

# M25 junction 10/A3 Wisley interchange TR010030

## 6.3 Environmental Statement Chapter 16: Assessment of cumulative effects

Regulation 5(2)(a)  
Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



## Infrastructure Planning

### Planning Act 2008

#### The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended)

### M25 junction 10/A3 Wisley interchange

#### The M25 junction 10/A3 Wisley interchange Development Consent Order 202[x ]

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### 6.3 ENVIRONMENTAL STATEMENT CHAPTER 16: ASSESSMENT OF CUMULATIVE EFFECTS

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## 16. Assessment of Cumulative Effects

### Executive summary

The chapter considers the assessment of the inter-relationship between environmental topics and an assessment of cumulative effects with other developments and this Scheme.

The baseline for each environmental topic is described in the previous chapters. Proposed developments that have been shortlisted in the cumulative effects assessment include the Highways England junction 10 - 16 Smart Motorway Programme (SMP); the former Wisley Airfield residential development, proposed building developments at the Royal Horticultural Society Garden, Wisley, six proposed other residential developments including a Care Home at Painshill Farm, seven other developments including office, retail, industrial and educational uses and one further road scheme at Send Marsh/Burnt Common.

In-combination effects during the construction period are principally related to noise, landscape and visual effects, and land take and are mainly temporary in nature. The overall in-combination effect of moderate adverse in relation to residential, community and business receptors, and driver and non-motorised travellers in anticipated and neutral for all other types of receptors. In-combination adverse effects during operation are principally related to noise and landscape and visual effects. There will also be beneficial in-combination effects related to establishment of improved driver and non-motorised user routes in the Scheme design. The overall in-combination effect during operation is considered to be neutral in relation to all types of receptor.

During construction, it is anticipated that cumulative effects will include effects related to noise; effects on users of public rights of way, drivers and some private dwellings related to the combined effects of noise, dust, land take and changes in access and visual amenity; temporary effects between the Scheme and the Feltonfleet School development related to tree removal however, replacement tree planting will be provided and effects on driver stress and delays in the delivery of proposed community facilities.

During operation, it is anticipated that beneficial cumulative effects in relation to businesses, attractions and community facilities primarily due to improvements in access and safety will occur, beneficial effects to pedestrians, cyclists and public rights of way and on driver stress and slight adverse effects in relation to views from the road, public rights of way and some fixed receptors. However, these effects would reduce as mitigation planting matures and some receptors would experience beneficial cumulative effects in relation to views.



## 16.1 Introduction

- 16.1.1 This chapter considers the in-combination and cumulative effects of the Scheme. The Environmental Impact Assessment (EIA) Directive and the Infrastructure Planning (EIA) Regulations 2017 (“IP (EIA) Regulations 2017”) require an Environmental Statement (ES) to include the assessment of the inter-relationship between environmental topics and an assessment of cumulative effects with other development.
- 16.1.2 This assessment draws on guidance provided within the design manual for roads and bridges (DMRB) Volume 11, Section 2, Part 5 HA 205/08 Assessment and Management of Environmental Effects and the Planning Inspectorate (PINS) 'Advice Note Seventeen: Cumulative Effects Assessment' (December 2015), which are considered to represent best practice for cumulative effects assessments in relation to DCO projects.
- 16.1.3 As set out in IEMA Guidance (2011), in-combination (synergistic) and cumulative (additive) effects are defined as:
- Intra-projects effects or ‘in-combination effects’ (synergistic): These effects occur between different environmental topics within the same proposal and as a result of the development’s direct effects i.e. combined effects from a single project (the intra-relationship between different environmental factors); and
  - Inter-project effects or ‘cumulative effects’ (additive): These effects occur as a result of the combined action of a number of different projects cumulatively with the project being assessed and on a single resource or receptor i.e. cumulative effects from different projects (with the project being assessed).

## 16.2 Competent expert evidence

- 16.2.1 This assessment of cumulative effects chapter has been undertaken by a Chartered Environmentalist (MSc, BSc, MIEMA, CEnv), Registered Environmental Impact Assessor, who holds a professional membership with the Institute of Environmental Management and Assessment. They have over 10 years of knowledge and experience in cumulative impact assessment within EIA and has used their knowledge and professional judgement to undertake this assessment.

## 16.3 Legislative and policy framework

- 16.3.1 The EIA Directive is implemented through the IP (EIA) Regulations 2017 in relation to NSIPs. The EIA Regulations require consideration of the likely significant effects of a development on the environment, including cumulative and in-combination effects.
- 16.3.2 The need to consider cumulative and in-combination effects in planning and decision-making is also set out in the National Policy Statement for National Networks (NPSNN) which states that *“any environmental statement should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development”*. It should also be considered *“how significant cumulative effects and the interrelationship between effects might as a whole affect the environment, even though they may be acceptable when considered on an individual basis with mitigation measures in place.”*

## 16.4 Study area

### In-Combination (synergistic) effects

- 16.4.1 The study area for the assessment of in-combination effects of the Scheme reflects the study areas, or spatial Zones of Influence (Zoi), identified within the relevant topic chapters of this ES (Chapters 5 to 15). The study areas considered are described in Table 16.1.

**Table 16.1: Zone of Influence/Study Area**

Environmental topic	Zone of influence
Air Quality	<ul style="list-style-type: none"> <li>For dust effects, 200 m from the area expected to be affected by construction activities;</li> <li>For local air quality during construction, 200 m from roads affected by changes in traffic during construction (the affected road network); and</li> <li>For local air quality during operation, 200 m from the proposed new roads and other roads affected by traffic changes (the affected road network).</li> </ul>
Noise and Vibration	<ul style="list-style-type: none"> <li>For construction effects, 300 m from the construction footprint of the site and roads used by construction traffic; and</li> <li>For operational effects, 600 m from the carriageway edge of any proposed new routes or existing routes to be bypassed or improved, and 600 m from any other affected routes within 1 km of the proposed new routes or altered existing routes.</li> </ul>
Biodiversity	<ul style="list-style-type: none"> <li>30 km from the DCO boundary for Special Areas of Conservation (SACs) where bats are a qualifying feature;</li> <li>5 km from the DCO boundary for bats;</li> <li>2 km from the DCO boundary for statutory designated sites of nature conservation importance including European designated sites and nationally designated sites (SAC, SPAs, Ramsar, SSSI, NNR, LNR)</li> <li>2 km from the DCO boundary for Non-statutory SNCIs, Roadside Nature Reserves and conservation verges;</li> <li>1 km from the DCO boundary for notable habitats, ancient woodland, notable or legally protected species and invasive plant species;</li> <li>500 m from the DCO boundary for water bodies; and 50 m from the DCO boundary of veteran trees.</li> </ul>
Road Drainage and the Water Environment	<ul style="list-style-type: none"> <li>As a minimum, the catchment of any watercourses crossed by the Scheme;</li> <li>Groundwater – assessed on the underlying Water Framework groundwater body; and</li> <li>For cumulative effects, any surface water outfalls originating from the Scheme that outfall into the same watercourse will be considered. Any other developments that have the potential to discharge into the same watercourse or cross the same watercourse as the Scheme will also be considered.</li> </ul>
Landscape	<ul style="list-style-type: none"> <li>Visual effects within 1 km from the DCO boundary; and</li> <li>Landscape effects within 1 km of the DCO boundary.</li> </ul>

Environmental topic	Zone of influence
Geology and Soils	<ul style="list-style-type: none"> <li>• Within 500 m of the DCO boundary.</li> </ul>
Cultural Heritage	<ul style="list-style-type: none"> <li>• Within 500 m of the DCO boundary.</li> </ul>
Materials and Waste	<ul style="list-style-type: none"> <li>• For material resources, the study area includes the demand for key construction materials nationally; and</li> <li>• For waste, the study area includes the waste arisings and waste infrastructure capacity within the county of Surrey (with the exception of hazardous waste which is considered at a national level).</li> </ul>
People and Communities	<ul style="list-style-type: none"> <li>• Within 500 m of the DCO boundary.</li> </ul>
Effects on Climate and Vulnerability to Climate Change	<ul style="list-style-type: none"> <li>• Climate Change impact is inherently a cumulative effect of all human actions (including development) and is therefore not considered further in the cumulative assessment; and</li> <li>• Due to the inherent cumulative effects of Climate Change, in-combination effects will be captured in the environmental topic chapters e.g. Ecology, Road Drainage and the Water Environment, and Air Quality assessments. Climate vulnerability is therefore not considered further in the cumulative assessment.</li> </ul>

## Cumulative (additive) Effects

- 16.4.2 The study area for the identification of ‘other development’ for inclusion in the assessment of cumulative effects is based on thresholds and spatial areas. These thresholds consider the nature and location of the Scheme and the Zols for individual environmental topics.
- 16.4.3 The thresholds and spatial areas have been defined as follows, recognising that larger, more significant, developments will have wider ranging environmental effects than smaller, and more local developments:
- NSIPs - All projects listed on the PINS programme of Projects - 10 km from the DCO boundary;
  - Regionally Significant Projects - all regionally important projects included in the traffic model - 3 km from the DCO boundary;
  - Major development - within and 1.5 km from the DCO boundary; and
  - Minor development - within the DCO boundary.
- 16.4.4 Nationally significant projects are those that are listed on the PINS Programme of Projects.
- 16.4.5 The definition of a Regionally Significant Project, *“is a project that has been included within the traffic model for the Scheme which factors in all developments which would generate significant additional vehicle trips per weekday day. This includes individual residential developments of 200 dwellings or more, clusters of smaller developments of more than 200 dwellings cumulatively, and employment developments providing 100 full time equivalent jobs or more”*. Only developments in the traffic model within 3 km of the DCO boundary are included in the cumulative assessment as the traffic model incorporates data from a much

wider geographic scale where cumulative effects with the Scheme are unlikely to occur.

- 16.4.6 Major development and Minor development is defined in accordance with the criteria provided in Article 2 of the Town and Country Planning Development Management Procedure (England) Order 2015: “*Thresholds for a major development includes more than 10 new dwellings, a site area of 0.5ha and all mineral and waste developments. Minor developments are defined as developments below these thresholds*”.
- 16.4.7 The assessment of cumulative effects is based on a topic-by-topic identification of where the Zols for the Scheme and Zols for ‘other developments’ overlap, and therefore have potential for cumulative effects.

