Application for North Falls Offshore Windfarm
Essex County Council (ECC) and Tendring District Council (TDC) Joint Response to ExQ1 issued on 4 February 2025

ExQ1	Question to:	Question:	ECC & TDC Response
1 General and Cross-topic Questions			
Q1.1.4	Local Authorities (LAs)	**Development Plan policies**	
		Confirm that you are content with the Applicant's policy analysis. The local planning authorities in responding to this question should also advise on whether there have been any changes to the Development Plan operative in their respective areas following the submission of the Application for the Proposed Development and/or as to whether any changes are anticipated prior to 28 July 2025, the latest date by which the Examination must be completed.	TDC is not content with the Applicant's policy analysis in some areas of their supporting statements. Section 1.10 and Table 5.5 of the Environmental Statement – Policy and Legislative Context (APP-017) omit a significant number of highly relevant TDC Local Plan policies. TDC is concerned that the Applicant has not fully considered all applicable provisions and policies from Sections 1 and 2 of the current *TDC Local Plan 2013-2033 and Beyond*. A comprehensive list of missing policies is provided in *Appendix 1* of the Local Impact Report (LIR) [REP1-065]. Furthermore, the Applicant incorrectly refers to the *Ardleigh Neighbourhood Plan* as a 'draft' document, the *Ardleigh Neighbourhood Plan* has been 'made' and formally adopted in October 2024. The Applicants consultants have acknowledged the above during recent virtual meetings and confirmed that they will attend to these omissions. There have been no changes to the TDC Development Plan policies since the submission of the DCO Application for the *North Falls Development*. Additionally, TDC does not anticipate any relevant policy changes before July 2025.
Q1.1.5	LAs	**Neighbourhood Plans**	
		In addition to the Ardleigh Neighbourhood Plan, are there other any relevant made or emerging neighbourhood plans that the ExA should be aware of? If there are, please:	

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		(i) Provide details, confirming their status and, if they are emerging, the expected timescales for their making.	There are no other Neighbourhood Plans, apart from the adopted *Ardleigh Neighbourhood Plan*, referred to above, that the ExA should be aware of. The *Ardleigh Neighbourhood Plan* was made in October 2024 and now forms part of the *TDC Development Plan*. The relevant Ardleigh Neighbourhood Plan policies will be referred to in the Applicants revised Environmental Statement updates (of relevant areas). Copy of *Ardleigh Neighbourhood Plan* is attached at **Appendix 1**.
		(ii) Provide copies of the relevant parts of any made plan or emerging plan.	
		(iii) Indicate the weight that you consider should be given to these documents.	
		(iv) Please also provide an update as regards the status of the Ardleigh Neighbourhood Plan and whether there have been any changes to relevant policies.	
Q1.1.6	LAs	**Updates on other development**	
		Provide an update on any planning applications that have been submitted or any permissions that have been granted following the submission of the Application for the Proposed Development which could either affect the Proposed Development or be affected by the Proposed Development and whether those developments would affect the conclusions reached in the Environmental Statement (ES)**.**	TDC can confirm that there are no relevant planning applications submitted or permissions granted since the submission of the Proposed Development application that could affect or be affected by the Proposed Development.
1.2 Environmental Statement (General)			
Q1.2.1	The Applicant	**Cumulative effects/impacts - ecology**	
	Relevant LA	In relation to cumulative effects/impacts, please provide or signpost the following:	
		(i) Confirmation of up to date/updated figures for each offshore ecological related ES chapter (or one overarching figure which supersedes those) showing the location, and labelling, of all developments screened into the cumulative effects assessment.	

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		(ii) A figure/plan showing the location of, and labelling, all developments screened into cumulative assessments overall. The Applicant will need to include/address any further relevant plans/projects since the original ES study was undertaken if it is warranted allowing for all Local Planning Authority responses/other IP submissions.	
		(iii) Are all relevant Planning Authorities content with what plans/projects have screened in/out of the ES cumulative assessments made by the Applicant? If not highlight/explain any omission/potential inclusion. This will need to be re-assessed by you in accordance with the adopted ExA's Timetable until close of the Examination period.	ECC and TDC are content with the list.
		(iv) Paragraph 395 of ES Chapter 13 [APP-027] states that the cut-off for inclusion of other OWFs in the cumulative assessment of offshore ornithology was March 2024. Paragraph 396 states that for the proposed Five Estuaries, Dogger Bank South and Outer Dowsing OWFs data has been used from the respective PEIRs rather than the submitted ESs. Moreover, Table 12.95 of ES Chapter 12 (3.1.14) [APP-026] indicates that the same approach was used for the cumulative assessment of marine mammals. Allowing for the published ES data associated to those nearby OWFs, and given the broad principle of scheme collaboration is indicated by NE as being beneficial, is any cumulative conclusion of the Applicant's ES warranted for update having regard to the worst case scenarios for all ecological effects/impacts for this development? The	

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		Applicant is requested to undertake a review of this.	
1.4 Code of Construction Practice			
Q1.4.2	LAs	**Outline Code of Construction Practice (**OCoCP)	
		The OCoCP [APP-248] provides the strategy for the mitigation and control of potentially adverse effects arising from the onshore construction activities. Please confirm whether you are satisfied that the OCoCP is sufficiently robust, precise and enforceable to provide effective mitigation of potential adverse effects.	There appears to be no direct reference to protection of existing trees and other vegetation on site, no reference to protective fencing around appropriate trees and other vegetation to be conserved, no reference to preventing storage of materials etc around conserved trees and vegetation etc. No reference to a relevant Tree Survey or Tree Protection plan. If this information is contained within the OLEMP or other document, than the relevant paragraphs or plan numbers should be referenced in this document under a separate heading e.g. Trees and Vegetation to be Conserved, to demonstrate their importance at the construction stage. TDC has specific concerns regarding Section 1.3.1 on working hours and the timing of works. The OCoCP currently states: • Construction work for onshore works must only take place between 07:00 and 19:00, Monday to Saturday, with no activity on Sundays or Bank Holidays, except as specified. • Between 13:00 and 19:00 on Saturdays, no "high impact" activities (e.g., piling/breaking out) shall occur unless exceptional circumstances apply. TDC considers these provisions to be outside the standard working hours typically applied within the district. To ensure

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			effective mitigation of potential adverse effects from onshore construction activities, and respite for nearby affected residents, we propose the following amendments: • No vehicles associated with the works should arrive on-site before 07:30 or leave after 19:00, except in emergencies. • Working hours for high-impact (noisy) activities should be restricted to 08:00–18:00, Monday to Friday, and 08:00–13:00 on Saturdays. • No construction activity of any kind should be permitted on Sundays or Public/Bank Holidays. These amendments align with local standards and would enhance the robustness, precision, and enforceability of the OCoCP, ensuring effective mitigation of potential adverse impacts on directly affected residents and the surrounding community.
Q1.4.3	LAs	**Works outside of general working hours**	
		Paragraph 51, OCoCP [APP-248], in the context of when work is required outside of the working hours specified in Paragraph 46, includes that *"The relevant local planning authorities will be advised of the likely timetable of works".* Is it sufficient for the LA to be advised of the likely timetable for these works or should this be changed so that works, outside of the hours specified in Paragraph 46, are to be agreed with the relevant planning authority in writing in advance and must be carried out within the agreed times?	Given the concerns previously raised in respect of the impacts of construction hours, construction work and noise on nearby affected residents and communities, TDC is of the view that any works outside of agreed working hours should be subject to a written agreement in advance of such work taking place. Such agreement shall include the type of work to be performed, the frequency / length of time, and the noise levels likely to be generated by the works to be performed.

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Q1.4.5	LAs and Parish Councils	**General working hours and working hours in proximity to residential properties**	
		Paragraph 46, OCoCP [APP-248], states the working hours as “Construction work for the onshore works must only take place between 0700 hours and 1900 hours Monday to Saturdays, with no activity on Sundays and bank holidays, except as specified below.” Are you content with the working hours proposed or whether tighter working hours should be sought in certain locations that affect residential properties?	See response to Q1.4.2 . TDC is not content with the proposed working hours. A schedule of 0700-1900, six days per week, provides little respite and could significantly harm the living conditions of nearby residents. Therefore, tighter working hour restrictions should be implemented in locations affecting residential properties.
2 Agriculture and other land uses, ground conditions and soils			
Q2.1.13	Essex County Council	**Mineral Safeguarding Areas (MSA)**	
		Are you satisfied with the Minerals Resource Assessment [APP-113] and the assessment of impact on the MSA as set out in 19.6.1.4 and 19.6.2.3 of Chapter 19 [APP-033]?	ECC is satisfied with the findings of the assessment.
5 Climate Change and Resilience			
Q5.1.9	Essex County Council and Tendring District Council	**Cumulative Climate Effects Assessment**	
		The ES Chapter 33 [APP-047] Table 33.28 provides a summary of projects considered for the Cumulative Effects Assessment (CEA) in relation to climate change. Please confirm that those applications referred to as being within the remit of your Council have been appropriately recorded and excluded from the CEA.	ECC and TDC are content with the list.
6 Compulsory Acquisition			

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Q6.1.35	Affected Persons/Interested Persons	**Known inaccuracies**	
		(i) Are any Affected Persons or Interested Parties aware of any inaccuracies in the BoR [AS-026], SoR [AS-028] or Land Plans [AS-018]?	No comments.
		(ii) If so, please set out what these are and provide the correct details.	
Q6.1.37	London Gateway Port, Centrica plc, Eastern Power Networks, Apatura Limited, Thorpe Park Solar Farm Limited, Essex County Council (as highway authority), Openreach Limited.	**The acquisition of Statutory Undertakers' land and extinguishment of rights and removal of apparatus – s127 and s138 PA2008** The relevant Statutory Undertakers are requested to set out their views as to whether the s127 and 138 PA2008 tests would be met or indicate and whether they are content with the protective provisions set out in the dDCO [AS-022]?	Protective Provisions on highway is also required, alongside a Framework Highway Agreement to be discussed with the applicant. The same approach has been applied to the Five Estuaries DCO.
7 Cumulative Impacts			
		Noise mitigation for cumulative effects	

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Q7.1.4	Tendring District Council	Paragraphs 100 and 101, OCTMP [APP-251] describe the baseline noise level monitoring and present a list of proposed mitigation measures that could be agreed to reduce the effect to a level that is not significant in the event of cumulative effects from Five Estuaries and / or Norwich to Tilbury. Please confirm if you are content with the procedures outlined in paragraphs 100 and 101?	TDC acknowledges that the noise assessment previously considered the impact of vehicle movements on highways, including the implementation of a temporary speed limit on Bentley Road as a key mitigation measure. The OCTMP [APP-251] appears to propose additional mitigation measures and noise monitoring to manage cumulative noise impacts effectively. Given these enhancements, TDC is satisfied that the proposed mitigation measures are sufficient to ensure noise levels remain non-significant in cumulative impact scenarios. Therefore, we have no further comments at this stage.
8 Design			
Q8.1.7	The Applicant, Local Authorities	**Design Mitigation – Earthwork Bunds** Although not proposed, the ExA notes that various RRs from IPs in close proximity to the OnSS state a preference for earthwork bunding as mitigation [RR-227]. These could screen and reorientate views in sensitive locations. Please can the Applicant comment on how the use of earthwork bunds would be reviewed on a location-by-location basis.	In relation to the use of bunds generally, in landscape character and visual impact terms, bunding is out of keeping with most local landscapes and should primarily be used away from visual receptors and be carefully designed to have shallow slopes (1:5 maximum) in order to ensure they blend with the surrounding landscape. Steeper slopes are also harder to establish vegetation on and can suffer from erosion and/or tree losses due to roots being raised above the water table. There could be a place for bunds being used as a temporary measure during construction.
9 Draft Development Consent Order (DCO)			
9.1 Articles			

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9.2 Schedule 1 – Authorised Development			
Q9.2.7	LAs	**Requirement 5 Substation works**	
		(i) Please confirm that you are content with the Design Vision [APP-234] and the Design Process – Post-DCO Consent shown in Section 1.6 of that document required to develop the detailed design for approval under R5?	(i) The Design Vision [APP-234] purports to set out a strong vision in relation to landscape and the proposed enhancement opportunities the project presents. (Para 1.1.1). However, we remain sceptical as to whether the proposals offer a strengthening of landscape character when the site and its immediate setting are changed from an open, agricultural landscape to an industrial one fringed by vegetation. The landscape is more than the features at its boundaries, and the visualisations by the applicant show that, even after 15 years, there will remain views of the tops of the structures of the installation. Para 1.3.4 OLEMP (APP1-036) provides one of two main documents that identify the landscape strategy and proposals alongside the Landscape and Visual Impact Assessment [APP-044). However, there is no spatial plan associated with the OLEMP. The written document cannot be read in isolation to the layout and spatial extent of the mitigation. It makes the text generic and meaningless. The only landscape strategy plan so far appears to be the Landscape Mitigation Plan (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)).This plan dates from June 2024. The Landscape and Visual Impact Assessment [APP-044) makes reference to the Landscape Mitigation. The Design Vision in contrast, in '*Section 1.5 Design Process - Prior to DCO Submission'* references an Outline Landscape Masterplan Figure 20. This masterplan identifies a series of fragmented buffer planted areas that do not follow the

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			current landscape or boundary structure. It does not optimise the objectives of the Essex GI Strategy. In our LIR (REP1-065), we stated that delivery of GI should adhere to the 'Lawton Principle' which advocates for a landscape-scale approach to conservation and the enhancement of connection between green sites- either through physical green corridors or through 'stepping-stones'. A bigger, better, and connected approach to GI delivery ensures the delivery of multiple functions and benefits to people and wildlife. We also identify how our understanding is that the Design Council Design Review Panel called for this approach and for the project team to think outside the red line boundary to create an integrated landscape approach which could include the planting of trees and renewal of hedgerows in the wider landscape area. This is confirmed in Paragraph 6.4.7, but we do not see how this feeds into the Landscape Strategy as claimed at 6.4.10. Works outside the project boundary could be facilitated through creation of a compensation fund that could be administered by local partners such as TDC, ECC, EWT, local parishes and landowners. Our judgement is that the scheme does not, as advised, move beyond a mitigation strategy to respond holistically to its context. The design does have the advantage of providing screening to the northern boundary and identifies the parameter of 20m width for the woodland buffer. The cross-section BB' and GG' on Pages 39 and 40 demonstrate that the top of the installation would still be visible once the vegetation has matured. Cross sections CC' and EE' do not show the installation so are meaningless. Sections DD' and FF' do not show a receptor so are meaningless.

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			The Design Vision [APP-234] and the Design Process – Post-DCO Consent outlined in Section 1.6 of the document seems a reasonable baseline pulling together the relevant environmental and ecological information to inform and developing the detailed design for approval under Requirement 5. It outlines how design parameters, landscape and ecological mitigation and enhancements, and biodiversity net gain measures interact to create a vision for the development. The document references several supporting documents, including the Environmental Statement, Outline Landscape and Ecological Management Strategy, and Biodiversity Net Gain Strategy. It has evolved based on greater detail about the project and site constraints, as well as feedback from key stakeholders. It is welcomed that as part of the Design vision that they will continuing to engage with Five Estuaries to develop the co-located site of the substations. Additionally, welcome the reference to the Essex Green Infrastructure Strategy as part of the design guidance documents which will be used in the development of the onshore substation where relevant. We would recommend consideration of the Essex Green Infrastructure Standards (2022). The Essex GI Standards outlines nine principles and standards for the protection, enhancement, creation, and management of GI in Essex. The application of these principles and standards through development management and planning policy will ensure the delivery of multifunctional, accessible high-quality GI. The National GI Framework Planning and Design Guidance offers evidence-based, practical advice on planning and designing effective

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			GI. It serves as a complement to both the National Model Design Code and the National Design Guide.
		(ii) Does R5 provide sufficient control for all design aspects?	(ii) It is recommended that under requirement 5 that the list of the details work to include a bullet point for the delivery of landscaping and ecological enhancements to ensure the landscaping, BNG and GI delivery is part of the onshore substation design as set out in the Design Vision.
		(iii) Should the Design Vision be a separate certified document within Schedule 12 Part 3 of the dDCO [AS-022]?	(iii) As the Design Vision includes the main landscape design strategy, which is not identified in any other documents, it would be preferable if the Design Vision was a certified document in the dDCO.
		(iv) The Design Vision paragraph 1.4.3 refers to the production of a Design Guide to inform the detailed design proposals. Should the production of that Design Guide be specifically secured by the dDCO?	(iv) As the Design Guide will identify detailed landscape guidance that will help deliver the main landscape strategy, it would be preferable if the Design Guide was secured in the dDCO, in line with requirement 5 and requirement 7: Provision of landscaping..
Q9.2.17	The Applicant, LAs	**Requirement 19 Onshore build options**	
		R19(1) appears to be designed to restrict the authorised development to one only of Build Option 1, 2a or 2b.	
		(i) There would seem to be a typographical error as the clause uses “and” instead of “or” between 2a and 2b and there is no “or” between 1 and 2a. Please review and amend accordingly.	
		(ii) Following notification to the LA under R19(2) should it be specified that thereafter no other option may be commenced?	
		(iii) Please explain how it is intended that R19 should operate in the event that the VEOWF DCO were to be made and commence development before NFOWF, or alternatively, that the NFOWF DCO were to be made and commence development first. Does the Requirement need	The Councils will respond at Deadline 3.

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		amendment to preclude other options in those circumstances, or is it sufficiently robust as it stands?	
		(iv) To provide clarity in the event that Build Option 1 is the chosen option, should a revised set of Onshore Works Plans also be submitted to the relevant local planning authority to indicate precisely the land required to implement that 'lesser' option in land-take terms?	The Councils will respond at Deadline 3.
10 Ecology			
10.1 Baseline/information			
Q10.1.2	Natural England	**Baseline Information – Stour and Orwell SPA and Ramsar**	
	Relevant Councils	(i) Are NE/Relevant Councils satisfied that the full features/basis of the Stour and Orwell SPA/Ramsar are recognised by the Applicant?	No comments as this is a matter for Natural England.
		(ii) If not the ExA requests updated background information explaining the full features/basis to inform the overall Examination.	
		(iii) For the Stour and Orwell Ramsar - the ExA notes that this has been screened out for Habitat Regulation Assessment (HRA) purposes by the Applicant. However, there are bird varieties which are qualifying species akin to the SPA. Therefore, do NE/Relevant Council's agree with the screening out of the Ramsar site from HRA? State your reasons why either way.	
Q10.1.6	The Applicant	**Cumulative impacts/Co-ordination/In-combination assessments**	

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	Natural England (NE) Nature Scotland (NS) Suffolk County Council (SCC) Relevant Local Authorities IPs	The ExA highlights the variance between different relevant project design life spans referred to in the wider vicinity. The North Falls the project lifespan is stated to be 30 years, for Five Estuaries 20-40 years, and National Grid Electricity Transmission 40 years, respectively. Moreover, the ExA acknowledges that Suffolk County Council (SCC) have stated in their RR that they are seeking a "*coordinated approach between different proposed offshore windfarm projects and multi-purpose interconnector projects within the vicinity of this project*" (including the Norwich to Tilbury project). The ExA also notes the 'golden rules' stated to be applied for site selection, including The Crown Estate's Cable Route Protocol, the national grid's Horlock Rules (for the siting of substations) and Holford Rules (for the siting of transmission infrastructure), as well as NPS EN-1, EN-3 and EN-5 and other relevant planning considerations which are presented in ES Appendix 4.1 (Document Reference: 3.3.1.1). That said, the cumulative impacts of the Proposed Development and two other associated Nationally Significant Infrastructure Projects – Five Estuaries and the East Anglian Connection Node as part of the Norwich to Tilbury upgrade are cited as not being properly considered by IPs (including the RR of Tendring District Council). They suggest greater integration on all NSIP projects could negate the need for onshore transmission.	Whilst we are satisfied that North Falls have worked in partnership with other NSIP applicants including sharing ecological data on cable corridors, greater interaction would have avoided the situation where 2 separate landscaping layouts on land surrounding the substations despite the agreement to share BNG.

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		(i) **Applicant/NE/SCC/IPs** – Clarify if the Applicant's cumulative impact assessments properly factor scheme variance between operational and decommissioning stages?	
		(ii) **Applicant** –when are any updates expected giving a further assessment of the effects of the variance? Explain any position to the contrary of not providing updates.	
		(iii) **SCC/Relevant Planning Authorities** - Have your overarching preferences been met with respect to ecological impacts including avoidance, mitigation, and compensation triggers/outcomes? If not explain the specific reasons why.	
10.2 Ecological Enhancement			
Q10.2.1	The Applicant	**Ecological Enhancement/ BNG Strategy**	
	All relevant Councils IPs	The ExA notes the content of the submitted BNG Strategy, July 2024 [APP-257]. The statutory provisions relating to BNG in Nationally Significant Infrastructure Projects (NSIPs) (i.e. section 99 and Schedule 15 of the 2021 Act) are not yet in effect and are not anticipated to come into effect until late 2025. Nonetheless, biodiversity interests and the wider policy/ statutory context those interests sit within, remain important and relevant considerations whereby significant enhancement could still potentially be secured. In that the context:-	

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		(i) The report sets out the strategy of assessing and securing BNG for 'onshore' elements on land and a minimum 10% BNG delivery is referred to. The figure is low. Could a more ambitious percentage figure not be pursued? What are the precise reasons why a more ambitious upper/lower figure band has not been utilised the starting point.	(i) In our LIR (REP1-065), we stated that delivery of GI should adhere to the 'Lawton Principle' which advocates for a landscape-scale approach to conservation and the enhancement of connection between green sites- either through physical green corridors or through 'stepping-stones'. A bigger, better, and connected approach to GI delivery ensures the delivery of multiple functions and benefits to people and wildlife. In that respect we would argue that in principle BNG should exceed 10% and that further delivery should be sought close to and be connected to the onsite BNG wherever possible. The Design Council Design Review Panel called for this approach into the landscape strategy and for the project team to think outside the red line boundary to create an integrated landscape approach which could include the planting of trees and renewal of hedgerows in the wider landscape area. July 2024 (APP-257) sets out a strategy for assessing and securing BNG for 'onshore' elements and aims only for delivery of minimum 10 per cent. A GI Plan (APP-134) has been produced and this should adhere to the 'Lawton Principle' which advocates for a landscape-scale approach to conservation and the enhancement of connection between green sites – either through physical green corridors or through 'stepping stones'. A bigger, better, and connected approach to GI delivery ensures the delivery of multiple functions and benefits to people and wildlife. In that respect we would argue that in principle BNG should exceed 10% and that further delivery should be sought close to and be connected to the onsite BNG wherever possible.

