Oxford Street and Oxford Circus Projects

Full Business Case - Transport Impact Annex

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1. Overview

1.1 Introduction

This document supports the Full Business Case for the Oxford Street and Oxford Circus projects and provides additional detail on the economic appraisal methodology used.

This note is formulated around the key monetised impacts including:

- Pedestrian ambience impacts
- Pedestrian journey time savings
- Road safety impacts
- Wider economic impacts

The detailed designs of the scheme are still being developed and as such, the economic appraisal makes use of the information which is currently available. At this stage, modelling work has not been undertaken and as such these impacts have not been quantified. This is not considered to affect the robustness of the outline business case, as generally they would further increase the benefits of the scheme.

1.2 Scheme Scope

Table 1 below, provides an overview of the scope and Figure 1 presents a high-level overview of the scope.

Table 1. Summary of Scope

	Overview	Cost and Funding
Do Nothing	• This option will incur costs for the removal of the temporary footway widening, seating and planting that was introduced in Oxford Street west during the Covid pandemic • The management of the space would continue to receive the basic level of Council maintenance and relevant highways services	Temporary interventions removal cost of £1.636m[1]
Oxford Street	• Additional and improved spaces to rest, with seating and shade and upgraded paving and accessibility throughout the area • On certain junctions with sides street, agoras will be installed to provide gathering and resting spaces. These will be supplemented with seating and greening to create an oasis space for rest and play • Hostile Vehicle Mitigation (HVM) measures	£139.8m *Requires 50% third party funding
Oxford Circus	• Redesigning traffic turning movements (to permit ahead traffic movements only) generating a streamlined junction for traffic and pedestrian movement – reducing wait times for traffic and pedestrians • Providing wider crossings – increasing capacity and improving pedestrian comfort • Reducing the crossing width – reducing the time it takes for pedestrians to cross the street.	£39.6m *Requires 50% third party funding

[1] £1.317m within financial case with the inclusion of contingency (20%) and risk (20%); adjusted to £1.636m with the inclusion of optimism bias (46%) for use in the economic case

	• Hostile Vehicle Mitigation (HVM) measures	

Figure 1. Oxford Street and Oxford Circus Project Extents

The economic dimension is based on information correct as of June 2023.

1.3 Appraisal Assumptions

This section provides an overview on the appraisal methodology adopted.

The economic appraisal of the proposed Oxford Street and Oxford Circus projects has been based on quantitative and qualitative assessments, as per the Department for Transport's Transport Appraisal Guidance (TAG) units A1 and A2. In line with TAG and advice contained within the 'Guidance for the Technical Project Manager', an appropriate, proportionate, and transparent approach has been adopted to assessing the scheme options. There is a need to tailor the appraisal's level of detail to the stage of project development.

As defined in TAG Unit A2.1, there are three levels of analysis, each of which is based on the maturity of the analytical techniques. The valuation of some quantifiable impacts will be done at level 1, reflecting fixed land use and excluding wider economic impacts. However, as shown in Figure 2 below, wider impacts can be estimated, and a proportionate approach considered here includes these wider impacts within an Adjusted Benefit-Cost Ratio.

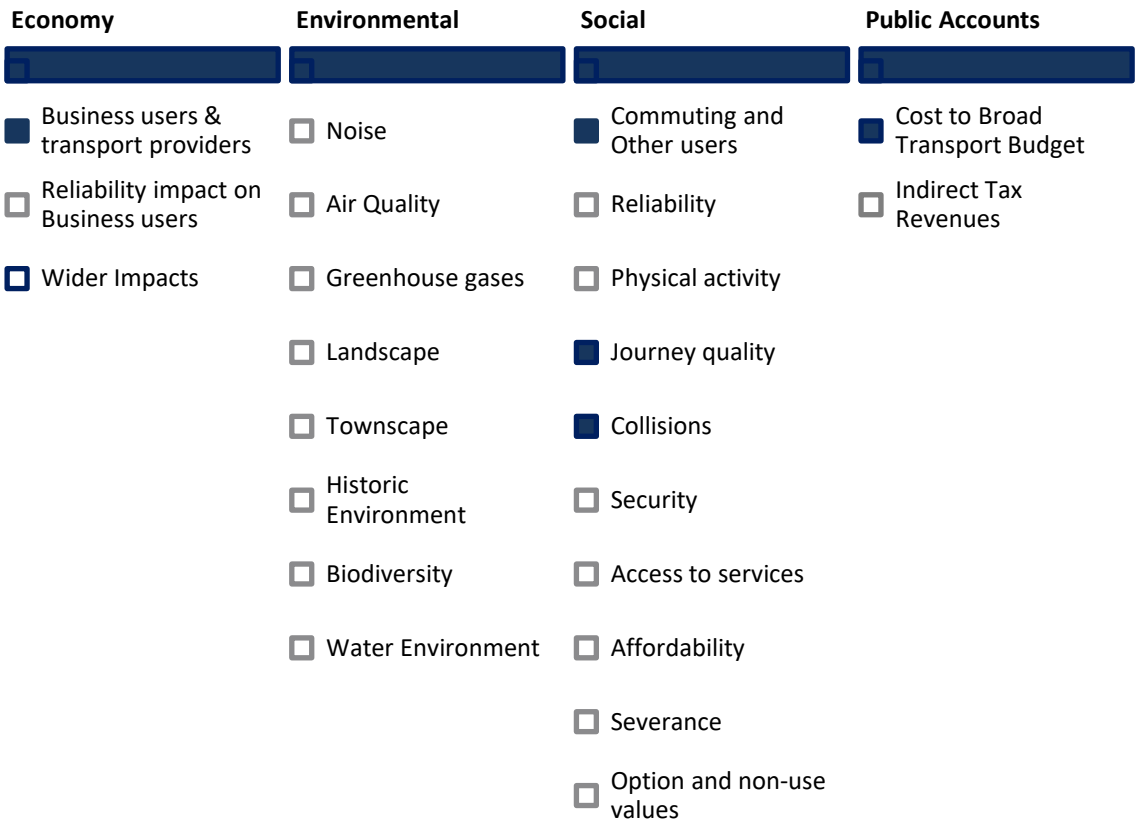

Figure 2. Appraisal Summary Table Impacts

Impacts have been categorised based on the following criteria.

- Monetised and reported in the core Benefit-Cost Ratio (BCR)
- Monetised but their inclusion is reported in an adjusted BCR (due to the maturity of the analytical techniques)

- ☐ It is currently disproportionate or infeasible to monetise so qualitative analysis will be reported in the AST.

1.4 Appraisal Tools and Approach

In addition to Treasury Green Book guidance and associated DfT guidance, as described above, the economic appraisal has also been undertaken in line with Transport for London (TfL) guidance relating the valuation of specific transport and public realm-related benefits.

As indicated in Figure 2 above, the three key impacts which have been monetised:

- Journey quality – Oxford Street and Oxford Circus;
- Collisions – Oxford Street and Oxford Circus;
- User Benefits i.e. time savings (Business Users and transport providers / Commuting and other users) – Oxford Circus only.

Given the focus of the scheme is public realm improvements, a 'basic' Benefit-Cost Ratio (BCR) has been constructed focused only on transport benefits that are clearly outlined in Transport Appraisal Guidance (TAG), using:

- The Valuing Urban Realm Toolkit (VURT) – the Transport for London (TfL) tool provides a monetised assessment of the benefits of improving the urban realm;
- Bespoke pedestrian journey time assessment – TAG values, modelling estimates and assumptions to monetised pedestrian journey time savings;
- Bespoke collision assessment – TAG values for reductions in collisions have been used to estimate avoidable collisions.

Other tools for assessing benefits have been excluded from the assessment for the following reasons:

- Ambience calculator – this toolkit is similar to the VURT; the VURT was considered to have greater flexibility for rating the proposed intervention with the criteria ranging from -3 to =3;
- Active Mode Appraisal Toolkit (AMAT) – the toolkit shares some overlap with VURT as both assess journey quality which would be deemed double counting. The health benefits could have been disaggregated and included; however, as the scheme is only indirectly generating additional active travel benefits for pedestrians only (due to additional footfall) this is unlikely to be due to modal shift in a city central location so was deemed conservative to exclude these benefits.

