

18. Cumulative Effects

18.1 Introduction

18.1.1 Each specialist Chapter of the Environmental Statement has assessed the likely significant environmental effects of the Proposed Development being completed together with the developments identified in Technical Appendix 2.1.

18.1.2 These are set out below:

18.2 Landscape, Townscape & Visual Assessment, chapter 7

18.2.1 Since 2000, plans for regeneration in the area have been rife. It is widely acknowledged that the recent regeneration of the area can be attributed to The Laban, built on the Creekside in 2002. The Laban is a contemporary dance school designed by Herzog and de Meuron which in 2003 won the coveted RIBA Stirling Prize. Lewisham Council has since identified Deptford Town Centre as a district in need of regeneration and intends, over the next five years, to transform the Deptford High Street Area.

18.2.2 There is a significant Council-led masterplan for Giffin Street, which lies just to the north-west of Deptford Bridge. The initiative involves improvements to Giffin Square, and aims to create it as a major public space, with a leisure centre, new homes and work units. Private developers Cathedral Group were appointed by Lewisham Council in 2006 to redevelop Deptford Station and the listed carriage ramp area. The proximity of these two schemes will provide real improvement to the centre of Deptford.

18.2.3 There are plans for a Creekside Village development with homes, shops and artists' studios. The Creekside area is north of Deptford Bridge and sits alongside the banks of Deptford Creek. Creekside's south-western boundary adjoins Herzog & de Meuron's Laban Centre. Telford Homes has been granted planning permission for four buildings, ranging from eight to 17 storeys in height, by Squire and Partners. These buildings will be sited on the western half of the Creekside development. On the remaining area a new theatre and jazz cafe are to be built, as well as extra studios for the Laban dance centre.

18.2.4 North-east from the Deptford Bridge there is planned redevelopment at 43-81 Greenwich High Road. The proposed site will provide a mixed use scheme comprising of offices, workshops, retail and hotel. Designs for the development are by BUJ Architects for Galliard Homes Ltd.

- 18.2.5 To the south of the Deptford Bridge is the former Seagar Distillery site. The gin distillery operated between the 1770s and 1970s as firstly Goodhews, then Hollands and later Seagers. Planning permission (in 2006) has been granted to provide a tower with over 200 residential units, as well as offices, shops, a restaurant, a café and an underground car park. This site is also being developed by Galliard Homes Ltd. with design by BUJ Architects.
- 18.2.6 To the east of the Site are three large former industrial sites located along the line of the infilled Grand Surrey Canal, which also passed through the Surrey Canal Site. Large residential-led, mixed use developments at Plough Way, Oxetalls Road and Grinstead Road are all currently the subject of planning applications. On the river front the redevelopment of Convoys Wharf has been proposed. The original masterplan by the Richard Rogers Partnership, which includes three tall buildings, was submitted for planning in 2002 but is currently undergoing revision by the site's new owners.
- 18.2.7 All of these schemes together with the others listed in Technical Appendix 2.1 have been considered.
- 18.2.9 Assessment has been undertaken of the visual effects of the Proposed Development on the townscape, landscape and views including the cumulative effects of consented and proposed schemes in the area in relation to the Proposed Development. This has been done through consideration of 30 representative views and the significance of those effects have been assessed.

18.3 Representative Views Conclusions

The conclusions have been as follows:

(7.6.1) **View 1: Northeast end of Tower Bridge, looking southeast**

Convoys Wharf will be visible on the distant skyline on the left of the view and the top of the Old Seagar Distillery tower will be just visible to the left of Chambers Wharf.

Significance of effects: negligible

(7.6.2) **View 2: Royal Naval College Greenwich, from water front**

The redevelopment of Convoys Wharf will conceal the northern part of the Proposed Development and the SELCHP chimney in this view. Cannon Wharf is visible to the right of

Convoys Wharf. The Shard will be just visible to the right of the Aragon Tower. To the left of the Proposed Development, Creekside Village will be just visible through the trees on the river front.

Significance of effects: minor, beneficial

(7.6.3) View 3: Blackheath Point, looking northwest [LVMF 6A.1]

New tall buildings at Elephant and Castle will be visible behind the Proposed Development Eileen House behind Surrey Canal and the consented London Park Hotel to the left of the recently completed Strata Building. The Shard will be visible to the right of Guys Hospital as a much taller element on the distant skyline. To the right of the Eastern Cluster the towers of the Convoys Wharf redevelopment and Creekside Village, much closer to the viewpoint will be seen as significantly taller elements in the middle ground. To the left will be the 27-storey tower of the Old Seager Distillery.

Significance of effects: moderate, beneficial

(7.6.4) View 4: Telegraph Hill

There will be no change in the view from a cumulative perspective.

Significance of effects: minor, beneficial

(7.6.5) View 5: King Edward Memorial Park, looking south

Consented developments at Canada Water may also just visible above the rooftops

Significance of effects: minor, beneficial

(7.6.6) View 6: Westferry Circus, looking southwest

To the left of the Proposed Development from right to left submitted proposals at Cannon Wharf, Marine Wharf West and Oxetalls Road will be visible above the existing buildings fronting the Thames. On the far left of the view are the tall buildings of the consented Convoys Wharf.