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The BNG Strategy (APP-257) summarised the potential net gains for options 1 (project alone) and 2 (joint with Five Estuaries), which both options will result in significant net gains for habitat and hedgerow beyond the 10% minimum. However, the BNG strategy indicated a net loss of -0.26 units (-29.19%) of watercourse. The BNG Technical Note (REP1-050), submitted with the Deadline 1 submissions, has recalculated the BNG units, leading to a significant reduction in provision. The project alone fails to meet the statutory 10% requirement for habitat and watercourses. However, it just meets the 10% statutory requirement for habitats within the joint option. Therefore, additional investigation into achieving a positive net gain for habitat and watercourses is necessary.
<table>
<tr><th></th><th>Option 1 (project alone) APP-257</th><th>Option 1 REP1-050</th><th>Option 2 (Joint) App-257</th><th>Option 2 REP1-050</th></tr>
<tr><td>Habitat</td><td>+96.81%</td><td>+6.77%</td><td>+33.91%</td><td>+10.71%</td></tr>
<tr><td>Hedgerow</td><td>+76.63%</td><td>+16.78%</td><td>+337.23%</td><td>+35.61%</td></tr>
<tr><td>Watercourses</td><td>-29.19%</td><td>-6.26%</td><td>-29.19%</td><td>-14.31%</td></tr>
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The Essex Local Nature Partnership commissioned a study to explore the viability assessment of biodiversity net gain in Essex. The “Viability Assessment of Biodiversity Net Gain in Essex” report evaluates the feasibility of increasing biodiversity net gain (BNG) from 10% to 20% in Essex. This looks at residential commercial and NSIPs. The assessment reveals that the additional costs for achieving 20% BNG are relatively low for both residential and commercial developments, with minimal impact on
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			development viability and land value. The report includes a case study on the Norwich to Tilbury (N2T) project, highlighting manageable costs for 20% BNG. The report concludes that a shift to 20% BNG is viable and recommends local authorities consider both onsite and offsite BNG solutions, engage with local landowners, and ensure a balanced approach to managing biodiversity units.
		(ii) Can the Applicant set out how potentially it could further boost and achieve meaningful overall biodiversity enhancements above the minimum 10% level it is referring to? Is it technically/financially possible to do that? If not, state why not.	(ii) ECC is the 'Responsible Authority' for delivering the Essex Local Nature Recovery Strategy (ELNRS) working closely with the Essex Local Nature Partnership to provide direction and ensure key stakeholders are engaged. The emerging LNRS will form the baseline for habitat information, which in turn will generate action to promote biodiversity management and improvement (including identifying strategic opportunity areas) and will provide further useful information. The LNRS plays a crucial role in Biodiversity Net Gain (BNG) by offering a strategic approach to off-site BNG delivery. The LNRS includes strategic opportunity maps highlighting areas with the highest potential for environmental benefits for new habitat creations across Essex. Sites of strategic significance offer a 15% uplift in biodiversity units compared to other sites, providing a 15% bonus on units purchased in these locations. The ELNRS is set to be published and adopted in July 2025. Although the maps are not yet made publicly available, the ELNRS includes two main types of maps: • Areas of Particular Importance for Biodiversity (APIB) Maps: These maps highlight national conservation sites, local nature reserves, local wildlife sites, and irreplaceable habitats in Essex,

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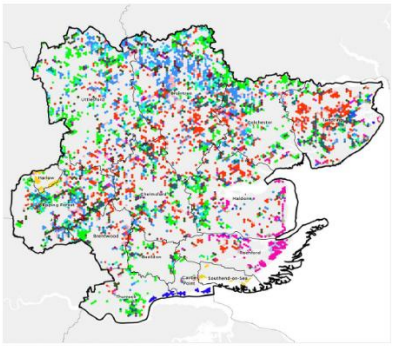
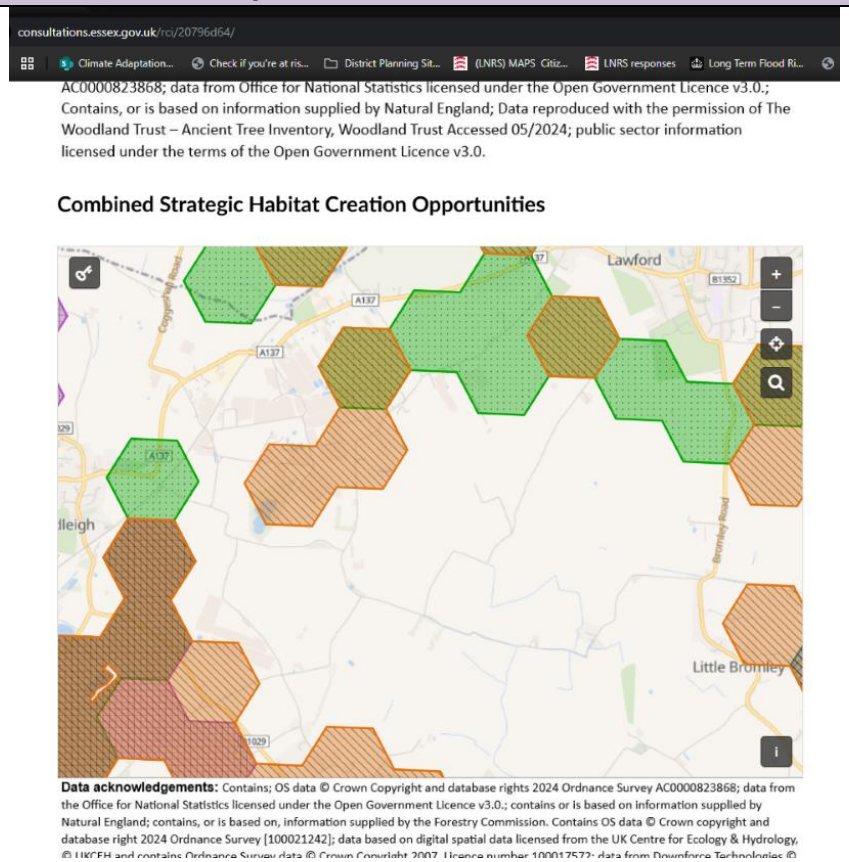
			covering a total of 56,226.27 hectares, which is 14% of the county. • Opportunity Maps: These maps identify areas in Essex that could become important for biodiversity and help connect existing habitats. They outline potential measures to create larger, better-connected habitats in line with biodiversity priorities. The opportunity maps in the Essex Local Nature Recovery Strategy (LNRS) are divided into two types: • All Creation Opportunities Maps: These maps show all locations of particular importance for biodiversity, including areas that overlap with Areas of Particular Importance for Biodiversity (APIB). • Strategic Creation Opportunities Maps: These maps highlight the top locations within all available opportunities that have the greatest potential to benefit nature and the environment. These strategic sites, selected by Local Authorities, are eligible for a 15% uplift on standard biodiversity units and do not overlap with APIBs. They cover 119,172.53 hectares (30.18% of Essex) and aim to increase green and blue infrastructure to 25% of Essex by 2030. Below is a screen shot of the All Creation Opportunities maps taken from the consultation document

ExQ1	Question to:	Question:	ECC & TDC Response
			5.3 Opportunity maps  Data acknowledgements: Contains: OS data © Crown Copyright and database rights 2024 Ordnance Survey AC0000825868; data from the Office for National Statistics licensed under the Open Government Licence v3.0.; contains, or is based on information supplied by Natural England; contains, or is based on, information supplied by the Forestry Commission. Contains OS data © Crown copyright and database right 2024 Ordnance Survey (100021242); data based on digital spatial data licensed from the UK Centre for Ecology & Hydrology, © UKCEH and contains Ordnance Survey data © Crown Copyright 2007, Licence number 100017572; data from Downforce Technologies © 2023; data from © Wildfowl & Wetlands Trust (WWT) copyright and / or database right 2023. All rights are reserved.; data reproduced with the permission of RSPB. © Crown Copyright. Ordnance Survey licence number 100031767 (2023); data from Buglife – The Invertebrate Conservation Trust; © Environment Agency copyright and/or database right 2020. All rights reserved.; © Marine Management Organisation (MMO) copyright and/or database right 2020. All rights reserved.; public sector information licensed under the terms of the Open Government Licence v3.0. 34 Map 3: **Combined Strategic Creation Opportunities** **Areas that could become of particular importance – 'strategic' combined habitat creation opportunities.** Analysis results presented as a generalised 0.25km² hexagonal grid and categorised by habitat type. All combined 'strategic' habitat creation opportunities cover 30% of the Greater Essex LNRS region. APIBs removed. ABIPS removed from all categories, apart from 'Strategic Sites selected by Local Authority'. Key Woodland Only (1) Grassland Only (1) Freshwater Standing Water Only (1) Freshwater River Buffer Only (1) Coast Only (1) Marine Only (1) Strategic sites selected by Local Authority only (1) Woodland and Grassland (2) Woodland and Freshwater Standing Water (2) Woodland and Freshwater River Buffer (2) Woodland and Coast (2) Grassland and Freshwater Standing Water (2) Grassland and Freshwater River Buffer (2) Grassland and Coast (2) Grassland and Strategic sites selected by Local Authority (2) Freshwater Standing Water and Freshwater River Buffer (2) Freshwater Standing Water and Coast (2) Freshwater River Buffer and Coast (2) Marine and Strategic sites selected by Local Authority Woodland, Grassland and Freshwater Standing Water (3) Woodland, Grassland and Freshwater River Buffer (3) Woodland, Grassland and Coast (3) Woodland, Freshwater Standing Water and Freshwater River Buffer (3) Woodland, Freshwater Standing Water and Coast (3) Grassland, Freshwater Standing Water and Freshwater River Buffer (3) Grassland, Freshwater Standing Water and Coast (3) Grassland, Freshwater River Buffer and Coast (3) Grassland, Coast and Marine (3) Freshwater Standing Water, Freshwater River Buffer and Coast (3) Woodland, Grassland, Freshwater Standing Water and Freshwater River Buffer (4) Woodland, Grassland, Freshwater Standing Water and Coast (4) Woodland, Grassland, Freshwater River Buffer and Coast (4) Woodland, Freshwater Standing Water, Freshwater River Buffer and Coast (4) Grassland, Freshwater Standing Water, Freshwater River Buffer and Coast (4) Grassland, Freshwater Standing Water, Freshwater River Buffer and Strategic sites selected by Local Authority (4) Woodland, Grassland, Freshwater Standing Water, Freshwater River Buffer and Coast (5) 35 The following is a zoomed-in view of the Combined Strategic Habitats creation maps. While there are no strategic opportunities identified for the substation area that are eligible for a 15% uplift on standard biodiversity units, the maps do show nearby habitats such as freshwater and grassland connectivity opportunities. However, the all creation opportunities map may offer a broader scope of the types of habitat opportunities that could be implemented to connect to wider GI/landscape network for the area.

ExQ1	Question to:	Question:	ECC & TDC Response
			 (key: green is grassland and orange is freshwater habitats).
		(iii) Explain what scope remains for the proposed DCO Scheme to further complement existing ecological and biodiversity initiatives within the local areas the scheme passes through. If relevant local/ regional or national initiatives have not been fully considered to date, provide an update on how potential integration could be achieved.	

ExQ1	Question to:	Question:	ECC & TDC Response
		(iv) Does the Applicant agree that s106 (Town and Country Planning Act 1990) obligation/agreement use involving a commuted sum mechanism or other bespoke mechanisms via s111 (Local Government Act 1972) to facilitate local biodiversity enhancements may be a feasible/ suitable option available? If not explain why not.	
Q10.2.2	The Applicant	**Ecological enhancement/BNG Strategy**	
	All relevant Councils	The ExA highlights that the UK Biodiversity Action Plan was superseded but relevant woodland priority status remains under the Natural Environment & Rural Communities Act 2006 (NERC) Sect 40 with a "Duty to conserve and enhance biodiversity" and Sect 41 – "List of habitats and species of principle importance in England". The Forestry Commission via its representation have suggested further woodland planting, with maintenance being secured for a period of 10 years. Hedgerows, individual trees and woodlands within a development site should also be considered in terms of their overall connectivity between woodlands affected by the development.	As stated in our LIR (REP1-065), ECC promotes the delivery of GI though the 'Lawton Principle' which advocates for a landscape-scale approach to conservation and the enhancement of connection between green sites- either through physical green corridors or through 'stepping-stones'. A bigger, better, and connected approach to GI delivery ensures the delivery of multiple functions and benefits to people and wildlife. We support the requirement to explore the opportunities for additional woodland planting, ensuring maintenance is secured for a 10-year period and the connectivity between hedgerows, individual trees and woodlands within a development site. The Essex LNRS opportunity area mapping also included woodlands and will highlight potential connectivity opportunities.
	IPs		

ExQ1	Question to:	Question:	ECC & TDC Response
		For example, the creation of some larger woodland blocks and hedgerow/hedgerow trees between the existing woodland blocks on site, to ensure maximum gains to increase habitat connectivity and benefit biodiversity across the whole site, not solely in specific areas just to be used as screening could be undertaken. This could involve bunded areas also. The ExA is seeking the Applicant to fully explore such options within the Examination period alongside the subsequent mechanisms of delivery with the overarching aim of maximising nature recovery.	Big Green Internet There is a Big Green Internet project aiming to plant and connect the woodlands from Tendring to Epping Forest, which potentially the path of this proposal may well pass through and the opportunities to contribute and the potential effects should be considered. https://thebiggreeninternet.co.uk/our-journey/ New Tree Planting and their early establishment The Environmental Management Plan to include measures for early establishment of new trees to be considered at the time of planting, which is often insufficient leading to poor survival rate of young trees. This should include weeding, mulching and watering. All newly planted trees with a trunk diameter of 6cm or more will be watered for three years via a buried watering tube, irrigation bag or irrigation well; applying 60 litres per visit, at least 14 times between May and September. Mulch, stakes, ties and weed establishment will also be inspected and actioned as required. Stakes and ties should be removed 3 years after planting.
Q10.2.3	All relevant Council's (including Suffolk County Council/ East Suffolk District Council/ Essex County Council)	**Ecological Enhancement/ BNG Strategy** (i) All relevant Council's (including Suffolk County Council/East Suffolk District Council/Essex County Council)/Essex Wildlife Trust/RSPB/NE/Forestry Commission/National Trust/IPs submit your views on seeking any further ecological enhancement/ facilitating BNG, or wider environmental gains inclusive of any future proofing (even if dual purpose for meeting wider design principles, climate change/adaption and resilience purposes) which may be desirable including regard expected local climatic conditions.	(i) As stated above and in the LIR (REP1-065), ECC promotes the delivery of GI through the 'Lawton Principle' which advocates for a landscape-scale approach to conservation and the enhancement of connection between green sites, either through physical green corridors or through 'stepping-stones'. A bigger, better, and connected approach to GI delivery ensures the delivery of multiple functions and benefits to people and wildlife. The ES and dDCO page 41 (par ix in connection with such Work Nos. 4B, 4C, 4D, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14)

ExQ1	Question to:	Question:	ECC & TDC Response
	Essex Wildlife Trust RSPB Natural England Forestry Commission National Trust Marine Management Organisation IPs		recommend other ecological enhancements not captured by the metric, such as bird and bat boxes and hibernacula. These enhancement and mitigation measure identified, along with landscaping are instrumental in producing quality GI, therefore all these GI threads should be carried through to detail stages of the application and secured through suitably worded condition. GI should be considered and prioritised throughout the planning process to ensure it is effectively designed and integral to the whole development from the outset. Through the right design, right GI, and right location of GI it can deliver more than one function and contribute to more than one priority, providing cost efficiency in the long term to deliver better outcomes
		(ii) Submit your views on boosting the level of BNG or other ecological enhancement proposals that could be delivered factoring all relevant local initiatives and scope to secure betterment. This may be linked to existing development plans, planned revisions to those, or stand-alone initiatives.	(ii) See response to Q10.2.1 in relation to the Final Report of the Viability Asessment of Biodiveristy Net Gain in Essex (2024, **Appendix 2**) for 20% and the emerging Essex Local Nature Recovery Strategy set to be published Summer 2025, which will identify areas of current importance for biodiversity and strategic opportunity locations for habitat creation and improvement and off-site biodiversity provision. ECC GI team promotes the delivery GI though the ‘Lawton Principle’ which advocates for a landscape-scale approach to conservation and the enhancement of connection between green sites- either through physical green corridors or through ‘stepping-stones’. A bigger, better, and connected approach to GI delivery ensures the delivery of multiple functions and benefits to people and wildlife. The scheme should assess what scope remains for the scheme to further complement existing ecological enhancement initiatives within the local areas the scheme

ExQ1	Question to:	Question:	ECC & TDC Response
			passes through; or which may be relevant to in-combination considerations; or wider ecological enhancement possibility.
		(iii) Explain what scope remains for the scheme to further complement existing ecological enhancement initiatives within the local areas the scheme passes through; or which may be relevant to in-combination considerations; or wider ecological enhancement possibility.	(iii) Scope may exist to provide additional enhancement within Tendring District through off-setting or compensation measures linked to the draft Essex Local Nature Recovery Strategy (2024), which is a statutory requirement, which could involve local partners such as the Essex Wildlife Trust, landowners, the local authorities and relevant parish councils. In previous comments made in June 2023 it was highlighted that The North Fall onshore proposed cable corridor runs through the Essex Climate Action Commission's (ECAC) recommended Climate Focus Area (CFA), which includes the Blackwater and Colne River catchment areas. Developments in the CFA must comply with the National Planning Policy Framework (NPPF) guidelines, which include achieving biodiversity net gain, implementing flood and water management techniques, and adopting sustainable land stewardship practices. The overall goal of the CFA is to achieve net zero carbon emissions through carbon reduction and carbon sequestration methods (e.g. Afforestation, reforestation, improved forestry or agricultural practices, and revegetation). The secondary goal of the CFA is to become more climate change resilient by: • improving soil health and access to natural green space and increasing biodiversity • reducing air pollution, • reducing flooding, • reducing the urban heat island effect,

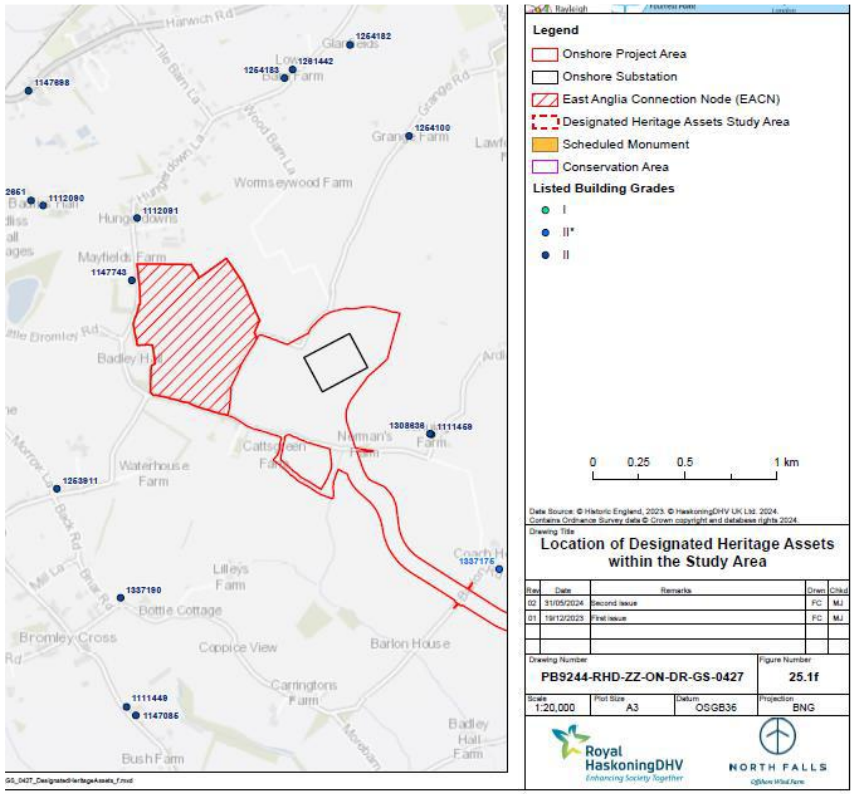
ExQ1	Question to:	Question:	ECC & TDC Response
			• improving the amenity and liveability of Essex communities This proposals for this development can contribute to these objectives and targets.
		(iv) If relevant local/ regional or national initiatives have not been fully considered to date, provide an Examination update on how potential integration could be achieved.	
		(v) The ExA specifically highlights that the scheme is projected to deliver a net loss for watercourses. Thus, further consideration should be given to BNG for watercourses in tandem with the above.	(v) Agree that the potential to achieving a positive net gain for watercourses is explored.
		(vi) **NE** – Biodiversity credits. The ExA acknowledges the Applicant's intention that if 'bespoke' mechanisms of off-site habitat enhancement or creation cannot be achieved in area habitat and hedgerow modules through consultation with relevant bodies and stakeholders on or off-site, biodiversity credits could be purchased through NE's register. Is there confidence from NE that scope for such contingency can/should be reasonably relied upon in those circumstances?	(vi) With no registered off-site habitat banks within Essex, it is recommended to discuss off-site and unit purchases, with Tendring District Council and Natural England. Essex Wildlife Trust potentially has BNG Units available for Abbots Hall Farm in Colchester, although ideally any BNG improvements would be located within the development area
		(vii) **The Applicant** – Does the Applicant consider the use of the register to be 'likely'? What is the expected probability, at this stage, of the register mechanism being required and is it the Applicant's preferred/expected position to rely on	

ExQ1	Question to:	Question:	ECC & TDC Response
		the register mechanism or not? The Applicant is invited to demonstrate the likelihood/need for such an option being utilised within the Examination period.	
10.3 Habitats Regulations Assessment			
Q10.3.17	The Applicant Natural England Local Authorities	**Compensation/ecological enhancement - all relevant species/dDCO** The ExA acknowledges the species and the extent of the provisions within Schedule 15 of the dDCO [APP-005] pertaining to 'compensation to protect the coherence of the national site network' as well as their subsequent limitation. (i) If any further compensation strategy documentation is accepted or sought either by the ExA or the SoS through necessity, how would such provision be formally secured and delivered by the dDCO? (ii) Does the dDCO allow sufficient flexibility for any fuller without prejudice compensation package to be secured and delivered if it is required? (iii) The ExA's considerations of such provisions would also extend to the nature of financial contribution mechanisms indicated as being potential options which would be reliant on secondary legislation yet to be issued by Government. In light of that situation has potential s106 Town and Country Planning Act 1990 or s111 of the Local Government Act 1972 or similar bespoke obligation/agreement use been fully factored as potential options for both compensation and ecological enhancement? If not state why not.	Compensation for impacts on designated sites (as part of the National Site Network) should be identified in sufficient detail to ensure the package is appropriate, deliverable and adequately secured. This should be secured by a legal obligation e.g. s106 or for enhancements, by an upfront payment under s111. Without a strategic "Delivery Plan" agreed by the LPA prior to the end of the examination, we maintain that there needs to certainty of likely ecological impacts with compensation before the ExA makes its recommendation on this dDCO to the SoS. We therefore do not consider that a financial contribution is appropriate in lieu of a known compensation package for this NSIP.

