



NORTHSTOWE PHASE 2 PLANNING APPLICATION

Environmental Statement Non-Technical Summary

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Homes &
Communities
Agency

ARUP



genecon



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Introduction

The Homes and Community Agency (HCA) is seeking planning permission from South Cambridgeshire District Council (SCDC) for development of Phase 2 of Northstowe with details of appearance, landscaping, layout, scale and access reserved (save for the matters submitted in respect of the Southern Access Road (West)) comprising:

- development of the main Phase 2 development area for up to 3,500 dwellings, two primary schools, a secondary school, the town centre including employment uses, formal and informal recreational space and landscaped areas, the eastern sports hub, the remainder of the western sports hub (to complete the provision delivered at Phase 1), the busway, a primary road to link to the southern access, construction haul route, engineering and infrastructure works; and
- construction of a highway link (Southern Access Road (West)) between the proposed new town of Northstowe and the B1050, improvements to the B1050, and associated landscaping and drainage.

For the purposes of the Environmental Statement (ES), all elements are referred together as the proposed development of 'Northstowe Phase 2' and comprises:

- Main Phase 2 development area - for the outline application area;
- Southern Access Road (West) – for the full application area.

The application being made is in outline (except for the Southern Access Road (West)). This means that further permissions will be sought from SCDC, in reserved matters applications, for details of the development that have not been dealt with at this stage. There will be further opportunities to further assess and address environmental effects in subsequent applications.

The Environmental Statement

Environmental Impact Assessment (EIA) is a study that systematically assesses the likely significant effects on the environment of a proposed project. The findings of the EIA are set out within an Environmental Statement (ES) which is submitted to the local planning authority in support of a planning application.

The ES for Northstowe Phase 2 has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 and relevant guidance.

The ES comprises:

- Volume I – main report including a glossary of terms, an overview of the EIA process, a full description of the project, and the environmental assessment chapters;
- Volume II – technical appendices of the EIA;
- Volume III – figures for the EIA;
- Non-technical summary – this volume.

The ES has been prepared by Arup in collaboration with Hyder Consulting, Genecon and Lockhart Garratt.

Site Context

The area of the main Phase 2 development area is approximately 165 hectares. The area is bordered to the east by the route of the Cambridgeshire Guided Busway (CGB), and to the west by Longstanton. The area includes the former Oakington Barracks, which currently comprises: three buildings, with no current use; slabs remaining from demolished buildings; remaining facilities associated with the barracks including sports amenities and green space; and a water tower which is the tallest structure on the site and visible feature in the wider landscape. The area surrounds the existing settlement of Rampton Drift, comprised of 92 properties, originally built as part of the barracks complex, although this area is not included in the application. The wider main Phase 2 Development area includes areas of hardstanding and open space

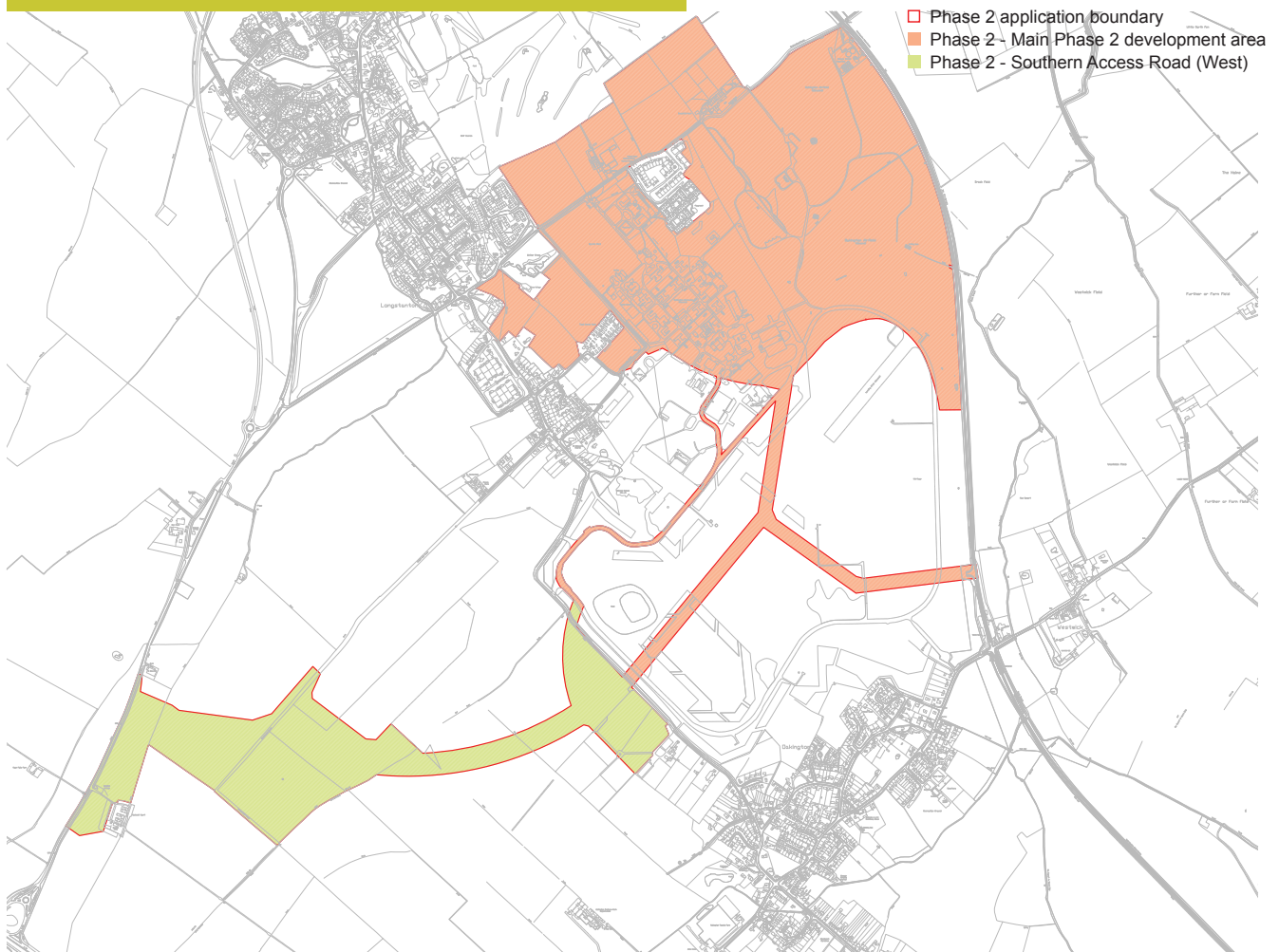
associated with the former airfield (much of this currently occupied by agricultural tenants), farmland including Brookfield Farm and Larksfield Farm. The area also includes a section of Rampton Road.