An 'adjusted' BCR has also been constructed combining those elements in the 'basic' BCR with further Gross Value Added (GVA) uplift elements – namely further uplift from additional visitor spending, additional local jobs supported through higher footfall (due to improved public realm delivered by the scheme), as well as jobs supported directly by construction work on the scheme itself. As outlined in Figure 2, due to the maturity of

analytical techniques an indicative wider economic benefits assessment has been conducted using a bespoke spreadsheet approach.

The approach follows a standard appraisal framework and aligns with TAG. All assumptions are based on TAG guidance unless explicitly stated.

A summary of the key appraisal assumptions are identified below:

- An opening year of 2027 for both the Oxford Street and Oxford Circus projects (the full first year of benefits following opening[2]);
- An appraisal period of 20 years from opening for the public realm journey quality benefits and wider economic impacts (GVA from construction/retail employment and visitor spending) and 60 years for the journey time savings and collision benefits (this reflects the likely minimum asset life of the infrastructure although this is likely longer);
- Discount rate of 3.5% (for the first 30 years of the appraisal period, dropping to 3% thereafter), in line with the Treasury Green Book and Departmental guidance;
- Values of collisions, value of time and growth in values of time based on DfT's WebTAG (current version published January 2023);
- All discounted costs and benefits have been converted to 2010 prices and values, in line with TAG Unit A1.1 (Cost Benefit Analysis); and
- The impacts of the proposed options are all presented relative to the do-nothing scenario.

[2] In line with appraisal guidance, the appraisal calculates benefits from the first full year of opening after construction; this has been estimated as 2027 for both projects from the programme plan

2. Assessment Scenarios

Table 2 below sets out the scenarios used to assess the scheme, including the values used in each scenario, the table tracks which economic impact each of the key parameters contributes to.

Table 2. Overview of Assessment Scenarios and Parameters Used

Parameter	Relevant Economic Impact(s)	Scenario					
		Do nothing (baseline)	Core	30-year appraisal period	Oxford Circus 30% cost reduction	High economy	Low economy
Appraisal period (years)	Journey quality	Same as scenario tested	20 years	30 years	20 years	20 years	20 years
	Collisions		60 years				
	Journey time benefits		60 years				
	Construction impacts: GVA uplift		20 years	30 years	20 years	20 years	20 years
	Economic activity and jobs uplift		20 years	30 years	20 years	20 years	20 years
Baseline footfall (annual)	Journey quality, Visitor spending, Journey time savings	36,702,859 (This is based on footfall data from September 2021- August 2022, with a 13% uplift to reflect the opening of the Elizabeth Line[3])					
Footfall uplift percentage	Journey quality, Visitor spending, Journey time savings	N/A	28.36%			38.36%	18.36%
Resultant annual footfall with uplift	Journey quality, Visitor spending, Journey time savings	36,702,859	47,112,426 (+10.410m)			50,782,112 (+14.080m)	43,442,141 (+6.729m)
Average journey time delay (saving) in seconds	Journey time savings	53.55	21.80 (31.75)				
Labour coefficient (*workers per £m output per year, 2011 prices)*	Wider impacts (construction job creation)	13.9					
Months at work for construction jobs	Wider impacts (construction job creation)	18					
Induced effect multiplier for construction jobs	Wider impacts (construction job creation)	2.11					
'Leakage effect' factor	Wider impacts (construction job creation, visitor spending job creation)	0.9					
Average visitor spend	Visitor spending	£75				£100	£50
% leisure/retail spending split	Visitor spending	61%					
% of new footfall leading to purchases that wouldn't otherwise happen	Visitor spending	5%					
Retail job displacement	Visitor spending	20%					

[3] Assumption based on Colliers NWEC Elizabeth Line Study (September 2022)

2.1.1 Baseline Scenario

The baseline scenario is a 'do-nothing' situation, a scenario where the temporary measures installed along Oxford Street West are removed and a basic level of Council management and maintenance is continued.

The cost for removing the temporary measures is £1.317m and these costs have been deducted from the Oxford Street project's costs.

The baseline annual footfall is based on a rolling annual average from September 2021 to August 2022, with a 13% uplift to reflect the opening of the Elizabeth Line[4]. This gives an annual value of 36,702,859.

For Oxford Circus, the baseline modelled journey time delay is 53.55 seconds – there is no journey time saving in the baseline scenario as there will be no improvements delivered.

The baseline average visitor spend is £75, which has been estimated based on values taken from the bands of spending in a West End Perception survey conducted by Lake Market Research.

2.1.2 Core Scenario

The core scenario is the central scenario used to assess the scheme against the do-nothing scenario.

The core scenario footfall represents a 28% uplift compared to the baseline scenario; this corresponds with supporting evidence within Appendix B which concludes that a 10-30% uplift can be anticipated as a result of schemes of this nature. The core scenario footfall is a value of 47,112,426, an increase of 10,409,567.

For Oxford Circus, the modelled journey time delay in the core scenario is 21.80 seconds, which represents a saving of 31.75 seconds against the baseline do-nothing scenario.

The Core scenario average visitor spend is £75 in line with the baseline, which has been estimated based on values taken from the bands of spending in a West End Perception survey conducted by Lake Market Research. This represents the middle value of the band (£50-£100).

With regards to visitor spending, a conservative assumption has been adopted that only 5% of the additional footfall will spend in line with the average visitor expenditure value.

High Economy Scenario

The high economy scenario is an optimistic scenario used as a proxy to reflect better-than-expected national economic conditions, relative to those anticipated (central estimations) by the UK government. The resulting expectation is therefore for higher footfall and higher average spending under these conditions.

The high economy annual footfall represents a 10 percentage point higher uplift compared to the core scenario (to 38.36% up from 28.36%). This results in a revised

[4] Colliers report Sept-22 NWEC Elizabeth Line Study

annual footfall figure of 50,782,112, representing an increase of 3,669,686 compared to the core scenario.

For Oxford Circus, the modelled journey time delay remains the same as in the core scenario, at 21.80 seconds (representing a saving of 31.75 seconds).

The high economy average visitor spend is £100, which has again been estimated based on values taken from the bands of spending in a West End Perception survey conducted by Lake Market Research. This represents the upper boundary of the band (£50-£100).

In line with the core scenario, only 5% of the additional footfall will result in additional spending.

2.1.3 Low Economy Scenario

The low economy scenario is a pessimistic scenario used as a proxy to reflect worse-than-expected national economic conditions, relative to those anticipated (central estimations) by the UK government. The resulting expectation is therefore for lower footfall and lower average spending under these conditions.

The low economy annual footfall represents a 10% lower uplift compared to the core scenario (to 18.36% down from 28.36%). This results in a revised annual footfall figure of 43,442,141, representing a decrease of 3,670,285 compared to the core scenario.

For Oxford Circus, the modelled journey time delay remains the same as in the core scenario, at 21.80 seconds (representing a saving of 31.75 seconds).

The low economy average visitor spend is £50, which has again been estimated based on values taken from the bands of spending in a West End Perception survey conducted by Lake Market Research. This represents the lower boundary of the band (£50-£100)

In line with the core scenario, only 5% of the additional footfall will result in additional spending.

3. Journey Quality Impacts

3.1 Introduction

This chapter describes the methodology adopted to monetised journey quality benefits.

3.2 Methodology

The main impact from the public realm improvements is to generate journey quality improvements for existing and new pedestrian users.

This has been assessed using the Valuing Urban Realm Toolkit (VURT). This toolkit was developed by (TfL) to provide monetised assessments of the benefits of improving the urban realm. It captures, using willingness to pay values, the improvements in elements of urban realm such as effective width, permeability and quality of environment. VURT provides outputs in 2016 prices, which for the purpose of this assessment have been converted to 2010 market prices and discounted to 2010, in according with DfT guidance.

The first step is to undertake a Pedestrian Environment Review System (PERS) audit of the existing situation on the ground, capturing the relevant attributes. This was primarily conducted using desktop surveys using Google street view to account for the street environment prior to the temporary Covid-19 measures being implemented along Oxford Street. Supplementary site visits were undertaken in November 2022 to verify the audit.

A PERS audit template was completed for each street giving each link a rating between -3 to 3. In addition, the PERS/VURT can also assess 'spaces'. It was deemed appropriate for Oxford Street to also be valued against these criteria as the public realm improvements should assist with making the space more intuitive and comfortable for dwelling

Scheme designs are then used to assess the improvements to each of the attributes. As with the existing pedestrian environment the link are also given a rating between -3 to 3. These scores are then converted into monetised values. A summary of the PERS scores for both the baseline and with scheme scenarios is provided in Tables 3 and 4 below.

