

Thanet District Council  
**New Settlement Mitigation Study**  
Summary Report

REP/228764/001

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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# 1 Introduction

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Since 2013, Ove Arup & Partners Limited (Arup) has been supporting Thanet District Council (TDC) in undertaking a Sustainability Appraisal (SA) of the emerging Thanet District Local Plan. As part of the emerging Local Plan, the way in which housing provision is to be addressed is an important issue for Thanet and its residents, due to its unique coastal setting and rural environment.

The concept of a new settlement to address housing demand was put forward as part of the Local Plan Issues and Options consultation in the summer of 2013. As limited details regarding a new settlement option were known at this time, the option performed poorly within the sustainability appraisal as there would be a high level of greenfield development requiring additional infrastructure and public transport investment in order to function. In addition, public support for a greenfield approach to housing was low. As such, the poorly performing option was discounted as a viable solution to addressing Thanet's housing demand.

Since the Issues and Options consultation, additional housing demand has been identified within Thanet resulting in a need to review the preferred housing strategy. For completeness, it was decided that a review of a potential new settlement option should be undertaken, but exploring the opportunity to implement robust mitigation in order to facilitate as sustainable new settlement scenario as possible.

This report explores the potential ways that a new settlement option could be implemented in a sustainable manner in order to improve performance against the sustainability objectives adopted for the Local Plan sustainability appraisal. The contents of this report are:

- Section 2 – a review of the existing new settlement option and the need for re-evaluation
- Section 3 – a literature review reporting the way in which new settlement policies have been progressed through local plans and the mitigation they incorporate
- Section 4 – key mitigation measures that should be incorporated as part of a new settlement option
- Section 5 – an indication of how a range of new settlement options might perform against the sustainability appraisal objectives, assuming that key mitigation measures are implemented.

## 2 New Settlement Option

### 2.1 Local plan option (2013)

In 2013, TDC identified the potential for a new settlement option to be considered as part of a viable solution to housing demand in Thanet. This was in response to Issue 9 of the Issues and Options Consultation<sup>1</sup>, which asked for comments on the ‘broad approach to the location of future homes’.

Issue 9 sought the views on a number of options relating to using previously developed land for housing; how greenfield housing should be accommodated; and where greenfield housing should be accommodated. These options are outlined in Table 1 below

Table 1: Issue 9 – housing options

Emphasis on previously developed land	How greenfield element should be accommodated	Where greenfield element should be accommodated
9a. Maximise development provisions within the existing built up areas of the towns and villages in order to minimise use of greenfield land.	9d. A single location	9g. Adjoining the urban area
9b. Focus on urban areas but with criteria (please state) for example to safeguard back gardens / family homes / sites that are not previously developed land.	9e. At a small number of locations	9h. Adjoining the villages
9c. Focus provision on greenfield sites and aim to restrict housing sites in the urban area to those important for regeneration.	9f. At dispersed sites	9i. Freestanding countryside sites
		9j. In the Green Wedges
		9k. Housing in the form of a new settlement

During the review of consultation responses, it was evident that there was public concern with the concept of a housing strategy based on a new settlement (option 9k). Very few responses to Issue 9 supported the concept of greenfield development, whilst the majority of responses advocated the development of existing urban areas with limited settlement expansion

### 2.2 Sustainability appraisal performance

Table 2 highlights the Sustainability Appraisal (SA) performance of the new settlement option as reported in the Interim SA Report<sup>2</sup>. The SA objectives represent those used in the interim assessment of options. The assessment text includes statements where there were specific impacts associated against

<sup>1</sup> Thanet District Council (2013) Thanet's New Local Plan - Options consultation

<sup>2</sup> Arup (2013) Local Plan – Issues and Options: Summary Interim Sustainability Appraisal Report

individual objectives, as well as statements where text is common amongst all options relating to future homes. The latter is identified in Table 2, where text refers to ‘options’.

Table 2: Sustainability appraisal performance of option 9k (Housing in the form of a new settlement).<sup>3</sup>

SA Objective	9k Housing in the form of a new settlement
1. To provide a sustainable supply of housing including an appropriate mix of types and tenures to reflect demand and need.	<b>Permanent, Direct and Indirect ST/LT +</b> These options would lead to new development in different areas. As such, there will be some effect on the housing market and the supply of different types of housing.
2. To maintain appropriate healthcare provision and access to healthcare facilities for all sectors of society.	N/A
3. To provide access to appropriate educational facilities for all sectors of society including focus on training vulnerable and welfare dependant workers with skills necessary to ensure year round employment.	
4. To increase public safety and reduce crime and fear of crime.	
5. To provide a sustainable public transport network that allows access to key facilities, services and employment opportunities without reliance on private vehicles.	<b>Permanent, Direct ST/LT --</b> A new settlement could be located away from existing facilities and services and could also result in the greater reliance on private car use to access services
6. To provide appropriate key facilities to support vulnerable people and reduce the level of deprivation identified across the wards.	
7. To create vibrant balanced communities where residents feel a ‘sense of place’ and individual contribution is valued.	<b>Unknown ?</b> These options are strategic in nature; as such the effects on communities cannot be predicted at this stage. There will be some impact on existing and new communities, but this is likely to vary significantly according to where the development is, it’s design etc.
8. To provide access to employment opportunities for all sectors of society ensuring that everyone who wants to work has the opportunity to secure appropriate paid employment.	<b>Permanent, Direct and Indirect ST/LT +</b> All options will bring about house building which in turn will bring about construction employment. Indirectly by supporting housing development there will also be greater pool of potential employees to support economic growth.
9. To ensure the sustainable development of the proposed economic growth and encourage industrial and employment	<b>Permanent, Direct and Indirect ST/LT +</b> All options will bring about house building which in turn will bring about capital spending,

<sup>3</sup> Objective 5 and Objective 16 provided duplication of traffic related objectives. The two objectives have been rationalised into one objective for the Sustainability Appraisal and the assessment of new settlement options against the sustainability appraisal objectives.

SA Objective	9k Housing in the form of a new settlement
development at key sites within the District to support priority regeneration areas.	demand along the supply chain and construction employment. As described above the options will also, indirectly, support the economy over the long term by helping to create a larger pool of potential employees.
10. To protect and enhance the areas natural, semi-natural and street scene to support the tourist economy.	<b>Permanent, Direct LT -</b> All greenfield development has the potential to result in the loss of natural and semi-natural landscape features and as a result they all have impact on natural and semi-natural resources.
11. To improve efficiency in land use through the re-use of previously developed land and existing buildings, including reuse of materials from buildings, and encourage urban renaissance.	<b>Permanent, Direct LT - -</b> All options will result in development of greenfield land. No information exists on development density, housing mix and/or re-use of derelict land.
12. To ensure that a sustainable pattern of development is pursued.	<b>Permanent, Direct ST/LT - -</b> A new settlement could be located away from existing facilities and services and could also result in the greater reliance on private car use to access services
13. To conserve and enhance the character and quality of the area's landscape and townscape particularly associated with town centres and coastal areas.	<b>Permanent, Direct LT -/?</b> Assuming that development is likely to increase the risk of impact on the countryside and other sensitive landscapes; a minor negative effect is anticipated. However it should be noted that a more effective assessment of effects can be undertaken as part of the site allocations process.
14. To preserve and enhance sites, features and areas of historic archaeological or architectural importance, and their settings.	<b>Unknown ?</b> This cannot be assessed effectively at the district wide scale.
15. To improve air quality in areas where air quality (pollutant) levels exceed national standards.	<b>Permanent, Direct LT - /?</b> All developments have the potential to result in adverse effects if vehicle movements result in greater emissions from private vehicles.
16. To provide a sustainable public transport network that allows access to key facilities, services and employment opportunities without reliance on private vehicles. (also included as social and economic objective)	<b>Permanent, Direct ST/LT - -</b> A new settlement could be located away from existing facilities and services and could also result in the greater reliance on private car use to access services
17. To develop key sustainable transport links between Thanet and the wider Kent district and beyond, including road, rail and air.	
18. To reduce waste generation and disposal and achieve the sustainable management of waste	<b>Permanent, Direct ST/LT -/?</b> All options bring about new housing development. Development of new housing will bring about construction (short term) and operational waste (long term).



