



17 CHARTERHOUSE STREET, LONDON

TRAVEL PLAN

Client: Anglo American and De Beers



TRAVEL PLAN

17 CHARTERHOUSE STREET, LONDON

Client: Anglo American and De Beers

i-Transport LLP
4 Lombard Street
London
EC3V 9HD
Tel: 020 7190 2820
Fax: 020 7190 2821
www.i-transport.co.uk

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QUALITY MANAGEMENT

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SECTION 1 INTRODUCTION

1.1 Introduction

1.1.1 Anglo American and De Beers have appointed i-Transport LLP to provide highways and transport advice in relation to the proposed refurbishment and extension at 17 Charterhouse Street.

1.1.2 The site is located at 17 Charterhouse Street within the London Borough of Camden (LBC). The borough boundary with the City of London (CoL) follows the centre of Charterhouse Street, although CoL are responsible for the maintenance of the whole carriageway. The site is currently served by two points of vehicular access; one from Charterhouse Street and one from Saffron Hill.

1.1.3 The development proposal is for the refurbishment and extension of the existing building to provide an additional 4,077sqm of office space and a new secure vehicular access via Charterhouse Street. The site will be occupied by the Applicant and will provide high quality offices for the company's London headquarters. The development proposal also includes a new pedestrian entrance off Charterhouse Street, in the vicinity of the existing vehicular access and the relocation of an existing bus stop.

Definition

1.1.4 Transport for London (TfL) defines a Travel Plan (TP) as being:

'...a long term management strategy for an existing or proposed development that seeks to integrate proposals for increasing sustainable travel by the future occupier(s) into the planning process and is articulated in a document that is to be regularly reviewed by the future occupier(s) of the site. It is based on evidence in the transport assessment of the anticipated transport impacts of the proposal and involves the development of agreed and specific outcomes, linked to an appropriate package of measures aimed at encouraging sustainable travel.'

1.1.5 This TP has been prepared in accordance with the Transport for London (TfL) Travel Planning Guidance, November 2013. This TP should be read in conjunction with the accompanying Transport Statement (*i-Transport Report Ref: ITL13105-001*).

1.1.6 In accordance with the guidance, this TP sets out sustainable transport objectives and targets together with a package of measures to facilitate and encourage future employees and visitors to travel to/from the site by walking, cycling and public transport. It also sets out the ongoing management arrangements for the development, including the appointment of a Travel Plan Co-ordinator (TPC) and the monitoring strategy.

1.2 **Structure**

1.2.1 The remainder of this TPS is structured as follows:

- Section 2 – Policy Context;
- Section 3 – Site Assessment;
- Section 4 – Travel Surveys;
- Section 5 – Aims, Objectives and Benefits;
- Section 6 – Targets;
- Section 7 – Measures;
- Section 8 – Management;
- Section 9 – Monitoring;
- Section 10 – Action Plan; and
- Section 11 – Securing and Enforcing.

SECTION 2 POLICY CONTEXT

2.1 National Policy

2.1.1 The National Planning Policy Framework (NPPF) (March 2012) provides the policy context in relation to Travel Plans. Paragraphs 35 and 36 state that Development Plans should protect and exploit opportunities for the use of sustainable transport modes. A Travel Plan is identified as a key tool to facilitate this and all developments that generate significant amounts of movement should be required to provide one. Sustainable travel objectives should include reducing the use of the private car (particularly for single occupancy journeys) and measures to promote walking, cycling and public transport use as suitable alternatives.

2.1.2 The Planning Practice Guidance identifies that the primary purpose of a Travel Plan is to identify opportunities for the effective promotion and delivery of sustainable transport initiatives e.g. walking, cycling, public transport and tele-commuting, in connection with both proposed and existing developments, and through this to reduce the demand for travel by less sustainable modes.

2.2 Local Policy

2.2.1 The London Plan and Mayor's Transport Strategy (MTS) also require the use of travel plans to help deliver sustainable development in London.

2.2.2 The Policy A1 – Managing the impact of development in LBC's Local Plan states that the Council will consider the impacts of a development through the information contained within a TP and associated transport statement.

SECTION 3 SITE ASSESSMENT

3.1 Overview

3.1.1 This section of the TP reviews the existing local transport network within the vicinity of the site, including a review of the provision of walking, cycling and public transport facilities and an assessment of the local highway network.

3.2 Site Location

3.2.1 The site is located at 17 Charterhouse Street within LBC. The site is located within the Central Activities Zone (CAZ), identifying it as part of the central hub of the city and a key location for business premises which policies seek to retain and enhance. The site is located within the Hatton Garden conservation area, with Hatton Garden some 120m to the west of the site.

3.2.2 The site is surrounded by commercial properties on all sides, with Charterhouse Street forming the southern frontage and Saffron Hill the eastern boundary. The site is linked in terms of its historical context to the Hatton Garden diamond area to the west, it having previously been home to the De Beers headquarters. This application is to bring the site up to modern standards, for re-use as a headquarters by The Applicant. A site location plan is provided at Figure 3.1.

3.3 Development Proposal

3.3.1 The development proposal is for the refurbishment and extension of the existing building to provide an additional 4,077 sqm of office space and a relocated secure vehicular access via Charterhouse Street. The site will be re-occupied by the Applicant and will provide high quality offices for the company's London headquarters. The development proposal also includes a new pedestrian entrance off Charterhouse Street, in the vicinity of the existing vehicular access and the relocation of an existing bus stop.

3.3.2 The proposed development will provide a total of 168 covered cycle parking spaces. The spaces will be provided at the rear of the site and will be only be accessible by staff (and visitors).

3.4 Site Accessibility

3.4.1 Circa 2.5m wide footways are provided on Charterhouse Street on the site's frontage. The footways provide a direct route to the local bus stops and towards the formal pedestrian crossings at the A40 Holborn in the west and with Farringdon Street/ Road in the east. These footways and crossings provide routes towards Chancery Lane and Farringdon London Underground stations and an array of local shops, facilities and services in the area. In addition, street lighting is present along Charterhouse Street.

