

18. CUMULATIVE EFFECTS

INTRODUCTION

- 18.1 This chapter assesses the cumulative effects of each of the four Development Scenarios in relation to effect interactions of the Development Scenarios in isolation, and the combined effects of each individual Development Scenario with other presently or reasonably foreseeable schemes.
- 18.2 The chapter has been written by Waterman Environmental and has been informed by all preceding technical chapters of this Environmental Statement (ES), together with qualitative judgements and, where appropriate, quantitative assessments provided by each of the technical contributors to the ES.

ASSESSMENT METHODOLOGY

- 18.3 As stated within Chapter 2: EIA Methodology, this chapter considers two types of cumulative effect:
- **Type 1 Effects:** Combined effects of individual effects arising from the Development Scenarios in isolation, e.g. a combination of noise, dust and visual effects; and
 - **Type 2 Effects:** Effects from each of the Development Scenarios and other schemes which individually might be insignificant, but when considered together could result in a significant cumulative effect.
- 18.4 Type 1 effects have been assessed using the findings of all technical assessments included within this ES, together with professional judgement.
- 18.5 The methodology for the assessment of Type 2 effects is set out in Chapter 2: EIA Methodology and has been agreed as part of the EIA Scoping process with Westminster City Council (WCC). However, to summarise, a set of specific criteria have been set in order to determine the 'other' schemes to be included within the assessment of cumulative effects. The criteria are:
- Schemes in close proximity to the application sites, which have been granted planning permission, where there is a net change in floorspace of more than 10,000m² and which are considered to have the potential to result in some cumulative effects;
 - Schemes in close proximity to the application sites, which have been granted planning permission, but fall below the floorspace threshold stated above. However, these schemes have been considered where their proximity to the application sites is such that the potential for cumulative effects with any of the Development Scenarios cannot be ruled out; and
 - Other reasonably foreseeable but unconsented schemes in the area, including consideration of future proposals which would respond to existing planning briefs relevant to the application sites and their surrounds together with other schemes in the vicinity of the application sites which are currently proposed by the Applicant. It should be acknowledged that due to a lack of technical design detail regarding some of these schemes, the cumulative assessment of such schemes has been based upon professional judgement.
- 18.6 The above criteria have been applied to consented schemes for which construction has not yet commenced, and also to any consented schemes currently under construction.
- 18.7 An information search carried out by the project planning consultants (Gerald Eve) and agreed with WCC's Planning and City Development department established a total of four consented schemes, three unconsented schemes, two further unconsented schemes proposed by the Applicant and, one scheme arising from relevant planning briefs. These schemes have therefore been included within the assessment of Type 2 cumulative effects. Summary descriptions of

these schemes are provided below which should be read in conjunction with Figures 18.1. Full details are provided in Technical Appendix 18a.

Consented Schemes

Abford House: Abford House and 333 Vauxhall Bridge Road

18.8 As illustrated on Figure 18.1, this scheme is located approximately 60m to the south of the site of application 2. Bounded by Wilton Road to the west and north, Vauxhall Bridge Road to the east and existing buildings to the south, consent has been granted for:

- Construction of a single building of up to 10 storeys;
- A total of 12,460m² Gross External Area (GEA), comprising:
 - 10,555m² GEA of office space (Class B1);
 - 1,905m² GEA of retail and catering floorspace (Class A).

Wilton Plaza: 18-26 Gillingham Street, 1-6 Gillingham Mews and 119-128 Wilton Road

18.9 Located approximately 270m south of the application sites, Wilton Plaza is bound by Wilton Road to the east, Gillingham Street to the south, Gillingham Mews to the west and existing buildings to the north. Planning consent has been granted for:

- Two buildings ranging in height from nine to eleven storeys. The tallest building element would be located along Wilton Road;
- A total of 17,864m² GEA, comprising:
 - 10,321m² GEA of residential (Class C3) accommodation;
 - 4,823m² GEA of student (Class C2) accommodation;
 - 717m² GEA of retail and catering floorspace (Class A); and
 - 2,003m² GEA of car parking and other ancillary uses.

9 Howick Place

18.10 The consented proposals for 9 Howick Place are located approximately 250m to the east of the application sites. The planning consent relates to the modification of the existing building including installation of an additional glazed storey and the addition of plant to the roof.

18.11 On completion, 9 Howick Place would provide:

- A total of 13,215m² GEA of floorspace. This would comprise:
 - 6,003m² GEA dedicated to a design and arts centre;
 - 3,168m² GEA of office (Class B1) accommodation;
 - 3,168m² GEA of residential accommodation (Class C3);
 - 492m² GEA of retail (Class A1) floorspace; and
 - 328m² GEA of accommodation to be used by the Royal Mail Collection Service.

Pimlico School, Lupus Street

18.12 WCC granted full planning consent in December 2007 for the demolition and reconstruction of Pimlico School, approximately 1km to the southeast of the application sites. This consent allows for the provision of a new four-storey school building for approximately 1,250 pupils, a community library and a centre for Westminster Adult Education Services (WAES). Car parking would be provided for 23 cars.

18.13 On completion, the proposals would provide a total of 12,845m² GEA of floorspace, including:

- 11,295m² GEA of school facilities; and
- 1,550m² GEA of floorspace dedicated to the library and WAES.

Unconsented Schemes

Victoria Station Upgrade

- 18.14 As noted in Chapter 1: Introduction and elsewhere in this ES, the Transport for London (TfL) and London Underground Limited (LUL) proposals for the Victoria Station Upgrade (VSU) include:
- Creation of a new 'Northern Ticket Hall' to the north of Victoria Street, beneath Bressenden Place accessed through a new entrance structure on the east side of Bressenden Place and Victoria Street adjacent to the Cardinal Place development;
 - Extension of the existing 'Southern Ticket Hall' beneath Terminus Place;
 - Provision of a new interchange tunnel between the Northern and Southern Ticket Halls (to be known as the Paid Access Link (PAL)); and
 - Enhancement of pedestrian accessibility to, from and through the public transport infrastructure via the provision of new escalators and lifts.
- 18.15 A Transport & Works Act Order (TWAO) application for VSU was submitted to WCC in November 2007, with a Public Inquiry scheduled to commence on 28 October 2008. LUL and TfL submitted changes to the TWAO application on 5 August 2008, with a Supplementary Environmental Statement (SES). This information, together with the assumption made in Chapter 2: EIA Methodology (i.e. that the Applicant's proposed modified form for VSU would be implemented) has been considered in relation to VSU for this cumulative assessment.

Chelsea Barracks

- 18.16 Located approximately 1km to the southwest of the application sites, this proposed scheme would involve the demolition of the existing former barracks buildings and their redevelopment for mixed use purposes (in buildings of between 5 and 13 storeys) comprising:
- 638 residential units (to include 319 units of affordable housing. Of these, 221 units are to be social rented and 98 intermediate housing. The tenure split is therefore 50% private, 35% social rented and 15% intermediate);
 - 164,643m² GEA of residential use (Class C3);
 - 16,003m² GEA of hotel use (Class C1);
 - 7,386m² GEA of sports centre use (Class D2);
 - 1,911m² GEA of flexible retail use (Class A1/A2/A3) and/or Class D1;
 - 1,717m² GEA of community hall use (Class D1);
 - 271m² GEA of retail use (Class A3);
 - 918m² GEA of ancillary management/support offices use; and
 - 40,373m² GEA of ancillary parking, circulation, servicing and shared plant.

Victoria Palace Theatre (126 Victoria Street)

- 18.17 The Grade II listed Victoria Palace Theatre is situated to the immediate south of the application sites, on the north side of Victoria Street. Its redevelopment would see the following alterations:
- Extension and alteration of the front of house areas;
 - A seven storey extension (including a new parapet level) and alteration to the flytower, in the north; and
 - A new seating layout within the auditorium.
- 18.18 The following two schemes are considered to be reasonably foreseeable as they are proposed by the same Applicant as the VT12 proposals. Therefore, where appropriate, they have both been considered within this assessment.

Selborne House, 54-60 Victoria Street

- 18.19 This scheme, also proposed by the Applicant, would be located approximately 350m to the east of the application sites and would involve the demolition of the existing office building of Selborne House together with its replacement by new office and retail accommodation. Selborne House is bounded by Spenser Street to the north, Buckingham Gate to the east, Victoria Street to the south and Westminster City Hall to the west. It is currently 10 storeys high with a maximum height of approximately 46m Above Ordnance Datum (AOD). It accommodates 1,135 staff within 16,249m² GEA of office space and incorporates 98 car parking spaces.
- 18.20 The proposed redevelopment would create a new 12 level building with:
- Office use (Class B1);
 - Retail use (Classes A1 and A3);
 - Flexible office/retail use (Classes B1, A1 and A3); and
 - 10 car parking spaces, 18 motor cycle spaces and 326 cycle spaces.
- 18.21 Further design details include:
- A roof profile slope from east to west;
 - The highest roof level at 64.0m Above Ordnance Datum (AOD) at the corner of Victoria Street and Buckingham Gate; and
 - The lowest roof level lies at 51.4m AOD adjacent to Westminster City Hall.
- 18.22 The Selborne House development forms part of the overall development anticipated as part of the Victoria Street, Buckingham Gate and Palace Street Site draft Planning Brief (refer to further details below).

