surgeries, Paddington Arts Centre, Edward Wilson Primary School and a police station. There are also several leisure facilities including: Meanwhile Gardens play area, Westbourne Green Park and Westbourne Green sports complex. Facilities also include the Stowe Boys Youth Club at 258 Harrow Road. This has recently been granted planning permission for demolition and replacement by a new building to accommodate an improved youth club and health centre.
6.2.4 The Royal Oak worksite is within the North West Westminster Special Policy Area (emerging UDP). The Special Policy Area aims to promote the regeneration of the area, develop business, improve the environment, strengthen shopping frontages, provide a mix of housing tenure and improve the pedestrian environment. It also highlights the need for a range of related community facilities to support this growth.

6.2.5 Westminster City Council, in conjunction with the Westminster City Partnership (key public and private sector partners) published a community strategy titled the Westminster City Plan in 2002. The plan aims to improve access to education, the safety of the local population, people’s health, the quality of the local environment and improvements to transport infrastructure.

6.2.6 Westminster City Council’s Neighbourhood Renewal Strategy (NRS) builds on this framework and aims to tackle deprivation targeting vulnerable groups and individuals including many local people living in and around Paddington. Groups that assist include the Paddington Development Trust, Paddington Regeneration Partnership, Paddington First, and investment through the Paddington Social and Community Fund.

Main Works

6.2.7 The Crossrail route runs along the surface railway within the existing rail corridor through the western part of the route window. The route then passes into tunnel at Royal Oak. The permanent works will comprise:

- taxi servicing facilities buildings (below Westway);
- a train reversing facility at Westbourne Park and track alternatives to the Great Western Main Line;
- an approach ramp, a portal at Royal Oak, a cut and cover tunnel, and twin bore tunnel commencing at Westbourne Park; and
- a Westbourne Bridge shaft containing intervention and ventilation facilities.

6.2.8 The works at Royal Oak will be constructed from four sites. The Royal Oak Worksite West will be located adjacent to the Westbourne Park Bus Garage (with access from Alfred Road and Great Western Road). Royal Oak Worksite East will be located north of the track under the Westway. The Platform 1A Worksite will be located to the south of the tracks (accessed from Gloucester Terrace) and north of the tracks will be the Paddington Central Worksite used for delivery and storage (although it appears in C2).

6.2.9 The majority of these works are on railway land, however, they will require the demolition of:

- buildings associated with, and including, the Great Western Studios (formerly the parcels office and Network Rail lost property);
- buildings located in Murphy’s Yard;
- bus washing facilities; and
- temporary closure of the Tarmac Topmix concrete ready-mix plant.

Significant Residual Impacts

6.2.10 Table 6.1 summarises the assessment process for this route section. There will be no significant impacts in this route section.

Cumulative Impacts

6.2.11 Table 6.2 summarises the assessment process for this route section. There will be no cumulative impact in this route section.
6.3 Paddington Station (Route Window C2)

Baseline

6.3.1 The Paddington area is dominated by the railway, which provides services into Paddington Station, one of London’s main rail termini. The surrounding uses reflect this travel function with the Hilton International Hotel, a YWCA and YMCA, numerous shops and services located within the station, and several smaller hotels in the surrounding streets. Praed Street provides the main local shopping facilities catering for the densely populated surrounding residential area and the staff of St Mary’s Hospital and medical school. There are several day care nurseries, doctor’s surgeries and a number of churches and religious institutions. Leisure facilities include the Imperial College Recreation Centre and several small open spaces.

6.3.2 Paddington is identified as an Opportunity Area by the London Plan with proposals for the renewal of St Mary’s Hospital and relocation of the Royal Brompton Hospital and Harefield Hospital which will support the creation of the largest health campus in London.

6.3.3 The Westminster Unitary Development Plan (notice of intention to adopted in 2004) designates Paddington as a ‘Special Policy Area’. The Special Policy Area is targeted for high-density good quality business and housing which will develop and strengthen the local community and range of facilities available.

6.3.4 The UDP identifies Praed Street as a district centre, which traditionally provides convenience goods and services for local communities. The UDP notes that the environment is poor and it forms part of the Circle of Initiative for planned management improvements. It also identifies local shopping and services at Craven Place/Craven Terrace.

Main Works

6.3.5 The twin-bore tunnels will pass beneath the surface railway lines that run into Paddington station. The route will then follow the alignment of Eastbourne Terrace before continuing under Spring Street and Sussex Square in twin-bore tunnels, with rails at a depth of between approximately 20 and 30 m below street level.

6.3.6 The new Crossrail station will be constructed under Eastbourne Terrace. It will provide an interchange with London Underground and National Rail services. Above-ground, the station will consist of a narrow glazed structure, between 6 m and 8 m high, referred to as the ‘light spine’. This will run the length of the station and separate the existing Departures Road (for taxi access) and Eastbourne Terrace. Street level access will be provided from Eastbourne Terrace into the western ticket hall and access to the eastern ticket hall will be provided from the mainline concourse. Streetscape enhancement works will also be implemented.

6.3.7 Two ventilation structures will be constructed at the eastern and western ends of the box. These will include emergency intervention facilities.

6.3.8 The Paddington works will be constructed from four sites. The Redstar Parcel Deck Worksite will be located on the site of the former parcels deck to the north of the station (it will be accessed from Bishop’s Bridge Road). The Eastbourne Terrace Worksite will require the use of Eastbourne Terrace and will be also accessed from Bishop’s Bridge Road. The Circle Line Link Worksite will be located at the junction of Praed Street and Craven Road. The works will also use the Platform 1A Worksite identified in Route Window C1.
6.3.9 The works will require the following demolitions:

- retaining wall and railings between Eastbourne Terrace and Departures Road;
- canopy over Departures Road;
- 191 to 195 Praed Street;
- internal demolition works within MacMillan House; and
- GWML parcels office at 4 to 18 Bishopsbridge Road.

**Significant Residual Impacts**

6.3.10 Table 6.1 summarises the assessment process for this route section. There will be no significant direct community impacts.

**Cumulative Impacts**

6.3.11 Table 6.2 summarises the cumulative impact assessment. There will be a cumulative impact on the community during construction caused by:

- visual impacts on residents and pedestrians around the work sites and occupants of the Hilton Hotel;
- noise disruption to 20 residential properties, St Mary’s Hospital and the Hilton Hotel; and
- delays to train users, loss of car parking and disruption to users of Paddington Station.
6.4 Hyde Park and Park Lane Shafts  
(Route Window C3)

Baseline

6.4.1 Hyde Park covers most of the route window. It provides a substantial recreation space in the heart of London. The Park is used for informal sports, walking, picnicking and horse riding. Park Lane runs north-south at the eastern boundary of Hyde Park. Oxford Street, which provides both regional and international shopping facilities, is located to the north-east. These retail and recreation functions support London’s role as an international centre.

6.4.2 The community uses reflect this international function. They include the Royal Lancaster Hotel, Grosvenor Hotel, Victory Services Club and Mayfair Conference Centre. Local facilities include the shopping centre at Connaught Street, Ravenstone pre-Preparatory School, a NHS clinic, Albermarle College, Marylebone Police Station and Tyburn Convent (near the site of Tyburn Gallows). Local open space is provided by Sussex Gardens.

6.4.3 The emerging Westminster UDP designates Hyde Park as ‘Metropolitan Open Land’. It also designates Oxford Street as ‘Primary Shopping Frontage’ (a role supported by the designation of an ‘International Shopping Centre’ by the London Plan). The emerging UDP identifies the shops at Connaught Street as ‘Local Shopping Frontage’ and target Sussex Gardens to the north as a ‘Priority Area for Open Space’.

Main Works

6.4.4 The twin-bore tunnels will pass between Lancaster Gate in the west and Park Street in the east with the rails at an approximate depth of between 27 m and 34 m below street level. East of Lancaster Gate the alignment will run under Hyde Park roughly parallel with Bayswater Road, and then parallel to Oxford Street. Other permanent works will consist of a shaft in Hyde Park and another shaft at Park Lane.

Hyde Park Shaft

6.4.5 A ventilation and emergency intervention shaft will be constructed on the northern boundary of Hyde Park, in the vicinity of the Victoria and Clarendon Gates. A ventilation terminal will be constructed immediately west of Victoria Lodge. The structure will be approximately 15 m by 10 m in area by 12 m deep (protruding about 2 m above-ground level) and will contain service equipment. It will be concealed by a low wall.

6.4.6 A horizontal tunnel (the ventilation passage) of between 8 and 13 m width will run eastwards from the ventilation terminal to a vertical shaft, located under North Carriage Drive. An intervention passage will run from the shaft to an entrance hatchway adjacent to Bayswater Road. The vertical shaft to the twin-bore tunnels will be 13 m in internal diameter. The bottom of the shaft will be connected to the twin-bore tunnels by adits. Two permanent access points to mechanical and electrical equipment and the ventilation fans will be constructed north of the shaft, at the edge of the park boundary.

