

18. Cumulative Effects

Introduction

- 18.1 This chapter provides an assessment of the potential cumulative effects of the proposed development in conjunction with effects arising from other developments in the surrounding area. It also provides an assessment of the potential combination of some or all of the effects identified in the EIA on a particular receptor.
- 18.2 The requirement for cumulative assessment is stated in the following legislation:
- Directive 85/337/EEC requires the assessment of *'the direct effects and any indirect, secondary, cumulative, short, medium and long term permanent or temporary, positive and negative effects of the project'*;
 - Directive 97/11/EC states that criteria for assessment includes *'the cumulation with other projects'*;
 - The EIA Regulations 2017 state that, *'the characteristics of the development must be considered having regard, in particular to the cumulation with other existing and/or approved development'*; and
 - Directive 2014/52/EU states that *'the description of the likely significant effects ... should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project'*.

Methodology

- 18.3 Cumulative effects come in two forms. The first relate to the impacts of the proposed development in conjunction with other developments in the area. These developments should be existing, consented or reasonably foreseeable in terms of delivery and should be located within a realistic geographical scope where environmental effects could combine to create a more significant effect on a particular sensitive receptor. These are hereafter referred to as cumulative effects.
- 18.4 The second type of cumulative effect is that of the combination of the various types of impacts from the proposed development. These are hereafter referred to as synergistic effects.

Cumulative Effects

- 18.5 As set out within Chapter 2, a cumulative site scoping exercise has been undertaken to identify any potential developments within the vicinity of the site which are likely to result in cumulative or synergistic effects. A planning history search has been undertaken for all planning applications submitted in the surrounding areas to the site which are either approved or awaiting decision. The search area extended to a 3km radius from the site

- boundary. It was considered a 3km radius was a suitable distance to identify the potential for any cumulative or synergistic effects that may arise, when considering the nature, location and scale of the proposed development.
- 18.6 Planning applications for single plots of residential development have been discounted from the assessment. Of the remaining applications, the large majority found during the search were not considered to result in significant cumulative environmental impacts when considered in combination with the proposed development.
- 18.7 The cumulative effects assessment has only considered existing, consented or reasonably foreseeable developments. For the purposes of the assessment, reasonably foreseeable means those developments that are currently known to the planning system or already within the consenting process (including those under construction; developments with planning permission not yet under construction; and submitted applications not yet determined).
- 18.8 The cumulative sites proposed to be scoped-in to the EIA have been confirmed with the Local Planning Authority (LPA) through the formal scoping process.
- 18.9 Those developments to be considered in the assessment as agreed with SRBC and LCC as part of the EIA Scoping process are set out in Table 18.1. **Figure 18.1** shows all of the development listed in Table 18.1 and indicates their locations in relation to the proposed development's red line boundary.
- 18.10 It should be noted that the Scoping Report included a cumulative application (ref. 07/2018/9316/OUT) for the construction of up to 100 dwellings and associated works approximately 0.3km south of the site. This application has subsequently been refused and as such is no longer considered as a cumulative development. Additionally, Site Refs 9 (07/2020/00774/FUL) and 10 (LCC/2020/0014) in Table 2.1 were not included in the Scoping Report as these applications had not been submitted at the time. These cumulative developments are being considered in this EIA as they are located within the vicinity of the site and could potentially result in cumulative effects with the Proposed Development.

Table 18.1: Cumulative Sites

Site Ref.	Application No.	Proposal	Approx. Distance and Direction	Status
1	07/2012/0627/ORM	Outline application for Residential Development [350 dwellings] (Access applied for).	2km south	Approval with conditions on 30 th August 2013
2	07/2014/0184/ORM	Outline application for Residential development of up to 400 dwellings (access applied for)	1.4km south	Approved on 11 th March 2016
3	07/2017/0211/ORM	Cuerden Strategic Site, Hybrid planning application for retail floorspace (Use Classes A1 & A3) and associated car parking, site access, highway works, drainage and strategic landscaping. Employment floorspace (Classes B1, B2 & B8), hotel (Class C1), health and fitness and leisure (Class D2), creche/nursery (Class D1), retail (Classes A1, A2, A3, A4 & A5), car showrooms (Use Class Sui Generis), residential (Classes C2/C3) and provision of associated car parking, access, public open space, landscaping and drainage (Access applied for)	1.5km southeast	Approved on 20 th December 2017
4	07/2017/3361/ORM	Hybrid planning application comprising of Full and Outline development - Environmental Impact Assessment (EIA) development Part A FULL - Site enabling works, the development of highway and drainage infrastructure for the full application site (the proposed development site) and the provision of car park accessed off Titan Way (Phase 1); together with the construction of 197 dwellings and associated internal access roads, public open space, green infrastructure, an acoustic barrier and highway infrastructure (Phase 2) Part B OUTLINE - for the remainder of the proposed development site for the development of between 653 and 753 new homes, up to 5,000 sqm of Business Park (Use Classes B1); up to 15,000 sqm of Use Class B2 and up to 8,000 sqm Industrial Estate (Use Class B8), local centre comprising up to 3,000 sqm of accommodation for occupation within	3km southwest	Approved on 7 th November 2019