Significance of effects: negligible

(7.6.7) View 7: Napier Avenue/Blasker Way, looking west

The redevelopment of Convoys Wharf will entirely conceal the Proposed Development at Surrey Canal and will dominate this view. Between the towers of the Pepys Estate the

submitted Cannon Wharf development will be visible. To its right the Shard will appear on the distant skyline of north Southwark with the submitted Marine Wharf West just visible above the trees to its right. The consented developments at Canada Water may be just visible above the tree line to the right of the Aragon Tower.

Significance of effects: negligible

(7.6.8) View 8: Burgess Park, looking east

There will be no change in the view from a cumulative perspective.

Significance of effects: minor, beneficial

(7.6.9) View 9: Burgess Park, north side of lake

There will be no change in the view from a cumulative perspective.

Significance of effects: neutral

(7.6.10) View 10: Open space near roundabout at Jamaica Road/Lower Road/Brunel Road, looking south

There will be no change in the view from a cumulative perspective.

Significance of effects: negligible

(7.6.11) View 11: Stave Hill (near Elmos Road), looking southwest

The edge of the submitted Cannon Wharf development will be visible on the far left hand edge of the view, with Grinstead Road to its right. To the right of the Proposed Development consented developments at Canada Water will be visible.

Significance of effects: minor to moderate, beneficial

(7.6.12) View 12: Brunswick Quay, looking southwest

There will be no change in the view from a cumulative perspective.

Significance of effects: negligible

(7.6.13) View 13: East end of Deptford Park, looking west

The top of the consented redevelopment of the Silwood Estate may be just glimpsed through the trees on the left hand side of the view.

Significance of effects: negligible

(7.6.14) View 14: Fordham Park, looking northwest

There will be no change in the view from a cumulative perspective.

Significance of effects: negligible

(7.6.15) View 15: New Cross Gate Station

There will be no change in the view from a cumulative perspective.

Significance of effects: minor, beneficial

(7.6.16) View 16: Somerfield Street

There will be no change in the view from a cumulative perspective.

Significance of effects: major, beneficial

(7.6.17) View 17: Surrey Canal Road east

There will be no change in the view from a cumulative perspective.

Significance of effects: moderate to major, beneficial

(7.6.18) View 18: Southeast end of Bridgeway Meadows, looking north

Consented redevelopment at The Silwood Estate will be glimpsed between the tall elements of the Proposed Development.

Significance of effects: major, beneficial

(7.6.19) View 19: Lovelinch Close looking north

There will be no change in the view from a cumulative perspective.

Significance of effects: major, beneficial

(7.6.20) View 20: Surrey Canal Road west

There will be no change in the view from a cumulative perspective.

Significance of effects: major, beneficial

(7.6.21) View 21: South Bermondsey Rail Station platform

There will be no change in the view from a cumulative perspective.

Significance of effects: major, beneficial

(7.6.22) View 22: Caroline Gardens, in front of the chapel portico

The consented Waste Transfer Facility at 763 Old Kent Road may be just visible in front of the Surrey Canal development.

Significance of effects: negligible

(7.6.23) View 23: Caroline Gardens, on the footpath in front of No.139 and 140

There will be no change in the view from a cumulative perspective.

Significance of effects: neutral

(7.6.24) View 24: Nunhead Cemetery

There will be no change in the view from a cumulative perspective.

Significance of effects: neutral

(7.6.25) View 25: Southwark Park

The taller elements of the proposed developments of, from left to right, Marine Wharf West, Cannon Wharf and Convoys Wharf will be glimpsed through the trees to the left of Surrey Canal.

Significance of effects: moderate, beneficial

(7.6.26) View 26: Verney Road

There will be no change in the view from a cumulative perspective.

Significance of effects: minor to moderate, beneficial

(7.6.27) View 27: Ilderton Road North

There will be no change in the view from a cumulative perspective.

Significance of effects: major, beneficial

(7.6.28) View 28: Ilderton Road South

There will be no change in the view from a cumulative perspective.

Significance of effects: minor, beneficial

(7.6.29) View 29: Silwood Street North

There will be no change in the view from a cumulative perspective.

Significance of effects: minor, beneficial

(7.6.30) View 30: Lower Road

There will be no change in the view from a cumulative perspective.

Significance of effects: negligible

18.4 Cultural Heritage, chapter 8

18.4.1 There are 22 Cumulative Schemes in the vicinity of the Application Site.

18.4.2 Following the implementation of the proposed mitigation measures outlined in Chapter 8 of this ES, there will be no significant residual effects on archaeological heritage assets. The excavation, analysis and recording of archaeological remains within the Application Site and within the 'Cumulative Schemes' identified in this assessment, will enhance the regional understanding of the archaeological evolution of the surrounding landscape. No significant cumulative adverse effects are therefore identified.