6.4.7 The Hyde Park Worksite will be located within the northern boundary of Hyde Park. It will include footpaths, part of North Carriage Drive (between Victoria Gate and Clarendon Gate), parkland open space, and part of the North Ride (used by horses). Heavy goods vehicles will access the site using North Carriage Drive (from Park Lane).
6.4.8 A second ventilation and emergency intervention shaft is required in the Park Lane area. It is required because the tunnelled distance between Bond Street station and the Hyde Park shaft will be around 1500m which does not meet safety requirements.

6.4.9 It will be constructed within the central reservation of Park Lane immediately south of Marble Arch and opposite Green Street. The terminal will be 7.5 m in diameter and 2 m height and will be constructed over the shaft, with equipment rooms provided in a concrete box below. The access stair to the surface will be provided. The Park Lane Worksite will occupy the entire landscaped central reservation site (with access direct from Park Lane).

Significant Residual Impacts

6.4.10 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.4.11 The north ride will be diverted around the construction site. The noise caused by general construction activity and the movement of lorries will result in a significant temporary adverse residual impact on the users of the diverted North Ride and the users of the riding school training ring. Appendix 1 provides more details on Hyde Park Stables.

6.4.12 Construction vehicles are currently prohibited from using North Carriage Drive. The introduction of construction lorries during the works will lead to a significant impact on the users of this part of Hyde Park.

6.4.13 The temporary closure of Victoria Gate will require the horse riders to use Clarendon Gate. Clarendon Gate does not have a specific horse crossing and cars drive faster at location at this location on the Bayswater Road. It has been assumed that safe crossing for horses will be ensured.

Cumulative Impacts

6.4.14 Table 6.2 (Chapter 10) summarises the cumulative impact assessment. There will be no cumulative impact.
6.5 Bond Street Station (Route Window C4)

Baseline

6.5.1 Bond Street Station provides the main public transport access to the major retail areas of Oxford Street, Bond Street and South Molton Street. These streets form part of the London ‘Central Activities Zone’ which supports London’s role as an international centre. The main uses are high-order serving international and national visitors. They include: department stores (e.g., Selfridges, John Lewis, the House of Fraser), hotels (Claridges), Wigmore Hall, the Handel House Museum and the Palladium Theatre. There are three London squares: Grosvenor Gardens (which fronts onto the American Embassy), Hanover Square and Cavendish Square. Residential areas comprise large and exclusive private apartments and houses. There are a number of supporting community uses which include: St Peter’s Church, the Ukrainian Catholic Cathedral, the Greek Orthodox Church of the Annunciation of the Virgin Mary, Mayfair Medical Centre, the Porchester Public Library and West End Central Police Station. Educational buildings include the London College of Fashion, the London College of Music, two primary schools and one nursery school.

6.5.2 The London Plan identifies Oxford Street, Regent Street and Bond Street as part of an ‘International Centre’. This is reflected by the emerging Westminster UDP which designates these streets as ‘Primary Shopping Frontages’.

Main Works

6.5.3 The permanent works will consist of new twin-bore tunnels and a new station at Bond Street featuring two ticket halls. The tunnels will pass between Park Street in the west and Poland Street in the east, roughly parallel to Oxford Street with rails at an approximate depth of 26 m to 32 m below street level.

6.5.4 The new station will be located to the south of Oxford Street between Gilbert Street to the west, and Hanover Square to the east. Two new ticket halls will be constructed, in the west at 65 Davies Street and the east at 18/19 Hanover Square.

6.5.5 The station will include two platforms fitted out to a length of 210 m, although the station tunnels will be constructed to facilitate extensions to 245 m should the need to operate longer trains arise. Ventilation and emergency intervention facilities will be provided at each ticket hall location.

Western Ticket Hall

6.5.6 Access from the west will be from a street level ticket hall located at 65 Davies Street, in a block bounded by Davies Street, St. Anselm’s Place, Gilbert Street and Weighhouse Street. Access to the platforms will be provided by two flights of escalators and an intermediate concourse. Ventilation and emergency intervention facilities will be included within a box located beneath the ticket hall. A sewer diversion will be carried out from the Davies Street Sewer Diversion Worksite.

6.5.7 The Davies Street Worksite will be located at 65 Davies Street with access from Weighhouse Street and egress via Davies Street. It will require the demolition of 65 Davies Street.

Eastern Ticket Hall

6.5.8 The eastern ticket hall will be located at street level at 18 and 19 Hanover Square, at the corner of Tenterden Street. Access to the platforms will be provided by a single flight of escalators. Ventilation and emergency intervention facilities will be adjacent to the ticket halls.

6.5.9 The Hanover Square worksite will require the demolition of 18-19 Hanover Square and 1a Tenterden Street. It will include the western part of the square and gardens. Access to the site will be from Brook Street and egress via Hanover Street to the south.
Temporary Significant Residual Impacts

6.5.10 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.5.11 Construction traffic will lead to more than 100% increase in HGV traffic on Davies Street and Weighhouse Street. This will be a significant negative temporary impact.

Permanent Significant Residual Impacts

6.5.12 The western ticket hall will require the permanent acquisition of 65 Davies Street. This building houses the headquarters of the University of the Arts and teaching facilities for the London College of Fashion. It also contains a gallery which is open to the public, exhibiting works by local artists and students. The facility caters for a wide range of students, 25% of whom are from overseas (see Appendix 1 for further information). The loss conflicts with the UDP planning policy. The loss will be a significant negative permanent impact.

6.5.13 There are likely to be 31 dwellings around the Davies Street Worksite which may qualify for rehousing for a period of greater than three months. Residents may be absent from the community for a relatively long period, it is therefore assumed that there will be a significant permanent impact.

Cumulative Impacts: Davies Street

6.5.14 Table 6.2 (Chapter 10) summarises the cumulative impact assessment.

6.5.15 There will be a cumulative impact on the local community at Davies Street during construction caused by

- increased HGV movements on Davies Street and Weighhouse Street;
- disruption to road users and bus users on Davies Street;
- noise disruption to one dwelling, the Ukrainian Catholic Cathedral and Regent Hall Church, users of the Hanover Square open space; and
- visual impacts on residents surrounding the worksite.

6.5.16 This also includes the potential rehousing of 31 dwellings for over 3 months and the demolition of 65 Davies Street, although permanent, these impacts will commence during the construction period.

Cumulative Impacts: Hanover Square

6.5.17 Users of Hanover Square and residents will also experience a cumulative impact resulting from a combination of noise and visual amenity impacts on users and residents of Hanover Square; and the loss of on-street parking spaces.
6.6 Tottenham Court Road Station (Route Window C5)

Baseline

6.6.1 The area along Oxford Street and Charing Cross Road is a major commercial and tourist destination, with numerous retail outlets. It houses a mixture of local, national and international facilities which include: international shopping along Oxford Street, the clubs, bars and restaurants of Soho, the theatres on Charing Cross Road, the Astoria night club and the British Museum. These uses play a vital role in the success of London as an international and national centre for leisure and entertainment. The residential community is small comprising mainly flats above retail uses, the YMCA, the YWCA and a number of hotels. It is served by the churches of St Patrick’s and St Giles in the Fields, open space on Soho Square and Bedford Square, sports facilities at the University of London, the CentrePoint Snooker Club and numerous local shops.

6.6.2 Tottenham Court Road Station is at the junction of Tottenham Court Road, Charing Cross Road, Oxford Street and New Oxford Street. It lies within ‘Central Activities Zone’ (as designated by the London Plan). The area is highlighted by the Plan as ‘an area of mixed uses with strong arts, cultural or entertainment character’. It also targets Tottenham Court Road as an ‘Area of Intensification’ to accommodate growth with higher density development and good accessibility.

6.6.3 The open space at Soho Square is designated by the UDP as a priority area for additional playspace and targeted by the Westminster City Plan (the community strategy) for the creation of safe and secure places for children to play.

6.6.4 Route window C5 also includes the proposed Fisher Street vent shaft. This area is mainly commercial with many retail outlets on High Holborn and Kingsway. The main residential uses are the Chancery Court Hotel and Holborn Hotel. Educational uses include the St Martins College of Art and Design and several buildings linked to the University of London. Open space is provided by Bloomsbury Square Gardens and Red Lion Square Gardens.

Main Works

6.6.5 The twin-bore tunnels will pass between Poland Street in the west and Jockey’s Fields in the east with rails at a depth of approximately 24 m below street level. East of Poland Street the alignment will run under Soho, approximately parallel with Oxford Street, towards Charing Cross Road. The alignment will then move northeast and pass under New Oxford Street into Holborn.