Wellington House, 67–73 Buckingham Gate

- 18.23 The existing Wellington House is located approximately 325m northeast of the application sites. The building provides office accommodation over nine floors, and was previously occupied by the Metropolitan Police Authority. It is now vacant. The existing building comprises 7,496m² GEA, including a split level basement. Plant is currently housed at roof level and eleven car parking spaces are provided within the basement level.
- 18.24 The site is triangular shaped and is bounded by Petty France to the north, Buckingham Gate to the southwest and 59 Petty France and 1 Vandon Street to the south-east.
- 18.25 The proposal is for a comprehensive development comprising the demolition of the existing building and redevelopment of the site to provide a new building comprising:
- A retail unit (Classes A1/A2) at ground floor level fronting Buckingham Gate and Petty France;
 - Eight studio apartments, 14 one-bedroom apartments, 19 two-bedroom apartments, 19 three-bedroom apartments and two four-bedroom apartments;
 - Residents' gym, general purpose/concierge space and an entertainment suite (for residents' use only); and
 - 19 car parking spaces and 62 cycle spaces at basement level, with access via Petty France.

Currently Unconsented Schemes Arising from Relevant Planning Briefs

- 18.26 The demolition and construction timescales of each of the four Development Scenarios will range from approximately five years for Development Scenario 4 to seven years for Development Scenarios 1 and 2. WCC have therefore requested that this cumulative effects assessment also gives consideration to any currently unconsented but reasonably foreseeable future development proposals which could respond to relevant planning briefs in the vicinity of the application sites. The only relevant planning brief in the area is as follows:

Victoria Street, Buckingham Gate and Palace Street Site (draft Planning Brief)

- 18.27 This site lies is approximately 200m to the east of the application sites. The draft Planning Brief (Ref. 18.1) sets out a vision for the comprehensive redevelopment of this area of Victoria, aiming to incorporate synergies with any future development around Victoria Station. The draft Planning Brief outlines a number of proposed uses within the site, including:
- Offices;
 - Residences (including affordable housing);
 - Open space and play space;
 - Retail and entertainment facilities;
 - Hotels;
 - Social and community facilities;
 - Education facilities; and
 - Leisure activities.
- 18.28 The draft Brief was published for public consultation in March 2007. As yet, however, it has not been adopted by WCC.

TYPE 1 EFFECTS

- 18.29 The combined effects of different types of effects, or effect interactions, from each of the four Development Scenarios on particular receptors have only been considered during the demolition and construction works and not once each Development Scenario is completed. This is because it is considered that the greatest likelihood of effect interaction, and hence significant effects, would occur during the demolition and construction works, not once the consented application(s) (resulting in any one of the four Development Scenarios) are complete and occupied. Indeed, demolition and construction effects can often be more adverse in nature (albeit on a temporary basis) than effects resulting from completed developments. This has been exemplified in Chapter 10: Air Quality and Chapter 11: Noise and Vibration.
- 18.30 In consideration of the comprehensive range of environmental management controls and other mitigation measures committed to by the Applicant specific to the demolition and construction works of all potential Development Scenarios, effect interactions are considered only for the anticipated residual effects of the Development Scenarios. As such, the established negligible demolition and construction residual effects on waste (Chapter 7: Waste Management), transport and access (refer to Chapter 9: Transport and Access), vibration (refer to Chapter 11: Noise and Vibration), archaeology (refer to Chapter 12: Archaeology), water resources (refer to Chapter 14: Surface Water Drainage and Flood Risk), wind conditions (refer to Chapter 15: Wind) and radio and terrestrial television reception (refer to chapter 17: Radio and Television Reception) have not been considered.
- 18.31 In addition to the above, socio-economic construction effects have not been included in the assessment of Type 1 effects. This is because the effects of additional employment and local spending during the demolition and construction works would not have the potential to interact with any other identified environmental effect. Furthermore, although residual contamination risks of minor significance have been identified in relation to unforeseen accidental spillages, any such effects would be localised and site-specific. As such, they would not have the potential to interact with other effects and are therefore not considered within the assessment of Type 1 effects.

- 18.32 Consequently, the main effect interactions during the demolition and construction works are likely to result from:
- **Temporary, short to medium-term** effects of **adverse** significance on townscape, conservation and visual receptors;
 - **Temporary, short to medium-term, local** effects of **minor to moderate adverse** significance in relation to noise generated from demolition and construction activities (refer to Chapter 11: Noise and Vibration);
 - **Temporary, short to medium-term, local** effects of **minor adverse** significance in relation to dust emissions (refer to Chapter 10: Air Quality);
 - **Temporary, short to medium-term, local** effects of **minor beneficial** significance in relation to daylight, sunlight and overshadowing (refer to Chapter 16: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare); and
 - **Temporary, short to medium-term, local** effects of **minor beneficial** significance in relation to satellite television reception (refer to Chapter 17: Radio and Television Reception).
- 18.33 The potential Type 1 effects for various sensitive receptors (identified within Chapter 3: Existing Land Uses and Activities and illustrated within Figures 3.2 to 3.4) in the vicinity of the application sites are listed in Table 18.1. This table also identifies the anticipated effect interactions during each of the main phases of demolition and construction. In accordance with Chapter 6: Demolition and Construction, the demolition and construction activities have been divided into 'Timeslices' with ten Timeslices anticipated for Development Scenarios 1, 2 and 3, and seven Timeslices for Development Scenario 4. Detailed descriptions of the activities undertaken within each Timeslice for each Development Scenario are provided within Chapter 6: Demolition and Construction.
- 18.34 Whilst the proposed demolition and construction activities and the phasing of the activities appear to be generally similar for each Development Scenario (notwithstanding the obvious differences in terms of the actual numbers of buildings to be demolished and constructed), it should be noted that there are subtle differences between all four Development Scenarios. It should also be noted that while the Timeslices follow the general sequence of demolition, construction of substructure, construction of superstructure and fit out, in certain instances, the erection of the superstructure may occur in one area of the application sites while the demolition of an existing building is occurring elsewhere. Further details can be obtained by reference to Chapter 6: Demolition and Construction.
- 18.35 To avoid repetition within Table 18.1, the potential sensitive receptors have been grouped together according to land use. It is anticipated that the proximity of the majority of receptors to the application sites is such that effect interactions would be similar for most sensitive receptors within each land use type. An exception is the locations of the identified residential receptors where those in closest proximity to the application sites would be likely to experience a greater magnitude of cumulative effects. This is reflected in Table 18.1. Bold text in Table 18.1 denotes a beneficial effect.

Table 18.1: Potential Type 1 Effect Interactions During Demolition and Construction of each of the Four Development Scenarios

Sensitive Receptor / Land Use	Development Scenario	Timeslice									
		Timeslice 1 (Jun 2010–Feb 2011)	Timeslice 2 (Mar 2011–July 2011)	Timeslice 3 (Aug 2011–Feb 2012)	Timeslice 4 (Mar 2012–July 2012)	Timeslice 5 (Aug 2012–Jun 2013)	Timeslice 6 (July 2013–Jun 2014)	Timeslice 7 (July 2014–Apr 2015)* ¹	Timeslice 8 (May 2015–Feb 2016)	Timeslice 9 (March 2016–Aug 2016)	Timeslice 10 (Sep 2016–Feb 2017)* ²
Residential occupants of surrounding properties to the south and southeast of the application sites, including properties on Victoria Street, Vauxhall Bridge Road and Carlisle Place.	1	TCV, N, D, DSO	TCV, N, D, DSO	TCV, N, D	TCV, N, DSO	TCV, DSO	TCV, N, D, DSO	TCV, N, D, DSO	TCV, DSO , N	TCV, DSO	TCV, DSO
	2	TCV, N, D, DSO	TCV, N, D, DSO	TCV, N, D	TCV, N, DSO	TCV, DSO	TCV, N, D, DSO	TCV, N, D, DSO	TCV, DSO , N	TCV, DSO	TCV, DSO
	3	TCV, N, D, DSO	TCV, N, D, DSO	TCV, N, D	TCV, N, DSO	TCV, DSO	TCV, DSO	TCV, DSO	TCV, DSO	TCV, DSO	TCV, DSO
	4	TCV, N, D, DSO	TCV, N, D, DSO	TCV, N, D	TCV, N, DSO	TCV, DSO	TCV, DSO	TCV, DSO	Not applicable		
Residential occupants of Roebuck House to the northeast of the application sites.	1	TCV	TCV	TCV	TCV	TCV	TCV	TCV	TCV	TCV	TCV
	2	TCV	TCV	TCV	TCV	TCV	TCV	TCV	TCV	TCV	TCV
	3	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)
	4	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)	(TCV)	Not applicable		
Residential occupants of surrounding properties to the west of the application sites, including properties on Victoria Square, and Buckingham Palace Road.	1	TCV, N, D, DSO , TV	TCV, N, D, DSO , TV	TCV, N, D, DSO , TV	TCV, N, DSO , TV	TCV, N, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV
	2	TCV, N, D, DSO , TV	TCV, N, D, DSO , TV	TCV, N, D, DSO , TV	TCV, N, DSO , TV	TCV, N, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV
	3	TCV, N, D, DSO , TV	TCV, N, D, DSO , TV	TCV, N, D, DSO , TV	TCV, N, DSO , TV	TCV, N, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	TCV, DSO , TV
	4	TCV, N, D, DSO , TV	TCV, N, D, DSO , TV	TCV, N, D, DSO , TV	TCV, N, DSO , TV	TCV, N, DSO , TV	TCV, DSO , TV	TCV, DSO , TV	Not applicable		

