

# **Chapter 10**

**Route Window C5:  
Tottenham Court Road East**

## 10 Route Window C5: Tottenham Court Road East

### 10.1 Summary of Residual Impacts

10.1.1 The following significant residual adverse impacts will occur temporarily during the utilities works, in addition to those reported in the main ES:

- *Visual Amenity*: Stage 1 and stage 4 works will result in additional significant adverse visual impacts for residents and workers in 144 Charing Cross Road and also 149–155 (odd) Charing Cross Road. Stage 3 works will result in additional significant adverse visual impacts for residents and workers at 3–9 (odd) Sutton Row and 21 Soho Square.
- *Townscape and Built Heritage*: The stage 3 works will result in a significant adverse impact on the setting of the Grade II listed building in 21 Soho Square.
- *Traffic and Transport*: Delays to vehicular traffic including buses during stage 1 works.

### 10.2 The Utility Works

#### Overview

10.2.1 An overview of the utility works is included in the introductory text in *Section 1.3*. In this route window the utilities works will be undertaken in eight stages. The timings of each of these stages are shown in *Figure 10.1* and the stages are represented graphically in the maps in the SES2 mapping volume (S2a).

#### Key Assumptions

10.2.2 The specific assumptions adopted for the assessment of these works (in addition to those listed in *paragraph 2.1.3*) are detailed below:

- each stage described below will include preparatory work (ie excavation, duct/pipe laying, chamber/manhole construction, reinstatement) and commissioning works (ie cable pulling, jointing, turning of flows). The preparatory works will result in the main impacts whilst the commissioning works will require utility companies to return at a later date to undertake these activities at specific and local nodes;
- each stage will involve excavation, duct/pipe laying, chamber construction and reinstatement except where mentioned specifically within the scheme description text; and
- the assessment assumes that the CLRLL and LU works will be integrated as detailed in the main ES. That is LU works will commence on site first with CLRLL following at a later stage (as outlined in the main ES, *Volume 8b (paragraphs 6.47 to 6.22)*). However, the two projects may develop such that all the LU works are complete before any CLRLL works start onsite. If this is the case then whilst the sequence of the works will alter, the activities occurring within each stage will remain the same and hence the resultant impacts will be unaltered.



Aerial view looking northwest across Charing Cross Road

### Scheme Description

10.2.3 The sequence of this scheme description is linked to that described in the main ES, *Volume 8b* and in particular *paragraphs 6.47 to 6.22*. Stages a to f are works which were described and assessed in the main ES. For these stages, the scheme description and impacts from the main ES have been repeated in the text below. Stages 1 to 4 are works specific to the SES and the impacts of these works were assessed as part of this SES and are reported in the relevant sections of this SES.

#### *Stage A (Duration 6 Months) London Underground (LU) Works*

10.2.4 During this stage statutory diversion works will take place on Oxford Street, Falconberg Court, and between Sutton Row and Denmark Place. This will require closure of Falconberg Court, and, for a short period, Sutton Row.

10.2.5 Reductions in lane width on Oxford Street will result in impacts on all traffic although widening the carriageway into the northern footway to maintain two flows will mitigate this to a level which is not significant. The alternative option of shuttle working with traffic signals will have a greater impact. The location of the worksite reduces the space available for loading and requires the closure of two bus stops during this stage (the stops remain closed during stage b) and the relocation northwards of the first stop on Tottenham Court Road (the stop remains closed throughout all construction stages). There will therefore be a significant impact due to disruption to the interchange.

10.2.6 Closures of Falconberg Court and Sutton Row will have significant impacts for pedestrians although the diversions for traffic are not significant. Diversion routes will be signed for all modes.

### *Stage B (Duration 6 Months) LU Works*

- 10.2.7 Works on Oxford Street and Falconberg Court continue during this stage, with their associated impacts. In addition, diversion works will take place on the western side of Charing Cross Road requiring the closure of the southbound contraflow bus lane in order to maintain northbound traffic flows. This will require the diversion of buses, and associated complementary traffic management measures on St. Giles High Street, Denmark Street, and Cambridge Circus. This will include carriageway widening on New Oxford Street and Earnshaw Street, and the removal of the left turn ban (for buses only) on Denmark Street. A bus stand area will also be provided connecting a bus only link between Andrew Borde Street and St. Giles High Street. These changes will have a significant impact on general traffic, buses and interchange.
- 10.2.8 Traffic exiting Oxford Street is restricted to one lane and new provision is made for right turning traffic from New Oxford Street into Tottenham Court Road.
- 10.2.9 Temporary additional facilities will be required for the large number of pedestrians. This will involve changing the St. Giles Circus junction, principally widening footways on the Charing Cross/Oxford Street corner. A protected route for pedestrians will be provided along the western side of Charing Cross Road, generally 4 m wide but no less than 3.5 m.

### *Stage C (Duration about 6 Months)*

- 10.2.10 Stage c sees the start of the main works—the opening up of the worksite on the eastern side of Charing Cross Road. This requires the closure of Andrew Borde Street, which will have a significant impact on traffic and buses in the area, as it would remove the ability of vehicles from St. Giles High Street to access Tottenham Court Road and vehicles (buses and taxis) to reach Oxford Street from Charing Cross Road. Road layouts on Charing Cross Road, St. Giles Circus, and New Oxford Street will be changed to mitigate the impact. Two lanes will be provided for vehicles to turn right from New Oxford Street into Tottenham Court Road. As part of the diversion route, general traffic will use Earnshaw Street whilst buses, taxis and cycles only are permitted to use St. Giles High Street north of Denmark Street. Some additional measures may also be required on St. Giles High Street to reduce delays to buses and taxis.
- 10.2.11 The works will also significantly impact on interchange by closing the stops and stands in Andrew Borde Street. This will require some re-routing of services and the provision of new stops and stands in St. Giles High Street and Earnshaw Street.
- 10.2.12 Pedestrians who used to cross Andrew Borde Street will need to follow alternative routes. A new pelican crossing will be provided at the St. Giles High Street/Denmark Street junction to assist pedestrians.

### *Stage 1 (Crossrail Enabling Works) Concurrent with Stages B and C*

- 10.2.13 Stage 1 involves the installation of ducts across Charing Cross Road and Andrew Borde Street for a future electricity diversion which is described in stage 4. Installing the ducts during this stage will minimise impacts on Charing Cross Road at a later date.

*Stage 2 (Duration 2 Months) Concurrent with Stage C*

- 10.2.14 Stage 2 involves the diversion and disconnection of services in Goslett Yard to enable the demolition of structures to the north of Goslett Yard and construction of the Crossrail box.

*Stage D (Duration 6 Months) LU/Crossrail Works*

- 10.2.15 Stage d sees the works and impacts from stage d continuing. In addition the worksite on the western side of Charing Cross Road will be opened up and the eastern site expanded to include the site of 148 Charing Cross Road. Various buildings in the area will be demolished. The closure of Falconberg Court (which is a through route for pedestrians only) and Sutton Row will have significant impacts requiring re-routing of general traffic, cyclists and pedestrians during the closures. Suitable diversions will be signed as appropriate for all modes.

*Stage 3 (Duration 10 Months) Concurrent with Stages D and E*

- 10.2.16 The diversion of the Thames Water sewer in Sutton Row will require construction of an approximately 300 mm diameter microtunnel under Sutton Row. The drive pit will be located at the junction of Falconberg Mews with Sutton Row, whilst the reception pit will be located at the junction of Sutton Row with Soho Square. Works will be required in Sutton Row, between the drive and reception shafts but it is assumed that vehicular access to Sutton Row and Falconberg Mews will be maintained.

