

USW Caerleon Environmental Statement

Chapter K: Residual and Cumulative Effects

29 November 2019



**Lichfields
Helmont House
Churchill Way
Cardiff
CF10 2HE**

Contents

K1.0	Introduction	1
K2.0	Identification of Key Sensitive Receptors	3
	Summary of Residual Effects	3
	Summary of Sensitive Receptors	5
K3.0	Inter-Relationship of Direct Effects	7
K4.0	Other Cumulative Effects	9
	Schemes to be Assessed	9
K5.0	Consideration of Cumulative Effects	11
	Transport	11
	Air Quality	12
	Landscape and Visual	12
	Arboriculture	12
	Ecology	12
	Cultural Heritage	14
	Socio Economic	14
K6.0	Summary and Conclusions	21
	Additional Impacts	21
	Conclusions	21
K7.0	Abbreviations & Definitions	22

K1.0 Introduction

- K1.1 This chapter draws together the findings from the individual inputs into the Environmental Statement ('ES'); defines inter-relationships between these assessments and any other developments in the area surrounding the site; and establishes whether there are any other residual effects on the identified sensitive receptors which may require additional mitigation not previously identified.
- K1.2 Chapter L then summarises the mitigation and monitoring measures identified within this ES and how this can be delivered and secured.
- K1.3 There are different inter-relationships between the various assessments within the ES and this section identifies the key links between any impacts identified and how these may influence each other. Where these relationships give rise to other combined direct effects arising from the development, it is necessary to identify how these impacts on those defined sensitive receptors identified in this ES.
- K1.4 There may also be other indirect effects arising from the development when considered with other proposals or schemes in the surrounding area. These effects may also give rise to the need to consider additional mitigation measures; albeit it is necessary to consider the likelihood of those other schemes proceeding and the ability or necessity of the applicant to mitigate any such effects for other sites.
- K1.5 Accordingly, this chapter considers two types of cumulative environmental effects in association with the Proposed Development:
- 1 Synergistic – the combined effect of different type of impacts attributable to the proposed development ('direct impacts') in respect of a particular receptor. An example of this could include the combined impact of noise, air quality and daylight, sunlight and overshadowing effects on a residential dwelling. This includes consideration of the impacts during the construction and operational phases; and
 - 2 Cumulative – these arise from the combined effect of the Proposed Development with committed development schemes that, individually, may be insignificant, but when combined with other impacts, may be significant.
- K1.6 During the process of agreeing the scope of the Environmental Impact Assessment ('EIA') with Newport City Council ('NCC'), developments were identified as requiring consideration in relation to those other indirect or cumulative effects. It was agreed that the developments discussed within Section K4.0 of this chapter should be assessed.
- K1.7 Sensitive receptors have been identified in individual chapters of the ES and are summarised in Section K2.0. These receptors are those with varying degrees of sensitivity to the environmental impact and change as a result of the proposals. Regard has been given to the sensitivity of the identified receptors to ensure consideration is then given to those which are potentially the most sensitive to impact, taking into account the extent of the effects arising. The professional judgement of those undertaking the EIA as well as topic specific criteria, legislation or guidelines have been used to identify the degree of sensitivity.
- K1.8 A consideration of the impacts arising from the construction and operational phases of the development has been carried out with each of the technical chapters and is also addressed in the assessment of the inter-relationship and cumulative effects arising from the scheme.
- K1.9 The structure of this chapter is as follows:

- Section K2.0 – Summarises the residual effects arising (following mitigation) identified within the ES and identifies of sensitive receptors;
- Section K3.0 – Considers the inter-relationship of Direct Effects arising from the proposals (synergistic effects) and any additional mitigation measures required to have regard to those effects;
- Section K4.0 – Identifies the cumulative assessment sites;
- Section K5.0 – Considers any cumulative effects arising from the scheme when considered with other identified proposals in the surrounding area;
- Section K6.0 – Provides a summary and conclusions from both this chapter and from the ES as a whole; and
- Section K7.0 – Lists abbreviations.

K2.0

Identification of Key Sensitive Receptors

K2.1

By way of context, this section summarises the key environmental effects identified in the ES as a means to identify the sensitive receptors most likely to be subject to residual effects arising from the development. It is with regard to those receptors that the analysis of any additional impacts associated with the cumulation of effects has been carried out.

Summary of Residual Effects

K2.2

Table K2.1 provides a summary of the main residual effects (post incorporation of mitigation measures) as identified in Chapters D to J of this ES that could be expected to arise during the period of construction and during the operation of the development.

Table K2.1 Summary of Residual Effects

Environmental Topic	Summary of Residual Effects
Effects During Construction Works	
A range of effects have been identified during the enabling works and construction period, many of these have been reduced to negligible or neutral residual effects once mitigation measures incorporated into the Construction Environmental Management Plan ('CEMP') have been taken into account.	
Transport	Impacts on all receptors (road users, pedestrians and cyclists) are expected to be negligible following the implementation of a Construction Traffic Management Plan ('CTMP')
Air Quality	All impacts are expected to be negligible . This includes the impact of dust soiling and exposure to pollution from construction traffic on residential properties, Caerleon Hospital and schools; the impact of dust/alkaline deposition on ecology receptors; and air quality impacts on human health.
Landscape and Visual	Landscape Character Effects: Neutral impacts on Geological Assets, the Historic Landscape and Cultural Landscape receptors. Minor/negligible adverse impacts on Landscape Habitats. Moderate adverse impacts on Visual and Sensory receptors. Visual Amenity Effects: Minor adverse impacts on the rugby ground. Moderate adverse impacts on all other receptors; namely nearby residents and the Public Right of Way east of the site. All of the identified impacts are temporary, apart from the rugby ground, which will undergo development to create a LEAP and kickabout area.
Arboriculture	Impacts range from moderate adverse to neutral/negligible. Moderate adverse impacts will occur from the loss of trees, several of which may be subject to a Tree Preservation Order ('TPO'). U Category trees and those with significant underlying condition issues