## 16.5 Assessment methodology

### In-Combination Effects

- 16.5.1 The methodology for the in-combination effects assessment adopts the principles provided in DMRB Volume 11, Section 2, Part 5: Assessment and Management of Environmental Effects.
- 16.5.2 The assessment methodology requires the identification of impact interactions associated with the Scheme on key environmental receptors. This ensures that the ES is not a series of separate assessments collated into one document, but rather a comprehensive assessment drawing together all the environmental effects of the proposals.
- 16.5.3 The effects identified within the technical topic chapters (Chapters 5 to 15) have been assessed to identify potential in-combination effects using professional judgement and a qualitative assessment approach.
- 16.5.4 The receptors considered in the ES have been sub-divided into the following groups:
- Human - residents, including community and private assets, sensitive receptors and vulnerable groups;
  - Human - all travellers, i.e. vehicle travellers, cyclists, and pedestrians;
  - Ecological receptors - protected species and existing habitats;
  - The water environment;
  - Heritage assets;
  - Geology and soils; and
  - Landscape.
- 16.5.5 Within these broad groups, individual receptors or groups of receptors that could be affected by the proposals have also been considered. The potential effects acting upon these receptors are primarily changes in traffic, noise, air quality, visual effects, and the physical environment (water, ecology, heritage etc). The assessment considers significant adverse residual effects after mitigation has been taken into account. Receptors that are significantly adversely affected by



two or more residual effects have then been identified and the range of effects likely to impact upon specific groups of receptors is described.

## Cumulative Effects


- 16.5.6 An assessment of cumulative effects has been undertaken. Advice Note 17 (PINS, 2015) recommends that: *“Other development’ with potential to give rise to cumulative effects should be identified by the applicant... the applicant should obtain available information on ‘other development’ by reference to planning applications, relevant development plans and any other available sources including stakeholder consultations, in particular with the relevant local planning authority.”*
- 16.5.7 The principles of the four-stage assessment approach to cumulative assessment, as outlined in Advice Note 17 (PINS, 2015), has been adopted as follows:
- Stage 1: Establish the NSIP’s Zone of Influence (ZOI) and Long List of ‘Other Development’;
  - Stage 2: Identify Shortlist of ‘Other Development’ - apply threshold criteria based on temporal scope, the scale and nature of other development and any other relevant factors to assist in deciding whether to include or exclude ‘other development’;
  - Stage 3: Information Gathering - compile detailed information on the ‘other development’ shortlisted, including proposed design and location, programme of construction, operation and decommissioning and environmental assessment information; and
  - Stage 4: Assessment - assess the cumulative effects of the proposed NSIP with the ‘other development’ based on factors including duration of effect, extent of effect, type of effect, frequency of the effect, value and resilience of receptors and likely success of mitigation.
- 16.5.8 To enable a reasonable and proportionate assessment, the following selection criteria has been used to identify and determine the long list of ‘other development’ which could result in potential cumulative effects with the Scheme in accordance with Table 3 in Advice Note 17 (PINS, 2015):
- Projects on the Infrastructure Planning Inspectorate’s Programme of Projects;
  - Trunk road and motorway projects which have completed the statutory planning processes, including those under construction;
  - Other development projects under construction or with valid planning permissions, and for which formal EIA is a requirement or for which non-statutory EIA has been undertaken;
  - Applications for consent which have been made, but which have not yet been determined;
  - Projects identified in the relevant emerging or adopted Development Plans, with appropriate weight given as they move closer to adoption, recognising that information on these proposals may be limited at present; and

- Project identified in other plans and programmes which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

16.5.9 The developments in the above categories are only considered in the assessment if they are considered to be ‘reasonably foreseeable’ and ‘committed’, in line with the guidance in DMRB Volume 11, Section 2, Part 5 HA 205/08.

16.5.10 The ‘other developments’ identified are then grouped into tiers in accordance with Advice Note 17 (PINS, 2015). This grouping reflects the likely degree of certainty attached to each development, with Tier 1 being the most certain and Tier 3 being the least certain and most likely to have limited publicly available information to guide the assessment. A description of the tiers is provided in Table 16.2.

**Table 16.2: 'Other Development' for inclusion in the CEA**

Tier	Likely Degree of Certainty	Level of detail
Tier 1	<ul style="list-style-type: none"> <li>• Under construction*;</li> <li>• Permitted application(s) whether under the Planning Act 2008 or other regimes but not yet implemented; and</li> <li>• Submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined.</li> </ul>	Decreasing level of detail likely to be available 
Tier 2	<ul style="list-style-type: none"> <li>• Projects on the Planning Inspectorate's Programme of Projects where a Scoping Report has been submitted.</li> </ul>	
Tier 3	<ul style="list-style-type: none"> <li>• Projects on the Planning Inspectorate's Programme of Projects where a Scoping Report has not been submitted;</li> <li>• Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given closer to adoption) recognising that information on any relevant proposals will be limited; and</li> <li>• Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals where such development is reasonable likely to come forward.</li> </ul>	
* Where other projects are expected to be completed before construction of the proposed NSIP and the effects of these projects are fully determined, effects arising from them should be considered as part of the baseline and may be considered as part of the construction and operation assessment.		

16.5.11 Rather than reporting every interaction, the methodology for the assessment of cumulative effects concentrates on the main significant effects, and aims to differentiate between permanent, temporary, direct, indirect and secondary effects, positive or negative.

16.5.12 Where significant cumulative effects, beyond those identified as residual effects from the Scheme in isolation, have been identified, additional mitigation measures are recommended.

16.5.13 The significance of cumulative effects on each environmental receptor group has then been made based on the balance of scores and using professional judgement.

16.5.14 Cumulative effects in relation to traffic growth, and its associated air quality and noise effects, across a wider regional study area are inherent within the traffic model and assessed as part of the main impact assessment in the relevant topic chapters. The assessments that make significant use of the traffic model are Air Quality and Noise and Vibration (Chapters 5 and 6). Certain information from the traffic model also contributes to the People and Communities (Chapter 13) in relation to driver stress calculations.

### Significance criteria

16.5.15 The assessment of significance of in-combination and cumulative effects has been undertaken in accordance with guidance in DMRB Volume 11, Section 2, Part 5 HA 205/08. The value and magnitude of impact has been determined by the criteria set within the individual topic chapters of this ES. The description of significance also takes account of the guidance in Advice Note 17 (PINS, 2015) to consider the capacity of environmental resources and receptors to accommodate any changes that are likely to occur. Paragraph 3.4.8 states that consideration should be given to the following:

- The duration of effect, i.e. temporary or permanent;
- The extent of effect, e.g. the geographical area of an effect;
- The type of effect, e.g. whether additive (e.g. loss of two areas of woodland of 1ha, resulting in 2 ha cumulative woodland loss) or synergistic (e.g. two discharges combine to affect a species which is not affected by a single discharge);
- The frequency of the effect;
- The 'value' and resilience of the receptor affected; and
- The likely success of mitigation.

16.5.16 Table 16.3 provides typical descriptors of effects in determining the significance of effect category for the combined and cumulative effects assessment. Effects are considered to be significant if Moderate, Large or Very Large.

**Table 16.3: In-Combination and Cumulative Effects Significance Descriptors**

Significance Category	Typical descriptors of effects resulting from the in-combination or cumulative effects of the Scheme
Very Large (Adverse or Beneficial)	<p>Where the balance of the effects of the Scheme or combined effects of the Scheme in association with other existing or more than likely / near certain future major development upon an individual or collection of environmental receptors would be very highly significant (positive or negative). Effects would be:</p> <ul style="list-style-type: none"> <li>• Permanent and far reaching for receptors of very high value;</li> <li>• Damaging for sites or features of international, national or regional importance; and</li> <li>• May include major change in a site or feature of local importance.</li> </ul>

Significance Category	Typical descriptors of effects resulting from the in-combination or cumulative effects of the Scheme
Large (Adverse or Beneficial)	Where the balance of the effects of the Scheme or combined effects of the Scheme in association with other existing or more than likely / near certain major future developments upon an individual or collection of environmental receptors would be highly significant (positive or negative). Effects would be: <ul style="list-style-type: none"> <li>• Permanent and far reaching for receptors of high value;</li> <li>• Localised for a receptor of very high value; and</li> <li>• Temporary for receptor of very high value.</li> </ul>
Moderate (Adverse or Beneficial)	Where the balance of the effects of the Scheme or combined effects of the Scheme in association with other existing or more than likely / near certain major future developments upon an individual or collection of environmental receptors would be significant (positive or negative). Effects would be: <ul style="list-style-type: none"> <li>• Permanent and far reaching for receptors of medium value;</li> <li>• Localised for receptors of high value; and</li> <li>• Temporary for a receptor of high value.</li> </ul>
Slight (Adverse or Beneficial)	Where the balance of the effects of the Scheme or combined effects of the Scheme in association with other existing or more than likely / near certain major development upon an individual or collection of environmental receptors would be noteworthy but not significant (positive or negative). Effects would be: <ul style="list-style-type: none"> <li>• Permanent and far reaching for receptors of low value;</li> <li>• Localised for receptors of medium value; and</li> <li>• Temporary for a receptor of medium value.</li> </ul>
Neutral	No effects. Where the positive or negative effects of the Scheme or the combined effects of the Scheme in association with other existing or more than likely / near certain future major developments would not be significant.

Table Source: Based on DMRB Volume 11 Section 2 Part 5 HA 205/08, Tables 2.3 and 2.6

## 16.6 Assumptions and limitations

- 16.6.1 The assessment has been undertaken using professional judgement and is based on information on 'other development' that is currently available and identified through consultation with the Local Planning Authorities. It is possible that there will be future planning applications for developments which could result in cumulative effects with the Scheme but, in line with the guidance in DMRB Volume 11, Section 2, Part 5 HA 205/08, only those developments which are 'reasonably foreseeable' and 'committed' have been included in the assessment.
- 16.6.2 For both the in-combination and cumulative effects assessments a worst-case approach has been adopted. For in-combination effects this assumes that effects arising from two different topics on one receptor will occur concurrently, unless timing is explicitly mentioned in the assessment e.g. daytime /night-time noise. For cumulative effects, where construction timing and phasing is not known, it has been assessed under the assumption that there is an overlap in the construction phases.