*Stage E (Duration 36 Months) LU/Crossrail Works*

- 10.2.17 The worksites on the east and west sides of Charing Cross Road are joined into a single site, although various distinct activities will take place within each. The impacts from the preceding stage will continue and in addition the closure of Charing Cross Road between Andrew Borde Street and St. Giles Circus will have a highly significant impact even though a new temporary access road linking Charing Cross Road with St. Giles High Street will be constructed approximately on the line of Andrew Borde Street. The road layout on St. Giles High Street will need amending with a new signalised junction. New Oxford Street will be affected by increased traffic flows, particularly with the Charing Cross Road northbound traffic now using the route and turning right at St. Giles Circus. Pedestrians using Charing Cross Road will be restricted to the western side. A protected route for pedestrians will be provided along the western side, generally 4 m wide but no less than 3.5 m. Access/egress by construction traffic across this route will be controlled by banksmen at all times.

*Stage 4 (Duration 12 Months) Concurrent with Stage E*

- 10.2.18 The relocation of an EDF Energy substation from the Goslett Yard site to the Astoria Theatre site, north of Sutton Row includes diversion of high voltage and low voltage cables from Andrew Borde Street, across Charing Cross Road and along Sutton Row to connect into the relocated substation. The ducts in Charing Cross Road and Andrew Borde Street have already been installed under stage 1, but access will still be required to chambers to pull and joint cables.

*Stage F (Duration 6 Months) LU/Crossrail Works*

- 10.2.19 The worksites split again in this stage, and the northern link on Charing Cross Road is reopened to general traffic. Although the adverse impacts of the construction process will abate the necessary junction layouts and signal timings will still result in a significant impact on buses and general traffic. The temporary access road constructed for stage e will be closed to general traffic and used for construction traffic within the site. The eastern worksite will move northwards resulting in restrictions on New Oxford Street. This will have a significant impact on New Oxford Street reducing capacity and creating significant delays for all traffic on this link. This will also prevent the right turn from New Oxford Street into Tottenham Court Road. The alternative diversions though convoluted, are not long enough to be considered significant.
- 10.2.20 Buses will be re-routed and some stops and stands re-sited during this stage. The traffic delays will have a significant impact on bus passengers and operators.
- 10.2.21 The new station entrances on Oxford Street and the south end of the new plaza will open, whilst the old Oxford Street entrance and the entrance at the corner of Oxford Street and Tottenham Court Road will close, having a beneficial impact on pedestrians and passengers as the station improvements come into effect. However the closure of the pedestrian route on the south side of the junction between New Oxford Street and Oxford Street will cause a significant adverse impact on pedestrians.

*Stage G (Duration 6 Months) LU/Crossrail Works*

- 10.2.22 The whole plaza area will be opened up along with the new northern plaza entrance. This will have a generally beneficial impact for pedestrians, including underground passengers, by improving access and amenity. However, the worksite on the corner of New Oxford Street and Charing Cross Road will continue with ongoing significant impacts on traffic, cyclists, buses and, especially, pedestrians crossing Charing Cross Road. Sutton Row will reopen with a new signalised junction.

*Stage H (Duration 6 Months) LU/Crossrail Works*

- 10.2.23 All the main elements of the new ground level scheme open in this stage. The worksite is restricted to the area round the underground entrance by the Dominion Theatre, which will be temporarily closed, and the adjacent part of New Oxford Street. This will necessitate a reduction in lane widths at the western end of New Oxford Street, which will continue to result in significant impacts on traffic, cyclists, buses and pedestrians. However, all bus stops/stands will be operating and the contraflow bus lane on Charing Cross Road will be reinstated.



## 10.3 Impacts on Townscape and Built Heritage

### Baseline

- 10.3.1 The utility worksites are generally located in a townscape of moderate sensitivity and medium quality, although Soho Square to the west is an area of high quality and high sensitivity. The utility worksites are located within Soho Conservation Area and Denmark Street Conservation Area. They also abut Soho Square Gardens, which are protected under the London Squares Preservation Act 1931, as well as a number of listed buildings and structures, which are located within these conservation areas. The full baseline assessment can be found in the main ES, *Volume 2, Chapter 8*.

### Direct Impacts on Listed Buildings

- 10.3.2 Two 4–5 m deep shafts will be constructed in stage 3 in the vicinity of St. Patrick's church, Soho Square, St. Patrick's Presbytery and 21 Soho Square. The works are unlikely to have any significant impact on the listed buildings, but as the detailed design of the works progresses, appropriate settlement assessment and, if necessary, mitigation will be undertaken.

### Assessment, Mitigation and Residual Townscape Impacts

- 10.3.3 Stage 2 works in Goslett Yard will be of short duration (two months) and consequently the impacts on the townscape will not be significant. Stages a, b, c, d, e, f, g and h works were assessed in the main ES.
- 10.3.4 Stages 1, 3 and 4 utility works in Charing Cross Road, Andrew Borde Street and Sutton Row are largely within the main worksites but extend into the surrounding streets. They will all be concurrent with the LU and/or CLRLL works that were assessed in the main ES. When considered in addition to the main construction works and compensation grouting works, these utility works will result in a larger area of worksite within the Soho and Denmark Street Conservation Areas and will affect the setting of a number of listed buildings. The stage 3 works will result in a significant adverse impact on the setting of the Grade II listed building in 21 Soho Square. There will be an increase in the extent and intensity of the impacts on other townscape resources already reported in the main ES, however, the additional utility works will not result in a change to the level of significance of impacts on these resources.

## 10.4 Impacts on Visual Amenity

### Baseline

- 10.4.1 Visibility of the utility worksites is restricted by the buildings that line the frontages of the streets where the works will take place. The zone of visual influence for the utility works will extend along Charing Cross Road, Sutton Row, Sutton Row, Soho Square, Goslett Yard and Andrew Borde Street. A mixture of high, medium and low sensitivity visual receptors are located in or around these streets.

### Assessment, Mitigation and Residual Impacts

- 10.4.2 Stage 2 works at Goslett Yard will be of short duration and the impacts on visual amenity will not be significant.
- 10.4.3 Stage 1 and stage 4 works will result in additional significant adverse visual impacts for residents and workers in 144 Charing Cross Road and also 149–155 (odd) Charing Cross Road. 149–155 (odd) Charing Cross Road are to be demolished as part of the main civil works but may be occupied during the enabling works. Stage 3 works will result in additional significant adverse visual impacts for residents and workers at 3–9 (odd) Sutton Row and 21 Soho Square. When considered in addition to the main construction works, the additional stage 1, 3 and 4 utility works in Charing Cross Road, Andrew Borde Street and Sutton Row will result in a minor increase in extent and intensity of visual impact for other visual receptors adjacent to the main worksite but the additional utility works will not result in any increase in the significance of impacts on these other receptors.

## 10.5 Impacts on Archaeology

### Baseline

- 10.5.1 The baseline resources are the same as those in the area of the main works, as described in the main ES, *Volume 2, Chapter 8*.