Site Ref.	Application No.	Proposal	Approx. Distance and Direction	Status
		any combination of uses within Classes A1,A2,A3, A4,A5,B1 or D1 (including health centre/clinic) (which shall not exceed 2,500 sqm of main town centre uses), a primary school (1.646ha) and associated public open space and green infrastructure (Phases 3-5 and education, employment and local centre phases) (Amended Plans)		
5	07/2016/0512/FUL	Erection of 28 dwellings with associated infrastructure	0.5km east	Approval with conditions on 13 th March 2017
6	07/2017/1266/REM	Reserved Matters application for the erection of 61 residential units comprising of dwellings and apartments with associated landscaping	1.5km north	Approved 14 th December 2018
7	07/2014/0190/ORM	Hybrid application for the erection of approximately 385 dwellings. This is hybrid application which includes two parts - Part A: Outline application permission (excluding Phase 1) for the erection of up to 204 dwellings, with the provision of associated infrastructure (including roads, footpath, cycleways and open space). All matters reserved for subsequent approval PART B: Full planning permission (Phase 1 as shown on the plans) for the erection of 181 dwellings and the provision of associated infrastructure (including roads, footpaths, cycleways and open spaces)	0.5km northeast	Approved on 22 nd December 2015
8	07/2015/0315/REM	Reserved matters application for the erection of 281 dwellings with associated infrastructure and landscaping	1.2km northeast	Approved on 13 th August 2015
9	07/2020/00774/FUL	Proposed redevelopment for open storage (Use Class B8), caravan storage (Use Class B8), caravan site including erection of ancillary building (Sui Generis) and recreation (Use Class E), change of use of existing building to workshop/storage (Use Class B2/B8) and ancillary caravan site/recreation use (Sui Generis), retention of existing building	0.2km west	Awaiting decision – application validated on 18 th September 2020

Site Ref.	Application No.	Proposal	Approx. Distance and Direction	Status
		for log store and processing (Class E), siting of static caravan as ancillary office to existing birds of prey centre (Sui Generis) and the retrospective reinstatement of a former track to access the site.		
10	LCC/2020/0014	Improvement of existing A582 and B5253 in Leyland to four lane dual carriageway standard with segregated combined cycle track between broad oak roundabout and the Stanifield Lane / Watkin Lane roundabout (A582) and Flensberg Way roundabout to Longmeanygate junction (B5253). The development includes new carriageways, upgrade of existing Croston Road, Sherdley Road and Longmeanygate junctions to fully signalised operation, embankments, attenuation ponds, landscape / ecological mitigation works, new railway bridges, retaining structures and fences, alteration / extension of subway, bridges and culverts and temporary contractor access and compound	Adjacent to sites western border	Awaiting decision – application validated on 2 nd March 2020
11	n/a	Completion of full allocation of Site C1 of the SRBC Local Plan which includes additional 250 residential units on third party land adjacent to the site	On third party land adjacent to the site within Site C1 of the SRBC Local Plan	n/a