6.6.6 The permanent works will include:

- twin-bore tunnels;
- a new station at Tottenham Court Road consisting of a new box at Goslett Yard and two new ticket halls;
- ventilation and EIP facilities at Fareham Street and Goslett Yard;
- a ventilation and EIP at Fisher Street; and
- the closure of Andrew Borde Street and streetscape enhancement.
Tottenham Court Road Station

6.6.7 The station will be located between Great Chapel Street and Charing Cross Road, to the South of Oxford Street. Two new ticket halls will be constructed, one at Dean Street and the other beneath the plaza at the front of Centre Point. The station will consist of two platforms fitted out to 210 m, although the tunnel will be constructed to facilitate extensions to 245 m should the need to operate longer trains arise.

6.6.8 Western Ticket Hall: A new ticket hall will be constructed on a site bounded by Oxford Street to the north, Great Chapel Street to the west, Dean Street to the east and Diadem Court to the south. This site at 93-96 Dean Street and 3-9 Diadem Court is occupied predominantly by media and property companies. A bank of four escalators will provide access to the ticket hall from an entrance building on Oxford Street. Two further banks with three escalators each will provide access down to the Central line interchange level and Crossrail platforms.

6.6.9 Fareham Street Shaft: A shaft will be sunk to the immediate south of the western ticket hall. The shaft will be 19 m in diameter and will be used for ventilation and emergency intervention.

6.6.10 Plaza (Eastern) Ticket Hall: An extension to the existing basement level ticket hall will be constructed beneath the plaza at the front of Centre Point and beneath Charing Cross Road. The existing Hornes Corner entrance will be permanently closed. The Dominion Theatre entrance on Tottenham Court Road will be retained and three new entrances will be provided at:

- the corner of Oxford Street and Charing Cross Road containing three escalators and a lift that will replace the existing station entrance;
- the front of Centre Point and facing northwards containing a fixed stair and a lift; and
- the front of Centre Point and pointing southwards containing two escalators and a fixed stair.

6.6.11 Two new shafts each containing three escalators will be provided down to the Northern line and Crossrail platforms. Andrew Borde Street will be permanently closed and landscaped and 148 Charing Cross Road will be demolished to allow for temporary diversion of Charing Cross Road.

6.6.12 Goslett Yard Shaft: A temporary shaft will be sunk, within a permanent box immediately to the south of the Astoria Theatre to facilitate construction work prior to its use as a ventilation and emergency intervention shaft.

6.6.13 The above works will be constructed from four worksites. The Astoria and Goslett Yard Worksites are both accessed from Charing Cross Road; and the Charing Cross Worksite is accessed from Charing Cross Road and Oxford Street. The Fareham Street Worksite will be accessed from Great Chapel Street. In addition to these main worksites there will be two lorry holding areas (Tottenham Court Road East and Newman Street (also a worksite); and a utilities worksite called Dean Street Sewer Diversion Worksite.

6.6.14 These worksites will require the demolition of Goslett Yard, the Astoria, the CentrePoint Snooker Club and a number of residential/retail/office buildings on Dean Street, Great Chapel Street, Charing Cross Road, Fareham Street, Oxford Street, Sutton Row, Falconberg Court and Diadem Court.
Fisher Street Shaft

6.6.15 A ventilation and emergency intervention shaft will be located between Catton Street and Fisher Street.

6.6.16 The work site will be located at Fisher Street (with access from Southampton Row and egress onto Catton Street and Fisher Street). This will require the demolition of 2-6 Catton Street and 1-2 Fisher Street as well as 8-10 Southampton Row although the façade will be retained as a frontage for a future over-site development. There will also be a lorry holding area at Fisher Street.

Significant Temporary Residual Impacts: Tottenham Court road

6.6.17 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.6.18 During construction there will be a significant adverse impact on pedestrian circulation and amenity in the St Giles Circus area (reported in the traffic impact assessment).

Significant Permanent Residual Impacts: Tottenham Court road

6.6.19 There will be a number of permanent significant impacts. The works will lead to the loss of the Astoria, the Mean Fiddler and Rouge nightclubs (Appendix 1 provides more detail on these facilities). The Astoria is one of the largest club and concerts venues in the UK. There are no comparable venues in the area. The loss of this, the Rouge and the Mean Fiddler from the same area is considered a significant permanent impact.

6.6.20 The loss of the Centre Point Snooker Club is also considered significant as there are no similar facilities in the area.

6.6.21 The works also require a number of residential demolitions at Diadem Court and the Bath House (Dean Street). Together the loss totals 10 dwellings. This is considered a significant negative permanent residual impact.

6.6.22 Noise disruption will significantly affect the West End Hostel for the homeless at Diadem Court for 11 months. This may render the hostel inoperable. This will be a significant negative permanent impact.

6.6.23 There will be a permanent beneficial impact on pedestrian circulation and amenity in the area with, amongst other measures, the pedestrianisation of Andrew Borde Street.
Cumulative Impacts: Tottenham Court Road

6.6.24 Table 6.2 (Chapter 10) summarises the cumulative impact assessment.

6.6.25 There will be a cumulative impact on the local community during construction. This will be caused by the combination of the impacts on pedestrian flows and amenity at St Giles Circus (outlined above) and:

- disruption to bus and underground users and road closures at Sutton Row, Fareham Street and Falconberg Court;
- disruption to pedestrians around St Giles Circus;
- noise disruption at St Patrick’s Church, a medical centre and a residential unit;
- visual impacts on residents surrounding the worksites, visitors to the Dominion Theatre and CentrePoint, users of Soho Square; and
- visual impacts on pedestrians along Oxford Street, Great Chapel Street, Dean Street, Diadem Court and in the vicinity of the Eastern Ticket Hall worksite.

6.6.26 This will also include the potential loss of the use of the West End Hostel, the loss of three nightclubs, the snooker club and 19 dwellings outlined as permanent impacts above. Although the loss of these uses are permanent, the effects will commence at the beginning of the construction period.

Significant Temporary Residual Impacts: Fisher Street

6.6.27 Construction works will generate over 100% increase in HGV traffic on Fisher Street and Catton Street. These streets currently have low traffic flows, additional lorry traffic will cause a significant impact on the local community.

Significant Permanent Residual Impacts: Fisher Street

6.6.28 The permanent loss of 9 dwellings at 8-10 Southampton Row and the Student Union and teaching Rooms of the Central St Martins College of Art and Design in Catton Street are both considered significant permanent negative impacts. Appendix 1 provides more information on Central St Martins College.

Cumulative Impacts: Fisher Street

6.6.29 There will be a cumulative impact during construction caused by:

- the increase in HGV flows down Fisher Street and Catton Street;
- noise impacts on students and teachers at the nearby University of Westminster and Central St Martins College buildings; and
- visual impacts on pedestrians along Catton Street and Procter Street and students and teachers at the University of Westminster and Central St Martins College.

6.6.30 This will include the loss of the 9 dwellings on Southampton Row and the Central St Martins College’s building at 2-6 Catton Street. They are considered as part of the cumulative construction assessment because although the loss of these uses is permanent, the effects will commence at the beginning of the construction period.
6.7 Farringdon Station (Route Window C6)

Baseline

6.7.1 Farringdon Station is located on Cowcross Street within a mix of offices, restaurants, retail outlets and Smithfield wholesale market. The street forms an important pedestrian route with the station and between surrounding shops and offices.

6.7.2 The area has a special character and appearance, which stems from its mix of uses, architecture and history. This character is derived from incremental and sustained development over nine centuries from Norman times to the present day. This has produced a unique layout of narrow streets.

6.7.3 There are large established social housing estates to the west of Hatton Garden, the Peabody Estate to the north, and several modern residential developments on Turnmill Street and Farringdon Road. These are supported by dental and doctors’ surgeries and a school. The area has seen the development and growth of the Hatton Garden jewellery trade (with associated workshops). The jewellery trade is focused on Hatton Garden with shops and workshops on most of the surrounding streets. The traders are supported by shops and cafés along Grenville Street, St Cross Street, Cowcross Street and Farringdon Road. Smithfield Market is located on Charterhouse Street to the south. It is one of London’s oldest markets, where meat has been bought and sold for over 800 years. St Bartholomew’s Hospital and Medical College are located to the north and south of the market.

6.7.4 Over the last ten years many jewellery workshops and former industrial buildings have been converted to residential properties and offices. These have attracted a range of health clubs, bars and several nightclubs on Turnmill Street, Cowcross St, St Johns St and Charterhouse Street. Farringdon Station (main line trains and underground) is the main local transport link. These facilities also serve the Barbican residential and cultural complex to the north.

6.7.5 The main works are located in the London Borough of Islington and some of the works fall within the City of London to the south. The Islington UDP was adopted in June 2002. It designates a Clerkenwell and Smithfield Special Policy Area (SPA) based on the history, range and mix of uses. The SPA aims to protect the special character of the Clerkenwell and Smithfield area. The Council wishes to prevent excessive growth of new residential units and not to marginalise the existing commercial activities or impose environmental requirements that force them to leave. It also strives to ensure that the specialist workshop uses, which are essential to the character of Clerkenwell as a cultural quarter, are not forced out by high land prices.