Table 3. PERS Link Attribute Scores

	Oxford Street East		Oxford Street West		Oxford Circus	
PERS Link Attributes	**Baseline**	**Scenario**	**Baseline**	**Scenario**	**Baseline**	**Scenario**
Effective width	-1	2	-1	2	-1	2
Dropped kerbs	0	2	0	2	0	2
Obstructions	0	3	0	3	0	3
Permeability	0	2	0	2	0	2
Legibility	1	3	1	3	1	3
Lighting	0	3	0	3	0	3
Personal security	1	3	1	3	1	3
Surface quality	0	3	0	3	0	3
User Conflict	-1	2	-1	2	-1	2
Quality of environment	0	3	0	3	0	3
Maintenance	0	3	0	3	0	3

Table 4. PERS Space Attribute Scores

	Oxford Street East		Oxford Street West		Oxford Circus	
PERS Space Attributes	Baseline	Scenario	Baseline	Scenario	Baseline	Scenario
Moving in the space	-2	2	-2	2	0	2
Interpreting the space	0	3	0	3	1	2
Personal safety	-1	3	-1	3	1	3
Feeling comfortable	-2	3	-2	3	0	2
Sense of place	-2	3	-2	3	0	1
Opportunity for activity	-3	3	-3	3	1	1

These PERS scores are then inputted into the VURT spreadsheet for each link.

The key inputs and assumptions are outlined in Table 5 below.

Table 5. VURT inputs and assumptions

Input	Assumption
Pedestrian footfall (existing per hour)	Values: see table 6 Oxford Street: calculated using an average of two count sites on Oxford Street over the most recent 12-month period (September 2021-August 2022); and dividing by 365 days in the year and 10.65 to reach an approximate per hour value Oxford Circus: the Oxford Street average value was adjusted using a September 2022 pedestrian survey to produce a more accurate value as Oxford Circus is anecdotally known to experience higher footfall due to the underground. An uplift was applied to Oxford Circus based on a comparison of footfall at locations to the east/west and at Oxford Circus[5]. This survey only captured data for the evening peak hour (17:15-18:15) so it was assumed a similar profile would apply throughout the rest of the day.
Pedestrian footfall (new users per hour)	Value: 28.36% Footfall uplift calculated by generating a percentage change between the most recent 12-month period available (September 2021-August 2022) compared against a 12-month period pre-Covid (January-December 2019)
Average walking distance (m)	Estimated based on professional assessment See table 4 below for values
Average walk speed (m/s)	Default value of 1.33m/s used
Weekday Scaling Factor	10.69 (default value multiplying pedestrian numbers per hour to daily value)
Annualisation Scaling Factor	3,549 [10.69 * 6.5 * 51]

[5] Five sites to the west of Oxford Circus had an average of 3,381 pedestrians per hour (17:15-18:15); three sites to the east of Oxford Circus had an average of 3,494/hour. Oxford Circus recorded 5,240/hour; on average a 52% uplift against the two other sites.

	(accounting for converting from day to week to full year – conservative estimate due to only accounting for 6.5 days and 51 weeks)

Table 6 presents the baseline footfall values used. The pedestrian footfall numbers have been generated using the most recently available 12-month period of two pedestrian counts on Oxford Street. Other localised streets have been estimated using the 2015 pedestrian counts which have given an indication of the proportionate pedestrian flow on these surrounding streets compared directly against Oxford Street. The percentages have then been applied to the 2022 Oxford Street count, to give an estimation of footfall on the surround streets.

Table 6. Baseline pedestrian footfall (NB. Numbers may not sum due to rounding)

	Baseline footfall (per hour)	Scenario footfall (per hour)
Oxford Street East	5,266	6,610
Oxford Street West	4,307	5,406
Oxford Circus	7,292	9,153

As noted within the Strategic Case, recent pedestrian footfall is still considerably lower than pre-Covid levels. To calculate the impacts of the schemes, a conservative assumption has been made that potential footfall uplift will be equal to a return to pre-Covid levels of footfall. This is equal to a 28% uplift which corresponds with supporting evidence as included within Appendix B. Appendix B concludes that a 10-30% uplift can be anticipated as a result of schemes of this nature. Therefore, owing to the suppression of footfall as a result of the Covid pandemic, a value at the higher end of the scale is deemed justifiable.

This is also deemed to be conservative on the basis that the future pedestrian footfall will be maintained at this level across the full appraisal period. It is more likely that footfall will continue to grow over the appraisal period.

As outlined above in Table 5, another key input is the average walk distance which is summarised below in Table 7.

Table 7. Walking distances

Street	Value	Comment
Oxford Street (East and West)	660m	The distances between the four underground stations along Oxford Street. It was assumed more visitors wouldn't walk the entire length; instead it was approximated they would walk an average of one-third (or roughly the distance between two underground stations).
Oxford Circus	100m	The approximate distance to travel along two approaches of the junction.

As mentioned previously, Oxford Street has also been assessed as a 'space'. For this another two key inputs were needed:

- Static users (stationary users of the space) - this was estimated as 10% of Oxford Street hourly users;
- Dwell time (how long static users remain in the space) - has been included at 5 minutes in the baseline and 10 minutes with the scheme in place. Given the retail nature of the area, it is considered a reason assumption without any more local evidence available.

3.3 Results

The primary benefit of the public realm improvements is to generate journey quality improvements for existing and new pedestrian users. As detailed above, this has been assessed in VURT, which assesses the benefits of improving the urban realm. These benefits have been quantified over the appraisal period as £52.94m for Oxford Street and £6.99m for Oxford Circus (discounted and deflated to 2010 prices).

The journey quality benefits that are expected to be delivered are £52.94m for Oxford Street and £6.99m for Oxford Circus across a 20-year appraisal period.

4. Road Safety Impacts

4.1 Introduction

This section outlines the approach taken to the assessment of road safety improvements.

4.2 Methodology

Collision assessment tools typically quantify benefits from a reduction in car kilometres. This impact is yet to be modelled for this scheme, and due to the wider improvement for pedestrians (including reducing conflict between users) it was deemed appropriate to undertake a bespoke appraisal. For the assessment a more targeted approach for quantifying collision reduction has been undertaken. This is considered proportionate and appropriate as the schemes improve the public realm.

Local collision data were extracted from the DfT's Road Safety database (STATS19) which collates all road traffic collisions resulting in personal injury that were reported to the police within 30 days.

The most recent six years of data between January 2016 and December 2021 was consolidated. Typically, 5 years' worth of data is included however, in this instance, due to the impacts of the Covid-19 pandemic this has been extended.

As shown in Figure 3 the collisions involving pedestrians are distributed along Oxford Street, with a concentration of these the key junctions due to the high levels of activity and conflicts between users of the space.

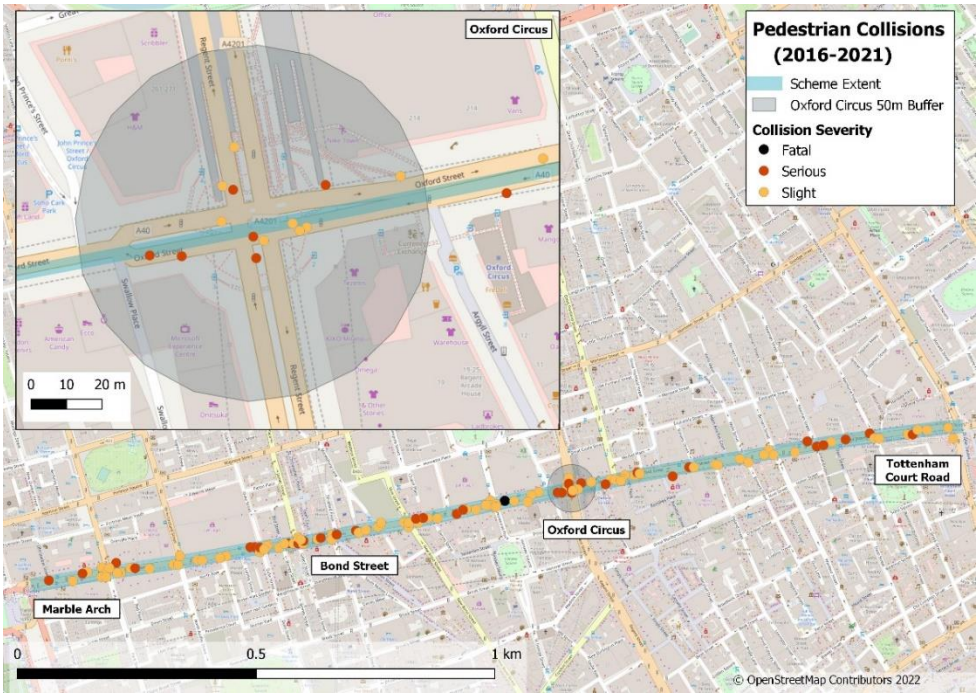

Figure 3. Map of pedestrian collisions recorded along Oxford Street, 2016 to 2021[6]

As shown in Table 8, the analysis showed that 128 collisions involving pedestrians occurred directly along Oxford Street across the 6-year period. This included 2 fatal, 30 serious in nature and the remaining were classified as slight. Collisions within the vicinity of Oxford Circus (i.e. a 50-meter radius) were recorded as zero fatal, 7 serious and 9 slight.