## 16.7 Baseline information

### In-Combination effects

- 16.7.1 The baseline for each environmental topic is described in detail for Air Quality, Cultural Heritage, Landscape, Biodiversity, Geology and Soils, Materials, Noise and Vibration, People and Communities and Road Drainage and Water Environment in the topic assessment chapters (Chapters 5 to 15).

### Cumulative effects

- 16.7.2 For Stage 1 of the Advice Note 17 (PINS, 2015) methodology (Establish the ZOI and a Long List of ‘Other Development’), a provisional list of ‘Other Development’ was compiled through searches of local authority planning webpages for planning applications and consents and a review of allocated and proposed sites in local plans. In accordance with guidance in DMRB, the relevant Local Planning Authorities (Guildford Borough Council, Elmbridge Borough Council, Woking Borough Council and Mole Valley District Council) were also consulted to determine whether any other developments near the Scheme should be taken into consideration and when they believe these to be likely to come forward. The Stage 1 Long List of ‘Other Development’ is included in Appendix 16.1 presented in a tabular format in accordance with the methodology.
- 16.7.3 For Stage 2 (Identify Shortlist of ‘Other Development’) the Long List of developments was then reviewed and filtered against the threshold criteria described in the methodology section above. The projects shortlisted for further consideration at Stage 2 are indicated in the table in Appendix 16.1 and summarised in Table 16.4 below. The Local Planning Authorities were then consulted on the proposed Stage 2 Short List to ensure all development with the potential for cumulative effects were identified.
- 16.7.4 The locations of the Stage 2 Short List developments, and their respective ZOIs, are shown on Figure 16.1.

**Table 16.4: Stage 2 Short List of ‘Other Development’**

Development	Distance from site (closest point)	Development Description	Application Reference
<b>Highways England</b>			
M25 junction 10 - 16 Smart Motorway Programme (SMP)	Partly within the DCO boundary	M25 junction 10 to junction 16 includes upgrading the M25 between junction 10 (A3) and junction 16 (M40) through a mixture of enhancements, including hard shoulder running between junctions 15 and 16.	N/A



Development	Distance from site (closest point)	Development Description	Application Reference
<b>Guildford Borough Council</b>			
The former Wisley Airfield	Partly within the DCO boundary	Residential led mixed use development, allocated for: <ul style="list-style-type: none"> <li>Homes, including some specialist housing and self-build plots, sheltered/Extra Care homes, traveller pitches, employment, comparison retail, convenience retail services in a new Local Centre, community and two form entry primary school</li> </ul>	Site allocation Policy A35 and 15/P/00012
Land to the East of South Cottage, White Horse Lane, Ripley, GU23 6BB	550 m	Construction of residential units to the rear, retail/commercial units on the High Street frontage, associated car parking and landscaping.	16/P/00608
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	Parts of the RHS site are within the DCO boundary	Erection of new part single-storey part two-storey building accommodating retail, entrance, visitor facilities and alterations to the car parking and hard and soft landscaping and following the demolition of the existing plant centre, the extensions to the Laboratory building, toilet blocks, Aberconway Cottage and part of Aberconway House.	16/P/01080
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	120 m	Erection of a two-storey building accommodating science, education, research and restaurant facilities, associated landscaping including a landscape bund and other works associated with the development.	16/P/00976

Development	Distance from site (closest point)	Development Description	Application Reference
Land at Garlick's Arch, Send Marsh Burnt Common and Ripley	2.3 km	Site allocated for homes, including some self-build and custom house building plots, and Travelling Show people plots (sui generis).	Site allocation Policy A43
Land for new north facing slip roads to/from A3 at Send Marsh/Burnt Common	2.3 km	Sites allocated for a new northbound on-slip to the A3 trunk road from A247 Clandon Road and a new southbound off-slip from the A3 trunk road to A247 Clandon Road.	Site Allocation Policy A43a
<b>Elmbridge Borough Council</b>			
Former San Domenico Restaurant	Within the DCO boundary	Demolition of existing main building and the construction of the new petrol filling station with ancillary convenience store, food to go outlet, pump islands, canopy, underground tanks, revisions to vehicular access, parking and circulation arrangements, landscaping and associated works.	2017/0524
Enfin, Painshill Farm, Portsmouth Road, Cobham Surrey KT11 1DN	0 km	Care home with integrated communal and support facilities, landscaped residents' gardens, staff areas, refuse storage, parking and landscaping following demolition of existing houses.	2018/2432
Feltonfleet School Byfleet Road Cobham Surrey KT11 1DR	Adjacent to and within the red line boundary	Two-storey detached building (Music Facility), conversion of Leighton, two-storey detached building (Digital Technology & Art Hub), single storey building, high brick wall enclosure, single storey maintenance shed, single storey detached building, cricket nets and replacement	2017/2106

Development	Distance from site (closest point)	Development Description	Application Reference
		boundary wall along Byfleet.	
Land at Chippings Farm, Portsmouth Road, Cobham, KT11 1EH	1.04 km	Existing greenbelt site identified as a potential strategic site for a Sustainable Urban Extension (SUE) and dwellings.	Site allocation Land Parcel - no 20
<b>Woking Borough Council</b>			
Land surrounding West Hall, Parvis Road, West Byfleet	800 m	Allocated site for residential including affordable house.	Site allocation GB13
Broadoaks, Parvis Road, West Byfleet	1.3 km	Allocated for offices, research premises, residential and associated garages. Change of use of Model Dairy to a shop/office. Conversion of Broadoaks House to create dwellings, new garages, restoration and extension to the Coach House to create dwellings and restoration and reuse of the Lodge Houses as independent dwellings and erection of new garages and dwellings, together with new altered access points to Parvis Road and Hobbs Close and separate pedestrian/cycle link from Parvis Road, associated internal roads, fencing including acoustic fencing to Parvis Road frontage.	Site allocation GB16 PLAN/2016/1003
Land To The North Of Old Woking Road And East Of Station Approach, West Byfleet, Woking, Surrey, KT14 6NG	200 m	Retail and leisure led mixed use redevelopment comprising of retail, leisure use, commercial and residential, community, car and cycle parking public realm improvements and associated works	PLAN/2017/0128
Camphill Tip, Camphill Road, West Byfleet	200 m	Proposed land use industrial floorspace (B2)10000 proposed	Site allocation UA49

Development	Distance from site (closest point)	Development Description	Application Reference
		GFA m2 and 263.9 proposed jobs FTE.	
Land to the south of Murrays Lane and Rectory Lane, Byfleet, KT14 7NE	1.8 km	Safeguarded site to meet future housing needs between 2027 and 2040.	Site Allocation UA1
<b>Runnymede Borough Council</b>			
Byfleet Road, New Haw	2.1 km	Allocated for employment use.	IE1 Site 51 / HO6/7
Central Veterinary Laboratory (APHA) Woodham Lane New Haw KT15 3NB	2.9 km	Housing Allocation site and additional serviced Gypsy/Traveller Pitches.	RU.17/1477

16.7.5 Stage 3 of the cumulative effects assessment process ‘Information Gathering’ was undertaken to provide further information on each of the Short List developments. This information is also provided in the table in Appendix 16.1.

16.7.6 Stage 4 ‘Assessment’ was then undertaken to determine if the effects of the Scheme and ‘Other Development’ are likely to result in combined significant effects. Section 16.8 assesses the potential adverse or beneficial cumulative effects of the project with ‘other development’.

## 16.8 Assessment of in-combination effects

### Construction

16.8.1 Table 16.5 sets out how the residual effects from each topic chapter has been combined to determine the overall significance of in-combination effects during construction.

16.8.2 Moderate in-combination adverse effects in relation to noise, landscape and temporary land take would be experienced by some residential, community and business receptors near the Scheme. The majority of human (residential receptors and other notable noise sensitive receptors including schools) that may experience in-combination effects during construction are located close to the Painshill interchange to the north east of the study area. During the construction phase, the multiple effects experienced by residents and community and business assets would be temporary in nature, and potentially intermittent, within the construction period.

16.8.3 Road and non-motorised travellers are likely to experience moderate in-combination adverse effects resulting from adverse noise and visual amenity effects and changes in journey length and disruption to journeys through congestion, noise and diversions. The multiple effects experienced by travellers would be temporary in nature, and potentially intermittent, within the construction period.

16.8.4 A combination of landscape changes, resulting in removal of vegetation and disruption from noise would result in significant adverse effects on biodiversity.

However, these effects have already been identified and assessed in the biodiversity chapter and mitigation measures incorporated. In-combination effects on biodiversity are considered to be slight adverse as effects are unlikely to increase the significant adverse effects identified for individual sites and receptors.

16.8.5 Landscape, the water environment, geology and soils and heritage assets are unlikely to experience in-combination effects in addition to those effects already assessed.

16.8.6 The in-combination effects during the construction period are principally related to noise, landscape and visual effects, and land take. These construction effects are mainly temporary in nature and localised in their geographical extent. The overall in-combination effect is considered to be moderate adverse in relation to residential, community and business receptors, and driver and non-motorised travellers, and neutral for all other types of receptor.

### Operation

16.8.7 Table 16.6 sets out how the residual effects from each topic chapter has been combined to determine the overall significance of in-combination effects during operation.

16.8.8 Slight in-combination adverse effects in relation to noise and visual amenity changes would be experienced by some residential, community and business receptors near the Scheme during operation. The majority of human (residential receptors and other notable noise sensitive receptors including schools) that may experience in-combination effects during operation are located close to the Painshill interchange to the north east of the study area.

16.8.9 Road and non-motorised travellers are likely to experience slight adverse in-combination effects in relation to landscape and visual amenity by year 15 of operation. However, this would be offset by beneficial in-combination effects due to the establishment of new and improved driver and NMU routes.

16.8.10 Landscape, biodiversity, the water environment, geology and soils and heritage assets are unlikely to experience in-combination effects in addition to those effects already assessed.

16.8.11 The in-combination adverse effects during operation are principally related to noise and landscape and visual effects. There will also be beneficial in-combination effects related to establishment of improved driver and non-motorised user routes in the Scheme design. The overall in-combination effect during operation is considered to be slight adverse in relation to residential, community and business receptors, and neutral for all other types of receptor.