- 18.11 The identified cumulative sites were reviewed by the Applicants' technical EIA team to consider if there is potential for cumulative effects in respect of each technical assessment that forms part of the EIA.
- 18.12 The safeguarded land for development, identified in Policy C1 of South Ribble Local Plan, to the immediate south of the site has not been included within the cumulative assessment as there is no indication of the quantum of development that may come forward or when the land might be developed.
- 18.13 The assessment of the cumulative sites was based on information available on the planning portals. This comprised a review of the information contained within the planning application package for each identified site (i.e. the description of development, red line plans and any masterplans / parameter plans / relevant information available for that site).
- 18.14 The cumulative assessment identified the additional effects resulting from the proposed development during both the demolition and construction, and operational phase of the proposed and cumulative developments. This provides sufficient information for the identification of potential for cumulative effects for each technical assessment, thus ensuring that SRBC can evaluate the impacts of the development in isolation and in conjunction with other developments in the area.
- 18.15 Cumulative effects can be generated at the construction stage if the sites are in close proximity and construction periods are likely to overlap. However, most construction projects employ regulatory controls and good practice to minimise impacts occurring outside the site boundary. It is assumed that standard best practice measures have been or will be employed on each cumulative development site.
- 18.16 The effects of cumulative operational impacts can be varied and will depend on the scale, nature and processes / activities of the proposed development, the location of sensitive receptors, the surrounding developments and the immediate environs. The cumulative assessment assumes that the mitigation measures proposed throughout this ES will be or have been implemented.
- 18.17 This chapter sets out each technical discipline and identifies where the residual effects identified within each technical chapter have been altered by a cumulative development.

Cumulative Effects

Ecology and Nature Conservation

Approach

- 18.18 For each project included within the cumulative assessment, all relevant ecological documents relating to that project were reviewed in order to determine the key features of the sites and likely potential effects, along with the proposed mitigation and residual effects. This is then compared against the features, likely effects, mitigation and residual effects for The Lanes to determine whether a cumulative impact is likely and therefore whether the project can be scoped in or out of assessment.

Likely Residual Cumulative Effects and their Significance

Demolition and Construction

- 18.19 No cumulative effects are anticipated with each cumulative site during the construction phase, assuming that all mitigation measures are implemented as stated in relevant documents.

The Completed and Operational Development

- 18.20 No cumulative effects are anticipated with each cumulative site during the operation, assuming that all mitigation measures are implemented as stated in relevant documents.

Archaeology and Heritage

- 18.21 No potential cumulative or synergistic effects have been identified. As no impacts to the setting of any heritage assets outside of the site have been identified and any currently unknown archaeological remains within the site can only be subject to direct physical impacts, there is no potential for cumulative or synergistic effects.

Landscape and Visual

Approach

18.22 This section considers the potential effects of cumulative change within the study area. The following applications are confirmed within the LVIA study area:

- 07/2014/0190/ORM: Factory Site (Residential Development – 385 dwellings)
- 07/2020/01063/FUL: Land to the East of Reynard Close Longton
- LCC/2020/0014: Improvement of Existing A582
- 07/2016/0512/FUL: Land at Clayton Gate Drive (Residential Development -28 dwellings)
- Completion of full allocation of Site C1 of the SRBC Local Plan

18.23 All of the above sites are located within Landscape Character Area 15b Longton – Bretherton Regional Character Area. Landscape effects have thus been considered in relation to potential changes incurred in landscape character and physical makeup at this level.

Landscape Effects

07/2014/0190/ORM: Factory Site (Residential Development – 385 dwellings)

18.24 The development of the identified housing sites increases this land use within the open landscape corridor which currently runs from the River Ribble corridor southwards to Tardy Gate. This landscape change to the river corridor will mean that this tract of landscape will be increasingly encapsulated, and as such the proposed Green Infrastructure (GI) network associated with the proposed development will be important to provide significant GI linkage between the built up areas of central Preston with the wider Green Belt to the south west.

07/2020/01063/FUL: Land to the East of Reynard Close Longton

18.25 The proposal will impact on character and tranquility of the green belt, however given the relatively small footprint and proposed fabric not out of character with the immediate surrounds, the development will more or less integrate with the immediate surroundings.

LCC/2020/0014: Improvement of existing A582

18.26 The dualling of Penwortham Way will result in substantial tree loss along the boundary of the highway at construction and completion (associated with widening and earthworks), as well as the expansion of infrastructure elements, albeit within an existing infrastructure corridor. Arising from the prevalence of established vegetation on the west embankment of the corridor, and assumed mitigation works associated with the improvement works, it is expected that this development will be effectively integrated into its existing setting.