Victoria Transport Interchange 2

Cumulative Effects

Sensitive Receptor / Land Use	Development Scenario	Timeslice									
		Timeslice 1 (Jun 2010–Feb 2011)	Timeslice 2 (Mar 2011–July 2011)	Timeslice 3 (Aug 2011–Feb 2012)	Timeslice 4 (Mar 2012–July 2012)	Timeslice 5 (Aug 2012–Jun 2013)	Timeslice 6 (July 2013–Jun 2014)	Timeslice 7 (July 2014–Apr 2015)* ¹	Timeslice 8 (May 2015–Feb 2016)	Timeslice 9 (March 2016–Aug 2016)	Timeslice 10 (Sep 2016–Feb 2017)* ²
Future residential occupants of Building 5 within the site of application 1 (Development Scenarios 1, 2, 3 and 4).	1	x	x	x	x	x	x	(N), DSO	(N), DSO	DSO	DSO
	2	x	x	x	x	x	x	(N), DSO	(N), DSO	DSO	DSO
	3	x	x	x	x	x	x	(N), DSO	DSO	DSO	DSO
	4	x	x	x	x	x	x	DSO	Not applicable		
Future residential occupants of Building 7b/c within the site of application 2 (Development Scenarios 1 and 2).	1	x	x	x	x	x	x	x	x	x	DSO
	2	x	x	x	x	x	x	x	x	x	DSO
	3	Not applicable									
	4	Not applicable									
Future and existing users of the Grade II listed Victoria Palace Theatre and the Duke of York Public House.	1	N, D	N, D	N, D	(N)	(N)	N, D	N	N, D	(N)	x
	2	N, D	N, D	N, D	(N)	(N)	N, D	N	N, D	(N)	x
	3	N, D	N, D	N, D	(N)	(N)	N, D	N	(N)	(N)	x
	4	N, D	N, D	N, D	(N)	(N)	(N)	x	Not applicable		
Listed Buildings surrounding of the application sites, including; Grade II Victoria Palace Theatre, Grade II Little Ben Clock, Grade I Royal Mews, Grade II* Apollo Victoria Theatre, Grade II Victoria Station, and Grade II* Grosvenor Hotel.	1	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	2	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	3	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	4	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, (N)	TCV, DSO, (N)	TCV, DSO	Not applicable		

Sensitive Receptor / Land Use	Development Scenario	Timeslice										
		Timeslice 1 (Jun 2010–Feb 2011)	Timeslice 2 (Mar 2011–July 2011)	Timeslice 3 (Aug 2011–Feb 2012)	Timeslice 4 (Mar 2012–July 2012)	Timeslice 5 (Aug 2012–Jun 2013)	Timeslice 6 (July 2013–Jun 2014)	Timeslice 7 (July 2014–Apr 2015)* ¹	Timeslice 8 (May 2015–Feb 2016)	Timeslice 9 (March 2016–Aug 2016)	Timeslice 10 (Sep 2016–Feb 2017)* ²	
Conservation Areas in proximity of the application sites, including: Westminster Cathedral Conservation Area, Royal Parks Conservation Area, Grosvenor Gardens Conservation Area, Birdcage Walk Conservation Area, Belgravia Conservation Area, Pimlico Conservations Area and Vincent Square Conservation Area.	1	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	2	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	3	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	4	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, (N)	TCV, DSO, (N)	TCV, DSO	Not applicable			
Existing and future pedestrians and road users.	1	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	2	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	3	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO, N	TCV, DSO (N)	TCV, DSO
	4	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N, D	TCV, DSO, N	TCV, DSO, (N)	TCV, DSO, (N)	TCV, DSO	Not applicable.			

Note: *1 Development Scenario 4 complete in December 2014
 *2 Development Scenario 3 complete in November 2016
 TCV Adverse Townscape, Conservation and/or Visual effects
 D Adverse Dust effects
 N Adverse Noise effects

DSO Beneficial Daylight, Sunlight and/or Overshadowing effects
 TV Beneficial Satellite Television Reception effects
 () very minor effects
 * no effects

TYPE 2 EFFECTS

- 18.36 As for Type 1 effects, only residual Type 2 effects (i.e. assuming mitigation measures have been implemented) have been considered. In all cases it is assumed that the other schemes considered in the cumulative assessment would have their own site-specific Environmental Management Plans (EMPs) in order to manage and minimise the potential adverse environmental effects of demolition and construction works (refer to Chapter 6: Demolition and Construction).
- 18.37 The construction of Abford House is largely complete and therefore any construction related works for the Abford House scheme are expected to be complete prior to commencing the site works for any of the four Development Scenarios (planned for June 2010). This scheme is therefore not considered when assessing the cumulative effects during demolition and construction.
- 18.38 The construction programme within the August 2008 VSU Supplementary Environmental Statement (ES) indicates a demolition and construction timeframe from December 2009 to August 2013. The indicative construction programme for the Selborne House scheme indicates construction works commencing in 2009 and be of approximately three years duration. The indicative construction programme for Wellington House anticipates demolition and construction works from late 2008 to December 2011. Therefore, the construction works in relation to these schemes are anticipated to overlap with the demolition and construction programmes arising from any of the four Development Scenarios.
- 18.39 The demolition and construction works in relation to Chelsea Barracks scheme are indicated to last for a period of six years. Whilst the date for commencement of these is not clear, given the anticipated duration of the works it is also anticipated that they would overlap with the demolition and construction programmes arising from any of the four Development Scenarios.
- 18.40 With regard to the other schemes being considered within this cumulative assessment there is currently no available information regarding the construction programming of these schemes. As such, it cannot be confirmed whether the demolition and construction works would overlap with any of the four Development Scenarios or not. However, the cumulative assessment of these schemes considers the potential effects of them overlapping with any of the four Development Scenarios as a worst case.
- 18.41 Information regarding the VSU scheme has been primarily gathered from the ES submitted with the planning application in November 2007 and the Supplementary ES submitted in August 2008. The physical compatibility, in material terms, of the VTI 2 proposals and the VSU scheme is important to the Applicant, as it is to TfL/LUL. It is appreciated that it might be appropriate for adjustments to be made to the Applicant's applications and/or the VSU scheme, for example in response to points arising from the public consultation exercise or for engineering reasons. In such circumstances, the Applicant would work with TfL/LUL with a view to reconciling the two schemes in the interests of delivering both. In any event, the Applicant would continue discussions with TfL/LUL to ensure that the delivery of the VSU scheme is not compromised.
- 18.42 In view of the above, discussions regarding the VSU proposals have continued with TfL/LUL throughout the VTI 2 design process. As discussed elsewhere in this ES, the close proximity of the two schemes means that, in the event of the VSU proposals gaining consent and that development proceeding, the timing of the delivery of parts of the overall VTI 2 proposals would be likely to be affected, particularly Buildings 6a and 7b/c as these above-ground structures would sit above the proposed below-ground VSU elements. As such, although the Applicant fully intends to deliver Development Scenario 1, it is recognised that the VSU proposals have the potential to affect the timing and delivery of parts of Development Scenario 1. Consequently, Development Scenarios 2, 3 and 4 are contemplated as viable alternatives in the event that Development Scenario 1 cannot be fully implemented without delays caused by VSU.

- 18.43 Despite the above, for completeness and in order to account for every possible outcome, each of the four Development Scenarios has been considered in the assessment of Type 2 cumulative effects.

Waste Management

Demolition and Construction

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.44 Site Waste Management Plans (SWMPs) are now mandatory for all construction projects over £250,000. Therefore, it is assumed that SWMPs would be implemented on all sites to facilitate the reuse and recycling of waste. As such, a significant proportion of inert demolition materials would be diverted from landfill in accordance with the waste hierarchy. Any hazardous waste would be disposed of in accordance with the Hazardous Waste Regulations. The cumulative effect of each of the four Development Scenarios together with the range of other consented and unconsented but reasonably foreseeable schemes would therefore be considered to be **negligible**.

Completed Development

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.45 Although each of the Development Scenarios in conjunction with the range of other schemes (consented and unconsented) included in this cumulative assessment would increase waste generation within WCC, it is assumed that (similar to the four Development Scenarios) the other schemes would be designed to include sufficient storage to enable segregation of recyclable and general waste and therefore meet national waste targets.
- 18.46 It is also anticipated that WCC would ensure sufficient waste management facilities are available within the other schemes to recycle or dispose of municipal waste. Consequently the cumulative effects in relation to waste are considered to be **negligible**.