ExQ1	Question to:	Question:	ECC & TDC Response
		(iv) NE/Local Planning Authorities do you have any comments to make on this issue?	
11 Flood Risk, groundwater and surface water			
Q11.1.3	The Applicant, Environment Agency, Essex CC (Lead Local Flood Authority - LLFA)	**Other Flood Risk** Has the Applicant adequately addressed matters relating to risk of flooding from all sources including those which are outwith the EA's responsibility?	No. In our LIR (REP1-065), para. 4.13.9 highlighted that further information and clarification are required in relation to surface water drainage. Noting that Requirement 22 of the dDCO (REP1-011) for an Operational Drainage Strategy, the LLFA also requests a requirement on temporary surface water drainage strategy for construction activities covering the whole project area, not just the onshore substation. This document is required to be submitted to and approved by the LLFA prior to commencement. The applicant has committed to providing further information as the project progresses. The latest documents state "Norwich to Tilbury FRA will outline the proposed mitigation measures / commitments to ensure no detrimental effects on flood risk from rivers and the sea or the functioning of flood defences. Implementation of these would reduce potential negative effects on the flood storage and floodplain flow attributes of watercourses in the study area." The document also commits to working to the LLFA's discharge requirements.
12 Historic Environment & Archaeology			
Q12.1.3	The Applicant	**Jennings Farm**	
	Local Authorities	(i) It is unclear whether or not the ES considers that Jennings Farm would experience an effect	Jennings Farm is located on Ardleigh Road, an access route for the cabling corridor and substation site. The Grade II

ExQ1	Question to:	Question:	ECC & TDC Response
		during the operational phase, or, whether an effect would also be experienced during the construction phase. Please provide any commentary necessary to account for the impact on Jennings Farm during the construction phase, and confirm whether or not a revision is required to the summary of effects contained within the ES. Please either rectify the omission, or explain what is required in your view to rectify this, or why you consider it has been addressed. The ExA understands that Jennings Farmhouse (Grade II Listed) no longer has an associated farm. Nonetheless, its setting within an agrarian landscape may still allow an appreciation of its historical functional connection to the surrounding landscape. Please can the Applicant and Local Authority provide commentary on the effect of proposed mitigation planting which, whilst seeking to screen the proposed development from Jennings Farmhouse, could curtail views of a previously open agrarian landscape which surrounds the farmhouse and could also be seen to contribute to its significance.	Listed Farmhouse is approximately 300m south of the proposed underground cabling corridor/easement. Given this proximity, TDC asserts that both the farmhouse and its residents will experience impacts during the construction and operational phases. Therefore, a revision to the Environmental Statement's (ES) summary of effects is required. Furthermore, recent planning history and land ownership records suggest that Jennings Farmhouse remains associated with some of the surrounding farmland, particularly to the south. The proposed screening planting should contribute positively to the farmhouse's historical significance.
			The proposed mitigation planting as identified by the Applicant in the Schedule of Mitigation (APP-012), section 2.18.5, Page 99 states: The onshore substation will be designed to reduce the overall height and massing of associated structures and other elements as far as practicable. Landscape proposals will include measures for the enhancement of local biodiversity during the operational phase of the onshore substation. This will include landscape screening of the onshore substation through hedgerow and woodland planting. Once matured, this will help to integrate the onshore substation into the existing landscape of arable fields and boundary trees/hedgerows. Secured by: Onshore substation design details and landscaping are secured through Requirements 6 and 7 of the Draft DCO (Schedule 1, Part 3, Requirements, 6 & 7)

ExQ1	Question to:	Question:	ECC & TDC Response
			Historic England's Guidance – The Setting of Heritage Assets (GPA3, 2017) is clear that: *40. Where attributes of a development affecting setting may cause some harm to significance and cannot be adjusted, screening may have a part to play in reducing harm.* ***As screening can only mitigate negative impacts, rather than removing impacts or providing enhancement, it ought never to be regarded as a substitute for well-designed developments within the setting of heritage assets. Screening may have as intrusive an effect on the setting as the development it seeks to mitigate, so where it is necessary, it too merits careful design. This should take account of local landscape character and seasonal and diurnal effects, such as changes to foliage and lighting. The permanence or longevity of screening in relation to the effect on the setting also requires consideration.*** *Ephemeral features, such as hoardings, may be removed or changed during the duration of the development, as may woodland or hedgerows, unless they enjoy statutory protection. Management measures secured by legal agreements may be helpful in securing the long-term effect of screening*. [own emphasis] The location of the Onshore Substation is to be to the south of Grange Road, as shown on Figure 25.1f of 3.2.21 Environment Statement Chapter 25 Figures (APP-072) (excerpt below). Furthermore, how this is illustrated within Cultural Heritage Viewpoint 1 Figures 25.3.2c and 25.3.2d of 3.3.49 Environmental Statement Appendix 25.3 Onshore Infrastructure Settings Assessment (APP-148) places the Onshore Substation behind the existing hedgerow to the north of Grange Road. The existing hedgerow to the north of

ExQ1	Question to:	Question:	ECC & TDC Response
			Grange Road would not screen the Onshore Substation like it is shown in the Viewpoint 1 Figures 25.3.2c and 25.3.2d. The actual location of the Onshore Substation would in fact be to the south of Grange Road within the open field system and would therefore be more prominent within the immediate landscape setting to the northwest of Jenning's Farmhouse.  *Figure 1 Excerpt of Figure 25.1f showing Onshore Project Area and Onshore Substation with Jenning's Farmhouse circled orange.* The existing field pattern to the southeast of Grange Road comprises large, open fields with ditches and occasional

ExQ1	Question to:	Question:	ECC & TDC Response
			trees as field boundaries (Figures 2 and 3 below). Hedgerows are only present to the north of Grange Road and along the bridleway of Barn Lane to the north and do not appear as historic field boundaries within field systems, only along roads or bridleways. The introduction of landscape screening through hedgerow and woodland planting as proposed is therefore in itself harmful to the significance of Jenning's Farmhouse as it would erode the open agrarian landscape which forms a key part of the setting of the listed building and how it is experienced. Additionally, any screening provided will take time to establish and would only be effective during winter months when the planting it not in leaf. This is most evident from the upper floors of Jenning's Farmhouse. Whilst it is accepted that there is no 'right to a view' in planning terms, Figure 2 demonstrates the impact of the Onshore Substation on the agrarian setting of Jenning's Farmhouse.

ExQ1	Question to:	Question:	ECC & TDC Response
			 *Figure 2 View from upper floor of Jenning's Farmhouse facing west towards the Onshore Substation site*  *Figure 3 From Cultural Heritage Viewpoint 1, location of Jenning's Farmhouse identified by orange arrow*

ExQ1	Question to:	Question:	ECC & TDC Response
			 *Figure 4 Grange Road facing back towards Jenning's Farmhouse (identified by orange arrow). Onshore Substation would be located in the foreground of the view.*
Q12.1.4	ECC and Local Authorities	**Survey Data**	
		Please comment on the extent to which the provided desk-based research and non-intrusive evaluation is sufficient, and provide commentary on any gaps or data that is missing in order to form comprehensive views on the archaeological survey.	The Applicant has provided sufficient desk-based data including full coverage of the scheme by aerial photographic (AP) assessment to enable a baseline assessment of the known archaeological resource within the scheme. Non-intrusive evaluation methods carried out prior to submission consist of geophysical survey. The geophysical survey covered approximately 85% of the proposed scheme and so a small amount of geophysical survey remains to be completed. The geophysical survey results have been ground truthed at two locations within the scheme. The results from the trial trench evaluation were fairly corroborative at one location though less successful at the second location. The trial trench evaluations were conducted in areas where there was a relatively low incidence of archaeological remains as identified through geophysical survey and so have not positively contributed to the assessment of this technique as an evaluation method.

ExQ1	Question to:	Question:	ECC & TDC Response
			The limited trial trench evaluations have provided sufficient information in the areas where they were completed, however this information is lacking from the remainder of the scheme. The lack of intrusive archaeological and geoarchaeological evaluation across the remainder of the scheme means there are gaps in the data and insufficient information has been provided to determine the full impact of the scheme on the archaeological resource. The geoarchaeological information provided is based on a low and uneven number of interventions located largely at the far ends of the route. This is not sufficient for the creation of a robust deposit model on which to propose mitigation.
Q12.1.6	The Applicant, ECC	**Offshore Archaeological Exclusion Zones (AEZ)**	
		To what extent is ECC content with off-shore geophysical survey, and potential Archaeological Exclusion Zones? Given that previously unidentified sites or features of interest or significance may also be present in as yet unsurveyed areas, what assurance is there that AEZs would allow further sites to be avoided?	ECC Place Services provide advice on behalf of the local authority for the land above Mean Low Water (Springs), including the intertidal zone, and so comments will be relevant to this area only. The geophysical surveys seem to have provided good coverage of the offshore areas. The assessment has identified Archaeological Exclusion Zones (AEZs) within the areas covered by geophysical survey where significant archaeological remains will be protected from any impact where possible, however these largely focus on the sites of wrecks and debris fields and no palaeogeographical landscapes have been included in the AEZs. The assessment has identified areas of potential archaeological significance towards the coastline, including buried complex channel features and possible organic deposits where

ExQ1	Question to:	Question:	ECC & TDC Response
			archaeological material may be preserved in situ. At present these palaeogeographic areas of archaeological significance have no protection proposed and the continuation of these features onshore has not been explored. Further assessment of data in areas of high archaeological/geoarchaeological significance should be carried out specifically in the nearshore/intertidal zone where in situ archaeological or palaeoenvironmental remains would be of national or international significance. These should be assessed for inclusion as AEZ's prior to any construction commencing.
Q12.1.7	The Applicant and Local Authorities	**Construction Phase – Disturbance of Archaeological Remains** During the construction phase there is identified potential disturbance to both on and off-shore archaeological remains. Activity at the substation and along the cable trench could impact on archaeological and geoarchaeological remains. Please provide a commentary on the extent to which proposed mitigation has addressed these impacts.	The mitigation proposed includes a programme of archaeological and geoarchaeological evaluation across the scheme. Until this is completed the nature, extent and significance of the archaeological resource, cannot be fully understood. The proposed mitigation focuses on avoidance of any significant archaeological deposits. Where this is not possible then preservation would be by record (archaeological excavation). This may result in the disturbance and loss of a significant number of archaeological deposits which, at present, remains undetermined. It will be important to identify any sites which are of high significance as soon as possible, and prior to construction work commencing to ensure mitigation measures are effective and can be implemented.
		Mitigation	

ExQ1	Question to:	Question:	ECC & TDC Response
Q12.1.13	The Applicant and Local Authorities	(i) The primary mitigation for heritage is avoidance. Further details and design of the proposed development would emerge over time, post consent. To what extent would avoidance of heritage assets be a practical option, taking into account all other factors which need to be considered in design and engineering of the proposed works?	(i) At present the investigations carried out and information submitted have not provided a suitable level of information on the potential for archaeological remains along the entire route and it remains to be demonstrated that the embedded mitigation through micro-siting will be feasible or achievable in all areas. The mitigation proposed presents considerable risk should extensive and important archaeological deposits be identified post consent. Archaeological excavations, should they be required, could have a detrimental impact on the project timetable. In addition, the embedded mitigation of micro-siting to avoid areas of significant archaeological remains will depend on the spatial extent of those remains within the project boundaries and avoidance through directional drilling could have cost implications for the project. In this case, if the proposed location of the Onshore Substation were located to the north of Grange Road it would be at a greater distance from Jenning's Farmhouse and proposed landscape screening mitigation may be more suitable. Furthermore, it would locate the Onshore Substation closer to the East Anglia Connection Node. It is not clear why location CO02 as shown in Figure 4.13 in 3.2.2 Environmental Statement Chapter 4 Figures Part 4 (**APP-050**) was discounted in Section 4.8 of 3.1.6 Environmental Statement Chapter 4 Site Selection and Assessment of Alternatives (**APP-018**).
		(ii) The OWSI provides mitigation strategies including a programme of archaeological evaluation completed across the scheme post consent to inform the nature of mitigation. However, details of coverage and extent if	(ii) In discussions with the Applicant an indicative trench plan has been requested. At present the percentage coverage for an archaeological evaluation has not been agreed. In Essex the regional standards for percentage coverage would be 4% with 1% contingency.

ExQ1	Question to:	Question:	ECC & TDC Response
		trenching and locations are not yet confirmed. Therefore, please provide a commentary on how the gaps in data would be completed and ground truthed.	The OWSI states that the evaluation will focus on anomalies identified through geophysics and AP with “several trenches” to sample and investigate blank areas. This would not be considered a meaningful evaluation methodology, areas where there is currently no identified data remain the highest risk in terms of encountering unexpected archaeological deposits.
13 Human Health			
Q13.1.2	LAs	**Onshore air quality management**	
		The OCoCP [APP-248] identifies control measures to be applied in order to ensure that any potential effects upon receptors that are potentially sensitive to air and dust emissions are adequately mitigated. Please confirm if you are content with the air quality management proposals in paragraphs 148 to 158 (inclusive) and that the measures to be included are sufficiently precise and enforceable?	TDC Environmental Health have considered paragraphs 148 to 158 (dust management plan and generator details) in consultation with the LPA. TDC can confirm that the air quality mitigation measures are sufficiently precise and enforceable.
14 Landscape, Visual and Seascape Effects			
Q14.1.5	The Applicant, and other IPs	**Impact on AONB and Heritage Coast**	
		The ExA notes Natural England’s concern that NFOWF has the potential to significantly impact the special qualities of the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (SCHAONB) and Suffolk Heritage Coast (SHC), in particular when acting cumulatively with other existing, consented and proposed OWF projects.	
		(i) To what extent is the Applicant satisfied that the assessment provided is robust, and what further information does it expect to provide in this regard.	

ExQ1	Question to:	Question:	ECC & TDC Response
		(ii) Please set out how, in your view, whether or not the proposals comply with local and national policy, in particular the obligation on relevant authorities to 'seek to further the purposes of an AONB' when undertaking activities, required by section 245 of the Levelling Up and Regeneration Act (2023). Please refer to relevant Defra guidance published 16 December 2024 where relevant.	The Councils note that Suffolf County Council has considered the Protected Landscape Duty in their LIR (REP1-074) . We support their stances on this matter to continue discussions with the Applicant and relevant parties to explore options for financial or non-financial measures to seek to further the purpose of the National Landscape.
Q14.1.7	The Applicant and Local Authorities, and other IPs	**Mitigation Planting at 15 Years – Onshore Substation** The LVIA identifies beneficial effects of planting after 15 years. VP02 and VP03 reduce in impact at the 15 year point to minor and not significant, and moderate respectively [APP-044]. Please provide further comment on the benefits, especially with regard to winter months. Please distinguish between the mitigation and screening of planting which seeks to obscure the view of the proposed OnSS and how this effects the open agricultural character of the landscape.	VP02 is located at the junction of the PRoW/Bridleway and Ardleigh Road, nearly 700m from the proposed installation, so the impacts from this distance will necessarily be lower. It is still not clear to us why this VP is located so far from the installation. The PRoW comes within 240m of the proposed project. We need evidence that users of the PRoW do not get more significant adverse impacts the closer they get to and from the installation. The baseline photographs demonstrate the open agricultural landscape with long, substantially uninterrupted views across it. The visualisation Year 1 53.5-degree view shows, even from this distance, the extent of the proposed development of North Falls, a view that would remain substantially visible until Year 10-15. The visualisation Year 15 shows that the proposed development, would still show above the mitigation planting across the length of it. These views, even from this distance, give the perception of an extensive industrial landscape, albeit partially hidden, which could significantly affect the perception of rurality and tranquillity. In winter this effect would be compounded. We judge that the residual impacts would not be minor adverse (not significant) but likely moderate adverse (significant) and a receptor closer to the project could have impacts that are even more significant.

ExQ1	Question to:	Question:	ECC & TDC Response
			VP03 Baseline photograph demonstrates the open agricultural landscape with long, substantially uninterrupted views across it. The Visualisation Year 1, 53.5-degree view, demonstrates the substantial impact the installation would pose for up to 10 years. The visualisation Year 15 shows that the proposed development would show above the mitigation planting after the tree belt has matured. The view has been truncated so the key characteristic of openness, one identified in the Tendring Landscape Character Assessment, has been lost, and the perception is of an extensive industrial landscape, albeit partially hidden, which could significantly affect the perception of rurality and tranquillity. In winter this effect would be compounded.
Q14.1.8	The Applicant and other IPs	**Onshore Substation – Screening impact on surrounding residential receptors** The ExA is aware of a difference in approach to screening of the proposed OnSS within the VEOWF proposal and that of NFOWF. Please set out the principal differences and any rationale for the approach, as well as any measures taken to incorporate elements within either scheme which would mitigate these visual impacts.	In terms of landscape character, the VEOWF proposal creates a more coherent strengthened landscape framework, whilst also strengthening the green infrastructure further into the wider landscape. In contrast that coherence is lacking in the NFOWF scheme, but it does have the advantage of providing better screening to the north/north-west of the scheme and has committed to a 20m width buffer as a parameter on the Outline Landscape Masterplan Figure 20. ECC and TDC requested the applicants of both proposals to continue their dialogue and to outline how the differences could be reduced and incorporated into the OLEMP.
Q14.1.15	Local Authorities	**Public Rights of Way (PROW) - Mitigation** The approach to mitigation for impact on the PROW network is set out in the Outline Public Rights of Way Management Plan (OPRoWMP) [APP-252] covering a temporary closure and	TDC feels that it is very important to recognise that the footpaths are a key element of the Tendring peninsula local landscape character and the importance of maintaining the integrity of the system is significant in landscape terms. It appears, from the information provided, that there will be some disruption to the network during the construction period

ExQ1	Question to:	Question:	ECC & TDC Response
		diversion process. Please provide commentary on the approach, including	but that there will be no permanent loss or closure of footpaths. Section 4.1 Paragraph 11 of the Outline Public Rights of Way Management Plan states that a pre-commencement survey of footpaths will be carried out and that all PRoW's will be returned to their original condition following completion of the development. In this regard it is considered that, where appropriate, improvements to footpath surfacing could be carried out so that their condition is better than before as this could potentially increase use of the system and to enhance user's experience. Additionally, where overhead structures may be visible from Public Rights of Way, consideration should be given to soft landscaping between the footpath and the structure to screen and obscure it/them from view. This approach has been used by the National Landscape Teams for both the Dedham Vale and the Suffolk and Essex Coast and Heaths National Landscapes with the principle being that where a structure is a too large to be screened completely, strategic planting can be carried out to screen the view of the structure.
		(i) Is sufficient information provided to identify/locate PROWs to provide required notices?	(i) Yes, the information provided to identify PROW (parish, PROW status and number), is clear and has been very well presented. The combination of the OPRoWMP and APP-206 PROW plan make identifying affected PROW easy and should enable other interested parties as well as ECC to be aware of PROW impacts. I cannot comment on who else they might need to serve notice on or whether this information would be adequate for them.