Completion of full allocation of Site C1 of the SRBC Local Plan

- 18.27 Landscape effects are expected to include loss of pasture land, trees and hedgerow albeit mitigation in the form of significant tree and hedgerow retention is expected to be in line with the current site's mitigation measures. The implications on local and regional landscape character will be minimal given the site's smaller footprint in comparison with the current site development, and offset by the planned extension of GI to link with existing wildlife networks to the south of site C1.
- 18.28 From the above review of committed and approved development it is considered that the reviewed developments that whilst resulting in adverse effects to landscape character at site and local context levels, cumulative effects will not result in undue harm to the baseline in terms of the Longton – Bretherton Regional Character Area which will remain largely intact when considered in the broader context. That said it is evident that the green infrastructure proposals integrated into the development strategy are important to secure the longevity of the resource for the long term, and potentially the functionality of Green Infrastructure network from the river corridor west to the Green Belt locality.

Visual Effects

- 18.29 In terms of visual amenity there are limited locations where change would result in cumulative effects because of the low lying, treed nature of the landscape and that some of the sites are within built up areas. That said residents of Cootes lane and Chain House Lane will experience further adverse change in their amenity from rear elevations, with regards to the adjacent development of Site C1.
- 18.30 The loss of woodland vegetation associated with the dualling of Penwortham Way may result in short-term adverse visual effects on receptors within the Green Belt however residual effects, once landscape proposals have matured are not expected to be significant.

Ground Conditions

- 18.31 Each of the cumulative developments identified in Table 18.1 have been scoped into the Ground Conditions cumulative assessment as they all could potentially have impacts on the local ground conditions.
- 18.32 It is assumed that all accepted proposed developments will have completed site investigation works where required with any required remediation works undertaken to address risks posed by soil or groundwater contamination. It has also been assumed that good working practices will be adopted by construction personnel during the development of these sites.
- 18.33 The assessment of the magnitude and significance of a potential impact has been carried out in accordance with Tables 10.1, 10.2 and 10.3 of Chapter 10: Ground Conditions.

Construction Cumulative Impacts

- 18.34 It is assumed that best practice is employed during construction works. However, risk of accidental fuel spillage and other incidents cannot be precluded.
- 18.35 A number of avoidable impacts have been identified:
- Short term impacts of air quality associated with site earthworks (e.g. vehicular movements of wagons and plant to and from sites); and
 - Potential release of contaminants into soil / controlled waters.
- 18.36 In addition, impacts which are considered to be unavoidable include:
- The excavation of Made Ground deposits could result in the potential exposure to contaminants; and
 - Permanent loss of agricultural land.
- 18.37 It is considered that with the implementation of adequate CEMPs, SMP, storage of fuel and other chemicals in accordance with the Control of Pollution (Oil Storage) Regulations and implementation of works in accordance with current legislation and standards, specifically EA Pollution Prevention Guidance (PPG) documents that all the above construction phase cumulative impacts will be **Minor Adverse/Negligible** and **Not Significant** in EIA terms.
- 18.38 Impacts that are considered unavoidable include: A combined permanent loss of agricultural / Greenfield land across the wider local area.
- 18.39 It is considered that the above effects during the construction phase will be **Minor Adverse** and considered not significant in EIA terms.

Completed Development

- 18.40 It is considered that the completed developments will increase the degree of hardstanding coverage with building foundations and drainage runs across the cumulative sites impacting on drainage rates and groundwater recharge rates this considered a **Minor Adverse** impact and is **Not Significant** in EIA terms. Additionally, there will be an increase in potential contamination sources due to the construction of areas of car parking and access roads, this is however considered a **Minor Adverse** impact and is **Not Significant** in EIA terms.
- 18.41 There is a potential for there to be **Minor Beneficial** cumulative effects as the cumulative developments will be required to mitigate or improve existing ground quality as part of the planning process.

Drainage and Flood Risk

- 18.42 No potential cumulative or synergistic effects are anticipated with the cumulative sites identified in Table 18.1 in relation to drainage and flood risk, as such all cumulative sites are scoped out of the Drainage and Flood Risk cumulative assessment.

Transport and Access

- 18.43 The assessment of cumulative effects is accounted for in the main assessment of the Proposed Development presented in Chapter 12 and the TA through the inclusion of known committed developments and assessment of traffic associated with the Site Allocation. The exception to this is the proposed dualling of Penwortham Way (Planning Ref: LCC/2020/0014) which does not currently have planning permission. Further details relating to committed developments and cumulative effect scenarios are described in **Appendix 12.1**.

Air Quality and Dust

Construction

- 18.44 There is the potential for cumulative effects on construction dust effects from other major developments in the vicinity of the development site should the phases overlap and from agricultural dust generating activity in the area.
- 18.45 Due to the size and nature of the above planning applications there is a likelihood for cumulative effects as a result of concurrent dust generating activity should the construction phases overlap.
- 18.46 However, the implementation of the mitigation measures in Table 13.31 of Chapter 13: Air Quality, which will be detailed within the CEMP, as well as suitable co-operation with the committed development sites will ensure that any cumulative effects at the development site will be not significant.