SA Objective	9k Housing in the form of a new settlement
19. To ensure development within the District responds to the challenges associated with climate change.	<p><b>Permanent, Direct LT -/?</b></p> <p>All three options will bring about growth in housing development which will bring about long term increase greenhouse gas emissions from household activities such as heating, cooking and electricity consumption. The option to build on dispersed sites will also bring with it an increased need to travel. Indirect impacts associated with travel could come about if housing developments are placed away from local centres and existing public transport links.</p>
20. To ensure appropriate development control procedures in place to manage the risks of coastal erosion, coastal and fluvial flood risk, in accordance with development management policies and NPPF	<p><b>Neutral 0</b></p> <p>It is assumed that development would only be permitted in line with Environment Agency guidance and NPPF, where it can be proven that development is not at risk of flooding, and where it does not increase the risk of flooding elsewhere</p>
21. To conserve and enhance biodiversity.	<p><b>Permanent, Direct LT -/?</b></p> <p>It is assumed that development on greenfield sites will increase the risk of negative impact on ecological assets across Thanet. Development across dispersed sites is likely to increase this risk. However these effects are site specific and cannot be effectively assessed at this level.</p>
22. To protect and improve the quality of fluvial and coastal water resources, including European designated sites	N/A
23. To reduce the global, social and environmental impact of consumption of resources by using sustainably produced and local products.	<p><b>Permanent, Direct ST -/?</b></p> <p>All options relate to house building. As such, both options will result in increased unavoidable short term demand for scarce resources. None of the options distinguishes itself as performing better in terms of sustainability (including resource use) and neither point towards a level of refurbishment of existing properties. All options will bring about higher levels of resource use through house building.</p>
24. To increase energy efficiency and the proportion of energy generated from renewable sources in the area.	<p><b>Permanent, Direct ST/LT -/?</b></p> <p>All options relate to house building which will increase the number of houses across the Thanet area (all things being equal). As such, it will result in increased unavoidable short term energy demand. Longer term there will be increase in consumption of energy from increased housing stock (however, with more sustainable design this should be less than existing stock).</p>

From looking at the assessment of the new settlement option, it is clear that effects are polarized as either positive or negative, with few unknowns.

Positive effects were generally those relating to socio-economic sustainability objectives. This includes **housing supply**, where a new settlement option provides

a case for large scale development that includes a mix of tenures and types, providing the opportunity for integrating housing needs within a new community. Additionally objectives relating to **employment** and **economic growth** would also experience positive benefits, primarily linked to the construction industry, but also linked to the increase in employment pool available locally and within the south east region.

Unknown effects were predicted in relation to the objective concerning the creation of vibrant balanced communities, as the outcome effects would depend greatly on the location and design of any new settlement.

Neutral effects are predicted in relation to **flooding and coastal erosion**, as it is unlikely that a new settlement will be located in an area deemed to be at risk from these processes.

Negative effects were likely to be realised by those sustainability objectives with an environmental focus, related to infrastructure and those with a land use context. In relation to providing **sustainable public transport networks**, developing **key sustainable transport links** and ensuring a **sustainable pattern of development** is pursued, negative effects are likely to be experienced due to the location of a new settlement in relation to existing facilities and services, notably those in Margate, Broadstairs, Ramsgate and Westwood Cross.

The quality of Thanet's natural, semi-natural and street scene environments are likely to be affected by all types of greenfield development (including the new settlement option), which may affect the **tourist economy** within the area. Thanet's **landscape and townscape** quality may also suffer from all housing options, though the effects would be dependent on detailed design and ultimate site allocations. As with all other options, new housing developments are likely to increase private car use in the area, resulting in detrimental effects on the areas **air quality**. This might be realised more through a poorly located new settlement option. The effects on objectives relating to **waste, climate change, resource consumption** and **energy efficiency** are negative and are dependent on absolute numbers of new housing rather than the location of them. The **biodiversity** of Thanet is also likely to be detrimentally affected due to the types of areas required for implementing a new settlement option being large, open and predominantly greenfield.

## 2.3 New Settlement Re-evaluation

Based on the information available at the issues and options stage of the local plan process, it is understandable why a new settlement option was assessed poorly. However, given that the required housing provision within Thanet has been increased from 12,000 to 15,660 as a result of the revised Strategic Housing Market Assessment (SHMA)<sup>4</sup>, more detailed assessment of the new settlement option has been requested based on the location of indicative sites and the potential for incorporating mitigation. The purpose is to see if, and how, a new settlement option could be developed in a more sustainable manner.

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<sup>4</sup> GL Hearn (2016) Thanet Strategic Housing Market Assessment

The location of indicative sites has been provided by TDC's Strategic Housing Land Availability Assessment (SHLAA) and omission sites, whilst mitigation that could benefit a new settlement option has been identified from a literature review that has covered specific stages of the SA and local plan processes. This review is reported in section 3.

### 3 New Settlements – Literature Review

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For this literature review, four stages of the planning of a new settlement were reviewed, from the SA of options and the SA of policy text, to the implementation via adopted policies, and masterplanning. These cases were located in England and Scotland and ranged from 2005 to 2016. Most plans involved entirely new rural settlements, such as Northstowe in South Cambridgeshire<sup>5</sup>, while some were large developments bordering established towns and villages that would function as self-contained new settlements, such as the West of Stonehouse development in Stroud<sup>6</sup>. In most cases, a new settlement was considered alongside other strategies to meet housing demand, such as expanding villages or increasing housing density in town centres.

As expected, each SA covers three broad themes: economic, social, and environmental performance. Within environmental performance there are many specific sub-themes, the most common being ecology, flood risk, transport, emissions, climate change resilience, air quality, noise, and heritage.

The first stage of planning studied was the issues and options SA stage of Local Plan preparation. At this stage, many policy options are compared, thus there is a low level of certainty in the details of the new settlement (for example: settlement size and location, design and density of housing), which results in a very high level assessment. Once the policy option has been chosen, another SA is undertaken to add detail to previous findings. Once the findings of the SA have been incorporated into the draft policy, the finalised policy should include details of the new settlement and measures to ensure any development that takes place is sustainable. Finally, once a masterplan is devised for a new settlement, more detailed site specific measures can be included to mitigate and enhance any sustainability issues.