### Assessment, Mitigation and Residual Impacts

- 10.5.2 Construction of telecom, gas, electricity, water and sewer utilities, in cut and cover trenches to a maximum depth of 2 m, has the potential to partially remove archaeological deposits at the following locations:
- Sutton Row;
  - Goslett Yard; and
  - Charing Cross Road/Andrew Borde Street.
- 10.5.3 The excavation of a cut and cover trench for diversion of the sewer in Fareham Street will completely remove potential archaeological remains within the footprint of the trench.
- 10.5.4 The excavation of deep shafts for the diversion of the sewer in Soho Square/Sutton Row will completely remove potential archaeological remains within the footprints of the shafts. The bored tunnel will have no impact on archaeological remains.
- 10.5.5 To mitigate these potential impacts, the incorporated mitigation measures will be implemented as set out in the main ES, *Volume 1, Chapter 3 (paragraph 3.7.13 onwards)* to produce preservation by record. Sewer shafts are likely to require localised archaeological excavation, others works will require an archaeological watching brief. No significant residual impacts are therefore predicted to occur.

## 10.6 Traffic and Transport Impacts

### Baseline

- 10.6.1 The affected streets are described below. Parking bays, where they are provided, are noted below. Bus routes are shown in *Figure 9.2*.
- 10.6.2 **Charing Cross Road:** (a short section south of the junction with Andrew Borde Street). This road is one-way northbound with a contraflow southbound bus lane. It is busy with traffic, including many buses, as well as pedestrians. There are frontage properties that require servicing.
- 10.6.3 **Andrew Borde Street:** (between St. Giles High Street and Charing Cross Road). This road is two-way but only the westbound direction carries a high volume of traffic. There are no frontage properties in this section of road.
- 10.6.4 **Goslett Yard:** This is a cul-de-sac with properties that require servicing.
- 10.6.5 **Sutton Row (including its junction with Soho Square):** This road is two-way between Soho Square and Falconberg Mews, and one-way eastbound between Falconberg Mews and Charing Cross Road. It is not heavily trafficked but it is an important route for drivers wishing to travel northbound from Soho Square or completing the route south of Oxford Street described in the assessment for Tottenham Court Road (west). It is well used by pedestrians. The section leading to its junction with Charing Cross Road is particularly narrow. There is a church on the southern side that requires servicing, with access via this road. In Soho Square there are about 10 general parking bays at the junction with Sutton Row.

### Assessment, Mitigation and Residual Impacts

#### Stage 1

- 10.6.6 This stage comprises the installation of a duct across Charing Cross Road and along the south side of Andrew Borde Street in preparation for an electricity diversion in stage 4. It will be concurrent with stages b and c of the LU works. The crossing of Charing Cross Road will be undertaken in sections to maintain traffic flows, but in addition to this it will be desirable for the stage b worksite to be opened in sections. The main part of the crossing of Charing Cross Road will then be undertaken before works take place at the southern end of the stage b worksite so that two lanes can be maintained for traffic in Charing Cross Road throughout the works. The works on the western side of Charing Cross Road will be carried out when the trench has been excavated for the stage b sewer works in the same location. If it is necessary to undertake the crossing of Charing Cross Road while the full stage b worksite is in operation Charing Cross Road will be reduced to a single lane at the junction with Andrew Borde Street. Despite the closure of Sutton Row and the removal of the contraflow southbound bus lane it is likely that there will be delays for traffic including buses. There will be a significant impact during the evening peak hour.

- 10.6.7 Utilities works along Andrew Borde Street will be undertaken during stage c of the LU works as Andrew Borde Street will be within the main worksite during that stage. No additional impacts are expected to arise.

#### *Stage 2*

- 10.6.8 This stage comprises the diversion and disconnection of services in Goslett Yard. It is concurrent with stage c. Access for servicing will be maintained whenever possible and vehicles will be able to turn before or after the trench. No significant impact is expected.

#### *Stage 3*

- 10.6.9 This stage comprises the diversion of the Thames Water sewer in Sutton Row and includes works at its junction with Soho Square. Works in this stage will be concurrent with the main construction stages d and e. During these stages Sutton Row east of Falconberg Mews will be closed. The impact of this closure was assessed in the main ES. The remaining section of Sutton Row will only be used for access to Falconberg Mews and Sutton Row, including the servicing access for St. Patrick's Church on the south side. The Thames Water works will consist of sinking drive and reception shafts between which a microtunnel will be driven. Smaller excavations will be needed wherever there is a connection into the sewer. Single alternate lane working will be required past the smaller excavations, but this will not require signal control as traffic volume will be low. The drive pit will be located at the junction of Sutton Row and Falconberg Mews, but the precise location is not known.
- 10.6.10 Pedestrian access will be maintained to properties in Falconberg Mews. A vehicular access will also be maintained although there may be short term restrictions for certain elements of the utility works. Servicing access must also be maintained for the church, but it is not expected that access will be required at all times. Mitigation will consist of laying a temporary deck (steel plate) across any excavation as required for access. The church will be consulted on detailed arrangements and it is expected that there will be no significant impacts.
- 10.6.11 While the reception shaft is dug and in use at the junction of Sutton Row and Soho Square, about 10 parking spaces, consisting of metered and pay and display bays, will need to be suspended. The total is made up of spaces that will be lost for the worksite and to ensure that through traffic and access to Sutton Row are maintained. Compensation grout shafts may be situated in Soho Square so it is unlikely that the bays could be relocated elsewhere in the immediate area. Detailed arrangements will be subject to consultation with City of Westminster. The main ES already identifies as a significant impact the loss of parking in Soho Square if compensation grout shafts are located there. The additional loss of parking spaces caused by the utilities works will worsen this situation for the 10 month period required for the works.

#### *Stage 4*

- 10.6.12 This stage comprises the relocation of an electricity substation from the Goslett Yard site to the Astoria Theatre site, north of Sutton Row, including electricity cables diversion from Andrew Borde Street, across Charing Cross Road and along Sutton Row to connect into the relocated substation. The works will be carried out concurrently with stage e.

- 10.6.13 As ducts will already have been installed in stage 1, the remaining works in Andrew Borde Street, Charing Cross Road and Sutton Row are for cable pulling and jointing only. Access to chambers will be required and the impact of the works will depend on the locations of the chambers. It is expected that chambers will be located within the main worksite boundary, and will not result in any additional traffic impacts.
- 10.6.14 The relocation of the substation in Sutton Row may affect servicing access to St. Patrick's Church. The traffic impact is similar to the issue discussed in stage 3 and it would be appropriate to continue the same measures in this stage. This will not be a significant impact. Access to Falconberg Mews will not be affected. During this stage Sutton Row east of Falconberg Mews remains closed, traffic impacts of this closure were discussed in the main ES.

### Summary

- 10.6.15 Based on the above the following mitigation measures will be required.
- 10.6.16 During stage 3, while work is undertaken in Sutton Row, it will be necessary to undertake the following mitigating measures:
- when servicing access is required for St. Patrick's Church, provision of a temporary deck across any excavation that may be located in front of the access road. The church will be consulted to agree detailed arrangements; and
  - suspension of 10 parking spaces around the junction of Sutton Row and Soho Square. This will add to the significant impact caused by the loss of parking for compensation grout shafts in Soho Square, described in the main ES.
- 10.6.17 During stage 4, while work is undertaken in Sutton Row, the same servicing access arrangements as those in stage 3 will be applied to St. Patrick's Church.
- 10.6.18 With the mitigation above significant impacts will be avoided except for the delay to vehicular traffic, including buses, in Charing Cross Road in stage 1.