**Table 16.5: Potential in-combination effects between topics on receptor groups – Construction**

Receptor	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities	Significance of Combined Effects
Human - residents, including community and private assets, sensitive receptors and vulnerable groups	No significant residual effects	Significant adverse effects from construction vibration predicted at seven sensitive receptors situated within 100 m of the percussive piling works for retaining walls and 25-50 m of work sites using a vibratory roller.	Not in scope of assessment	No significant residual effects	Moderate Adverse effects on several residential receptors.	No significant residual effects	No significant residual effects	No significant residual effects	Moderate adverse effects on residential community and business assets related to land take.	<b>Moderate Adverse</b> – due to the combination of vibration and landscape effects on some receptors, and moderate adverse effects on community, residential and business receptors in relation to land take.
Human - all travellers, i.e. vehicle travellers, cyclists, and pedestrians	No significant residual effects	No significant residual effects.	Not in scope of assessment	No significant residual effects	Moderate Adverse effects on several public rights of way.	No significant residual effects	Not in scope of assessment	No significant residual effects	Moderate adverse effects on non-motorised users and public rights of way.	<b>Moderate Adverse</b> – due to the combination of visual amenity effects and physical disruption to

Receptor	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities	Significance of Combined Effects
										Public Rights of Way during construction.
Ecological receptors – protected species and existing habitats	No significant residual effects	Potential temporary disturbance to species. Noise effects on ecological receptors have been considered in the biodiversity chapter.	Adverse effects on nature conservation resources during construction period due to disturbance.	No significant residual effects	Not in scope of assessment. Landscape effects of vegetation removal on biodiversity are considered in biodiversity chapter.	No significant residual effects	Not in scope of assessment	No significant residual effects	Not in scope of assessment	<b>Slight adverse</b> In-combination effects of noise, landscape effects of tree removal and effects on ecological receptors.
The water environment	No significant residual effects	No significant residual effects	No significant residual effects with mitigation in place.	No significant residual effects	Not in scope of assessment	No significant residual effects	Not in scope of assessment	No significant residual effects	Not in scope of assessment	Neutral
Landscape and townscape	Not in scope of assessment	Not in scope of assessment	Not in scope of assessment	Not in scope of assessment	Moderate Adverse residual effects	Not in scope of assessment	No significant residual effects	No significant residual effects	Moderate adverse effects	Neutral

Receptor	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities	Significance of Combined Effects
Geology and soils	No significant residual effects	Not in scope of assessment	Not in scope of assessment	No significant residual effects	Not in scope of assessment	No significant residual effects	Not in scope of assessment	No significant residual effects	Not in scope of assessment	Neutral
Heritage assets	No significant residual effects	No significant residual effects	Not in scope of assessment	Not in scope of assessment	Not in scope of assessment	Not in scope of assessment	No significant residual effects	No significant residual effects	Not in scope of assessment	Neutral
Overall In-combination Effect for the Scheme during Construction					Moderate Adverse					

**Table 16.6: Potential in-combination effects between topics on receptor groups – Operation**

Receptor	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities	Significance of Combined Effects
Human - residents, including community and private assets, sensitive receptors and vulnerable groups	No significant residual effects	No significant adverse effects were identified that were directly attributable to the Scheme.	Not in scope of assessment.	No significant residual effects.	Slight Adverse effects on residential properties in opening year, reducing by as mitigation planting matures.	Moderate Beneficial effects in relation to controlled waters.	No significant residual effects	No significant residual effects	No significant residual effects	Neutral
Human - all travellers, i.e. vehicle travellers, cyclists, and pedestrians	No significant residual effects	No significant adverse effects were identified that were directly attributable to the Scheme.	Not in scope of assessment	No significant residual effects	Moderate adverse effects in opening year for several public rights of way and recreational areas. Reducing to slight adverse effects by year 15 as mitigation planting matures.	Moderate Beneficial effects in relation to controlled waters.	Not in scope of assessment	No significant residual effects	Significant beneficial residual effects for non-motorised users during operation. effects in relation to driver stress.	Neutral – there will slight adverse effects related to landscape, but this will be offset by beneficial effects due to new and improved driver and NMU routes.

Receptor	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities	Significance of Combined Effects
Ecological receptors – protected species and existing habitats	No significant residual effects	No significant adverse effects were identified that were directly attributable to the Scheme. Noise effects on ecological receptors have been considered in the biodiversity chapter	Moderate adverse effects on ancient woodland, and veteran trees. Moderate to large beneficial effects in relation to creation of areas of new habitat.	No significant residual effects	Not in scope of assessment. Landscape effects of vegetation removal on biodiversity are considered in biodiversity chapter.	Moderate Beneficial effects in relation to controlled waters.	Not in scope of assessment	No significant residual effects	Not in scope of assessment	<b>Neutral</b> - There will be moderate adverse effects on ancient woodland and veteran trees, but these effects will be offset by the beneficial effects from new habitat creation.
The water environment	No significant residual effects	No significant residual effects		No significant residual effects	Not in scope of assessment	Moderate Beneficial effects in relation to controlled waters.	Not in scope of assessment	No significant residual effects.	Not in scope of assessment	Neutral
Landscape and townscape	Not in scope of assessment	Not in scope of assessment	Not in scope of assessment	Not in scope of assessment	Moderate Adverse effects	Not in scope of assessment	No significant residual effects	No significant residual effects	Moderate adverse effects in relation to views from the road in	Neutral



Receptor	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities	Significance of Combined Effects
									opening year, but negligible by year 15.	
Geology and soils	No significant residual effects	Not in scope of assessment	Not in scope of assessment	No significant residual effects	Not in scope of assessment	Moderate Beneficial effects in relation to controlled waters.	Not in scope of assessment	No significant residual effects	Not in scope of assessment	Neutral
Heritage assets	No significant residual effects	No significant residual effects	Not in scope of assessment	Not in scope of assessment	Not in scope of assessment	Not in scope of assessment	No significant residual effects	No significant residual effects	Not in scope of assessment	Neutral
Overall In-combination Effect for the Scheme during Operation					Neutral					

## 16.9 Assessment of cumulative effects

### Introduction

- 16.9.1 Tables 16.7 and 16.8 set out the cumulative effects by topic for each of the developments in the construction phase of the Scheme. Tables 16.9 and 16.10 set out the cumulative effects by topic for each of the developments in the operation phase of the Scheme.
- 16.9.2 Stage 1 and 2 of the methodology eliminated developments that were not considered to have potential for cumulative effects to arise due to scale, geographical location and any temporal overlap in construction phases and therefore only the developments on the shortlist are assessed. The assessments in Tables 16.7 to 16.10 summarise Stages 3 and 4 of the cumulative effects assessment which considers the residual effects identified in the topic assessment chapters. The long list of developments is provided in Appendix 16.1.

### Construction

- 16.9.3 The cumulative assessment for the construction stage indicates that the closer and larger scale developments have a greater potential for adverse cumulative effects during construction of the Scheme. The junction 10 SMP scheme, Wisley Airfield and RHS Wisley developments would contribute most to the predicted cumulative effects as the construction phases are likely to overlap.
- 16.9.4 There are likely to be slight adverse cumulative noise effects during construction due to the combined construction noise from the Scheme, junction 10 - 16 Smart Motorway Programme (SMP) and Wisley Airfield developments. There are likely to be moderate to large cumulative effects from the combination of the noise, dust, land take, changes in access and visual amenity effects of the Scheme with the junction 10 SMP and Wisley Airfield developments for users of public rights of way, drivers and some private dwellings. There is likely to be moderate adverse cumulative effects on driver stress during construction. The Scheme, combined with the junction 10 SMP and Wisley Airfield developments may also delay the implementation of the new community assets during construction.
- 16.9.5 The combined effects of the Scheme with the proposed RHS Wisley developments are likely to result in slight to moderate adverse cumulative effects in relation to landscape and visual effects experienced by users of public rights of way and road users, and driver stress during construction.
- 16.9.6 Some of the smaller developments proposed in the area are likely to result in cumulative effects in relation to noise. The former San Domenico Restaurant developments may result in slight adverse cumulative effects during the construction phase of the Scheme as access to the site may affect the routing of construction traffic for the development. There is also potential for slight adverse cumulative noise effects with the Painshill Farm development if the proposed development is operational during the construction phase.
- 16.9.7 The Feltonfleet School and Painshill Farm developments are likely to contribute to slight adverse cumulative effects in relation to landscape and visual effects during construction. These developments are also likely to contribute to slight to

moderate adverse effects in relation to driver stress. For the Painshill Park development, moderate adverse cumulative effects with the Scheme are likely in relation to the amenity of the residential receptors on Portsmouth Road and visitors to Painshill Park due to the combined effects of dust, noise and visual changes. Construction of the Scheme may also delay the delivery of a care home.

16.9.8 Overall there is likely to be the following cumulative effects during construction due to the combination of effects of all the shortlisted projects:

- Slight adverse cumulative effects in relation to construction noise;
- Moderate adverse cumulative effects during construction for users of public rights of way, drivers and some private dwellings related to the combined effects of noise, dust, land take and changes in access and visual amenity;
- Slight adverse cumulative effects between the Scheme and the Feltonfleet School development related to tree removal. Replacement tree planting is included in the mitigation package for the Scheme, so effects would be temporary;
- Moderate adverse cumulative effects on driver stress during construction; and
- Slight adverse cumulative effects related to delays in the delivery of proposed community facilities.

## Operation

16.9.9 The cumulative assessment for the operation stage indicates that there is potential for beneficial cumulative effects in operation for the Scheme in combination with the junction 10 - 16 Smart Motorway Programme (SMP), Wisley Airfield and RHS Wisley developments. Once operational, the schemes combined together would be beneficial for local businesses and community facilities by unlocking development potential for nearby sites and improving road capacity and access to these sites. This includes improved and safer access to RHS Wisley which may improve access to the gardens and increase visitor numbers. Public access and education are key contributors to the asset's significance and support the garden's major projects objectives. There would also be a moderate beneficial cumulative effect for Feltonfleet School related to improvements to road access to the school. New and improved pedestrian and cycle routes would also result in beneficial cumulative effects for all nearby development areas.

16.9.10 There is also predicted to be beneficial cumulative effects in relation to Driver Stress in relation to these developments as Scheme improvements will increase the capacity of the network. However, this would be slightly offset by increased Driver Stress due to frustration at the longer distance to be travelled to access RHS Wisley from the A3.