6.7.6 The UDP designates the station as an ‘Area of Opportunity’ where the council wishes to see investment during the plan period, under the direction of a planning brief. The plan designates shops on Farringdon Road as a ‘Protected Local Shopping Area’.

6.7.7 The City of London UDP was adopted in April 2002. It designates Smithfield Market as an Economic Activity Zone. It identifies strategic cycle routes across the Farringdon area.

6.7.8 The Neighbourhood Renewal Strategy and Community Strategy processes have been combined in Islington to create one strategy implemented through an action plan. The first Islington Community and Neighbourhood Renewal Strategy Action Plan was finalised in March 2003.
6.7.9 It is based on the Islington Community and Neighbourhood Renewal Strategy developed by Islington Strategic Partnership, after extensive consultation with local organisations and residents. The Action Plan promotes neighbourhood renewal across the poorest communities addressing: crime and safety, education and lifelong learning, health and well-being, housing, business, jobs and training, environment and sustainability. It also promotes active citizenship and community empowerment, and sustainable development. Responsibility for implementation is with the Islington Strategic Partnerships Board (ISPB).

Main Works

6.7.10 The tunnels will pass from Holborn, beneath the Fleet Valley and Smithfield, and then to Aldersgate and the Barbican, with the rails at a depth of about 31m. The permanent works will consist of a twin-bore tunnel, and a new station at Farringdon with western and eastern ticket halls and integrated ventilation and emergency access. A new rail crossover will also be constructed between Farringdon and Liverpool Street Stations, beneath the Barbican.

Farringdon Station

6.7.11 The station will serve the western edge of the City, providing an interchange with London Underground and Thameslink. The station will be located between Farringdon Road and Lindsey Street. Two new ticket halls will be constructed in the west at Farringdon Road and the east at Lindsey Street (Barbican). The station will consist of two platforms fitted out to 210 m although the tunnel will be constructed to facilitate extensions to 245 m should the need to operate longer trains arise. Interchange with London Underground will be provided from Lindsey Street ticket hall. Cowcross Street will be pedestrianised between the London Underground station at Farringdon and the Crossrail western ticket hall.

6.7.12 Farringdon Road Ticket Hall: will be at street level and will be built to approximately the same height as the existing London Underground ticket hall (approximately 8 m high) on the site of Cardinal House. A bank of three escalators will descend from the ticket hall to platform level. The escalators will be housed in a deep box that will also include ventilation and emergency intervention equipment. To the southwest of the structure, a construction shaft will be built and then back filled upon completion of the station works.

6.7.13 Lindsey Street Ticket Hall: will be located at street level in a block bounded by Charterhouse Street, Hayne Street, Long Lane and Lindsey Street. A bank of three escalators will descend to an intermediate concourse from which stairs to Barbican Underground station will be provided. A further bank of three escalators will descend to a further concourse beneath the London Underground and Thameslink tunnels before a third bank connects with the Crossrail platforms. A separate shaft will be constructed on this site that will contain ventilation and emergency intervention access. Emergency escape from the Crossrail platforms will be provided in a new shaft in 38-42 Charterhouse Street (this is also known as Fox and Knot Street).

6.7.14 The works will be carried out from four sites. The Cardinal House Worksite uses the railway land running parallel to Farringdon Road (it will be accessed from Farringdon Road and West Smithfield). The Smithfield Market Basement Worksite which uses the market basement will be accessed from the ramp in West Smithfield. The Lindsey Street Worksite (which will be accessed from Cowcross Street with egress onto West Smithfield) occupies Lindsey Street. The Fox and Knot Street Worksite will occupy the area bounded by Charterhouse Square, Charterhouse Street and Fox and Know Street.
6.7.15 There will also be a lorry holding area on Snow Hill (south of Farringdon Station), a Farringdon Crossover Worksite and an Aldersgate Street Sewer Diversion Worksite.

6.7.16 The works will require the following demolitions:

- Cardinal House on the corner of Cowcross Street and Farringdon Road;
- 54, 56 and 58-64 Charterhouse Street, 3, 8 to 9 and 10 Hayne Street, 2a, 3, 4 and 5 Lindsey Street (including Smithfield House), 20 to 23 Long Lane;
- 33-35 and 36-37 Charterhouse Square;
- 38-42 Charterhouse Street; and
- Charterhouse Square and Hayne Street bridges spanning Circle and Metropolitan Lines.

Temporary Significant Residual Impacts

6.7.17 Table 6.1 (Chapter 10) summarises the assessment process for this route section. There will be no temporary significant residual impacts.

Permanent Significant Residual Impacts

6.7.18 The demolition of the Lindsey Street Hotel will be a permanent significant negative residual impact as there are no other low cost hotels within the area.

6.7.19 The pedestrianisation of Cowcross Street will be a beneficial significant impact on the amenity and circulation of the pedestrians. (Appendix 2 – Picture 9).

Cumulative Impacts

6.7.20 Table 6.2 (Chapter 10) summarises the cumulative impact assessment. There will be a cumulative impact on the local community surrounding the Eastern Ticket Hall caused by:

- noise impacts on local residents, pupils and teachers at Charterhouse School and patients and doctors at a surgery on Long Lane;
- loss of car parking and traffic impacts on pedestrians; and
- visual impacts on local residents, users of Charterhouse Gardens, occupants of Charterhouse College and the City University Medical College and pedestrians on streets around the worksites.

6.7.21 This will also include the loss of the Lindsey Street Hotel. Although this is a permanent impact the effect will commence at the beginning of construction.
6.8 Liverpool Street Station (Route Window C7)

Baseline

6.8.1 The area surrounding Liverpool Street Station and Blomfield Shaft mainly comprises office and office services which provide for the 210,000 people employed within the catchment of the station. Although this does not constitute a residential based community the Corporation of London make it very clear in the City of London UDP that social, retail and transport services are vital to support this population. Finsbury Circus and the area around Liverpool Street Station provide the mix and range of shops and services to serve the office-based population.

6.8.2 Due to the commercial nature of the area there are relatively few community facilities, they include the University and several health centres. The bowling green and local open space at Finsbury Circus provide the main recreation space.

6.8.3 Bishopsgate and Shoreditch to the east of the station fall within the Borough of Tower Hamlets. They are designated an ‘Opportunity Area’ by the London Plan. The Plan states that the Mayor will work with partners to draw up planning frameworks to inform UDP reviews and broader regeneration and community strategies.

6.8.4 The City of London UDP designates Finsbury Circus, Liverpool Street Station (mainly south of the station at The Arcade, Old Broad St and Blomfield St) and the Moorgate/London Wall as ‘Principal Shopping Centres’. The UDP aims to reduce traffic and create better facilities for pedestrians to support this. It also provides ‘Strategic Cycle Routes’ that link a network of cycle ways around the City.

6.8.5 At Moorgate the UDP supports that redevelopment opportunities will improve the streetscape through good urban design and that traffic management policies will help create better conditions for shoppers including more space for seating and pedestrians. Open spaces are recognised as limited and are therefore important resources in the area. Policy Rec4 states ‘resist the loss and encourage the provision of recreation and sports facilities.

Main Works

6.8.6 The twin-bore tunnels will pass between Moorgate in the west and Commercial Street in the east. East of the Barbican the alignment will run approximately parallel with, and north of, the London Wall, before swinging northwards beyond Liverpool Street Station. The permanent works will consist of twin-bore tunnels, a new station at Liverpool Street with a new ticket hall at Moorgate, and a separate shaft structure on Blomfield Street.

6.8.7 A new station will be constructed to serve the City and provide interchange with Underground and national rail services at Liverpool Street and Moorgate Stations. The station will be located between Liverpool Street and Moorgate with a new ticket hall. The existing London Underground ticket hall will be modified to provide access to the east end of the Crossrail platforms. Crossrail passengers will use two banks of three escalators to reach the existing Central, Metropolitan & Circle line ticket hall adjacent to the mainline concourse.

6.8.8 The new basement level ticket hall (approximately 8 m deep) will be provided next to the existing London Underground station with two street-level entrances, one between Moorfields and Moorgate and one from a pedestrian area off Moorfields, opposite the Moorhouse development. A bank of two escalators will descend from street level to the ticket hall where a bank of a further three will connect with the Crossrail platforms. There will be an interchange passage between the Crossrail platforms and the London Underground Northern line platforms. There will be access to London Underground Metropolitan line platforms. Ventilation and emergency intervention facilities will be incorporated into the new ticket hall box.
6.8.9 A new 37 m deep box will be sunk at 10-11 Blomfield Street to provide ventilation, escape and EIP facilities to the Crossrail station tunnels. This will include a 28 m high ventilation stack.