Socio-Economics

Demolition and Construction

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.47 In respect of additional jobs generated through the demolition and construction works, all of the consented schemes considered within the cumulative assessment would bring additional jobs and spending to the local and regional area. These effects cannot be readily quantified on the basis of the information provided for each cumulative scheme. However, all would provide additional construction jobs to those predicted for Development Scenarios 1, 2, 3 and 4.
- 18.48 The consented cumulative schemes are relatively small compared to each of the Development Scenarios. Furthermore, not all of the schemes would involve demolition as, for example, the 9 Howick Place scheme would involve the redevelopment of existing buildings. Overall, it is considered that the combined effects of construction jobs and spending from any of the four Development Scenarios together with the other consented cumulative schemes would be **short to medium term, local to regional effects of minor beneficial** significance.
- 18.49 The consented cumulative schemes would potentially involve temporary job losses during demolition and construction which would be compensated for by subsequent job creation on completion. Due to the differences in demolition and construction timescales within each cumulative scheme, some job generation may take place before other job losses are incurred. Taking into account the phasing of each of the Development Scenarios and the different phasing timescales within each of the different cumulative schemes, the cumulative effects are considered to be of **negligible** significance.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.50 A number of the unconsented cumulative schemes would be relatively large, particularly the Chelsea Barracks and VSU schemes. The combined construction jobs of any of the four Development Scenarios plus consented and unconsented cumulative schemes are therefore considered to represent **short to medium term, local to regional** effects of **substantial beneficial** significance.
- 18.51 Similarly to as noted above for the consented schemes, the consented and unconsented schemes considered together would potentially involve temporary job losses during demolition and construction which would be compensated for by subsequent job creation on completion.
- 18.52 Again, due to the likely differences in demolition and construction timescales within each cumulative scheme, some job generation may take place before other job losses are incurred elsewhere. Taking into account the phasing of each of the Development Scenarios and the different phasing timescales within each of the different consented and unconsented cumulative schemes (in so far as these are currently known), the cumulative effects are considered to be of **negligible** significance.

Completed Development***Development Scenario 1, 2, 3 and 4 plus Consented Schemes***Employment, Productivity, Local Spend, Multipliers and Housing

- 18.53 An analysis of the additional jobs created by the consented cumulative schemes **showed a** net loss of 89 jobs. This would be due to the loss of the Royal Mail Sorting Office as part of the 9 Howick Place scheme, as all the other schemes would provide a net increase in jobs.
- 18.54 Based upon the information available, it is estimated that the combination of each of the four Development Scenarios plus the consented schemes on employment would result in:
- For Development Scenario 1, a net increase of 2,686 direct jobs, along with a total of 1,343 indirect jobs at the regional level, giving a total employment effect of 4,028 jobs;
 - For Development Scenario 2, a net increase of 1,877 direct jobs, along with a total of 938 indirect jobs at the regional level, giving a total employment effect of 2,815 jobs;
 - For Development Scenario 3, a net increase of 2,601 direct jobs, along with a total of 1,300 indirect jobs at the regional level, giving a total employment effect of 3,901 jobs; and
 - For Development Scenario 4, a net increase of 1,800 direct jobs, along with a total of 900 indirect jobs at the regional level, giving a total employment effect of 2,699 jobs.
- 18.55 The proposed office and retail jobs in each of the consented cumulative schemes considered would lead to productivity benefits. The increases in these jobs would complement and enhance the productivity benefits identified for each of the four Development Scenarios (refer to Chapter 8: Socio-Economics).
- 18.56 Two of the four of the consented cumulative schemes assessed would involve an increase in residential provision (i.e. 9 Howick Place and Wilton Plaza). These schemes would lead to a net increase of approximately 374 residents, giving a total increase of 632 residents overall for Development Scenarios 1 and 2 and an increase of 563 for Development Scenarios 3 and 4. The additional dwellings would contribute to meeting GLA's housing targets.
- 18.57 The increased numbers of residents predicted for the consented cumulative schemes would lead to an associated increase in local spending within Westminster. In combination with each of the Development Scenarios, and applying multipliers and leakage effects where appropriate, it is estimated that within Westminster there would be:

- For Development Scenario 1, an additional local spend of £5.1 million from additional residents and an additional local spend of £1.9 million from employees;
- For Development Scenario 2, an additional local spend of £5.1 million from additional residents and an additional local spend of £1.4 million from employees;
- For Development Scenario 3, an additional local spend of £4.6 million from additional residents and an additional local spend of £1.9 million from employees; and
- For Development Scenario 4, an additional local spend of £4.6 million from additional residents and an additional local spend of £1.3 million from employees.

18.58 The combined effects of job creation, increased local spending, productivity benefits and increased housing provision for each of the four Development Scenarios in combination with the consented cumulative schemes are considered to be **long-term, local to national** effects of **substantial beneficial** significance.

Education

18.59 The Wilton Plaza and 9 Howick Place schemes would create additional demand for local schools due to the residential element in each of these schemes. Calculations estimate that in combination with the consented cumulative schemes the additional need for education provision would be:

- For Development Scenarios 1 and 2, up to 26 children for fully funded early years nursery school places and up to 41 for primary school places; and
- For Development Scenarios 3 and 4, up to 19 children for fully funded early years nursery school places and up to 29 for primary school places

18.60 Contrasting this demand with the identified existing provision within Westminster (refer to Chapter 8: Socio-Economics) and bearing in mind that the effect would be phased over a long period, together with WCC's time to adjust to the increased population, it is considered that the overall effect of the consented cumulative schemes together with any of the four Development Scenarios would be of **negligible** significance.

18.61 Furthermore, in respect of secondary education provision, the 'Building Schools for the Future' programme would provide some £200 million of capital funding to Westminster schools over the coming years, and conditional planning consent for the redevelopment of the Pimlico School has been granted as part of this programme. It is therefore considered that the effect of the consented cumulative schemes together with any of the four Development Scenarios on secondary education provision would be of **negligible** significance.

Health Care

18.62 In combination with the consented cumulative schemes, additional demand for GPs based on average England list sizes would be:

- 0.4 GPs for Development Scenarios 1 and 2; and
- 0.3 GPs for Development Scenarios 3 and 4.

18.63 The increases in demand would, however, be phased-in over a number of years and would give WCC time to adjust to the increased population. Furthermore, financial contributions to cover these small increases in health-need may be secured through Section 106 agreements between WCC and the other schemes' applicants, as is intended for each of the four Development Scenarios (refer to Chapter 8: Socio-Economics). The effect of consented cumulative schemes together with any of the four Development Scenarios on the additional need for GPs is therefore considered to be of **negligible** significance.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.64 The cumulative effects of the completed consented and unconsented schemes together with any of the four Development Scenarios would vary according to both the size and use of commercial floorspace and the number of residential units, in both the existing buildings and the proposed developments. Limited information is currently available in respect of some of these schemes and certain assumptions have therefore been made in assessing cumulative effects.
- 18.65 In respect of the Victoria Street, Buckingham Gate and Palace Street Planning Brief site, no attempt to quantify the benefits has been made due to a lack of finalised information. However, qualitative assessments based on the aspirations set out in the Planning Brief have been made where appropriate.
- 18.66 Information regarding the VSU and Selborne House schemes has been sourced from their respective Environmental Statements (Refs 18.2 and 18.3) and has been included in the calculations where appropriate. It should be noted that a number of buildings which would be demolished under the VSU scheme would also be demolished under Development Scenarios 1 and 2 (e.g. Elliot House, 9-11 Bressenden Place). Therefore, job losses may have been double counted in some instances, thus providing slight underestimates in stated overall employment gains.

Employment, Productivity, Local Spend, Multipliers and Housing

- 18.67 An analysis of the additional jobs created by the consented and unconsented schemes shows a net increase of 1,279 jobs. These additional jobs are largely due to the Applicant's unconsented Selborne House scheme. Based upon the information available, it is estimated that the combination of each of the four Development Scenarios plus the consented and unconsented schemes on employment would result in:
- For Development Scenario 1, a net increase of 4,054 direct jobs, along with a total of 2,027 indirect jobs at the regional level, giving a total employment effect of 6,081 jobs;
 - For Development Scenario 2, a net increase of 3,245 direct jobs, along with a total of 1,622 indirect jobs at the regional level, giving a total employment effect of 4,867 jobs;
 - For Development Scenario 3, a net increase of 3,969 direct jobs, along with a total of 1,984 indirect jobs at the regional level, giving a total employment effect of 5,953 jobs; and
 - For Development Scenario 4, a net increase of 3,168 direct jobs, along with a total of 1,584 indirect jobs at the regional level, giving a total employment effect of 4,751 jobs.
- 18.68 Furthermore, there is likely to be growth in employment from the redevelopment of the Victoria Street, Buckingham Gate and Palace Street Planning Brief site, which is designated as suitable for office renewal and growth. Any consequent development would be likely to involve an increase in the amount of office and retail employment land, contributing to increased employment and productivity in the Victoria area.
- 18.69 Several of the assessed consented and unconsented cumulative schemes involve an increase in residential provision. These schemes would lead to a net increase of approximately 1,865 residents, giving a total increase of 2,123 residents overall for Development Scenarios 1 and 2 and an increase of 2,054 for Development Scenarios 3 and 4. The additional dwellings would contribute to meeting the housing targets set out by the GLA.
- 18.70 The increased residents predicted for the consented and unconsented schemes would lead to an associated increase in local spending within Westminster. In combination with each of the Development Scenarios, and applying multipliers and leakage effects where appropriate, it is estimated that within Westminster there would be:
- For Development Scenario 1, an additional local spend of £17.2 million from additional residents and an additional local spend of £2.9 million from employees;
 - For Development Scenario 2, an additional local spend of £17.2 million from additional residents and an additional local spend of £2.4 million from employees;

- For Development Scenario 3, an additional local spend of £16.7 million from additional residents and an additional local spend of £2.9 million from employees; and
- For Development Scenario 4, an additional local spend of £16.7 million from additional residents and an additional local spend of £2.3 million from employees.