To the south of the main Phase 2 development area is land that is identified for Phase 3 of Northstowe.

The area for the proposed Southern Access Road (West) runs from the B1050 to the boundary of Northstowe. This area currently comprises arable fields and extends to approximately 51 hectares. Wilson's Road, a public right of way crosses the area, providing a link from Longstanton towards Bar Hill.

Figure 1 identifies the application site for Northstowe Phase 2.

FIGURE 1: NORTHSTOWE PHASE 2 APPLICATION SITE



The Non-Technical Summary

This document is a non-technical summary (NTS) of the ES and presents the main findings of the EIA in non-technical language. As such this NTS provides a short summary of the large amount of technical data that is available on Northstowe Phase 2, highlighting the “likely significant environmental effects” that have been identified, along with the actions that are being proposed to mitigate these effects.

Where further information is required about matters referred to in this NTS, interested parties should consult the ES and its accompanying figures/appendices.

Environmental Impact Assessment

The EIA has been undertaken in part to avoid or reduce negative environmental effects and to also identify and promote positive effects.

The assessment has considered the following aspects of the environment:

- Air Quality;
- Noise and Vibration;
- Transport and Access;
- Socio-economics;
- Archaeology and Cultural Heritage;
- Ecology;
- Geology, Hydrogeology and Soils;
- Hydrology and Flooding;
- Waste; and
- Landscape and Visual effects including lighting.

Effects considered include those that are temporary, arising from demolition and construction activities, those that are permanent due to the presence of the new town and access road and cumulative effects of the nearby committed developments.

The EIA process has been carried out in a series of stages, an outline of which is presented in Figure 2.

Scoping: agreeing with SCDC and other statutory consultees what assessments should be carried out and how these should be done.

Baseline: information gathered to tell us about what the existing environmental conditions of the site and wider study area are.

Assessment: identification of the likely significant environmental effects from the site preparation, construction and operation of the proposed development. Where possible, industry standard methodologies and significance criteria have been used to assess the effects on the environment. Where these do not exist, professional judgement and experience of similar projects have been used.

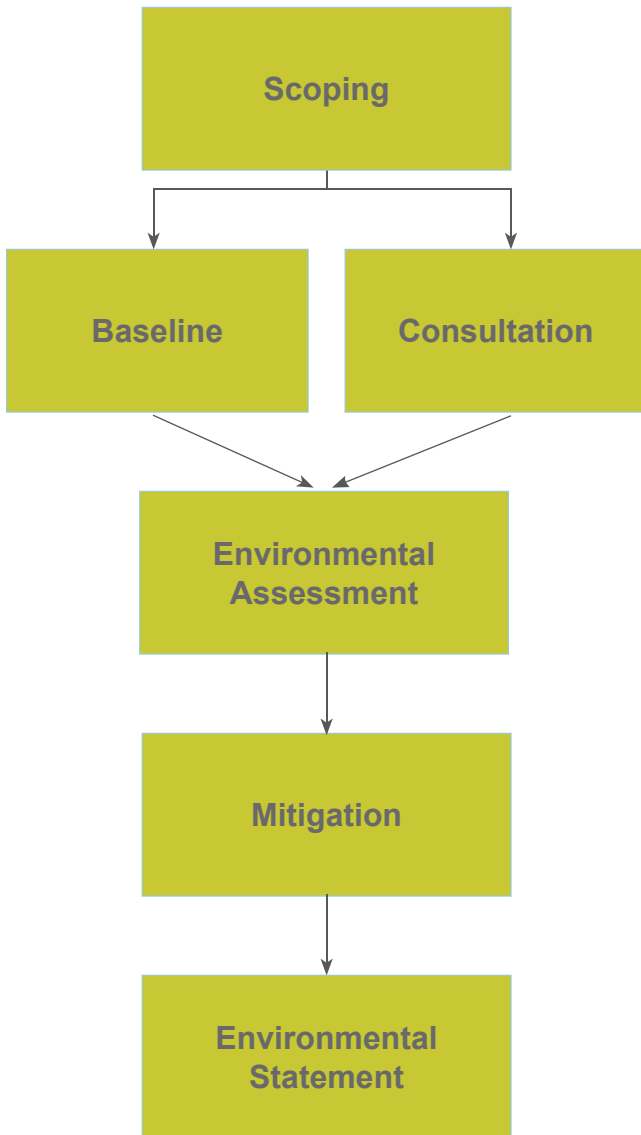
Cumulative and in-combination assessment: an assessment of the effects that would arise from the combination of the proposed development and other developments in the vicinity, including existing developments and also those not yet constructed (but within the planning system) or currently under construction.

Mitigation: Measures intended to avoid, reduce and, where possible remedy, significant adverse environmental effects of the project.

Iterative process: environmental specialists have provided feedback to the design process so that the final design solution incorporates mitigation and enhancement measures where possible. In addition mitigation that will be implemented during construction and operation of the proposed development has been proposed.

Residual effects: effects that would remain after mitigation and enhancement measures have been fully implemented, are stated in the ES.

FIGURE 2: THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS



The proposed Northstowe Phase 2 development

The proposed Northstowe Phase 2 development would comprise a number of different elements which are outlined in Table 1. Figure 3 is the Land Use Parameter Plan which shows the layout of the main Phase 2 development area. The Planning Statement accompanying the application provides further details on the scheme.