18.4.3 In regards to built heritage there are 17 identified committed schemes within the wider area of the Application Site, many of which are a significant distance from the designated heritage assets and the Application Site. Those schemes within close proximity to the Site to have an cumulative effect include;

- Silwood estate (residential development; up to 6 storeys)
- 763 Old Kent Road (Waste transfer facility; 16.5 metres)
- Grinstead Road (Residential lead development; up to 12 storeys)

18.4.4 These schemes however are largely redevelopment projects. Whilst their relatively low level scale limits any cumulative visual impact, subsequent increased construction traffic may result in cumulative visual effects on surrounding designated heritage assets. These

effects are anticipated to be temporary. No significant cumulative adverse effects are therefore identified.

18.5 Microclimate: Daylight and Sunlight, chapter 9

18.5.1 It is considered that the cumulative developments are too distant from the Site to lead to any cumulative effects with respect to daylight and sunlight. This includes the Silwood Estate development (Lewisham planning ref DC/09/73169) which is closest to the Application Site, but is characterised by low rise blocks, separated from the Site by wide railway tracks.

18.5.1 Potential cumulative effects are therefore not significant.

18.6 Wind Microclimate, chapter 10

18.6.1 The extent of the wind tunnel model is considered sufficient to create appropriate wind flows within and immediately surrounding the Application Site, including the area of the potential significant environmental effects. Whilst several of the consented schemes represent substantial developments, they mostly lie outside the extent of the wind tunnel model and are considered too distant from the Application Site to have any significant cumulative effects with the Proposed Development in terms of wind environment.

18.6.2 The proposed Silwood Estate Phase 4C does lie within the assessment area extent, but comprises a small number of mid-rise residential blocks. Wind tunnel tests were carried out for the Proposed Development with the consented Silwood Estate Phase 4C. No discernable cumulative effects were observed.

18.6.3 On this basis, potential cumulative environmental effects would not be considered significant.

18.7 Socio-Economics and Population, chapter 11

18.7.1 The cumulative developments would be expected to deliver a number of social and economic effects through increased homes and therefore residents including children, along with the provision of new commercial floorspace creating jobs and promoting visitor and employee expenditure.

18.7.2 The assessment of residential units is based on a uniform tenure split for each of the cumulative developments based on a similar average model to the sizes and tenures of units at the Proposed Development. The employment generation is based on the methodology

outlined above, using ARUP/English Partnerships Employment Densities: A Full Guide (2001).

18.7.3 The residential element of the cumulative developments, including the 2,500 units at Surrey Canal, totals around 13,000 additional homes in north Lewisham and Southwark. Applying an average estimated household spend of £310 per week on goods and services, this would create an additional £209.5m per year in local household expenditure.

18.7.4 Altogether, the cumulative developments would deliver around 13,000 homes in a range of tenures and sizes. Applying a similar average model of tenure and size mix from the Proposed Development to schemes where detailed tenure and size mix is unavailable leads to an estimated total population of around 22,800 people, of which 2,287 would be expected to be children. Of these children, around 860 would be primary school-aged and 390 would be secondary school-aged. The new population in these cumulative developments will increase pressure on local facilities such as primary healthcare and education. However, the developments will include some element of education and community provision on-site through the re-developed Tidemill Primary School and new library at Deptford Lounge and the Leisure Centre within the Giffin Street Masterplan Area, and the Convoys Wharf development is due to provide an additional new school.

18.7.5 Based on an assessment of capacity at local education facilities, the increased population would increase pressure on primary and secondary school places in the local area. Given the scale of cumulative development in the area, it is likely that there will be a need to mitigate the effect of the Proposed Development as part of the broader investment in north Lewisham's infrastructure. In the context of a cumulative increase of up to 860 primary and 390 secondary-age children in nearby Developments, the Proposed Development would therefore be expected to have a **minor adverse** effect on existing education capacity before mitigation.

18.7.6 The cumulative increase in the local population of around 22,800 people would put pressure on local GP surgeries in north Lewisham and Southwark. At present, the combined Local Authorities have an average list size of around 1,200 patients per GP (NHS Business Services, 2010). Given that the most frequently used planning assumptions take an average of 1,800 patients per GP as being considered acceptable, it is likely that the additional population will create demand for around 13 new GPs. In the context of the increased demand for GPs from cumulative developments, the effect of increased population at the Proposed Development is therefore considered negligible due to the proposed on site provision of health space.

18.7.7 In addition, the cumulative developments include potential healthcare space at the Proposed Development and Eileen House, and Convoys Wharf is due to provide a new 4-6 GP Surgery. Consultation with LB Lewisham has identified that there is currently vacant floorspace with the capacity to incorporate additional local healthcare services, potentially GPs, at the

recently opened Waldron Health Centre at Stanley Street, next to New Cross Rail Station. In addition, the New Cross Gate NDC Neighbourhood Centre, including an integrated GP centre and pharmacy, is a committed development.