## 10.7 Noise and Vibration Impacts

### Baseline

- 10.7.1 The noise-sensitive receptors that will potentially be affected by the utility works in this route window are limited to the following:
- St. Patrick's Church; and
  - The George public house, Goslett Yard.
- 10.7.2 These are noise-sensitive properties that are in close proximity to the proposed utility works.
- 10.7.3 Baseline noise levels were measured at both locations near to the Eastern (Plaza) Ticket Hall utility diversions: St. Patrick's Church (WE26) and Goslett Yard (WE27). These were reported in the main ES, *Volume 2, Chapter 8 (paragraph 8.7.145, Table 9.17)*. The baseline noise levels are presented in *Table 10.1*.

Table 10.1 Baseline Noise Levels at Representative Noise-Sensitive Receptors

Receptor	Daytime Baseline Noise Level	Evening/Weekend Baseline Noise Level	Night-time Baseline Noise Level
	L <sub>Aeq</sub> , 12 hour dB	L <sub>Aeq</sub> , 4, 10 or 16 hour dB	L <sub>Aeq</sub> , 8 hour dB
St. Patrick's Church (WE26) <sup>1</sup>	72		
The George Pub (Goslett Yard) (WE27)	67	66	64

<sup>1</sup> Three hour shortened measurement period

10.7.4 Ambient noise levels are moderate to high at most of these locations. This is due to the combination of road traffic noise and commercial uses in the vicinity.

#### Assessment, Mitigation and Residual Impacts

10.7.5 Only two sensitive receptors are likely to be affected by these works.

10.7.6 **St. Patrick's Church:** The main ES reported that the church will be subject to a significant residual noise impact from the main construction works. It is considered likely that the church will also experience a significant residual noise impact as a result of the stage 3 utility works. Therefore, the effect for this facility will be to extend the total duration of significant residual construction noise impacts. Thus the impacts at St. Patrick's Church from the utilities works fall into category 3. As noted in the main ES, *Volume 1, Chapter 3*, it is recognised that there are some community facilities such as St. Patrick's Church, which are predicted to experience construction noise impacts that may potentially affect their use. When further details of the construction methods, timing and duration of the works are available (during and after the detailed design), the nominated undertaker will take the necessary steps to ensure that any residual impacts are minimised.

10.7.7 **George Public House, Goslett Yard:** It is considered likely that the George public house at Goslett Yard will experience a significant noise impact during the stage 2 utility works that are estimated to take place over a period of two months within Goslett Yard. Given the duration of the works, their proximity and the baseline noise level, any residential property forming part of the public house would be likely to qualify for noise insulation. The provision of noise insulation will result in no significant construction noise impact at this property.

10.7.8 The results of the utilities noise assessment for the various categories of impact are summarised in *Table 10.2*.

**Table 10.2 Summary of Noise Impacts by Stage**

Stage	Assessment
1	This falls into category 1, ie no significant residual impact.
2	This falls into category 2, ie the George public house, Goslett Yard will qualify for noise insulation. No significant impact was identified in the main ES at this property.
3	This falls into category 3, ie St. Patrick's Church will be subject to a significant residual impact from the stage 3 utility works. This property is already predicted to experience noise levels from the main construction works such as would constitute a significant residual impact.
4a	This falls into category 1, ie no significant residual impact.

10.7.9 The results of the utilities noise assessment by receptor are summarised in *Table 10.3*. Only properties qualifying for noise insulation, temporary rehousing or predicted to experience a significant residual impact, are included.

**Table 10.3 Summary of Noise Impacts by Receptor**

Property	Noise Insulation	Temporary Rehousing	Significant Residual Impact	Stage	Impact from Main Works	Category
The George public house, Goslett Yard	✓			2	None	2
St. Patrick's Church			✓	3	Significant residual impact	3

10.7.10 The residential property forming part of The George public house is likely to qualify for noise insulation to mitigate noise from the utilities works.

10.7.11 In addition to significant residual impacts identified from the main construction works, St. Patrick's Church, which is expected to be subject to significant residual noise impacts from the main works, will experience a further period of significant residual impacts associated with utilities works. As noted in the main ES, *Volume 1, Chapter 3*, it is recognised that there are some community facilities, which are predicted to experience construction noise impacts that may potentially affect their use. When further details of the construction methods, timing and duration of the works are available (during and after the detailed design), the nominated undertaker will take the necessary steps to ensure that any residual impacts are minimised.

# **Chapter 11**

**Route Window C5:  
Tottenham Court Road Station  
Compensation Grout Shafts**

## 11 Route Window C5: Tottenham Court Road Station Compensation Grout Shafts

### 11.1 Summary of Residual Impacts

11.1.1 The following significant residual adverse impacts will occur temporarily during the utilities works, in addition to those reported in the main ES.

- *Traffic and Transport*: Temporary suspension of parking bays in Soho Square during stages 3, 4, 5 and 6.
- *Noise and Vibration*: Significant temporary residual noise impact at medical centre (13 Great Chapel Street).

### 11.2 The Utility Works

#### Overview

11.2.1 An overview of the utility works is included in the introductory text in Section 1.2. In this location, works will be undertaken to enable the construction of seven grout shafts. The timings of each of these works are shown in Figure 11.1 and the stages are represented graphically in the maps in the SES2 mapping volume (S2a).

#### Key Assumptions

11.2.2 The specific assumptions adopted for the assessment of these works (in addition to those listed in *paragraph 2.1.3*) are detailed below:

- the preparatory works will result in the main impacts whilst the commissioning works will require utility companies to return at a later date to undertake these activities at specific and local nodes; and
- compensation grout shafts not included in this section are not deemed to have a significant effect on existing known utilities and have been scoped out.

#### Scheme Description

11.2.3 The likely location of the Bond Street compensation grout shafts are as stated the main ES, *Volume 2*. The following table cross-references those locations to this document and states whether utility works are required. If utility works are not required then an assessment was not undertaken.

Grout Shaft Location as Described in ES	SES Grout Shaft Number	Utilities Work
Sheraton Street	1	Yes
Within Fareham Street worksite	2	No
Northwest corner of Soho Square	3	Yes
Northeast corner of Soho Square	4	Yes
Southeast corner of Soho Square	5	Yes
Southwest corner of Soho Square	6	Yes
Within Charing Cross Road opposite Denmark Place	7	Yes

***Shaft 1 (Duration 5 Months) Pre Shaft Construction Utility Works  
(Duration 2 Months) Post Shaft Removal***

11.2.4 The proposed shaft will occupy the junction of Great Chapel Street and Sheraton Street. As a result the utilities at this location will be diverted locally around the proposed shaft. Through pedestrian traffic will be maintained at all times but through vehicular traffic will be restricted during the diversion. The Thames Water sewer will be abandoned for the duration of the shaft.

11.2.5 On completion of the compensation grout shaft works some of the utilities (in particular the sewer) will be reinstated along their current alignment.

***Shaft 3 (Duration 4 Months) Pre Shaft Construction***

11.2.6 The proposed shaft occupies the northwest corner of Soho Square and will require the diversion of local utilities and fibre optic cables.

***Shaft 4 (Duration 4 Months) Pre Shaft Construction***

11.2.7 The proposed shaft occupies the southwest corner of Soho Square and will require the diversion of local utilities and fibre optic cables.