18.71 The combined effects of job creation, increased local spending, productivity benefits and increased housing provision, considering consented and unconsented cumulative schemes, are therefore predicted to be **long-term, local to national** effects of **substantial beneficial** significance for all four Development Scenarios.

Education

18.72 The consented and unconsented cumulative schemes would create additional demand for local schools due to the residential element in each of the schemes. Calculations estimate that in combination with the consented and unconsented cumulative schemes the additional need for education provision would be:

- For Development Scenarios 1 and 2, up to 121 children for fully funded early years nursery school places and up to 168 for primary school places; and
- For Development Scenarios 3 and 4, up to 114 children for fully funded early years nursery school places and up to 156 for primary school places

A substantial amount of this demand would arise from the currently unconsented Chelsea Barracks development.

18.73 Again, any effects would be phase over a long period and, therefore WCC would have time to adjust to the increased population. Taking into account predicted educational demand with the identified existing provision within Westminster (refer to Chapter 8: Socio-Economics), it is considered that the overall effect of the consented and unconsented cumulative schemes together with any of the four Development Scenarios would be of **negligible** significance.

18.74 Furthermore, as noted above, in respect of secondary education provision, the 'Building Schools for the Future' programme would provide some £200 million of capital funding to Westminster schools over the coming years, and conditional planning consent for the redevelopment of the Pimlico School has been granted as part of this programme. It is therefore considered that the effect of the consented and unconsented cumulative schemes together with any of the four Development Scenarios on secondary education provision would be of **negligible** significance.

Health Care

18.75 In combination with the consented and unconsented cumulative schemes, additional demand for GPs based on average England list sizes would be 1.3 GPs for all four Development Scenarios. However, as previously noted, the increases in demand would be phased in over a number of years and would give WCC time to adjust to the increased population. Furthermore, financial contributions to cover these small increases in health-need may be secured through Section 106 agreements between WCC and the other schemes' applicants, as is intended for each of the four Development Scenarios (refer to Chapter 8: Socio-Economics).

18.76 The effect of consented and unconsented cumulative schemes together with any of the four Development Scenarios on the additional need for GPs is therefore considered to be of **negligible** significance.

Townscape, Conservation and Visual

Demolition and Construction

- 18.77 During demolition and construction, the potential interaction of the consented Development Scenario with 9 Howick Place, VSU, or other nearby proposals, is unlikely to have a substantial adverse cumulative effect on townscape, built heritage and views. Any effects experienced would be temporary.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.78 9 Howick Place scheme is located approximately 300m east of the three application sites. The proposed buildings would not be significantly higher than their surroundings. This development would not therefore be visible in any of the sensitive views included within the visual assessment. Thus, this scheme would not create any townscape, conservation and visual cumulative effects with the four Development Scenarios. The Pimlico School scheme, owing to its relatively low height in relation to its surroundings, and its distance of 1km southeast from the three application sites, is visually irrelevant and would not result in any significant cumulative effects with any of the four Development Scenarios.
- 18.79 The proposed Abford House would be located immediately to the south of the three application sites. This scheme is largely constructed and therefore has been included within the existing/baseline view images.
- 18.80 Wilton Plaza, the Victoria Palace Theatre extension, Wellington House, Selborne House and Chelsea Barracks appear in connection with a number of townscape and local views and have been taken into account within the Townscape, Conservation and Visual Assessment (refer to Volume 2 of this Environmental Statement).
- 18.81 These, however, have a minimal effect, and do not contribute to a cumulative effect of any substance. Therefore, the cumulative effects on townscape, conservation and visual assessment are considered to be the same as that identified within the Volume 2 of this Environmental Statement.
- 18.82 The VSU works would not include any significant above ground structure. It is therefore considered that no townscape, conservation and visual cumulative effects would arise from this scheme in relation to the four Development Scenarios.
- 18.83 Regarding the schemes arising from the Victoria Street/Buckingham Gate/Palace Street planning brief, sufficient details pertaining to the height, form, façade articulation and materials are not available. As such, this cumulative assessment cannot address the townscape, conservation and views arising from these schemes when taken cumulatively with the four Development Scenarios. However, given the likely scale of schemes which could come forward as a result of the planning brief, it is assumed that all would be designed sensitively in consultation with the relevant statutory consultees to minimise (as far as practically possible) any unacceptable adverse effects to the surrounding townscape and views.

Transportation and Access

Demolition and Construction

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.84 If demolition and construction works in relation to the 9 Howick Place and Wilton Plaza schemes and any the four Development Scenarios were to overlap, or be undertaken concurrently, there would be the potential for some cumulative effects to arise in relation to construction traffic and vehicular and pedestrian access/movement. However, these schemes are relatively small and are located over 250m away from the three application sites. The Pimlico School scheme is located approximately 1km from the application sites and can, therefore, be discounted from this assessment. Therefore, the cumulative effects on transport and access in relation to all four Development Scenarios are considered to be **negligible**.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.85 The construction phasing for each of the four Development Scenarios would vary slightly (refer to Chapter 6: Development and Construction). As such, there would be differing levels to which construction phasing would overlap with VSU. The revised Transport Assessment (TA) for the VSU scheme (August 2008) (Ref. 18.2) provides estimates of peak construction lorry movements broken down between the five construction sites of the VSU development works.
- 18.86 It is difficult to determine the precise number of construction vehicles collectively generated. However, the peak would be greatest at approximately 147 construction vehicles per day in 2012. No hourly figures are provided, but average vehicles per hour over an assumed ten hour working day would be 15, or a construction vehicle movement onto one of the five component construction sites every four to five minutes.
- 18.87 The peak construction activity for the VSU scheme in 2012 does coincide with the indicative construction vehicle peak for each of the four Development Scenarios (assuming a VT12 start on site in 2010). The total number of construction vehicles generated by both VSU and any of the four Developments Scenarios would be (worst case) 24 construction vehicles for any of the four Development Scenarios and 15 VSU construction vehicles per hour, resulting in a total of 39 construction vehicles per hour.
- 18.88 The construction sites for any of the four Development Scenarios would have a number of entrances, and the revised TA for the VSU scheme states that two holding areas would be provided. In terms of the peak flow of construction vehicles for the two schemes, 39 vehicles represent less than 5% of traffic flows on the Inner Ring Road (IRR) (which are generally at least around 1,000 vehicles per hour in each direction). This is considered to equate to a **negligible** cumulative effect.
- 18.89 The implementation of site specific EMPs and construction traffic management strategies would restrict deliveries during peak hours and manage construction traffic and routing as far as practically possible, and provide appropriate vehicular and pedestrian access to minimise such effects.
- 18.90 It is anticipated that other unconsented schemes would all be subject to site-specific EMPs to manage construction traffic, and therefore, even if their demolition and construction works were to overlap with that of any of the four Development Scenarios the potential cumulative effects would also be **negligible**.

Completed Development***Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes***

- 18.91 In order to predict the full transport effects on the future baseline scenario, growth factors have been used to factor up the base flows for the future baseline traffic, thus taking account of the cumulative schemes. Adequate allowance has been made for trips that would be generated by both the consented and unconsented schemes. Therefore, the future baseline scenario, against which the effect of the four Development Scenarios on transportation and access (including trip generation and pedestrian flows) has been assessed, (and together with an individual trip generation forecast for the cumulative schemes) have inherently incorporated the relevant pedestrian and vehicular trips generated by the cumulative schemes. This is summarised in Chapter 9: Transportation and Access and is detailed within Chapter 4 of Technical Appendix 9a: Transport Assessment.
- 18.92 As a consequence, the cumulative effects of the consented and unconsented schemes and all four Development Scenarios on the pedestrian and highway network are considered to be identical to those identified within Chapter 9: Transportation and Access. As such, it is considered that there would be a negligible cumulative effect upon traffic and pedestrian flows.
- 18.93 The Victoria Street, Buckingham Gate and Palace Street site draft Planning Brief, which sets out WCC's aspirations for this area and outlines, amongst others, open space, pedestrian and

vehicle movement expectations for new development, was not included in the future baseline model.

- 18.94 It is likely that the provision of increased open space and improved pedestrian facilities required by the planning brief would require some shift of capacity from vehicle space to pedestrians. However, Victoria Street is currently operating under capacity and therefore the cumulative effects on traffic flows are likely to be **negligible**. In addition, the provision of increased public realm would act together with any of the four Development Scenarios to improve the public space. Depending upon the detailed proposals implemented under the Victoria Street, Buckingham Gate and Palace Street Planning Brief, the cumulative effect on the public realm and pedestrian movements could be **long term, local** and of **minor to moderate beneficial** significance.