- Phase 2 application boundary
- Green Separation
- Greenway
- Waterpark
- Sports hub
- Residential
- Schools
- School or residential
- Town Centre
- Swales
- Attenuation ponds

FIGURE 3: NORTHSTOWE PHASE 2 LAND USE PARAMETER PLAN

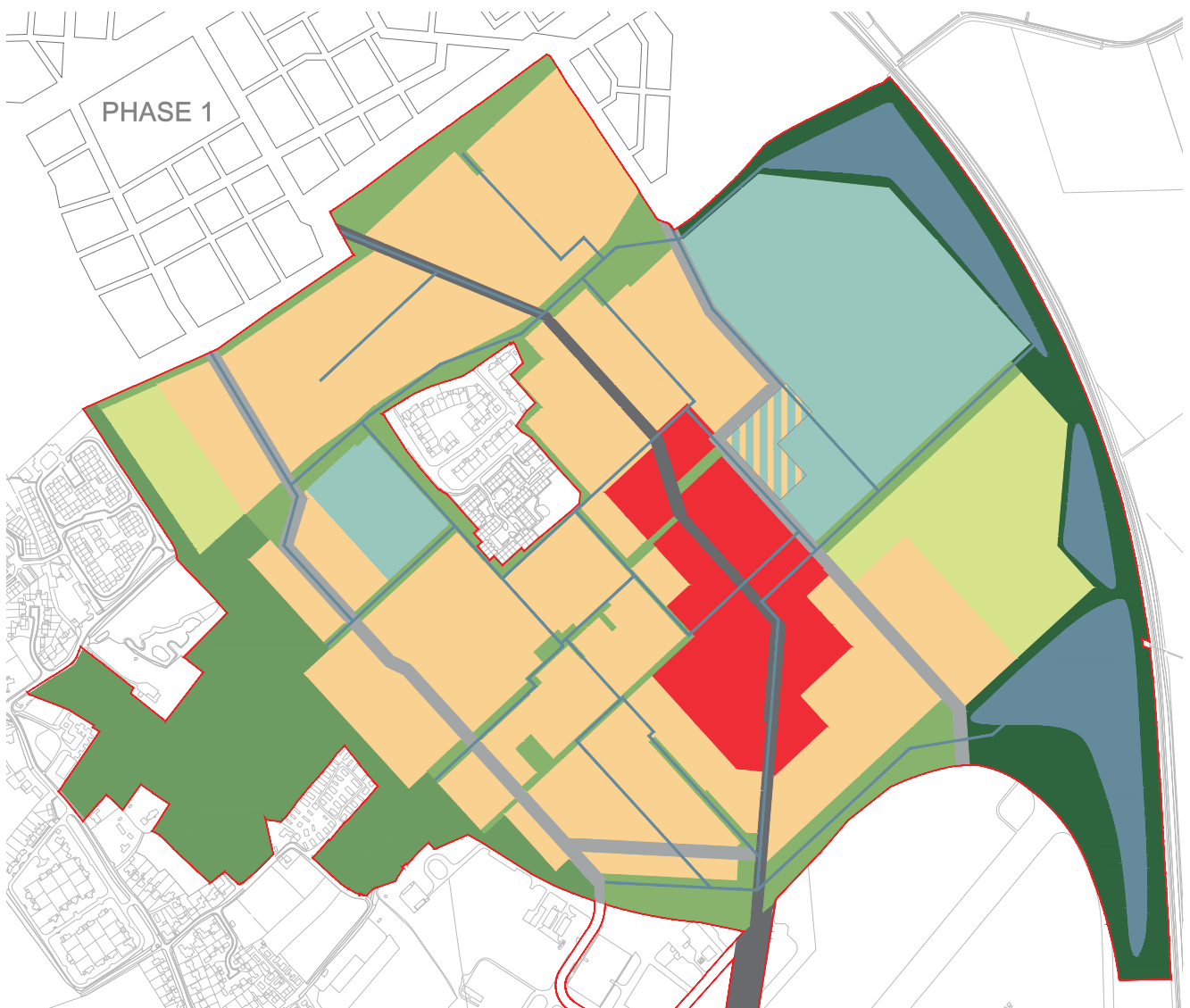


TABLE 1: COMPONENTS OF THE PROPOSED NORTHSTOWE PHASE 2 DEVELOPMENT

Development proposals	
Housing	Up to 3,500 dwellings. A proportion of the housing would be affordable housing (the % of overall units is yet to be determined).
Employment	Employment floorspace. This is anticipated to comprise a total of approximately 21,200 square metres.
Town Centre	Northstowe Phase 2 includes the delivery of the town centre for the whole of Northstowe - the area of the town centre is approximately 9.3 hectares.
Building heights	A range of building heights are proposed. Building heights would be greatest in the town centre and in part of the area of the former barracks site with a maximum height of 18.5m above proposed ground level (up to five storeys). This would also be the proposed height of the employment buildings and one small area of residential building on the western side of the site. The eastern schools would be up to 12m in height, the western school would be up to 9m in height. The remaining residential buildings would be up to 11m in height (up to three storeys).
Building densities	A range of densities are proposed. The densities are: 35-40 dwellings per hectare (dph), 41-60 dph and 61 dph and over.
Education	Provision would be made for two primary schools (one of 2 form entry, one of 3 form entry) and one secondary school (12 form entry) including post 16 facilities and special educational needs.
Landscaping, play, sport and recreation	Provision has been made for approximately 52 ha of informal and formal open space including: the eastern sports hub; the remainder of the western sports hub; play space provision including LEAPS, NEAPS and LAPS, green separation and greenways.
Energy	There is to be a low carbon approach to the proposed development (more details are set out in the Energy Strategy and Low Emissions Strategy appended to the Sustainability Statement)
Drainage	Sustainable Urban Drainage Systems (SuDS) are incorporated into the surface water drainage system for the proposed development. Foul water would be directed to Anglian Water's Uttons Drove sewage treatment works.
Access and movement	A new highway link is proposed from the B1050, this will link into the road and busway corridors that run through the site. The primary roads and busway link directly to the equivalent roads in Phase 1. Initial construction access would be via Phase 1, once the new highway link is build the construction route would be via the existing Airfield Perimeter Road and Southern Access Road (West).
Car Parking	An average of 1.5 spaces per dwelling would be provided.
Lighting	As the core area of the scheme is currently in outline only a detailed lighting strategy is unwarranted at this time. Lighting for the Southern Access Road (West) is shown on submitted drawings.
Site levels	The Main Phase 2 development area is proposed to be predominantly at existing ground level to retain existing landscape/ ecology features where possible and construction / development platform depth up to + 0.5m across the site. An area of fill is proposed in the northeast where there is a requirement to increase levels to minimise flood risk and to link with the Phase 1 development levels.