3.4.2 To the rear of the site, Saffron Hill operates as a shared surface arrangement, from the steps to/from Charterhouse Street to the site's servicing and delivery entrance. At this point, footways are provided on both sides of Saffron Hill, whereby they connect with wider footways on Greville Street. The steps leading down from Charterhouse Street to Saffron Hill are privately owned by the Applicant. This area was stopped up in 1982 and is not part of the public highway. However, the Applicant permits the public to use the route. This arrangement will continue with the proposed development.

3.4.3 An advisory cycle lane is present along the northern side of Charterhouse Street, outside of the site.

3.4.4 Cycle Superhighway 6 (CS6) will provide a direct route for cyclists across central London, between Elephant and Castle and King's Cross. The route will be either fully segregated or on quiet back streets. As part of the proposals, the new CS6 will provide the following within the vicinity of the site:

- New signalised pedestrian crossings on all arms of the junction of Charterhouse Street with Farringdon Street/ Road;
- Saffron Hill to be signed for northbound cyclists on quiet roads; and
- Greville Street to close to motor traffic at Farringdon Road, with new segregated track to link cyclists to Saffron Hill.

Public Transport Accessibility

- 3.4.5 The accessibility of the site has been assessed using the Public Transport Accessibility Level (PTAL) methodology. PTALs are a detailed measure of the accessibility of a site to the public transport network, taking into account the combination of walking time and service frequency.
- 3.4.6 The site has been ascribed a PTAL rating of 6b (with 1a indicating the lowest level of accessibility to public transport and 6b indicating to the highest level). This result determines that the site has an 'excellent' accessibility rating. The full PTAL report calculation are attached as Appendix A.

Bus

- 3.4.7 The site is well located to the local bus network. The closest bus stops to the site are located outside of the site on Charterhouse Street (for eastbound services) and on Farringdon Street (for westbound services). The eastbound stop on Charterhouse Street provides access to the bus routes 17 and 45 and the bus stops on Farringdon Street provide access to the additional 63 and 172 bus services.
- 3.4.8 These bus stops provide services towards destinations such as Kings Cross Station and London Bridge. A summary of the frequencies of these bus stops is provided in Table 3.1.

Table 3.1: Summary of Local Bus Services and Headway

Bus Route	Destination	Typical Headway		
		Monday-Friday	Saturday	Sunday
17	London Bridge – Cannon Street Station – Charterhouse Street – Kings Cross Station – Caledonian Road & Barnsbury Station – Severn Sisters Road – Upper Holloway Station – Archway Station	Every 6-9 minutes	Every 9-12 minutes	Every 15 mins
45	Kings Cross / St Pancras International Station – Apothecary Street – Blackfriars Station – Southwark Station – Elephant & Castle Station – Loughborough Junction Station – Brixton Station – New Park Road - Atkins Road / New Park Road	Every 7-11 minutes	Every 8-11 minutes	Every 15 mins
63	Kings Cross Station / York Way – Farringdon Station – Blackfriars Station – New Kent Road – Peckham Rye Station - Forest Hill Tavern	Every 4-8 minutes	Every 5-9 minutes	Every 6-9 minutes
172	Clerkenwell Road – Farringdon Station – Waterloo Station – Elephant and Castle Station – Old Kent Road – New Cross Gate Station – Brockley Station – Crofton Park Station - Brockley Rise	Every 8-10 minutes	Every 8-10 minutes	Every 15 mins

Source: Transport for London, accessed July 2017

3.4.9 It can be seen that the bus stops provide frequent services to a range of destinations.

London Underground Limited

3.4.10 Farringdon London Underground Limited (LUL) station is situated to the north of the site, circa 200m, equivalent to a two-minute walk from the site.

3.4.11 Farringdon LUL station is served by the Hammersmith and City and Circle lines which both typically run every 8-10 minutes on Monday to Friday during the peak periods. The Hammersmith and City lines provides frequent services towards Hammersmith and Liverpool Street and the Circle line provides frequent services towards Hammersmith and Edgware Road.

3.4.12 Chancery Lane LUL station is located circa 440m to the west of the site, equivalent to a 5-minute walk. The station is served by the Central line with a peak period headway of one train every 2-3 minutes (in one direction). The Central line provides frequent services towards Epping Underground station and Hainault Underground station.

3.4.13 Blackfriars Underground station is situated to the south of the site, circa 820m, equivalent to a 10-minute walk from the site.

3.4.14 Blackfriars Underground station is served by the Circle and District lines which both typically run 5-9 minutes on Monday to Friday during the peak periods. The Circle line provides frequent services towards Hammersmith and Edgware Road and the District line provides frequent services towards Upminster and Ealing Broadway.

National Rail

3.4.15 Farringdon national rail station is located some 200m from the site. The station provides access to Thameslink services which serve destinations within greater London and beyond, including King's Cross St Pancras, Croydon, Sutton, Wimbledon, Luton, Gatwick Airport, Brighton, Bedford, and Sevenoaks.

Elizabeth line

3.4.16 The Elizabeth Line is a new railway line running through Central London from Reading and Heathrow in the west to Shenfield and Abbey Wood in the east. The new railway will stop at 40 accessible stations, with 10 newly built and 30 upgraded. The line will stop at Farringdon for connection with the national rail and LUL services. It is anticipated that upon opening of the Elizabeth Line, Farringdon will become one of the busiest stations in the UK. It is anticipated that when the route fully opens in December 2019, the route will provide a train every two and a half minutes at peak times.

3.4.17 A local public transport plan is provided at Figure 3.2.

3.5 Local Highway Network

3.5.1 Charterhouse Street provides a route linking the A40 Holborn towards the A1 Aldersgate Street, via the A201 Farringdon Street and Smithfield Market. The road is a wide single carriageway within the vicinity of the site and subject to a 30mph speed limit. The junction of the A40 with Charterhouse Street also provides access to Hatton Garden and the A4, via New Fetter Lane. The A40 is a key route through Central London which routes from the City through the West End and towards the M40 and M25, for connections to the wider strategic network. To the east of the site, the junction of the A201 Farringdon Street/ Road with Charterhouse Street provides accesses south across Blackfriars Bridge and north towards King's Cross.