16.9.11 There will be cumulative effects in relation to views from the road, public rights of way and some fixed receptors during operation as a result of all shortlisted developments associated with new gantries, vegetation clearance, land take, severance and changes in access. The cumulative effects will vary by receptor, but in general these would be slight adverse and reduce as mitigation planting matures. There would be beneficial visual effects for some receptors.

16.9.12 Overall there is likely to be the following cumulative effects during operation due to the combination of effects of all the shortlisted projects:

- Slight beneficial cumulative effects during operation in relation to local businesses, attractions and community facilities primarily due to improvements in access and safety;
- Slight beneficial cumulative effects during operation in relation to pedestrians, cyclists and public rights of way;
- Slight beneficial cumulative effects in relation to driver stress during operation; and
- Slight adverse cumulative effects during operation in relation to views from the road, public rights of way and some fixed receptors. However, these effects would reduce as mitigation planting matures and some receptors would experience beneficial cumulative effects in relation to views.

**Table 16.7 Summary of Cumulative Effects between 'Other Developments' and the Scheme during Construction (Sections 5-8)**

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
M25 junction 10 - 16 Smart Motorway Programme (SMP)	N/A	Construction phase is likely to overlap therefore there is potential for cumulative effects. However, with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.  Neutral	Construction phase is likely to overlap therefore this is potential for cumulative effects. With the proposed mitigation in place the cumulative effect would be reduced but is considered to be slight adverse.  Slight Adverse	Construction phase is likely to overlap therefore there is potential for cumulative effects. With the proposed mitigation in place, the effects of air quality and noise changes on biodiversity is considered to be negligible. The SMP project will not lead to increased land take as all requirements have been allowed for within the DCO boundary and will not result in any change to access to protected sites.  Neutral	Construction phase is likely to overlap and potential cumulative effects to the water environment, particularly to the River Wey and River Mole, which are adjacent to the development and groundwater aquifers. However, with the adoption of good working practices and strict adherence to the Environment Agency Pollution Prevention Guidance (PPGs) it is considered there would be a negligible cumulative effect.  Neutral
The former Wisley Airfield	Site allocation A35	Construction phase could overlap therefore there is potential for cumulative effects. However, with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.  Neutral	Construction phase could overlap therefore there is potential for cumulative effects. With the proposed mitigation in place the cumulative effect would be reduced but is considered to be slight adverse.  Slight Adverse	Construction phase could overlap with the potential for cumulative effects. Cumulative effects impacts resulting from construction works or combined land take loss are not considered to be significant as the temporary land take would be reinstated prior to the other project commencing.  Neutral	Construction phase could overlap and result in cumulative effects to the water environment, particularly to Stratford Brook, the River Wey catchment and groundwater aquifers. However, with the adoption of good working practices and strict adherence to the Environment Agency Pollution Prevention Guidance (PPGs) it is considered there would be a negligible cumulative effect.  Neutral



Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
Land to the East of South Cottage, White Horse Lane, Ripley, GU23 6BB	16/P/00608	No potential for cumulative effects	No cumulative construction effects are expected as the Schemes are located sufficiently far apart.  Neutral	There will be no overlap or adjacent land take and the small number of properties is not considered to result in increased recreational pressure on designated sites in the vicinity of the Scheme.  Neutral	Construction periods are unlikely to overlap so no cumulative effects are anticipated.  Neutral
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	16/P/01080	Construction phase will overlap therefore there is potential for cumulative effects. However, with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.  Neutral	No cumulative construction effects are expected as no adverse construction effects were predicted at Wisley due to the Scheme.  Neutral	No cumulative effects on biodiversity are expected as this development does not overlap in terms of land take with the Scheme.  Neutral	Construction phase is likely to overlap and potential cumulative effects to the water environment, particularly to the River Wey and groundwater aquifers. However, with the adoption of good working practices and strict adherence to the Environment Agency Pollution Prevention Guidance (PPGs) it is considered there would be a negligible cumulative effect.  Neutral
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	16/P/00976	Construction phase will overlap therefore there is potential for cumulative effects. However, with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.	No cumulative construction effects are expected as no adverse construction effects were predicted at Wisley due to the Scheme.  Neutral	No cumulative effects on biodiversity are expected as this development does not overlap in terms of land take with the Scheme.  Neutral	Construction phase is likely to overlap and potential cumulative effects to the water environment, particularly to the River Wey and groundwater aquifers. However, with the adoption of good working practices and strict adherence to the Environment Agency Pollution Prevention Guidance (PPGs) it is considered there would be a negligible cumulative effect.

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
		Neutral			Neutral
Land at Garlick's Arch, Send Marsh Burnt Common and Ripley	Site Allocation Policy A43	No potential for cumulative effects	No cumulative construction effects are expected as the Schemes are located sufficiently far apart.  Neutral	This development has been included in the traffic model for the Scheme and any potential air quality and noise impacts during construction have already been accounted for.  Neutral	No potential for cumulative effects
Land for new north facing slip roads to/from A3 at Send Marsh/Burnt Common	Site Allocation Policy A43a	No potential for cumulative effects	No cumulative construction effects are expected as the Schemes are located sufficiently far apart.  Neutral	No potential for cumulative effects	No potential for cumulative effects
Former San Domenico Restaurant	2017/0524	Construction phase will overlap therefore there is potential for cumulative effects. However, with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.  Neutral	There is potential for adverse cumulative effects during the construction phase of the Scheme as access to the site may affect the routing of construction traffic for the development.  Slight adverse	Construction phase will overlap therefore there is potential for cumulative effects. However, both schemes require the removal of the main restaurant building and with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.  Neutral	Construction phase is likely to overlap and potential cumulative effects to the water environment, particularly to the River Mole and groundwater aquifers. However, with the adoption of good working practices and strict adherence to the Environment Agency Pollution Prevention Guidance (PPGs) it is considered there would be a negligible cumulative effect.  Neutral

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
Former San Domenico Restaurant	2014/4612	<p>Construction phase will overlap therefore there is potential for cumulative effects. However, with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.</p> <p>Neutral</p>	<p>There is potential for adverse cumulative effects during the construction phase of the Scheme as access to the site may affect the routing of construction traffic for the development.</p> <p>Slight adverse</p>	<p>Construction phase will overlap therefore there is potential for cumulative effects. However, both schemes require the removal of the main restaurant building and with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.</p> <p>Neutral</p>	<p>Construction phase is likely to overlap and potential cumulative effects to the water environment, particularly to the River Mole and groundwater aquifers. However, with the adoption of good working practices and strict adherence to the Environment Agency Pollution Prevention Guidance (PPGs) it is considered there would be a negligible cumulative effect.</p> <p>Neutral</p>
Enfin, Painshill Farm, Portsmouth Road, Cobham Surrey KT11 1DN	2018/2432	<p>There is potential for cumulative effects if the proposed development is operational during the construction phase. However, with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.</p> <p>Neutral</p>	<p>There is potential for cumulative effects if the proposed development is operational during the construction phase, due to its proximity to the Painshill interchange.</p> <p>Slight adverse</p>	<p>The only land take required that is directly connected to the junction 10 Scheme is some minor verge clearance on the slips of the A3 / A245 junction. Any reptiles that are displaced from the verge in this location during the construction of the junction 10 Scheme would be expected to relocate into the land within the Enfin site, and return after the junction 10 works are complete. The cumulative effect of this interaction would need to be assessed and mitigated as part of the Enfin project and no cumulative effects as a direct result of the junction 10 Scheme are therefore anticipated.</p>	<p>It is assumed construction of this development will be completed before the Scheme construction begins. Therefore, no construction cumulative effects are anticipated in relation to the water environment.</p> <p>Neutral</p>

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
				Neutral	
Feltonfleet School Byfleet Road Cobham Surrey KT11 1DR	2017/2106	Construction phase will overlap therefore there is potential for cumulative effects. However, with mitigation in place including adherence to best practice guidance as specified in the CEMP, it is considered there would be a negligible cumulative effect.  Neutral	There is potential for cumulative effects as a significant effect was predicted at Feltonfleet School for the construction phase of the Scheme.  Slight adverse	Construction phase is likely to overlap, and the Feltonfleet scheme will require the removal of several trees adjacent to an area of proposed tree removal for an access road for the junction 10 Scheme. There is therefore potential for a slight adverse cumulative effect during construction due to the combined loss of trees. Veteran trees, Habitats of Principal Importance and notable species will not be affected and replanting of trees will be included in the mitigation package for the junction 10 Scheme.  Slight adverse	Construction phase is likely to overlap and potential cumulative effects to the water environment, particularly to the River Mole and groundwater aquifers. However, with the adoption of good working practices and strict adherence to the Environment Agency Pollution Prevention Guidance (PPGs) it is considered there would be a negligible cumulative effect.  Neutral
Land at Chippings Farm, Portsmouth Road, Cobham, KT11 1EH	Site allocation Land Parcel - no 20	No potential for cumulative effects	No cumulative construction effects are expected as the Schemes are located sufficiently far apart.  Neutral	No potential for cumulative effects	No potential for cumulative effects

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
Land surrounding West Hall, Parvis Road, West Byfleet	Site allocation GB15	No potential for cumulative effects	No cumulative construction effects are expected as the Schemes are located sufficiently far apart.  Neutral	This development has been included in the traffic model for the M25 junction 10 Scheme and any potential air quality and noise effects during construction have already been accounted for.  Neutral	No potential for cumulative effects
Broadoaks, Parvis Road, West Byfleet	Site allocation GB16 PLAN/2016/1003	No potential for cumulative effects	No cumulative construction effects are expected as the Schemes are located sufficiently far apart.  Neutral	This development has been included in the traffic model for the M25 junction 10 Scheme and any potential air quality and noise effects during construction have already been accounted for.  Neutral	No potential for cumulative effects
Land To The North Of Old Woking Road And East Of Station Approach, West Byfleet, Woking, Surrey, KT14 6NG	PLAN/2017/0128	No potential for cumulative effects	Construction phases do not overlap and the Schemes are located sufficiently far apart.  Neutral	No potential for cumulative effects	No potential for cumulative effects
Camphill Tip, Camphill Road, West Byfleet	Site allocation UA49	No potential for cumulative effects	Construction phases do not overlap and the Schemes are located sufficiently far apart.  Neutral	No potential for cumulative effects	No potential for cumulative effects