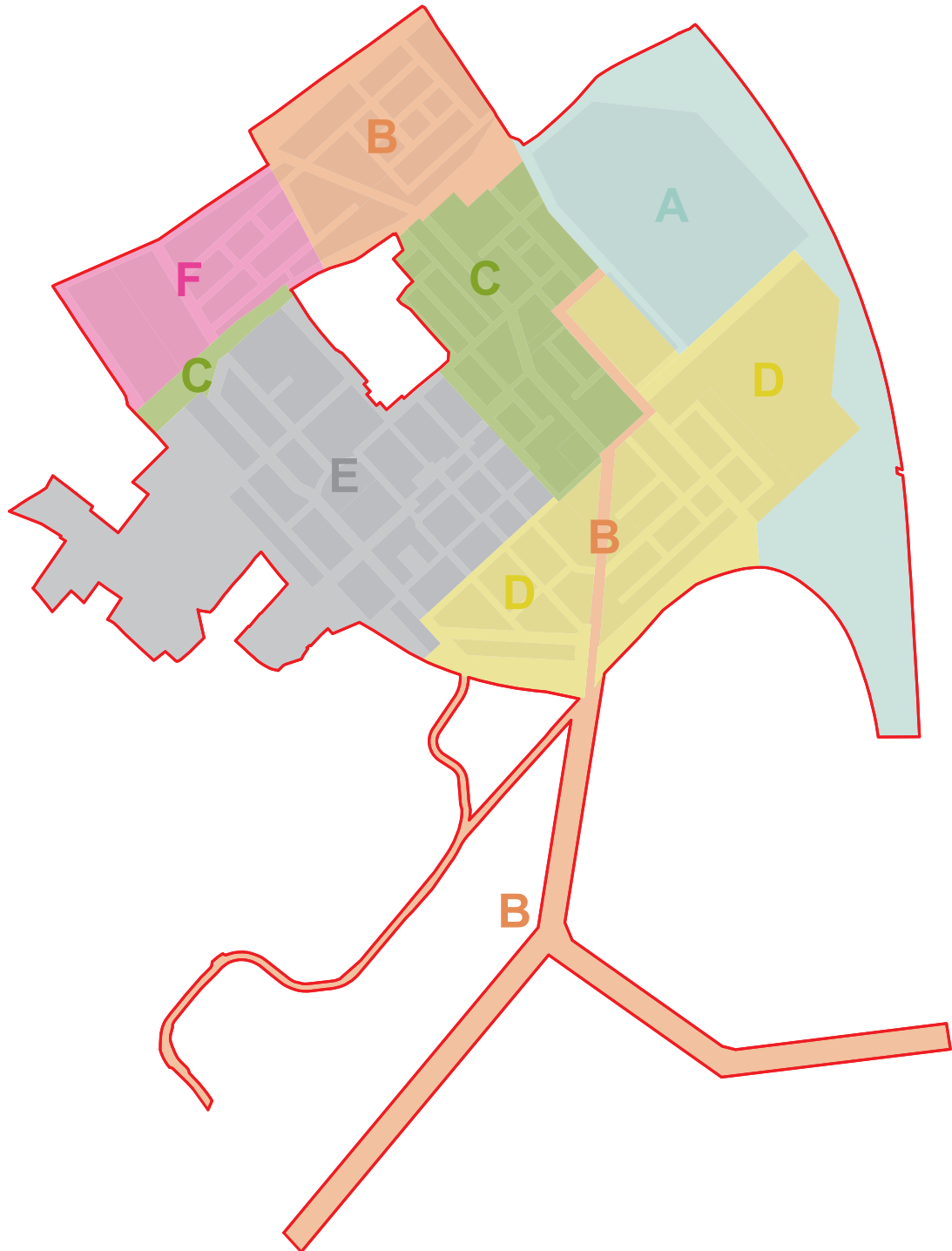
Construction programme

Construction of Northstowe Phase 2 and associated infrastructure would take approximately 15 years between 2016 and 2031 and would be divided into phases of construction work as illustrated in Table 2. The proposed secondary school would come forward as the first phase of development, to open in Autumn 2018, and first delivery of homes is anticipated to be in 2019. The location of the different phases (termed A-F) is shown on Figure 4. A final phasing plan would be agreed in advance of commencement with SCDC and CCC. These timescales may vary depending on changes to housing market conditions.

TABLE 2: CONSTRUCTION PROGRAMME

Activity	Years
Site preparation	
Site enabling works	2016 – 2017
Construction	
Phase A	2016 – 2018: To include secondary school, completion of water park and enhancement of green separation (west)
Phase B	2017 – 2019: To include initial residential units adjoining Phase 1, commencement of Southern Access Road (West) and access road to south of main Phase 2 (through future Phase 3 area)
Phase C	2019 – 2021: Town centre commences, including initial retail facilities, primary school, completion of Southern Access Road (West)
Phase D	2021 – 2023: Residential area to south and construction of town square and sports hub (east)
Phase E	2023 – 2026: Residential area established in former barracks area, continuation of town centre, primary school
Phase F	2026 – 2029: Last residential area and completion of town centre and northern sports hub
Town centre	2020 – 2031: Construction starts in Phase C
The Southern Access Road (West)	2017 - 2020
Infrastructure provision	2016 – 2028
Off-site highways works	2018 – 2021
On-site highways works	2016 - 2029

FIGURE 4: SUB PHASE PLAN



Construction Management Plan

All works would be undertaken in accordance with a Construction Environmental Management Plan (CEMP) which sets out the control measures and the standards to be implemented throughout the construction of Northstowe Phase 2. An outline CEMP has been submitted with the planning application which would be completed by the appointed contractor. "Phase-specific" CEMPs would be prepared to manage environmental effects associated with specific phases of development.

Site access during construction

Construction vehicles would access the Northstowe Phase 2 development initially through Phase 1 (to construct the Secondary School and initial homes) during the period of time until the Southern Access Road (West) and Primary Road through Phase 3 is completed.

Once the Southern Access Road (West) is complete, construction vehicles would access the development from the A14 at Bar Hill, and the Southern Access Road (West). A Construction Traffic Management Plan would be in place to minimise the impact of traffic and limit traffic from accessing local roads.

From the roundabout junction of the Southern Access Road (West) and the Primary Road through Phase 3 (to the south of Longstanton Road), a construction haul route would be provided using the existing eastern perimeter road. This would be only for construction vehicles and would enable a separation of construction and operational traffic during the build out of the development.

Working hours

Unless otherwise agreed with SCDC, working hours during the construction phase would be limited to:

- 07:30hrs – 19:00hrs Monday to Friday
- 07:30hrs – 13:00hrs Saturday; and
- No noisy activities on Sundays

Consideration of alternatives

The site location for a new town in Cambridgeshire has been decided as a result of careful site selection studies over a number of years. The allocation of Northstowe in adopted policy documents has led the applicant to conclude that it is not appropriate to further investigate potential alternative sites.