	will experience a neutral impact from their removal. Trees north-east of the driveway off College Crescent are expected to experience minor adverse impacts from ground level changes. All arboriculture receptors will experience a neutral/negligible impact as a result of tree damage.
Ecology	Negligible impacts are predicted on all receptors, including the Severn Estuary SAC/SPA/Ramsar, River Usk SAC/SSSI, Afon Llwyd/Afon Llwyd Grasslands SIN, Semi-natural broadleaved woodland, scattered trees, breeding birds, roosting/foraging/commuting birds and common reptiles (slow worm).
Cultural Heritage	No effects predicted on the Grade II listed Gate Piers or potential buried archaeological remains. The Grade II listed Former Caerleon Teacher Training Building and Grade II listed Principal's Residence and Caretaker's/Gardener's Lodge will experience minor adverse impacts.
Socio Economic	Moderate beneficial impacts on construction employment.
Effects During Operation of the Development	
Transport	Impacts on all receptors (driver delay, pedestrian and cyclist delay, pedestrian and cyclist amenity and accidents and safety) are expected to be minor beneficial following the implementation of a Travel Plan, sustainable travel initiatives and off-site highway improvements.
Air Quality	Negligible impacts are predicted at all receptors, except for Caerleon High Street AQMA which is expected to experience a minor beneficial impact.
Landscape and Visual	Landscape Character Effects: Geological Assets at Year 1 will experience a neutral adverse impact, reducing to neutral at Year 15. Landscape Habitats and the Historic Landscape will experience a minor beneficial impact at Year 1, increasing to moderate/minor beneficial at Year 15. Visual and Sensory receptors will experience a moderate/minor adverse impact at Year 1, improving to a minor beneficial impact at Year 15. The Historic Landscape will experience a minor/negligible beneficial impact at Years 1 and 15. Visual Effects: Receptors 1, 2, 3 and 4 (residential) will experience minor/negligible adverse impacts at Year 1, improving to minor/negligible beneficial impacts at Year 15. Receptors 5, 6, 7 and 8 (residential) will experience a major/moderate neutral impact at Year 1, reducing to a moderate

	neutral impact at Year 15. Lodge Road (2, 3 and 4), Roman Way, College Glade (6) and College Crescent (1) will experience a moderate adverse impact at Year 1 and a moderate/minor adverse impact at Year 15. The Rugby Ground will experience a minor adverse impact at Year 1 and a minor/negligible adverse impact at Year 15. Receptor 21 (the PRoW east of the site) will experience a moderate/minor neutral impact at Year 1, improving to a minor beneficial impact at Year 15).
Arboriculture	Minor adverse impacts are predicted on retained trees due to increased pressure on trees in a residential setting and a change in wind dynamics and wind loading.
Ecology	Negligible impacts are predicted for the Severn Estuary SAC/SPA/Ramsar, River Usk SAC/SSSI, Afon Llwyd/Afon Llwyd Grasslands SINC, Roosting/foraging/commuting bats and common reptiles (slow worm). Negligible to possible minor beneficial impacts with appropriate landscaping are expected on Semi-natural broadleaved woodland, scattered trees and breeding birds.
Cultural Heritage	The Grade II listed Former Caerleon Teacher Training College Building, Grade II listed Principal's Residence and Caretaker's/Gardener's Lodge and the Grade II listed Gate Piers will experience minor beneficial impacts. There will be no effect on potential buried archaeological remains.
Socio Economic	Moderate beneficial impacts are predicted as a result of increased resident expenditure, fiscal impacts, the local labour market/commuting and the provision of new housing. Minor beneficial impacts are predicted on deprivation indicators and open space, community, leisure and recreation. Education and healthcare will experience negligible impacts.

Summary of Sensitive Receptors

K2.3

The technical assessments contained within the ES have identified a range of sensitive receptors which have varying degrees of sensitivity to environmental impact(s) and change as a result of the proposed development. Those receptors potentially sensitive to the effects identified in Table K2.1 are identified below (in alphabetical order).

- 1 Archaeology
- 2 Below ground geology
- 3 Caerleon High Street AQMA
- 4 Caerleon Hospital
- 5 Construction Workers
- 6 Cultural Landscape

- 7 Cyclists
- 8 Designated Sites (Severn Estuary SAC/SPA/Ramsar, River Usk SAC/SSSI, Afon Llwyd/
Afon Llwyd Grasslands SINC)
- 9 Drivers
- 10 Ecology/Habitats
- 11 Historic Landscape
- 12 Human health
- 13 Listed Buildings
- 14 Local Schools
- 15 Nearby residential properties
- 16 Open Space/Recreation Provision
- 17 Other Trees
- 18 Pedestrians
- 19 Public Right of Way
- 20 Rugby Ground
- 21 TPO Trees
- 22 U Category Trees
- 23 Visual and Sensory Receptors

K2.4 The assessment of the potential for other direct or indirect effects arising from this development or others in the surrounding area has been carried out with regard to these receptors on the basis that their sensitivity means that they are most likely to be subject to any additional significant effects. Other receptors identified in this ES have no or limited sensitivity to change and therefore are less likely to be subject to cumulative effect(s) and have not been specifically identified in this chapter.