Table 8. Pedestrian user collision recorded along Oxford Street, 2016 to 2021[7]

Severity	Oxford Street		Oxford Circus	
	Total	Average[8]	Total	Average[8]
Fatal	2	0	0	0
Serious	30	5	7	1
Slight	96	16	9	2
Total	**128**	**21**	**16**	**3**

Within GIS these collisions were visualised and those directly within the scheme extent where shortlisted as potentially avoidable. Due to the nature of the schemes, the analysis focused solely on pedestrian collision. Casualty savings were calculated based upon the number of collisions which may have been avoided if the public realm and pedestrian priority scheme had been implemented as proposed. An average value was then derived as shown in Table 8.

[6] STATS19 Data, Department for Transport, 2022
[7] STATS19 Data, Department for Transport, 2022
[8] Rounded values

As the STATS-19 collision data omits specific collision descriptions a proportionate and conservative approach had to be taken. As such, the following steps were taken have been also considered:

- Identifying the collisions involving pedestrians;
- Estimating a potential reduction based on the RoSPA reduction forecasts (Table 9) – these factors were rationalised and prioritised those which aligned best with the scheme scope. A 50% reduction was considered a reasonable value due to factoring the combined measures being installed (including streamlining traffic movements along Oxford Street);

Table 9. RoSPA collision reduction forecasts by modification type

	RoSPA Collision Modification type	Reduction in Collisions
Most Applicable	Footway	37%
	Crossing improvement	41%
	Street lighting improvements	21%
	Junction improvement	44%
	Markings	34%
	Controlled crossing	31%
Least Applicable	Bus/Cycles only	50%
	Pedestrianised	100%

- Applying the reduction to the average annual collision rate – this had to consider the impacts of rounding and as such generated the following values:
    - Oxford Street: 8 slight, 3 serious and 1 fatal collision (as <1 per year is infeasible and 0 per year would underestimate the benefits);
    - Oxford Circus: 1 slight and 1 serious collision (as <1 per year is infeasible and 0 per year would underestimate the benefits).
- Applying the per casualty price to generate a monetised collision saving per annum and across the appraisal period. The 2010 price and value year has been used to avoid the requirement for deflating the values (as the values are already in 2010 prices and therefore only require discounting);

The approach is deemed conservative due to:

- Applying the reduction only to pedestrians - this is deemed conservative as cyclists may also gain some indirect benefits as the public realm improvements would reduce the conflict between the vehicle carriageway and footways (e.g. due to insufficient width pedestrians setting out into the carriageway).

A bespoke spreadsheet was created to approximate the likely benefits from these avoided collisions. A cost for each collision was calculated using TAG table A4.1.1, based upon the number of casualties associated with each collision and the severity of these casualties. The resultant values were summed and divided by six to give a potential average annual casualty cost saving. Using the 2010 values for collision savings the benefits of casualty avoidance have been assessed over a 60-year appraisal period. These annualised values

have then been discounted at 3.5% p.a. from the first full year of benefits (2027) to the first 30 years, in line with TAG Unit A1.1, at 2010 prices.

As noted above, this is considered a proportionate and appropriate approach for the nature of the scheme. It is considered that the casualty saving benefits generated are conservative as they have only considered collisions involving pedestrian (motorised vehicles and cyclists will also likely benefit) and have utilised the 2010 value prices rather than increasing over time as displayed in the TAG databook.

4.3 Results

The assessment assumed 50% of pedestrian collisions could be avoidable and therefore, the following has been identified:

- Oxford Street – 8 slight, 3 serious and 1 fatal collisions saved on average per year
- Oxford Circus – 1 slight, 1 serious and 0 fatal collisions saved on average per year

Using these values an annual collision based on 2010 values (casualty cost) is £2,511,216.

Based on those assumptions, the bespoke assessment estimates £35.78m for Oxford Street of Present Value Benefits (PVB) over the 60-year appraisal period in 2010 prices. For Oxford Circus the PVB is £3.07m.

The bespoke safety benefits assessment deliver £35.78m in PVB for Oxford Street and £3.07m for Oxford Circus.

5. Journey Time Impacts

5.1 Introduction

This section outlines the approach taken to the assess pedestrian journey time benefits.

Both projects will improve the flow of pedestrians along Oxford Street and through Oxford Circus. At Oxford Circus specifically, the junction redesign reduces delays for pedestrians and vehicles, generating journey time benefits for all users.

5.2 Methodology

Typically, journey time savings are extracted from models. This impact is yet to be modelled for the projects, and due to the significant improvements at Oxford Circus was deemed appropriate to undertake a bespoke appraisal. The bespoke appraisal focused purely on pedestrians however, it is noted that general traffic (including cyclists) would be expected to also gain some time saving benefits. These have not been quantified due to the unavailability of traffic modelling at the time of writing.

A LinSig junction model was used to estimate signal phases and timings between the existing and proposed arrangement. Pedestrian delay figures were extracted for the average delay (seconds) per pedestrian as a result of the signal changes. This represents the average wait time for a pedestrian to cross each of the streets at the junction during a typical weekday morning and evening peak hour. Significant benefits were expected due to shorter crossing distances and streamlined signal phases permitting more efficient movement of motorised and non-motorised users throughout the junction.

A bespoke spreadsheet was created to approximate the likely benefits for pedestrians under the proposed junction redesign. Initially the bespoke spreadsheet calculated an average delay saving per pedestrian (from the junction model as described above) as shown below in Table 10.

Table 10. Journey Time Assumptions

	Morning Peak (sec)	Evening Peak (sec)	Average (sec)
Current Average Delay	51.5	55.6	53.55
Future Average Delay	21.8	21.8	21.80
Average Time Saving	29.70	33.80	31.75

This showed that on average each pedestrian would save approximately 31.75 seconds, or 0.53 of a minute. This time saving was then multiplied this across the annual demand accounting for existing demand and forecasted uplift (with values consistent with the inputs from the journey quality assessment). Table 11 below shows the key assumptions incorporated within the bespoke spreadsheet.

Table 11. Journey Time Benefit Assumptions

	Input	Comment
Pedestrian Demand – Existing	7,292 (per hour) 77,660 (per day)	Consistent with values inputted for journey quality benefits (see Table 3)
Pedestrian Demand – New Users	2,028 (per hour) 22,026 (per day)	
Background growth	0%	No additional growth assumed
User Split	Commute – 29.16% Other – 70.62% Work – 0.22%	User splits derived from O2 data on user type per LSOA
Values of Time (£ per hour)	Commute – 14.71 Other – 6.71 Work (walker) – 14.81	Values of time applied to the user split, in line with TAG databook Table A1.3.1 (January 2023)
Annualisation	253	Number of working days (annualised to day demand conversion has accounted for this value)
Appraisal period	60 years	Used to reflect the likely legacy of the changes and lifespan on the assets.

5.3 Results

The assessment applied assumptions which were consistent with the other monetised benefits. This showed that on average each pedestrian would save 32 seconds (calculated using average savings in the morning and evening peak) under the new junction arrangement.

Based on those assumptions, the bespoke assessment estimates £19.16m of Present Value Benefits (PVB) over the 60-year appraisal period in 2010 prices attributed to the Oxford Circus project only.