Air Quality

Demolition and Construction

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.95 The main effects during the demolition and construction of developments are in relation to dust. Due to the typical dispersal and deposition rates of dust over distances (see Chapter 10: Air Quality), it is considered that the potential for dust to create a cumulative effect is only likely to be an issue for the closest developments, i.e. those within 50 to 100m of the three application sites, if they are constructed at the same time.
- 18.96 9 Howick Place, Wilton Plaza and Pimlico School are not located within 100m of the three application sites and therefore the potential would not exist for cumulative dust effects in relation to them and the four Development Scenarios.
- 18.97 Therefore, it is considered that cumulative dust effects for all four Development Scenarios and consented schemes during the demolition and construction phase would be **negligible**.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.98 With regard to the VSU scheme, the concurrent demolition and construction processes would be in close proximity to the three application sites and therefore, could result in increased dust generation during dry and windy periods. This would have the potential to affect sensitive receptors such as the Grade II listed Victoria Palace Theatre and the flat above the Duke of York Public House. In addition, should construction works in relation to the extension to the Victoria Palace Theatre occur at the same time as those for the consented Development Scenario, cumulative effects could occur. The other unconsented schemes are located over 100m from the application sites and therefore, the potential for cumulative dust effects in relation to these would not exist.
- 18.99 Accounting for mitigation such as the implementation of appropriate site-specific EMPs, the worst-case cumulative effect of all four Development Scenarios and unconsented schemes is anticipated to be **short to medium-term, local** and of **minor adverse** significance.
- 18.100 The combined construction and demolition traffic of all cumulative schemes may cause cumulative local air quality effects. In the 'worst case' scenario that the other schemes are constructed at the same time, and they use the same construction traffic routes, there could be **short to medium-term, local** effects of **minor adverse** significance. However, construction traffic routes would be agreed with WCC and thus could be re-routed to avoid potential adverse effects.

Completed Development***Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes***

- 18.101 As described above, and in Chapter 9: Transportation and Access, the future baseline traffic data takes account of the traffic related to all the cumulative schemes. Therefore, the air quality assessment for the future year for each Development Scenario includes the consideration of traffic related to the cumulative schemes in the surrounding area and therefore comprises a cumulative effect assessment in this regard. The cumulative effect on air quality due to consented scheme would therefore be equivalent to the residual effects described within Chapter 10: Air Quality.
- 18.102 As mentioned above, the VSU scheme would not generate any modification in traffic flows. No cumulative effect would therefore arise from the VSU scheme in terms of air quality for each of the four Development Scenarios.

Noise and Vibration**Demolition and Construction*****Development Scenario 1, 2, 3 and 4 plus Consented Schemes***

- 18.103 In the event that cumulative schemes are constructed concurrently with any of the Development Scenarios, cumulative noise and vibration effects could occur during combined demolition and construction activities. However, the consented Wilton Plaza, Pimlico School and 9 Howick Place schemes are considered to be sufficiently distant from the application sites that **no cumulative effects** would be anticipated.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.104 Similarly to above, the most of the unconsented cumulative schemes are considered to be sufficiently distant from the application sites that they do not require assessment in terms of cumulative demolition and construction noise effects. The exceptions are the VSU and Victoria Palace Theatre extension schemes.
- 18.105 The site of the proposed VSU scheme would overlap all three VTI 2 application sites and, as such, adverse cumulative effects are likely for any of the four Development Scenarios considered in combination with the VSU scheme. In particular, adverse cumulative effects could be expected at the closest noise sensitive receptors, i.e. Evelyn Mansions, the Grade II listed Victoria Palace Theatre and the flat above the Duke of York public house.
- 18.106 It should be noted that the VSU scheme requires particularly noisy construction techniques, such as jet grouting, to be undertaken. Jet grouting, particularly when undertaken from the surface (as has been proposed for the VSU scheme) and in the absence of mitigation, is likely to create significant adverse impacts upon Evelyn Mansions, the Grade II listed Victoria Palace Theatre and the flat above the Duke of York Public House. However, it is reasonable to assume that WCC would need to be satisfied, prior to granting consent for the VSU scheme, that all of the likely demolition and construction effects of the scheme had been identified and that relevant mitigation measures had been proposed to prevent, reduce and, where possible, offset any unacceptably adverse effects, particularly in accordance with WCC's Code of Construction Practice (CoCP).
- 18.107 Additionally, it is envisaged that the VTI 2 project team would work closely with the VSU project team and WCC to, for example, schedule particularly noisy demolition and construction activities in such a way as to avoid unnecessarily adverse effects at nearby sensitive receptors.
- 18.108 Accounting for mitigation such as that discussed above, and the implementation of appropriate and well managed site specific EMPs, both for the VSU scheme and for any of the four Development Scenarios, the worst-case cumulative effects at these sensitive receptors are anticipated to be **short to medium term** and of **moderate adverse** significance.

- 18.109 The construction of the Victoria Palace Theatre extension would be a relatively small-scale undertaking in comparison to any of the four Development Scenarios. It is anticipated that if construction timescales overlapped, a combination of site-specific EMPs to control particularly noisy activities, and co-ordination between construction sites, would be sufficient to ensure that any cumulative effects would be **negligible** for any of the four Development Scenarios.
- 18.110 The combination of construction and demolition traffic from all the consented and/or unconsented cumulative schemes would have the potential to cause local cumulative noise and vibration effects if they were all constructed at the same time and used the same construction traffic routes. If this occurred, cumulative effects would be **short to medium term, local** and of **minor adverse** significance. However, construction traffic routes would be agreed with WCC and thus could be re-routed to avoid potential adverse effects.

Completed Development

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.111 As noted in the sections above, the traffic data used to establish the residual noise effects of the four completed and occupied Development Scenarios had already accounted for all cumulative schemes. Therefore, it is considered that the cumulative effects of traffic noise from any of the four Development Scenarios and the consented cumulative schemes would be equivalent to the identified residual effects in Chapter 11: Noise and Vibration.
- 18.112 It is considered that the consented cumulative schemes are all too distant from any sensitive receptor in the vicinity of the application sites to cause significant cumulative effects in terms of noise from fixed plant. In addition, all consented cumulative schemes would be subject to the WCC requirement of a planning condition stipulating that noise generated by plant to be 10dBA below the background L_{90} level outside nearby residences. As such, in terms of noise from fixed plant, the cumulative effects of consented schemes with the any of the four Development Scenarios would be of **negligible** significance.
- 18.113 The consented cumulative schemes are all sufficiently distant from any relevant sensitive receptor to cause **no cumulative effects** in terms of noise from servicing.
- 18.114 Abford House is sufficiently distant from any relevant sensitive receptors to cause **no cumulative effects** in terms of noise from Class A3 units, and there are no other Class A3 or A4 units within the remaining consented schemes.
- 18.115 In terms of vibration, **no cumulative effects** are expected.

Archaeology

Demolition and Construction

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.116 The site of Wilton Plaza has previously been subject to an archaeological watching brief. However archaeological investigation of the site is likely to be ongoing and if the construction of whichever Development Scenario is to be developed commences prior to the Wilton Plaza development, surviving geo-archaeological remains may be affected.
- 18.117 The site of 9 Howick Place has not been subject to an archaeological investigation. However, the four Development Scenarios should not have a cumulative effect on this site as the consented proposals for 9 Howick Place would have little impact on archaeological deposits on the site.
- 18.118 The redevelopment of Pimlico School is considered to sufficiently distant from the four Development Scenarios for there to be no cumulative effects.