K3.0**Inter-Relationship of Direct Effects****K3.1**

This section considers the inter-relationship between the direct effects arising from the development. It takes account of the residual effects (following mitigation) as they relate to the key sensitive receptors identified in Section K2.0.

K3.2

The analysis identifies both positive and negative impacts and makes reference to the degree of effect as identified within the technical assessments. The objective is to identify where the accumulation of effects on particular receptors, and the relationship between the effects, may give rise to a need for additional mitigation not identified previously.

K3.3

This section focuses only on those issues where the effect identified is of minor, moderate or major significance (i.e. where the effect is negligible or there is no effect it has not been considered). The EIA process has identified that for the majority of the technical assessments carried out the residual effects of the development (i.e. after mitigation) are either neutral/negligible or beneficial against the baseline position.

K3.4

To assist in this analysis, the table below summarises the effects anticipated against each receptor and identifies where particular receptors may be subject to an accumulation of environmental effects.

Table K3.1 Direct Residual Environmental Effects by Receptor

Receptor	During Construction	During Operation
1 Archaeology	-	-
2 Below ground geology	-	-
3 Caerleon High Street AQMA	-	(AQ)
4 Caerleon Hospital	-	-
5 Employment	SE	SE
6 Cultural Landscape	-	-
7 Cyclists	-	(T)
8 Designated Sites (Severn Estuary SAC/SPA/Ramsar, River Usk SAC/SSSI, Afon Llwyd/ Afon Llwyd Grasslands SINC)	-	-
9 Drivers	-	(T)
10 Ecology/Habitats	(LV)	(E) (LV) ↑
11 Historic Landscape	-	(LV)
12 Human health	-	-
13 Listed Buildings	(CH)	(CH)
14 Local Schools	-	-
15 Nearby residential properties/residents	LV	(LV) ↓
16 Open Space/Recreation provision	-	(SE)
17 Other Trees	(ARB)	(ARB)
18 Pedestrians	-	(T)
19 Public Right of Way	LV	(LV)
20 Rugby Ground	(LV)	(LV) ↓
21 TPO Trees	ARB	(ARB)
22 U Category Trees	-	(ARB)
23 Visual and Sensory Receptors	LV	(LV) ↓

Key: T – Transport; E – Ecology; LV – Landscape & Visual; ARB – Arboriculture; E – Ecology; CH – Cultural Heritage
SE – Socio Economic

RED – adverse effect; GREEN – beneficial effect; () – minor effect; - – no/negligible effect anticipated;

* - transitory/short-term effect; ↓- effect reducing over time/ ↑- effect increasing over time

- K3.5 Table K3.1 identifies that there is limited/no potential for receptors to be subject to additional effects arising from the interaction between impacts and the construction and operation of the development. There are no overlapping adverse impacts; during the operational phase ecology/habitat receptors experience minor beneficial ecological and landscape/visual impacts, though these are identical in nature and are simply reflected in both topic areas.
- K3.6 Where minor adverse landscape and visual impacts are identified during the operational phase, this reflects the development at Year 1. As identified in Table K2.1 the impacts decrease over time as the landscaping matures and becomes established within the site.
- K3.7 The analysis above has identified that there is no requirement for or ability to identify additional mitigation measures to address effects arising from the interrelationship between impacts on sensitive receptors, over and above the already proposed mitigation measures (described in the individual ES technical chapters and compiled in ES Chapter L) that can be secured by planning conditions.

K4.0

Other Cumulative Effects

- K4.1 As no formal scoping exercise was undertaken for the EIA the cumulative assessment has been scoped to include those developments that remain of relevance that were assessed in the previous (refused) planning application for the site, as well as any other existing or approved developments that have come about since the preparation of the earlier ES.
- K4.2 The objective is to identify whether impacts from several developments which individually might be insignificant could, when considered together, cause a significant indirect and cumulative impact requiring mitigation.
- K4.3 Throughout this ES, the assessment has been based on the proposed development details that are described in Chapter C and the plans that accompany the planning application (provided at Appendix C1).

Schemes to be Assessed

- K4.4 Best practice dictates that cumulative assessments of this nature should have regard to those schemes that are 'reasonably foreseeable' (i.e. usually those under construction or with planning permission, as specified in guidance such as IEMA's 'Guidelines for Environmental Impact Assessment' (2004) and the EC's 'Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions' (1999)).
- K4.5 This is further clarified in Schedule 4 of the EIA Regulations, which requires "*A description of the likely significant effects of the development on the environment resulting from, inter alia- ... e) the cumulation of effects with other existing and/or approved projects*" (Paragraph 5(e).
- K4.6 The assessment is only capable of being carried out based on the information available at this time.
- K4.7 Various schemes have been identified for potential consideration in this EIA and have been identified via:
- 1 A review of the cumulative developments considered in the previous (refused) planning application associated with the redevelopment of the site;
 - 2 A review of NCC planning records to identify projects that have the potential to give rise to cumulative effects as a result of their geographic proximity to the site, scale of development or other relationship that may be relevant;
 - 3 Local knowledge; and,
 - 4 Informal conversations with NCC Planning Officers.
- K4.8 Having followed the above steps, the following cumulative developments were identified for inclusion within the cumulative assessment:
- 1 Land at Trinity View. Planning permission was granted in May 2015 for the construction of 4 dwellings (Application Reference 15/0344, NCC).
 - 2 Land and Buildings North East of 71 Forge Close, Caerleon. It was resolved to grant permission for the development of 16 dwellings in July 2018, however it is understood that the S106 agreement remains pending (Application Reference 16/0786, NCC).
 - 3 New Primary School, Lodge Hill, Caerleon. Construction is underway for a new Primary School (Application Reference 17/0605, NCC).
 - 4 Llanfrechfa Grange Hospital, Caerleon Road, Llanfrechfa, Cwmbran. Construction is underway for a Specialist and Critical Care Centre (Outline Application Reference

12/P/00348; Reserved Matters Application Reference 15/P/00097, Torfaen County Borough Council).