The Completed and Operational Development

- 18.47 As confirmed with Vectos, the transport consultant for the project, the traffic flow forecasts included the committed developments as agreed with the relevant highways department.
- 18.48 The traffic forecasts associated with the cumulative schemes have been assessed within both the Do Minimum and Do Something scenarios for the Proposed Development.
- 18.49 Additionally, the impacts associated with both scenarios within the sensitivity analysis have included the cumulative developments. Further details are presented within **Appendix 13.3 of Volume 3**. Therefore the cumulative air quality effects associated with all operational phase impacts have already been considered within this assessment.

Noise and Vibration

- 18.50 Site Ref. 1, 4, 5 and 7 in Table 18.1 have been scoped out of the cumulative assessment for Noise impacts as due to the distance from the site, the impacts, if any, would be negligible. Sites 2, 3, 6, 9 and 10 have been scoped in to the assessment. Site 11 for the completion of the wider allocation is assessed within chapter 14.
- 18.51 Cumulative Sites that have the potential to contribute to proposed noise levels associated with the development and impacting upon the development are considered here.

Demolition and Construction

- 18.52 It is not unusual for demolition and construction activities to take place on more than one development site in proximity to each other. However, the contractor for the site should undertake regular liaison meetings and reviews with neighbouring sites to plan works so that they do not cause unnecessary disruption.
- 18.53 Whilst it is not practical to undertake a quantitative assessment of the cumulative noise and vibration effects due to the lack of information, it is assumed that all construction sites will follow the set noise limit criteria and the CoCP guidelines.
- 18.54 Therefore, it is assumed that nearby construction sites will comply with best available mitigation measures during their demolition and construction phases minimising potential adverse effect.
- 18.55 Additionally, construction works at the proposed site would be incorporated into a CEMP to ensure that cumulative adverse effect is minimised.

Completed Development - Operational fixed plant noise

- 18.56 Cumulative noise from fixed plant items and equipment during the operational stage of these development should follow the legislative requirements for fixed plant items and it is assumed that the design of fixed plant and equipment at the nearby development would also follow the National noise limit policy criteria. Therefore, it would result in an overall negligible effect upon the nearby receptors, which is not significant.

Completed Development - Operational traffic

- 18.57 The cumulative aspect of road traffic noise has been evaluated based on the 18 hours annual average weekly traffic (AAWT) data provided by VECTOR, which includes 2018 baseline year, and 2025 opening year, with and without the Site. The 2025 forecast also includes the proposed development traffic with and without dualling of Penwortham Way.
- 18.58 According to summary of results presented in chapter 14, the related traffic increase with and without the proposed development is considered negligible, i.e., less than 0.9 dB according to the DMRB criteria.

18.59 Therefore, the forecast traffic increase due to the proposed development is within **NOEL** effect characteristics and not considered to generated significant adverse noise impact to the area. This is the level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.

Mitigation Measures

18.60 No specific mitigation measures are required due to any cumulative effects.

Residual Impact

18.61 No specific measures are required in relation to the cumulative impacts and, as such, the residual impacts are as in the main assessment.

Socio-economics

18.62 Similar methods to those employed in Chapter 15 were used to assess the cumulative effects. However, a higher-level assessment has been undertaken when assessing potential pupil yields for primary and secondary education. This is sourced from Lancashire County Council's guidance of 0.17 primary school pupils per house and 0.09 secondary school pupils per house¹. This higher-level approach is used as it has not been possible to identify specific development mixes for other schemes as was the case with the assessment for the proposed development.

Likely Residual Cumulative Effects and their Significance

Construction Cumulative Effects

18.63 In terms of socio-economic impact assessment, no adverse effects are identified during the construction phase. Construction of the cumulative developments would bring about additional demolition and construction jobs and expenditure across the district. These effects cannot be readily quantified on the basis of the information available for the cumulative developments. However, given the nature and scale of the cumulative developments, it is considered that the likely cumulative effects in relation to construction employment creation and expenditure would be a beneficial effect in the short term at the District level.

The Completed and Operational Development

Population

18.64 The cumulative developments of 3,815 dwellings have the potential to accommodate around 9,600 residents once completed and fully occupied. It is estimated that 6,700 residents would be of working age (16-64), equivalent to 70% of the population.