3.6 Existing On-Street Restrictions

- 3.6.1 There are a number of on-street parking and loading restrictions within the immediate vicinity of the site. Immediately adjacent to the site, on the northern side of Charterhouse Street, there are double yellow lines from its junction with Ely Place to the junction with Farringdon Street/Road. There are no loading restrictions present along this stretch of carriageway. There is also a 27m long bus stop from a point some 30m west of the site's vehicular entrance to a point some 30m east of the junction with Ely Place.
- 3.6.2 To the west of Ely Place on the northern side of Charterhouse Street there are loading restrictions, which prohibit loading at all times to the west of Ely Place. The same restrictions are present on the southern side of Charterhouse Street from its junction with Holborn to a point approximately opposite the site's western boundary. There is a bus stand on the southern side of Charterhouse Street of approximately 45m in length opposite the bus stop on the northern side, with the remainder of the southern side of the carriageway exhibiting a single yellow line prohibiting parking Monday to Friday 7am to 7pm and Saturday 7am to 11am, but with no loading restrictions.

SECTION 4 TRAVEL SURVEYS

4.1 Overview

- 4.1.1 The Applicant will undertake the first travel survey, i.e. the baseline travel survey, upon first occupation of the development (within the first six months of occupation). The survey will be TRICS compliant, as specified by the LBC.

4.2 Mode Share

- 4.2.1 It is likely that future employees of the development will experience similar travel characteristics of the existing employees working in the local area. As such, mode share data of the local area has been obtained from the 2011 Census Origin Destination Flow Data for the Method of Travel to Work Dataset (WU03EW) for workers in the local area (based on the Middle Super Output Area (MSOA) Ref: Camden 027). A summary of the local travel to work mode share is provided in Table 4.1.

Table 4.1: Method of Travel to Work (Workers in Camden 027)

Mode	Camden 027 Workers	
	Count	%
Train	11,183	37%
Underground, metro, light rail or tram	9,666	32%
Bus, minibus or coach	3,351	11%
Bicycle	1,851	6%
Driving a car or van	1,750	6%
Walking	1,732	6%
Motorcycle, scooter or moped	524	2%
Passenger in a Car or Van	173	1%
Taxi	69	0%
Other	52	0%
Total	30,351	100%

Source: 2011 Census 'WU03EW – Location of usual residence and place of work by method of travel to work (MSOA level)'. Place of work: Camden 027.

Note: Numbers may not sum due to rounding

- 4.2.2 It can be seen from the local Census data, that the majority of workers in the area travel to work by public transport (80%) with a further 12% traveling on foot or by bicycle. Those traveling by car represent a proportion of 6%.

4.2.3 However, due to the site's limited parking provision (for senior members of staff only), local on-street parking restrictions and lack of places to park in the area, it is expected that the car mode share of future employees of the site will be lower than this.

SECTION 5 AIMS, OBJECTIVES AND BENEFITS

5.1 Aims

5.1.1 The overarching purpose of a TP is to influence behaviour change towards sustainable modes of travel and active travel. In this context, the primary aim of this TP is to encourage sustainable travel (including walking, cycling and public transport) trips made by future employees.

5.2 Objectives

5.2.1 In addition to the primary aim, the following objectives are identified:

- Inform employees and visitors of the site about the local public transport facilities available;
- Promote the sustainability of the site using a range of promotional measures, including a Travel Information Board which is provided in a communal staff area; and
- Monitor the effectiveness of the TP through regular employee travel surveys.

5.3 Benefits

5.3.1 The TP has many benefits, including demonstrating a commitment to promoting sustainable forms of transport and improving the health and safety of employees and the local community. The potential benefits of the TP include the following:

- Improving the health and fitness through active travel such as walking and cycling;
- Less congestion on local roads which can also improve staff punctuality;
- Local environmental improvements from reduced congestion, pollution and noise; and
- A more accessible site by non-car modes.

5.3.2 The TP measures will seek to ensure that the objectives are met. The measures will assist in minimising car travel to and from the site and will help bring environmental benefits to the local businesses and residents.

SECTION 6 TARGETS

6.1 Overview

6.1.1 Targets are the measurable goals against which the progress of the TP can be assessed. Best Practice guidance places emphasis on targets being 'SMART', that is: Specific, Measurable, Achievable, Realistic and Time Bound. Targets should be linked to the TP objectives.

6.1.2 At this stage, i.e. prior to first occupation of the site, it is accepted practice to provide initial 'interim' targets that are based on the 2011 Census Data. The indicative targets set out below will be updated and refined following the baseline travel survey which will be undertaken in 'Year 1' (within the first six months of occupation of the site).

6.2 Interim Targets

Target 1 – To increase the mode share of active journey trips

6.2.1 To achieve a minimum of 15% of staff walking or cycling to work by the time of the first staff travel survey.

Target 2 – To increase the mode share of staff traveling by public transport

6.2.2 To achieve a minimum of 80% of staff using public transport to travel to work by the time of the first staff travel survey.

Target 3 – Travel Plan Awareness

6.2.3 To achieve 80% awareness of the Travel Plan amongst staff at the time of the first staff travel survey (based on number of surveys returned).

6.2.4 These targets will be reviewed and updated as necessary, following the collection of the initial baseline staff travel survey data (within six months of occupation). Regular staff travel surveys will be carried out annually alongside the review of the TP in Years 3 and 5.

SECTION 7 PACKAGE OF MEASURES**7.1 Overview**

7.1.1 The key measures of this TP are the provision of infrastructure to facilitate the use of non-car modes of transport and the promotion of these modes. This section provides details of the infrastructure to be provided, the 'soft-measures' to be implemented, and the publicity and promotion of this. These measures will collectively contribute to achieving the targets and meeting the objectives of the TP.

7.2 Infrastructure

7.2.1 The following infrastructure elements have been included in the site design to encourage the use of sustainable travel modes.

Cycle Infrastructure and Facilities

7.2.2 The development proposal will provide 168 cycle parking spaces on-site. The spaces will be located in a secure area, to the rear of the building, accessible by staff only. The proposed provision is in accordance with LBC's standards and those set out in the London Plan.

7.2.3 In addition, cyclist facilities, such as showers, changing rooms and lockers will also be provided to those members of staff who cycle to work.

Car Parking

7.2.4 The existing site provides 10 car parking spaces within the basement for staff use only. The proposed development will retain the 10 car parking spaces, of which one will be converted into disabled car parking spaces and four spaces will be equipped with electric vehicle charging points, as per the standards set out in the London Plan.