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
Land to the south of Murrays Lane and Rectory Lane, Byfleet, KT14 7NE	Site Allocation GB5	No potential for cumulative effects	Construction phases do not overlap and the Schemes are located sufficiently far apart.  Neutral	No potential for cumulative effects	No potential for cumulative effects
Byfleet Road, New Haw	IE1 Site 51 / HO6/7	No potential for cumulative effects	Construction phases do not overlap and the Schemes are located sufficiently far apart.  Neutral	No potential for cumulative effects	No potential for cumulative effects
Central Veterinary Laboratory (APHA) Woodham Lane New Haw KT15 3NB	RU.17/1477	No potential for cumulative effects	Construction phases do not overlap and the Schemes are located sufficiently far apart.  Neutral	No potential for cumulative effects	No potential for cumulative effects



**Table 16.8 Summary of Cumulative Effects between 'Other Developments' and the Scheme during Construction (Sections 9-13)**

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
M25 junction 10 - 16 Smart Motorway Programme (SMP)	N/A	<p>Construction work will be within the existing motorway footprint and have limited potential to result in cumulative effects with landscape and visual receptors.</p> <p>Neutral</p>	<p>The development may have a minor adverse effect on the geology and soils with the potential for cumulative effects. However, best practice measures and appropriate design and mitigation measures will be implemented and effects are not considered to be significant.</p> <p>Neutral</p>	<p>None anticipated. Work will be within the existing motorway footprint and have limited potential to impact known heritage assets, either directly or indirectly.</p> <p>Neutral</p>	Insufficient information available	<p>The Scheme has the potential to result in cumulative effects on amenity and views from the road during construction due to vegetation clearance and new gantries for users of the Common Land, Access Land and Birchmere Scout Camp. Non-motorised users may experience cumulative effects due to the combined effects of noise, dust and visual amenity. There will be moderate adverse cumulative effects on Driver stress during construction, which would be mitigated through the implementation of a Traffic Management Plan.</p> <p>Moderate adverse</p>
The former Wisley Airfield	Site allocation A35	<p>There is potential for significant cumulative effects including for road and users of public rights of way during construction. This scheme would form a major</p>	<p>The development may have a minor adverse effect on the geology and soils with the potential for cumulative effects. The residential development has the</p>	No potential for cumulative effects.	Insufficient information available	<p>The Scheme has the potential to result in cumulative effects for private dwellings at Elm Corner and Wilderness Cottage in relation to land take and changes in access. Users of common Land to the east of</p>

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
		<p>component within the wider landscape.</p> <p>Moderate adverse</p>	<p>potential to disturb and facilitate the migration of any existing contaminants. There is limited overlap with the M25 Jn10/A3 Wisley interchange and no significant cumulative effects are anticipated.</p> <p>Neutral</p>			<p>Ockham Park junction would experience cumulative major adverse effects from land take and severance. The Scheme may delay the implementation of the new community assets during construction. Users of some footpaths would experience moderate cumulative effects in relation to severance and changes in amenity. There will be moderate adverse cumulative effects on views from the road and driver stress during construction, which would be mitigated through the implementation of a Traffic Management Plan.</p> <p>Moderate to large adverse</p>
Land to the East of South Cottage, White Horse Lane, Ripley, GU23 6BB	16/P/00608	No potential for cumulative effects	No potential for cumulative effects	<p>The Scheme would not impact the heritage assets identified in the 16/P/00608 application; no cumulative impacts are anticipated.</p> <p>Neutral</p>	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	16/P/01080	The scheme would involve the demolition of existing buildings and the erection of proposed buildings. This may result in cumulative effects on visual receptors including road users accessing Wisley Lane.  Slight adverse	None anticipated. Work will have limited potential to impact sources, pathways, or receptors, either directly or indirectly.  Neutral	The Scheme would have a minor adverse effect on the Grade II* Listed RPG at Wisley, though no direct impact on associated Listed Buildings will occur.  Neutral	Insufficient information available	Users of Footpath 7 which runs between the RHS site and its car park, would experience a moderate adverse cumulative effect related to amenity. There will be moderate adverse cumulative effects on views from the road and driver stress during construction, which would be mitigated through the implementation of a Traffic Management Plan.  Moderate adverse
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	16/P/00976	The scheme would involve the demolition of existing buildings and the erection of proposed buildings. This may result in cumulative effects on visual receptors including road users accessing Wisley Lane.  Slight adverse	None anticipated. Work will have limited potential to impact sources, pathways, or receptors, either directly or indirectly.  Neutral	The Scheme would have a minor adverse effect on the Grade II* Listed RPG at Wisley, though no direct impact on associated Listed Buildings will occur. Improvements at RHS Wisley combine with the 16/P/01080 proposal to improve access to RHS Wisley, and will support the beneficial impacts of increasing access to RSH Wisley, where public	Insufficient information available	Users of Footpath 7 which runs between the RHS site and its car park, would experience a moderate adverse cumulative effect related to amenity. There will be moderate adverse cumulative effects on views from the road and driver stress during construction, which would be mitigated through the implementation of a Traffic Management Plan.  Moderate adverse

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
				access and education are key contributors to the asset's significance.  Neutral to slight beneficial		
Land at Garlick's Arch, Send Marsh Burnt Common and Ripley	Site Allocation Policy A43	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Land for new north facing slip roads to/from A3 at Send Marsh/Burnt Common	Site Allocation Policy A43a	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects	This development is beyond the Zone of Influence for People and Communities.
Former San Domenico Restaurant	2017/0524	There is potential for cumulative effects for road users, but change would be in the context of an existing highways corridor.  Neutral	No potential for cumulative effects	The Scheme may impact the purported route of the London - Winchester Roman Road, which also intersects with the location of the proposed development of application 2017/0524. Both the Scheme and the application include requirements for archaeological evaluation and mitigation, and the	Insufficient information available	No potential for cumulative effects

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
				<p>extent of the overall Roman Road would be only slightly diminished if both the Scheme and the proposal were to require complete removal of archaeological remains. No cumulative impacts are therefore anticipated.</p> <p>Neutral</p>		
Former San Domenico Restaurant	2014/4612	<p>There is potential for cumulative effects for road users, but change would be in the context of an existing highways corridor.</p> <p>Neutral</p>	No potential for cumulative effects	<p>The Scheme may impact the purported route of the London - Winchester Roman Road, which also intersects with the location of the proposed development of application 2017/0524. Both the Scheme and the application include requirements for archaeological evaluation and mitigation, and the extent of the overall Roman Road would</p>	Insufficient information available	No potential for cumulative effects

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
				<p>be only slightly diminished if both the Scheme and the proposal were to require complete removal of archaeological remains. No cumulative impacts are therefore anticipated.</p> <p>Neutral</p>		
<p>Enfin, Painshill Farm, Portsmouth Road, Cobham Surrey KT11 1DN</p>	<p>2018/2432</p>	<p>The scheme would involve the demolition of existing housing and erection of a 70 bed care home which may result in cumulative effects on visual receptors.</p> <p>Slight adverse</p>	<p>No potential for cumulative effects</p>	<p>No cumulative impacts anticipated, as the proposed development does not impact any heritage assets.</p> <p>Neutral</p>	<p>Insufficient information available</p>	<p>Cumulative adverse effects could result in relation to the amenity of the residential receptors on Portsmouth Road due to the combined effects of dust, noise and visual changes. Construction of the Scheme may delay the delivery of a care home. There may be adverse cumulative effects on the amenity of visitors to Painshill Park. There will be moderate adverse cumulative effects on driver stress during construction, which would be mitigated through the implementation of a Traffic Management Plan.</p>



Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
						Moderate adverse
Feltonfleet School Byfleet Road Cobham Surrey KT11 1DR	2017/2106	The scheme would involve the demolition of existing buildings and erection of proposed school buildings which may result in cumulative effects on visual receptors.  Slight adverse	Given the nature of the Feltonfleet School works, no adverse impacts are anticipated which may impact human health and controlled waters receptors in the area.  Neutral	No potential for cumulative effects.	Insufficient information available	There would likely be slight adverse cumulative effects on Driver Stress during construction due to the need for additional traffic management.  Slight adverse
Land at Chippings Farm, Portsmouth Road, Cobham, KT11 1EH	Site allocation Land Parcel - no 20	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Land surrounding West Hall, Parvis Road, West Byfleet	Site allocation GB15	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Broadoaks, Parvis Road, West Byfleet	Site allocation GB16 PLAN/2016/1003	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Land To The North Of Old Woking Road And East Of Station Approach, West Byfleet, Woking, Surrey, KT14 6NG	PLAN/2017/0128	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Camphill Tip, Camphill Road, West Byfleet	Site allocation UA49	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
Land to the south of Murrays Lane and Rectory Lane, Byfleet, KT14 7NE	Site Allocation GB5	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Byfleet Road, New Haw	IE1 Site 51 / HO6/7	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Central Veterinary Laboratory (APHA) Woodham Lane New Haw KT15 3NB	RU.17/1477	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.