***Shaft 5 (Duration 8 Months) Pre Shaft Construction***

11.2.8 The proposed shaft occupies the southeast corner of Soho Square and will require the diversion of local utilities and fibre optic cables. There is also the potential to clash with a water main and hence provision has been made to diver this utility away from the shaft.

***Shaft 6 (Duration 3 Months) Pre Shaft Construction***

11.2.9 The proposed shaft occupies the south west corner of Soho Square and will require the diversion of local utilities and fibre optic cables.

***Shaft 7 (Duration 24 Months) Pre Shaft Construction***

11.2.10 The proposed shaft is located on the corner of the Goslett Yard/Charing Cross Road junction. As well as the diversion of local utilities, the diversion of a multi-way BT duct route will be required.



## 11.3 Impacts on Townscape and Built Heritage

### Baseline

- 11.3.1 The compensation grout shaft utility works 1 and 3–6 are located within a townscape of high quality and high sensitivity. These works are also within the Soho Conservation Area and abut a number of listed buildings within the conservation area. The compensation grout shaft utility works 7 is located within a townscape of moderate quality and moderate sensitivity and abuts the Soho Conservation Area but no listed buildings. The full baseline assessment of the sensitivity of the townscape within the Tottenham Court Road Station Route Window can be found in the main ES, *Volume 2, Chapter 8*.

### Direct Impacts on Listed Buildings

- 11.3.2 Compensation grout shaft utility works 1 appears to be in close proximity to listed bollards on Great Chapel Street. Mitigation will be undertaken by temporarily removing the bollards which will be replaced on completion of the works. There will be no direct impacts on listed buildings resulting from the additional compensation grout shaft utility works.

### Assessment, Mitigation and Residual Impacts

- 11.3.3 Compensation grout shaft utility works 3, 4 and 6 will be of short duration and consequently the impacts on the townscape and conservation areas will not be significant.
- 11.3.4 Compensation grout shaft utility works 1, 5 and 7 at Sheraton Street and Great Chapel Street, Soho Square and Goslet Yard and Charing Cross Road, which occur in advance of and post the compensation grout shaft works and extend beyond the boundary of the compensation grout shaft works into the surrounding streets. Worksites 1 and 5, when considered in addition to the compensation grout shaft works, will result in a larger area of worksite within the Soho Conservation Area and will affect the setting of a number of listed buildings. Shaft 1 utility works will abut a listed building and listed bollard on Great Chapel Street. There will be an increase in the extent and duration (of approximately 24 months) of the impacts on other townscape resources already reported in the main ES, however, the additional utility works will not change the level of significance of impact on these resources.

## 11.4 Impacts on Visual Amenity

### Baseline

- 11.4.1 Visibility of the compensation grout shaft utility works is restricted by the buildings that line the frontages of the streets where the works will take place. The zone of visual influence for the utility works will extend along sections of Great Chapel Street, Sheraton Street, Greek Street, Soho Square, Goslett Yard and Charing Cross Road. Moderate sensitivity visual receptors are located in or around these streets.

### Assessment, Mitigation and Residual Impacts

- 11.4.2 The shafts 3, 4 and 6 utility works in the Haunch of Venison Yard and at the rear of buildings 67 and 68 New Bond Street will be of short duration and the impacts on the visual amenity will not be significant.
- 11.4.3 Visual amenity receptors in the vicinity of the shafts 1, 5 and 7 works will experience, in addition to the compensation grouting works, increases in the duration of impact (of approximately 24 months) and an increase in extent. Overall, the additional utility works at Great Chapel Street and Sheraton Street, Soho Square and Goslett Yard and Charing Cross Road would not result in any increase in the level of significance of impacts on visual amenity identified in the main ES.

## 11.5 Impacts on Archaeology

### Baseline

- 11.5.1 The baseline resources are reported in the main ES, *Volume 2, Chapter 8*.

### Assessment, Mitigation and Residual Impacts

- 11.5.2 The diversions of utilities at Soho Square, Goslett Road, Charing Cross Road, and the junction of Great Chapel and Sheraton Street have potential to partially or completely remove archaeological remains.
- 11.5.3 To mitigate these potential impacts, the incorporated mitigation measures will be implemented as set out in the main ES, *Volume 1, Chapter 3 (paragraph 3.7.13 onwards)* to produce preservation by record, probably as an archaeological watching brief. With this mitigation, no significant residual impacts are predicted.

## 11.6 Traffic and Transport Impacts

### Baseline: Tottenham Court Road (East)

- 11.6.1 The affected streets are described below. Parking bays, where they are provided, are noted below. Bus routes are shown in *Figure 9.2*.
- **Soho Square:** This square is located south of Oxford Street and west of Charing Cross Road. The local traffic management system, which includes one-way clockwise operation around the square, has reduced through traffic but not eliminated it. There are around 200 parking spaces on both inside and outside kerbs, consisting of general (about 60 spaces), residents (about 30), shared use (about 15), doctors (3), ambulance (1) and about 100 motorcycle spaces. They are generally well used. There are properties surrounding the square that require servicing.
  - **Charing Cross Road:** Charing Cross Road is a main south to north route in central London. Traffic operates one-way northbound with a southbound contraflow bus lane south of St. Giles Circus. It is heavily trafficked and is busy with pedestrians.

- **Goslett Yard:** The small yard is a cul-de-sac with little traffic and few pedestrians. It provides access to the George public house and a number of commercial premises.

### **Assessment, Mitigation and Residual Impacts: Tottenham Court Road (East)**

- 11.6.2 Shafts 3, 4, 5 and 6 will all be located in Soho Square. As discussed in the main ES, the location of these shafts will result in significant loss of parking. To reduce the number of spaces lost during utilities diversions, works will only be undertaken at one of the shafts at any one time. As mitigation it may be possible to reallocate parking bays in consultation with the City of Westminster to ensure that parking for priority users is maintained. A significant impact on local parking provision will, however, remain while the utilities works are in progress. Servicing to properties in Soho Square will take place from unaffected sections and pedestrian access will be maintained all round the square at all times.

#### ***Shaft 3***

- 11.6.3 This shaft will be located in the north western corner of Soho Square. Utilities will be diverted locally round the site of the shaft. It is expected that it will be possible to maintain one line of traffic past the works at all times. This will result in a loss of 14 general parking bays, 6 shared use bays, 1 residents bay and 20 motorcycle spaces.

#### ***Shaft 4***

- 11.6.4 This shaft will be located in the north eastern corner of Soho Square. Utilities will be diverted locally round the site of the shaft. It is expected that it will be possible to maintain one line of traffic past the works at all times with the suspension of 15 general parking bays and 22 motorcycle spaces.

#### ***Shaft 5***

- 11.6.5 This shaft will be located in the southeastern corner of Soho Square. Work will result in the suspension of 15 general parking bays, 10 residents bays, 23 motorcycle spaces and a doctors bay. Two water mains will be diverted so it may not be possible to maintain a running lane past the works, in which case the affected section would be closed. The direction of traffic flow in Soho Square will be reversed (from clockwise to anti-clockwise) between Greek Street and Carlisle Street to permit access and by undertaking the work in sections across the mouth of the Greek Street junction it should be possible to maintain access to that street. If it is found that this is not feasible for the heaviest vehicles that require access to Greek Street temporary arrangements will be agreed with City of Westminster and the police.
- 11.6.6 Vehicles from the northern half of Soho Square will be able to exit via Soho Street or Sutton Row only, the impact is not expected to be significant. While the above measures are in place, no works will be undertaken in Carlisle Street, including its junction with Dean Street; Fareham Street; or Dean Street. Works will also be coordinated with stages a and b of the LU works so that Sutton Row is open to traffic for as long as possible. However, there will be periods when the LU works will require Sutton Row to be closed. During this time the northeastern corner of Soho Square will be made two-way and all vehicles in the northern half of Soho Square will exit via Soho Street. The impact on traffic is not expected to be significant as this will only affect

vehicles servicing Soho Square. However, two-way working in the affected section will lead to a further suspension of seven general parking bays which will add to the significant impact on parking.