7.3 Soft Measures

7.3.1 A range of measures will be used to encourage the use of active travel and public transport to the site by future employees and visitors. The following measures will be used to encourage employees to travel by sustainable modes:

- The promotion of the TP through a notice board in a communal staff area. The notice board will include information regarding local walking and cycling routes and public transport information, including links to the TfL website for journey planning services;
- The promotion to staff of national walking and cycling events, such as national 'Walk to Work Week' (www.livingstreets.org.uk/walk-with-us/events/walk-to-work-week) and 'Bike Week' (www.bikeweek.org.uk);
- The employer and employees will be encouraged to uptake the government Cycle Scheme which provides tax free bikes for employees through their employer. More information can be found at (www.cyclescheme.co.uk);
- The employer will be encouraged to offer their staff interest free season ticket loans for the local public transport services (including bus, national rail, London Underground and Overground); and
- Car parking spaces will be managed efficiently, with spaces allocated to specific employees only. The car park will be accessible to only those who have the permissions to do so.

7.3.2 These measures will collectively contribute to achieving the targets and meeting the objectives of the TP.

7.4 **Publicity and Promotion**

7.4.1 The sustainable transport options available to future employees will be highlighted as part of the induction process for employees at the site. In addition, the soft measures identified above will be publicised and promoted to employees through a communal staff notice board.

SECTION 8 MANAGEMENT

8.1 Travel Plan Co-Ordinator

8.1.1 The Applicant is responsible for the implementation of the TP as set out in this document. The Applicant will appoint an individual to act as the Travel Plan Co-Ordinator (TPC) for the site, whose role will be to ensure that the measures identified in this document are in place. The TPC will be appointed prior to first occupation of the development will remain in place for a period of five years. The contact details for the TPC will be supplied to LBC prior to occupation of the development.

8.2 Travel Plan Co-Ordinator Role

8.2.1 The TPC will carry out the following functions:

- Take responsibility for the delivery of the TP;
- Oversee the implementation of the 'soft' measures outlined in Section 7;
- Carry out the baseline travel surveys (within six months of first occupation);
- Raise awareness of the TP amongst staff;
- Oversee the monitoring and review procedure for the TP, ensuring that deadlines are adhered to;
- Undertake travel TRICS compliant surveys and monitor the progress of the TP;
and
- Report the results of the progress of the TP to LBC as required.

SECTION 9 MONITORING

- 9.1.1 The TP will be monitored and reviewed in accordance with TfL's standardised approach to monitoring. This TP will be monitored via TRICS, as requested by LBC.
- 9.1.2 The first travel survey will be undertaken within six months of occupation. The results of the first survey will be released via the TPC who will inform staff of the results. The TRICS compliant surveys will be undertaken at Years 3 and 5, in accordance with TfL guidance.
- 9.1.3 The TPC will monitor and review the progress and success of the TP and seek to make all staff aware of the progress made and the effectiveness of the sustainable travel solutions. The use of a staff communal notice board will assist in informing residents of any new measures and give them an understanding of how the TP is operating.
- 9.1.4 If required, the TPC will meet with the Travel Plan Officer at LBC to assess the effectiveness of the TP measures and to review the need for introduction of further measures if necessary.

SECTION 10 ACTION PLAN

10.1 An indicative Action Plan is presented in Table 10.1 which provides a programme for delivering the measures. The action plan outlines the proposals for implementation, monitoring and review and identifies timescales and funding responsibilities. This is indicative at this stage and will be refined in due course.

Table 10.1: Action Plan of Measures

Measures	Summary of Measures	Responsibility	Timescale
Travel Plan Co-Ordinator	Nominate Travel Plan Co-Ordinator	Applicant	Prior to first occupation
Cycle Facilities	Provision of secure and covered cycle parking on site	Applicant	Prior to first occupation
Travel Plan Promotion	Information pack about the Travel Plan and local and national transport events and options available, to be made available on a staff communal notice board	Applicant/ TPC	Prior to first occupation
Promoting Public Transport	Information on public transport routes and timetables to be made available on the staff communal notice board	Applicant/ TPC	Prior to first occupation
Promotion of National and Local Events	Information to be made available about upcoming national and local events such as 'Bike Week' and 'Walk to Work' week	Applicant/ TPC	Introduced within three months of occupation and updated regularly (at least every three months)
Travel Plan Monitoring and Review	Monitor modal split and review the Travel Plan measures in line with the Travel Plan and modal split	Applicant/ TPC	The baseline travel survey, will be undertaken within six months. Follow up surveys in Years 3 and 5.