The development proposals submitted for Phase 2 have evolved as a result of careful consideration and evaluation, building on the Northstowe Area Action Plan and the Northstowe Joint Development Control Committee endorsed Development Framework Document as well as consultations with SCDC, CCC, the Northstowe Parish Forum and the local community.

The proposed development is the option which responded best to the process of evaluation, environmental constraints and the vision for Northstowe.

Air quality

Assessments of air quality are concerned with the presence of airborne pollutants. Existing air quality data suggests that air quality is generally good and that concentrations are below the relevant legislative Air Quality Standards (AQS) objectives in the vicinity of the site.

Assessment methodology

Potential local air quality effects associated with both the construction and operation phases as a result of road vehicle exhaust emissions were assessed in accordance with the Environmental Protection UK guidance.

Mitigation

In order to reduce or avoid effects associated with construction dust and emissions, Best Practice Measures (BPM) would be adopted and integrated into the CEMP. These measures include, amongst others, site management to minimise dust, monitoring, screening of dusty activities and dust suppression activities.

Likely significant effects

During construction, the proposed development is predicted to have a high risk of dust emissions from demolition, earthworks, and construction activities. Suitable mitigation measures would however control potential dust soiling effects to an acceptable level. The assessment indicated therefore that the residual effects were predicted to be negligible and not significant.

Construction vehicle emissions are not considered to be significant owing to a low average number of construction-phase movements. Concentrations of airborne pollutants were modelled to determine the air quality effects of the completed Northstowe Phase 2 development and were determined not to be significant in terms of both existing and future receptors such as residents of Northstowe.

Data regarding the potential energy centre emissions has not been finalised, however, it is considered that any likely effects would not be significant, given the air quality concentrations in and around the site are well below the respective AQS objectives. However, this would be confirmed using detailed modelling, and would be part of a detailed reserved matters application to SCDC. Once the development has been completed, it is predicted that there would not be any significant air quality effects.

Noise and vibration

The noise and vibration assessment considers the suitability of the site for Northstowe Phase 2 and considers the likely noise effects that may result on the surrounding environment. Existing ambient noise levels were assessed by carrying out noise surveys at locations agreed with SCDC. These surveys indicated that generally the surrounding areas are quiet residential sites with low ambient noise levels, particularly at night. Near busier roads such as the B1050 and Dry Drayton the existing traffic noise levels are high.

Assessment methodology

The assessment was carried out in accordance with recognised guidance.

Changes in noise as a result of increased traffic associated with Northstowe Phase 2 were assessed using standard Highways Agency guidance.

Mitigation

A CEMP would be put in place to manage construction related noise effects. Construction noise impacts can be mitigated by implementing measures such as acoustic screens or selecting quieter items of plant. These mitigation measures would reduce noise levels so that they are acceptable and not significant.

Options for mitigating the predicted operational noise effects along Rampton Drift will be investigated further at detailed design stage.

Where significant effects from road traffic noise are predicted at on-site houses and buildings, this would be mitigated to acceptable levels by incorporating acoustic measures in the design of houses and buildings. These measures would include the use of higher specification glazing and possibly secondary glazing. However, the exact location and details of these measures would be confirmed in detailed reserved matters applications to SCDC.

Likely significant effects

Construction noise and vibration effects would be for the duration of construction works only. Appropriate mitigation measures would reduce noise effects to acceptable levels and therefore no residual noise effects are expected from construction activities.

Once constructed, the operational traffic is likely to result in negligible noise effects except at one monitoring location (Rampton Drift) where a significant noise effect is predicted as a result of large changes in traffic volumes. It is likely that the final design would include buildings between Rampton Drift and the CGB, which would act as a noise barrier and help to reduce noise effects.

Transport and access

Northstowe Phase 2 will have good quality connections by all modes of travel. A dedicated busway will serve the heart of the development with new CGB services linking Northstowe to Cambridge and Huntingdon. The Citi 5 bus service will be extended into the site. A new single carriageway road link will be provided from the southern end of the development to connect to the B1050 and the A14 at Bar Hill. There will be a network of walking and cycling routes within the site and a series of improvements to existing public rights of way to connect Northstowe to the wider area. A new cycleway will follow the busway to the south to connect to the route next to the CGB as well as follow the Southern Access Road (West) and the B1050 to join the proposed walking and cycling improvements along the A14, giving a connection to Bar Hill.

The Airfield Road/ Longstanton Road will be fully closed to traffic except for emergency vehicles and buses from the Oakington, except under exceptional circumstances. A separate construction traffic route will be provided from the Southern Access Road (West) so that vehicles do not go through local communities or impact on access into the development.

Assessment methodology

The traffic and transport effects have been estimated using the County Council's transport model and then detailed work has been undertaken to look at what effects there would be from increases in traffic. This focussed on locations where traffic flows would increase to a level where it may affect pedestrians' crossing and the amenity of routes, congestion and delay to drivers and accidents and safety.

Mitigation

Sustainable travel and effective road network and junction design has formed part of the proposed Northstowe Phase 2 development. Further mitigation measures include:

- Traffic calming/ walking and cycling measures and appropriate signage on Ramper Road to the west of the B1050 Longstanton bypass to reduce the level of development traffic using this route to access the A14;
- Improvements to the capacity at the junction of the B1050 Station Road/ Over Road/ Berrycroft in Willingham together with pedestrian crossing improvements on Station Road;

- Measures on Rampton Road to reduce vehicle speeds; and
- A Construction Traffic Management Plan to minimise the effects of road traffic during the construction phase.

Likely significant effects

During construction it has been estimated that 47,526 vehicle movements onto site (one way) would be needed during construction – this is equivalent to nine arrivals per day throughout the construction phase (or 18 two-way movements). This does not represent a significant effect. Consequently, the assessment focused on operational traffic effects.

The assessment identified that, during operation there would be increases in traffic flow of more than 30% in an average hour or a peak hour on flows in four areas of the road network;

- Ramper Road, just east of Swavesey during all periods;
- Ramper Road, west of Longstanton bypass in PM peak, 18 hour and daily periods;
- The local access road east of Bar Hill (part of the A14 improvement scheme); and
- B1050 between the Bar Hill junction and the new Northstowe access roundabout during all periods.

With the mitigation measures outlined above in place traffic and transport effects are assessed as not significant.