18.7.8 The cumulative developments will also include an element of commercial floorspace, with office, leisure, hotel and community floorspace, equating to up to an estimated 13,000 FTE jobs including those created at the Proposed Development. The additional 13,000 FTE positions would therefore be expected to cause an increase in local expenditure by employees of around £17.4m per year.

18.7.9 The cumulative developments have all been subject to planning policy in terms of design, accessibility and safety, and will all offer a significant physical improvement to streetscene and public realm, with a variety of soft and hard landscaped public space suitable for play and recreation.

18.8 Transport and Movement, chapter 12

18.8.1 There are a number of committed developments which together will generate much more additional travel movements than will the Proposed Development.

Highway Impact Assessment

18.8.2 The following tables show the expected change in vehicle movements on the roads surrounding the Site when the base with committed development traffic scenario is compared with the base with committed development and Proposed Development traffic scenario. As previously, the data is compared peak hour flows.

Table 18.1: Percentage Impact of Committed + Development Associated Traffic – AM Peak Hour

Link	AM Peak Hour Vehicle Movements		
	Base + Committed	Base + Committed Dev + Proposed Dev	% Change
1. Surrey Canal Road – east of Orion Business Park junction	880	908	+3.2% (+28)
2. Rollins Street	30	86	+186.7% (+56)
3. A2 Kent Road – east of Ilderton Road junction	2102	2274	+8.2% (+172)
4. A2 Kent Road – west of Ilderton Road junction	1819	1899	+4.4% (+80)
5. Ilderton Road – north of A2 junction	961	1212	+26.1% (+251)
6. Ilderton Road – south of Rotherhithe New Road junction	1321	1424	+7.8% (+103)
7. Rotherhithe New Road – west of Ilderton Road junction	1612	1732	+7.4% (+120)

Cumulative Effects

8. Rotherhithe New Road – east of Ilderton Road junction	2007	2032	+1.2% (+25)
9. Hawkstone Road	425	425	0% (0)
10. Rotherfield old Road	1321	1338	+1.3% (+17)
11. Lower Road – north of Rotherhithe New Road junction	1379	1387	+1% (+8)

Table 18.2: Percentage Impact of Committed +Proposed Development Associated Traffic – PM Peak Hour

Link	PM Peak Hour Vehicle Movements		
	Base + Committed	Base + Committed Dev + Proposed Dev	% Change
1. Surrey Canal Road – east of Orion Business Park junction	1302	1346	+3.4% (+44)
2. Rollins Street	33	98	+197.0% (+65)
3. A2 Kent Road – east of Ilderton Road junction	1819	2050	+12.0% (+231)
4. A2 Kent Road – west of Ilderton Road junction	1908	2008	+5.2% (+100)
5. Ilderton Road – north of A2 junction	967	1298	+34.2% (+331)
6. Ilderton Road – south of Rotherhithe New Road junction	1125	1276	+13.4% (+151)
7. Rotherhithe New Road – west of Ilderton Road junction	1751	1887	+7.8% (+136)
8. Rotherhithe New Road – east of Ilderton Road junction	2017	2046	+1.4% (+29)
9. Hawkstone Road	510	510	0% (0)
10. Rotherfield old Road	1242	1259	+1.4% (+17)
11. Lower Road – north of Rotherhithe New Road junction	1954	1996	+2.1% (+42)

Table 18.3: Percentage Impact of Committed +Proposed Development Associated Traffic – Saturday Peak Hour

Link	Weekend Peak Hour Vehicle Movements		
	Base + Committed	Base + Committed Dev + Proposed Dev	% Change
1. Surrey Canal Road – east of Orion Business Park junction	796	864	+8.5% (+68)
2. Rollins Street	35	83	+137.1% (+48)
3. A2 Kent Road – east of Ilderton Road junction	1846	2110	+14.3% (+246)
4. A2 Kent Road – west of Ilderton Road junction	1848	1963	+6.2% (+115)
5. Ilderton Road – north of A2 junction	1001	1381	+38.0% (+380)
6. Ilderton Road – south of Rotherhithe New Road junction	948	1141	+20.4% (+193)

Cumulative Effects

7. Rotherhithe New Road – west of Ilderton Road junction	1437	1595	+11.0% (+158)
8. Rotherhithe New Road – east of Ilderton Road junction	1771	1805	+1.9% (+34)
9. Hawkstone Road	520	520	0% (0)
10. Rotherfield old Road	1140	1161	+1.8% (+21)
11. Lower Road – north of Rotherhithe New Road junction	1770	1784	+1.0% (+14)

Severance

18.8.3 Overall, with a higher level of traffic across the network, severance will slightly increase beyond those experienced with only the Baseline plus Proposed Development. This is considered to only result in a minor adverse effect however mitigating measures that will be delivered through each of the wider committed development sites that have been included within this assessment will help to minimise the impact on severance.

Driver Delay

18.8.4 The cumulative effect of the committed development in addition to the Proposed Development will place an increased level of traffic on the highway network within the study area as demonstrated in the above tables. This has been assessed in the Transport Assessment contained in Appendix 12.1.