**Table 16.9 Summary of Cumulative Effects between 'Other Developments' and the Scheme during Operation (Sections 5-8)**

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
M25 junction 10 - 16 Smart Motorway Programme (SMP)	N/A	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	This development is included in the traffic model, therefore cumulative effects inherent in operational assessment.	The SMP project will not lead to increased land take as all requirements have been allowed for within the DCO boundary and will not result in any changes to access to protected sites.  Neutral	With the adoption of the specified design and mitigation measures there is not considered to be the potential for cumulative effects during operation.  Neutral
The former Wisley Airfield	Site allocation A35	Other development included in traffic model, therefore cumulative effects	Cumulative significant effects in the operation phase have been captured in the assessment of local roads.	The Wisley project will not receive planning consent unless it can be demonstrated that it will not cause any increase in recreational	Residential developments typically have a low pollution risk once constructed and will be required to follow well established best practice guidance to mitigate

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
		inherent in operational assessment.		pressure on the SPA and proposes to do this by providing Suitable Alternative Natural Greenspace. The junction 10 Scheme will provide new NMU routes and replacement land outside designated areas. Neither project would therefore increase recreational pressure, and no cumulative effects are anticipated.  Neutral	pollutant loading and flood risk. It is considered likely that the development would have appropriate mitigation in place in order to obtain planning permission and therefore there would be no significant adverse cumulative effects during operation.  Neutral
Land to the East of South Cottage, White Horse Lane, Ripley, GU23 6BB	16/P/00608	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	The quantity of additional traffic accessing this development when operational is not considered to result in any significant effects.  Neutral	There will be no overlap or adjacent land take and the small number of properties is not considered to result in increased recreational pressure on designated sites in the vicinity of the Scheme.  Neutral	Residential developments typically have a low pollution risk once constructed and will be required to follow well established best practice guidance to mitigate pollutant loading and flood risk. It is considered likely that the development would have appropriate mitigation in place in order to obtain planning permission and therefore there would be no significant adverse cumulative effects during operation.  Neutral
Royal Horticultural Society Garden, Wisley Lane,	16/P/01080	Other development included in traffic	There is potential for the development to increase traffic flows accessing the	No cumulative effects on biodiversity are expected as this development does not	The nature of this development would suggest a low pollution potential once constructed. The

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
Wisley, Woking, GU23 6QS		model, therefore cumulative effects inherent in operational assessment.	RHS Garden and increase noise levels by more than 1 dB. However, as the majority of the traffic (~80%) is expected to access the RHS Garden via the A3 rather than through Wisley Village, no significant cumulative effects are likely.  Neutral	overlap in terms of land take with the Scheme.  Neutral	development would be required to follow well established best practice guidance to mitigate pollutant loading and flood risk. It is considered likely that the development would have appropriate mitigation in place in order to obtains planning permission and therefore there should be no significant adverse cumulative effects during operation.  Neutral
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	16/P/00976	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	There is potential for the development to increase traffic flows accessing the RHS Garden and increase noise levels by more than 1 dB. However, as the majority of the traffic (~80%) is expected to access the RHS Garden via the A3 rather than through Wisley Village, no significant cumulative effects are likely.  Neutral	No cumulative effects on biodiversity are expected as this development does not overlap in terms of land take with the Scheme.  Neutral	The nature of this development would suggest a low pollution potential once constructed. The development would be required to follow well established best practice guidance to mitigate pollutant loading and flood risk. It is considered likely that the development would have appropriate mitigation in place in order to obtains planning permission and therefore there should be no significant adverse cumulative effects during operation.  Neutral
Land at Garlick's Arch, Send Marsh	Site Allocation Policy A43	Other development	This development was included in the operation	This development could lead to increased recreational	No potential for cumulative effects.

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
Burnt Common and Ripley		included in traffic model, therefore cumulative effects inherent in operational assessment.	phase assessment and no significant effects were identified and there is therefore no potential for cumulative effects.  Neutral	pressure on designated sites. However, the junction 10 Scheme will provide new NMU routes and provide replacement land outside the designated areas and no overall increase in recreational pressure on designated sites is anticipated.  Neutral	
Land for new north facing slip roads to/from A3 at Send Marsh/Burnt Common	Site Allocation Policy A43a	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	No potential for cumulative effects.	No potential for cumulative effects.	No potential for cumulative effects.
Former San Domenico Restaurant	2017/0524	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	No significant effects during the operation phase of the Scheme were identified at the San Domenico site. The additional traffic generated by the development would not be sufficient to result in a significant cumulative effect.  Neutral	Both schemes require the removal of the main restaurant building and with mitigation in place there would be a negligible cumulative effect.  Neutral	The nature of this development would suggest a low pollution potential once constructed. The development would be required to follow well established best practice guidance to mitigate pollutant loading and flood risk. It is considered likely that the development would have appropriate mitigation in place in order to obtain planning permission and therefore there should be no significant adverse

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
					cumulative effects during operation.  Neutral
Former San Domenico Restaurant	2014/4612	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	No significant effects during the operation phase of the Scheme were identified at the San Domenico site. The additional traffic generated by the development would not be sufficient to result in a significant cumulative effect.  Neutral	Both schemes require the removal of the main restaurant building and with mitigation in place there would be a negligible cumulative effect.  Neutral	The nature of this development would suggest a low pollution potential once constructed. The development would be required to follow well established best practice guidance to mitigate pollutant loading and flood risk. It is considered likely that the development would have appropriate mitigation in place in order to obtains planning permission and therefore there should be no significant adverse cumulative effects during operation.  Neutral
Enfin, Painshill Farm, Portsmouth Road, Cobham Surrey KT11 1DN	2018/2432	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	No significant effects during the operation phase of the Scheme were identified at the Painshill Farm. The additional traffic generated by the proposed care home would not be sufficient to result in a significant cumulative effect.  Neutral	This development could lead to increased recreational pressure on designated sites. However, the junction 10 Scheme will provide new NMU routes and provide replacement land outside the designated areas and no overall increase in recreational pressure on designated sites is anticipated.	The nature of this development would suggest a low pollution potential once constructed. The development would be required to follow well established best practice guidance to mitigate pollutant loading and flood risk. It is considered likely that the development would have appropriate mitigation in place in order to obtains planning permission and therefore there



Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
				Neutral	should be no significant adverse cumulative effects during operation.  Neutral
Feltonfleet School Byfleet Road Cobham Surrey KT11 1DR	2017/2106	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	This development would not affect traffic flows so there is no potential for cumulative effects.  Neutral	There is potential for a slight adverse cumulative effect due to the combined loss of trees. However, replacement tree planting will be included in the mitigation package for the junction 10 Scheme and no operational effects are anticipated.  Neutral	The nature of this development would suggest a low pollution potential once constructed. The development would be required to follow well established best practice guidance to mitigate pollutant loading and flood risk. It is considered likely that the development would have appropriate mitigation in place in order to obtains planning permission and therefore there should be no significant adverse cumulative effects during operation.  Neutral
Land at Chippings Farm, Portsmouth Road, Cobham, KT11 1EH	Site allocation Land Parcel - no 20	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	This development is included in the traffic model, therefore cumulative effects inherent in operational assessment.	No potential for cumulative effects.	No potential for cumulative effects.

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
Land surrounding West Hall, Parvis Road, West Byfleet	Site allocation GB15	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	This development is included in the traffic model, therefore cumulative effects inherent in operational assessment.	This development could lead to increased recreational pressure on designated sites. However, the junction 10 Scheme will provide new NMU routes and provide replacement land outside the designated areas and no overall increase in recreational pressure on designated sites is anticipated.  Neutral	No potential for cumulative effects.
Broadoaks, Parvis Road, West Byfleet	Site allocation GB16 PLAN/2016/1003	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	This development is included in the traffic model, therefore cumulative effects inherent in operational assessment.	This development could lead to increased recreational pressure on designated sites. However, the junction 10 Scheme will provide new NMU routes and provide replacement land outside the designated areas and no overall increase in recreational pressure on designated sites is anticipated.  Neutral	No potential for cumulative effects.
Land To The North Of Old Woking Road And East Of Station Approach, West Byfleet, Woking, Surrey, KT14 6NG	PLAN/2017/0128	Other development included in traffic model, therefore cumulative effects inherent in	This development would not affect traffic flows so there is no potential for cumulative effects.  Neutral	No potential for cumulative effects.	No potential for cumulative effects.

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
		operational assessment.			
Camphill Tip, Camphill Road, West Byfleet	Site allocation UA49	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	This development is included in the traffic model, therefore cumulative effects inherent in operational assessment.	No potential for cumulative effects.	No potential for cumulative effects.
Land to the south of Murrays Lane and Rectory Lane, Byfleet, KT14 7NE	Site Allocation GB5	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	This development would not affect traffic flows so there is no potential for cumulative effects.  Neutral	No potential for cumulative effects.	No potential for cumulative effects.
Byfleet Road, New Haw	IE1 Site 51 / HO6/7	Other development included in traffic model, therefore cumulative effects inherent in operational assessment.	This development would not affect traffic flows so there is no potential for cumulative effects.  Neutral	No potential for cumulative effects.	No potential for cumulative effects.
Central Veterinary Laboratory (APHA) Woodham Lane New Haw KT15 3NB	RU.17/1477	Other development included in traffic model, therefore cumulative effects inherent in	This development would not affect traffic flows so there is no potential for cumulative effects.  Neutral	No potential for cumulative effects.	No potential for cumulative effects.

Development	Application Reference	Air quality	Noise and Vibration	Biodiversity	Road Drainage and the Water Environment
		operational assessment.			

**Table 16.10 Summary of Cumulative Effects between 'Other Developments' and the Scheme during Operation (Sections 9-13)**

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
M25 junction 10 - 16 Smart Motorway Programme (SMP)	N/A	<p>The scheme is within the existing motorway footprint and will have limited potential to result in cumulative effects with landscape and visual receptors.</p> <p>Neutral</p>	<p>The development may have a minor adverse effect on the geology and soils with the potential for cumulative effects. However, best practice measures and appropriate design and mitigation measures will be implemented and effects are not considered to be significant.</p> <p>Neutral</p>	<p>None anticipated. Work will be within the existing motorway footprint and have limited potential to impact known heritage assets, either directly or indirectly.</p> <p>Neutral</p>	Insufficient information available	<p>Once operational, the schemes combined would be beneficial for local business. There would be adverse cumulative effects on Views from the road due to vegetation clearance in combination with new gantries from SMP. There will be beneficial cumulative effects on driver Stress once the Scheme is operational.</p> <p>Slight beneficial</p>
The former Wisley Airfield	Site allocation A35	There is potential for significant cumulative effects including for road and users of public rights of way	The development may have a minor adverse effect on the geology and soils	No potential for cumulative effects.	Insufficient information available	The Scheme has the potential to result in cumulative effects for private dwellings at Elm Corner and

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
		<p>during operation, although this would reduce to negligible as mitigation planting matures.</p> <p>Slight adverse</p>	<p>with the potential for cumulative effects.</p> <p>There is limited overlap with the M25 Jn10/A3 Wisley interchange and no significant cumulative effects are anticipated.</p> <p>Neutral</p>			<p>Wilderness Cottage in relation to land take and changes in access. Users of common Land to the east of Ockham Park junction would experience cumulative major adverse effects from land take and severance. There would be slight beneficial cumulative effects in relation to unlocking the development potential of the airfield site and for businesses and community assets as the Scheme would increase road capacity. The Scheme proposes a new re-routed NMU facility along the new road leading to Wisley Bridge, leading off Ockham Park junction resulting in beneficial cumulative effects on amenity. There will be beneficial</p>