The bespoke journey time benefits assessment delivers £19.16m in PVB

6. Wider Economic Impacts

6.1 Introduction

This section outlines the approach taken to assessment wider economic impacts.

6.2 Methodology

As noted previously, due to the maturity of analytical techniques an indicative wider economic benefits assessment has been conducted using a bespoke spreadsheet

approach. As such, the benefits from construction employment and additional visitor spending has been included within an adjusted BCR.

Two aspects of wider economic impacts have been monetised:

- Construction Impacts (direct and indirect jobs);
- Economic Activity and Jobs Uplift (Visitor spend and indirect job creation).

6.2.1 Construction Impacts

The construction of the scheme will create further employment opportunities, for which the employment market will need to accommodate. The construction of the proposed schemes will also make a significant contribution by generating additional Gross Value Added (GVA). GVA is a measure of the difference between what is produced as an output (goods and services) and the inputs (such as raw materials and semi-finished products) used in the production of the output. It represents the additional value that is added through economic activity.

As such, construction impacts have been estimated from the number of construction jobs being created:

- **Directly** – through direct construction jobs created as a result of the scheme being delivered; and
- **Indirectly/induced** – through purchasing down the supply chain; otherwise known as the 'multiplier effect' which demonstrates that an initial investment can have much larger economic benefits as this expenditure is diffused through the economy.

Using labour coefficients from the Homes and Communities Agency (HCA) Calculating Cost per Job Best Practice Note (2015) [9], it is possible to estimate the number of direct construction jobs that could be supported by the proposed development over the course of the construction phase. Taking account of the composition of the proposed development, the coefficient for the development of 'infrastructure' is considered the most appropriate for calculating the number of direct construction jobs. This labour coefficient published indicates the number of workers per £m output per year (in 2011 prices). This coefficient assumes that 13.9 years of Full-Time Equivalent (FTE) employment would be generated per £1 million of construction cost in 2011 prices.

To use the coefficient, the capital cost (excluding any contingency) has been deflated to 2011 prices using the UK Government GDP Deflator (2022). This has been done to ensure the same price year (the coefficient was in 2011 prices).

Then, applying the above 'infrastructure' coefficient to the deflated construction cost suggests that the proposed development could support 597 years of direct FTE employment spread over the construction phase for Oxford Street and 246 FTE for Oxford Circus.

The number of jobs created can then be used to estimate the Gross Value Added (GVA) effects using the ONS 2022 release of Output per Job on GVA per FTE job (a value of £71,041 per job per year). This has been applied for the 18 months of scheme construction for Oxford Street and 12 months for Oxford Circus.

[9] Homes and Communities Agency (HCA), (2015); Calculating Cost per Job Practice Note

As construction is made up of many discrete elements of work undertaken by specialists (e.g. bricklaying, carpentry, plumbing, electrics etc.), the number of workers on site will inevitably fluctuate during different periods of the construction phase.

In addition to direct construction jobs created, indirect jobs are also created. Construction involves purchases from a range of suppliers who in turn purchase from their own suppliers via the supply chain. The relationships between the initial direct spending and total economic impacts are known as the 'multiplier effect', which demonstrates that an initial investment can have much larger economic benefits as this expenditure is diffused through the economy. Local businesses across Oxford Street could benefit from trade connections established during the construction phase of the proposed development. As a result, further indirect jobs would be supported locally within the economy through the suppliers of construction materials and equipment.

In addition, businesses would also be expected to benefit to some extent from temporary growth in expenditure linked to the direct and indirect employment effects of the construction phase. While only a portion of these benefits would be felt in the local area, it would be anticipated that the local economy could benefit from a temporary boost from the wage spending of workers within shops, bars and restaurants, and other service facilities. Such effects are typically referred to as 'induced effects'.

Research undertaken on behalf of the National Housing Federation indicates that the construction industry has an indirect and induced employment multiplier of 2.11[10]. Applying this employment multiplier to the direct FTE construction jobs per year derived above indicates the additional years of indirect FTE employment spread over the construction phase by the proposed development in sectors throughout the UK economy. This has been estimated at 663 FTE indirect job for Oxford Street and 273 FTE indirect jobs for Oxford Circus.

Based on discussion with WCC and review of the Green Book place-based multipliers, a 'leakage' factor of 0.9 has been used, as the indirect jobs created are expected to be in the non-traded sector (e.g. retail, hospitality). The residual employment roles created once this factor has been applied can in turn estimate additional economic output through Gross Value Added (GVA). GVA is a measure of the difference between what is produced as an output (goods and services) and the inputs (such as raw materials and semi-finished products) used in the production of the output. It represents the additional value that is added through economic activity.

To estimate the Gross Value Added (GVA) effects, the ONS 2022 release of Output per Job on GVA per FTE job has been applied, with a value of £71,041 per job per year. This has been applied across the scheme construction timescale.

Table 12 summarises the monetised benefit for GVA uplift from both direct and indirect construction job creation.

[10] Indirect and Induced employment has been calculated using an employment multiplier of 2.11 sourced from the National Housing Federation (2019). This implies that per direct job generated, a further 1.11 induced jobs are supported in the supply chain.

Table 12. Monetised Benefit – Construction Job Creation

Base Cost	Oxford Street		Oxford Circus	
	Total Direct GVA Benefit	Total Indirect GVA Benefit	Total Direct GVA Benefit	Total Indirect GVA Benefit
2022 price	£42.43m	£42.39m	£17.50m	£17.49m
2010 price (deflated)	£31.08m	£31.05m	£12.91m	£12.90m
2010 price (deflated and discounted)	**£18.64m**	**£18.62m**	**£7.97m**	**£7.97m**

Using the scheme costs to estimate the number of additional construction jobs, the Oxford Street and Oxford Circus projects are anticipated to create 597 Full Time Equivalent (FTE) jobs directly within construction for Oxford Street and 246 FTE at Oxford Circus.

The direct jobs contribute approximately £71k of annual GVA. These jobs have been spread across the estimated construction timescales (18 months for Oxford Street and 12 months for Oxford Circus; see section 7.6), which when rebased and deflated to 2010 values equates to £18.64m for Oxford Street and £7.98m for Oxford Circus.

The scheme is anticipated to support 597 FTE jobs indirectly within the wider supply chain for Oxford Street and 246 FTE for Oxford Circus. This is expected to generate a further £18.62m and £7.97m respectively.

GVA uplift for direct jobs and indirect job is included only in the adjusted BCR.

6.2.2 Economic Activity and Jobs Uplift

One of the key objectives of the scheme is to create a "high quality public realm scheme that addresses accessibility, safety and sustainability issues". The schemes aim to enhance the actual and perceived comfort and security of the pedestrian environment for existing users. It will also induce increased appeal which will encourage more visitors, thereby supporting local businesses in the area. This additional footfall will support additional retail and leisure expenditure predominately along Oxford Street.

Using data consistent with the journey quality assessment, results in approximately 32.5 million visitors to Oxford Street per annum (calculated using an average of two count sites on Oxford Street over the most recent 12-month period (September 2021-August 2022)).

The core scenario has assumed that the public realm improvements will help to restore pedestrian footfall back to pre-Covid levels. This assumption is deemed conservative as additional growth on pre-Covid levels would be expected in the long-term. As such a 28% uplift has been assumed based on the last 12 months of observed footfall data compared against 2019.

A conservative approach was adopted to assume that not all additional footfall would result in additional local expenditure. The following factors have been considered:

a) **Spending by new visitors only** – it has been assumed that while the improvements will benefit existing users, this wouldn't generate any additional spending. This is considered a conservative approach as due to the improved pedestrian environment visitors to Oxford Street may feel more comfortable in the space and stay longer, thereby potentially spending more in the local economy.

b) **The visitor type** - through utilising O2 phone data[11] a pedestrian type split was derived to determine an approximate split between resident, worker and visitor across the local LSOAs[12]. This demonstrated that approximately 61% of users in the area were classified as 'visitor'. Therefore, in the first instance, it was assumed that only 61% of the increased footfall would be potential leisure spenders (estimated at approximately 9.1million visitors). It is noted that this likely underestimates local spend from other trips (e.g. local office workers).

c) **Net increase is shopping purchases** - it was assumed that not all new visitors would spend in the local economy. As such a conservative approach has been adopted where the annual expenditure figures have been applied to only 5% of the 28% footfall uplift expected from the scheme improvements;

This additional footfall will support additional retail and leisure expenditure along Oxford Street. Average spend per visitor has been estimated using a recent perception survey undertaken by Lake Market Research on West End Perceptions Research, as summarised in Figure 4 below.