ExQ1	Question to:	Question:	ECC & TDC Response
		(ii) Is sufficient notice of temporary diversions provided, including the recipients of notices?	(ii) In terms of details of the propsoed temporary diversions, they have identified the PROW to which this would apply with, it is noted, further details to follow in the final PRoWMP after discussions with ECC and affected landowners. This seems sensible as landowners, and/or the PROW Maintenance team may wish to comment or influence routes/mitigation measures when they have seen the final document. The information provided at this stage doesn't state in so far as I can see exactly how much advance notice they will provide for each individual temp. closure/diversion by means of notices on site/details/contact with ECC/landowners/user groups etc./details on their website. In general terms the publication of advance notice (inc. refreshing of on-site notices/signage) would be beneficial for PROW users to help with planning walks/rides etc. as well as to PROW colleagues, though I am content for this information (e.g. details of how many weeks advance notices is provided and where) to be included in the PRoWMP. Again, I cannot comment on how much notice they need to provide to other interested parties, but in general terms the more widely publicised and the more in advance it is the better, with a minimum of 2-3 weeks' notice (unless on-the-ground circumstances dictate otherwise) being beneficial and hopefully reasonable. As they will be using their powers under the DCO to effect this closures/diversions the PROW team will be relying on the applicant to provide suitable notification as indicated in their documentation to avoid unnecessary enquiry generation about them.
16 Socio-economic Effects			

ExQ1	Question to:	Question:	ECC & TDC Response
Q16.1.6	The Applicant and Local Authorities	**Supply Chain Plan**	
		(i) Is there a draft Supply Chain Plan available [APP-045]?	
		(ii) Are the local authorities satisfied with the proposals in respect of the Supply Chain?	The Councils will respond at Deadline 3.
17 Terrestrial Traffic and Transportation			
Q17.1.2	National Highways, Essex County Council, Suffolk County Council and any other IP	**Assessment of onshore traffic and transport impacts**	
		Do you consider that the Outline Construction Traffic Management Plan (OCTMP) [APP-251] and the proposed approval as the CTMP under Requirement 9 of the DCO [APP-005] addresses all relevant issues, including cumulative effects, from the assessment of onshore traffic and transport impacts for the Proposed Development, as set out in ES Chapter 27 [APP-041] and Appendix 27.1 Transport Assessment [APP-165]? If not, what are your concerns and how might they be addressed?	As set out in the LIR [REP1-065], the content of the OCTMP does reduce our concerns; however, we are looking for the following changes: 1) Clarity on what pre commencement works will be covered by the management plan (as per the current Five Estuaries OCTMP) we are looking for a commitment where if the scale of any works exceeds 20 two-way movements on the same day, the workforce would be required to adhere to use of the agreed OCTMP construction routes. 2) That the approval of the CTMP would be discharged by the highway authority. 3) Confirmation that the timing of HGV movements will be monitored and reported. 4) Confirmation that a high proportion of HGVs will be equipped with GPS (or another suitable method) to monitor routing. 5) Further commitments towards monitoring of staff mode share and commitments towards achieving at least the 1.5 persons car share ratio or equivalent sustainable travel percentage, with aspirations for higher proportions.

ExQ1	Question to:	Question:	ECC & TDC Response
			6) A review process to ensure the staff exhibit the shift patterns or if they do not that the impacts are not material. 7) Timing of any AIL movements through Colchester to be 'off-peak'. 8) Reference to a Framework Highways Agreement for technical approval of the highway works. 9) Clarity around the road safety commitments at paragraph 84 and 85 in terms of the extent of the mitigation and how it will be delivered. As per our response to ExA question 17.1.5 below. 10) Inclusion of a Road Safety Review process. 11) Agreement on a road inspection and remediation process. 12) Provision of monitoring reports to the highway authority. The Council is looking for proportionate, pragmatic management measures to reduce the likelihood of the development exceeding its assessed impact and to achieve reasonable levels of sustainable travel (reflecting EN-1) taking into consideration the relative accessibility of the site.
Q17.1.3	The Applicant	**Proposed mitigation - limiting Heavy Goods Vehicle (HGV) numbers** ES Chapter 27 Traffic and Transport [APP-041], Table 27.42 presents proposed mitigation measures of "Commitment to limit HGV numbers no greater than the average HGVs per link" for Link 25 (B1032 from Holland Road to Kings Parade) & 35 (B1035 north of B1033 to Whitehall Lane). The OCTMP [APP-251] Appendix A: Peak Vehicle Movements Per Link – Option 2 and Appendix B:	Further clarity has been requested by the Council on this issue within our LIR [REP1-065] i.e. confirming the numbers that are being adhered to and that they do not result in a calculated environmental impact. For instance, it is assumed this would still result in a low impact on a high sensitivity link for Link 25 and a high impact on a low sensitivity link for Link 35. It is also unclear how technically HGV movements can be limited to an average.

ExQ1	Question to:	Question:	ECC & TDC Response
		Peak Vehicle Movements Per Link – Scenario 1, only show mitigated flows for Links 20 and 35. (i) For Link 25, confirm if the HGV numbers in Appendices A and B, are in accordance with the above commitment? (ii) For Link 20, advise how the need for the mitigated flow has been derived?	
Q17.1.4	The Applicant	**HGV movements through Thorpe-le-Soken** ES Chapter 27 [APP-041] identifies that there will be delivery time restrictions (outside of school start and finish times) for HGV movements through Thorpe-le-Soken and that these will be managed through the OCTMP [APP-251] which would be secured by the DCO. Has consideration also been given as to whether HGVs can safely pass in opposing directions given the potential for on-street parking and / or deliveries to businesses, which may temporarily restrict the available width at certain points along this route?	Five Estuaries DCO did not route HGVs through the more constrained part of Thorpe Le Soken (e.g. northwest of the B1414 / B1033 junction), but rather routed some through Weeley Heath and then turned right out of B1414 bypassing this section avoiding this constrained part of the network. This is an inconsistency between the projects. Our preference is for consistency and therefore the Five Estuaries routeing. However, it is noted that the peak daily HGV flows along this link are approximately 30 HGVs and average are 20 HGV (so between 2 and 4 an hour), as such they are low and the likelihood of conflicts is reduced as a result. Any change would require an updated Traffic and Transport Environmental Statement Chapter or at least a sensitivity test on its implications.
Q17.1.5	The Applicant (All	**Proposed mitigation - enhanced maintenance and driver inductions**	

ExQ1	Question to:	Question:	ECC & TDC Response
	questions), Essex County Council (Questions (i) and 2nd part(i))	ES Chapter 27 Traffic and Transport [APP-041], Table 27.42 for Impact 3: Highway Safety and Table 27.43 for Cumulative Effect 3: Highway Safety, state that: *"Enhanced maintenance measures as well as enhanced driver inductions"* are proposed as mitigation measures for Cluster 8 (St John's Roundabout junction, A133/St John's Road/London Road) and Links 22 (A133 south of the B1033 to Progress Way) and 23 (A133 south of Progress Way to the B1032). The OCTMP [APP-251], paragraph 84 states: "*With regard to Cluster 8 it is proposed that prior to the commencement of construction of the relevant phase, the condition of the road marking and surfacing upon the approach to the roundabout will be reviewed and if markings and high friction surfacing (on the A133 approach to the roundabout) are deemed to require refreshing, the Applicant will facilitate conversations with Essex County Council to prioritise the delivery of these maintenance measures*."	
		(i) Given that the above maintenance measures have been identified as mitigation for safety reasons, can this be made into a commitment and secured in the OCTMP for this aspect? Can the wording be revised and agreed such that it is precise and enforceable.	(i) It is the Council's expectation that the mitigation would be undertaken by the Council as part of routine maintenance prior to the project; however, if not, the Council would support some form of commitment to delivery by the Applicant in advance of the works. As set out in the LIR [REP1-065], our recommendation is that a Road Safety Review is undertaken prior to commencement, and an ongoing review is undertaken during construction to identify any reasonable management measures that can be implemented as a result of any identified issues. The Road Safety Review would identify whether the mitigation has

ExQ1	Question to:	Question:	ECC & TDC Response
			been delivered, whether it is still required, and if not, the Applicant would be required to implement or fund it.
		ES Chapter 27 Traffic and Transport [APP-041], Table 27.42 identifies that enhanced maintenance measures as well as enhanced driver inductions are proposed for separately for Cluster 8 and Links 22 & 23. Paragraphs 193 and 253 indicates that mitigation for Links 22 & 23 would be covered by enhanced driver inductions and training measures.	
		(i) Please clarify what enhanced maintenance measures are proposed for Links 22 & 23, and are they sufficient?	
		(ii) Given the reliance in the OCTMP on driver inductions and training, how will the effectiveness of these be measured?	(ii) The Council's assumption is that the enhanced driver inductions would include identification of the specific concerns at any road accident clusters for drivers to be aware of including the road collision history, so that they are specifically conscious of issues at these locations. As set out in our LIR [REP1-065], we would recommend that this is widened to workers as well. As above, a road safety review process may identify additional concerns, or may identify that some issues have been addressed, which would help inform these discussions, as well as identify any other management measures that could be implemented by the project (e.g. HGVs travelling outside of peak hours or outside of school hours).
Q17.1.6	The Applicant	**Travel plan measures to reduce single occupancy vehicle trips** The OCTMP [APP-251] states in paragraph 43 that: *"ES Chapter 27 Traffic and Transport (Document Reference: 3.1.29) assessed a worst case scenario of all employees travelling by vehicle, with a car share ratio of 1.5 employees per car (or three employees per every two cars)."*	(i) The Council have previously raised our concerns around the car share ratio [REP1-065] (both in this submission and Five Estuaries DCO). Importantly, the Council are looking for a mechanism to be put in place that looks to ensure that both assessed impacts on the highway network are not exceeded and the development exhibits reasonably sustainable travel patterns.

ExQ1	Question to:	Question:	ECC & TDC Response
		Furthermore, while Table 3.1 Personnel Travel Measures includes "*Identify car share, pick up locations" and "Walking / cycling facilities",* these are qualified in paragraph 50 as measures that could be adopted. **(i)** Given the importance of the above car share assumption in determining the effects from construction traffic, how will this be effectively implemented and controlled in the CTMP? **(ii)** To what extent will walking /cycling facilities be provided at the various construction compounds to support sustainable travel?	EN-1 sets out that the Applicant should set out the measures to improve access by active, public and shared transport to offer genuine modal choice. It is recommended that use of the Park and Ride at Colchester is explored for operating a shuttle service between sites to minimise impacts of vehicle movements. With reference to Section 3.2.2 of the CTMP, the plan does not currently look to minimise worker impacts of vehicle movements on the highway network and community. There is currently no commitment to offer access by non-car modes. In addition, the vehicle movement figures are worst case for a moment in the lifetime of the project where movements are at peak and so on that basis should be very unlikely to be breached, meaning that there is little or no incentive to achieve any form of sustainable transport credentials for the site for the majority of its build out as the number of workers, and subsequently movements, is lower (i.e. if the number of workers is 80% of the peak figure then they could exhibit much worse travel patterns and not exceed the figure). There should be a commitment to monitor against the assessed car share or modal split, and to implement additional management measures if the proportions are not achieved. (ii) It is expected that there will be limited numbers of staff walking and cycling to site, and that car sharing / use of staff mini-buses is likely to be the most effective mechanism for reducing single occupancy car trips and achieving relatively sustainable travel patterns.
Q17.1.7	The Applicant	**Travel outside of known peak times (Light Vehicles)**	(i) The Council have previously raised concerns on the potential impacts if shift patterns are not realised. The assessment (as well as Five Estuaries) relies on

ExQ1	Question to:	Question:	ECC & TDC Response
		ES Chapter 27 Traffic and Transport [APP-041] paragraph 52 includes "*During this engagement it was agreed with the relevant highway authorities at an ETG meeting on the 05 September 2023 (detailed within ES Appendix 27.4 (Document Reference: 3.3.67)) that no detailed assessment of driver delay (capacity) would be required. The rationale for this agreement was a commitment by the Applicant to ensuring that 80% of employees arrive prior to the morning network peak hour (07:15 to 08:15) and depart before or after the evening peak hour (16:30 to 17:45).*" Paragraph 52 of the OCTMP [APP-251] states that: *"The assessment of driver delay (capacity) presented within ES Chapter 27 Traffic and Transport (Document Reference: 3.1.29) is predicated upon industry experience that highlights that the majority of the construction workforce would arrive before the morning network peak hour of (07:15 to 08:15) and depart before or after the evening peak (16:30 to 17:45).*" The OCTMP paragraph 53 includes: *"To ensure that there would not be an adverse impact upon capacity, the TMCo would limit these movements to no more than 20% of the peak daily LV demand (outlined in Appendix A).*" **(i)** Has consideration been given to how the workforce arrival and departure times might vary in the winter, due to shorter daylight hours, compared with the summer? **(ii)** What further mitigation could be implemented to retime travel outside of peak periods?	impacts occurring outside of the peak hours, and as a result no junction modelling is undertaken. The Council do not dispute this approach, albeit there is limited evidence that justifies the assessed shift patterns, as set out in the LIR [REP1-065] our preference is for these shift patterns to be monitored and managed during construction, as per our answer to (ii) below to ensure they occur and to ensure that impacts do not exceed those assessed. (ii) If the development fails to achieve its assessed shift patterns, then a review process should be put in place (based on the 20% figure referred to at paragraph 53 of the OCTMP). It is recommended that a monitor and manage process is embedded to check the shift patterns are commensurate with those assessed, and, if not, to either assess to see if the impacts are material or preferably to identify additional management measures that can be put in place to address these impacts (e.g. minibuses).

ExQ1	Question to:	Question:	ECC & TDC Response
Q17.1.8	The Applicant (All questions) and Essex County Council (Question (iii))	**Bentley Road Improvement Works – Temporary provision of area for non-motorised user access (footway /cycleway)**	
		For Work No. 9 the dDCO [APP-005] includes *"temporary provision of area for non-motorised user access."* Page 41 of ES Chapter Appendix 27 Traffic and Transport Consultation [APP-168] states: *"At this stage, following the completion of construction it is proposed that the road widening would be retained and transferred to Essex County Council and the footway/cycleway removed."*	
		(i) What is the anticipated timing and sequencing for the Bentley Road improvement works to include the installation and removal of the non-motorised user access and how will this be undertaken to minimise any disruption?	(i) The works will need to be undertaken prior to a significant increase in HGVs on Bentley Road. We would look to minimise disruption through effective traffic management, but the exact method for this is to be determined. A road closure would result in significant delays for local residents.
		(ii) How would this be affected by the three possible build out Scenarios for both NFOWF and VEOWFs, described in Paragraph 20 of ES Chapter 5 Project Description?	
		(iii) Please confirm if ECC do not seek retention of the footway/ cycleway post works and / or is there other NMU facility that they consider beneficial?	(iii) ECC is not seeking retention of the facility. In an ideal scenario that decision would be made at the end of construction as between now and the end of the project, there may be changes to the local walking/cycling network that would mean that the improvements have a legacy benefit that has not currently been identified. However, ECC recognises that currently the retention of the facility is not justified in terms of operational impact and as such is not being proposed by the Applicant.
Q17.1.15	Tendring District Council (TDC), Essex	**Methodologies – Noise and Vibration** Do TDC and ECC agree with the Baseline Noise Survey, Road Traffic Noise Assessment, Construction Noise and Vibration calculations, and	TDC acknowledges the significance of ES Chapter 26 [APP-040] and has reviewed the methodologies applied in the noise and vibration assessments. While our Environmental Health colleagues do not have the resources to scrutinise every

ExQ1	Question to:	Question:	ECC & TDC Response
	County Council (ECC)	Operational Noise Calculations Methodologies adopted in the ES Chapter 26 [APP-040], including the predicted noise and vibration levels?	aspect in exhaustive detail, they have assessed the standards and methodologies used and confirm that they are appropriate and relevant for the types of noise and vibration being measured. Regarding noise assessment: • The baseline noise levels appear appropriate for this assessment. • Paragraphs 173 to 177 identify noise levels that could result in a high impact but also confirm that mitigation measures will be implemented in the final CoCP to ensure acceptable noise levels. • TDC recommends that, once mitigation measures are confirmed and/or implemented, the noise limits should be reviewed or noise monitoring should be conducted in affected locations to verify the effectiveness of the mitigation. • The impact of road traffic noise has also been noted, particularly the application of a 40mph speed limit, which is expected to be addressed in the final CoCP. Regarding vibration assessment: • The assessment concludes that the risk of property damage is not significant in EIA terms. • The implementation of mitigation measures within the final CoCP is noted. • TDC agrees that a well-maintained road surface will help mitigate vibration impacts. The level of vibration experienced will depend on factors such as vehicle movements, which have been considered in the assessment.

ExQ1	Question to:	Question:	ECC & TDC Response
			Based on these findings, TDC is satisfied with the methodologies used for noise and vibration assessments and has no further comments at this stage.

Ardleigh Neighbourhood Plan 2020 - 2033

Prepared by Ardleigh Parish Council

May 2024

Table of Contents

Appendices

- Appendix A: Proposals maps

Annexes

- Annex 1: Local Green Spaces Assessment
- Annex 2: Village Design Statement (VDS).

Additional supporting documents

- Basic Conditions Statement
- Strategic Environmental Assessment (SEA) & Habitat Regulations Assessment (HRA) Screening Report
- Ardleigh Community Engagement Report.

For the purposes of this Neighbourhood Plan, the terms “appendix” and “annex” are used as follows:

> Appendix - a document or report included at the end of the plan because it is too large for the main body of the plan but needs to be included to provide clarity or understanding.
>
> Annex - a standalone document or report that supports the plan and its policies but that can also be read and used in its own right.

Foreword

Ardleigh comes from two Anglo Saxon words - Ard (High) and Ley (Pasture). Archaeological finds show that the area has been settled since Neolithic times (4,000 to 2,000BC) and it has had continuous settlement ever since. It is also reputed to be one of the largest parishes by area in the Country. The centre of the medieval village of Ardleigh is approximately five miles (8 km) from the City of Colchester and about four and half miles (7.2 km) from Manningtree. As well as the main settlement of the village of Ardleigh, smaller hamlets make up the Parish as a whole.

There is a diverse mix of housing throughout the Parish from small modern estates to historic buildings and farmhouses more than 70 of which are listed buildings. Land surrounding the village and hamlets is predominantly given to agriculture and horticulture, with an industrial area mainly situated along the Old Ipswich Road/A12. Ardleigh is in the district of Tendring and the parliamentary constituency of Harwich and North Essex. The Parish has its own Parish Council.

The Neighbourhood Plan has been created by the Parish Council and local residents following extensive consultation. The process began in early 2020 when the Neighbourhood Plan area was formally designated by Tendring District Council. The Ardleigh Neighbourhood Plan Working and Steering Groups then met a total of 75 times between June 2020 and August 2022 to develop the Plan and ensure that the appropriate steps were taken and guidance followed.

The Plan sets objectives on key identified themes such as transport, community, the built and historic environment, local green spaces, housing and the general approach to development, including landscape features and design quality of physical structures. It builds on current and future planned activity in the Local Plan and says what the Parish Council and its partners will work towards.

The overwhelming view of the community, who responded to public consultation, is that the Parish of Ardleigh should above all else retain its rural characteristics in relation to the visual quality of its buildings, open spaces, trees, hedges, footpaths and bridleways. The people of the Parish of Ardleigh also feel strongly that their sense of community should be protected and nurtured across the whole Parish, including the village centre, Ardleigh Heath, Burnt Heath, John de Bois Hill, Fox Street, Plains Farm, Crockleford Heath and other outlying areas.

The vision is for the people of Ardleigh to continue to develop its sense of community, retain its rural feel and to enjoy and protect the countryside around them: allowing for strictly controlled housing development and employment growth to maintain a vibrant community.

Thanks go to all of those in the community who have contributed to the production of this Neighbourhood Plan.

August 2022

1. Introduction

1.1. Welcome to the Ardleigh Neighbourhood Plan 2020-2033. This plan will deliver our vision for the Parish of Ardleigh over the plan period.

1.2. Once made, a Neighbourhood Plan forms part of the Development Plan for the defined Neighbourhood Area. Neighbourhood Plans were introduced by the Localism Act 2011 and allow communities to shape development in their area.

1.3. Neighbourhood Plans help with the determination of planning applications in the Neighbourhood Area, setting out where development will go and what it will look like.

1.4. This Neighbourhood Plan is for the rural Parish of Ardleigh in the district of Tendring. Ardleigh lies in open countryside between the urban centres of Colchester and Manningtree.

1.5. The purpose of this plan is to allow Ardleigh to grow appropriately and organically, whilst protecting its best features for future generations.

1.6. In order to produce this plan, the Working Group undertook a survey of views throughout the Parish, commissioned a number of expert studies to produce the evidence base and instructed a local planning consultancy (Planning Direct) to assist with the technical drafting, working closely with the Parish Council and the District Council throughout.

1.7. Once adopted, we expect that all planning decisions in Ardleigh will be made in accordance with this Neighbourhood Plan, unless it is in conflict with an up-to-date Local Plan or material planning considerations indicate otherwise.

2. Neighbourhood Plan Area

2.1. This Neighbourhood Plan concerns the Parish of Ardleigh**.** On 08/06/2020, Tendring District Council formally designated the whole Parish as a Neighbourhood Plan Area.