Source: Consultant's Estimates

SECTION 11 SECURING AND ENFORCING

11.1 S106

11.1.1 The TP monitoring and review will be secured through a s106 agreement.

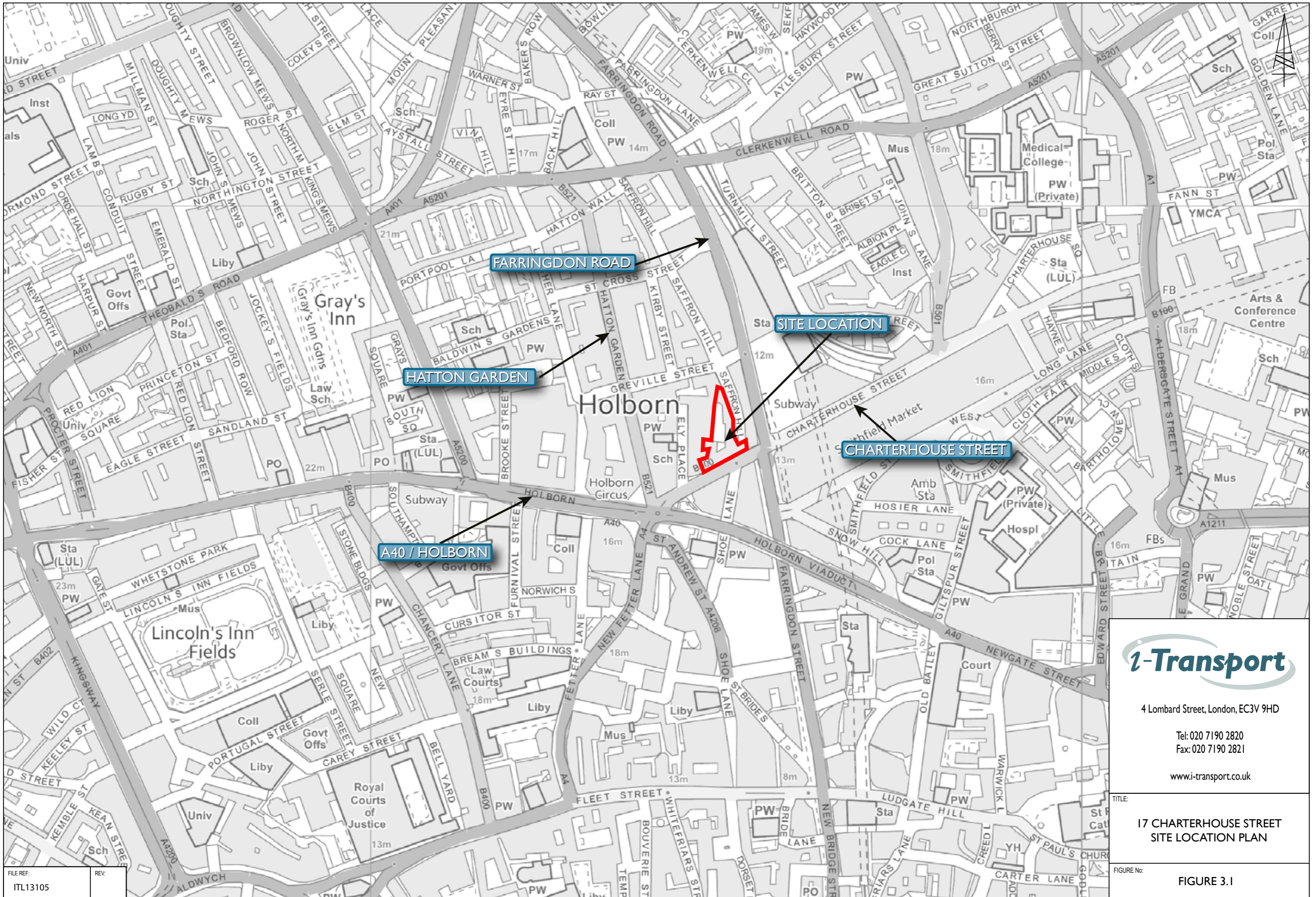
11.2 Funding

11.2.1 The Applicant will fund the following items for the first five years of the Travel Plan's lifetime:

- Soft measures identified above;
- Marketing and promotion of the TP;
- The TPC role; and
- The monitoring surveys.

11.2.2 Should the targets for the TP be achieved following the first five years, the developer will cease to fund the TP.

FIGURES



4 Lombard Street, London, EC3V 9HD

Tel: 020 7190 2820
 Fax: 020 7190 2821

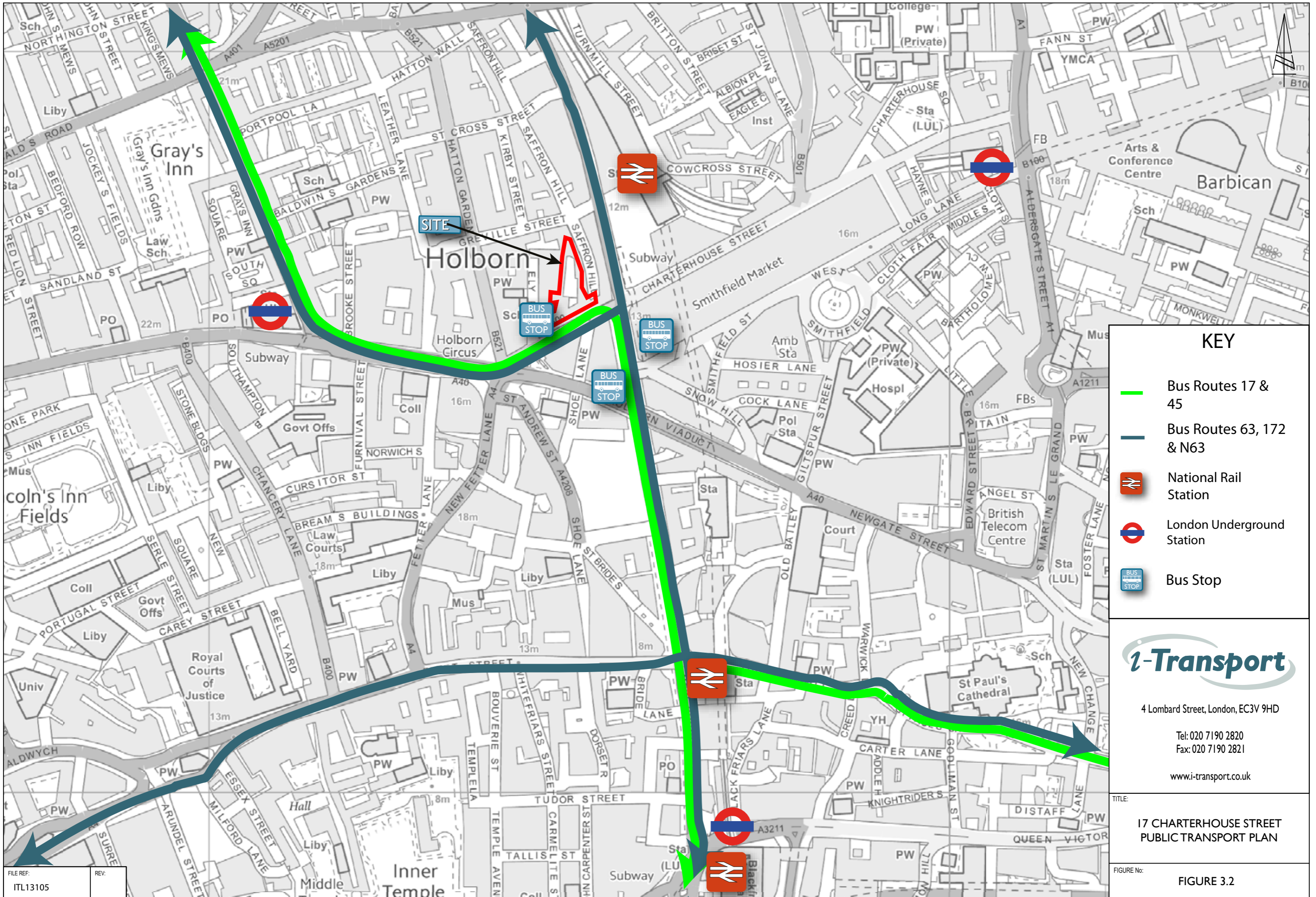
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TITLE:
**17 CHARTERHOUSE STREET
 SITE LOCATION PLAN**