6.8.10 The scheme will be constructed from four worksites. The Moorgate Worksite will be located at Moorgate Station (accessed from Moorgate). The Finsbury Circus Worksite will be located on Finsbury Circus open space and bowling club area. The Liverpool Street Worksite and Blomfield Street Worksites will both be accessed from Blomfield Street. There will also be two lorry holding areas, one on Finsbury Circus and at London Wall.

6.8.11 The works require the demolition of:

- Moorgate Box: 91-109 Moorgate;
- Blomfield Street Shaft; 11-12 Blomfield Street; and
- Finsbury Circus Worksite: bowling green, pavilion and gardens.

**Temporary Significant Residual Impacts**

6.8.12 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.8.13 The temporary loss (over five year period) of the open space at Finsbury Circus will be a significant negative residual impact. The open space is used all year round by office workers and local residents. It is the largest open space in the City and provides a bandstand with outdoor concerts. The loss of both the recreation and open space functions is in direct conflict with local planning policy and will be a significant negative impact.

6.8.14 The open space includes a bowling green used by the City of London Bowling Club (Appendix 1 provides more details on the Bowling Club). The construction will require the temporary use of the Green. It has been assumed that the Green will be re-instated at the end of the construction period, however the temporary loss of this facility is considered a significant negative impact. It may be possible to mitigate this loss by using the nearby green at Finsbury Square as an alternative. This is subject to an agreement between the Corporation of London and the London Borough of Islington.

6.8.15 Construction traffic will generate over 100% increase in HGV traffic on Circus Place. This will be a significant negative temporary impact.
Permanent Significant Residual Impacts

6.8.16 Table 6.1 (Chapter 10) summarises the assessment process for this route section. There will be no permanent significant impacts.

Cumulative Impacts

6.8.17 Table 6.2 (Chapter 10) summarises the cumulative impact assessment. There will be a cumulative impact on the community around Moorgate and Finsbury Circus during the construction period.

6.8.18 This will be caused by the combination of the direct temporary impacts outlined above and:

- noise disruption on one residential property, the London Metropolitan University, a dental practice and medical clinic;
- adverse impacts on the visual amenity of pedestrians in the area, students at the University and occupants of the Great Eastern Hotel; and
- disruptions for bus users.
6.9 Whitechapel Station (Route Window C8)

Baseline

6.9.1 Whitechapel Station is located on Whitechapel Road, east London. The Whitechapel area is a vibrant multicultural mix with a street market and the wide range of Bangladeshi restaurants and shops on Brick Lane. The main shopping facilities are provided along Whitechapel Road and Brick Lane. There are a number of community uses near Whitechapel Station including the Whitechapel Sports Centre, several dental surgeries, the Eastenders Snooker Club, the Albion Health Centre and a young people’s centre. There are also many residential streets and the Royal London Hospital to the south.

6.9.2 Hanbury Street forms part of a residential area to the east of Brick Lane (which accommodates one of the largest Bangladeshi communities in London). The community uses reflect the ethnic diversity of this neighbourhood with facilities such as the Kobi Nazul Centre, the Hanbury Community Project and Spitalfield Society, the HEBA Women’s Project, the London Jamme Masjid Mosque, the Bangladesh Welfare Association, Christ Church with gardens and community centre and primary school, Bongobir Osman Centre, the Bradbury Centre and St Anne’s R.C. Church.

6.9.3 The Network Rail tracks runs east-west to the north of Pedley Street. To the west of Pedley Street is the extensive Bishopsgate redevelopment area. Community facilities in this area include: Spitalfields City Farm, Hague Primary School, The Good Shepherd Mission, Weavers Community Space, St Matthews Social Club and Repton Boys Club.

6.9.4 The London Plan identifies East London as a priority area for development, regeneration and infrastructure improvements. Whitechapel/Aldgate are designated as an ‘Opportunity Area’ where the Mayor will work with partners to draw up planning frameworks to inform UDP reviews and broader regeneration and community strategies. The Plan strives to find a balance between the developing business community and sustaining and strengthening existing communities.

6.9.5 The Plan also identifies Whitechapel as a district centre, which provides convenience goods and services for the local community, it proposes to develop the capacity of this centre.

6.9.6 The Tower Hamlets UDP was adopted in December 1998. A revised draft was put on deposit in May 2004. The policies below have been taken from the deposit draft, which provides the most up to date information on the local community. The vent shaft and the station works are within the City Fringe Action Area. This includes Aldgate, Bishopsgate and Whitechapel and is described by the UDP as ‘one of the most dynamic and vibrant London precincts with its rich blend of old and new buildings and existing communities’.

6.9.7 The Action Area seeks to balance the pressure for large-scale redevelopment with the need to maintain the economic and social vitality of the area.

6.9.8 The UDP identifies ‘Development Nodes’ as the focus for intensive redevelopment whilst ensuring impacts on the surrounding community are minimised. It also identifies ‘Activity Nodes’ where activities will be sustained, promoted and any new development should enhance, promote and complement the identified activities. Two such nodes in Brick Lane and Spitalfields (with the unique retail, restaurant and residential character) are near the works and Whitechapel, which is developing as a creative industry area, is also identified. The Plan also mentions community areas where creation of new housing and social facilities are priorities; one such area is almost opposite Whitechapel Station on Whitechapel Road. Whitechapel is identified as a ‘District Centre’ in the Plan with key shopping facilities along Whitechapel Road outside the station.
6.9.9 Brick Lane is identified as a ‘Restaurant Zone’ and ‘Local Shopping Parade’ and classified as a ‘Neighbourhood Centre’. There are also neighbourhood centres at Wentworth Street and O’Leary Square. The Royal London Hospital opposite the station is identified as a social facility.

6.9.10 The first community plan for Tower Hamlets was launched in May 2001 setting out a vision for the future of Tower Hamlets to 2010. The current plan reports on progress in Year 3 identifying what was achieved in 2003-2004. Tower Hamlets also has a Young People’s Community Plan. The Plan targets safety, housing, health and social care, business investment, education and leisure, and public services. In the last 10 years organisations have been set up to look at the problems of the City Fringe area and ways to integrate and link the local population into benefits available from proximity to the City. Training has also been targeted at the youth population in Spitalfields Banglatown and Whitechapel where there is a large proportion of people under 20 (mainly Bangladeshi).

6.9.11 Tower Hamlets has been targeted by Central Government for neighbourhood renewal. Tower Hamlets partnership, launched in 2001; has designed a neighbourhood renewal strategy to produce more measurable improvements in housing, health, employment, crime and education using the neighbourhood renewal fund grant. Local Area Partnership (LAP2) Bethnal Green South Spitalfields and Banglatown prioritises improvement of services and facilities and community involvement and engagement and improvement in the quality of the local environment.

Main Works

6.9.12 The twin-bore tunnels will pass between Commercial Street in the west and Stepney Green in the east with the rails at an approximate depth of between 26m and 31m from street level. East of Commercial Street the alignment will run approximately parallel with, and south of, the Great Eastern Main line (GEML), before swinging southeastwards beyond Whitechapel station.

6.9.13 The scheme main works will consist of:

- a permanent shaft at Hanbury Street;
- a new station at Whitechapel with an interchange concourse beneath Durward Street and, shaft structures, all integrated with the station; and
- a temporary shaft at Pedley Street.

Hanbury Street Shaft

6.9.14 A shaft will be constructed between Liverpool Street and Whitechapel Station (to comply with safety standards). It will measure 32m in length, 14m in width and 37m in depth and will be constructed at the junction of Hanbury Street, Spelman Street and Princelet Street. The shaft will contain EIP and ventilation equipment. The surface level structures will include a ventilation stack and maintenance building approximately 12 m high. The work will be carried out from a worksite that will occupy an area between Hanbury Street, Spelman Street and Princelet Street. Access will be from Whitechapel Road via Greatorex Street and Hanbury Street.

6.9.15 The works will require the demolition of:

- 68-80 Hanbury Street;
- Britannia House at 80-102 Hanbury Street; and
- ground floor rear extensions of 63, 65 and 67 Princelet Street.
Whitechapel Station

6.9.16 Crossrail will construct a new station to provide interchange with the District line and East London line and in the 2016 baseline the Metropolitan Line replacing the current Hammersmith and City services. The Station will also improve transport links to the local area. The new station will be constructed between Court Street and Cambridge Heath Road.

6.9.17 Three scenarios were assessed for ticket halls at Whitechapel Station. The first is the preferred solution because this performs best in transport terms. However, it depends on further work by London Underground and possibly a Transport and Works Act Order to allow the London Underground works. Under these circumstances the Crossrail project cannot rely on this going ahead. Therefore two additional scenarios were considered.