18.65 Population growth over the past 10 years has been lower in South Ribble compared to regionally and nationally, and the working age population has declined by 4% since 2011. In addition, the retirement age population is projected to grow compared to a projected reduction in the working age population. The sensitivity of the receptor is therefore assessed as **high**.

18.66 It is estimated that the total population in South Ribble would increase by around 9% as a result of cumulative development and the working aged population would increase by around 10%. This represents a permanent rise, and the magnitude of the effect is assessed as **substantial**.

18.67 The significance of the effect for South Ribble is therefore assessed as **Major Beneficial** in the long term at the district level, which is **Significant**.

¹ Lancashire County Council, Planning Obligations in Lancashire Policy School Projection Methodology.

Housing Stock

- 18.68 The cumulative developments would lead to a further 3,815 homes developed in South Ribble. The receptor for this effect is the current housing supply in South Ribble.
- 18.69 The sensitivity of the receptor is **high**. The baseline data shows that South Ribble has not met its housing target of 417 dwellings per annum, and the delivery of new housing is a policy priority in the Joint Core Strategy.
- 18.70 The proposed cumulative development would increase the overall housing stock in South Ribble by around 8%. The magnitude of the effect is assessed as **substantial**.
- 18.71 The significance of the effect of the receptor is assessed as **Major Beneficial** in the long term at the District level which is **Significant**.

Capacity of the Local Social and Community Infrastructure

Education

- 18.72 To assess the likely number of primary school children yielded by the cumulative developments, the assessment draws on guidance in the Lancashire County Council School Projection Methodology. This provides a high-level estimate that the primary school yield is 0.17 per dwelling and a secondary school yield of 0.09 per dwelling.
- 18.73 Applying these yields to the cumulative developments results in potential for 648 primary school pupils and 333 secondary school places.
- 18.74 There are 378 spare places in existing primary schools within 2 miles of the proposed development boundary. The proposed development also includes the provision of a 2-form entry primary school (420 places), as well as an additional FE primary school as part of one of the cumulative developments (site ref 4).
- 18.75 It is estimated that without the additional primary schools to be developed as part of cumulative developments there would not be enough spare capacity at primary schools in the local area. However, the cumulative development of primary schools together would provide an estimated 630 additional school places², bringing the total number of spare places to 1,008. Thus, indicating there would be enough spare capacity in local primary schools to accommodate the cumulative developments.
- 18.76 The significance of the effects on education facilities are assessed as follows.
- 18.77 In both primary and secondary schools within the 2 miles of the proposed development, spare capacity is fairly high. The sensitivity of the receptor is therefore assessed as **low**;
- 18.78 The cumulative developments would increase the requirement for school places in the area. However, the baseline assessment has indicated there is sufficient capacity in local secondary and primary schools, with

² Based on an average class size of 30 across 7 years

additional capacity delivered through the new primary school as part of the proposed development to accommodate these pupils. The magnitude of the effects is assessed as **negligible**.

- 18.79 The overall significance of the effect on both primary and secondary schools is assessed as **negligible** in the long term at the local level, which is **Not Significant**.

Health

- 18.80 The cumulative developments would increase the average patient list size per FTE GP from 1,882 to 2,081, rising from just below the average for the NHS Chorley and South Ribble CCG area (1,908) to significantly above the CCG average. The majority of dentists within 2 miles of the proposed development are not accepting new patients, suggesting little spare capacity.
- 18.81 The requirement for health services will impose additional demands and costs upon the existing provision. The assessment shows that the average patient list size per FTE GP for local GP surgeries is higher than the average for the Chorley and South Ribble CCG area when the increase in population of the proposed site is considered and there appears to be little capacity in local dentists. However, there plans to expand health care provision locally. The sensitivity of the health receptor is therefore assessed as **medium**.
- 18.82 As a result of the need arising from residents of the cumulative developments, the average patient list size per FTE GP would increase from 1,882 to 2,081 (an increase of over 10%). The magnitude of the effects would result in a **substantial adverse** impact. Therefore, without any mitigation, the significance of the effect on local health provision is assessed as **Major Adverse** in the long term at the local level, which is **Significant**.
- 18.83 However, there are other sites in the cumulative developments which include potential healthcare mitigation. To achieve adequate mitigation, developers may provide healthcare facilities as part of their development, or through engagement with the local CCG and Council provide for the expansion of existing local services. Providing the cumulative development proposed is mitigated against appropriately the magnitude of the effect is would therefore be assessed as **negligible** in the long term at the local level. Therefore, with the appropriate level of mitigation, the significance of the effect on local health provision is assessed as **Negligible** in the long term at the local level, which is **Not Significant**.