In the earliest stages of a local plan, most new settlements share many common poorly performing sustainability themes, many of which could be improved with careful mitigation once more detail is known about the new settlement. The main issue with new settlements to meet housing targets, is their long lead times - for many local councils, the new settlement will only be fully established after the local plan period. Linked to this is the significant infrastructure investment required to provide utilities, transport, and facilities to the new housing. If the new settlement does not provide all the facilities required to be self-sufficient, it may put additional pressure on already pressured nearby town centres, as is the case for the new settlement options in Lichfield<sup>7</sup>, as well as increasing travel via private car. Any increase in private car use has negative implications for local noise and air quality, which would exacerbate air quality issues if the new settlement was located in an Air Quality Management Area, such as in Aylesbury Vale<sup>8</sup>. This infrastructure investment is especially large if the new settlement is planned on

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<sup>5</sup> Cambridge City Council (2014) Sustainability Appraisal of the Cambridge Local Plan

<sup>6</sup> Stroud District Council (2015) Stroud District Local Plan

<sup>7</sup> Lichfield City Council (2014) Sustainability Appraisal: Submission Local Plan Strategy (including EiP Modifications)

<sup>8</sup> Lepus Consulting (2015) Sustainability Appraisal of the Aylesbury Vale District Council Issues and Options Consultation. Reasonable Alternatives SA Report

greenfield land. Most councils aimed to utilise brownfield land for new settlements, however some councils have very little brownfield land to build on, such as in Wealden<sup>9</sup>. Building on greenfield land brings several adverse environmental impacts; firstly the new settlement would likely have an adverse effect on views and the local landscape (as the character changes from rural to urban), and may have in-combination effects on the setting of heritage assets. Building on greenfield land would also adversely affect ecology by decreasing connectivity and removing habitat. In addition, greenfield land normally has little artificial light, so a new settlement would introduce light pollution and adversely affect nocturnal wildlife. Finally, if the new settlement is located near a sensitive ecological area, it may have a detrimental effect on the habitat either directly, for example increased recreational use and encroachment, or indirectly, for example increased nitrogen deposition on the Ashdown Forest SSSI in Wealden.

Conversely, there are many sustainability themes where a new settlement can perform well. The main advantage of planning an entire new settlement is the ability to design in sustainability from the outset. This is supported by economies of scale which allow green technologies like district heating, renewable energy, and recycling facilities to become viable. This also applies to community, health, and education facilities as well as employment opportunities, which could serve both the new settlement and the wider area, improving access to essential services where there may be a deficiency. This has the indirect effect of enhancing the rural economy as well. Furthermore, focussing development on a new settlement would alleviate development pressure on historic towns and villages, as is the case in Uttlesford<sup>10</sup>. The housing provided in the new settlement should also include affordable housing and specialty housing as part of the masterplan. During planning, education facilities and employment can be strategically placed close to housing and green transport can be prioritised in the settlement design to promote use of sustainable transport. To encourage outdoor activity and walking as a mode of transport, green infrastructure should be used which would also serve as ecological mitigation and enhancement, especially if habitat corridors were planned. Finally, landscaping could be used not only for visual amenity, but also as part of Sustainable Drainage Systems (SuDS) to reduce flood risk and encourage water efficiency.

The preparation and implementation of a local plan provides an opportunity to address crime, fear of crime and safety as part of the local policy agenda. A strong commitment to address crime and safety ensures potential developers consider these issues appropriately, contributing to more sustainable communities. Within the Uttlesford Local Plan<sup>11</sup>, the concept of designing safe new settlements extended to the consideration of the community safety and ability to reduce anti-social behaviour as part of a general design policy.

Specific mitigation measures were given mostly during the adopted policy and masterplan stages of planning. Here the location and some details were known of the new settlement, which allowed for more specific mitigation measures to

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<sup>9</sup> Wealden District Council (2015) Wealden Local Plan Sustainability Appraisal Report – Part A

<sup>10</sup> Uttlesford District Council (2015) Sustainability Appraisal (SA) & Strategic Environmental Assessment (SEA)

<sup>11</sup> Uttlesford District Council (2005) Uttlesford Local Plan

improve the SA result. Most improvements related to the design and planning of the settlement to proactively enhance sustainability themes. Regarding location of the new settlement, the most sustainable locations were those on brownfield land close with some existing transport infrastructure, such as on an old airfield in the case of Long Marston Airfield in Stratford-upon-Avon<sup>12</sup>, or near a transport hub, such as a main line station in the case of Winchfield in Hart<sup>13</sup>. Additionally, including a settlement buffer while planning is beneficial to prevent sprawl and protect habitat. In addition to existing transport, public transport and active transport paths should be developed to sustainably link the new settlement to other settlements or transport hubs, and reduce private car use.

During early planning, consideration should be given to the integration of green technologies into the new settlement, such as renewable energy and district heating. Waste minimisation measures and recycling should also be included in both construction and design, such as on-site recycling facilities and sustainably sourced construction material, as in the masterplan guidance for Gaydon-Lighthorne in Stratford-upon-Avon<sup>14</sup>. When planning residential areas, energy efficiency, low carbon living, and climate change resilience should be prioritised in terms of neighbourhood layout and housing orientation and design, as given in the Blindwells Development Framework for East Lothian Council<sup>15</sup>.

Green infrastructure and green spaces would also benefit the new settlement in terms of well-being and ecology, as well as being able to provide visual and noise mitigation, such as from the A1 (T) in East Lothian. The green infrastructure should retain established habitat where possible (e.g. mature trees, hedgerows, and ponds) and increase habitat connectivity via habitat corridors. If habitat is lost due to development, compensatory habitats should be provided on-site for protected and priority species, as in the case of Great Crested Newts for the North Cheshire Growth Village<sup>16</sup>. Green space provision can also contribute to SuDS as flood storage and drainage areas, and be incorporated into water efficiency measures and flood pathway planning, as in the West of Stonehouse development in Stroud.

If the new settlement is planned for greenfield land, the character of the new settlement should aim to reduce the impact on the landscape by designing a town sympathetic to the local form, and with planned views both to and from the settlement, as given in the Vision for Long Marston Airfield in Stratford-upon-Avon. The town design should also aim to reduce the impact on the setting of heritage assets, such as the Grade I listed Crewe Hall near the South Cheshire Growth Village.

Due consideration to reducing waste, including requirements for new settlements to provide appropriate measures for waste collection and disposal, are often identified within the local plans. For example Lichfield, specifies that waste

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<sup>12</sup> Nathaniel Lichfield & Partners (2014) Long Marston Airfield New Settlement

<sup>13</sup> Hart District Council (2014) Sustainability Appraisal (incorporating Strategic Environmental Assessment) of Housing Development Options

<sup>14</sup> Stratford-upon-Avon District Council (2015) Land at Gaydon/Lighthorne Heath. Supplementary Planning Document

<sup>15</sup> East Lothian Council (2010) Development Framework for Blindwells New Settlement

<sup>16</sup> Cheshire East Council (2013) Shaping Our Future – A development Strategy for Jobs and Sustainable Communities

management facilities should be provided in suitable locations. This can extend beyond household waste collection, and incorporate the expectation to minimise waste generation. Where the local plans don't provide initial provision for related matters, the SA often provides recommendations for such like measures to be incorporated into the local plan policies, for example Hart District.