Socio-economics

The socio-economic assessment looked at the beneficial and adverse economic and social effects to humans arising from the proposed Northstowe Phase 2 development. Longer-term effects, when the commercial and residential development is occupied, were also identified. Effects have been measured in two study areas – in five wards surrounding the site (the local area) and in the wider South Cambridgeshire and Cambridge area.

South Cambridgeshire and Cambridge are relatively affluent areas, with clusters of high performing businesses supported by a healthy labour market that has high levels of participation and a highly skilled labour force.

It is anticipated that there will be high levels of population, employment and economic growth over the coming decades and this may place further strain on existing local services and the areas housing market, which is already showing signs of a shortage of available housing across the area to accommodate anticipated growth.

Assessment methodology

Based on HM Treasury guidance, a forecast model was developed to measure economic benefits to 2031. Economic benefits are considered in terms of new jobs and Gross Value Added (GVA) which is a measure of productivity and the Governments preferred way to measure growth in the economy.

The model measures new jobs and increased GVA generated from the construction of the development. This includes employment gains directly related to investment in constructing Phase 2 and wider jobs and GVA generated within the economy from the spending habits of direct employees.

In the operational phase, the model measures the longer-term effects of new jobs created through new planned employment space and the spending effects of people living in planned new housing.

Likely significant effects

In the South Cambridgeshire and Cambridge area it is estimated that 913 new full-time jobs would be created throughout the construction phase, either through direct investment in construction activity or within the wider local economy. It is estimated that the new jobs would generate £72.6 million in GVA for the economy which represents a significant beneficial effect.

When Northstowe Phase 2 commercial and housing development is occupied, it is anticipated that there will be a significant beneficial effect of 2,248 new full-time jobs being created across South Cambridgeshire and Cambridge. At current value, this would generate £992 million in GVA up to 2031. This would represent a significant long term beneficial effect within the local economy. Other significant beneficial effects include increased provision of services and provision of new and affordable housing.

Changes in service provision during the operational phase would arise from a combination of the increased need for services from an expected increase in population and an increase in provision through the planned delivery of new facilities. The provision of new services to meet these needs would lead to a long term significant beneficial effect on existing surrounding communities of the Primary Study Area. It is anticipated that this would have a minor long-term beneficial effect on the Secondary Study Area, helping to ease pressures of education and health service delivery to the wider sub-region.

No significant adverse socio-economic effects have been identified.

Archaeology and cultural heritage

Likely effects on buried archaeological remains and on the fabric and settings of listed buildings, Conservation Areas, Scheduled Monuments, registered parks and gardens as well as non-designated heritage assets including elements of the former RAF Oakington have been assessed.

There are no Scheduled Monuments within the site itself which lies within a landscape that has seen settlement from at least the Bronze Age. The earliest settlements are widely scattered and their remains minimal, however by the late pre-Roman Iron Age an ordered landscape of farmsteads, fields and tracks existed. Roman period activity was concentrated in two parts of the proposed development area.

The Conservation Areas at the core of the modern villages of Longstanton, Oakington and Westwick all have medieval or earlier origins although in the case of Westwick only the earthwork remains of the medieval manor adjacent to Westwick Hall can be seen.

The origins of the present village of Longstanton lie in the period before the Norman Conquest. Evidence of pre-Norman activity has been found along the line of the modern High Street beyond the limits of the modern village to both north and south including some features found within the south-western part of the proposed core development area.

The majority of the proposed core development area falls within the boundary of the former RAF Oakington. The airfield came into service in 1940 and served as a base first for bomber command, then transport command before becoming a Flying Training School.

There are four (of a group of eight) listed Oakington type pillboxes which are located within the boundary of the proposed development (the others being outside the development boundary). These pillboxes originally formed part of a wider airfield defence system but now comprise the sole remaining elements within the development site.

Assessment methodology

The assessment was undertaken using a methodology based on guidance issued by English Heritage, the Institute for Archaeologists and the Highways Agency.

Mitigation

All designated and some non-designated assets of the former RAF station would be retained (subject to viability). This includes the former Officers' Mess, Guard and Fire Party House, listed pill boxes and Station HQ which will be converted to new uses.

Mitigation of loss of cultural heritage assets would be by a programme of recording which will be guided by a Historic Environment Management Plan. Archaeological investigations will take place prior to construction and, where necessary, co-ordinated with remediation activity that takes place across the site.

Understanding and appreciation of the historic environment of Northstowe will be enhanced through the implementation of a number of measures including a programme of community involvement

with archaeological investigations, provision of historic environment information boards at selected locations across the development site (e.g. at the Oakington-type pillboxes) and providing support for the establishment, subject to securing appropriate funding, of a Heritage Centre which would provide a long term focus for community engagement with all aspects of the heritage of Northstowe.

Design mitigation has included shaping of the water park to avoid the four listed Oakington type pillboxes and alignment of the Southern Access Road (West) to avoid all known archaeological sites.

Likely Significant effects

No significant residual effects have been identified following the implementation of mitigation.

Ecology

The ecological assessment considers the effects on the ecological resources during the site preparation, construction and operational stages of the proposed development.

Assessment methodology

The baseline conditions were derived from a desk study and series of ecology surveys undertaken between September 2006 and June 2014, with the majority of this work being completed between April 2012 and June 2014. This comprised habitat surveys and bat, badger, breeding bird, water vole and otter, great crested newt, common toad, reptile, aquatic and terrestrial invertebrate and hedgerow surveys.

The assessment followed the Institute of Ecology and Environmental Management Ecological Impact Assessment Guidelines and took into consideration design measures that have been incorporated to the proposed development to alleviate adverse ecological effects.

Existing conditions

The following ecological features were considered in the assessment: habitats (arable, improved grassland, neutral semi-improved grassland and broadleaved scattered trees, hedgerows and buildings); mammals (bats; badger; brown hare); a wide range of bird species, (including quail, barn owl yellow wagtail, grey partridge, lapwing, skylark and corn bunting);

amphibians and reptiles (great crested newt; common toad; grass snake; common lizard); and invertebrates. These features were valued at a parish to county scale.

Mitigation

A European Protected Species (EPS) Mitigation Licence would be obtained for bats. Three of the pillboxes would be enhanced for bats and a bespoke bat house or bat boxes would be erected at the site. A badger licence would be obtained and an artificial badger sett would be created. A badger tunnel would be installed under the proposed busway, to maintain connectivity to foraging habitats along the eastern edge of Northstowe. Nesting opportunities would be provided for barn owl, swift, starling, house sparrow, swallow and house martin, leading to a residual significant beneficial effect on swift.