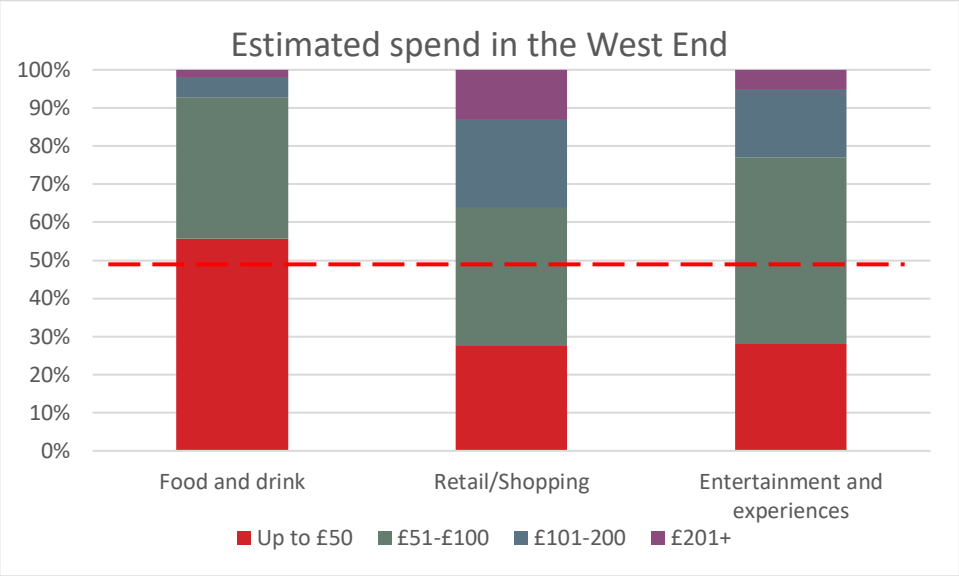

Figure 4. Summary of expected spend on visit to the West End [13]

Due to the nature of Oxford Street being primarily retail, the estimated spend was based solely on this category. As the most common category of expected expenditure for visitors on "retail / shopping" was "between £51-£100", a conservative estimate of £75 on average has been utilised.

Accounting for this, the additional visitor spending per annum has been calculated as an £23.81m per annum (in 2022 prices). It is estimated that over the 20-year appraisal this would generate over £135.82m in additional visitor spending (discounted to 2010 prices).

Furthermore, from this additional visitor spend this can also induce further job creation by converting additional turnover into the creation of FTE jobs. Whilst accounting for potential displacement (estimated to be 20%), the number of gross direct jobs estimated to being created is 30 net direct FTE jobs per year.

[11] WCC data, supplied for the period May 2021 to December 2021
[12] Estimated using MSOA Westminster 011 and Westminster 013
[13] Lake Market Research on West End Perceptions Research, September 2021

The number of jobs created can then be used to estimate the Gross Value Added (GVA) effects using the ONS 2022[14] release of Output per Job on GVA per FTE job in the retail sector (a value of £45,665 per job per year). Applying this to the net direct employment impact of the scheme (as derived above), it is estimated that £1.38m of GVA per annum could be supported, which over the 20-year appraisal period equates to an PVB of £7.86m of GVA total.

This assessment uses the same assumptions on footfall as the pedestrian journey quality benefits outlined above. The monetised benefits are considered to be conservative due to:

- Firstly, applying conservative uplift to bring future pedestrian footfall in line with pre-Covid pandemic levels over the appraisal period (as outlined in the Strategic Dimension, pre-Covid, the assumption was that the Elizabeth Line opening would increase underground station entries and exits by 55%);
- Secondly, only applying additional visitor spend to leisure footfall (estimated using O2 phone data) which likely underestimates local spend from other trips (e.g. local office workers).

GVA uplift for visitor spend and associated job creation is included in the adjusted BCR for Oxford Street only.

The wider economic benefits that the schemes at Oxford Street and Oxford Circus are expected to be delivered are approximately £18.64m and £7.97m PVB in direct construction jobs and a further £18.62m and £7.97m for indirect jobs.

Furthermore, Oxford Street will also generate additional visitor spend estimated at £135.82m across a 20-year appraisal period. In turn, this additional spend it expected to support further job creation to the value of approximately £7.86m.

6.3 Summary of Monetised Benefits

Table 13 below summarise the monetised benefits that have been considered in this appraisal.

Table 13. Overview of costs and benefits (in 2010 prices)

Impact		Oxford	Oxford Circus
Journey quality improvements		£52.94m	£6.99m
Collision reduction		£35.78m	£3.07m
Journey time savings		N/A	£19.16m
Wider economic benefits	GVA uplift from direct construction jobs	£18.64m	£7.98m
	GVA uplift from indirect construction jobs	£18.62m	£7.97m
	Additional visitor spending	£135.82m	N/A
	GVA uplift from net direct retail employment	£7.86m	N/A
Total Benefit		£269.66m	£45.15m

[14] ONS, (2022); Output per Job UK [Available at: Output per job, UK - Office for National Statistics (ons.gov.uk)]

7. Sensitivity Analysis

In order to demonstrate the robustness of the Economic Case, it is typical to illustrate how the benefits, costs and value for money change under different scenarios and assumptions. The following factors have been assessed:

- 30-year appraisal period for public realm improvements and visitor spending – the core scenario assumes a 20-year appraisal period (60 years for accident and journey time benefits). However, this is a deliberatively conservative approach and the lifespan of the infrastructure would likely be extended with the inclusion of ongoing maintenance to prolong the longevity of scheme infrastructure;
- Oxford Circus 30% cost reduction[15] – due to the physical constraints (see Table 10 in the Strategic case) around the construction of the scheme this looks to demonstrate what the situation would be if the construction methods were standard (i.e. not accounting for special construction circumstance). The contractor estimated that the cost would be reduced by 30%;
- High economy (optimistic) scenario – incorporating a 10% increase in footfall uplift (to 38.36% up from 28.36%) and a £100 average visitor spend (up from £75).
- Low economy (pessimistic) scenario – incorporating a 10% decrease in footfall uplift (to 18.36% down from 28.36%) and a £50 average visitor spend (down from £75).

7.1.1 30-year appraisal period

Tables 14 and 15 below provide a summary of the impact which the 30-year appraisal period sensitivity test has on the potential outcomes. These demonstrate that a 30-year appraisal period increases the BCR markedly, given that journey quality and visitor spending benefits persist for an additional 10 years under this scenario.

Table 14. Sensitivity Test Outcomes – Oxford Street 30 Year Appraisal (£m in 2010 market prices, discounted to 2010)

	Basic BCR		Adjusted BCR	
	30y Appraisal Period		30y Appraisal Period	
	WCC	Total	WCC	Total
PVB (£m)	£109.710m		£330.988m	
PVC (£m)	£30.395m	£61.535m	30.395m	61.535m
NPV (£m)	£79.316m	£48.176m	300.593m	269.453m
BCR	**3.61**	**1.78**	**10.89**	**5.38**
Value for Money Category	**High**	**Medium**	**Very High**	**Very High**

[15] 30% estimated by the OSP design and build contractor who suggested that the work around Oxford Circus would result in a circa 30% uplift in the costs due to the approvals and restrictions that will be applied by LUL (London Underground Limited) including around vibration, fire and access, working times, and restricted access.

Table 15. Sensitivity Test Outcomes – Oxford Circus 30 Year Appraisal (£m in 2010 market prices, discounted to 2010)

	Basic BCR	Adjusted BCR
	30y Appraisal Period	30y Appraisal Period
	WCC	WCC
PVB (£m)	£31.977m	£47.919m
PVC (£m)	£17.127m	£17.127m
NPV (£m)	£14.851m	£30.792m
BCR	**1.87**	**2.80**
Value for Money Category	**Medium**	**High**

7.1.2 Oxford Circus Cost Reduction

The design and build contractor estimated that the work around Oxford Circus would result in approximately 30% higher costs due to the approvals and restrictions that will be applied by LUL (London Underground Limited) including around vibration, fire and access, working times, and restricted access. As such this sensitivity tests looks to demonstrate what the situation would be if the construction were using standard methods (i.e. not accounting for special construction circumstance). Therefore, the cost would be reduced by 30%.