Overall, the many poorly performing sustainability themes are linked to the location of the settlement, especially if it is on greenfield land. Furthermore, transport remains a complex topic for a new settlement, because of the need to maximise sustainable transport without constricting private car use. The main advantage of a new settlement is the ability to design sustainability into the settlement fabric in terms of green technology, climate change resilience, flood risk, ecology, well-being, and resource efficiency. Although there is great opportunity to create a sustainable settlement, the large infrastructure investment required and long lead times are unavoidable.

## 4 Key Messages and Mitigation

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### 4.1 Introduction

From the literature review undertaken as part of this study, it was evident that consistent themes were

- Transport and access;
- Amenity;
- Housing; and
- Physical environment.

The mitigation relevant to these themes is outlined below in sections 4.2 to 4.5 below.

### 4.2 Transport & Access

- M1. **Public Transport** – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood Cross.
- M2. **Alternative Transport** – Where sites perform poorly against Public Transport Accessibility Level (PTAL), it is suggested that cycling / pedestrian provision is promoted to improve accessibility via alternative transport modes including walking / running and cycling. This would increase accessibility to existing centres, increase the viability of site development and enable air pollutants deriving from a particular development to be minimised.
- M3. **Public Access** – Public rights of way footpaths should be retained (especially routes of historic importance) or diverted as these will be of community / local importance.

### 4.3 Amenity

- M4. **Site design** – The development should ensure that construction / operation impacts do not adversely affect existing residential amenity, and layout of the site and any associated houses/buildings maximise opportunities provided by the local micro-climate such as those relating to daylight and wind.
- M5. **Landscaping** – It would be beneficial to ensure an attractively landscaped stand-off between main roads and new settlement for noise attenuation and to help create an inclusive and attractive environment.
- M6. **Green Corridors** – A green ‘buffer’ should be provided if the new settlement is too close to a neighbouring settlement. This should be incorporated as part of the design process.



- M7. **Green Infrastructure and Open Spaces** – the development should promote urban greening and protection and planting of trees by integrating green infrastructure into design, increasing the amount and quality of open spaces and improving access to existing formal and informal open spaces and facilities.
- M8. **Site suitability** – Site suitability assessments for air quality and noise should be undertaken to inform settlement development.

#### 4.4 Housing

- M9. **Housing Mix / Tenure** – Ensure that a mix of housing types is provided to address local needs – need affordable provision, not offsetting in other areas.
- M10. **Housing Mix** – Consider housing above retail, and other facilities could be encouraged to reduce land take / maximise development opportunities.
- M11. **Housing Design** – The development should incorporate sympathetic, modern and novel designs where appropriate to create new and exciting landscapes and townscapes.
- M12. **Security and Safety** – The development should be designed to be safe, minimise the potential for crime and anti-social behaviour and provide for a mix of uses and natural surveillance of streets and spaces.

#### 4.5 Physical environment

- M13. **Surface Water Run-off / Drainage** – If feasible, the use of grey water systems in place of grid connections could be encouraged.
- M14. **Biodiversity** – Ensure that settlements avoid any priority species / habitats, or incorporate them as protected features within overall site plans.
- M15. **Materials and Waste** – careful choice and use of building materials to reduce the generation of waste and help ensure a high quality external environment and healthy internal environment.

## 5 New Settlement Options

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During February 2016, the requirement for approximately 3,660 additional homes to be included as part of the Thanet Local Plan led to TDC revisiting previous options for housing growth. The potential for a new settlement growth scenario was identified, dependant on the sustainability issues identified with Option 9k as part of the issues and options stage of the sustainability appraisal process could be addressed.

The locations of potential new settlement options were identified from sites previously brought forward as part of the TDC SHLAA as well as additional sites that may become available. The locations of the proposed new settlement options are reported below.

### 5.1.1 NS1

An approximate 68hectare site, bordered by the A299 Hengist Way and Manston Airport to the north; Grinsell Hill and the Lanes, which are unclassified roads, to the south; Laundry Road (an unclassified road) to the west; and agricultural fields to the east. The site consists of a number of agricultural field units and a small number of residential properties on two roads that transect the site, Way Hill and Wayborough Hill. The Wayside Caravan Park is located to the southern perimeter of the site.

### 5.1.2 NS2

An approximate 34hectare site, located to the west of Manston Airport and north of Minster. The site is bordered by the A299 to the south; agricultural field units to the north; the B2190, Minster Road and the Manston Park business estate to the east; and additional agricultural field units and the village of Acol to the west and north west. The northern part of the site is traversed by Minster Road.

### 5.1.3 NS3

A site of approximately 95hectare in size, located to the north of Manston Airport to its western end. Bounded by Spitfire Way to the south; Manston Park Business Estate and agricultural field units to the west; agricultural field units and light industrial land to the north; and the site of the former RAF Manston to the east. The site is predominantly green fields, but is split into four sections by Manston Road running north west to south east and Alland Grange Lane running north to south. There are a small number of residential properties located within the site boundary, along with some light industrial units.

### 5.1.4 NS4

An approximate 60hectare site, situated to the east of site NS3, with which it shares a border. Manston Road runs along the southern and western edges of the site; Manston Court Road is located east of the site. Occupying the majority of the site is grassland and agricultural land, with a small section of airport runway from

Manston Airport taking up a large section of the site also. In the south west corner of the site, near Spitfire Way there are two museums, the R.A.F. Manston Museum and the RAF Manston Spitfire & Hurricane Memorial Museum. A number of residential properties are located along the eastern edge of the site as well as holiday accommodation.

### 5.1.5 NS3 and NS4 overlap

A site of approximately 30Ha in size, located between NS3 and NS4. Manston Road is situated along the south eastern and south western borders of the site. Predominantly, buildings make up the site with the Defence Fire Training and Development Centre lying in the south western corner. Besides buildings, vegetation such as grassland and trees make up the rest of the site along with tarmac for walkways and car parks. West of the site, site NS3 is situated which is predominantly agricultural fields and to the east, site NS4 is located which contains mainly grassland. A residential estate is positioned to the south west perimeter of the site, along Esmonde Drive. More agricultural fields and vegetation lay northwards of this site.

### 5.1.6 NS5

A site approximately 320hectares, situated to the north of NS1, to the south and east of NS3 (with which it shares a border) and overlaps site NS4. It is bordered by the A299 Hengist Way to the south, and Spitfire Way and Manston Road to the west. The land within the site has previously been used for commercial purposes and is therefore denoted as brownfield. Occupying the majority of the site is Manston Airport, including its runway, which runs in the southern portion of the site. A terminal building, aircraft movement areas and taxiways, and car parking and ancillary facilities associated with the airport are also located within the site, with the remainder of the area covered by scattered areas of improved grassland.