An EPS Mitigation Licence would also be obtained for great crested newt. An ecological watching brief would be implemented during site clearance, which would also cover other amphibians and reptiles. Amphibian tunnels would be constructed below the proposed primary road, to maintain connectivity to breeding ponds and foraging habitat for great crested newt and common toad.

The pumping mechanism for the waterpark would be sympathetic to wildlife. Lighting mitigation would also be implemented during the construction and operation of the proposed development. The hedgerows would contain native species, including elm, and would be connected to the wider landscape, leading to a significant beneficial effect for hedgerows, white spotted pinion moth and the white-letter hairstreak butterfly. A framework Ecological Management Plan has been produced, which would be updated during the planning process and implemented.

Landscape planting mitigation has been selected where possible to contribute to the requirements of the ecological mitigation. Where possible, trees will be retained.

Likely significant effects

Permanent habitat loss would lead to a significant adverse effect on arable and improved grassland, also on quail, barn owl, grey partridge, lapwing, skylark, yellow wagtail and corn bunting, as well as badger due to the loss of foraging habitat. Temporary disturbance to barn owl would also lead to a significant adverse effect. Creation of the waterpark would lead to residual significant beneficial effects on greylag goose, mallard, reed bunting and great crested newt. No other significant effects have been identified.

Geology and soils

Effects related on geology and soils principally concern human health and safety, groundwater and surface waters, designated ecological receptors, plant growth and construction materials.

From published data the geology beneath the site comprises superficial deposits of Alluvium and River Terrace Deposits over Kimmeridge Clay Formation and Ampthill Clay Formation. This sequence was confirmed by the ground investigation that has been undertaken across the site.

The bedrock beneath the site is designated an unproductive strata, whilst the superficial deposits are considered to be an aquifer that has permeable layers capable of supporting water supplies at a local rather than strategic scale.

There are no registered landfill sites within the site boundary, however given the previous use of the site, it is possible that small areas of landfilling are present. Areas of made ground / landfilling (to 2.9m depth) have been encountered in the southern part of the site.

Cambridgeshire has a greater proportion of high-grade agricultural land than any other county in England and Wales. In total, Cambridgeshire has 79.3% Best Most Versatile land (BMV), whilst the average for England is just 22.7%. With such a high percentage, a higher than average proportion of agricultural land within the site falls within the BMV grades (Grades 1, 2 and 3a).

Several potential sources of unexploded ordnance hazard have been considered and there is the potential for ordnance to range in size from small arms ammunitions to large unexploded bombs. Whilst the majority of the site is considered to be a low hazard level, there are specific areas which are given a moderate or a high hazard level rating. A high

level programme of works to address unexploded ordnance, across Northstowe has been submitted to the Council in line with Condition 10 of the Phase 1 planning permission. The works would be carried out in accordance with the approved details.

Assessment methodology

The study area is the application boundary of Northstowe Phase 2 proposed development, however consideration is given to activities or features within 500m of the boundary e.g. landfill sites which may have an impact on the proposed development.

The assessment of the potential for adverse environmental effects that could be associated with chemical contamination has been undertaken in accordance with The Statutory Guidance on Part IIA of the Environmental Protection Act 1990 (EPA 1990) as set out in Defra Circular 2012; The Environment Agency's Model Procedures for the Management of Land Contamination (Contaminated Land Report (CLR) 11) and other relevant supporting guidance.

Potential effects could be experienced by:

- Geological and soils resources in and around the scheme;
- Existing residents (Rampton Drift and in surrounding area) and future residents and /or commercial users; and
- Controlled waters (groundwater beneath the site and surface water features).

Mitigation

Appropriate mitigation measures during site preparation and construction works will be implemented and will include:

- Implementation of a UXO Risk Mitigation Plan for the whole of the Northstowe development;
- Investigation and assessment of previously un-investigated areas;
- Preparation of a remedial strategy to ensure that the site is suitable for the proposed use;
- Preparation of a CEMP and phase-specific CEMPs; and
- Preparation of a Soil Resource Plan for the sustainable re-use of soils.

Good practice approaches to the development of the site would be implemented to maximise the re-use of soils within the design for landscaping or biodiversity, and thus maximise the protection of the soil resource.

Likely significant effects

Implementation of mitigation would ensure that the soils used across the site are suitable to support a variety of specified activities. For example, surplus nutrient-poor soils (such as sub-soils) will be re-used in areas of habitat creation whilst surplus nutrient-rich soils will be prioritised for areas of landscape planting. This would ensure the conservation of the soil resource, minimisation of the need to remove any soil off-site and thus a more sustainable development. It would also ensure that the benefits provided by the soils, such as rainfall attenuation, are retained and maximised.

The loss of Best and Most Versatile Agricultural Land across the site would be a significant adverse effect.

Hydrology and flooding

The hydrology and flooding assessment established the principles and strategy of hydrology, flood risk and drainage in relation to the complete new town of Northstowe with particular emphasis on Northstowe Phase 2.

The area surrounding the study area, including the existing settlement of Longstanton, is drained by two main catchments: Swavesey Drain/Longstanton Brook and the Beck Brook/Cottenham Lode.

The Environment Agency's updated Flood Map for surface water (2014) shows that the majority of the Phase 2 study area is at low risk of surface water flooding. Mapping indicates there is a surface water flow route through the area of the Oakington Barracks. The mapping shows that surface water flows into the site and ponds to the eastern boundary along the CGB route.

Based on the Environment Agency online groundwater mapping, the risk to the proposed scheme from groundwater flooding is considered to be low.

Assessment methodology

The assessment was undertaken in accordance with current legislation, national, regional and local plans and policies.

Mitigation

It is proposed that drainage systems within the development would be Sustainable Drainage Systems (SuDS). SuDS are a means of reducing flooding by restricting surface water discharge rates and runoff volumes, as well as improving water quality, and providing biodiversity opportunities and amenity value.

During construction the contractor would be required to follow a CEMP which would mitigate against pollution risk to the water environment.

Other mitigation includes suitable finished floor levels and steering the proposed development away from high flood risk areas.

For the Southern Access Road (West) it is proposed that surface water will be discharged via roadside ditches to localised ponds where it will be stored and discharged at a controlled rate in order to avoid flooding.

Likely significant effects

As a result of the mitigation measures no significant effects on surface water resources are identified. No increased risk to flooding in Longstanton or Oakington is identified.