K4.9

The location of the above cumulative sites is identified on Figure K4.1.

Figure K4.1 Location of Cumulative Sites



1: Land at Trinity View; 2: Land and Buildings North East of 71 Forge Close; 3: New Primary School, Lodge Hill; 4: Llanfrechfa Grange Hospital.

K5.0 Consideration of Cumulative Effects

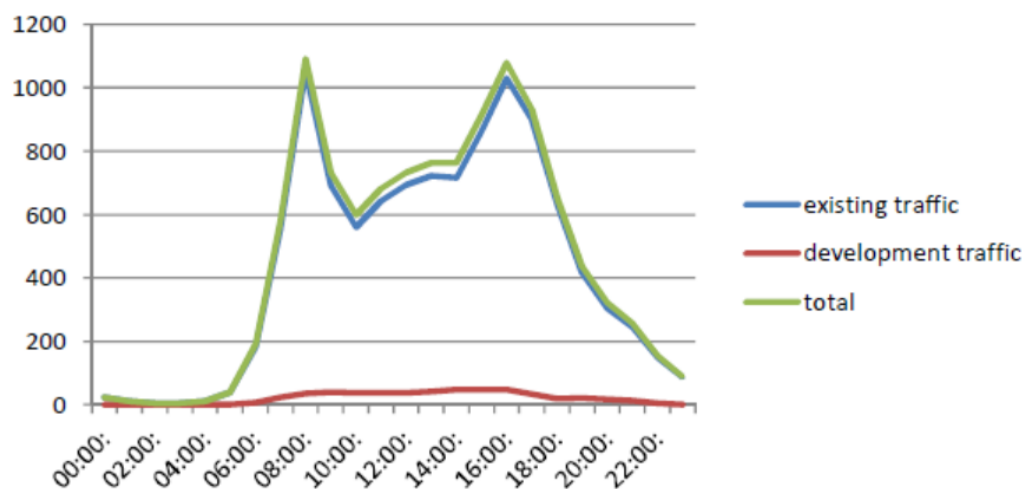
K5.1 This section considers, by topic, whether there will be any additional impacts when the development is assessed in combination with the identified cumulative developments.

Transport

K5.2 Traffic data from the Llanfrechfa Grange Hospital development has been sourced from the WSP Transport Assessment prepared in July 2012. Based on the development traffic data in the TA, the forecast development traffic from the hospital is 46 two-way vehicle trips in the AM peak and 42 two-way vehicle trips in the PM peak travelling on the B4236 Caerleon Road.

K5.3 Table 8.2 in the TA shows the daily profile of trips on Caerleon Road (extract below). The chart demonstrates that the daily development traffic is low when compared to the existing traffic flows along Caerleon Road. It should be noted that the daily flows are weekday flows and the 24hr AADT flows are likely to be even less than the flows in the chart below.

Figure K5.1 Llanfrechfa Grange Hospital - Daily Profile of Traffic along Caerleon Road



Source: Llanfrechfa Grange Hospital Transport Assessment

K5.4 There are no further details in the TA on how the traffic is distributed further south on the B4236 and it is therefore not known how many of these trips will be within the study area. However, it is likely that a large proportion of traffic will have distributed on the local highway outside of the study area.

K5.5 No Transport reports were submitted in support of the planning applications for the residential developments at Trinity View and Forge Close, however based on an assessment using a residential trip rate from the TRICS database, the proposed residential developments would generate 10 two-way vehicle trips in the AM peak and 9 two-way vehicle trips in the PM peak. This equates to an additional vehicle every 6 minutes in the AM and PM peak periods.

K5.6 The Transport Statement submitted in support of the new primary school in Caerleon (17/0605) stated that proposed development would have a marginal impact on the local highway network during the AM and PM peak hour periods, or throughout the course of the day.

K5.7 The Transport Statement stated that the majority of trips would already be accommodated on the highway network travelling to and from the existing school. The proposed development was forecast to generate an additional 5 two-way vehicle movements between 08:00 and 09:00 and

2 two-way vehicle movements between 15:00 and 16:00. Notwithstanding this, the school traffic is already included in the March 2019 traffic surveys.

- K5.8 On the basis of the assessment above, it is therefore considered that the level of traffic associated with the committed developments would result in minimal increases in traffic within the study area during the weekday AM and PM peak hours and during the day and have therefore not been considered in the cumulative assessment for the proposed development.

Air Quality

- K5.9 Given that the traffic survey data that was used in the assessment of air quality impacts associated with the proposed development at the USW Caerleon site took account, insofar as was possible, of the cumulative development sites in the baseline, the impacts are unchanged from those identified within Chapter E of the ES.
- K5.10 Whilst there may be instances where overlapping construction stages has the potential to give rise to cumulative dust etc impacts, each development will be constructed in accordance with its own Construction Environmental Management Plan ('CEMP'), which will include measures to ensure that dust and other air quality construction-related impacts are reduced to negligible.

Landscape and Visual

- K5.11 Having considered the location, scale and nature of the cumulative development sites identified within Section K4, each is considered acceptable in their own right in planning terms and EDP has identified no further cumulative effects arising from these developments, given the nature of the application proposals for the Application Site and the identified effects arising from these.