- 18.119 Although the direct effects on archaeological and geo-archaeological remains would be site-specific, once all of the above schemes have been completed only fragments of this important landscape would remain on the wider (non site-specific) scale, thus limiting the scope for future research in this area.
- 18.120 However, these consented schemes would be subject to mitigation measures similar to any of the four Development Scenarios. These would be likely to include a site-specific EMP and targeted archaeological investigations including geo-archaeological sampling, localised excavation, and/or archaeological watching brief investigation. All mitigation measures would be approved by English Heritage on behalf of WCC so as to ensure an appropriate level of archaeological protection and preservation.
- 18.121 The resulting cumulative effects in relation to all four Development Scenarios would therefore be **negligible**.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.122 It is anticipated that the primary cumulative effect on archaeology would result from the combination of any of the four Development Scenarios with the unconsented VSU scheme. During the demolition and construction phases, the VSU scheme has the potential to remove archaeological remains within the limits of all three application sites. The magnitude of the effects would be dependent on which applications are consented and the schedule of works in relation to the resulting Development Scenarios.
- 18.123 The VSU scheme would include a new northern ticket hall under Bressenden Place which would be constructed by cut-and-cover and a number of construction/access/sump shafts would be excavated during the works. Below the northern ticket hall, new station operations room, plant and accommodation rooms would be provided. A portion of the VSU Paid Area Link (PAL) tunnel would be located within the lower level basement proposed as part of application 1 (within all four Development Scenarios). VSU works would also require a number of utilities currently located in the pavement and highway to be diverted, some temporarily, others permanently and for ground improvement (jet grouting) along Allington Street and a number of adjacent areas.
- 18.124 Therefore, the VSU scheme would be likely to remove areas of potential archaeological material across all three application sites, particularly in the area of Bressenden Place in relation to Buildings 6a and 7b/c and in the basement levels.
- 18.125 However, the VSU scheme would be subject to mitigation measures similar to those for the four Development Scenarios. These would be likely to include a site-specific EMP and targeted archaeological investigations. Discussions to date have proposed geo-archaeological sampling, localised excavation, and/or archaeological watching brief investigation. All mitigation measures would be approved by English Heritage on behalf of WCC. Therefore, the resulting cumulative effects in relation to all four Development Scenarios would be **negligible**.
- 18.126 It should be noted that the area of potential cumulative effects is slightly reduced for Development Scenario 2 (because Building 6a is not included within applications 1 and 2) and Development Scenario 3 and 4 (because Development Scenarios 3 and 4 do not interact with the VSU scheme to the east of the Victoria Palace Theatre),
- 18.127 The Victoria Palace Theatre extension may also result in a cumulative effect as expansion of this building has the potential to remove archaeological remains adjacent to the three application sites. The effect would be the same for all four Development Scenarios. The effect would be dependent on the extent and schedule of works in relation to this theatre extension scheme. It is currently thought that the extension to the theatre basement would remove material to the north of the theatre. However, it is probable that the basement expansion would also be subject to mitigation measures similar to the four Development Scenarios and to the VSU scheme. The cumulative effect after completion of mitigation would, therefore, be **negligible**.

- 18.128 Demolition and redevelopment of the site of Selborne House and works involved with the Victoria Street, Buckingham Gate and Palace Street Planning Brief may produce cumulative effects in relation to any of the four Development Scenarios as, although the direct effects on archaeological and geo-archaeological remains would be site-specific, in relation to the above schemes being completed only fragments of this important landscape on the wider scale would remain, limiting the scope for future research in this area. The cumulative effect in relation to Victoria Street, Buckingham Gate and Palace Street would be dependent on the extent and schedule of works in relation to this planning brief which has yet to be adopted.
- 18.129 Wellington House, at the junction of Buckingham Gate and Petty France, and Chelsea Barracks to the south-west, are considered sufficiently distant from the application sites for them to have no cumulative effect on any of the four Development Scenarios.

Completed Development

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.130 The completion of the piled walls to create the basement levels within application 1 (within all four Development Scenarios) and the northern ticket hall within the VSU scheme would have the potential to alter groundwater flow in the vicinity of the two developments with consequent effects to geo-archaeological deposits. Therefore, the completed VSU scheme, in combination with any of the four Development Scenarios, would have the potential to create an adverse cumulative effect on buried organic deposits. Dewatering could reduce the value of any such deposits. The significance of any such effects are **unknown** based on the information currently available and would be investigated as excavations commence.

Ground Conditions and Contamination

- 18.131 Effects relating to soils and ground conditions are site-specific. Consequently, it is anticipated that the only cumulative effects would be resulting from potential interactions with the VSU scheme during the demolition and construction phases.
- 18.132 As described above, the VSU scheme would involve excavations and disturbance to the ground. As shown within Chapter 13: Ground Conditions and Contamination, there is a recognised potential for contamination within underlying soils and groundwater from historical operations over the three application sites (including within the footprint of the VSU scheme).
- 18.133 However, the VSU scheme and the all four of the Development Scenarios would implement appropriate mitigation measures according with the current legislation and would adopt best practice guidance both during demolition and construction and once completed. The principle of these measures is described within Chapter 13: Ground Conditions and Contamination. Consequently, the cumulative risks to sensitive receptors are considered to be **negligible**.

Surface Water Drainage and Flood Risk

Demolition and Construction

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.134 Most water resource and flood risk associated effects are site-specific. However, schemes in proximity to the application sites could have the potential to generate combined effects upon dewatering of the lower aquifer, reducing the quality of the groundwater and reducing quality of surface waters via the accidental spillage of construction related materials. In all cases, the potential cumulative effects would be mitigated by the application of suitable construction methodologies and the implementation of appropriate site-specific EMPs. As a consequence, the cumulative effects would generally be **negligible** but would be **short-term, local** and of **minor adverse** significance in the case of unexpected and accidental spillages to surface water resources.

Completed Development

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.135 All consented schemes considered in the cumulative assessment are located on brownfield and predominantly hard-surfaced sites. As such, the volume of the individual and cumulative effects of stormwater discharges would not result in any significant cumulative effects with respect to the groundwater recharge regime or local hydrology. It is also assumed that all schemes considered would not result in contaminating land uses. As such, there would be **no cumulative effects** upon groundwater quality. Similarly, the anticipated low volumes of stormwater discharges to combined sewer network are unlikely to affect the existing situation.
- 18.136 With regards to flood risk, this assessment has assumed that all consented schemes have been approved by the Environment Agency. By definition, this would mean that each scheme in isolation and together, would not result in an unacceptable increase in flood-risk.
- 18.137 In the case that the consented schemes implement Sustainable Drainage System (SUDS) measures similar to the four Development Scenarios (for example, green or brown roofs, rainwater harvesting systems, construction of new sewer network, etc), the cumulative effects on surface water run-off and flood risk would be **negligible to long term, local level** effects of **minor beneficial** significance.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.138 The unconsented schemes considered as part of this assessment would be subject to the same considerations as for the consented schemes. The resulting cumulative effects would therefore be as above.
- 18.139 The cumulative effects of each of the four completed Development Scenarios plus consented and unconsented schemes upon water resources and flood risk are therefore considered to be **negligible to long term, local level** effects of **minor beneficial** significance.

Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare

Demolition Effects

- 18.140 As established in Chapter 16: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare, significant residual effects would be likely to occur as a result of the proposed demolition activities on any of the three application sites. These significant residual effects would include improvements to levels of daylight, sunlight and overshadowing to nearby sensitive receptors as existing buildings are removed. All other residual effects would be negligible. Therefore only the above listed effects are relevant to this cumulative effects assessment of each of the four Development Scenarios.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.141 Daylight, sunlight and overshadowing effects are typically site-specific. As such, the relatively large distance of 9 Howick Place, Wilton Plaza and Pimlico School from the application sites infers that there would be no cumulative demolition effects associated with the consented cumulative scheme.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.142 Similarly to the above, the relatively large distance of most unconsented cumulative schemes from the application sites dictates that only the VSU scheme would be relevant to an assessment of cumulative demolition effects with the four Development Scenarios. The footprint of the VSU scheme would coincide with all three application sites. The scheme would involve the demolition and landscaping of Elliot House, 120-124 Victoria Street and 3-11 Bressenden Place.

- 18.143 In Development Scenarios 1 and 2, Elliot House, 120-124 Victoria Street and 3-11 Bressenden Place would also be demolished. Therefore, demolition associated with the VSU scheme would have **no cumulative effects** on Development Scenarios 1 or 2 in terms of daylight, sunlight or overshadowing since exactly the same buildings would be demolished in each case.
- 18.144 Development Scenarios 3 and 4 would involve the retention of 120-124 Victoria Street and 3-7 Bressenden Place while Elliot House and 9-11 Bressenden Place would be demolished. However, the demolition activities associated with the VSU scheme would involve the removal of 120-124 Victoria Street and 3-7 Bressenden Place. Nevertheless, despite the additional removal of these buildings, the cumulative effects of Development Scenarios 3 and 4 with the VSU scheme would be **negligible** in terms of daylight, sunlight and overshadowing. This is due to the fact that there are no relevant sensitive receptors in the vicinity of 120-124 Victoria Street and 3-7 Bressenden Place.

Construction Effects

- 18.145 The worst-case cumulative effects from construction activities would be directly comparable to the cumulative effects of the completed Development Scenarios plus other completed consented and unconsented schemes. As such, reference should be made to the sections below.

Completed Development

- 18.146 As established in Chapter 16: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare, significant residual effects would be likely to occur as a result of the completion of any of the four Development Scenarios in terms of the following:
- Daylight and sunlight to existing surrounding residential properties;
 - Daylight and sunlight to proposed residential properties; and
 - Permanent overshadowing to proposed amenity areas within the application sites.
- 18.147 All other residual effects would be negligible. Therefore only the above listed effects are relevant to this cumulative effects assessment.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.148 Similarly to above, the relatively large distances of 9 Howick Place, Wilton Plaza and Pimlico School from the application sites infers that there would be **no cumulative effects** associated with the completed consented cumulative schemes together with any of the four Development Scenarios. At the time of assessment, Abford House was fully constructed (but not operational) and, therefore could also be discounted from consideration of cumulative effects of the completed Developments Scenarios

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.149 The VSU scheme would not include the construction of any significant above ground structures. However, reference to the proposed demolition programme for the VSU scheme, as previously outlined, implies that the completed Development Scenarios 1 or 2, plus the completed VSU scheme, would provide the same above ground structures as Development Scenarios 1 or 2 in isolation. Therefore there would be **no cumulative effects**.
- 18.150 The completed Development Scenarios 3 or 4 plus the completed VSU scheme would provide the same above ground structures as Development Scenarios 3 or 4 in isolation, with the exception that 120-124 Victoria Street and 3-7 Bressenden Place would be demolished and landscaped. However, the cumulative effects of completed Development Scenarios 3 or 4 with the completed VSU scheme would be **negligible** in terms of daylight, sunlight and overshadowing. This is due to the fact that there are no relevant sensitive receptors in the vicinity.
- 18.151 The seven-storey Victoria Palace Theatre extension (refer to Figure 18.3) has also been assessed in terms of its potential cumulative effects to residential amenity in the vicinity.