2.2. The diagram below provides the Neighbourhood Plan Area within which this Neighbourhood Plan applies.

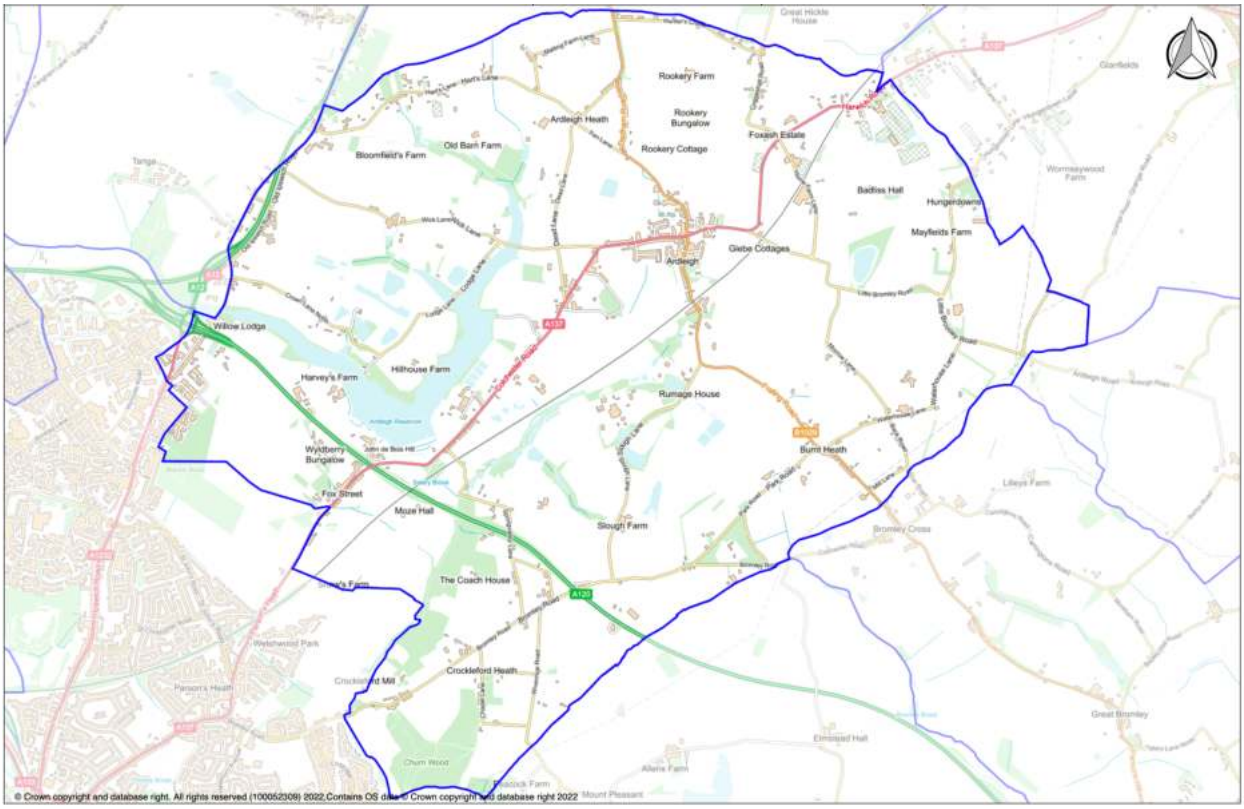


Fig 1. Neighbourhood Plan Area [blue line]

3. What is a Neighbourhood Plan and why do we need one?

3.1. Neighbourhood planning is a right for communities introduced through the Localism Act 2011. Communities can shape development in their areas through the production of Neighbourhood Development Plans (often referred to simply as Neighbourhood Plans), Neighbourhood Development Orders and Community Right to Build Orders.

3.2. Once approved, Neighbourhood Plans become part of the Development Plan and the policies contained within them must be used in the determination of planning applications.

3.3. Policies in Neighbourhood Plans must be in general conformity with the strategic policies of the Local Plan. However, they may change more detailed policies (or add further detailed policies) where appropriate to the designated Neighbourhood Plan area.

3.4. Fundamentally, Neighbourhood Plans cannot block development already included in the Local Plan. What they can do is shape where that development will go and what it will look like.

3.5. A Neighbourhood Plan is developed by a Neighbourhood Forum or a Parish/ Town Council. In this case, Ardleigh Parish Council has worked with specialist consultants to develop the Neighbourhood Plan.

3.6. Before a Neighbourhood Plan can be adopted, it must be independently examined to ensure that it meets the basic conditions. It must then be put to a public referendum of all of the registered electors within the Neighbourhood Plan Area.

3.7. Only a draft Neighbourhood Plan that meets each of the basic conditions can be put to a referendum and be “made” (in other words, adopted). The basic conditions are set out in paragraph 8(2) of Schedule 4B to the Town and Country Planning Act 1990 as applied to Neighbourhood Plans by section 38A Planning and Compulsory Purchase Act 2004.

3.8. The basic conditions are:

- Having regard to national policies and advice contained in guidance issued by the Secretary of State it is appropriate to make the Neighbourhood Plan;

- The making of the Neighbourhood Plan contributes to the achievement of sustainable development;

- The Neighbourhood Plan is in general conformity with the strategic policies contained in the development plan for the area of the authority (or any part of that area);

- The making of the Neighbourhood Plan does not breach, and is otherwise compatible with, EU obligations; and

- Prescribed conditions are met in relation to the Neighbourhood Plan and prescribed matters have been complied with in connection with the proposal for the order.

4. Planning policy context

4.1. The Development Plan for Ardleigh is currently made up of:

- Tendring District Local Plan 2013-2033 and Beyond: North Essex Authorities' Shared Strategic Section 1;
- Tendring District Local Plan 2013-2033 and Beyond: Section 2;
- Essex Minerals Local Plan; and
- Essex and Southend-on-Sea Waste Local Plan.

Section 1

4.2. Section 1 of the 2013-2033 Local Plan was jointly prepared by Braintree, Colchester, Essex and Tendring Councils (known collectively as the North Essex authorities) and covers broad strategic matters. It was adopted on 26/01/2021.

4.3. Section 1 of the Local Plan takes bold steps to provide for the housing, employment and social needs of existing and future residents up to and beyond the plan period. A key focus of this part of the Plan is the creation of a new garden community.

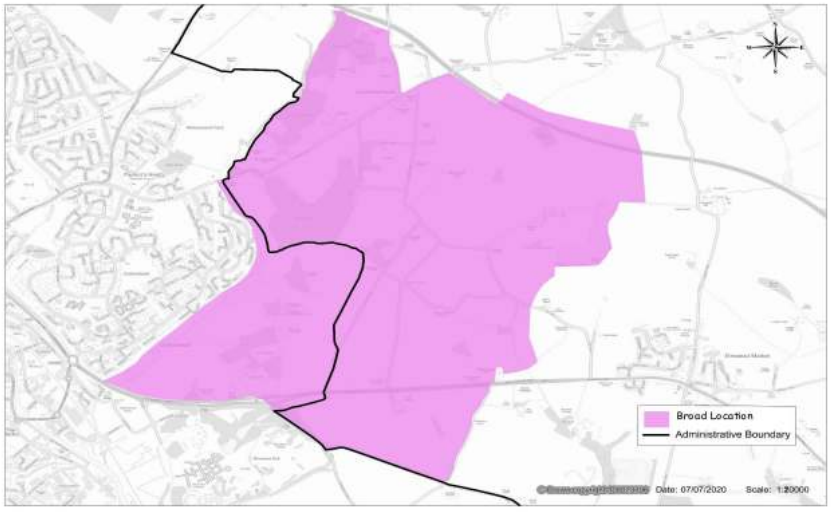


Fig. 2. Broad location of the proposed Tendring/Colchester Garden Community

4.4. LP1 Policy SP 3 sets out the spatial strategy for North Essex. Existing settlements are the focus for growth and development is accommodated within and adjoining settlements depending on their scale, role and sustainability. It is this policy which contains the new Tendring/Colchester Borders Garden Community (GC) proposal.

4.5. LP1 Policy SP 4 indicates that Tendring has a minimum housing requirement of 11,000 over the plan period of LP1 to 2033. LP1 Policy SP 5 supports a strong, sustainable and diverse economy with at least 12 hectares of employment land sought in Tendring.

4.6. LP1 Policy SP 6 sets out the requirement for a Development Plan Document (DPD) for the GC and identifies the strategic transport infrastructure that requires planning permission and funding before any permission is granted for the GC.

4.7. LP1 Policy SP 8 identifies 2,200 – 2,500 homes, seven hectares of employment land and provision of Gypsies and Travellers that are to be provided within the permission for the GC within this Plan period (as part of the expected overall total of 7,000 – 9,000 new homes, 25 hectares of employment land to be delivered beyond 2033. It identifies what the DPD will cover and indicates that no part of the GC will obtain permission before the DPD is adopted. It sets out principles for the GC.

4.8. LP1 Policy SP 9 sets out further details for the DPD including the definition of the boundary and the amount of development.

4.9. The new community is proposed to be sited on the Tendring/Colchester border, extending into the southernmost portion of Ardleigh Parish where the small historic hamlet of Crockleford Heath[1] is located.

4.10. The DPD has now been prepared by TDC and Colchester City Council. The draft DPD includes the identification of an “Area of Special Character” at and around the settlement of Crockleford Heath, aimed at safeguarding its distinctive rural character.

4.11. The DPD has been subject to two formal periods of consultation. The DPD, and other accompanying documents, was submitted to the Secretary of State for examination on 21 September 2023. Hearing sessions are, at the time of writing, currently being held.”

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[1] *LP2 page 35*

Section 2

4.12. Section 2 of the 2013-2033 Local Plan contains policies relating solely to Tendring District. It was adopted on 25/01/2022. Section 2 allocates the homes and jobs required for the plan period. It also contains place-shaping policies. These policies steer and guide development to ensure that Tendring's natural and built assets are enhanced and protected, its communities are well connected both by broadband and travel choices, and new development is designed to promote healthy living, adaptability of homes and safety from flood risk.

4.13. The Vision includes reference to the GC. LP2 helpfully sets out which policies are regarded as 'strategic' in nature[2]. LP Policy SPL1 states that the GC is at the top of the settlement hierarchy alongside Clacton-on-Sea and Harwich and Dovercourt. It identifies Ardleigh as a Smaller Rural Settlement.

4.14. LP2 Policy LP1 identifies 1000 homes to be delivered at the GC by 31 March 2033. This aligns with the plan period for this Plan which is to 2033.

Local Plan Strategy for Ardleigh

4.15. Ardleigh village is defined as a Smaller Rural Settlement. It sits at the lowest tier of the settlement hierarchy.

4.16. The Smaller Rural Settlements are considered to be the least sustainable locations for growth. Nevertheless these villages are under pressure to grow and some small-scale development, sympathetic to the rural and often historic character of the settlement, can help to sustain these communities.

4.17. To plan for this, Settlement Development Boundaries have been drawn flexibly to accommodate a range of sites within and on the edge of the villages enabling them to be considered for small-scale residential infill development.

4.18. LP2 Policy SPL 2 identifies settlement development boundaries including one for Ardleigh village. It is clear that the GC sits outside this and will be subject to a

[2] *LP2 page 35*

separate DPD containing its own policies designed to guide the location of development in the broad location identified on Diagram 10.2 in LP 1 and Map B.7.

4.19. This is important because some of the policies in this Plan refer to the settlement development boundary. As yet the GC is not a settlement with a settlement development boundary and is treated as a discreet location in LP2 Policy SPL 2. Therefore it is important for those policies, or elements of those policies, in this Plan which do not apply to the GC, that this is made explicit on a policy by policy basis.

4.20. LP2 Policy SPL 2 states there is a general presumption in favour of new development subject to detail consideration within the Settlement Development Boundary.

4.21. Outside the Settlement Development Boundary, planning applications will be considered in relation to the pattern and scales of growth in the settlement hierarchy and relevant policies. For instance LP2 Policy PP 13 sets out a number of specific circumstances where, in the interest of supporting growth in the rural economy, planning permission may be granted in the countryside.

4.22. Development over 10 dwellings is only permitted where there is support from a Parish Council or an approved neighbourhood plan advocates additional growth or there is an identified local need for affordable housing that could be addressed on a rural exception site, subject of Policy LP 6 (section 3.3.1.4.4).

4.23. Rural Exception Sites will be permitted on sites adjoining Ardleigh's defined Settlement Boundary provided:

i. Sufficient evidence is provided of a shortage of council/affordable housing within the Parish; and

ii. The scheme is supported by Ardleigh Parish Council.

4.24. The Plan also provides a flexible policy for self-build houses. These schemes may be permitted in the countryside subject to meeting specific criteria (policy LP 7).

4.25. The development of new care homes and extra care housing is also promoted by the Plan (policy LP 10).

4.26. Retail growth in Ardleigh is expected to be limited to small-scale developments

intended to serve the day-to-day needs of the local community only (policy PP3).

4.27. In terms of employment growth, the Plan encourages sustainable development proposals for farm and other land-based diversification schemes that would benefit the rural area. Further support for rural-based enterprises is provided by local policy PP 13.

4.28. Tourism-related proposals of the right kind are also strongly encouraged, including the provision of appropriate outdoor recreational facilities that would strengthen the function and protection of the undeveloped countryside (policy PP 8).

4.29. In terms of visitor accommodation, any growth in hotels or guesthouses should be limited to established sites or to ancillary accommodation at appropriate venues such as public houses (upper floors), residential health and beauty facilities and function/conference centres (policy PP 9). New or extended camping and touring caravan sites are also encouraged but will be subject to holiday occupancy restrictions (policy PP 10).

4.30. The policies of this Neighbourhood Plan are intended to support and complement the general spatial strategy outlined above.

4.31. Not all policies or some elements of policies will apply to the Tendring/Colchester Borders Garden Community. Where this is the case, it has been made clear in the policy itself. Ardleigh Parish Council intends to work closely and proactively with the partner councils to progress the design and development of the GC.

5. Background to the Parish

5.1. The Parish lies within the Ardleigh & Little Bromley Ward, part of the District of Tendring situated within the County of Essex.

5.2. Ardleigh is a small rural Parish which comprises largely of good quality agricultural land, supported by dispersed farmsteads. The main point of settlement is the historic nucleated village of Ardleigh which lies at the heart of the Parish. Other smaller hamlets, including Ardleigh Heath, Burnt Heath and Crockleford Heath intersperse the wider rural area. It is believed that the Parish has been settled in excess of 3000 years.

5.3. The 2011 Census recorded 849 households and 2058 usual residents throughout the Parish[3].

5.4. Ardleigh village is defined as a smaller rural settlement in the Local Plan. It comprises a nucleated village which has grown around the crossroads of Station Road, Dedham Road, Colchester Road and Harwich Road. These key arterial routes extend throughout and beyond the Parish, connecting Ardleigh to various lower and higher-level settlements including Colchester, Manningtree and Brightlingsea.

5.5. The Parish lies in very close proximity of the historic city of Colchester[4], being directly adjoined to the defined town settlement boundary in places. The heart of Ardleigh village lies approximately 7km, or a 12-minute drive, from the city centre.

5.6. Since 1981, a substantial proportion of Ardleigh village has been formally designated as a Conservation Area. Significantly, the Parish also contains the remains of a later Bronze Age urnfield cemetery which was designated a Scheduled Ancient Monument in 1976 (list entry no. 1002146).

5.7. Ardleigh Reservoir lies to the south-west of Ardleigh village and covers an

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[3] Unless otherwise stated, all statistics in this document are derived from 2011 census data.

[4] Colchester was awarded city status in May 2022 to mark the Queen's Platinum Jubilee.

expansive 48.5 hectares. The reservoir supplies over 14 million litres of drinking water every day to 133,000 customers in the Colchester area. It also supports various recreational activities.

Socio-economic profile

5.8. The rural Parish is sparsely populated, with a density (number of persons per hectare) of 1 by contrast to 4.1 for the district, 4 for the county and 4.1 for the country as a whole.

5.9. As indicated by the below charts, the age profile of the Parish is more closely in line with findings for the county and the country than with the age structure of its host district.

5.10. Significantly, the Parish contains proportionately fewer very old persons (85+) than the national population which is rather unusual for a small rural locality such as this. It may be the case that the Parish's close proximity to the urban centre of Colchester has supported more younger residents to remain than is the norm.

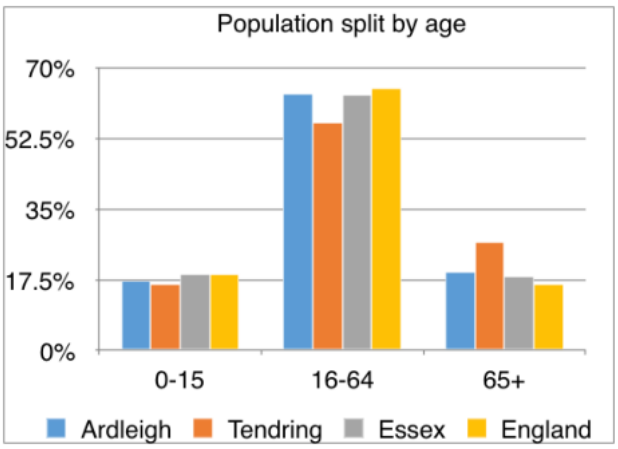

Fig. 3.

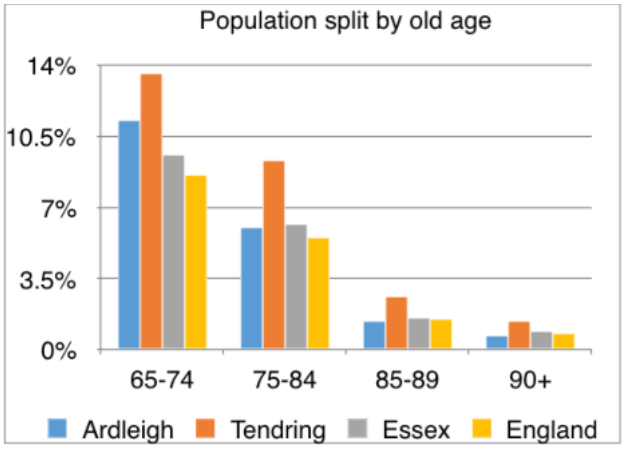

Fig. 4.

5.11. The vast majority of Ardleigh's residents are self-reported as of white British origin (95%). This indicates the Parish to be very slightly more ethnically diverse than its host district, where 95.4% of residents are self-reported as of white British origin. As is usual in more sparsely populated rural areas, Ardleigh contains considerably less ethnic diversity than the country as a whole (where 79.8% of the population self-reports to be of white British origin).

5.12. Approximately 69.1% of Ardleigh's working age (16-74) population is

economically active[5], compared to 61.7% for the district, 71.1% for the county and 69.9% for the country as a whole. The below chart provides a break down of economically active residents by activity. As indicated, Ardleigh contains a statistically significant number of self-employed workers and proportionately fewer short-term unemployed residents than the district, county or country as a whole.

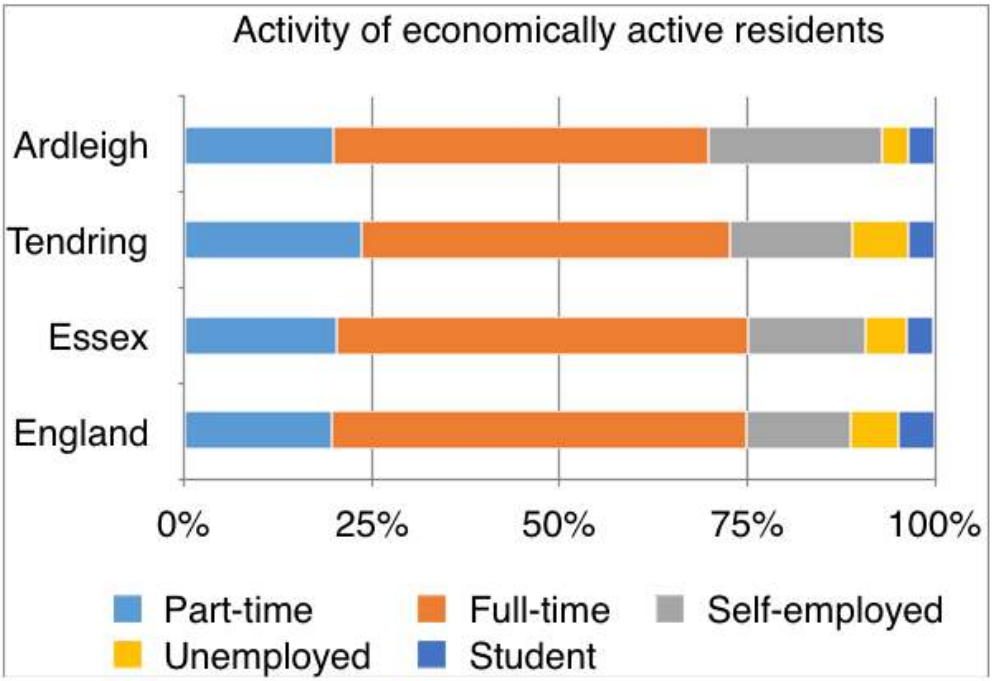

Fig. 5.

5.13. Following from the above, approximately 30.9% of Ardleigh's population is economically inactive[6], compared to 38.3% for the district, 28.9% for the county and 30.1% for the country as a whole. The below chart provides a break down of economically inactive residents by activity. As indicated, Ardleigh contains proportionately fewer retired residents than its host district, although this remains above the county and national findings.

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[5] "economically active" is a term used in the 2011 Census to refer to those persons either in employment or unemployed but available and actively seeking work.