18.8.5 A number of highway improvement schemes may be delivered through the committed developments in the surrounding area to minimise driver delay, however the increase in traffic levels on the local road network surrounding the Application Site is considered to be minor adverse.

Pedestrian Delay and Amenity

18.8.6 With a higher level of traffic across the network, pedestrian delay will slightly increase beyond those levels experienced with only the Baseline plus Proposed Development. The wider committed developments will implement other improvements that will help to enhance overall pedestrian amenity however, at a local level surrounding the Application Site the effect of an increase in network traffic is considered to result in a minor adverse effect for pedestrians.

Fear and Intimidation

18.8.7 The higher levels of traffic across the highway network generated as a result of the committed development being added to the assessment are considered to result in an increase in fear and intimidation however, due the measures set within the Proposed Development and the supporting mitigating measure, the effect of this increase traffic is considered to be still minor beneficial.

Accident and Road Safety

18.8.8 The higher levels of traffic across the highway network generated as a result of the committed development are considered to result in minor adverse effect on accidents and road safety.

Dust and Dirt

18.8.9 Other developments will cause dust and dirt during their construction phases. There may be a cumulative effect where developments are constructed at the same time. However, each development will need to put in place a construction and logistics plan and it will be the responsibility of the Highway Authority to ensure effective coordination of these plans.

Accident and Road Safety

18.8.10 As a result of the higher levels of traffic across the highway network including the roads surrounding the Application Site generated as a result of the committed development it is considered the this will have a minor adverse effect on accidents and road safety.

18.9 Noise and Vibration, chapter 13

18.9.1 Cumulative effects have been considered as part of the assessment of road traffic noise, and are presented in Table 18.8 below. The effects are of low adverse significance.

Table 18.4: Road traffic noise change for completed development

Link Name	Opening Year without Development minus Baseline 2010	Opening Year with Development minus Baseline 2010
Ilderton Road	0.0	0.1
Surrey Canal Road	0.0	0.1
Zampa Road	0.0	0.1
Bolina Road	0.0	0.0
Silwood Street	0.0	0.0
Rotherhithe New Road	0.0	0.1
Stockholm Road	0.0	1.2
Rollins Street	0.1	0.7

18.10 Air Quality, chapter 14

18.10.1 Cumulative effects associated with the traffic generated by Committed Developments have been fully taken into account in this assessment.

18.10.2 The predicted annual mean concentrations of nitrogen dioxide, PM₁₀ and PM_{2.5}, as well as the number of days with PM₁₀ concentrations >50 µg/m³, are set out in Table 18.9, for the “With Scheme plus Committed Developments” scenario. For ease of comparison, those predictions for the “Without Scheme plus Committed Developments” scenario are also reproduced.

Cumulative Road Traffic Effects – Existing Receptors

18.10.3 Predicted pollutant concentrations remain well below the objectives whether the Proposed Development proceeds or not. The changes in annual mean nitrogen dioxide and PM₁₀ concentrations and the number of days with PM₁₀ >50 µg/m³ brought about by the Proposed Development are shown in the table below. The magnitude of changes in annual mean nitrogen dioxide concentrations are all imperceptible, with the highest incremental change predicted to be 0.2 µg/m³; this reflects the small change in traffic flows. The magnitude of changes in annual mean PM₁₀ and PM_{2.5} concentrations, and the number of days >50 µg/m³ PM₁₀ are all imperceptible. Based on the criteria detailed in Chapter 14, the effects are all judged to be negligible.

18.10.4 Isopleths of the modelled annual mean nitrogen dioxide concentrations at ground-floor level are presented in the figure below for the 2025 With Scheme plus Committed Developments scenario. The areas where annual mean nitrogen dioxide concentrations are predicted all lie within the carriageway, and there is no relevant public exposure.

Table 18.5: Predicted Concentrations of Nitrogen Dioxide (NO₂), PM₁₀ and PM_{2.5} in 2025 - Annual Mean (µg/m³) and Number of Days with PM₁₀ > 50 µg/m³

Location	2025 “Without Scheme +CD”				2025 “With Scheme +CD”			
	NO ₂	PM ₁₀ ^a		PM _{2.5}	NO ₂	PM ₁₀ ^a		PM _{2.5}
	Annual Mean	Annual Mean	Days	Annual Mean	Annual Mean	Annual Mean	Days	Annual Mean
Receptor 1	24.9	19.9	3	12.8	24.9	19.9	3	12.8
Receptor 2	23.3	19.3	3	12.5	23.4	19.4	3	12.5
Receptor 3	31.1	21.2	5	13.6	31.1	21.2	5	13.6
Receptor 4	30.0	21.2	5	13.6	30.2	21.3	5	13.6
Receptor 5	27.3	20.9	5	13.6	27.5	20.9	5	13.6
Receptor 6	29.1	20.9	5	13.4	29.2	20.9	5	13.4
Receptor 7	28.1	20.9	5	13.4	28.2	20.9	5	13.4
Receptor 8	27.1	21.0	5	13.7	27.1	21.1	5	13.7

Receptor 9	26.7	21.0	5	13.6	26.7	21.0	5	13.6
Receptor 10	24.4	20.1	3	13.1	24.4	20.1	3	13.1
Objectives	40	40	35	25^b	40	40	35	25^b

^a The numbers of days with PM₁₀ concentrations greater than 50 µg/m³ have been estimated from the relationship with the annual mean concentration described in Defra, 2009.