Arboriculture

- K5.12 There are no identified cumulative impacts with the proposed development at the USW Caerleon site and the cumulative impact sites identified in Section K4.

Ecology

- K5.13 This assessment of cumulative impacts considers each site identified in Section K4 in turn. They are only discussed where applicable to Important Ecological Features ('IEFs').
- K5.14 The majority of allocated and consented developments considered within this assessment lie within the built-up area of Caerleon and include previously developed/brownfield sites. Llanfrehfa Grange Hospital is, however, located on the edge of urban development, within the settlement of Llanyravon located circa 4km north of the EIA site.
- K5.15 Given their containment within urban areas, their spatial separation and distance from the EIA site, and/or limited extent of significant habitat features affected, no significant cumulative effects are considered likely to arise, as detailed further below according to the ecological baseline identified.

Designated Sites

Statutory Designations

- K5.16 As detailed in the EIA (see ES Chapter H for further information), a Habitat Regulations Assessment ('HRA') was undertaken by NCC in 2015 to test whether the policies within the Adopted LDP, including Policy H1 (Housing Sites), would have likely significant effects on the integrity of any internationally designated sites, including the Severn Estuary.

Ramsar/SAC/SPA and River Usk SAC, both located within the ZoI of the EIA site. Policy H1 of the LDP incorporates development at Trinity Road.

- K5.17 As outlined in Chapter H of this ES, the HRA determined that the NCC's LDP, in implementation will not have a likely significant effect on the European site(s) considered as part of the HRA screening alone or in combination.
- K5.18 With respect to developments listed within Section K4.0, each are sufficiently distant and hydrologically disconnected from the international designations or otherwise of such a small scale that potential effects on designated sites arising from deterioration in water quality, increase in suspended solids and pollution incidents are considered unlikely in combination with development of the EIA site. As discussed in Chapter H of this ES, an appropriate pollution prevention strategy and a sensitive drainage scheme will, furthermore, mitigate for any of these potential impacts resulting in a negligible residual effect.
- K5.19 With respect to potential disturbance of designated sites associated with an increase in recreational pressure, this will be mitigated for through the retention and enhancement of the semi-natural habitats to be delivered for amenity and wildlife with pedestrian links and natural play areas located across the wider development. Of the development proposals considered within a cumulative assessment, only development at Trinity Road and Forge Road will deliver additional residential housing (comprising 4 units and 16 units respectively) whilst remaining proposals concern the delivery of new school and hospital facilities. In consideration of the relatively small scale of these developments combined with the provision of recreational facilities and public open space within the EIA site therefore, no cumulative impacts are anticipated.

Non-Statutory Designations

- K5.20 The Afon Llwyd SINC and Afon Llywd Grasslands SINC were scope into this EIA as an IEF given its proximity to the EIA site (400m). Although no direct impacts are anticipated, surface water ground water/ pollution impacts may arise.
- K5.21 In relation to the above development proposals considered within the cumulative assessment such developments are sufficiently distant and hydrologically disconnected from these local designations or otherwise of such a small scale that potential effects such that no potential negative effects to these SINCs are anticipated.

Habitats

- K5.22 Only broadleaved woodland habitat and scattered trees afforded TPOs were scoped into the EIA.
- K5.23 Such habitats will, however, be retained within development proposals with minor loss of individual trees. The EIA site will, furthermore, incorporate a landscaping scheme comprising native, or wildlife-friendly planting. This will be combined with the maintenance and enhancement of retained habitats, in order to increase its resilience and mitigate long-term disturbance effects. In addition, the Landscape Strategy and Detailed Soft Landscape Plan submitted with a planning application will include measures to establish and maintain new habitats of long term ecological value within the development's open spaces. Given this, and the current state of the site, there could potentially be a beneficial effect.
- K5.24 With respect to development proposals considered within the cumulative assessment, these are largely characterised by habitats of limited ecological importance with development proposals to be delivered alongside a landscape strategy intended to enhance biodiversity onsite. Combined with the spatial separation between sites, no potential significant effects to habitats of ecological importance are considered likely.

Species

- K5.25 The future development of the EIA site will cause a loss of nesting bird habitat, limited to scattered shrub and hedgerow planting across the EIA site. While this would cause a negative permanent impact at site level, an appropriate landscaping and nest box scheme combined with retention of more valuable semi-natural habitats would compensate for the loss of habitats likely resulting in negligible cumulative impacts in the long-term.
- K5.26 The proposed development of the EIA site will result in the loss and/or disturbance of several common pipistrelle day roosts in addition to a soprano pipistrelle day roost and potential/historical summer day roost for Myotis bats associated with onsite buildings. This is in addition to loss of several trees with potential to support roosting bats. As such, development will be undertaken under a method statement and development licence from NRW with provision of compensatory roosting features in mitigation for proposed loss. This will be delivered alongside a Landscape Strategy to enhance the site for a local bat assemblage more generally.
- K5.27 No bat roosts have been recorded in association with development sites at Trinity Road, Lodge Hill, and Forge Road, such that these developments are not considered to result in any potential significant cumulative effects on roosting bats. In contrast, the development of Llanfrehfa Grange Hospital is to result in the loss of several common pipistrelle bat roosts considered to be of low conservation status. Nevertheless, given the presence of low status roosts only, combined with the delivery of development in accordance with a development licence from NRW and landscape strategy, provision of compensatory roosting features, cumulative effects arising from development of the EIA site in respect of bats are considered negligible.
- K5.28 With respect to reptiles, sites scoped into the cumulative assessment are considered sufficiently distant and isolated from one another such that no cumulative impacts to a local population are anticipated. Although a low population of slow-worm was identified within the EIA site and at Trinity View, proposals will be delivered in accordance with a reptile mitigation strategy to prevent harm/injury to a population whilst the EIA site seek to retain and enhance the majority of suitable habitat within the site.