[6] "economically inactive" is a term used in the 2011 Census to refer to those persons not in employment or actively seeking and available for work due to being retired, looking after home or family, long-term sick or disabled, students or other reasons.

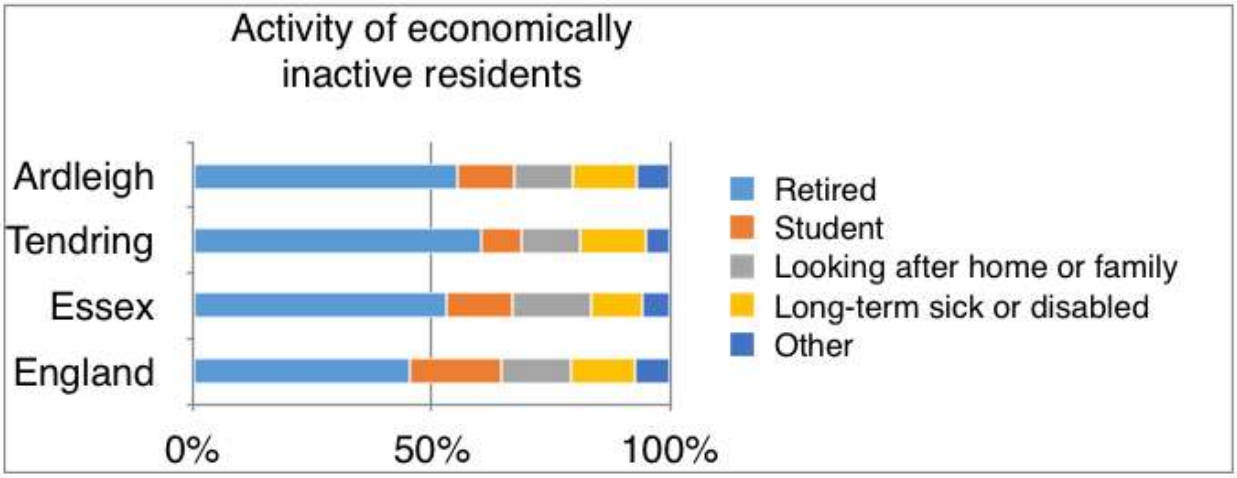


Fig. 6.

5.14. The Parish of Ardleigh is predominantly occupied by agricultural land uses and this is reflected in the statistically significant proportion of working residents employed in the industries of agriculture, forestry and fishing.

5.15. Ardleigh also contains a statistically significant proportion of working residents employed in administrative, professional, scientific and technical industries.

5.16. Compared to findings for the host district, Ardleigh contains proportionately fewer residents employed in the industries of wholesale, retail, vehicle repair, health care or social work. This is indicated by the below chart which provides a break down of the main industries in which the working residents of Ardleigh are employed[7].

[7] *For the purposes of this chart, only industries employing more than 4% of the total working population of Ardleigh have been individually noted. All other industries are grouped into the "other" category.*

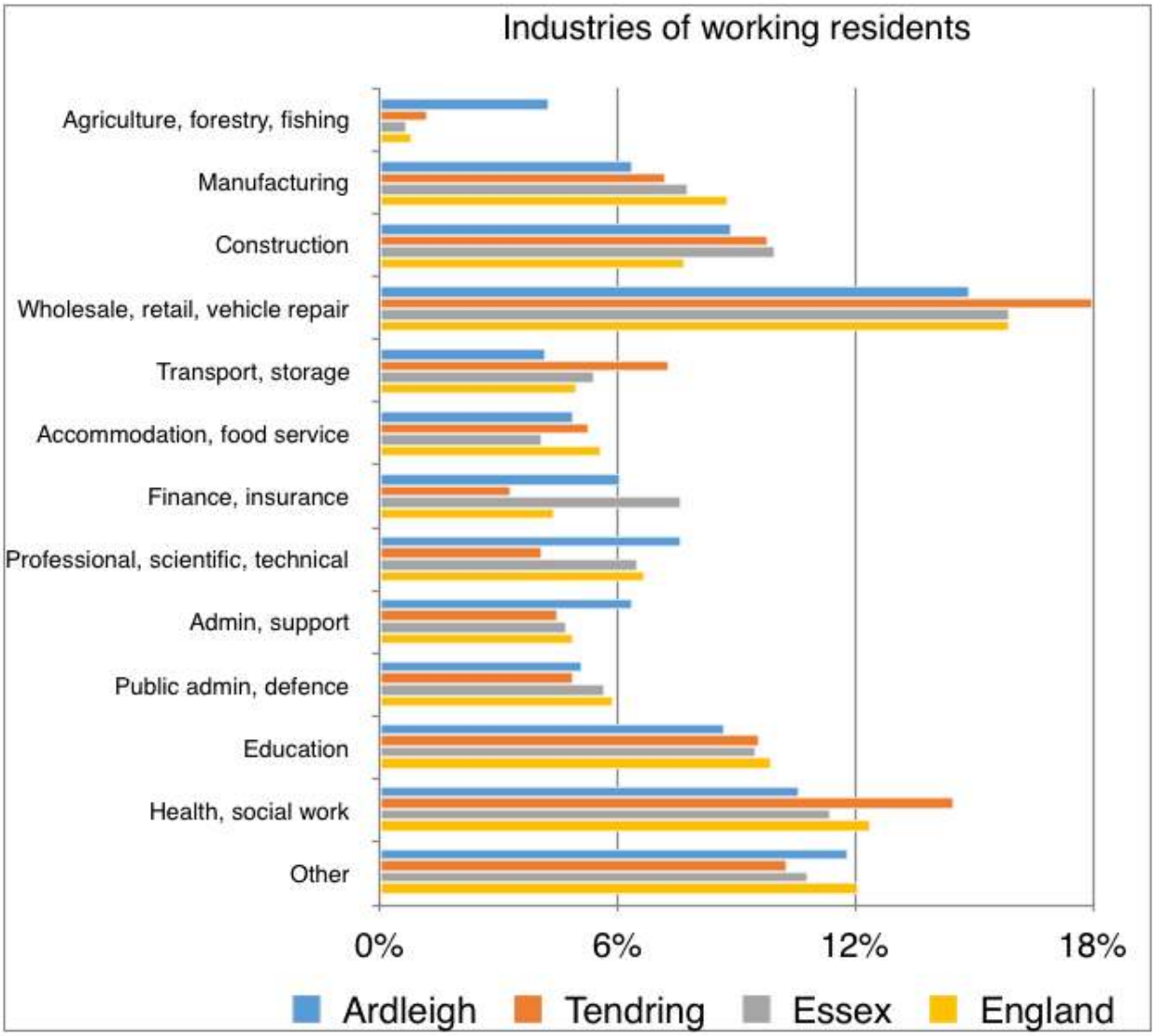


Fig. 7.

5.17. At 35.3% of its total working population, Ardleigh also contains a very significant number of residents employed in directorial, managerial, senior or other professional roles. This compares especially favourably to findings for the host district, where only 21.6% of the total working population occupies such high level roles.

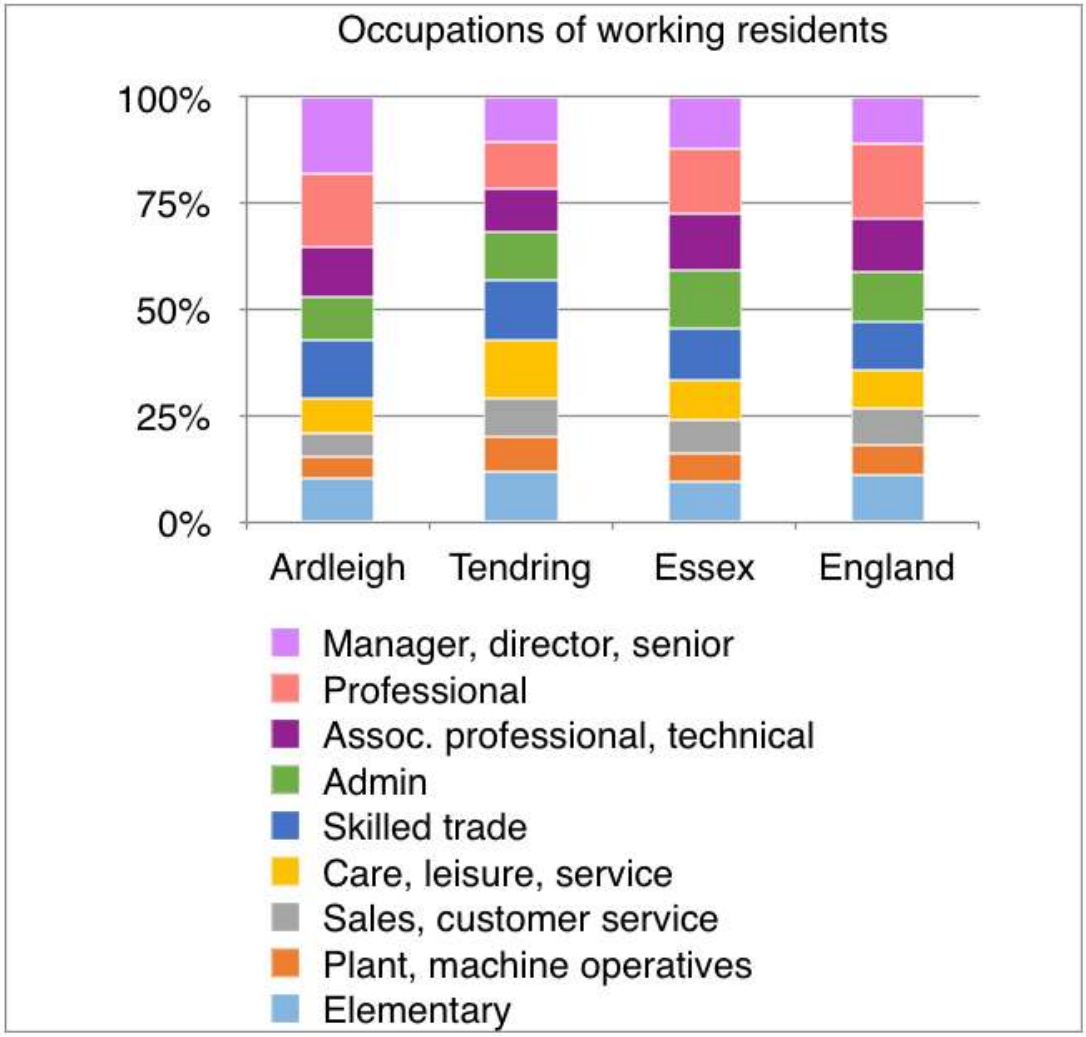
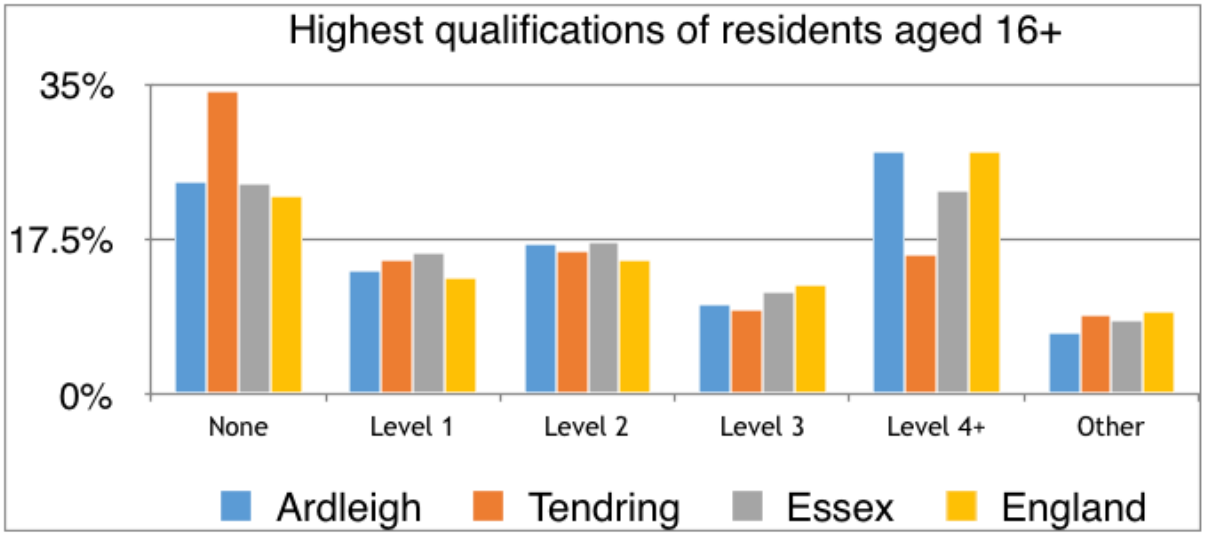


Fig. 8.

5.18. Ardleigh's residents are also relatively well-educated, especially compared to district-wide trends. Indeed, only 24% of Ardleigh's adult residents are without any qualification, compared to 34.3% of Tendring's total adult population. Similarly, 27.4% of Ardleigh's adult population is educated to degree-level or above, compared to only 15.9% for Tendring as a whole. As indicated by the below chart, the residents of Ardleigh's qualification levels are more closely in line with findings for the county and the country than its host district.



Qualification Levels

None = no academic or professional qualifications
Level 1 = 1-4 GCSEs or equivalent (any grades)
Level 2 = 5+ GCSEs or equivalent (grades A*-C)
Level 3 = 4+ AS Levels/2+ A Levels or equivalent
Level 4+ = Degree level or above (e.g. BA, BSc)
Other = Vocational, work-related, foreign, apprenticeships

Fig. 9.

5.19. The health of Ardleigh's residents is generally very good, particularly compared to findings for its host district. This may be explained, at least in part, by Ardleigh village's well-located GP Surgery in the context of a rural district where many of the smaller rural communities are somewhat remote from vital health services.

5.20. As indicated by the below chart, approximately 81.9% of Ardleigh's residents report their health to be either "good" or "very good", compared to just 74.2% throughout Tendring. This finding is largely in keeping with the national figure, with 81.4% of England's total population reporting to be in either "good" or "very good" health.

5.21. Similarly, only 3.7% of Ardleigh's population report their health to be either "bad" or "very bad", compared to 7.6% throughout Tendring and 5.4% throughout England.

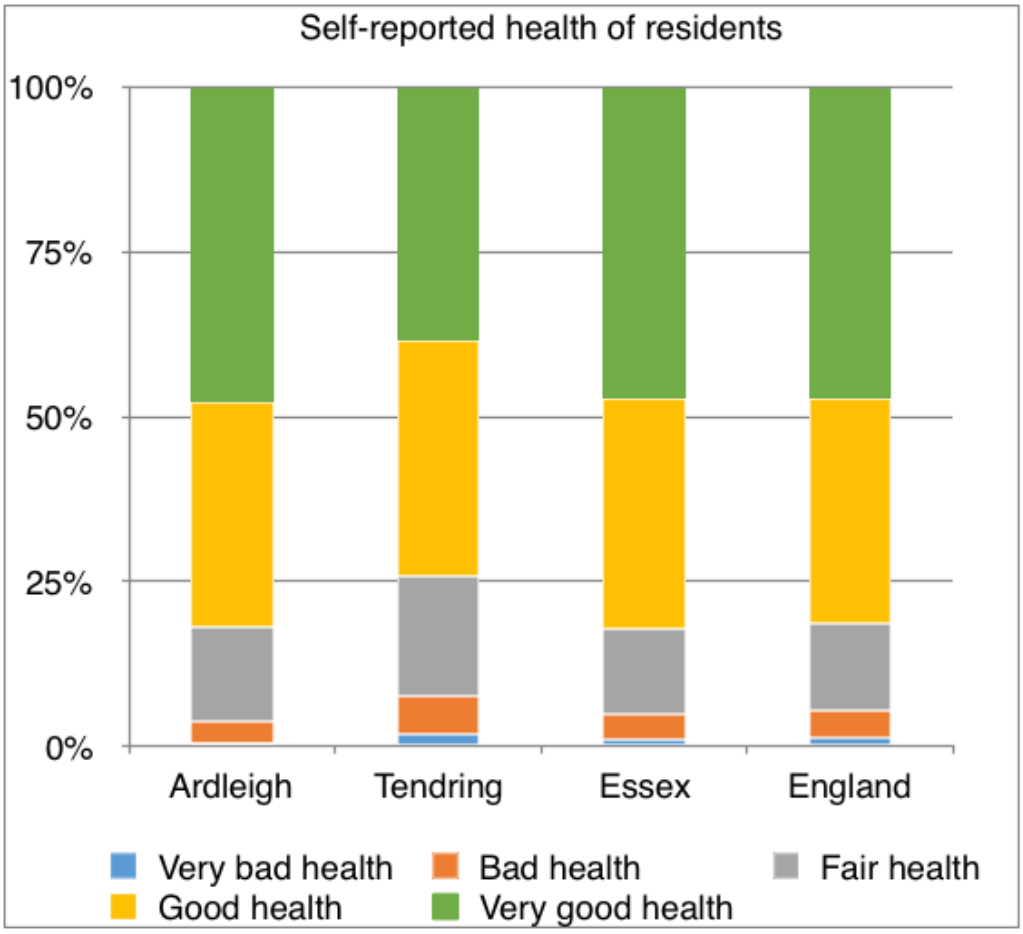


Fig.10.

5.22. Taken together, the above statistics paint a picture of a Parish that has:

- a low population density;
- a fairly well-balanced age profile;
- limited ethnic diversity;
- typical levels of employment;
- a notable agricultural economy; and
- a well-educated and healthy population.

Housing profile

5.23. The 2011 census recorded 849 households and 2058 usual residents in the Parish[8].

5.24. The average household size of the Parish stands at 2.5 persons which is only very slightly greater than the averages for the district (2.2), county and country (both at 2.4).

5.25. There are high levels of home ownership throughout the Parish. 80.9% of all Ardleigh's households own their homes, with approximately 54% of these owned outright and 46% owned with a mortgage (or loan). This compares very favourably to statistics for the county and the country where, respectively, 71.3% and 63% of all households own their homes. It also exceeds levels of home ownership throughout Tendring (at 73.7%).

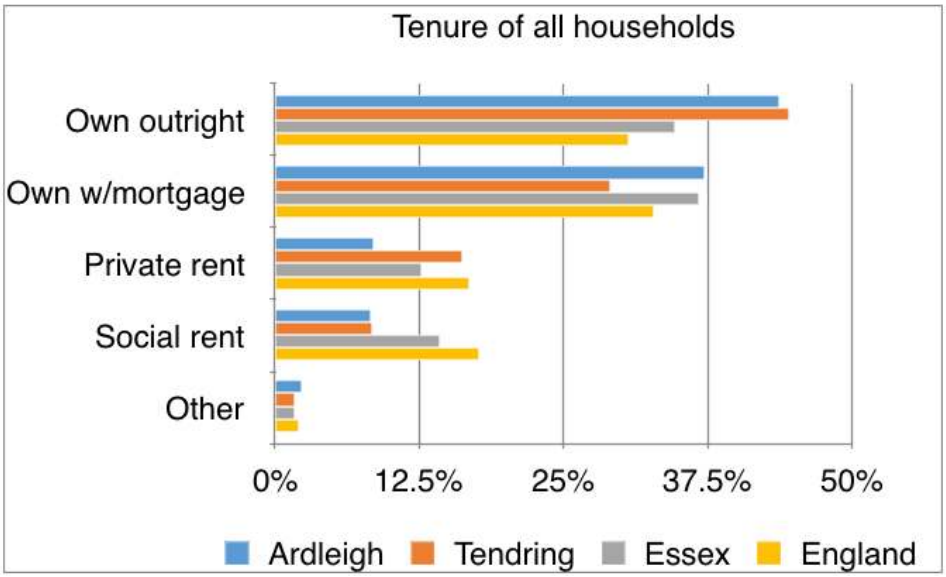


Fig.11.

5.26. As is fairly usual in rural areas, only a small proportion of Ardleigh's housing stock is rented (16.8%). The number of socially-rented properties in Ardleigh (at

[8] *In April 2020, Tendring District Council estimated that there were approximately 1000 dwellings in the Parish (taking account of recent development), with a further 230 dwellings expected on sites with planning permission. This suggests a rather significant increase in housing stock since 2011*

8.3% of its total stock) is closely aligned with the figure for the district (at 8.4%), however there are substantially fewer privately-rented properties in Ardleigh (at 8.5% of its total stock) than are found throughout Tendring as a whole (at 16.2%).

5.27. Ardleigh's housing stock is very much dominated by detached property types, these comprising a significant 57% of its total provision. Compared to findings for the district, county and the country as a whole, Ardleigh contains relatively few flats, maisonettes and terraced homes.