FIGURE No:
FIGURE 3.1

FILE REF:
 ITL13105

REV:



KEY

-  Bus Routes 17 & 45
-  Bus Routes 63, 172 & N63
-  National Rail Station
-  London Underground Station
-  Bus Stop



4 Lombard Street, London, EC3V 9HD

Tel: 020 7190 2820
Fax: 020 7190 2821

www.i-transport.co.uk

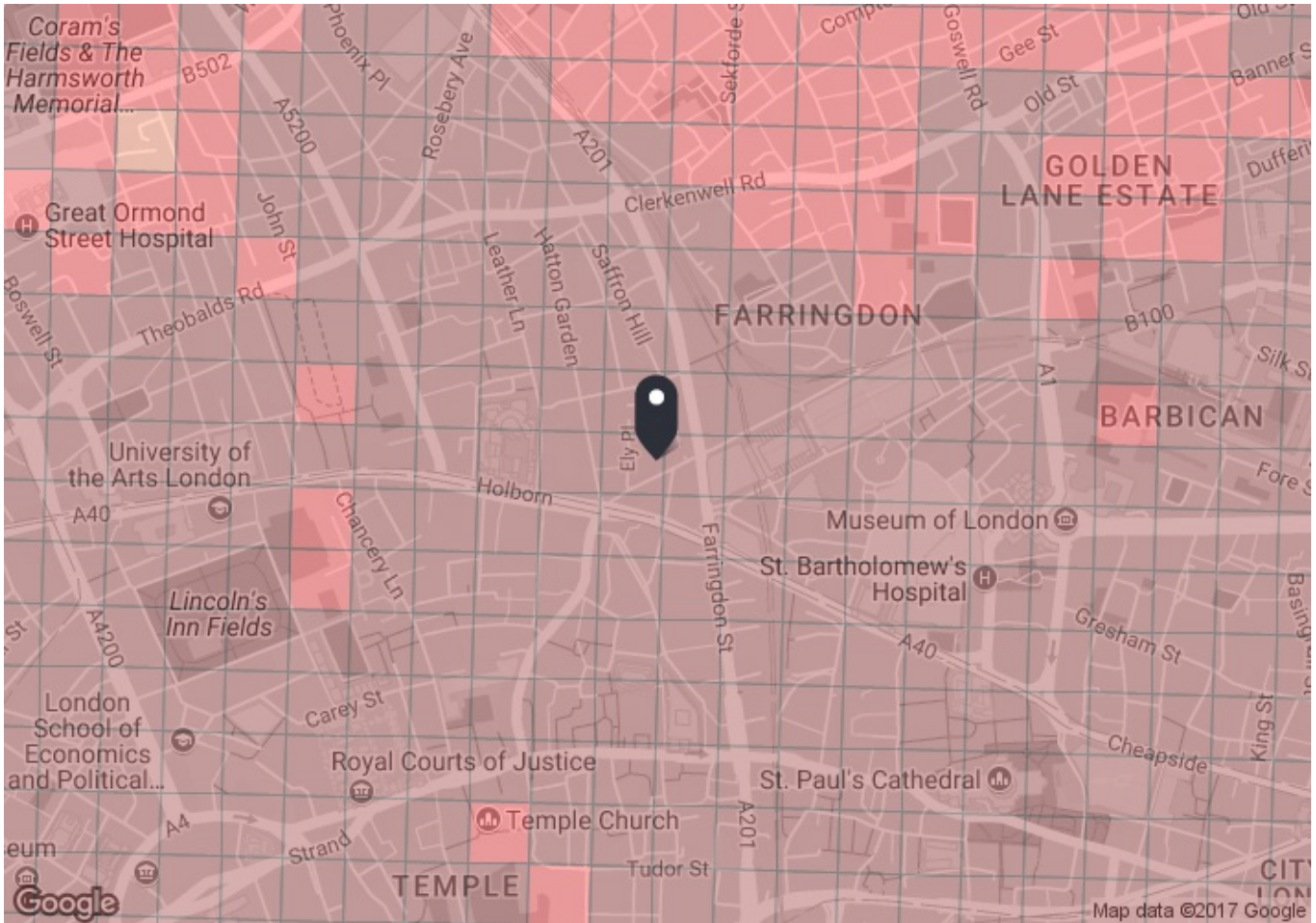
TITLE:
**17 CHARTERHOUSE STREET
PUBLIC TRANSPORT PLAN**

FIGURE No:
FIGURE 3.2

FILE REF: ITL13105
REV:

APPENDIX A

PTAL Report



PTAL output for Base Year 6b

6b

17 Charterhouse St
 17 Charterhouse St, London EC1N 6RA, UK
 Easting: 531488, Northing: 181644

Grid Cell: 86368

Report generated: 06/07/2017

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Map key - PTAL

0 (Worst)	1a
1b	2
3	4
5	6a
6b (Best)	

Map layers

- PTAL (cell size: 100m)