Summary

- K5.29 Owing to the absence of significant residual effects predicted, cumulative effects are considered to be extremely unlikely to arise in combination with those developments scoped into this cumulative impact assessment.
- K5.30 In consideration of IEFs associated with the EIA site, it is concluded that the proposals will conform to the respective legislative protection afforded to these IEFs and with respect to national and local planning policy requirements.

Cultural Heritage

- K5.31 The assessors are not aware of any other major developments in the locality that could cause cumulative effects on cultural heritage together with the proposed redevelopment of the USW Caerleon Campus.

Socio Economic

- K5.32 Information was not available in relation to the build costs and construction period for all of the cumulative sites that have been identified in Section K4.0. As a result, it has not been possible to

fully assess the cumulative impact of the construction phases of all developments that are planned in the local area. The conclusions that are drawn in respect of these matters will therefore represent an underestimation of the true and full impact.

K5.33 The objective of this cumulative impact assessment is to identify whether, when considered together, the impacts arising from other key developments in the area in proximity to the proposed scheme would cause any significant indirect and cumulative impacts requiring mitigation.

K5.34 This assessment takes into account the following schemes:

Table K5.1 Additional permitted schemes in area of proposed development

Development	Planning application references	Residential units	Non-residential floorspace (GEA)
Land at Trinity View	15/0344	4 (all market)	0
Land and Buildings North East of 71 Forge Close, Caerleon	16/0786	16 (all affordable)	-940sqm (B8)
Llanfrechfa Grange Hospital, Caerleon Road, Llanfrechfa, Cwmbran (Torfaen County Borough Council) (construction underway)	Outline: 12/P/00348 Reserved Matters: 15/P/00097	0	Max. 50,000sqm hospital; Up to 2,000sqm hospital sterilisation and disinfection unit
New Primary School, Lodge Hill, Caerleon (construction underway)	17/0605	0	Net additional 896sqm primary school
Total		20	-940sqm (B8) +52,896sqm (health and education floorspace)

Source: Planning application documents

K5.35 These additional schemes will provide a total of 20 new dwellings and 52,896sqm of health and education floorspace but result in the loss of 940sqm of B8 floorspace. They will generate employment, GVA and expenditure during the construction phase within the local area.

K5.36 The residential developments at Land at Trinity View and Land and Buildings North East of 71 Forge Close will also generate ongoing residential expenditure and additional Council Tax.

K5.37 The new hospital at Llanfrechfa Grange is not expected to generate additional employment, as staff will transfer from existing facilities elsewhere. The ES submitted for the Llanfrechfa Grange Hospital scheme estimates that 2,900 FTE staff will be transferred to the new hospital from existing sites.

K5.38 Similarly, the new primary school at Lodge Hill will amalgamate the existing infant and junior school to offer improved facilities and will not generate additional employment. The planning application for the new Lodge Hill primary school states that the existing 24 full-time and 16 part-time staff will be retained.

Construction Impacts

- K5.39 Whilst the construction value and an assessment of impacts was provided for the Llanfrechfa Grange Hospital development¹, no information was provided in relation to the build costs and construction period for any of the other additional sites. As a result, it has not been possible to assess the cumulative impact of the construction of all developments that are planned in the local area.

Cumulative Impact

- K5.40 Based solely on the assessment of construction impacts at Llanfrechfa Grange alongside the proposed development at the former USW Caerleon campus, it is considered that the cumulative impact of the additional schemes in terms of temporary construction employment and GVA generation will be **temporary, beneficial** and **substantial** in scale.

Operational Impacts

Resident Expenditure

- K5.41 It is estimated that £110,000 will be spent by the occupants of the 20 dwellings within the first 18 months of occupation on decorations and furnishings.
- K5.42 It is estimated that the total annual resident expenditure from households living in the 20 dwellings to be provided at the identified additional schemes will be approximately £432,000 per annum. Lichfields has calculated this estimate based on typical patterns of household expenditure², including an adjustment to reflect regional expenditure differentials³.

Cumulative Impact

- K5.43 Taken together with the first occupation expenditure for the proposal at USW Caerleon of £1.2 million, the cumulative impact will be £1.3 million.
- K5.44 When added to the ongoing resident expenditure for the proposal at USW Caerleon of £6.2 million, this assessment identifies a cumulative expenditure of £6.6 million per annum.
- K5.45 The cumulative impact of these identified schemes on resident expenditure would therefore have a **permanent beneficial** effect of **substantial** magnitude.

Fiscal Impacts

- K5.46 Lichfields has estimated the approximate level of Council Tax contributions for the additional schemes, based on the Council Tax charge for homes in Band D in Newport (2019/20)⁴, and assuming that there would be no exemptions or discounts.
- K5.47 Based on this analysis, the additional sites will attract approximately £27,500 per annum in Council Tax in perpetuity following completion.

¹ Estimated construction value: £150 million; construction employment: 162 FTE jobs. Source: WSP, Specialist and Critical Care Centre Environmental Impact Assessment (July 2012)

² This analysis applies data from the ONS Family Spending Survey Financial Year Ending 2017 (February 2018 edition).

³ Average expenditure in Wales is approximately 85.5% of the national average. Source: ONS Family Spending Survey Financial Year Ending 2017 (February 2018 edition).