Table 18.2: Socio-economic Cumulative Impacts

Site Ref.	Application No.	Approx. Distance and Direction	Dwellings	Estimated Population Yield / Increased GP Patients	Primary School Pupil Yield	Secondary School Pupil Yield
1	07/2012/0627/ORM	2km south	350	773	60	32
2	07/2014/0184/ORM	1.4km south	400	884	68	36
3	07/2017/0211/ORM	1.5km southeast	210	464	20	11
4	07/2017/3361/ORM	3km southwest	750	1,657	128	68
5	07/2016/0512/FUL	0.5km east	28	62	5	3
6	07/2017/1266/REM	1.5km north	61	135	10	5
7	07/2014/0190/ORM	0.5km northeast	385	850	65	35
8	07/2015/0315/REM	1.2km northeast	281	621	48	25
11	n/a	On third party land adjacent to the site within Site C1 of the SRBC Local Plan	250	552	43	23
Total			2,715	5,997	446	236
Total with proposed development			3,815	9,602	648	333

Health

- 18.84 All developments identified in Table 18.1 have been scoped into the Health cumulative assessment given the potential for cumulative effects on the determinants of health considered in the health assessment.

Approach

Construction and Demolition

- 18.85 In terms of Active Travel, it is unlikely cumulative construction traffic will affect the same receptors at the same time and no specific cumulative effects have been identified in the transport chapter, although it should be noted that some of the other development schemes have not explicitly assessed construction traffic. Cumulative effects on PRoW that are likely to affect the same receptors at the same time have also not been explicitly identified. No significant effects on health in the active travel category have been identified.
- 18.86 In terms of Healthy Environment, given the distance of the majority of the schemes from the proposed development, it is unlikely there will be cumulative effects associated with dust or noise that will affect the same receptors at the same time. In relation to the cumulative effects with the full allocation for 1,350 residential units, the implementation of the proposed mitigation measures (including CEMP) and phasing of the proposed development will help reduce effects on individual sensitive receptors such that cumulative effects are unlikely to occur.
- 18.87 No cumulative effects on flood risk or ecology are anticipated and overall ground conditions will be improved through development, although no significant effects on health are identified.
- 18.88 In terms of vibrant neighbourhoods, there may be a beneficial effect associated with creating demolition and construction jobs, although no significant effects on human health is anticipated. There may be some cumulative effects associated with community cohesion and stress / uncertainty to groups that have strong views / perceived risks regarding the development. This will contribute to the moderate effect already noted.

The Completed and Operational Development

- 18.89 In terms of healthy housing, the cumulative provision of housing stock, including affordable housing, will provide a moderate beneficial effect on human health.
- 18.90 In terms of active travel, as outline in the Transport Assessment, the existing highway network has been determined to have sufficient capacity to accommodate the forecast proposed development traffic flows, cycle and pedestrian links across the site will increase accessibility, and the proposed dualling of the A582 has the potential to allow for public realm enhancements and improvements to prioritise and promote walking and cycling within the local area. Therefore, no significant cumulative effects on health are anticipated.

- 18.91 In terms of Healthy Environment, no cumulative effects on air quality, flood risk, or ecology are anticipated and overall ground conditions will be improved through development, although no significant effects on health are identified. In relation to noise and vibration, with the implementation of the proposed mitigation measures, including good acoustic design at the detailed design stage, no significant cumulative effects are anticipated in relation to health.
- 18.92 Whilst cumulatively there will be an increase in housing sites in the local landscape, with some landscape features e.g. pasture land, trees and hedgerows lost - the wider landscape character is not anticipated to be significantly affected. Cumulative mitigation including new publicly accessible green infrastructure and networks of cycleways and footpaths may provide new opportunities physical recreation and accessing nature.
- 18.93 In terms of Vibrant Neighbourhoods, no significant effects are anticipated with respect to school capacity although there will be an increased demand on GPs from 1,882 to 1,956FTE per GP, higher than the NHS Chorley and South Ribble average, this will contribute to a major adverse effect. However surrounding developments could utilise services provided as part of the proposed development, and CIL contributions will be made to allow for enhancement or expansion of existing healthcare services in the area. No cumulative significant effects on health are anticipated.