^b The European Union limit value of 25 µg/m³ is to be met by 2015.

Table 18.6: Incremental Change in Predicted Concentrations Between “With Scheme + CD” and “Without Scheme +CD” in 2025^a

Location	NO ₂	PM ₁₀		PM _{2.5}
	Annual Mean (µg/m ³)	Annual Mean (µg/m ³)	No. Days >50 µg/m ³	Annual Mean (µg/m ³)
Receptor 1	< 0.1	< 0.1	< 1	< 0.1
Receptor 2	0.1	0.1	< 1	< 0.1
Receptor 3	< 0.1	< 0.1	< 1	< 0.1
Receptor 4	0.2	0.1	< 1	< 0.1
Receptor 5	0.1	< 0.1	< 1	< 0.1
Receptor 6	0.1	< 0.1	< 1	< 0.1
Receptor 7	0.1	< 0.1	< 1	< 0.1
Receptor 8	< 0.1	< 0.1	< 1	< 0.1
Receptor 9	< 0.1	< 0.1	< 1	< 0.1
Receptor 10	< 0.1	< 0.1	< 1	< 0.1

^a Based on un-rounded values

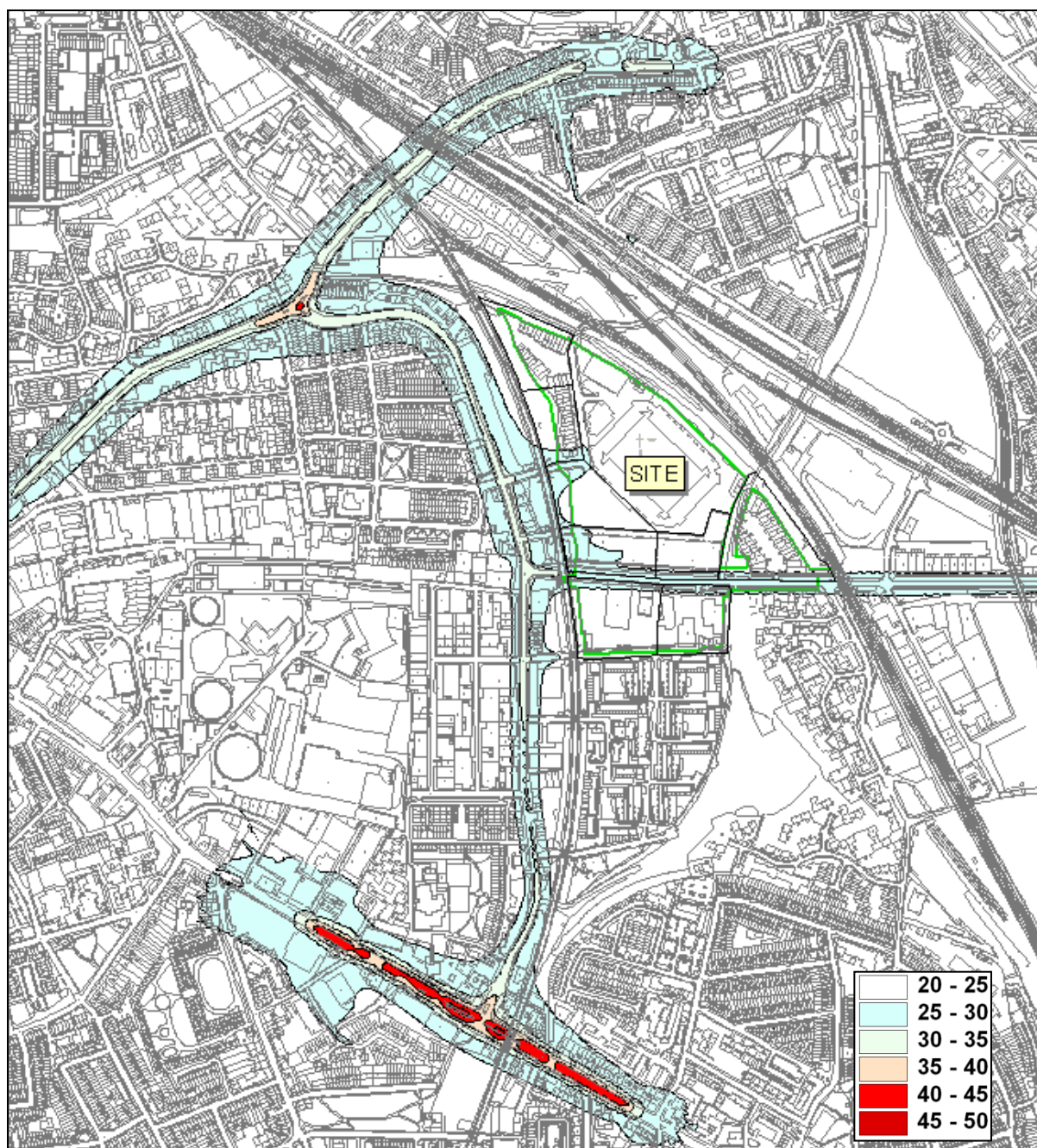


Figure 18.1 Modelled Annual Mean Nitrogen Dioxide Concentration Contours in 2025 With Scheme plus Committed Developments within the Study Area.