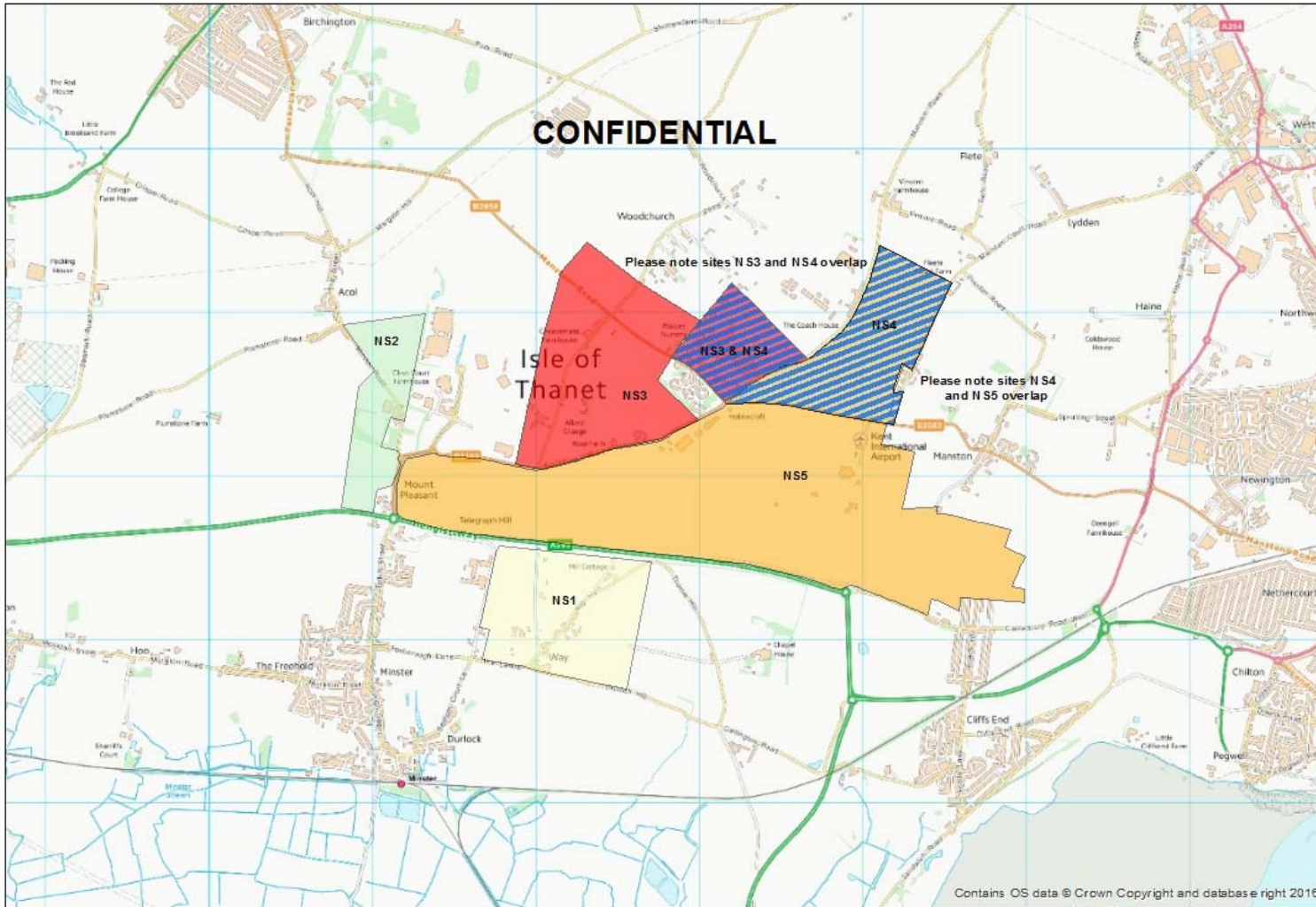


Figure 1: Indicative new settlement options based on sites submitted under the SHLAA process and omission sites

Table 3: Assessment of new settlement options against the sustainability appraisal objectives

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
1. To provide a sustainable supply of housing including an appropriate mix of types and tenures to reflect demand and need.	Permanent. Direct. ST/LT +	Permanent. Direct. ST/LT ?	Permanent. Direct. ST/LT +		Permanent. Direct. ST/LT ++	<p>Assumptions regarding additional mitigation:</p> <ul style="list-style-type: none"> <li>Housing Mix / Tenure – Ensure that a mix of housing types is provided to address local needs – need affordable provision, not offsetting in other areas.</li> <li>Housing Design – development should incorporate sympathetic, modern and novel designs where appropriate to create new and exciting landscapes and townscapes.</li> </ul>
						<p>Assessment:</p> <p>Whilst all of the housing sites offer the potential for new build in a manner that promotes housing quality, the reduced site area of NS2 when compared to N1, NS3, NS4 and NS5 could result in either a reduced amount of housing, reduced residual space for other facilities (open space, community facilities, retail) or the reliance on more medium density housing. For NS2 to meet the additional houses required of approximately 3,660 as identified by the SHMA<sup>4</sup>, an overall housing density of approximately 102 properties per hectare. This may restrict the types of housing offered, which in turn may affect potential tenure arrangements due to restricted supply.</p> <p>Sites NS1, NS3, and NS4 allow for a greater mix of type and densities due to the size of these sites, which additionally places less restrictions on the location and design of open space and other facilities associated with a new settlement though compared with NS5, there would be a required compromise to meet the required housing needs and provide social infrastructure and commercial and retail opportunities. .</p> <p>Site NS5 can meet the required additional housing demand of 3,660 with a density of approximately 11 properties per hectare, substantially lower than the other sites. The housing density specified in the strategic and non-strategic housing policies of the Local Plan is between 35 and 40 properties per hectare. The site is large enough such that provision of the required housing, suitable open space and retail / commercial opportunities would not be compromised.</p>
2. To maintain appropriate healthcare provision and access to healthcare facilities for all sectors of society.	Permanent. Direct / Indirect ST/LT ?					<p>Assumptions regarding additional mitigation:</p> <ul style="list-style-type: none"> <li>Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood.</li> </ul>
						<p>All sites are likely to require new on site health facilities to supplement existing facilities in surrounding settlements. The provision of such services however are not known.</p> <p>The local GP surgery in Minster is likely to be able to offer availability for some residents, though access is potentially an issue. Existing and future developments (such as medical facilities secured within development at Westwood) would be utilised by residents.</p>