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	HOLBORN CIRCUS	341	237.8	6	2.97	7	9.97	3.01	0.5	1.5
Bus	FLEET STREET SHOE LANE	11	592.76	7.5	7.41	6	13.41	2.24	0.5	1.12
Bus	FLEET STREET SHOE LANE	23	592.76	8	7.41	5.75	13.16	2.28	0.5	1.14
Bus	FLEET STREET SHOE LANE	26	592.76	7.5	7.41	6	13.41	2.24	0.5	1.12
Bus	FLEET STREET SHOE LANE	4	592.76	6	7.41	7	14.41	2.08	0.5	1.04
Bus	FLEET STREET SHOE LANE	15	592.76	7.5	7.41	6	13.41	2.24	0.5	1.12
Bus	FLEET STREET SHOE LANE	76	592.76	8	7.41	5.75	13.16	2.28	0.5	1.14
Bus	FLEET STREET SHOE LANE	172	592.76	6	7.41	7	14.41	2.08	0.5	1.04
Bus	CHARTERHOUSE STREET	17	94.23	7.5	1.18	6	7.18	4.18	0.5	2.09
Bus	CHARTERHOUSE STREET	45	94.23	7	1.18	6.29	7.46	4.02	0.5	2.01
Bus	HOLBORN CIRCUS EAST	8	194	10	2.43	5	7.43	4.04	0.5	2.02
Bus	HOLBORN CIRCUS EAST	521	194	27	2.43	3.11	5.54	5.42	1	5.42
Bus	HOLBORN CIRCUS EAST	242	194	6.5	2.43	6.62	9.04	3.32	0.5	1.66
Bus	HOLBORN CIRCUS EAST	46	194	6	2.43	7	9.43	3.18	0.5	1.59
Bus	HOLBORN CIRCUS EAST	25	194	8	2.43	5.75	8.18	3.67	0.5	1.83
Bus	FARRINGDON ST SMITHFIELD	63	265.8	12	3.32	4.5	7.82	3.84	0.5	1.92
Bus	ST BARTS WEST SMITHFIELD	56	564.29	9	7.05	5.33	12.39	2.42	0.5	1.21
Bus	HATTON GARDEN	243	617.64	11	7.72	4.73	12.45	2.41	0.5	1.2
Bus	HATTON GARDEN	55	617.64	10	7.72	5	12.72	2.36	0.5	1.18
LUL	Blackfriars	'Upminster-EalingBwy'	937.65	5	11.72	6.75	18.47	1.62	0.5	0.81
LUL	Blackfriars	'TowerHill-EalingBwy'	937.65	0.33	11.72	91.66	103.38	0.29	0.5	0.15
LUL	Blackfriars	'EalingBwy-Barking '	937.65	1.33	11.72	23.31	35.03	0.86	0.5	0.43
LUL	Blackfriars	'Upminster-Richmond'	937.65	6	11.72	5.75	17.47	1.72	0.5	0.86
LUL	Blackfriars	'Richmond-DagEast'	937.65	0.67	11.72	45.53	57.25	0.52	0.5	0.26
LUL	Blackfriars	'Wimbledon-Upminster'	937.65	4	11.72	8.25	19.97	1.5	0.5	0.75
LUL	Blackfriars	'Wimbledon-DagEast'	937.65	1	11.72	30.75	42.47	0.71	0.5	0.35
LUL	Blackfriars	'Barking-Wimbledon'	937.65	0.67	11.72	45.53	57.25	0.52	0.5	0.26
LUL	Blackfriars	'TowerHill-Wimbledon'	937.65	2.67	11.72	11.99	23.71	1.27	0.5	0.63
LUL	Blackfriars	'DagEast-EalingBwy'	937.65	0.67	11.72	45.53	57.25	0.52	0.5	0.26
Rail	City Thameslink	'BEDFDM-SVNOAKS 1E62'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-BROMLYS 1E83'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-ORPNGTN 1L60'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-SUTTON 1O13'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-KENTHOS 1S85'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-BRGHTN 1T11'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-BRGHTN 1T15'	386.85	0.67	4.84	45.53	50.36	0.6	0.5	0.3
Rail	City Thameslink	'BRGHTN-BEDFDM 1T83'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-SUTTON 1V23'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-SUTTON 1V82'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BRGHTN-BEDFDM 1W06'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BRGHTN-BEDFDM 1W81'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-BRGHTN 1W84'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-BRGHTN 1W86'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'STALBCY-SVNOAKS 2E11'	386.85	1	4.84	30.75	35.59	0.84	1	0.84
Rail	City Thameslink	'BEDFDM-SVNOAKS 2E19'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'LUTON-SVNOAKS 2E21'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'STALBCY-SVNOAKS 2E95'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SUTTON-LUTON 2O00'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SUTTON-BEDFDM 2O04'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SUTTON-STALBCY 2O06'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SUTTON-LUTON 2O10'	386.85	1	4.84	30.75	35.59	0.84	0.5	0.42
Rail	City Thameslink	'LUTON-SUTTON 2O17'	386.85	0.67	4.84	45.53	50.36	0.6	0.5	0.3
Rail	City Thameslink	'STALBCY-SUTTON 2O21'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'STALBCY-SUTTON 2O29'	386.85	0.67	4.84	45.53	50.36	0.6	0.5	0.3
Rail	City Thameslink	'LUTON-BCKNHMJ 2S91'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'STALBCY-BROMLYS 2S93'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BRGHTN-BEDFDM 2T02'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BRGHTN-BEDFDM 2T04'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Rail	City Thameslink	'BEDFDM-BRGHTN 2T15'	386.85	1	4.84	30.75	35.59	0.84	0.5	0.42
Rail	City Thameslink	'BEDFDM-BRGHTN 2T25'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BRGHTN-LUTON 2T99'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SUTTON-STALBCY 2V02'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SUTTON-STALBCY 2V08'	386.85	0.67	4.84	45.53	50.36	0.6	0.5	0.3
Rail	City Thameslink	'BEDFDM-SUTTON 2V15'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SUTTON-BEDFDM 2V16'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'LUTON-SUTTON 2V19'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SUTTON-KNTSHTN 2V20'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'STALBCY-SUTTON 2V27'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'LUTON-SUTTON 2V31'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BRGHTN-BEDFDM 2W08'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BRGHTN-BEDFDM 2W12'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BRGHTN-BEDFDM 2W16'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'ASHFKY-BEDFDM 1E61'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'ASHFKY-BEDFDM 1E63'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'RCHT-BEDFDM 1E67'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SVNOAKS-BEDFDM 1E69'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BROMLYS-BEDFDM 1E82'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BCKNHMJ-BEDFDM 1G65'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'KENTHOS-BEDFDM 1G71'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'ORPNGTN-STALBCY 2D93'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'ORPNGTN-LUTON 2D95'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SVNOAKS-STALBCY 2E59'	386.85	0.67	4.84	45.53	50.36	0.6	0.5	0.3
Rail	City Thameslink	'SVNOAKS-LUTON 2E61'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SVNOAKS-WHMPSTM 2E63'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SVNOAKS-KNTSHTN 2E65'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'SVNOAKS-KNTSHTN 2E67'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BROMLYS-LUTON 2E93'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'ORPNGTN-LUTON 2L59'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'ORPNGTN-KNTSHTN 2L65'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-ELPHNAC 1J87'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
Rail	City Thameslink	'BEDFDM-ELPHNAC 1J88'	386.85	0.33	4.84	91.66	96.49	0.31	0.5	0.16
LUL	Farringdon	'Edgware-Hammersmith'	410.13	6	5.13	5.75	10.88	2.76	0.5	1.38
LUL	Farringdon	'Barking-Hammersmith'	410.13	6.34	5.13	5.48	10.61	2.83	1	2.83
LUL	Farringdon	'Hammersmith-Plaistow'	410.13	1	5.13	30.75	35.88	0.84	0.5	0.42
LUL	Farringdon	'Aldgate-AmerFast'	410.13	1	5.13	30.75	35.88	0.84	0.5	0.42
LUL	Farringdon	'Ches-AldgateFast'	410.13	2	5.13	15.75	20.88	1.44	0.5	0.72
LUL	Farringdon	'Uxbridge-AldSlow'	410.13	5.33	5.13	6.38	11.51	2.61	0.5	1.3
LUL	Farringdon	'Watford-AldSfast'	410.13	3.67	5.13	8.92	14.05	2.14	0.5	1.07
LUL	Farringdon	'Aldg-WatfordSlow'	410.13	3.67	5.13	8.92	14.05	2.14	0.5	1.07
LUL	Farringdon	'Ald-HarrowHill'	410.13	1.33	5.13	23.31	28.43	1.06	0.5	0.53
LUL	Chancery Lane	'Epping-Ealing'	389.3	3	4.87	10.75	15.62	1.92	0.5	0.96
LUL	Chancery Lane	'WRuislip-Epping'	389.3	3	4.87	10.75	15.62	1.92	0.5	0.96
LUL	Chancery Lane	'RuislipGar-Epping'	389.3	1	4.87	30.75	35.62	0.84	0.5	0.42
LUL	Chancery Lane	'WhiteCity-Epping'	389.3	0.33	4.87	91.66	96.53	0.31	0.5	0.16
LUL	Chancery Lane	'Epping-NActon'	389.3	1	4.87	30.75	35.62	0.84	0.5	0.42
LUL	Chancery Lane	'Northolt-Epping'	389.3	0.67	4.87	45.53	50.39	0.6	0.5	0.3
LUL	Chancery Lane	'Debden-WRuislip'	389.3	0.33	4.87	91.66	96.53	0.31	0.5	0.16
LUL	Chancery Lane	'WhiteCity-Debden'	389.3	0.33	4.87	91.66	96.53	0.31	0.5	0.16
LUL	Chancery Lane	'Debden-Northolt'	389.3	1	4.87	30.75	35.62	0.84	0.5	0.42
LUL	Chancery Lane	'RuislipGdns-Debden'	389.3	0.33	4.87	91.66	96.53	0.31	0.5	0.16
LUL	Chancery Lane	'Loughton-WRuislip'	389.3	1	4.87	30.75	35.62	0.84	0.5	0.42
LUL	Chancery Lane	'NActon-Loughton'	389.3	0.67	4.87	45.53	50.39	0.6	0.5	0.3
LUL	Chancery Lane	'RuislipGdns-Loughton'	389.3	0.67	4.87	45.53	50.39	0.6	0.5	0.3
LUL	Chancery Lane	'WhiteCity-Loughton'	389.3	0.33	4.87	91.66	96.53	0.31	0.5	0.16
LUL	Chancery Lane	'Loughton-Northolt'	389.3	0.33	4.87	91.66	96.53	0.31	0.5	0.16
LUL	Chancery Lane	'Ealing-Loughton'	389.3	1	4.87	30.75	35.62	0.84	0.5	0.42