- 18.152 The closest existing residential accommodation is considered to be sufficiently distant that the height of the proposed theatre extension would not affect baseline daylight and sunlight levels. However, in terms of the daylight levels received by the proposed residential accommodation, the proposed theatre extension is in close proximity to the proposed Building 7b/c (within Development Scenarios 1 and 2 only).
- 18.153 An assessment of the cumulative effect of the theatre extension on daylight levels received by the proposed residential receptors within Building 7b/c established the following:
- Development Scenario 1 would result in 108 (88%) of rooms within Building 7b/c being fully compliant with the recommended ADF levels specified in the BRE Guidance. Of the 15 rooms which would not comply, all would be secondary bedrooms. Development Scenario 1 plus the theatre extension would result in 105 (85%) of rooms being fully compliant. Of the 18 rooms which would not comply, all would be secondary bedrooms.
 - Development Scenario 2 would also result in 108 (88%) of rooms within Building 7b/c being fully compliant with the recommended ADF levels specified in the BRE Guidance. Again, of the 15 rooms which would not comply, all would be secondary bedrooms. Development Scenario 2 plus the theatre extension would result in 107 (87%) of rooms being fully compliant. Of the 16 rooms which would not comply, all would be secondary bedrooms.
- 18.154 It is considered that, given the dense urban nature of the application sites and the flexible manner in which the BRE Guidelines should be applied to urban sites, the cumulative effects of the Victoria Palace Theatre extension with either Development Scenario 1 or 2 would be of **negligible** significance. For detailed results, refer to Technical Appendix 18b.
- 18.155 There would be no cumulative impacts for Development Scenarios 3 and 4 because Building 7b/c would not form part of either of these Development Scenarios.
- 18.156 The only proposed amenity areas within any of the four Development Scenarios which have the potential to be affected by the theatre extension are those within Building 7b/c (within Development Scenarios 1 and 2 only). However, it is considered that the cumulative effect upon these amenity areas would be of **negligible** significance as the completion of the theatre extension would not involve an increase in building height sufficient to significantly increase levels of overshadowing. There would be **no cumulative effects** within Development Scenarios 3 or 4.

Wind

Demolition and Construction

- 18.157 The predicted residual effects of demolition and construction activities on each of the three application sites as a result of any of the four Development Scenarios were negligible (refer to Chapter 15: Wind). For the same reasons, it is considered that none of the consented or unconsented cumulative schemes considered within this chapter would significantly alter these predicted residual effects. Therefore, the cumulative effects to wind conditions during demolition and construction activities for all four Development Scenarios are considered to be **negligible**.

Completed Development

Development Scenario 1, 2, 3 and 4 plus Consented Schemes

- 18.158 The consented 9 Howick Place, Wilton Plaza and Pimlico School schemes are too distant from the application sites to require consideration within this cumulative effects assessment. Abford House was fully constructed (but not operational) at the time of assessment and was therefore included within the baseline conditions. It has, consequently, not been included within this cumulative effects assessment. Therefore, there would be no cumulative wind effects of any of the four Development Scenarios with the consented schemes.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.159 Of the relevant unconsented schemes, only the Victoria Palace Theatre extension and the VSU scheme are sufficiently close to the application sites to require consideration. That is, all of the other unconsented schemes are too distant from the application sites to have any significant cumulative effects upon wind conditions when considered in conjunction with any of the four Development Scenarios.
- 18.160 The existing Victoria Palace Theatre is generally 6-storeys high, rising in the centre to about 8-storeys. The proposed extension would increase the height at the north of the theatre to 10-storeys. The theatre extension would be adjacent to all three application sites. If the theatre was considered in isolation, then increasing the building height (by adding the extension) would be expected to slightly increase wind speeds around the base of the building. However, the theatre would be sheltered by the proposed buildings of Development Scenarios 1 and 2. For Development Scenarios 3 and 4 the north façade of the theatre would be more exposed, but the retained buildings at 3-7 Bressenden Place would still provide a significant amount of shelter.
- 18.161 In summary, it is considered that, as a result of the shelter provided by the nearby buildings within all four Development Scenarios, wind conditions at ground level are unlikely to change as a result of the completion of the proposed theatre extension. Therefore, the cumulative effects would be **negligible** for all four Development Scenarios.
- 18.162 The completed VSU scheme in combination with Development Scenario 1 (or Development Scenario 2) would provide the same above ground structures as the completed Development Scenario 1 (or Development Scenario 2) in isolation. Therefore there would be no cumulative effects.
- 18.163 The completed Development Scenarios 3 or 4 plus the completed VSU scheme would provide the same above ground structures as Development Scenarios 3 or 4 in isolation, with the exception that 120-124 Victoria Street and 3-7 Bressenden Place would be demolished and landscaped.
- 18.164 Testing of Development Scenario 3 in combination with the VSU scheme indicates that wind conditions would worsen slightly at test location 62. The wind conditions at this location would be suitable for pedestrian walking or long-term walking, but would not be suitable for long-term sitting or entrance doors. The wind conditions at this location would be suitable for its intended pedestrian purpose and cumulative effects would, therefore, be **negligible**.
- 18.165 Testing of Development Scenario 4 in combination with the VSU scheme indicates that wind conditions would worsen slightly at test locations 58, 61, 62, 63, 65, 80 and 81. Again, the wind conditions at all of these affected locations would be suitable for pedestrian walking or long-term walking, but would not be suitable for long-term sitting or entrance doors. Since all of these locations are sited along or beside Bressenden Place, the wind conditions at all of the affected locations would be suitable for their intended pedestrian purpose. Cumulative wind effects of Development Scenario 4 with the completed VSU scheme would, therefore, be **negligible**.

Radio and Television Reception**Demolition and Construction*****Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes***

- 18.166 None of the consented or unconsented cumulative schemes is close enough to the application sites or of a sufficient height or bulk to affect radio and television reception at the relevant sensitive receptors in the vicinity of the application sites during demolition and construction activities. Therefore, it can be considered that the cumulative effect upon radio and television reception would be **negligible** during demolition and construction for all four Development Scenarios.

Completed Development***Development Scenario 1, 2, 3 and 4 plus Consented Schemes***

- 18.167 Of the consented schemes, Wilton Plaza, Pimlico School and 9 Howick Place would have **no cumulative effects** with any of the four Development Scenarios due to their distance from the application sites and their similar height compared to baseline conditions.

Development Scenario 1, 2, 3 and 4 plus Consented Schemes plus Unconsented Schemes

- 18.168 Of the unconsented schemes, the VSU scheme would not provide any significant above-ground structures, the Victoria Palace Theatre extension is not considered likely to create reflections or shadows of a magnitude great enough to affect nearby sensitive receptors, and the remaining unconsented schemes are too distant from the application sites to require consideration. Cumulative effects are, therefore, considered to be **negligible** for each of the four Development Scenarios.

SUMMARY AND CONCLUSIONS

- 18.169 A wide range of cumulative effects have been identified for each of the Development Scenarios. In terms of Type 1 Effects, these predominantly relate to the interaction of effects to townscape, conservation and visual factors; noise; dust; daylight, sunlight and overshadowing; and satellite television reception. These effect interactions were considered for the demolition and construction phases of each of the four Development Scenarios in isolation. Effect interactions would vary considerably in terms of duration, magnitude and location and would be perceived differently by different sensitive receptors in the vicinity of the application sites. However, in general, it is considered that effect interactions involving noise, dust and townscape, conservation and visual effects would be the most common Type 1 cumulative effects for each of the four Development Scenarios.
- 18.170 In relation to Type 2 effects, it is clear that most of the consented and unconsented schemes considered would have limited cumulative effects on any of the four Development Scenarios with most predicted effects being negligible. However, consideration of the unconsented VSU scheme and, to a lesser extent, the unconsented Victoria Palace Theatre extension, indicates that some significant adverse cumulative effects should be expected, particularly in relation to demolition and construction works.
- 18.171 Finally, it should be noted that there are predicted to be significant beneficial cumulative socio-economic effects related to job creation, additional local and regional spend and the provision of housing, thereby facilitating urban regeneration on a regional scale. However, adverse cumulative effects are predicted, particularly in terms of noise and air quality during demolition and construction activities.
- 18.172 Despite the above, the Applicant is committed to ensuring that the delivery of VT12 and VSU would not be unreasonably compromised due to adverse cumulative effects. Consequently, ongoing consultation, open dialogue and mutually beneficial working is envisaged to continue prior to and during all related VT12 and VSU works.