#### **Shaft 6**

- 11.6.7 This shaft is located in the southwestern corner of Soho Square. It is likely that one running lane can be maintained by suspending 15 residents bays, 3 general parking bays, 33 motorcycle spaces and an ambulance bay. The normal clockwise traffic circulation around the square will be maintained during this stage of the works. Work across the junction with Frith Street will be undertaken in sections to maintain access. If it is found that this is not feasible for the heaviest vehicles requiring access to Frith Street, temporary arrangements will be agreed with City of Westminster and the police. While work is undertaken for this grout shaft no work will take place in Carlisle Street including its junction with Dean Street.

#### **Shaft 7**

- 11.6.8 The shaft will be located in the footway close to the corner of Charing Cross Road and Goslett Yard. It is likely that the service diversions required will be undertaken during stage b of the main works when other utilities are being diverted from the western footway of Charing Cross Road immediately to the north. The traffic management measures for stage b including the loss of the contraflow bus lane on Charing Cross Road, are expected to result in significant impacts for drivers, public transport users and pedestrians. The diversions for the shaft will extend the works to the south and exacerbate these impacts. In addition, there may be some loss of kerbside loading space on the east side of Charing Cross road but this will not be significant.

#### **Summary: Tottenham Court Road (East)**

- 11.6.9 Based on the above, the following mitigating measures will be required.
- While utilities works are undertaken for shafts 3, 4, 5 and 6 sufficient local parking places will be suspended to permit access for traffic around each worksite. In consultation with City of Westminster existing parking places will be reallocated to maintain parking for priority users and temporary bays will be provided if possible.
  - To minimise the impact on parking and access, works for shafts 3, 4, 5 and 6 will not be undertaken concurrently.
  - Works for shaft 5 will be coordinated with stages a and b of the Tottenham Court Road station works described in the main ES and will close the southeastern corner of Soho Square. Soho Square between Greek Street and Carlisle Street will be made one-way anti-clockwise. Work across Greek Street will be undertaken in sections to maintain access to that street. When the LU works require closure of Sutton Row, the northeastern corner of Soho Square will be made two-way and all vehicles in the northern half of Soho Square will leave via Soho Street.
  - While work is undertaken for shaft 5, no works will take place in Carlisle Street including its junction with Dean Street, Fareham Street, or Dean Street.

- While work is undertaken for shaft 6, work across Frith Street will be undertaken in sections to maintain access.
- While work is undertaken for shaft 6, no works will take place in Carlisle Street including its junction with Dean Street.
- Works for shaft 7 to be carried out during stage b of the main works.

11.6.10 With the mitigation measures described above it is likely that additional significant impacts will be avoided except the following:

- Suspension of parking bays in Soho Square while utilities works are undertaken for shafts 3, 4, 5 and 6 will have a significant impact on local parking provision.

#### **Baseline: Tottenham Court Road (West)**

11.6.11 The affected street which is not covered elsewhere in this SES is described below. Parking bays, where they are provided, are noted below. No bus routes are affected by these works

- **Sheraton Street:** This is a narrow one-way westbound road and traffic volume is very light. There are four residents bays and approximately seven motorcycle spaces. The frontage properties require servicing.

#### **Assessment, Mitigation and Residual Impacts: Tottenham Court Road (West)**

##### *Shaft 1 Pre Shaft Construction*

11.6.12 This shaft is located at the junction of Great Chapel Street and Sheraton Street where utilities will be diverted locally. In the assessment of the utilities diversions in *Chapter 9*, it is assumed that this compensation grout shaft will not be required and that some utilities from Dean Street will be diverted through Great Chapel Street, affecting the same section.

11.6.13 Diversion of the utilities in Sheraton Street to make room for the grout shaft is expected to be achieved by relocating them within the street. The junction of Sheraton Street and Great Chapel Street will be closed to traffic and Great Chapel Street between Diadem Court and Sheraton Street will be closed to pedestrians. Access to all buildings will be maintained but all parking spaces in Sheraton Street will be suspended due to its narrow width. The City of Westminster will be consulted regarding reallocation of parking bays. These measures are the same as those proposed in the main ES to cover the construction and operational periods for the grout shaft. It is likely that there would be no significant impacts provided this work is not undertaken concurrently with any of the utilities works for the grout shafts in Soho Square because of the cumulative loss of parking spaces.

11.6.14 However, this only deals with the utilities already located in Great Chapel St and Sheraton Street, not necessarily those proposed for diversion into Great Chapel Street from elsewhere. Sheraton Street, the southern section of Great Chapel Street and the footpath between Sheraton Street and Carlisle Street are all narrow, the roads having particularly narrow footways. If there is insufficient room for the additional utilities and the grout shaft, it is proposed that some of the diverted utilities follow an alternative route. This would be from Dean Street to Great Chapel Street through Diadem Court, which is itself narrow, with little room for services. While works are taking place in Diadem

Court pedestrians will be diverted via Fareham Street which is nearby and does not constitute a significant diversion. As the diverted services consist only of electricity and various telecoms it is expected that they could all be fitted into one or other of the alternative routes. Most other streets in this area are also narrow and are fronted by small buildings which require servicing so no other straightforward diversion routes exist.

#### *Shaft 1 Post Shaft Removal*

11.6.15 During this stage some of the utilities will be restored to their current alignment. It would be appropriate to apply the same measures described above. In view of the parking spaces lost due to the compensation grout shafts in Soho Square, this stage will not take place until those works are complete.

#### **Summary Tottenham Court Road (West)**

11.6.16 Based on the above, the following mitigating measures will be required:

- during both stages, apply the same traffic management measures described in the main ES; and
- no work will take place in Soho Square while work is undertaken for this shaft.

11.6.17 With the mitigation measures described above it is likely that additional significant impacts will be avoided. However, this assessment assumes main utilities can be rerouted without affecting utilities diversion for the grout shaft. The re-routing will lead to different traffic and pedestrian impacts. It will need to be assessed and it is likely that any changes to the proposed utilities diversion for the main works will give rise to significant impacts.

## **11.7 Noise and Vibration Impacts**

### **Baseline**

11.7.1 The noise-sensitive receptors that will potentially be affected by the utility works in this location are limited to the following:

- medical centre (13 Great Chapel Street);
- 16 Soho Square;
- St. Patrick's Church; and
- the George public house, Goslett Yard.

11.7.2 These are noise-sensitive properties that directly overlook and are in close proximity to the proposed utility works.

11.7.3 Baseline noise levels were measured at, or very close to, six of the above receptor locations in the vicinity of the compensation grout shaft utility works: 16 Soho Square (WE24); St. Patrick's Church (WE26) and Goslett Yard (WE27). These were reported in the construction noise assessment reported in the main ES, *Volume 2, Chapter 8 (paragraph 8.7.145, Table 8.17)*. At the other receptors the baseline noise levels were derived from data measured at the survey locations. The baseline noise levels are presented in *Table 11.1*.