Table 16 below provides a summary of the impact which the Oxford Circus 30% cost reduction sensitivity test has on the potential outcomes for the assessment of the Oxford Circus part of the scheme (the Oxford Street results are unaffected).

The 30% cost reduction sensitivity test at Oxford Circus demonstrates that excluding the price uplift applied due to the physical constraints, the BCR would be in the high category.

Table 16. Sensitivity Test Outcomes – Oxford Circus 30% cost reduction (£m in 2010 market prices, discounted to 2010)

	Basic BCR	Adjusted BCR
	30% cost reduction	30% cost reduction
	WCC	WCC
PVB (£m)	£29.207m	£45.148m
PVC (£m)	£11.989m	£11.989m
NPV (£m)	£17.218m	£33.159m
BCR	**2.44**	**3.77**
Value for Money Category	**High**	**High**

7.1.3 High Economy Scenario

Tables 17 and 18 below provide a summary of the impact which the high economy scenario has on the potential outcomes. These demonstrate that the high economy scenario does not have a major impact on the basic BCR, as the majority of journey quality and journey time benefits accrue to existing users (whilst accident benefits do not change).

With regards to the adjusted BCR, there is a much larger change in comparison to the core scenario, given the combination of the change in footfall uplift and average visitor spend.

The benefits accrued from job creation through construction investment do not change, as these are based on the scheme costs which are unchanged in this scenario.

Table 17. Sensitivity Test Outcomes – Oxford Street High Economy Scenario (£m in 2010 market prices, discounted to 2010)

	Basic BCR		Adjusted BCR	
	High Economy Scenario		High Economy Scenario	
	WCC	Total	WCC	Total
PVB (£m)	£91.333m		£387.723m	
PVC (£m)	£30.395m	£61.535m	30.395m	61.535m
NPV (£m)	£60.938m	£29.798m	£357.329m	£326.189m
BCR	**3.0**	**1.48**	**12.76**	**6.30**
Value for Money Category	**High**	**Low**	**Very High**	**Very High**

Table 18. Sensitivity Test Outcomes – Oxford Circus High Growth Scenario (£m in 2010 market prices, discounted to 2010)

	Basic BCR	Adjusted BCR
	High Economy Scenario	High Economy Scenario
	WCC	WCC
PVB (£m)	£30.351m	£46.293m
PVC (£m)	£17.127m	£17.127m
NPV (£m)	£12.405m	£29.166m
BCR	**1.77**	**2.7**
Value for Money Category	**Medium**	**High**

7.1.4 Low Economy Scenario

As above, Tables 19 and 20 below demonstrate that the low economy scenario does not exhibit a major impact on the basic BCR, whilst having a more significant impact on the adjusted BCR (for the same reasons as given above for the high economy scenario). The only change in the Value for Money Category is with the adjusted BCR accounting for the total costs where the BCR drops to the 'High' category.

Tables 24 and 25 provide a summary of the impact which the low economy scenario has on the potential outcomes.

Table 19. Sensitivity Test Outcomes – Oxford Street Low Economy Scenario (£m in 2010 market prices, discounted to 2010)

	Basic BCR		Adjusted BCR	
	Low Economy Scenario		Low Economy Scenario	
	WCC	Total	WCC	Total
PVB (£m)	£86.093m		£185.374m	
PVC (£m)	£30.395m	£61.535m	£30.395m	£61.535m
NPV (£m)	£55.699m	£24.559m	£154.980m	£123.840m
BCR	**2.83**	**1.40**	**6.10**	**3.01**
Value for Money Category	**High**	**Low**	**Very High**	**High**

Sensitivity Test Outcomes – Oxford Circus Low Economy Scenario (£m in 2010 market prices, discounted to 2010)

	Basic BCR	Adjusted BCR
	Low Economy Scenario	Low Economy Scenario
	WCC	WCC
PVB (£m)	£28.062m	£44.004m
PVC (£m)	£17.127m	£17.127m
NPV (£m)	£10.935m	£26.877m
BCR	**1.64**	**2.57**
Value for Money Category	**Medium**	**High**

7.1.5 Summary of Sensitivity Test Results

Table 21 below presents a summary of the BCR's under all the scenarios tested.

Table 20. Summary of Sensitivity Test Results

Scenario	Oxford Street				Oxford Circus	
	Basic BCR		Adjusted BCR		Basic BCR	Adjusted BCR
	WCC	Total	WCC	Total	WCC	WCC
Core	2.92	1.44	8.87	4.38	1.71	2.64
30-year appraisal period	3.61	1.78	10.89	5.38	1.87	2.80
Oxford Circus 30% cost reduction	N/A				2.44	3.77
High economy	3.00	1.48	12.76	6.30	1.77	2.70
Low economy	2.83	1.40	6.10	3.01	1.64	2.57

8. Other Non-monetised Impacts

8.1 Introduction

This section summarises the non-monetised impacts' assessments which have not been quantified.

8.2 Economy

8.2.1 Business Users and Transport Providers

The Oxford Street Project focuses on the delivery of journey quality benefits for pedestrians which will have minimal impact on pedestrian journey times. While the scheme prioritises spaces for pedestrians, the main interventions on Oxford Street will be supported by a package of essential highways improvements which aim to enhance traffic capacity and improve traffic movement. Overall, the anticipated impact on business users and transport providers has been assessed as neutral**.**

The Oxford Circus project focuses on the delivery of pedestrian environment improvements and journey time improvements. The junction redesign will improve journey times for taxis and bus provides by streamlining the vehicle and pedestrian signal phases at the junction. Overall, the anticipated impact on business users and transport providers has been assessed as slight beneficial**.**

8.2.2 Reliability Impact on Business Users and Transport Providers

As above, the Oxford Street project will generate slight improvements in pedestrian journey time reliability due to increased space for pedestrians and further pedestrian prioritisation measures. Therefore, the anticipated impact has been assessed as neutral.

For the Oxford Circus project, the junction redesign will address the existing traffic bottleneck which will reduce delays at the junction and the surround streets, generating a slight benefit to journey time reliability for business users and transport providers.

8.3 Environment

8.3.1 Noise

Paragraph 2.2.2 of TAG Unit A3 Environmental Impact Appraisal states that:

> *"The noise appraisal should be proportional to the scheme and its proposed impact. Analysis should be no more detailed than is required to support robust decision making. The analyses outlined in this Unit may not be appropriate for all schemes but should provide the basis for less detailed analyses where appropriate. Where noise impacts are deemed to be minimal, the analysis of noise impacts may be scoped out."*

It is not anticipated that either project will have a significant impact on noise levels as the scheme focus is aimed at improving conditions for existing and new pedestrian users. The reduction of the carriageway width and minor diversions on traffic will divert some traffic away from Oxford Street, therefore generating a slight benefit for noise on Oxford Street.

Similarly, at Oxford Circus the junction redesign will address the existing traffic bottleneck which will reduce delays at the junction and the surrounding streets. This will generate a slight beneficial impact to noise by reducing the level of stationary traffic.

8.3.2 Air Quality/Greenhouse Gases

For Oxford Street, motor vehicle emissions will not be impacted significantly as the reassignment of vehicles onto surrounding streets is negligible. Many other routes are also more direct through the removal and simplification of one-way systems so overall it is expected to be neutral. The additional planting of trees and planters will contribute to an improvement in local air quality. There will also be an increase in electric vehicle charging points. As a result, it is anticipated that the scheme will have a slight beneficial impact on air quality and greenhouse gas emissions.

For Oxford Circus, motor vehicle emissions will not be impacted significantly. While, there will be a slight reduction in the level of stationary traffic this is anticipated to have a negligible impact on air quality and greenhouse gas emissions.

8.3.3 Embedded Construction Carbon

According to a carbon impact assessment undertaken by WCC using their Carbon Impact Evaluation Tool (which is based on forecast scheme expenditure), the full scheme construction (Oxford Street and Oxford Circus) is estimated to embody a total of 46,749 tonnes of CO2e. The do-nothing scenario will also include some carbon impact but this has not been quantified through the tool. Nonetheless, the scheme is considered to be one of the top five most carbon intensive projects in WCC's capital programme.