⁴ Newport Council Guide to Council Tax (2019/20): Council Tax charges for "Other areas"

Cumulative Impact

- K5.48 Together with the impacts of the proposed development, the cumulative contributions will be £443,500 in Council Tax per annum⁵.
- K5.49 The cumulative Council Tax revenue for all of the identified developments represents 0.7% of the total collected in Newport in 2019/20⁶.
- K5.50 The cumulative impact of the proposed development in relation to fiscal matters will therefore be **permanent, beneficial** and of **moderate** magnitude.

Impact on Local Labour Market

- K5.51 Based on the average household size of 2.33 for Newport in 2017, it is estimated that the 20 new homes will accommodate a resident population of 47 people. Of these new residents, 29 are expected to be aged between 16 and 64⁷.

Cumulative impact

- K5.52 When taken together with the proposed development at USW Caerleon, the cumulative impact of all of the identified schemes would be to accommodate 555 people, of which 345 would be aged 16 to 64. This represents an increase of 0.4% in the number of working age people in Newport⁸.

Impact on Commuting

- K5.53 It is estimated that the additional schemes would result in an additional 8 out-commuting movements.

Cumulative impact

- K5.54 The cumulative impact of all schemes would be an additional 99 out-commuting movements. In the context of the current position of Newport being a net importer of labour, this would serve to reduce the level of net in-commuting by 1.1%.
- K5.55 These developments will help to provide a better balance of homes and employment within the District, which will in turn encourage shorter, more sustainable commuting patterns.
- K5.56 The cumulative impact of the identified schemes would therefore have a **permanent, beneficial** effect of **moderate** magnitude in relation to commuting.

Impact on Deprivation

- K5.57 The additional schemes will supplement the benefits associated with the proposed development in the current application in relation to improving access to homes and generating resident expenditure that will support additional employment. In addition, the new hospital and primary school will improve the quality of healthcare and education facilities in the area.

⁵ Scenario 1: Council Tax contributions of £1.5 million per annum

⁶ A total of £66.3 million is estimated to be raised by Newport Council in 2019/20 from Council Tax. Source: Newport Council, *Your guide to Council Tax and Non-Domestic Rates 2019/20*

⁷ Based on the proportion of Newport residents aged 16 to 64 in the ONS Annual Population Survey 2017 (62.3%)

⁸ Based on ONS Annual Population Survey 2017 data, which states that there are 94,375 people aged 16-64 in Newport

K5.58 As indicated in the Baseline section of Chapter J, according to the 2014 WIMD both Newport and the Caerleon area display relatively low levels of deprivation. However, the local authority area includes 14 LSOAs in the 10% most deprived in Wales, making up 14.7% of the LSOAs in Newport.

K5.59 Whilst the additional developments are located in generally affluent areas, these schemes will help to address recognised deprivation in relation to accessing housing and services.

Cumulative impact

K5.60 The cumulative impact of the proposed development together with the other identified schemes would therefore have a **permanent, beneficial** effect of **minor** magnitude in relation to deprivation.

Housing Impacts

K5.61 When taken together, the schemes will deliver a cumulative total of approximately 238 new homes, including 38 affordable homes. This will provide a beneficial addition to the housing supply within Newport and will play an important role in contributing towards the identified level of housing need within the area.

K5.62 This new housing would represent a contribution of 2.3% of the overall housing requirement in the adopted Newport LDP⁹.

Cumulative impact

K5.63 The cumulative impact of the identified developments would therefore have a **beneficial** effect of **moderate** magnitude in relation to housing.

Impact on Education Facilities

K5.64 Based on the requirement set out in the Newport Planning Obligations SPG (adopted August 2015), the additional identified schemes would generate a need for 6 additional primary school places and 4 secondary school places.

K5.65 Whilst the potential impact of these additional pupils has been assessed below in relation to the capacity of existing schools, it is assumed that each individual scheme will make appropriate provision to accommodate the pupils expected to live at the new dwellings. This will be necessary in order to make these schemes acceptable in planning terms.

K5.66 Given that the new primary school at Lodge Hill will accommodate the amalgamation of the existing infants and junior schools, it is not expected that it would increase the current pupil capacity in the area.

Cumulative impact

K5.67 When taken together with the proposed development at USW Caerleon, this results in a cumulative need for 59 primary school places and 42 secondary school places.

K5.68 The baseline section of Chapter J indicates that there are currently 253 surplus places within the 18 primary schools located within 3 miles of the proposed development. At the secondary level, the four schools within 3 miles of the proposal site are currently over-subscribed by 120 places.

⁹ Measured against the housing requirement of 10,350 dwellings between 2011 and 2026 in the adopted Newport LDP

- K5.69 On this basis, the impact of all of the identified schemes would result in a surplus of 194 primary school places (3.4% of total capacity) and a shortfall of 162 secondary school places (-3.4%). However, as noted above, it is considered that each development will make appropriate provision to accommodate its own new pupils.
- K5.70 It is also worth noting that this level of need represents a “worst case” scenario and assumes that all of the pupils will attend state schools. In reality, some will attend independent and special schools further afield. Therefore, the impact on the state sector would be reduced.
- K5.71 Taking into account the fact that each development will need to make appropriate provision for its own new pupils, the cumulative impact of the identified developments would therefore be **negligible** in relation to education.