**Table 11.1 Baseline Noise Levels at Representative Noise-Sensitive Receptors**

Receptor	Daytime Baseline	Evening/Weekend	Night-time Baseline
	Noise Level	Baseline Noise Level	Noise Level
	L <sub>Aeq, 12 hour</sub> dB	L <sub>Aeq, 4, 10 or 16 hour</sub> dB	L <sub>Aeq, 8 hour</sub> dB
16 Soho Square (WE 24) <sup>1</sup>	70		
St. Patrick's Church (WE 26) <sup>1</sup>	72		
The George public house, Goslett Yard (WE27)	67	65	64

<sup>1</sup>Short-term monitoring location (L<sub>Aeq, 3 hr</sub>)

11.7.4 Ambient noise levels are moderate to high in this area. Road traffic noise is the dominant noise source in the area.

### Assessment, Mitigation and Residual Impacts

#### Overview

11.7.5 The relevant mitigation measures, as set out in *Appendix B1* of the main ES, will be employed as appropriate to reduce construction noise impacts.

11.7.6 The potential noise impact from the various stages of the utilities works is considered below.

#### 11.7.7 **Medical Centre at 13 Great Chapel Street–Tottenham Court Road Shaft 1:**

The utility works for Tottenham Court Road shaft 1 will take place directly outside this receptor. It is assumed that both the works before and after the main civil works will entail excavation works taking place for more than 10 days in any 15 day period. Due to the narrow streets, relatively high noise levels would be generated and this will therefore result in a significant noise impact for the Medical Centre at 13 Great Chapel Street. These works therefore fall into category 2.

- 11.7.8 **16 Soho Square–Tottenham Court Road Shaft 4:** The utility works for Tottenham Court Road shaft 4 in Soho Square will take place close to 16 Soho Square. It is assumed that works required before the shaft construction works will entail excavation taking place for more than 10 days in any 15 day period. As the works will take place directly outside 16 Soho Square, a significant construction noise impact will occur. However, it is likely that this property will qualify for noise insulation, and hence there will be no significant residual noise impact. As reported in the Supplementary ES, May 2005, 16 Soho Square is likely to qualify for noise insulation due to the construction and operation of the grout shaft. Consequently this property falls into category 3.
- 11.7.9 **St. Patrick’s Church–Tottenham Court Road Shaft 5:** The utility works for Tottenham Court Road shaft 5 in Soho Square will take place close to St. Patrick’s Church. It is assumed that works required before the shaft construction works will entail excavation taking place for more than 10 days in any 15 day period. As the utility works will take place directly outside St Patrick’s Church, a significant construction noise impact will occur.
- 11.7.10 The main ES already identifies that the church will be subject to a significant residual noise impact from the main construction works. Therefore, the effect for this facility will be to extend the total duration of significant residual construction noise impacts. Thus the impacts at St. Patrick’s Church from the utilities works fall into category 3. As noted in the main ES, *Volume 1, Chapter 3*, it is recognised that there are some community facilities such as St. Patrick’s Church, which are predicted to experience construction noise impacts that may potentially affect their use. When further details of the construction methods, timing and duration of the works are available (during and after the detailed design), any nominated undertaker will take the necessary steps to ensure that any residual impacts are minimised.
- 11.7.11 **Tottenham Court Road Shaft 6, Soho Square southeast:** There are no noise-sensitive properties in the vicinity of these works. Therefore, no noise impacts would be expected and the works are expected to fall into category 1.
- 11.7.12 **The George Public House in Goslett Yard–Tottenham Court Road shaft 7:** The noise levels generated by the Tottenham Court Road shaft 7 works in Charing Cross Road will not be expected to exceed the criteria at which a significant impact would occur for the residential part of the George Public house in Goslett Yard. The property concerned is the only noise-sensitive property that is potentially affected by these utility works. The George pub is therefore classed as category 1.
- 11.7.13 The results of the construction noise assessment for the various categories of impact are summarised in *Table 11.2*.

Table 11.2 Summary of Noise Impacts by Stage

Stage	Assessment
<b>Tottenham Court Road Grout Shafts</b>	
<b>Shaft 1</b>	This falls into category 2, ie a significant residual noise impact is predicted for the medical centre at 13 Great Chapel Street.
<b>Shaft 4</b>	This falls into category 3. 16 Soho Square will qualify for noise insulation and therefore there will be no significant residual impacts.
<b>Shaft 5</b>	This falls into category 3. St. Patrick's Church will be subject to a significant residual impact, extending the impacts from the main civil works.
<b>Shaft 6</b>	This falls into category 1, ie no significant residual impact.
<b>Shaft 7</b>	This falls into category 1, ie no significant residual impact.

11.7.14 The results of the construction noise assessment by receptor are summarised in the *Table 11.3*. Only properties qualifying for noise insulation or temporary rehousing or predicted to experience a significant residual impact are included.

Table 11.3 Summary of Noise Impacts by Receptor

Property	Noise Insulation	Temporary Rehousing	Significant Residual Impact	Stages	Impact from Main Works	Category
Medical Centre (13 Great Chapel Street)			✓	Shaft 1	None	2
16 Soho Square	✓			Shaft 4	Noise insulation	3
St. Patrick's Church			✓	Shaft 5	Significant residual impact	3

11.7.15 16 Soho Square is likely to qualify for noise insulation to mitigate noise from the utilities works. Significant residual noise impacts are likely to occur for the medical centre (13 Great Chapel Street) and St. Patrick's Church, which is expected to be subject to significant residual noise impacts from the main works. The church will experience a further period of significant residual impacts associated with utilities works.

11.7.16 As noted in the main ES, *Volume 1, Chapter 3*, it is recognised that there are some community facilities, which are predicted to experience construction noise impacts that may potentially affect their use. When further details of the construction methods, timing and duration of the works are available (during and after the detailed design), any nominated undertaker will take the necessary steps to ensure that any residual impacts are minimised.



# **Chapter 12**

**Route Window C5:**

**Tottenham Court Road**

**Fisher Street**

**Compensation Grout Shaft**

## 12 Route Window C5: Tottenham Court Road–Fisher Street Compensation Grout Shaft

### 12.1 Summary of Residual Impacts

12.1.1 No significant residual impacts will occur in addition to those identified in the main ES.

### 12.2 The Utility Works

#### Overview

12.2.1 An overview of the utility works is included in the introductory text in Section 1.2. In this location, works will be undertaken to enable the construction of one grout shaft. The timings of these works are shown in Figure 12.1 and the stages are represented graphically in the maps in the SES2 mapping volume (S2a).

#### Key Assumptions

- 12.2.2 The specific assumptions adopted for the assessment of these works (in addition to those listed in *paragraph 2.1.3*) are detailed below:
- The preparatory works will result in the main impacts whilst the commissioning works will require utility companies to return at a later date to undertake these activities at specific and local nodes.
  - Compensation grout shafts not included in this section are not deemed to have a significant effect on existing known utilities and hence and been scoped out.