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
3. To provide access to appropriate educational facilities for all sectors of society including focus on training vulnerable and welfare dependant workers with skills necessary to ensure year round employment.	Permanent. Direct. ST/LT +				Permanent. Direct. ST/LT ++	Assumptions regarding mitigation: <ul style="list-style-type: none"> <li>Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood.</li> </ul>
						Existing education facilities unlikely to be able to provide suitable provision due to location. All new settlement options are likely to require additional, bespoke facilities, which are likely to be more viable as critical mass in the area is likely to be increased. Improved and additional public transport provision will also make existing educational facilities in surrounding areas viable options.  Site NS5, owing to its size, will have land provision for bespoke requirement sot provide suitable educational facilities, without compromising the ability to provide social infrastructure and retail and commercial opportunities.
4. To increase public safety and reduce crime and fear of crime.	Permanent. Direct. ST/LT +					Assumptions regarding mitigation: <ul style="list-style-type: none"> <li>Housing Design – development should incorporate sympathetic, modern and novel designs where appropriate to create new and exciting landscapes and townscapes.</li> <li>Site design – Development should ensure that construction / operation impacts don't adversely affect existing residential amenity.</li> </ul>
						All new settlement options will provide an opportunity for modern design standards to be implemented within a large scale development ensuring that opportunities for criminality and anti-social behaviour are kept to a minimum
5. To provide appropriate key facilities to support vulnerable people and reduce the level of deprivation identified across the wards.	Permanent. Direct / Indirect. ST/LT ?					Assumptions regarding mitigation: <ul style="list-style-type: none"> <li>Housing Mix / Tenure – Ensure that a mix of housing types is provided to address local needs – need affordable provision, not offsetting in other areas.</li> <li>Housing Design – development should incorporate sympathetic, modern and novel designs where appropriate to create new and exciting landscapes and townscapes.</li> </ul>
						Even with a strong commitment to provide housing that meets local demand, particularly the needs of vulnerable groups, it is unclear how a new settlement option at any of the identified options will be able to provide key facilities for vulnerable people. Further mitigation in the form of design guidelines should stipulate the requirement for community facilities to be included as part of the site design, so that needs are met locally, rather than requiring travel to Margate, Broadstairs and Ramsgate.
6. To create vibrant balanced communities where resident's feel a 'sense of place' and individual contribution is valued.	Permanent. Indirect. ST/LT +					Assumptions regarding mitigation: <ul style="list-style-type: none"> <li>Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood.</li> <li>Alternative Transport – Where sites perform poorly against Public Transport Accessibility Level (PTAL), it is suggested that cycling / pedestrian provision is promoted to improve accessibility via alternative transport modes. This would increase accessibility to existing centres and increase the viability of site development.</li> </ul>

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
						<ul style="list-style-type: none"> <li>• Public Access – Public rights of way footpaths should be retained or diverted as these will be of community / local importance.</li> <li>• Site design – Development should ensure that construction / operation impacts don’t adversely affect existing residential amenity.</li> <li>• Landscaping – It would be beneficial to ensure an attractively landscaped stand-off between main roads and new settlement for noise attenuation</li> <li>• Green Corridors – A green ‘buffer’ should be provided if the new settlement is too close to a neighbouring village, e.g. Manston. This should be incorporated as part of the design process.</li> <li>• Green Infrastructure – Development should incorporate green infrastructure, including green spaces (benefits for ecology, wellbeing)</li> <li>• Site suitability – Site suitability assessments for air quality and noise should be undertaken to inform settlement development</li> <li>• Housing Mix / Tenure – Ensure that a mix of housing types is provided to address local needs – need affordable provision, not offsetting in other areas.</li> <li>• Housing Mix – consider housing above retail and other facilities could be encouraged to reduce land take / maximise development opportunities.</li> <li>• Housing Design – development should incorporate sympathetic, modern and novel designs where appropriate to create new and exciting landscapes and townscapes.</li> </ul> <p>Fundamentally, the incorporation of extra-ordinary mitigation measures and exceeding minimum standard will help to ensure that a vibrant community feel is experienced within a new settlement development, rather than the simple creation of a housing dormitory.</p>
<p>7. To provide access to employment opportunities for all sectors of society ensuring that everyone who wants to work has the opportunity to secure appropriate paid employment.</p>	<p>Permanent. Indirect / Direct. ST/LT +</p>	<p>Permanent. Indirect / Direct. ST/LT ?</p>				<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>• Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood.</li> <li>• Alternative Transport – Where sites perform poorly against Public Transport Accessibility Level (PTAL), it is suggested that cycling / pedestrian provision is promoted to improve accessibility via alternative transport modes. This would increase accessibility to existing centres and increase the viability of site development.</li> <li>• Public Access – Public rights of way footpaths should be retained or diverted as these will be of community / local importance.</li> </ul> <p>Whilst all new settlement options are unlikely to provide significant levels of new employment, limited on site employment would likely be created, directly in terms of retail and potentially indirectly in terms of management and servicing.</p> <p>Site NS1 would increase access to employment in London and Canterbury as a result of easy links with Minster station, as well as the local area assuming public transport is improved</p>



SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
						NS2, NS3, NS4 and NS5 may increase access to employment within a greater area of East Kent and Thanet if public transport links to Margate, Broadstairs, Ramsgate and Westwood are improved.
8. To ensure the sustainable development of the proposed economic growth and encourage employment development at key sites within the District to support priority regeneration areas.	Permanent. Direct / Indirect. ST/LT ?					<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood.</li> <li>Alternative Transport – Where sites perform poorly against Public Transport Accessibility Level (PTAL), it is suggested that cycling / pedestrian provision is promoted to improve accessibility via alternative transport modes. This would increase accessibility to existing centres and increase the viability of site development.</li> <li>Public Access – Public rights of way footpaths should be retained or diverted as these will be of community / local importance.</li> </ul> <p>Minster is the closest local centre and includes a range of existing retail provision. Local retail provision likely to be required within any new settlement option, which is likely to be limited to convenience shopping.</p> <p>Access to Westwood is limited and promotes use of private car. Increased public transport provision would be required in order to reduce this dependency and be able to provide required levels of accessibility to rely on existing retail provision at Westwood.</p> <p>The benefits of a sustainable and social housing provision which could be provided at site NS5 would be negated by the loss in potential economic jobs from investment at the airport. Provision of housing on site NS5 would prevent the possibility of Manston Airport being regenerated and associated jobs which would be realised if investment were to occur at the airport site.</p>
9. To protect and enhance the areas natural, semi-natural and street scene to support the tourist economy.	Neutral 0	Temporary / Permanent. Indirect. ST/LT ?				<p>Assumptions regarding mitigation: N/A</p> <p>Unlikely that the development of a new settlement option would significantly affect the tourist economy, though there are two existing hotels at Minster Services, which could be incorporated as part of the redevelopment of NS2.</p> <p>The development of site NS4 and the NS3 and NS4 extension site would potentially affect the operational viability of the RAF Manston Museum and the RAF Manston Spitfire and Hurricane Museum. This would require consideration as part of any future site development brief.</p> <p>The development of site NS5 would affect the future operational viability of the decommissioned Manston airport. This would require consideration as part of any future site development brief.</p>