6.9.18 All three scenarios can be constructed, subject to the London Underground works, under the powers in the Bill. The three scenarios are described in full in the main Environmental Statement. The first scenario (which is preferred) is outlined here. The other two scenarios are not explained in detail because the community impacts are the same.

6.9.19 Scenario 1 - A new western ticket hall would be provided over the District line east of Court Street. The western end of the Crossrail platforms will be accessed from this ticket hall via the District line platforms, then escalators to an interchange concourse within a box under Durward Street providing interchange to the District line and the East London line. A further bank of escalators will descend from this interchange concourse to the Crossrail platforms. This western ticket hall will require demolition of London Underground accommodation over the District line and removal of three District line tracks; the northernmost and southern two (by London Underground).

6.9.20 Removal of the District line tracks may require London Underground to provide facilities for reversing trains at an alternative location, powers for which would need to be obtained by London Underground separately to the Bill. The ventilation, escape and EIP infrastructure will be constructed at the east end of the Crossrail platforms to the west of Cambridge Heath Road at the junction with Whitechapel Road.

6.9.21 A shaft at Durward Street would be required for all three scenarios. This will include the Whitechapel station interchange concourse (providing access to London Underground East London line platforms) escape, EIP and ventilation equipment at the west end of the Crossrail platforms. The shaft will be constructed at Essex Wharf.

6.9.22 The following worksites will be required at Whitechapel:

- The eastern part of the Durward Street Worksite will occupy Swanlea School carpark, open amphitheatre, caretakers house, play area, garden area, staff parking and a small store room of the sports centre. This site will be accessed from Durward Street. The western part of the Dunwood Street worksite will temporarily occupy the staff carpark of a sports centre;
- the Sainsbury’s Car Park Worksite and Sainsbury’s Car Park Temporary Shaft Site will require a large proportion of the carparking area and will be accessed from Cambridge Heath Road with egress onto Brady Street; and
- the District Line worksite will be located on Dunwood Street and includes an area used as a bus stand and bus turning area.
6.9.23 The Whitechapel works will require the demolition of:

- the school caretaker’s house at the Essex Wharf worksite; and
- London Underground signalling accommodation over District line south of Durward Street - for scenarios 1 & 2 only; and
- a conservatory to the Blind Beggar pub, and a section of Sainsbury’s supermarket car park and adjacent wall at Sainsbury’s Car Park worksite.

Pedley Street Shaft

6.9.24 A temporary shaft at Pedley Street (which will be connected to the Hanbury Street Shaft via a temporary tunnel under Spital Street). It will be used for the delivery and removal of materials during the tunnelling phase. The temporary shaft at Pedley Street will be backfilled and the site reinstated during the construction phase of the running tunnels. The Pedley Street worksite will occupy land on the south side of the GEML between the eastern end of Pedley Street and the western end of Tent Street, which lies just to the west of Bethnal Green station.

6.9.25 Demolitions at Pedley Street will comprise:

- the western part of the disused viaduct between Pedley Street and the active GEML lines, currently occupied by Banjax Motorcycles;
- the remaining section of the disused railway viaduct, located to the north of Weaver House between Pedley Street and the active GEML lines;
- minor structures at 73-74 Vallance Road, currently occupied by Forest Reclaim; and
- the end of the disused Railway Viaduct between Hemming Street and Tent Street.

Significant Temporary Residual Impacts: Hanbury Street

6.9.26 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.9.27 There will be increases in lorry traffic on Greatorex Street, Hanbury Street, Spital Street and Buxton Street. Whilst containing some commercial uses, these streets are primarily residential with some community facilities. Current traffic flows are low and the additional lorry traffic during the 11 month peak period of construction will generate a significant adverse community impact.

Significant Permanent Residual Impacts: Hanbury Street

6.9.28 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.9.29 There are likely to be 20 dwellings around Hanbury Street which may qualify for re-housing for a period of greater than three months. Due to the fact that residents may be absent from the community for a relatively long period, it is assumed that there will be a significant permanent impact.

Cumulative Impacts: Hanbury Street

6.9.30 Table 6.2 (Chapter 10) summarises the cumulative impact assessment. In addition to the direct temporary impacts outlined above there will be a cumulative impact arising from noise and visual impacts during construction. This will also include the potential rehousing of 20 residential properties for a period of greater than three months. Although this is reported as a permanent impact the effect will commence during construction.
Significant Temporary Residual Impacts: Whitechapel Station

6.9.31 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.9.32 Construction works will require the temporary acquisition of a garden area, playground space, outdoor amphitheatre and caretaker’s house at Swanlea school. Appendix 1 provides additional information on Swanlea school.

6.9.33 Residents at 11 dwellings on Durward Street are likely to require re-housing for less than three months. This will be a significant negative impact on the local community.

6.9.34 There will also be an increase in lorry traffic on Durward Street because it is currently closed to through traffic and will be opened up to provide a route for construction traffic. There will also be a significant increase of HGV traffic on Brady Street which currently has relatively low traffic flows. This additional HGV traffic during construction will generate a significant adverse community impact.

Picture 10: Swanlea school existing layout (Source: Crossrail)
**Significant Permanent Residual Impacts: Whitechapel Station**

6.9.35 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.9.36 There are two options for the reinstatement of open space at Swanlea School which are subject to on-going discussions with the school. The first option reinstates the open space lost during construction. The second option which includes the use of Essex Wharf site would provide a net increase in the school playground space. The selection of which option is dependant on discussions with the local authority and school, neither option will result in a significant permanent impact on the school.

**Cumulative Impacts: Whitechapel Station**

6.9.37 Table 6.2 (Chapter 10) summarises the cumulative impact assessment.

6.9.38 There will be a cumulative impact on the local community at Whitechapel caused by a combination of the direct temporary impacts outlined above and:

- noise impacts on local residents, pupils at Swanlea school, users of the Young People Centre (2a-12 Cambridge Heath Road) and patients and doctors at the Albion Health Centre;
- visual impacts on residents, users of the youth centre and pupils at Swanlea school; and
- loss of car parking and localised traffic congestion.

**Significant Temporary Residual Impacts: Pedley Street**

6.9.39 Table 6.1 (Chapter 10) summarises the assessment process for this route section. There will be no temporary significant impacts.

**Significant Permanent Residual Impacts: Pedley Street**

6.9.40 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.9.41 It is likely that 17 dwellings round Pedley Street may qualify for re-housing for a period of greater than three months. Due to the fact that residents may be absent from the community for a relatively long period, it is assumed that this will be a significant permanent impact.

**Cumulative Impacts: Pedley Street**

6.9.42 Table 6.2 (Chapter 10) summarises the cumulative impact assessment. At Pedley Street, there will be a cumulative impact resulting from a combination of increased noise, the loss of visual amenity. This cumulative impact will also include the potential rehousing of 17 residential properties for a period of greater than three months. Although this is reported as a permanent impact the effect will commence during construction.
6.10 Mile End Corridor Conveyor (Route Window C8A)

Baseline

6.10.1 The area to the south of the railway is mainly residential. Meath Gardens and Mile End Park lie to the north with the Regents Canal to the east (along the western boundary of Mile End Park). Community resources include several play areas, the Morpeth Secondary School, Bethnal Green Goodwill Centre, Wessex Community Centre, Bangabanhu Infants School and Baitul Aman Mosque and Cultural Centre.

6.10.2 The area is within the London Borough of Tower Hamlets. The UDP designates Mile End Park and Meath Gardens as ‘Metropolitan Open Land’.

Main Works

6.10.3 This route window contains the eastern part of the conveyor from Pedley Street, Mile End (Devonshire Street) sidings at which excavated material will be loaded onto trains, and the northern part of Mile End Park, which will form a stockpiling area for excavated material. The temporary Mile End conveyor will run along the south side of the existing railway corridor. It will be used to carry excavated material removed through the Pedley Street temporary shaft (see Route Window C8) to Mile End (Devonshire Street) sidings and a holding area located within part of Mile End Park.

6.10.4 In order to accommodate the works at this worksite, it will be necessary to demolish Globe New Furniture on Globe Road.

6.10.5 The Mile End Park Excavated Material Handling Site will be fully restored and no permanent structures will be constructed on the site. The conveyor will be dismantled following completion of the works.

Significant Residual Impacts

6.10.6 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.10.7 The temporary loss of a large area of open space at Mile End Park for approximately 26 months is considered a temporary negative residual impact. This is an area of informal open space, distinct from neighbouring areas of the park which are used for specific activities (Artspark to the south and the ecology park to the north).
Cumulative Impacts

6.10.8 Table 6.2 summarises the cumulative impact assessment.

6.10.9 The combination of the direct community impact outlined above, noise impacts on the University Halls of Residence, the London Hospital, residents of 45 dwellings and visual impacts on users of the Park and residents around the Mile End Park worksite will cause a cumulative impact on the local community.
6.11 Stepney Green Shafts (Route Window C9)

Baseline

6.11.1 This area is mainly residential with some industry. The main recreation area is provided by Stepney Green which houses an all weather sports pitch. There are a number of community facilities, which include Stepping Stones Farm, Sir John Cass’s Foundation, Rolan Philips Scot Centre and Redcoat Secondary School. St Dunstan’s Church and grounds are located to the east of Stepney High Street.