Climate Change

Inter-Cumulative Effects

- 18.94 Inter-cumulative effects relate to the impacts of the proposed development in conjunction with other developments in the area. These developments should be existing, consented or reasonably foreseeable in terms of delivery and should be located within a realistic geographical scope where environmental effects could combine to create a more significant effect on a particular sensitive receptor. These are hereafter referred to as cumulative effects.
- 18.95 In terms of Climate Change, which is a global issue, comprehensive consideration of inter-cumulative effects (i.e. effects in combination with other developments) would need to account for every other development and activity that generates carbon emissions or releases other greenhouse gases. As this encompasses, to varying degrees, most of the activity on the globe it is not practical nor helpful, to consider inter-cumulative effects, beyond recognising that it is necessary to reduce carbon emissions across the board and that all development has a duty to reduce its own emissions.
- 18.96 It is unreasonable for the purposes of a planning application to quantify all sources of emissions from other third-party developments for the following reasons:
- The emissions from other developments fall under Scope 3, which do not form part of the assessment under the methodology outlined in Chapter 17: Climate Change;
 - Large technical data requirements from other developments are not accessible;
 - It would require a huge interlinking scope of assessment that would exceed that expected of a planning application for any one development;
 - It is not feasible to undertake a high-level chemical assessment to analyse likely synergistic impacts between different emissions from varying developments; and
 - Complicated, unpredictable chemical reactions driven by atmospheric, climatic and behavioural factors are beyond the Applicant's control.

Intra-Cumulative Effects

- 18.97 Intra-cumulative effects refers to the combination of the various types of impacts from the proposed development. These are hereafter referred to as synergistic effects. Technical chapters that can be associated directly include traffic and transport, as well as the indirect impacts of climate change such as air quality, flood risk and ecology. The mitigation of synergistic effects is possible through thoughtful and informed design that will act to minimise the proposed development or surrounding receptors vulnerability to effects.
- 18.98 Intra-cumulative effects (i.e., climate change effects in combination with other environmental effects on a common receptor) are also unrealistic to appraise. Climate change effects manifest as effects considered within

other environmental disciplines, for example air quality and flood risk, but do not have a quantifiable direct effect on local receptors. The effects act on a global receptor but the individual contribution from a single development of this scale is almost indistinguishable. It is the additive effects from all the other development globally that poses the potential catastrophic threat.

Synergistic Effects

18.99 The EIA has taken into consideration synergistic effects on identified receptors as a consequence of collective actions (refer to Chapters 7-17). Constraints and identified sensitive receptors have been considered in detail throughout the proposed development's design evolution, including the consideration of proposed site preparation and construction techniques. The aim of this process has been to address the potential for significant adverse impacts and ultimately to achieve no significant residual effects in isolation or in-combination (i.e. synergistic effects). The measures identified to address the potential for significant effects have, for the most part, been designed-in to the proposed development and considered in the EIA as embedded mitigation. Any measure that is not specifically designed-in feature of the proposed development is described as an additional mitigation measure in the relevant technical chapter and in Chapter 19: Summary of Mitigation and Residual Effects. These are also of relevance when considering synergistic effects. A summary of how these are applicable to certain actions is outlined below. Key considerations in terms of the in-combination effects relating to these measures include:

- Presence and therefore remediation of contaminated soils as appropriate and potential release of dust to atmosphere. (see Chapter 10: Ground Conditions, and Chapter 13: Air Quality and Dust for further detail). This has been considered throughout the technical assessments where relevant in terms of assessment of significant effects.
- Ground and enabling works. This has been considered throughout the ES to assess impacts on water quality, ground conditions and nuisance activities such as noise, dust and emissions.
- Construction related issues and uncertainty during planning stages is likely to have synergetic effects on existing populations, relating to stress and uncertainty. These will be mitigated through measures implemented in the CEMP.

Conclusion

18.100 Review of SRBC and LCC's planning portals has confirmed that there are developments which have the potential to interact with the proposed development and generate cumulative effects. Therefore, a cumulative assessment has been undertaken. The results of which have identified that the development is unlikely to give rise to significant cumulative construction or operational effects. Consideration has also been given to synergistic effects of the proposals which has identified a number of effects to those receptors in close proximity during the construction period. However, these are predicted to occur on occasional basis only, are temporary, short-term and localised.