© Crown copyright 2010. All rights reserved. License number: 100046099

Cumulative Road Traffic Effects – Receptors within Proposed Development

18.10.5 The predicted annual mean concentrations of nitrogen dioxide, PM₁₀ and PM_{2.5}, as well as the number of days with PM₁₀ concentrations >50 µg/m³, are set out in the table below for the receptor locations within the Proposed Development. All predicted concentrations are well below the objectives for all pollutants.

Cumulative Road Traffic Effects - Assessment of Significance

18.10.6 The operational air quality effects associated with road traffic are judged to be insignificant. This professional judgement is made in accordance with the methodology set out in Chapter 14, taking into account the factors to determine air quality significance, and also taking into account the uncertainty over future projections of traffic-related nitrogen dioxide concentrations, which may not decline as rapidly as currently projected. In particular this judgement takes account of the fact that predicted concentrations are all well below the air quality objectives, the effects are predicted to be negligible, and the assessment has been based on 2020 emissions and background forecasts (as opposed to 2025) will have overestimated the effects.

Table 18.7: Predicted Concentrations of Nitrogen Dioxide (NO₂) and PM₁₀ in 2025 for New Receptors in the Proposed Development

Location	2025 "With Scheme + CD"			
	NO ₂ (µg/m ³)	PM ₁₀ (µg/m ³) ^a		PM _{2.5} (µg/m ³)
	Annual Mean	Annual Mean	No. Days >50µg/m ³	Annual Mean
Receptor 11	23.9	20.0	3	13.1
Receptor 12	23.9	19.9	3	13.0
Receptor 13	24.9	20.2	4	13.1
Receptor 14	23.8	19.9	3	13.0
Receptor 15	22.7	19.2	2	12.4
Receptor 16	22.5	19.1	2	12.4
Receptor 17	23.9	19.5	3	12.6
Receptor 18	22.4	19.1	2	12.3
Objectives	40	40	35	25^b

^a The numbers of days with PM₁₀ concentrations greater than 50 µg/m³ have been estimated from the relationship with the annual mean concentration described in Defra, 2009.

^b The European Union limit value of 25 µg/m³ is to be met by 2015.

18.11 Groundwater, Soils and Contamination, chapter 15

18.11.1 The cumulative effects associated with Geology, Ground Conditions and Contamination are not considered significant because the likely significant effects identified are all considered to be highly localised to the Site and the potential effects on receptors offsite is considered negligible.

18.12 Water Resources and Flood Risk, chapter 16

18.12.1 The Proposed Development will not increase flood risk elsewhere in the catchment and therefore there are no cumulative effects with regard to flood risk.

18.12.2 Water quality has the potential to have likely significant cumulative effects during the construction phase of the Proposed Development. However, mitigation has been recommended to reduce the impact and any possible effects to the wider area.

18.12.3 In general there are unlikely to be any likely significant cumulative effects, with regard to water resources, as a result of the Proposed Development together with the other committed development in the locality as listed in Chapter 2 of this ES, as each development has been subject to the same national guidance and Environment Agency requirements. Should the mitigation measures detailed above be put in to place then, as any nearby proposed developments will be to the same standard, there should be no need for any cumulative mitigation measures and likely significant residual effects of this development and other local developments will be negligible.

18.12.4 As the surrounding area is brownfield in nature and therefore entirely impermeable, any future developments in this area will not increase the impermeable area around the location of the site. As such the risk of increased surface water runoff is unlikely and therefore no further mitigation will be required. The reduction being provided as part of this Proposed Development will afford a significant beneficial likely significant effect to not only the Site but the wider catchment.

18.13 Ecology and Nature Conservation, chapter 17

18.13.1 It is considered that given the paucity of habitats within the Site, its lack of value to protected species and the absence of potential for the Proposed Development to give rise to significant adverse environmental effects on other habitats / sites within the local area, all potential significant cumulative environmental effects during the construction phase of the Proposed Development are limited to those on non-statutory designated sites in the immediate vicinity of the Site. For clarity, these non-statutory sites are Bridgehouse Meadows, South Bermondsey Railway Embankment and Senegal Railway Banks SINCs.

18.13.2 It is considered that potential significant cumulative environmental effects during the operational phase of the Proposed Development are principally in relation to non-statutory

designated sites in the immediate vicinity of the Site. Potential effects would be through increased noise, lighting and recreational pressure.