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
<p>10. To improve efficiency in land use through the re-use of previously developed land and existing buildings, including reuse of materials from buildings, and encourage urban renaissance.</p>	<p>Permanent. Direct. ST/LT --</p>				<p>Permanent. Direct. ST/LT +</p>	<p>Assumptions regarding mitigation: N/A</p> <p>Majority of development on NS1, NS2, NS3 and NS4 would be on greenfield land, which is an incumbent factor of new settlement development in this location.</p> <p>Development on NS5 would be on previously developed land which had a low-intensive use (brownfield), thereby reducing greenfield development.</p>
<p>11. To ensure that a sustainable pattern of development is pursued.</p>	<p>Permanent. Direct. ST/LT +</p>					<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>• Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood.</li> <li>• Alternative Transport – Where sites perform poorly against Public Transport Accessibility Level (PTAL), it is suggested that cycling / pedestrian provision is promoted to improve accessibility via alternative transport modes. This would increase accessibility to existing centres and increase the viability of site development.</li> <li>• Public Access – Public rights of way footpaths should be retained or diverted as these will be of community / local importance.</li> <li>• Site design – Development should ensure that construction / operation impacts don't adversely affect existing residential amenity.</li> <li>• Landscaping – It would be beneficial to ensure an attractively landscaped stand-off between main roads and new settlement for noise attenuation</li> <li>• Green Corridors – A green 'buffer' should be provided if the new settlement is too close to a neighbouring village, e.g. Manston. This should be incorporated as part of the design process.</li> <li>• Green Infrastructure – Development should incorporate green infrastructure, including green spaces (benefits for ecology, wellbeing)</li> <li>• Housing Mix – consider housing above retail and other facilities could be encouraged to reduce land take / maximise development opportunities.</li> </ul> <p>The integration of new settlements into existing settlement patterns is fundamentally affected by good levels of transport connectivity and treatment of green buffers and edges between built up areas.</p> <p>The incorporation of strong mitigation, such as those outlined above, would contribute towards ensuring that development is appropriate and commensurate with surrounding areas. The effects against all sites are therefore considered similar and are positive assuming that a robust design guide / development brief would be implemented for a new settlement option</p>

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
12. To conserve and enhance the character and quality of the area's landscape and townscape particularly associated with town centres and coastal areas.	Permanent. Direct. ST/LT +					<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>Landscaping – It would be beneficial to ensure an attractively landscaped stand-off between main roads and new settlement for noise attenuation.</li> <li>Green Corridors – A green ‘buffer’ should be provided if the new settlement is too close to a neighbouring village, e.g. Manston. This should be incorporated as part of the design process.</li> <li>Green Infrastructure – Development should incorporate green infrastructure, including green spaces (benefits for ecology, wellbeing).</li> <li>Housing Design – development should incorporate sympathetic, modern and novel designs where appropriate to create new and exciting landscapes and townscapes.</li> <li>Biodiversity – Ensure that settlements avoid any priority species / habitats, or incorporate them as protected features within overall site plans.</li> </ul> <p>The conservation of rural landscapes would be key for any new settlement to consider, in terms of its integration with the surrounding environment. There are considerable opportunities to enhance landscapes and townscapes through an effective design process.</p>
13. To preserve and enhance sites, features and areas of historic archaeological or architectural importance, and their settings.	Permanent. Direct. ST/LT --	Neutral 0	Permanent. Direct. ST/LT -	Neutral 0		<p>Assumptions regarding mitigation: N/A</p> <p>Site NS1 contains one scheduled monument and four listed buildings. In order to maximise the area for development, the ancient monument would be removed and/or its setting effected, as well as the setting of the four listed buildings being effected.</p> <p>Site NS3 contains one listed building. As with site NS1, for the development of NS3 to be maximised, the setting of the listed building would be effected.</p>
14. To improve air quality in areas where air quality (pollutant) levels exceed national standards.	Temporary / Permanent. Indirect. ST/LT ?					<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood.</li> <li>Alternative Transport – Where sites perform poorly against Public Transport Accessibility Level (PTAL), it is suggested that cycling / pedestrian provision is promoted to improve accessibility via alternative transport modes. This would increase accessibility to existing centres and increase the viability of site development.</li> <li>Public Access – Public rights of way footpaths should be retained or diverted as these will be of community / local importance.</li> <li>Landscaping – It would be beneficial to ensure an attractively landscaped stand-off between main roads and new settlement for noise attenuation</li> <li>Green Corridors – A green ‘buffer’ should be provided if the new settlement is too close to a neighbouring village, e.g. Manston. This should be incorporated as part of the design process.</li> </ul>

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
						<p>The development of a new settlement option away from existing settlements, has the potential to have mixed effects on local air quality and ultimately Air Quality Management Areas. Locating development away from congested roads within urban areas will help reduce congestion and therefore traffic related pollution. However, without improved integrated public transport provision, reliance on private car use will remain and could result in congested urban areas becoming the destination for many trips.</p> <p>With respect to landscaping, there is anecdotal evidence that certain types of planting can potentially reduce levels of PM10, though this should not be relied on to significantly affect pollutant concentrations. Conversely, it has also been suggested that landscaping and planting can potentially trap pollutants around road corridors, particularly as they can often be planted to mitigate wind effects. Therefore, careful consideration of landscaping design should be considered as part of the design process</p>
<p>15. To provide a sustainable public transport network that allows access to key facilities, services and employment opportunities without reliance on private vehicles.</p>	<p>Permanent. Indirect. ST/LT +</p>	<p>Permanent. Indirect ST/LT ?</p>		<p>Permanent. Indirect. ST/LT +</p>	<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and West wood Cross.</li> <li>Alternative Transport – Where sites perform poorly against Public Transport Accessibility Level (PTAL), it is suggested that cycling / pedestrian provision is promoted to improve accessibility via alternative transport modes. This would increase accessibility to existing centres and increase the viability of site development.</li> <li>Public Access – Public rights of way footpaths should be retained or diverted as these will be of community / local importance.</li> </ul> <p>For sites NS1, NS2 and NS5, additional bus services are required to serve the new settlement as there is a lack of existing services. However, the proximity to Minster railway station potentially provides strong rail links to Ramsgate, Broadstairs, Margate, Canterbury and London, which could improve accessibility to other employment markets in East Kent for residents in Thanet. Additionally, there is the potential to link local cycling routes with the Viking Coastal Trail cycling route to increase cycling provision and accessibility to Margate, Broadstairs, Ramsgate and Westwood Cross. However, given the location of the new settlement options, dependency on private car use will still exist, primarily due to the separation of the new settlement sites from existing centres and Westwood Cross. This would mean that increased public transport provision would be required in order to be able to rely on existing retail provision at Westwood Cross</p> <p>For sites NS3 and NS4 additional bus services would also be required to serve a new settlement, again due to the lack of existing services. This would be of paramount importance to secure in order to reduce future reliance on private car use. Again, given the location of the new settlement options, dependency on private car use will still exist, primarily due to the separation of the new settlement sites from existing centres and Westwood Cross. This</p>	