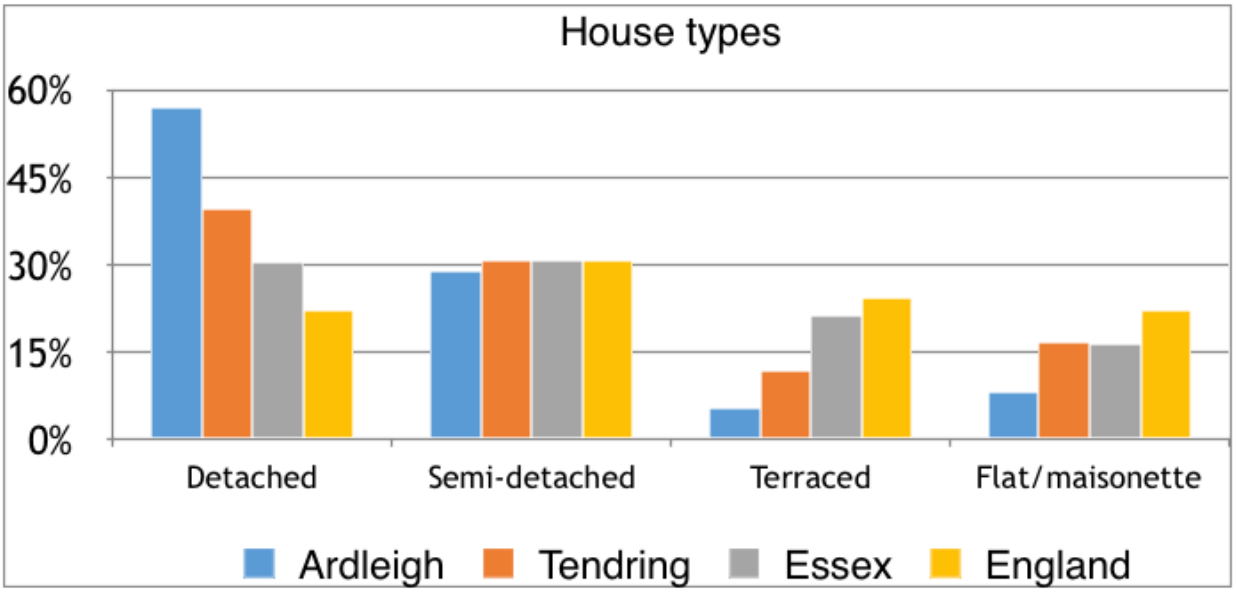


Fig.12.

5.28. In terms of household composition, the vast majority of all Ardleigh's households are occupied by single families (70.2%). This stands in relative contrast to the numbers of single family households found throughout the district (62%), the county (66%) and the country as a whole (61.8%).

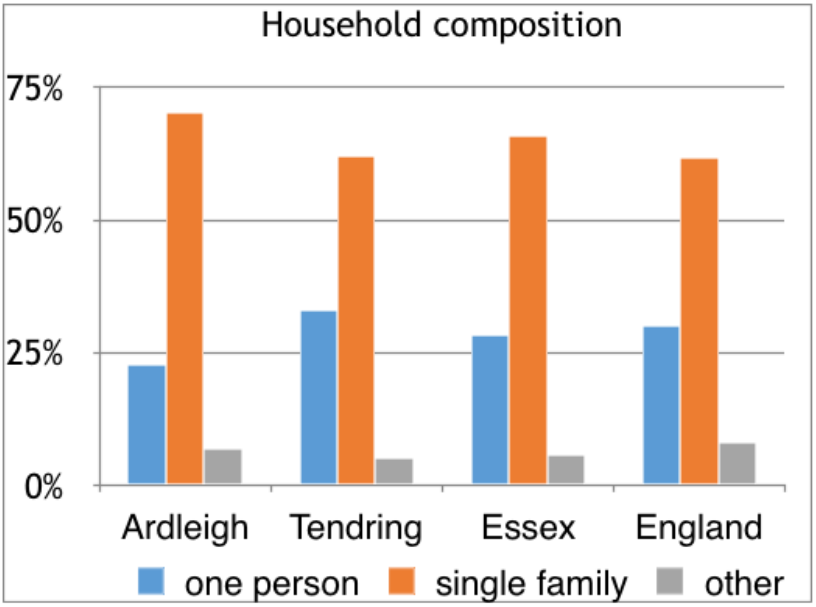


Fig.13.

5.29. Ardleigh contains a fair range of local services and facilities for a Parish of its size. Its residents nonetheless remain largely dependent on private car use for access to main shopping, employment and educational facilities. This is reflected in the Parish's high levels of car (and van) ownership, as indicated by the below chart.

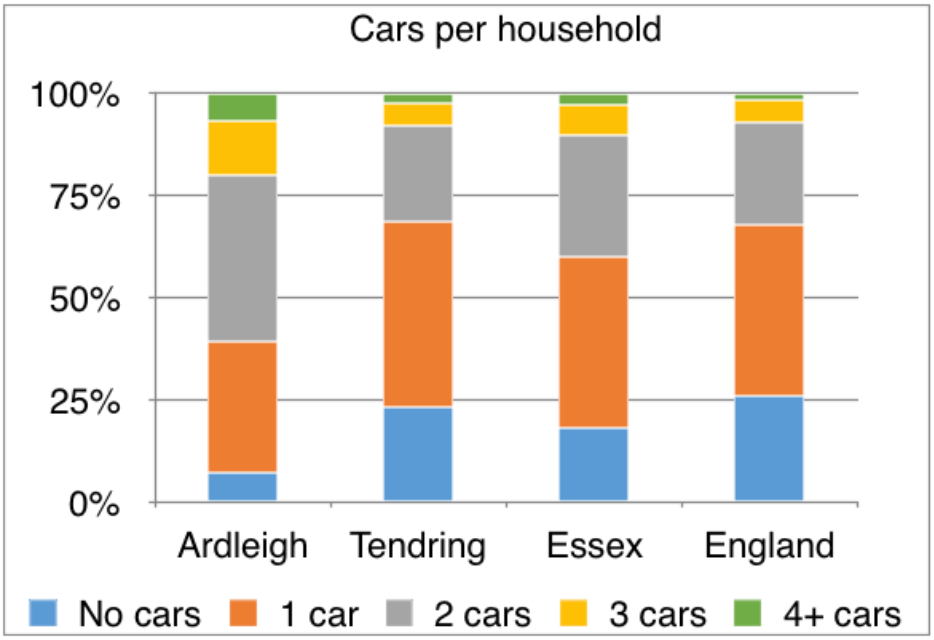


Fig.14.

5.30. Taken together, the above statistics suggest that Ardleigh's population is composed mainly of families that own their detached homes and have 1 or more cars.

Landscape & Natural Environment

5.31. The Parish of Ardleigh stands on a flat gravel plain in open countryside. It comprises predominantly of agricultural land and retains a distinctly pastoral character and quality in spite of its close proximity to the urban centre of Colchester.

5.32. Dedham Vale National Landscape is located immediately to the north of the Parish, just outside of its confines.

5.33. Part of the A120, a major regional trunk road, passes through the southern portion of the Parish, close to its boundary with Colchester City. This presents a marked urban intrusion into an otherwise rural landscape.

5.34. The nucleated Ardleigh village provides the main point of settlement at the heart of the Parish, with other smaller hamlets and farmsteads dispersed throughout.

5.35. Here, the landscape character is truly emblematic of the host National Character Area (NCA), Suffolk Coast and Heaths. Indeed, the 2015 NCA Profile found that:

"The majority of the character area is sparsely settled with small isolated, nucleated medieval hamlets and villages complementing a scatter of isolated farmsteads, traditional barns and cottages throughout the rural area."

5.36. Ardleigh is one such nucleated medieval village, tucked into an otherwise rural landscape where it is complemented by scatterings of isolated farmsteads, barns and cottages.

5.37. A valley system lies to the west and south of Ardleigh village but is barely perceptible, with one of the valleys being largely filled by Ardleigh Reservoir.

5.38. Ardleigh Reservoir is a notable landscape feature, spanning almost 50 total hectares to the south-west of Ardleigh village. The reservoir was created in the 1970s and supplies the area with potable drinking water as well as supporting various recreational activities.

Fig. 15. Ardleigh Reservoir from Wick Lane

Glyn Baker / Ardleigh Reservoir from Wick Lane / CC BY-SA 2.0

5.39. There are two Sites of Special Scientific Interest[9] (SSSIs) in Ardleigh.

5.40. The first is Ardleigh Gravel Pit which sits just south of the village and is split over 2 units, occupying 1.22 total hectares. This site is considered to be of major geological importance, with deposits exposed here being of international significance. Ardleigh Gravel Pit is classified as being in "favourable condition"[10] by Natural England.

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[9]SSSIs are areas designated for special protection by Natural England due to their features of special interest, including their wildlife, geology and/or landform.

[10] Natural England's objective is to achieve "favourable condition" status for all SSSIs. This means the habitats and features of the site are in a healthy state and being conserved by appropriate management.

5.41. The second is Bullock Wood, an ancient woodland[11] which straddles the Parish's boundary with Colchester. Only a small part of this 23.3 hectare SSSI is located in Ardleigh. This site is noted to contain a wide range of trees, including a number of nationally rare species. Bullock Wood benefits from "favourable condition" status.

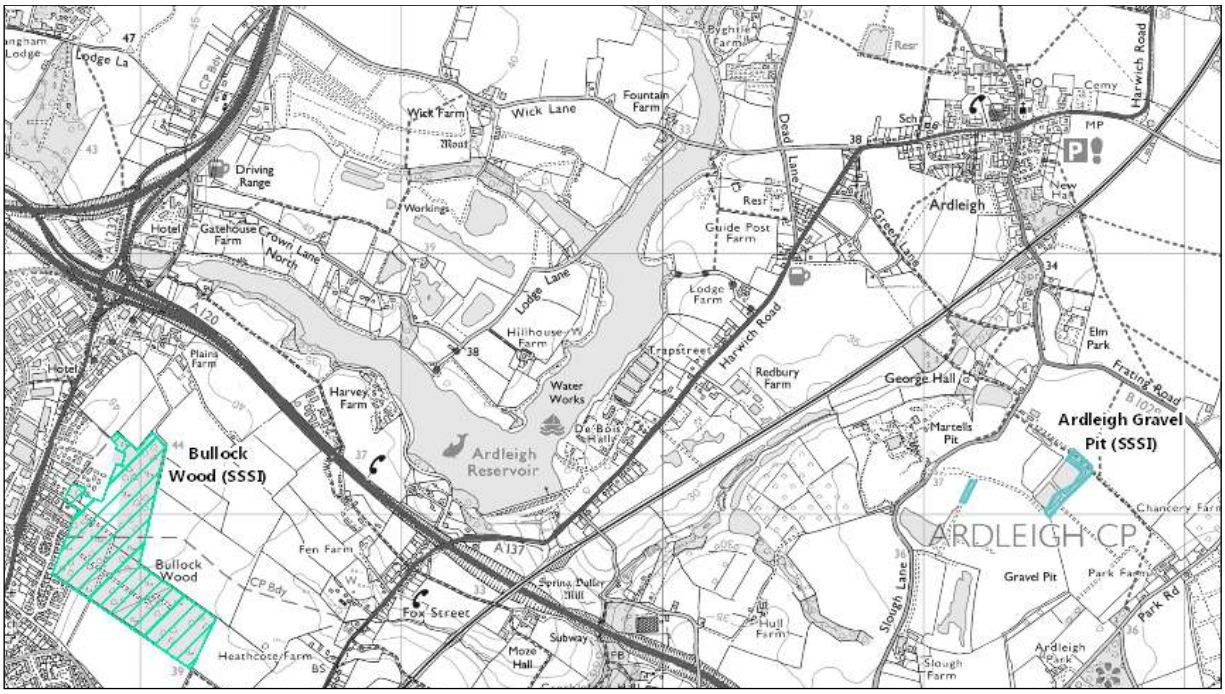

Fig. 16. The two SSSIs in the south of the Parish: Bullock Wood & Ardleigh Gravel Pit

5.42. In conjunction with Essex Wildlife Trust, the District Council has identified over 100 Local Wildlife Sites[12] (LoWS) in Tendring, 11 of which are in the Parish of Ardleigh.

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[11] Ancient Woodlands are areas of woodland identified by Natural England as having had continuous woodland cover since 1600 AD resulting in the survival of certain rare plants and animals and are thereby afforded special protection. Ancient Woodland is a form of Irreplaceable Habitat.

[12] LoWS are areas of land with significant wildlife value which provide important wildlife refuges and a green infrastructure network. They are worthy of nature conservation and protected by the Local Plan.

Local Wildlife Sites			
Code	Site Name	Area (ha)	Grid Ref.
Te1	Ardleigh Reservoir Wood, Ardleigh	2.1	TM 026287
Te2	Birch Wood, Ardleigh	0.7	TM 028303
Te3	Ardleigh Reservoir Grassland, Ardleigh	3.1	TM 032284
Te4	Churn Wood Meadow, Ardleigh	1.3	TM 033256
Te5	Churn Wood, Ardleigh	26.3	TM 036259
Te6	Wall's Wood, Ardleigh	14.3	TM 037271
Te7*	Chapel Lane Verge, Ardleigh	0.03	TM 043254
Te9	Manor House Meadow, Ardleigh	1.6	TM 052288
Te10	Springhead Corner Meadow, Ardleigh	2	TM 053286
*Protected Verges			

Local Wildlife Sites: Ancient Woodlands	
Name	Grid Ref.
Churn Wood, Ardleigh	TM 036258
Walls Wood, Ardleigh	TM 038274

Table 1.

5.43. The Local Plan also identifies a number of Safeguarded Open Spaces[13] throughout Ardleigh and affords these additional protection against development (see local policy HP 4).

5.44. Safeguarded Open Spaces designated in the Local Plan include Ardleigh's:

- The Ardleigh Recreation Ground;
- Millennium Green;
- churchyard;
- allotments; and
- cemetery.

[13] *Safeguarded Open Spaces comprise of open spaces (including parks, churchyards, allotments and playing pitches) which make a considerable contribution to the quality of life of residents and visitors and which promote sustainable communities.*

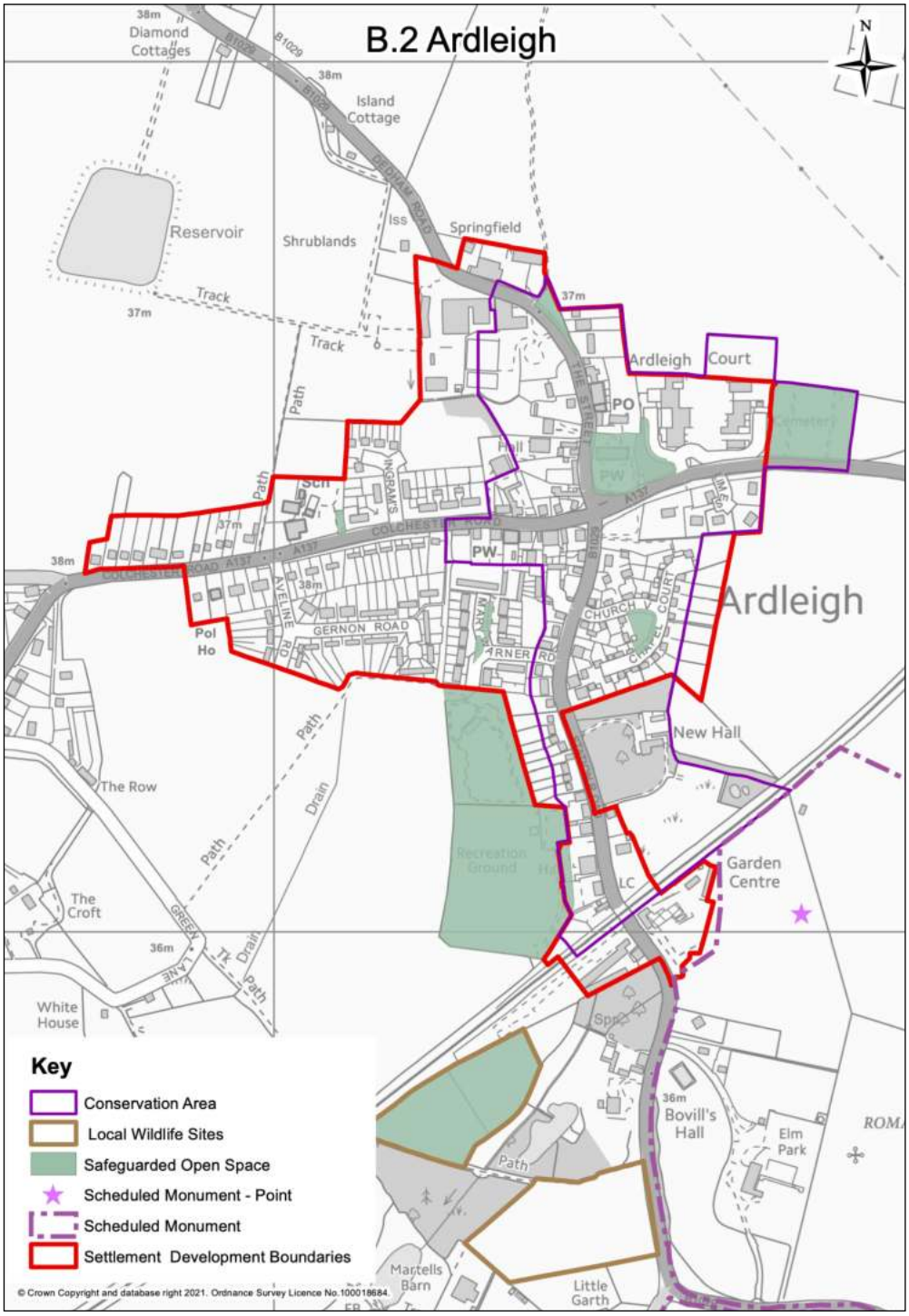


Fig. 17. Ardleigh's Safeguarded Open Spaces in green (Local Plan)

5.45. Local Green Spaces are identified in this Neighbourhood Plan.

History & Conservation

5.46. A defining feature of Ardleigh is its rich historical and archaeological character.

5.47. It is believed that the Parish has been settled in excess of 3000 years. Ardleigh appeared in the 1086 Domesday Book, with its population of 38 households placing it in the largest 20% of all settlements recorded at this time.

5.48. The Parish currently boasts 75 listed buildings, of which one is a Scheduled Ancient Monument, two are Grade II* listed, and the remainder Grade II listed.

5.49. There is a notably high concentration of Grade II listed buildings at the historic core of Ardleigh village along Colchester Road and The Street.

5.50. The Grade II* listed St Mary's Church, parts of which date to the 14th century, is also prominently located here.

Fig. 18. The Grade II listed St Mary's Church*

5.51. In recognition of its clear heritage value, the heart of Ardleigh village has been a designated Conservation Area since 1981. The Conservation Area Appraisal adopted by the District Council in 2006 summarises the special interest of the Conservation Area as follows:

“Ardleigh is a small medieval village at an important road junction, and retains its fine church and sequences of attractive vernacular buildings. The well-treed approaches to the north and the east are essential to the character of the village and are also included in the Area. The village expanded southwards in the 19th century, resulting in further groups of distinctive buildings, which with their settings are also recognised by Area designation.”

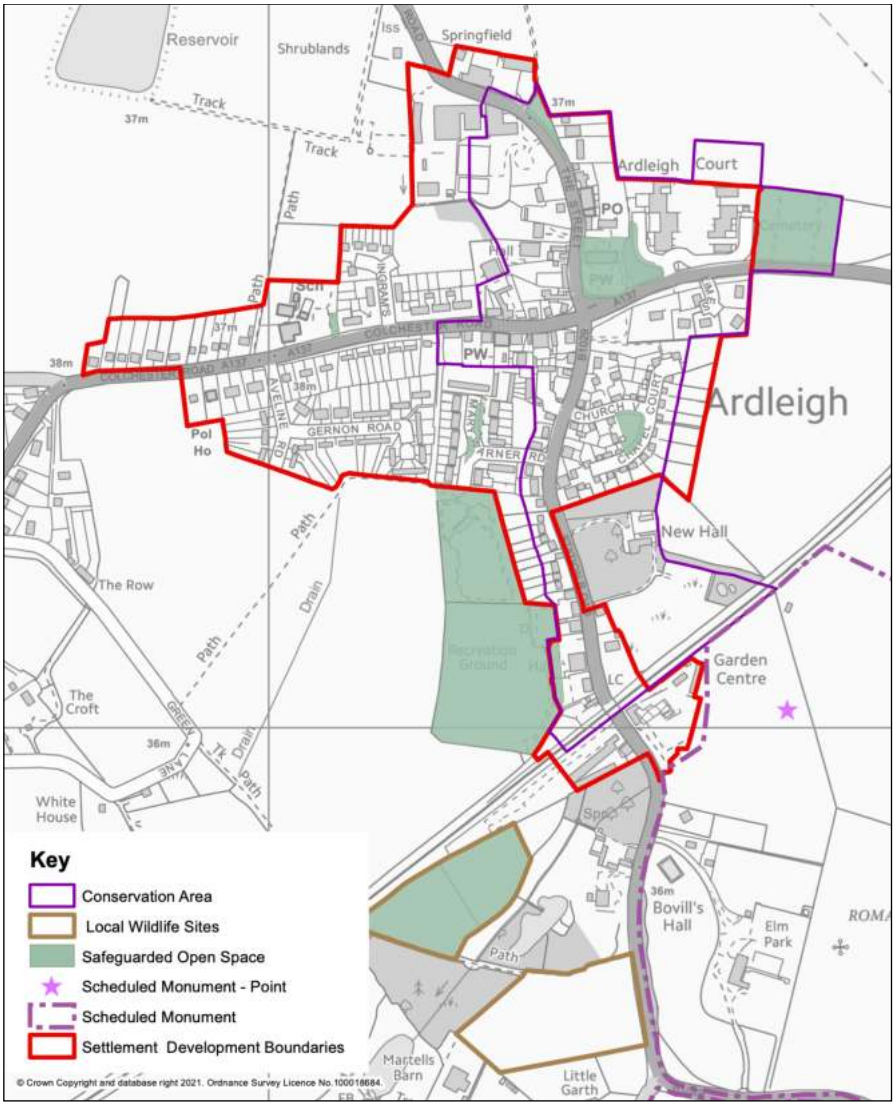


Fig. 19. Ardleigh Conservation Area in purple

Notable Assets

5.52. To the south of the Parish and just north of the A120 is the Grade II* listed Spring Valley Mill, a water mill which was later adapted to steam and now sits vacant. This late 18th century timber-framed and weatherboarded structure sits in a prominent position adjacent Spring Valley Lane, an historic route which is protected in its own right. The mill is the setting of Malcolm Saville's 1956 children's novel "Treasure at the Mill" and the filming location of its subsequent 1957 adaptation.