18.13.3 Consideration has also been given to potential effects on faunal species which may utilise the Proposed Development.

East London Line Extension (Phase 2):

18.13.4 It is understood that these works are scheduled to commence in early 2011 and would be completed by autumn 2012. For the purpose of this cumulative assessment it has been assumed that the East London Line extension would be operational by the end of 2012. In the worst case, there could be a period of several months where construction works associated with the East London Line extension would overlap with the Proposed Development. This would give rise to potential significant cumulative environmental effects during the construction phase on non statutory designated sites and would be in relation to increased noise, lighting and dust during the construction phase. It is noted that Bridgehouse Meadows SINC is to be used as a construction site for the East London Line Extension works and so this development will have direct effects on this SINC through temporary habitat degradation, when the East London Line Extension is considered alone.

18.13.5 Any potential cumulative effects associated with the construction phase would be temporary and reversible. Appropriate mitigation has been put forward in respect of the Proposed Development so as to avoid significant adverse environmental effects on non-statutory designated sites during the construction phase of the Proposed Development. Such measures include commitments in respect of lighting, noise and dust levels which will be delivered through site wide and plot specific COCPs. There would be no cumulative effects in relation to (i.e. temporary) land take of any non-statutory designated sites, since the Proposed Development would not result in any such effects. It is considered that the mitigation measures put forward in respect of the Proposed Development would prevent any potential significant adverse cumulative environmental effects and it is expected that mitigation measures proposed as part of the proposals associated with East London Line extension would further mitigate any such effects.

18.13.6 In relation to the operational phase of the developments, it is considered that potential adverse cumulative environmental effects are limited to increased noise. Appropriate design of the lighting schemes associated with each development would ensure that the railway embankments (South Bermondsey Railway Embankment and Senegal Railway Banks SINC) remain unlit. Given the nature of the proposals associated with the East London Line extension and the habitats which this SINC supports, there would be no cumulative effects in relation to an increase in recreational pressure.

18.13.7 With regard to increased noise levels, the operational phase of the East London Line extension will result in temporary increases in noise levels at the three non-statutory sites and within the Proposed Development, when trains pass. The Proposed Development will result in increased ambient noise levels both within the Site and at the three non-statutory sites, primarily associated with traffic and human activity with noise levels further increased on match days. It is considered that faunal species associated with the non-statutory sites would not be significantly adversely affected by an increase in ambient noise levels, since they would habituate to such increases. With regard to increases in peak noise levels, any effects would be temporary and reversible, since any species displaced would return once noise levels decrease back towards those consistent with ambient levels).

18.13.8 Bridgehouse Meadows SINC is to be enhanced in conjunction with the Proposed Development following works associated with the East London Line extension.

18.13.9 No significant adverse cumulative environmental effects have been identified.

Thameslink 2000

18.13.10 It is understood that the Thameslink works are scheduled to commence in early 2013 and would be completed by 2015. For the purpose of this cumulative assessment it has been assumed that Thameslink 2000 works would be operational by the end of 2015. There may therefore likely be an overlap with the Proposed Development.

18.13.11 As with the proposed East London Line extension potential significant cumulative environmental effects during the construction phase would be in respect of non statutory designated sites and would be in relation to increased noise, lighting and dust. All such effects would be temporary and reversible. No additional cumulative environmental effects have been identified for the construction phase and it is considered that no additional mitigation would be required.

18.13.12 In relation to the operational phase, as with the East London Line extension it is considered that potential adverse cumulative environmental effects are limited to increased noise. No additional cumulative environmental effects have been identified and it is considered that no additional mitigation would be required.

18.13.13 No significant adverse cumulative environmental effects have been identified.

Other developments within the local area

18.13.14 The cumulative sites are well removed from the Proposed Development. The closest sites to the Proposed Development are Silwood Estate and Grinstead Road, located approximately 0.25km and 0.6km to the east of the Site respectively.

18.13.15 It is understood that the Silwood Estate development will be complete by the end of 2010. As such there would be no potential cumulative environmental effects at the construction phase. In relation to the development at Grinstead Road, given the distances involved and the separation of the sites by existing infrastructure, there would be no cumulative effects during the construction phases of the developments even in the event that the schemes ran concurrently. In relation to the operational phases of all three schemes, it is considered that given the distances involved and the separation of the sites by existing infrastructure / development including the railway line, and taking into account the proposed mitigation measures in respect of the Proposed Development, there would be no potential cumulative effects on habitats / species within the Proposed Development. Furthermore, it is considered that given the fact that both the Silwood Estate and Grinstead Road sites are separated from Senegal Railway Embankments SINC (and the other SINC in the immediate vicinity) by the existing railway infrastructure (not designated), there would be no significant adverse cumulative environmental effects on non-statutory designated sites. No further potential significant adverse cumulative environmental effects have been identified.

18.13.16 Having reviewed the proposals associated with other relevant developments, it is considered that there would be no potential significant adverse cumulative environmental effects on any sensitive receptors.