Impact on Health Facilities

- K5.72 Existing GP provision in the local impact area operates at a GP to patient ratio of 1:1,303. The cumulative increase of 555 residents is likely to increase the average number of patients served by each of the 39 GPs in the local area by 14¹⁰. This would result in a new GP to patient ratio of 1:1,317, which still is below the typical provision rate of 1,800 patients per GP¹¹.
- K5.73 If the new patients for the dental practices in the area could not be accommodated it is likely that the existing practices would expand or new practices would be established. Similarly, any additional demand for opticians and pharmacies could be satisfied through the opening of new facilities. This expansion of services would have the added benefit of creating new jobs.
- K5.74 The new hospital will result in the transfer of facilities in the local area. Whilst it would be expected to deliver a qualitative improvement in facilities it is unlikely to significantly increase existing healthcare capacity.

Cumulative impact

- K5.75 The cumulative impact of the identified developments would therefore have a **negligible impact** in this regard.

Impact on Open Space, Sport and Recreation, and Community Facilities

- K5.76 Whilst the two cumulative housing schemes may be too small to provide on-site open space and recreation/community facilities, it is assumed that each individual scheme will make appropriate provision in line with the relevant policy requirements.

Cumulative impact

- K5.77 On that basis, the cumulative impact is likely to be in line with that of the proposed development at Caerleon – i.e. a net over-provision of open space giving rise to a beneficial impact of minor magnitude.

Conclusion

- K5.78 If all of the identified schemes were to be approved and commenced simultaneously then the themes/areas that currently have a beneficial impact would receive further benefit. Any negative impact areas would be further affected but if all the schemes provide adequate mitigation

¹⁰ Based on total new population within 2 miles of the post code NP18 3QT: 50,816 existing residents + 555 new residents at the proposed development

¹¹ Source: <http://www.hudumodel.com/help/GuidanceNotes.pdf> (p. 55)

contributions through Section 106 agreements or onsite provision then these would be negligible.

- K5.79 The scale and significance of the residual impacts, following adequate and fair mitigation measures at all development sites would result in the following impacts. In many cases, the additional development in Newport will be beneficial, especially in regard to the local economy, affordability and ensuring local business viability.

Conclusion

- K5.80 If all of the identified schemes were to be approved and commenced simultaneously then the themes/areas that currently have a beneficial impact would receive further benefit. Any negative impact areas would be further affected but if all the schemes provide adequate mitigation contributions through Section 106 agreements or onsite provision then these would be negligible.
- K5.81 The scale and significance of the residual impacts, following adequate and fair mitigation measures at all development sites would result in the following impacts. In many cases, the additional development in Newport will be beneficial, especially in regard to the local economy, affordability and ensuring local business viability.

Table K5.2 Summary of impacts upon baseline position of all developments commencing simultaneously (after mitigation)

Theme/Area	Impact	Magnitude
Construction phase		
Employment	Beneficial (temporary)	Moderate
Operational phase		
Resident Expenditure	Beneficial	Moderate
Fiscal	Beneficial	Moderate
Local Labour Market/commuting	Beneficial	Moderate
Deprivation	Beneficial	Minor
Housing	Beneficial	Moderate
Education	Negligible	
Healthcare	Negligible	
Open Space, Community, Leisure and Recreation	Beneficial	Minor

Source: Lichfields analysis

K6.0

Summary and Conclusions

Additional Impacts

- K6.1 The cumulative impacts that are predicted to occur in cumulation with other identified developments are limited to socio economic and transport matters.
- K6.2 With regards to cumulative transport impacts, there is predicted to be a minimal increase in traffic within the study area during the AM and PM peak periods and throughout the day, though these will not be significant and have not been considered further.
- K6.3 Socio economic impacts reflect the main assessment; those themes/areas that are identified as having a beneficial impact within the main technical assessment (ES Chapter J) will experience additional beneficial impacts (i.e. construction employment, resident expenditure, fiscal, the local labour market, deprivation and housing supply). Conversely there is the potential that negative impacts could also experience additional negative dis-benefits; although it is concluded that adequate mitigation reduces these impacts to negligible.

Conclusions

- K6.4 This chapter has considered the inter-relationships between impacts identified within this ES and whether there is a need for further mitigation (synergistic effects). It also considers the potential for cumulative impacts when the development is considered with other developments in the surrounding area.
- K6.5 It has been identified that no synergistic effects will occur that would require additional mitigation and/or monitoring.
- K6.6 Similarly, consideration has been given to the potential for cumulative effects when the development is considered alongside other identified existing and/or approved schemes in the surrounding area. The assessment has shown that there is very limited potential for cumulative effects and that no additional mitigation is required.

K7.o

Abbreviations & Definitions

- 1 AQMA – Air Quality Management Area
- 2 CEMP – Construction Environmental Management Plan
- 3 CTMP – Construction Traffic Management Plan
- 4 EIA – Environmental Impact Assessment
- 5 ES – Environmental Statement
- 6 FTE – Full Time Equivalent
- 7 GP – General Practitioner (Doctor)
- 8 GVA – Gross Value Added
- 9 HRA – Habitat Regulations Assessment
- 10 IEFs – Important Ecological Features
- 11 LDP – Local Development Plan (Newport)
- 12 LEAP – Locally Equipped Area of Play
- 13 LEMP – Landscape and Ecology Mitigation Plan
- 14 LSOA – Lower Super Output Area
- 15 NCC – Newport City Council
- 16 PRoW – Public Right of Way
- 17 SAC – Special Area of Conservation
- 18 SINC – Site of Importance for Nature Conservation
- 19 SPA – Special Protection Area
- 20 SPG – Supplementary Planning Guidance
- 21 SSSI – Site of Special Scientific Interest
- 22 TA – Transport Assessment
- 23 TPO – Tree Protection Order
- 24 USW – University of South Wales (Caerleon)
- 25 WIMD – Wales Index of Multiple Deprivation
- 26 ZOI – Zone of Influence