Waste

Effective waste management is an important factor to consider in proposed developments. Policies, legislation and guidance set standards that should be met in terms of waste management. The waste assessment identified likely waste arisings from construction, demolition, excavation and operation and compared the waste management practices being proposed against what are considered to be sustainable waste management practices.

Assessment methodology

In order to assess the effectiveness of the proposed scheme's waste management, the existing conditions were set out at each of the construction, demolition, excavation (CD&E) and operational phases. These were compared against published figures at a regional level for the percentage of waste that is normally recovered and reused.

Mitigation

The alignment, location, level and grading of the proposed development has been designed to minimise excavation volumes. It has also been designed to enable flexibility in the landscaping, so that it can accommodate the changes in surplus excavated material volumes that may arise when site conditions differ from those assumed during the design. Both these approaches should enable all excavation material (except where contaminated) to be reused on-site where conditions allow.

It would be possible to reuse some of the CD&E waste during the development process. The separation of waste types would help minimise their contamination and allow for easier recycling methods. The amount of construction materials that would be delivered on-site would be carefully monitored and delivered from local sources where possible and using a 'just in time' method to ensure only the right amount of materials arrive on-site when needed.

Recycling all inert and non-hazardous materials on-site and adhering to the requirements of the Waste Strategy prepared for the proposed development, would ensure that impacts of construction and demolition waste are minimised.

Once completed, all residential and commercial properties would have adequate provision of recycling facilities in order to enable the maximum potential recycling rate to be achieved.

Likely significant effects

Following the implementation of mitigation, during construction no residual significant waste effects are predicted.

Once operational Northstowe Phase 2 would generate a significant increase in the amount of operational waste (domestic waste) (2.46% increase) being managed by SCDC. This is considered to be a significant effect.

Landscape and visual effects

The landscape and visual impact assessment (LVIA) provides an assessment of the likely significant effects of the proposed development on the surrounding landscape and views of the site. The assessment takes into account the existing landscape context of the site and future developments outside the site that might also become visible.

Assessment methodology

The assessment was undertaken according to the standard industry guidance for the following scenarios:

- Peak Construction phase (2018-2027) – defined as the period during which the main civil engineering works would take place and be visible; and
- Operation year 1 - an assessment of effects in winter and summer following full build out of the proposed development in 2031.

20 viewpoint locations were agreed with the SCDC and the visual assessment has been supported by the production of a construction and operation zone of theoretical visibility (ZTV) and 20 annotated viewpoints.

12 local landscape character areas (LCAs) were also defined using information collated as part of the landscape baseline as well as existing national and regional published character assessments and conservation character appraisals.

The assessment is based on parameter plans and scheme information on the nature of the landscape design in the context of surrounding land uses. This assessment has therefore been carried out according to the worst case scenario, as suggested by standard industry guidance.

An assessment was also undertaken for the effects of night time lighting from the proposed development.

Mitigation

The proposed CEMP would to minimise the temporary adverse landscape and visual effects that have been identified. Control measures would include:

- Protection of existing trees and hedgerows;
- Retention of existing fences, hedges and planting for the purposes of screening;
- Use of well-designed visually attractive hoardings; and

- Use of appropriate lighting when required.

Additional mitigation measures would be included at the detailed design stage and to compliment and/or enhance the ecological mitigation required. These would include refinement of the landform around the pedestrian bridge and water park to better integrate the features into the surrounding landscape, the retention of further existing vegetation on site and early planting of vegetation to increase effectiveness of screening in the first operations year.

Likely significant effects

Much of the landscape character in the local area would be subject to temporary significant adverse effects during construction from the presence of cranes, construction traffic and hoardings and the removal of vegetation. In terms of visual effects, there would be significant adverse effects during construction from the viewpoints within close proximity of the site due to these additional features being highly visible and incongruous with the existing view. There would be no significant visual effects from viewpoints further from the site.

Once built there would be no significant adverse effects on landscape character areas although there would be some significant beneficial effects in terms of enhancement to the character of the landscape.

In terms of visual effects, the assessment indicates that the significant residual adverse effects would be:

- New close up views of three and five storey high buildings within Northstowe Phase 2 and the loss of background views of vegetation, including a line of mature Poplar trees, from Rampton Drift playground and residential properties within Rampton Drift; and
- New middle ground views of the Southern Access Road and associated junctions and infrastructure from residential properties on Hattons Road.

In terms of lighting effects, appropriate use of light during construction and careful design result in no significant effects resulting from lighting associated with the main development area. A moderate adverse significant effect is considered likely in relation to the Southern Access Road (West).

Cumulative effects

When looking at the environmental effects of a proposed development it is necessary to consider other future developments in the area and what, if any, cumulative or in combination effects there may be. Developments that were considered for the purpose of this assessment, and which were agreed with SCDC included:

- Phase 1 Northstowe;
- A14 Cambridge to Huntingdon Improvement Scheme; and
- Home Farm, Longstanton.

For the majority of topics, it was determined that following appropriate mitigation, there would be no significant cumulative effects. However, significant adverse cumulative effects that have been identified include:

- A significant increase in traffic noise at Rampton Drift which was one of the monitoring locations. The large increase of 38.2 dB(A) at this location would be due to the large change in traffic volumes. It is likely that the final design would include buildings between Rampton Drift and the CGB, which would act as a noise barrier and help to reduce noise effects.
- The loss of arable fields, grassland habitat and skylark territories would result in a significant adverse effect (at a parish scale) in conjunction with Northstowe Phase 1.

The landscape and visual effects predicted would be intensified by the additional development in the area. The significant landscape and visual effects at two LCAs and four viewpoints, and the non significant effect at Longstanton Golf course LCA during construction would be further elevated by additional construction in the area.

The significant visual effect at Viewpoint 15 (Hattons Road) and the non significant effects at two LCAs and four viewpoints would be further elevated by the additional development in the area.

A moderate adverse cumulative lighting effect is identified with the Southern Access Road (West).

Further information

All of the planning application, including the full ES for the proposed Northstowe Phase 2 development is available on the Northstowe website:

www.northstowe.com

A reasonable charge will be made for printing and distribution costs of the ES.

Limited copies of this NTS are available free of charge and are available at the following location:

South Cambridgeshire District Council

South Cambridgeshire Hall

Cambourne Business Park

Cambourne

Cambridge

CB23 6EA

Contact us

If you would like further information on the proposals then please get in touch:

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