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
LUL	Chancery Lane	'Ealing-NewburyPark'	389.3	0.67	4.87	45.53	50.39	0.6	0.5	0.3
LUL	Chancery Lane	'WRuislip-NewburyPark'	389.3	0.33	4.87	91.66	96.53	0.31	0.5	0.16
LUL	Chancery Lane	'NActon-NewburyPark'	389.3	0.33	4.87	91.66	96.53	0.31	0.5	0.16
LUL	Chancery Lane	'Hainault-Ealing '	389.3	5.33	4.87	6.38	11.24	2.67	0.5	1.33
LUL	Chancery Lane	'Hainault-Nacton '	389.3	1.33	4.87	23.31	28.17	1.06	0.5	0.53
LUL	Chancery Lane	'Hainault-WRuislip '	389.3	3.33	4.87	9.76	14.63	2.05	0.5	1.03
LUL	Chancery Lane	'RuislipGdns-NP-Hain '	389.3	0.67	4.87	45.53	50.39	0.6	0.5	0.3
LUL	Chancery Lane	'WhiteCity-Hainault '	389.3	1.67	4.87	18.71	23.58	1.27	0.5	0.64
LUL	Chancery Lane	'Hainault-NP-Northolt'	389.3	1	4.87	30.75	35.62	0.84	0.5	0.42
LUL	Chancery Lane	'GrangeHill-WD-Eal '	389.3	1	4.87	30.75	35.62	0.84	0.5	0.42
LUL	Chancery Lane	'GrangeHill-Wdld-Whit'	389.3	0.67	4.87	45.53	50.39	0.6	0.5	0.3
LUL	Chancery Lane	'GrangeHill-Wdld-WRsp'	389.3	0.67	4.87	45.53	50.39	0.6	0.5	0.3
Total Grid Cell AI:									69.45	



E enquiries@i-transport.co.uk

W www.i-transport.co.uk

Grove House, Lutyens Close
Chineham Court, Basingstoke
Hampshire RG24 8AG

T 01256 338 640

F 01256 338 644

Centurion House
129 Deansgate
Manchester M3 3WR

T 0161 830 2172

F 0161 830 2173

4 Lombard Street
London
EC3V 9HD

T 020 7190 2820

F 020 7190 2821