6.11.2 There are no community policies that directly affect this area.

Main Works

6.11.3 The twin-bore tunnels will pass between Stepney Green in the west and the Regent’s Canal in the east. East of Stepney Green the alignment will divide into two, the northern tunnel continuing eastwards towards the southern end of Mile End Park and the southern tunnel running southeast towards Limehouse and the A13, Commercial Road. The new Stepney Green shaft structures are the only above-ground Crossrail features within this route window.

6.11.4 Crossrail will construct two shafts to provide facilities for EIP, escape and ventilation. Two 16 m diameter shafts will be constructed on Stepney Green, immediately west of Garden Street. EIP, ventilation and escape facilities will be provided. Two 7.5 m high surface structures will be constructed along with an area of hardstanding.

6.11.5 The shafts will be constructed within one large worksite located on Stepney Green. The worksite will require Stepping Stones Farm grazing area and the astroturf on Stepney Green. Construction access will be from Stepney Green.
Significant Residual Impacts

6.11.6 Table 6.1 (Chapter 10) summarises the assessment process for this route section. The temporary loss (for up to six years) of the astroturf will be a significant negative impact. There are no alternative facilities locally and it is in conflict with local planning policy.

6.11.7 The temporary loss of the grazing area of the city farm will be a significant negative impact. It will change the function of the farm from small and large animals to just small animals. Appendix 1 provides more information on Stepping Stones Farm.

6.11.8 Garden Street will be closed for 5 years requiring pedestrians to be diverted. This will be a significant negative temporary impact.

Cumulative Impacts

6.11.9 Table 6.2 (Chapter 10) summarises the cumulative impact assessment. The combination of the direct community impacts outlined above, noise impacts on residents on local residents; and visual impacts on pupils at Sir John Cass’s Foundation and Red Coat Secondary School, residents, pedestrians and users of the Green and Stepping Stones Farm will cause a significant cumulative impact on the local community during construction.
6.12 Lowell Street Shaft (Route Window C10)

Baseline

6.12.1 Lowell Street is located to the north of the DLR (which runs east-west across the route window). To the south is Limehouse Basin with boat docking facilities. Retail facilities are located along Salmon Lane to the north, other community facilities include Tower Hamlets Homeless Hostel Limehouse Library and Our Lady Immaculate Roman Catholic Church.

6.12.2 The area lies within the London Borough of Tower Hamlets. The UDP identifies Salmon Lane near Lowell Street shaft as a ‘Neighbourhood centre’. The shaft lies to the immediate east of a ‘Green Chain’; a linear open area linking open space, canals, river and parks for nature and recreation functions.

6.12.3 The area lies within the Local Action Plan area 7 (LAP7) East India and Lansbury, Limehouse. The Plan aims to improve educational achievements and lifelong learning opportunities, increase employment for local people, and promote healthy living.

Main Works

6.12.4 The Docklands Light Railway (DLR) runs east-west on a Victorian viaduct through this route window, which lies within LB Tower Hamlets. The twin-bore tunnels will pass beneath Commercial Road before swinging southwards to pass beneath the DLR between Limehouse and Westferry stations.

6.12.5 The Lowell Street shaft and surface building are the only permanent works within this route window. An 18.8 m diameter shaft will be constructed on undeveloped land at the comer of Commercial Road and Basin Approach (at 610 Commercial Road). EIP, ventilation and escape facilities will be provided. The ventilation structures will be about 15 m in height. One approximately 25 m long surface structure will be constructed along with an area of hardstanding.

6.12.6 Beneath the surface, a concrete box will contain ventilation equipment. Construction of the Lowell Street shaft works will be carried out from an area of undeveloped land located at No. 610 Commercial Road, which is bounded by a DLR viaduct to the south and a disused railway viaduct to the east. Access will be from Commercial Road. There will also be a lorry holding area along West India Dock Road.

Significant Residual Impacts

6.12.7 Table 6.1 (Chapter 10) shows the assessment process. There will be no significant residual impacts.

Cumulative Impacts

6.12.8 Table 6.2 (Chapter 10) summarises the assessment of cumulative impacts in this route section. There will be no cumulative impact.
6.13 Isle of Dogs Station (Route Window C11)

Baseline

6.13.1 The Isle of Dogs is dominated by the Canary Wharf office and retail complex and Billingsgate Fish Market (the largest inland fish market in the UK). Given the strong commercial nature of the area there are limited community resources but they do include: the Limehouse Practice and Emmanuel Miller Centre, sheltered accommodation on Gill Street, St Anne’s Church, Lambeth Consultation and Participation Team and the Cruising Association.

6.13.2 The London Plan designates the Isle of Dogs as an ‘Opportunity Area’. It states the Mayor will work with partners to draw up planning frameworks to inform UDP reviews and broader regeneration and community strategies. The Isle of Dogs and Poplar are also designated as ‘District Centres’, which, according to the London Plan provide convenience goods and services for the local community. The London plan proposes to develop the capacity of these centres.

6.13.3 The Tower Hamlets UDP has produced an outline Area Action Framework for the Isle of Dogs. It recognises issues raised by the London Plan including the increasing isolation of local communities in the Isle of Dogs. The Area Action Framework proposes to ensure new development contributes to the social and physical infrastructure required to stop this isolation. The UDP identifies the area to the north as ‘Primary Shopping Frontage’ i.e. a district centre. It identifies the docks as ‘Activity Areas’ to promote the development of leisure opportunities in the area to the north of the Crossrail works. It also identifies ‘Community Areas’ to the south, with a priority to identify community needs including services, facilities and public realm improvements.

6.13.4 The area falls within LAP 8 Blackwall/ Cubitt Town, Millwall. The Plan aims to raise the standard of healthy living, enhance quality of local environment by resisting inappropriate development and improve lifelong learning and achievement.
Main Works

6.13.5 The twin-bore tunnels will pass under the northern part of the Isle of Dogs between Westferry Road in the west and the Blackwall Tunnel in the east with the rails at a depth of about 30 m below street level. East of Westferry Road, the alignment will run under West India Docks and North Dock (roughly parallel with the Docklands Light Railway (DLR)) and Aspen Way.

6.13.6 The main permanent features comprise the Hertsmere Road shaft and the Isle of Dogs Station.

Hertsmere Road Shaft

6.13.7 A 9 m diameter shaft (with emergency ventilation facilities will be constructed on a car park between the Cannon Workshops on Cannon Drive and Hertsmere Road. A 5 m high building will be constructed on the surface with a basement containing plant equipment. The worksite will include a lorry holding area. The Cannon workshop car park will be reinstated on completion of the works.

Isle of Dogs Station

6.13.8 A new station will be constructed beneath and within the West India North Dock. The station will extend from east of the DLR bridge to the east end of the dock. The station will be constructed within a 475 m long concrete box with a 245 m long island platform. This will be fitted out to 210 m with the potential for extension should the need to operate longer trains arise. A 165 m long scissor crossover at the western end of the box will enable trains to terminate at the station and return either to central London or to Abbey Wood.

6.13.9 Access to and from the station will be via a re-built Great Wharf bridge. A bank of escalators will be provided from the bridge down to a landing at the same level as the dockside where a further bank will connect with the ticket hall located within the station box beneath the water level. Further escalators will be provided to platform level.
6.13.10 Escape and ventilation structures will be constructed at each end of the station box. The station will have one ticket hall, with passive provision for a second.

6.13.11 There will be three construction sites: the North Quay (accessed from Aspen Way), Billingsgate market carpark (accessed from Aspen Way) and a conveyor worksite at Bellmouth passage to the north of the southern dock (using part of the water area).

Significant Residual Impacts

6.13.12 Table 6.1 (Chapter 10) summarises the impact assessment.

6.13.13 The closure of the West India North Dock, will block access to the Blackwall Basin and Poplar Basin. It is likely that, with no other means of access, 20 vessels moored in Blackwall Basin and 90 vessels moored in Poplar Dock may have to find alternative moorings. Given the shortage of alternative moorings in Central London this will result in a significant temporary impact. Appendix 1 provides more details on the uses of Poplar and Blackwall Basins.

6.13.14 The closure of West India North Dock will also effectively ‘lock in’ St Peter’s barge, which accommodates St Helen’s Church. It is likely that this barge will have to find an alternative mooring during the construction works. The potential temporary loss of the use of the barge by the Church would be a significant impact.

6.13.15 The construction works will also require the closure of Great Wharf Bridge resulting in a considerable diversion for pedestrians. A significant adverse impact will therefore occur.