### 12.3 Scheme Description

#### Overview

12.3.1 The likely location of the Fisher Street compensation grout shafts are as stated in the main ES, Volume 2 (*paragraph 8.7.32*). Table 12.1 cross-references those locations to this document and states whether utility works are required. If utility works are not required then an assessment has not been undertaken:

**Table 12.1 Compensation Grout Shaft Locations**

Grout Shaft Location as Described in ES	SES Grout Shaft Number	Utilities Work
Within the Kingsway Tram Subway	1	No
Proctor Street	2	Yes

#### *Shaft 2 (Duration 4 Months) Pre Shaft Construction*

12.3.2 This shaft will require the diversion of utilities, including fibre optic cables to avoid the shaft in Proctor Street.



## 12.4 Impacts on Townscape and Built Heritage

### Baseline

- 12.4.1 The compensation grout shaft utility works 2 is located within a townscape of high quality and high sensitivity. These do not lie within any conservation areas and do not abut any listed buildings. The full baseline assessment of the sensitivity of the townscape within Route Window C5 can be found in the main ES, *Volume 2, Chapter 8*.

### Direct Impacts on Listed Buildings

- 12.4.2 There will be no direct impacts on listed buildings resulting from the additional compensation grout shaft utility works.

### Assessment, Mitigation and Residual Impacts

- 12.4.3 Compensation grout shaft utility works 2 will be of short duration and consequently the impacts on the townscape and conservation areas will not be significant.

## 12.5 Impacts on Visual Amenity

### Baseline

- 12.5.1 Visibility of the compensation grout shaft utility works is restricted by the buildings that line the frontages of the streets where the works will take place. The zone of visual influence for the utility works will extend along sections of Proctor Street, Eagle Street and Catton Street. A mixture of high, moderate and low sensitivity visual receptors are located in or around these streets.

### Assessment, Mitigation and Residual Impacts

- 12.5.2 The shaft 2 utility works in Proctor Street will be of short duration and the impacts on the visual amenity will not be significant.

## 12.6 Impacts on Archaeology

### Baseline

- 12.6.1 The baseline resources are the same as those in the area of the main works, as described in the main ES, *Volume 2, Chapter 8*.

### Assessment, Mitigation and Residual Impacts

- 12.6.2 The diversion of utilities in Proctor Street has potential to partially or completely remove archaeological remains. To mitigate these potential impacts, the incorporated mitigation measures will be implemented as set out in the main ES, *Volume 1, Chapter 3 (paragraph 3.7.13 onwards)*, to produce preservation by record, probably as an archaeological watching brief. With this mitigation, no significant residual impacts are predicted.

## 12.7 Traffic and transport impacts

### Baseline

12.7.1 The affected streets are described below. Parking bays, where they are provided, are noted below. Bus routes are shown in *Figure 9.2*.

- **Procter Street** (including junction with Catton Street): This is a busy but wide one-way southbound road that forms part of a one-way system in the area. This street has two bus lanes, one on each side of the road, and three general traffic lanes in between.

### Assessment, Mitigation and Residual Impacts

12.7.2 The works involve diverting electricity, fibre optic and telecom cables locally to avoid the shaft in Procter Street. It is expected that with a normal working area for the works, the utilities diversion will require closure of the bus lane and the traffic lane to the west side and the suspension of the bus lane on the east side. The remaining lanes will be adequate to accommodate traffic without causing significant impacts. If the east side bus lane were not suspended, buses would be likely to experience greater delay on the approach to the lane than they could save by using it. It may also be necessary to suspend the bus stop nearest to High Holborn. All buses would use an existing bus stop further north. Both footways will be retained although the western one may be reduced in width. With these arrangements, no significant impacts will occur.

12.7.3 Catton Street is a narrow one-way westbound road. While works affect its junction with Procter Street it is recommended that Catton Street is closed to traffic. Access to an off-street car park and servicing to Procter House will be maintained via Southampton Row and all other servicing will take place from Fisher Street. Pedestrian access will not be affected by this closure. In addition, the closure will lead to the suspension of one diplomat, one general and two business permit bays. The loss of one general parking bay is not a significant impact; other bays can be relocated by reallocating general parking bays in surrounding streets. With all the measures above it is likely that significant impacts can be avoided.

### Summary

12.7.4 Based on the above, the following mitigating measures will be required:

- the east side bus lane and the bus stop in the same section to be suspended; affected bus routes will use existing bus stop further north; and
- closure of Catton Street to traffic while works in Procter Street affect the junction with this street. Access to an off-street car park and servicing Procter House maintained via Southampton Row. Business permit and diplomat bays in Catton Street relocated locally.

12.7.5 With the mitigation measures described above it is expected that additional significant impacts can be avoided.

## 12.8 Noise and vibration impacts

### Baseline

- 12.8.1 The noise-sensitive receptors that will potentially be affected by the utility works in this location are limited to the University of Westminster.
- 12.8.2 This is the only noise-sensitive property that directly overlooks and is in close proximity to the proposed grout shaft works.
- 12.8.3 Baseline noise levels were measured at, or very close to, the above receptor location in the vicinity of the compensation grout shaft utility works: 138 Charing Cross Road (CA01); and Catton Street (CA03). These were reported in the construction noise assessment reported in the main ES, *Volume 2, Chapter 8 (paragraph 8.7.145, Table 8.17)*. The baseline noise levels are presented in *Table 12.2*.

**Table 12.2 Baseline Noise Levels at or near Representative Noise-Sensitive Receptors**

Receptor	Daytime Baseline	Evening/Weekend	Night-time Baseline
	Noise Level	Baseline Noise Level	Noise Level
	L <sub>Aeq</sub> , 12 hour dB	L <sub>Aeq</sub> , 4, 10 or 16 hour dB	L <sub>Aeq</sub> , 8 hour dB
138 Charing Cross Road (CA01)	75	74	73
Catton Street (CA03) <sup>1</sup>	70		

<sup>1</sup> Short-term monitoring location (L<sub>Aeq</sub>, 3 hr)

- 12.8.4 Ambient noise levels are moderate to high in this area. Road traffic noise is the dominant noise source in the area.

### Assessment, Mitigation and Residual Impacts

- 12.8.5 The relevant mitigation measures, as set out in *Appendix B1* of the main ES, will be employed as appropriate to reduce construction noise impacts.
- 12.8.6 The potential noise impact from the various stages of the utilities works is considered below.
- 12.8.7 **University of Westminster – Fisher Street Shaft 2:** Works required before the Fisher Street Shaft 2 construction will be in close proximity to the university building in Drake Street. This property will not be affected by noise for the entire duration of the works. The noise levels generated by these works are not expected to exceed the criteria at which a significant impact would occur. The University of Westminster therefore falls into category 1.
- 12.8.8 The results of the construction noise assessment for the various categories of impact are summarised in *Table 12.3*.

**Table 12.3 Summary of Noise Impacts by Stage**

Stage	Assessment
<b>Shaft 2</b>	This falls into category 1 ie no significant residual impact.

12.8.9 The results of the construction noise assessment by receptor are summarised in the *Table 12.4*. Only properties qualifying for noise insulation or temporary rehousing or predicted to experience a significant residual impact are included.

**Table 12.4 Summary of Noise Impacts by Receptor**

Property	Noise Insulation	Temporary Rehousing	Significant Residual Impact	Stage	Impact from Main Works	Category
No properties are predicted to experience a significant noise impact due to works associated with the Fisher Street grout shaft						

12.8.10 No properties are predicted to qualify for noise insulation or temporary rehousing due to works associated with the Fisher Street grout shaft. Nor will any properties experience a significant residual noise impact.