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
						would mean that increased public transport provision would be required in order to be able to rely on existing retail provision at Westwood Cross. Unlike sites NS1 and NS2, access to Minster station is achievable, but Manston Airport and the A299 act as a potential physical barrier that would require further intervention to mitigate.
16. To develop key sustainable transport links between Thanet and the wider Kent district and beyond, including road, rail and air.	Permanent. Indirect. ST/LT ?					<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>Public Transport – There will be a need to increase public transport provision from sites to existing service centres, including Margate, Broadstairs, Ramsgate and Westwood.</li> <li>Alternative Transport – Where sites perform poorly against Public Transport Accessibility Level (PTAL), it is suggested that cycling / pedestrian provision is promoted to improve accessibility via alternative transport modes. This would increase accessibility to existing centres and increase the viability of site development.</li> </ul> <p>Whilst the location of a new settlement option is likely to be removed from existing urban centres, the integration of public and alternative transportation links is important in reducing dependency on private car use, improving local air quality and increasing access to employment, facilities and services. A transportation hierarchy can be established that when implemented, addresses all transport needs. This will need to include making transport options compatible with each other, whilst offering safe infrastructure. For example, the separation of cycling and walking routes from highways should be promoted.</p> <p>The development of site NS5 would affect the future operational viability of the Manston airport, which would reduce air traffic into the area. However, there would be considerable opportunities to expand on other, potentially more sustainable modes of transport, such as rail.</p>
17. To reduce waste generation and disposal and achieve the sustainable management of waste	Permanent. Indirect. ST/LT ?					<p>Assumptions regarding mitigation: N/A</p> <p>Any new settlement development will result in an increase in waste production, which is likely to include both household and commercial waste. However, due to the scale of development there is an opportunity to implement effective waste management in the form of reducing and recycling waste at a large scale. Recycling facilities should be central to residential areas and monitored for use. To ensure that the amenity of residential areas don't suffer from neglected / overused bins.</p>
18. To ensure development within the District responds to the challenges associated with climate change.	Permanent. Direct. ST/LT +					<p>Assumptions regarding mitigation: N/A</p> <p>For all the potential new settlement sites, the opportunity exists to create modern, energy efficient and well-designed buildings that are future proofed from the effects of climate change in terms of flooding, solar gain and wind micro climate. Any design brief for a new settlement site should dictate that climate change resilience is central to the development of any scheme design.</p>

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
19. To ensure appropriate development control procedures in place to manage the risks of coastal erosion, coastal and fluvial flood risk, in accordance development management and NPPF.	Permanent. Indirect. ST/LT 0	Permanent. Indirect. ST/LT ?			Permanent. Indirect. ST/LT +	<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>Water / Drainage – If feasible, the use of grey water systems in place of grid connections could be encouraged.</li> </ul> <p>For all the potential new settlement sites, there is unlikely to be any specific risk of flooding, due to the separation from coastal areas and the lack of significant water bodies on or adjacent to sites.</p> <p>However, development of greenfield land is likely to promote surface run-off and reduce lag times, as increasing the amount of hard areas will reduce water penetration into the soils and groundwater.</p> <p>For NS1, this increased run off is unlikely to impact on existing residential properties, but for NS2, NS3 and NS4, there is a risk that increased run-off may affect existing residential properties without due consideration of sustainable drainage solutions. The Environment Agency would be unlikely to support a development proposal which did not make a concerted effort to employ sustainable drainage solutions.</p> <p>For NS5, there would be a beneficial effect as the brownfield site of the airport runway and associated hardstanding areas would be developed to higher surface water run-off standards.</p>
20. To conserve and enhance biodiversity.	Permanent. Direct. ST/LT ?			Permanent. Direct. ST/LT +	<p>Assumptions regarding mitigation:</p> <ul style="list-style-type: none"> <li>Biodiversity – Ensure that settlements avoid any priority species / habitats, or incorporate them as protected features within overall site plans.</li> </ul> <p>Development on greenfield land (NS1, NS2, NS3 and NS4) will reduce levels of habitat locally and may affect specific species. It is therefore important that any new settlement option should be informed by a preliminary ecological appraisal, which helps shape the development of any particular site, especially the mitigation required to reduce effects on biodiversity.</p> <p>As NS5 is a brownfield site, biodiversity could be enhanced with appropriate mitigation measures.</p>	
21. To protect and improve the quality of fluvial and coastal water resources, including European designated sites	Permanent. Indirect. ST/LT 0				Assumptions regarding mitigation: N/A	By removing the demand on sites closer to coastal areas, a new settlement option may have a small effect in ensuring that coastal environments are not jeopardised from over-development.
22. To reduce the global, social and environmental impact of consumption of resources by using sustainably produced and local products.	Permanent. Indirect. ST/LT ?			Assumptions regarding mitigation: N/A	All development will require resources, but it is possible to promote the use of locally resourced and sustainably produced materials in order to reduce the carbon footprint and energy requirements of products.	
	Permanent. Direct. ST/LT +				Assumptions regarding mitigation: <ul style="list-style-type: none"> <li>Housing Design – development should incorporate sympathetic, modern and novel designs where appropriate to create new and exciting landscapes and townscapes.</li> </ul>	

SA Objective	NS1	NS2	NS3	NS4	NS5	Commentary
<p>23. To increase energy efficiency and the proportion of energy generated from renewable sources in the area.</p>						<p>Any new settlement development will result in an increase in energy consumption within a particular area, but it is how that energy is produced and how efficiently it is used, which is key in terms of promoting a sustainable use of energy.</p> <p>Creating modern buildings that reduce the need for heating and power are key to reducing energy demand, as is ensuring that infrastructure such as street lighting is 'smart', using energy efficient light bulbs that could potentially be dimmed during the early hours of the morning.</p> <p>Onsite energy production can be achieved using CHP technology where suitable, but also using solar technology, which is common in Thanet. This reliance on renewable energy will reduce the demand on electricity from the National Grid.</p>





## 6 Summary

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The purpose of this study was to explore ways in which potential new settlement options may be made more sustainable through the implementation of robust mitigation. This was to identify how far sustainability could progress from the level achieved during the appraisal of Issues and Options during 2013. As little detail was known at this time regarding the potential locations and types of development constituting new settlements, this option for housing growth in Thanet scored poorly against the sustainability objectives.

The most recent Strategic Housing Needs Assessment<sup>4</sup> estimates that approximately 3,660 homes need to be provided in addition to those currently identified within the preferred option Local Plan. As such, the consideration of a new settlement option warranted further analysis to understand whether best practice mitigation might improve performance against the sustainability objectives. This best practice mitigation was taken from examples of local plans and masterplans undertaken within the UK, and should be considered integral for consideration within any new settlement development.

The re-evaluation of a new settlement housing option incorporating this mitigation resulted in the following results:

- Two sustainability objectives (objective 10 - reuse of previously developed land, and objective 13 – to preserve and enhance sites, features and areas of historic archaeological or architectural importance, and their setting) resulted in known adverse effects. This was due to the requirement to develop on greenfield land at sites NS1, NS2, NS3 and NS4, and the presence of a scheduled monument and listed buildings within sites NS2 and NS3. Note that objective 10 resulted in a positive impact at NS5.
- A number of previously negative scoring objectives, were now neutral or unknown effects. This indicated that the manner in which mitigation was secured and implemented played an important role in achieving sustainability within a new settlement development.
- By utilising mitigation measures such as grey water harvesting, dedicated cycle infrastructure, inclusion of renewable energy, etc., sustainability improvements could be achieved. These are likely to be cost-effective and would help secure sustainability credentials for any new settlement development.

For any future new settlement option, development should be fundamentally steered by sustainability principles. This is likely to require effective mitigation, such as that identified in this study and additional mitigation identified through further investigation, to be incorporated into a design guide, should a new settlement option be included within the Local Plan preferred options.