Cumulative Impacts

6.13.16 Table 6.2 (Chapter 10) summarises the assessment of cumulative impacts in this route section. There will be no cumulative impact.
6.14 Mile End and Eleanor Street Shafts (Route Window C12)

Baseline

6.14.1 Mile End Park is in a predominantly residential area with large areas of social housing, two primary schools, one secondary school and Avery Hill College (Mile End Annex). Mile End Park provides a district leisure and recreation facility which includes the East London Stadium.

6.14.2 Mile End Park is designated as 'Metropolitan Open Land' (strategically important open space unique to London) in the Tower Hamlets UDP. There is a presumption against development unless it is for leisure recreation sport or culture. It is proposed to launch the Football at Mile End (FAME) development in 2005, to open a Mile End leisure centre in 2006 and complete the redevelopment of York Hall by 2007.

6.14.3 Eleanor Street Shaft is located within a 'railway triangle' with tracks on three sides. The main use is storage and warehousing, but there is also a traveller's site, which accommodates 19 residential caravans. Several local open spaces, the Wellington primary school and isolated local shops are located within the wider area.

6.14.4 Eleanor Street is within Local Area Partnership 6 and Mile End Park shaft is in Local Area Partnership 7. Both partnerships work with the local communities on urban renewal.

Main Works

6.14.5 The twin-bore tunnels will broadly follow beneath the London, Tilbury and Southend (LT&S) Line in this route window, with the rails at an approximate depth of between 23 m and 28 m from street level. Other permanent works within this route window will comprise the Mile End Park shaft and Eleanor Street shaft.

Mile End Shaft

6.14.6 A 16 m diameter shaft will be constructed in the southeast corner of Mile End Park bounded by Burdett Road and the mainline railway viaduct that carries the LT&S line to and from Fenchurch Street. The shaft will have emergency escape, EIP and ventilation facilities which will be housed in a structure approximately 8 m high, 38 m wide and 52m long. The surface structure will be shaped as a green mound. A hardstanding area will be provided for emergency assembly and for use by emergency and maintenance vehicles.

6.14.7 The twin bore tunnels will broadly follow the existing railway corridor. Mile End Shaft will be constructed in the south east corner of Mile End Park (bound by Burdett Road and the viaduct to Fenchurch Street). Access will be from Burdett Road. The area is currently being developed for seven games pitches (as part of the Tower Hamlets Stadium Development). A lorry holding area will be in place along Burdett Road, north of the worksite.
Eleanor Street Shaft

6.14.8 A 15 m diameter shaft will be constructed within the eastern extent of the current caravan park site at the eastern end of Eleanor Street. The site is in an area of land bounded by London Underground’s District line and the LT&S line to Fenchurch Street. Ventilation and emergency intervention facilities will be provided. A surface structure of 11 m height, 17.5 m width and 35.5 m length will be constructed and set within an area of hardstanding for emergency and maintenance vehicles.

6.14.9 The Eleanor Street shaft will be constructed in land bound by the District line and Mainlines (to, and from, Fenchurch Street). The worksite will be located on a traveller’s site. Access will be from Eleanor Street. There will be a lorry holding located on Eleanor Street.

Significant Temporary Residual Impacts: Mile End Park

6.14.10 Table 6.1 (Chapter 10) summarises the assessment process for this route section. The construction of the Mile End Park shaft will result in the temporary loss of a football pitch. The pitch will be reinstated on completion of the works however, its loss will be a significant adverse impact on the community. Appendix 1 provides more information on the pitches at Mile End Park.

Significant Permanent Residual Impacts: Eleanor Street

6.14.11 Table 6.1 (Chapter 10) summarises the assessment process for this route section. The loss of 19 dwellings at the Eleanor Street travellers’ will be a significant permanent negative impact. There is currently no agreement in place for the reinstatement of these units. It is proposed that a compensation payment could be made to the LB Tower Hamlet to permanently relocate the travellers’ caravan park. Further discussions will be required with Tower Hamlets to progress this proposal. At this stage a significant adverse impact is predicted. See Appendix 1 for more information on the caravan park.

Cumulative Impacts

6.14.12 Table 6.2 (Chapter 10) summarises the assessment of cumulative impacts in this route section. There will be no cumulative impact.
6.15 Pudding Mill Portal (Route Window C13)

Baseline

6.15.1 This area is mainly light industrial (including the Heron Industrial Estate) and railway lands with some residential to the west.

6.15.2 The area falls within the London Borough of Newham. The UDP was adopted in June 1997 and the review has not yet been published. The only community related designations include a proposed cycle route and the existing Green Chain.

Main Works

6.15.3 The twin-bore tunnels will pass between the A11, Bow Road and under the River Lea at a depth of about 17 m from street level, before emerging from the ground near Pudding Mill Lane. The Docklands Light Railway (DLR) station will be replaced and the existing railway realigned. The alignment will run parallel with the DLR corridor (north of Bow Road) towards Pudding Mill Lane Station. The alignment will then use the existing surface railway corridor to the east. There are substantial enabling works including sewer diversions.

6.15.4 The works are located between the River Lea in the west and Marshgate Lane in the east. The twin-bore tunnel emerges at the tunnel eye, immediately east of the River Lea, where a ramp will rise through a cut and cover box to a portal and up to the track level of the GEML west of the DLR station. Permanent works will consist of:

- Pudding Mill Lane portal, covered ramp and cut and cover box;
- a new Pudding Mill Lane DLR station and alignment on viaduct;
- re-alignment of the westbound (up line) electric track of the GEML;
- twin-bore tunnels; and
- permanent closure of Pudding Mill Lane to road traffic and the opening up of Marshgate Lane to road traffic;

6.15.5 There will be EIP and escape facilities at the portal.

6.15.6 The works will be constructed from three sites: Puddingmill Lane Worksite on Heron Industrial Estate, Bow Midland Yard Worksite and Bow Midland Yard West Worksite (all the works will be accessed from Pudding Mill Lane and Marshgate Lane).

6.15.7 At the Pudding Mill Lane and Bow Midland Yard worksites, the following structures will be demolished:

- Units 1 to 9, Heron Industrial Estate, Barbers Road;
- Unit 1, Heron Industrial Estate, Bridgewater Road;
- 8 Barbers Road;
- Unit 1, 50b Marshgate Lane;
- 22, 47, 51 and 53 Marshgate Lane;
- the forecourt of 20 Marshgate Lane;
- Marlborough House, Unit C The Gatehouse and Capital Print and Display, all on Barbers Road;
- BBL building, Cooks Road;
- Kierbeck Coil Compound, Pudding Mill Lane;
- the DLR bridge; and
6.15.8 buildings within the Bow Midland Yard worksite.

**Significant Residual Impacts**

6.15.9 Table 6.1 (Chapter 10) summarises the assessment process for this route section.

6.15.10 Construction work will require the closure of the City Mill River footpath for approximately one year and three months, and utilities work and general construction will require the closure of the River Lea footpath for at least six months. As there are no alternative routes within a reasonable distance, these will generate a significant adverse impact for pedestrians.

**Cumulative Impacts**

6.15.11 Table 6.2 (Chapter 10) summarises the assessment of cumulative impacts in this route section. There will be no cumulative impact.

*Picture 21: River Lea footpath area*
6.16 Abbey Mills (Route Window C13A)

Baseline

6.16.1 The site is located at Abbey Mills Pumping Station. This lies within an area called Mill Meads which comprises the old pumping station, a new pumping station, allotments and some green space. Residential streets lie to the north-west with railway land and a gas depot to the east. The Three Mills Wall River lies to the west, and the Prescott Channel to the south.

6.16.2 The works are in the London Borough of Newham. The Newham UDP (Adopted June 2001). It designates Mill Meads area as ‘Green Space to be protected’ and as Major Opportunity Zone 3 (MOZ3). The MOZ covers West Ham Mills (including Three Mills Island, land at Sugar House Lane and Hunts Lane. It proposes high quality mixed use employment which would include heritage, leisure and recreation uses. The Plan also designates a proposed ‘Recreational Footpath Network’ with routes along the boundary of Mill Meads

Main Works

6.16.3 The works comprise the diversion of the Hackney to Abbey Mills and Wick Lane sewers, as a result of alignment of the Crossrail running tunnels at Pudding Mill Lane (Route Window C13). The works will take approximately fifteen months to complete.

6.16.4 The works will involve two shafts, one of which is required for the insertion or recovery of a TBM; the other shaft is for access during and after the works. A new pumping station will be constructed at the Abbey Mills site. Material, including excavated material, will be transported by road.

Significant Residual Impacts

6.16.5 Table 61 (Chapter 10) summarises the impact assessment. There will be no significant impacts.

Cumulative Impact

6.16.6 Table 6.2 (Chapter 10) summarises the cumulative assessment. There will be no cumulative impact.