Considering the level of design at this stage, a more sophisticated consideration of carbon is not possible, however there is potential to incorporate within the detailed design of the scheme and the accompanying processes measures which reduce the scheme's carbon impact. This is a priority for WCC in line with the Net Zero commitments and responds to the visitor perception survey which indicates a strong desire for a more environmentally sustainable and climate friendly street.

Overall, it is expected that the scheme will have a slight adverse impact in terms of embedded construction carbon at this stage.

8.3.4 Landscape

As the scheme is entirely within a London borough the impact on landscape is therefore negligible and has been assessed as not applicable.

8.3.5 Townscape

Townscape is defined in TAG as the physical and social characteristics of the built and non-built urban environment. It relates to a sense of place or identity, and can take the form of buildings, structures and spaces. The social characteristics are determined by how these are used and managed. Townscape incorporates all aspects of urban form, not just those of an historic nature or value. The impacts on the historic environment are appraised separately below.

As detailed in the Strategic Case, the Oxford Street area is located across several different conservation areas, designated by Westminster City Council on the basis of 'special architectural and historic interest.' Additional planning permissions apply in these areas in order to protect their unique characteristics. These are:

- Portman Estate
- Stratford Place
- Mayfair
- Harley Street
- Regent Street
- East Marylebone
- Soho
- Hanway Street

Many of the areas locally are considered to have distinctive character and historic buildings. Oxford Street is often named as the boundary to these conservation areas and the proposed improvements will enhance the public realm and local character. For the Oxford Street project, due to its close proximity to several conservative areas the public realm improvements will enhance the townscape and local character of the area. As such it is anticipated that the scheme will have a slight beneficial impact on townscape.

For Oxford Circus, the improvements to Oxford Circus will reduce the dominance of motor traffic in the area. In combination with more space for pedestrians this will slightly enhance the public realm and local character. As such it is anticipated that the scheme will have a neutral impact on townscape.

8.3.6 Historical Environment

The man-made historic environment, or heritage assets, is defined in TAG as:

- Buildings of architectural or historic significance;

- Historic areas or landscapes, such as parks, gardens and public spaces; and
- Historic sites, such as monuments and locations of historical importance.

While Oxford Street includes several listed buildings (including Selfridges), the proposed measures will not directly impact on the locally or nationally listed buildings. The public realm improvement, however, will enhance the context and alter the setting of the historic built environment, increasing its visual prominence and priority within the urban landscape. Overall, it is anticipated that both projects will have a slight beneficial impact on historic environment.

8.3.7 Biodiversity

Both projects fall within the existing highway land. The public realm improvements at Oxford Street project will include elements of green and blue infrastructure which will have a slight positive impact. This includes an increase in greening, where possible, with species selected to increase biodiversity gain and extended periods of colour and interest. Greening seeks to support the creation of green corridors to support a biodiverse ecological connection between green spaces. The species selected will introduce a rich, colourful and diverse vegetation which will attract pollinators and birds, in response to the visitor perception survey which indicated a strong desire for a more environmentally sustainable and climate friendly street. This is in support of the Wild West End initiative which seeks to encourage wildlife back into central London by supporting ecological links between green spaces.

In order to maximise the biodiversity net gain opportunities afforded and enabled by the scheme, more detailed consideration will be given to this through the detailed design of the scheme, involving key partners such as Wild West End in the detailed design where appropriate.

This will also improve the wellbeing of residents, workers and visitors. As such it is anticipated that the scheme will have a slight beneficial impact on biodiversity.

For Oxford Circus, the project scope is more limited in space. The exact location of additional trees and planting are still to be confirmed but are unlikely to be extensive around Oxford Circus due to the shallow underground and concentration of utilities. As such it is anticipated that the project will have a neutral impact on biodiversity.

8.3.8 Water Environment

The Oxford Street project will look to improve upon the current drainage system through the provision of additional drains and investigate the introduction of Sustainable Urban Drainage Systems (SUDs) to future proof drainage and support flood and climate resilience. Greening maintenance, which includes watering, is a key consideration which will be addressed throughout the design process and in the management plan for the project. The proposals for Oxford Circus will also seek to improve the current drainage system where possible.

8.4 Society

8.4.1 Commuting and Other Users

The public realm improvements are likely to improve journey quality for pedestrian trips but have minimal improvements on journey times. Due to the nature of the area attracting commuters but mostly leisure users ('other users') the impacts

disproportionately impact this user group. For Oxford Street the project is expected to improve journey quality for pedestrian trips but have minimal improvements on journey times. Overall, the anticipated impact on commute and other users has been assessed as neutral.

However, at Oxford Circus the project is expected to improve journey quality for pedestrian trips and also have improvements on pedestrian journey times by reducing wait times at the crossings (this has been monetised see section 4). For commuting and other trips utilising motorised modes users might experience slight journey time benefits due to the junction redesign addressing the traffic bottleneck. As such the anticipated impact that the project will have a moderate beneficial impact on commuting and other users.

8.4.2 Reliability impact on Commuting and Other Users

As above, at Oxford Street pedestrian commute and other trips might experience slight improvements in journey time reliability due to increased space for pedestrians and other pedestrian prioritisation measures. Therefore, the anticipated impact has been assessed as neutral.

For Oxford Circus, due to the proposed junction redesign this results in a shorter wait time for pedestrians and motorised vehicles as there is no longer a dedicated phase for pedestrians (due to the junction only permitting the ahead movements only). Therefore, the anticipated impact has been assessed as slight beneficial.

8.4.3 Physical Activity

For Oxford Street, this impact has not been quantified as the scheme is only indirectly generating additional active travel, therefore, additional 'movement' of people may actually be displaced as visitors may choose Oxford Street over another shopping destination. Furthermore, any physical activity benefits typically arise from mode shift and due to the city centre location, it is unlikely pedestrians would switch from motorised modes. However, it is anticipated that the public realm improvements may encourage pedestrians to walk further distances due to improved comfort and security. As such the anticipated impact is slight beneficial.

For Oxford Circus, the junction redesign will have limited impact on physical activity. Therefore, the anticipated impact has been assessed as neutral.

8.4.4 Security

Along Oxford Street the project will have significant impact on security through proposed improvement of the public realm including positive landscaping; increased lighting and visibility; and further hostile vehicle mitigation measures being installed. Overall, the impact of the scheme on security has been assessed as moderately beneficial.

For Oxford Circus, the project will have significant impact on security through the installation of hostile vehicle mitigation measures to address Oxford Circus being identified as a high/very high terrorist risk.

8.4.5 Access to services

As defined in TAG, accessibility can relate to physical access onto public transport, the ability to get to a destination and the accessibility of transport service information. The

level of access depends on where people live, where services are located and the availability and affordability of transport.

For the scheme there are no fundamental changes proposed to bus routes or vehicle access restrictions. Therefore, the accessibility of Oxford Street should remain unchanged and the anticipated impact on access to services has been assessed as neutral.

8.4.6 Affordability

There no fundamental changes expected for affordability and the anticipated impact has been assessed as neutral.

8.4.7 Severance

TAG defines severance as follows:

> *"The separation of residents from facilities and services they use within their community caused by substantial changes in transport infrastructure or by changes in traffic flows. Severance will only be an issue where either vehicle flows are significant enough to significantly impede pedestrian movement or where infrastructure presents a physical barrier to movement."*

TAG also states that severance primarily concerns those using non-motorised modes, particularly pedestrians.

For Oxford Street, the project will improve the pedestrian environment including wider pedestrian crossings, longer green times at pedestrian crossings, more frequent formal crossing points. This will reduce the effective width of the carriageway and the dominance of motorised vehicles in the area also helping to reduce the conflict between non-motorised users (including pedestrians and cyclists) and motorised users. Overall, it is anticipated that the scheme will have a slight beneficial impact on severance.

For Oxford Circus, the project will improve the pedestrian environment by widening the pedestrian crossing, reducing the crossing width and reducing the wait time for pedestrians. This will reduce the effective width of the carriageway and the dominance of motorised vehicles in the area also helping to reduce the conflict between non-motorised users and motorised users. Overall, it is anticipated that the scheme will have a slight beneficial impact on severance.

8.4.8 Options and Non-use Values

Option and non-use values relate to the value that people put on a transport service even though they do not use that service and relates to very irregular and infrequent use. The scheme does not offer any increase in transport services and therefore the assessment against option values has been assessed to be neutral.