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
						cumulative effects on driver Stress once the Scheme is operational.  Slight beneficial
Land to the East of South Cottage, White Horse Lane, Ripley, GU23 6BB	16/P/00608	No potential for cumulative effects	No potential for cumulative effects	The Scheme would not impact the heritage assets identified in the 16/P/00608 application; no cumulative impacts are anticipated.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	16/P/01080	The scheme would involve the demolition of existing buildings and the erection of proposed buildings which may result in cumulative effects on visual receptors. However, the landscape mitigation proposed is anticipated to reduce cumulative effects to a negligible level.  Neutral	None anticipated. Work will have limited potential to impact sources, pathways, or receptors, either directly or indirectly.  Neutral	The Scheme would have a minor adverse effect on the Grade II* Listed RPG at Wisley, though no direct impact on associated Listed Buildings will occur. Improvements at RHS Wisley combine with the 16/P/01080 proposal to improve access to RHS Wisley, and will support the beneficial impacts of increasing access to RSH Wisley, where public	Insufficient information available	Moderate beneficial cumulative effects due to the improved safer access for RHS Wisley, which supports its major projects objective, including improved non-motorised user access. There would be a slight beneficial cumulative effect in relation to views from the road, with the view of the new buildings and the new Wisley Lane Overbridge from



Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
				<p>access and education are key contributors to the asset's significance.</p> <p>Neutral to slight beneficial</p>		<p>Wisley Lane. There is likely be more visitors to RHS Wisley and the Scheme improvements should increase the capacity of the network, reducing Driver Stress – but there may be increased Driver Stress due to frustration at the longer distance to be travelled to access RHS Wisley from the A3, which would be slight adverse.</p> <p>Moderate beneficial</p>
Royal Horticultural Society Garden, Wisley Lane, Wisley, Woking, GU23 6QS	16/P/00976	<p>The scheme would involve the demolition of existing buildings and the erection of proposed buildings which may result in cumulative effects on visual receptors. However, the landscape mitigation proposed is anticipated to reduce cumulative effects to a negligible level.</p> <p>Neutral</p>	<p>None anticipated. Work will have limited potential to impact sources, pathways, or receptors, either directly or indirectly.</p> <p>Neutral</p>	<p>The Scheme would have a minor adverse effect on the Grade II* Listed RPG at Wisley, though no direct impact on associated Listed Buildings will occur. Improvements at RHS Wisley combine with the 16/P/01080 proposal to improve access to RHS Wisley, and will support the beneficial impacts of increasing access to RSH Wisley, where public access and education are key contributors to the asset's significance.</p> <p>Neutral to slight beneficial</p>	Insufficient information available	

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
Land at Garlick's Arch, Send Marsh Burnt Common and Ripley	Site Allocation Policy A43		No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Land for new north facing slip roads to/from A3 at Send Marsh/Burnt Common	Site Allocation Policy A43a	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Former San Domenico Restaurant	2017/0524	<p>There is potential for cumulative effects for road users, but change would be in the context of an existing highways corridor.</p> <p>Neutral</p>	<p>The development may have a minor adverse effect on the geology and soils with the potential for cumulative effects. However, best practice measures and appropriate design and mitigation measures will be implemented and effects are not considered to be significant.</p> <p>Neutral</p>	<p>The Scheme may impact the purported route of the London - Winchester Roman Road, which also intersects with the location of the proposed development of application 2017/0524. Both the Scheme and the application include requirements for archaeological evaluation and mitigation, and the extent of the overall Roman Road would be only slightly diminished if both the Scheme and the proposal were to require complete removal of</p>	Insufficient information available	<p>Once the Scheme is operational, there would be increased traffic flow past Feltonfleet School to access San Domenico, but improvements for access to the school as a result of the junction 10 Scheme would result in a neutral effect for the school.</p> <p>Neutral</p>

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
				archaeological remains. No cumulative impacts are therefore anticipated.  Neutral		
Former San Domenico Restaurant	2014/4612	There is potential for cumulative effects for road users, but change would be in the context of an existing highways corridor.  Neutral	The development may have a minor adverse effect on the geology and soils with the potential for cumulative effects. However, best practice measures and appropriate design and mitigation measures will be implemented and effects are not considered to be significant.  Neutral	The Scheme may impact the purported route of the London - Winchester Roman Road, which also intersects with the location of the proposed development of application 2017/0524. Both the Scheme and the application include requirements for archaeological evaluation and mitigation, and the extent of the overall Roman Road would be only slightly diminished if both the Scheme and the proposal were to require complete removal of archaeological remains. No	Insufficient information available	Once the Scheme is operational, there would be increased traffic flow past Feltonfleet School to access San Domenico, but improvements for access to the school as a result of the junction 10 Scheme would result in a neutral effect for the school.  Neutral

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
				<p>cumulative impacts are therefore anticipated.</p> <p>Neutral</p>		
Enfin, Painshill Farm, Portsmouth Road, Cobham Surrey KT11 1DN	2018/2432	<p>The scheme would involve the demolition of existing housing and erection of a 70 bed care home which may result in cumulative effects on visual receptors. However, the landscape mitigation proposed is anticipated to reduce cumulative effects to a negligible level.</p> <p>Neutral</p>	No potential for cumulative effects	<p>No cumulative impacts anticipated, as the proposed development does not impact any heritage assets.</p> <p>Neutral</p>	Insufficient information available	No cumulative effects during operation are anticipated.
Feltonfleet School Byfleet Road Cobham Surrey KT11 1DR	2017/2106	<p>The scheme would involve the demolition of existing buildings and erection of proposed school buildings which may result in cumulative effects on visual receptors. However, the landscape mitigation</p>	<p>Given the nature of the Feltonfleet School works, no adverse impacts are anticipated which may impact human health and controlled waters receptors in the area. No intrusive works are currently planned near this</p>	No potential for cumulative effects.	Insufficient information available	<p>Feltonfleet School is a community asset receptor Improvements for access to the school as a result of the junction 10 Scheme would result in cumulative beneficial effects for the school. The site is also</p>

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
		proposed is anticipated to reduce cumulative effects to a negligible level.  Neutral	proposed development and no cumulative effects are anticipated.  Neutral			identified as Development Land. There will be moderate beneficial cumulative effects due to the Scheme once operational.  Moderate beneficial
Land at Chippings Farm, Portsmouth Road, Cobham, KT11 1EH	Site allocation Land Parcel - no 20	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Land surrounding West Hall, Parvis Road, West Byfleet	Site allocation GB15	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Broadoaks, Parvis Road, West Byfleet	Site allocation GB16 PLAN/2016/1003	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Land To The North Of Old Woking Road And East Of Station Approach, West Byfleet, Woking, Surrey, KT14 6NG	PLAN/2017/0128	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Camphill Tip, Camphill Road, West Byfleet	Site allocation UA49	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.

Development	Application Reference	Landscape	Geology and Soils	Cultural Heritage	Materials and Waste	People and Communities
Land to the south of Murrays Lane and Rectory Lane, Byfleet, KT14 7NE	Site Allocation GB5	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Byfleet Road, New Haw	IE1 Site 51 / HO6/7	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.
Central Veterinary Laboratory (APHA) Woodham Lane New Haw KT15 3NB	RU.17/1477	No potential for cumulative effects	No potential for cumulative effects	No potential for cumulative effects.	Insufficient information available	This development is beyond the Zone of Influence for People and Communities.

## 16.10 Mitigation

- 16.10.1 The mitigation measures proposed are detailed in the individual topic chapters. Where possible, mitigation measures during construction will be aligned and programmed with those proposed for other major developments taking place in the vicinity of the Scheme in consultation with the other developers to minimise their cumulative effects.
- 16.10.2 The cumulative effects assessment has adopted a conservative approach and therefore represents a worst-case assuming all developments would be concurrent, which is unlikely to occur in practice. Due to uncertainties with the progression of other schemes, the assessment significantly relies on assumptions on the timing and nature of other development.

## 16.11 Monitoring

- 16.11.1 Monitoring in accordance with the Scheme Outline Construction Environmental Management Plan (CEMP) will be required, particularly during construction in relation to noise, the water environment, cultural heritage and biodiversity. These would consider cumulative effects and undertake regular reporting and reviews to ensure cumulative effects are minimised and action taken to preserve and enhance assets and limit impact on receptors. The establishment of mitigation planting will be monitored once construction has been completed, this will consider cumulative effects from other completed developments and those in construction.

## 16.12 Summary

- 16.12.1 The in-combination effects during the construction period are principally related to vibration, landscape and visual effects, and land take. These construction effects are mainly temporary in nature and localised in their geographical extent. The overall in-combination effect is considered to be moderate adverse in relation to residential, community and business receptors, and driver and non-motorised travellers, slight adverse for ecological receptors, and neutral for all other types of receptor.
- 16.12.2 The overall in-combination effect during operation is considered to be neutral in relation to all types of receptor.
- 16.12.3 Overall there is likely to be the following cumulative effects during construction due to the combination of effects of all the shortlisted projects:
- Slight adverse cumulative effects in relation to construction noise;
  - Moderate adverse cumulative effects during construction for users of public rights of way, drivers and some private dwellings related to the combined effects of noise, dust, land take and changes in access and visual amenity;
  - Slight adverse cumulative effects between the Scheme and the Feltonfleet School development related to tree removal. Replacement tree planting is included in the mitigation package for the Scheme, so effects would be temporary;
  - Moderate adverse cumulative effects on driver stress during construction; and



- Slight adverse cumulative effects related to delays in the delivery of proposed community facilities.

16.12.4 Overall there is likely to be the following cumulative effects during operation due to the combination of effects of all the shortlisted projects:

- Slight beneficial cumulative effects during operation in relation to local businesses, attractions and community facilities primarily due to improvements in access and safety;
- Slight beneficial cumulative effects during operation in relation to pedestrians, cyclists and public rights of way;
- Slight beneficial cumulative effects in relation to driver stress during operation; and
- Slight adverse cumulative effects during operation in relation to views from the road, public rights of way and some fixed receptors. However, these effects would reduce as mitigation planting matures and some receptors would experience beneficial cumulative effects in relation to views.

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