5.53. Spring Valley Mill is on Historic England's Heritage at Risk (HAR) Register. Its condition is "very bad" and it has priority B status; "B - immediate risk of further rapid deterioration or loss of fabric; solution agreed but not yet implemented". It is believed that some urgent repair works have already been carried out following the receipt of a Repair Grant for Heritage at Risk. However, as of 2021, the mill remained to be supported by temporary scaffolding.

Fig. 20. The Grade II listed Spring Valley Mill*

5.54. Ardleigh's only Scheduled Ancient Monument is the crop mark site just south of Ardleigh village which was first designated in 1976. This site contains a later bronze age cemetery comprising both barrows and urnfield. Fragments of urn

were first unearthed during a 1955 scheme of deep ploughing on Vince's Farm.

5.55. Other archaeological finds have since been uncovered here, including multi-period remains in 1995-96 as the successful result of a watching brief placed on the stripping of a new access road.

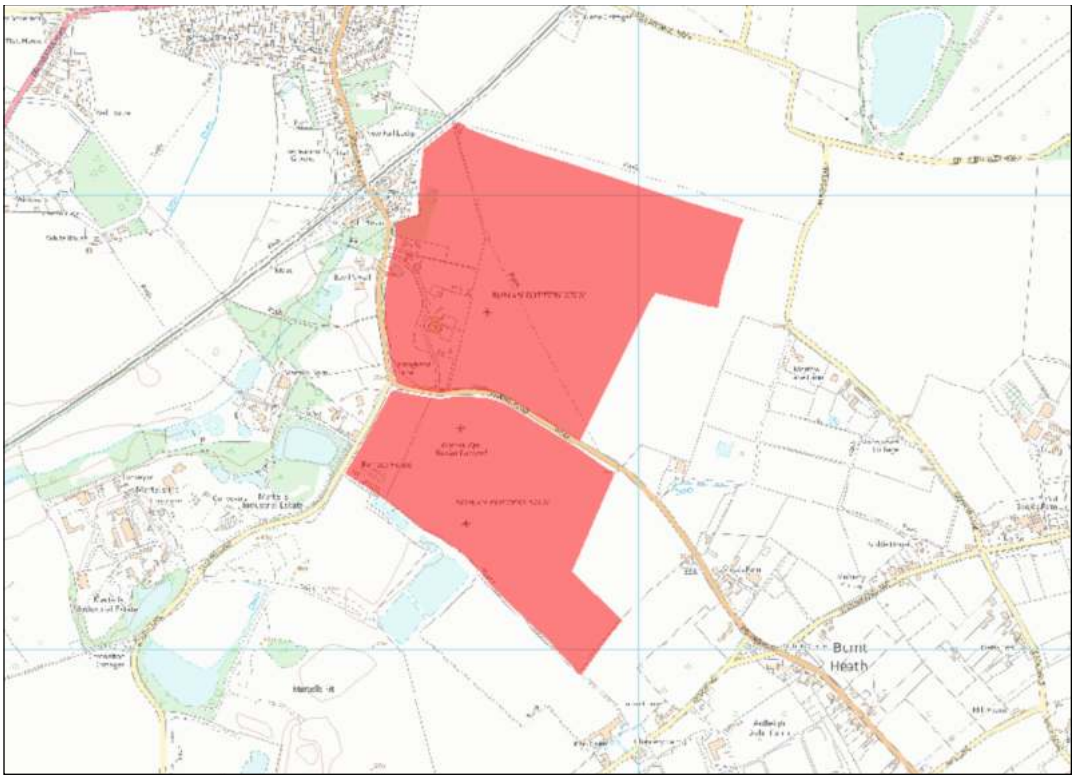


Fig. 21. Scheduled Ancient Monument located just south of the railway line

5.56. There are 9 Protected Lanes[14] throughout Tendring district and two of these - Lodge Lane/Crown Lane North and Spring Valley Lane - can be found in Ardleigh.

[14] Protected Lanes are lanes designated by the County Council and afforded additional protection as a result of their heritage value (indicating ancient road patterns) and contribution to local character

Services, facilities & infrastructure

5.57. The services and facilities in Ardleigh are relatively diverse for a Parish of its small size and rural nature.

Overview

5.58. Currently available at the heart of Ardleigh village is a post office, Primary School, GP surgery, two churches, takeaway, convenience store and public car park. Just south-west of the village, along Colchester Road, is a service station and public house.

Fig. 22. The Lion Inn, a Grade II listed public house at the heart of Ardleigh village, currently shut

5.59. The longstanding village pub permanently closed its doors during the COVID-19 pandemic and it is not yet known whether it will re-open in the future.

5.60. Ardleigh Parish also contains a number of more specialised services and facilities.

Employment

5.61. In terms of key employment sites, these are generally agricultural or industrial in nature and include a steel fabricator, plant & machinery hire shops, fruit & vegetable wholesalers, an industrial estate, a construction company, a horse breeder, a timber merchant, a sand & gravel supplier, a vineyard and various working farms.

5.62. There are several business parks, notably around the Old Ipswich Road area offering units for small and medium sized enterprises of various sorts.

Leisure & Community Facilities

5.63. Ardleigh's main recreational facility is Ardleigh Reservoir which hosts a fishery and a sailing club. Colchester Bowling Club is also located in close proximity. Ardleigh Fly Fishing Club operates from a private site at Hull Farm.

Fig. 23. Ardleigh Fly Fishing Club

5.64. Ardleigh's Village Hall is located towards the southernmost extremity of the village, adjacent to the Ardleigh Recreation Ground and Millennium Green. The recently refurbished Village Hall is fully accessible and available for public hire.

5.65. The recreation ground and green provides a cricket pitch, a children's play park and exercise equipment.It previously offered a football pitch and has potential to

be used for a wide range of sports and recreation. It is also home to Ardleigh Cricket Club.

Fig. 24. Children's play equipment

5.66. A mobile library visits Ardleigh village every three weeks.

Tourism

5.67. Ardleigh's dedicated tourism facilities are mostly in the form of accommodation. The Parish contains a small number of holiday lettings, B&Bs and a Caravan & Camping Park.

Transport

5.68. There are a number of bus stops located throughout Ardleigh village and some of the smaller hamlets. At the present time, buses are fairly regular and provide parishioners with access to Colchester, Manningtree, Harwich and elsewhere.

Fig. 25. Bus stop & shelter at the heart of Ardleigh village

5.69. Historically, the Parish was served by a dedicated railway station on the Great Eastern Main Line. The station was permanently closed in 1967 but the railway line remains a prominent landscape feature, bisecting Ardleigh village to the south.

5.70. The nearest train stations are now in Manningtree (approximately 4.2 km north-east of the Parish boundary) and Colchester North (approximately 3.6 km south-west of the Parish boundary).

New A120/A133 link road

5.71. Public consultation on a new link road for the A120/A133 closed in December 2019. The new link road is proposed to adjoin with a section of the A120 located within the south-easternmost extremity of Ardleigh Parish. The new road is proposed in order to reduce congestion, improve connectivity and facilitate planned housing and business growth in the area. In particular, it will form part of the Tendring/Colchester Borders Garden Community, creating access into and from it.

5.72. Planning permission for the new link road was granted by Essex County Council in November 2021 (ref. CC/TEN/31/21). It is anticipated that construction of the road will commence in 2022 and complete in 2024. The proposed location of the new link road is indicated on the below diagram.

5.73. The new link road is likely to improve parishioners' ease of access into the urban centre of Colchester but may also increase pressures for future development. It will be important to ensure that Colchester's urban sprawl remains reasonably well-contained and Ardleigh's rural character is safeguarded.

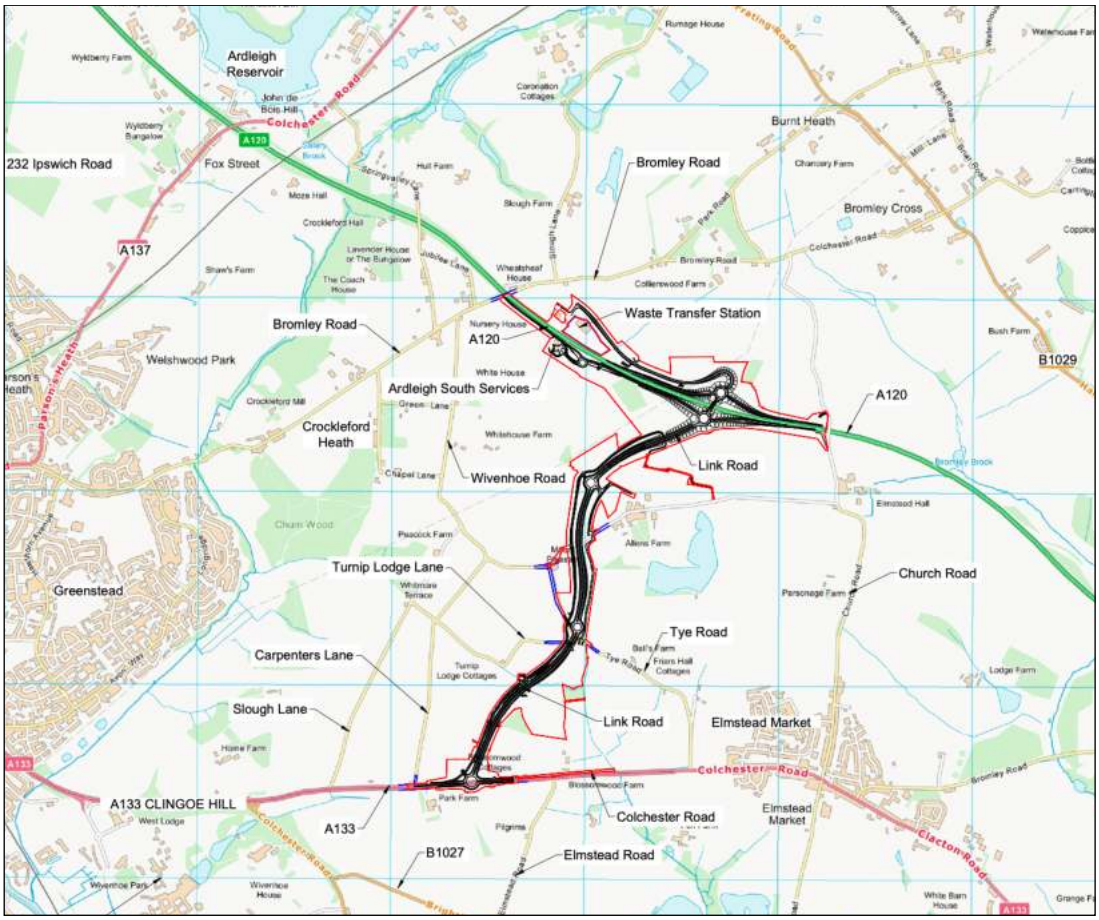


Fig. 26. Approved new link road & waste transfer station

6. Consultation & evidence base

6.1. National planning guidance requires that the local community is actively involved in the shaping of a Neighbourhood Plan, with their views relied upon to inform the purpose, direction and contents of the Neighbourhood Plan.

Summary

6.2. In 2020/21, local consultation took the form of two questionnaires:

1. a Strengths/Weaknesses/Opportunities/Threats (SWOT) Questionnaire called "Your Chance to Have Your Say" to establish the broad areas of concern and key opportunities for new development; and
2. a more detailed Consultation Questionnaire reflecting the results from the SWOT.

6.3. Due to the unprecedented circumstances of a global pandemic and associated Government imposed restrictions, consultation could not be conducted face-to-face. There was no opportunity for Village Hall events or visits to clubs and groups.

6.4. Instead, both consultations were carried out through online and hard copy questionnaires. These were distributed electronically via a dedicated page on Ardleigh Parish Council's website and other social media sites.

6.5. Details of the consultation exercises (and updates) were also included in the Ardleigh Advertiser (Parish magazine) which is available online, with a hard copy also delivered to every household in the Parish.

6.6. Hard copies were also distributed to accessible community sites, such as the local shop, Post Office, garage, garden centres and Ardleigh Surgery. Every effort was made to be as inclusive as possible.

6.7. Both questionnaires were aimed at all age groups and suitable for both householders and businesses.

First steps

6.8. The Neighbourhood Planning Team is made up of a Steering Group (with a project management role) and a larger Working Group. Both were established in April 2020. The Chair of the Steering Group reported regularly to the Parish Council.

6.9. The Steering Group was made up of 3 Parish Councillors (one of whom acted in a secretarial role), plus the Parish Council Clerk. The Working Group was made up of 9 Parish Councillors, the Parish Council Clerk and 4 members of the public. The members of the public include one young person, two who have lived in the Parish for many years and another who recently moved to the village. Of the Parish Council members, two are new; one having become a Parish Councillor after joining the Working Group.

6.10. Both Groups were set up during April 2020 at which time a Terms of Reference (ToR) was agreed and sanctioned by the Parish Council as well as a project plan and a communications and engagement strategy.

6.11. All meetings were conducted via an online video conferencing service. A shared online database was created for all documents and a dedicated page was created on the Ardleigh Parish Council website to record progress and communicate with the local community.

6.12. Communication with the local community has been key throughout the plan preparation process. Articles have regularly been posted in the Ardleigh Advertiser, supplemented by other social media posts and updates on the Parish Council website.

6.13. Progress was regularly reported at the Parish Council's monthly meeting, with the Minutes published on their website and summarised within the Ardleigh Advertiser.

First 'SWOT' Questionnaire

6.14. The first questionnaire was entitled "Your Chance to Have Your Say" (see Appendix 1).

6.15. This consultation tool was developed and designed by the Working Group to gain insight into the key issues affecting the local community. It was intended to steer and inform a more detailed questionnaire.

6.16. It was also agreed, due to the pandemic restrictions, that it would be of benefit to engage with the local community as early as possible in order to better raise awareness of the Neighbourhood Plan.

6.17. The SWOT Questionnaire was available on the Parish Council's website, under the Neighbourhood Plan heading. It was also available in hard copies at the local Post Office, shops, garage and garden centres.

6.18. It was launched at the beginning of July 2020 and ran until the end of August 2020.

6.19. Posters designed to raise local awareness of the ongoing consultation exercise were placed on all of the Parish Notice Boards, including at the following locations:

- Village playing field
- Village Hall
- Village Centre
- Village School
- Coggeshall Road
- Fox Street
- Plains Farm
- Burnt Heath
- Crockleford Heath.

6.20. Posters were additionally displayed in the two garden centres, local shops, Spar petrol station, Post Office and Ardleigh Surgery. The Ardleigh Advertiser (Parish magazine) included information about the survey throughout the campaign.

6.21. A database of businesses and local community groups was also compiled using a variety of local directories (and local knowledge) and contacted by email.

6.22. 130 total responses to the SWOT Questionnaire were received and analysed by members of the Working Group. The results were published in the Ardleigh Advertiser and on various social media platforms.

Second Questionnaire

6.23. Using the results of the initial SWOT Questionnaire, a more detailed Consultation Questionnaire was developed by Planning Direct with input from the Working Group. As the Government's pandemic restrictions persisted, there were no opportunities for face-to-face consultation events to be held. To counter this, every effort was made by the Working Group to inform the local community of the second consultation exercise.

6.24. The Consultation Questionnaire was launched on 18th November 2020 via Survey Monkey. A hard copy version was designed, printed and distributed throughout the Parish in the same manner as the SWOT questionnaire.

6.25. The village school, church, businesses and a number of local community groups were contacted by email and encouraged to participate.

6.26. Posters designed to emphasise different benefits of completing the questionnaire (to encourage as wide a take-up as possible) were displayed on Parish notice boards, in the usual village retail outlets and other local places frequented by parishioners.

6.27. The Consultation Questionnaire ran from mid-November to the end of January 2021. 300 responses were received, more than doubling the response to the SWOT questionnaire. This amounts to around 15% of the Parish population.

6.28. The responses to the Consultation Questionnaire have been used to inform the Vision, Objectives and Policies of this Neighbourhood Plan.

Outcome of the consultation

6.29. It is the overwhelming view of the people who live and work in the Parish of Ardleigh that it should above all else retain its rural characteristics, including the visual quality of its buildings, open spaces, trees, hedges, footpaths and bridleways.

6.30. There is also a strong sense of community in Ardleigh which should be protected and nurtured throughout all parts of the Parish, including its outlying hamlets such as Crockleford Heath (which is impacted by the proposed Garden Community).

6.31. Local residents would like to see the community spirit of the Parish strengthened by encouraging the development of leisure, sport and other recreational facilities including, if possible, a community hub.

6.32. Local people have clearly stated that they feel the greatest threat to the rural characteristics and community spirit of the Parish is the overdevelopment of housing. It appears to be widely agreed amongst local residents that Ardleigh has taken “more than its fair share” of new housebuilding in recent years and should not be the focus of major/strategic housing growth.

6.33. This local opinion appears to be largely in line with the view taken by Tendring District Council and the housing strategy contained within their Local Plan.

6.34. The responses from the Consultation Questionnaire have been used to inform the Vision and Policies of this Neighbourhood Plan.

Evidence Base

6.35. To inform the preparation of this Neighbourhood Plan, the following documents have also been produced:

Annex 1: Local Green Spaces Assessment; and
Annex 2: Updated Village Design Statement (2021).

7. Vision

7.1. In 2033, the Parish of Ardleigh remains in possession of its distinctive rural character and qualities.

7.2. The village's longstanding nucleated format continues to be preserved, whilst the rest of the Parish continues to provide a complementary offering of scattered farmsteads, barns, cottages and other appropriate rural land-based development.

7.3. The agricultural economy continues to thrive and there has been no significant loss of best and most versatile agricultural land to non-compatible uses. Appropriate and well-located rural land-based businesses have been supported to expand and flourish.

7.4. Positive features of the built, natural and historic environment have been protected and, wherever possible, enhanced. Ideally, Spring Valley Mill no longer appears on the Heritage at Risk register.

7.5. Some small-scale housing development has taken place within the defined Settlement Development Boundaries. This has been built to a very high standard, showing due regard for the local vernacular, the surrounding built context and the contents of the Village Design Statement. Sustainable design and construction techniques abound.

7.6. Existing community facilities, including Safeguarded Open Spaces and Local Green Spaces, have been retained and new leisure facilities intended to improve community cohesion and the health and wellness of residents have been introduced.

7.7. Where tourism, retail or employment-related development has taken place, it demonstrates due regard to the needs of residents and constraints of the Parish, including its landscape character and highways capacity.

7.8. Whilst efforts have been made to reduce the Parish's high levels of out-commuting for employment purposes (including support for home working proposals), efforts have equally been made to avoid any significant influx of in-commuting to Ardleigh.

7.9. Ardleigh remains a pleasant and tranquil place to live and work, providing a high standard of life to all of its residents.

7.10. The policies of this Neighbourhood Plan will ensure that the Vision is achieved.

8. Objectives

8.1. The objectives of this Neighbourhood Plan are simple:

- To achieve the Vision; and

- To achieve sustainable development in Ardleigh in accordance with the three overarching objectives of the National Planning Policy Framework (NPPF), namely:

c) **an economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

d) **a social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

e) **an environmental objective** – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Neighbourhood Plan Policies






9. Policy GDP: General Approach to Development






Explanatory text

9.1. Once made, this Neighbourhood Plan will form part of the Development Plan for the Neighbourhood Plan Area. In accordance with national planning legislation, all applications for development within the Ardleigh Neighbourhood Plan Area must comply with both the Local Plan and the Neighbourhood Plan (and any other documents forming the Development Plan) unless material considerations indicate that a departure from one or more of their policies is justified.

9.2. Whilst the Neighbourhood Plan sets no target or allocations for development within the Neighbourhood Plan Area, it does recognise that there will be a small amount of new development within the settlement on a windfall basis (per paragraph 3.3.1.4.2 of the Local Plan Part 2).

9.3. A range of small scale new development can be accommodated on a limited basis in Ardleigh where it falls within the Settlement Development Boundaries and complies with all other relevant Development Plan policies.

9.4. Outside Settlement Development Boundaries and outside of the Tendring Colchester Border Garden Community, opportunities for new development are more constrained. All parts of the Parish outside of the defined Settlement Development Boundaries and outside of the Tendring Colchester Border Garden Community comprise open countryside where national and local policies of restraint apply.

9.5. The Local Plan approach to development in the open countryside seeks to:

- Encourage the sustainable growth and development of farm and other rural land based businesses, including the construction of essential new buildings and rural workers' dwellings (policy PP 13);
- Support the re-use of redundant rural buildings for sustainable employment, leisure or tourism purposes (policy PP 13);
- Support the provision of compatible outdoor recreational activities (policy PP 8);
- Enable the provision of new or extended camping and caravan sites, provided there is no adverse effect on local biodiversity or geodiversity (policy PP 10); and
- Allow for the delivery of a modest amount of specialist new homes only, namely:
  - Rural workers' dwellings (in accordance with policy PP 13);

- Affordable housing on Rural Exception Sites (in accordance with policy LP 6); and
- Certain types of self-build and custom-built homes (in accordance with policy LP 7).

9.6. All of the above types of open countryside development permitted by the Local Plan are considered to be modest in scale and impact. Policy GDP provides additional support for similarly modest developments, provided specific criteria are met.

9.7. This Neighbourhood Plan does not seek to prevent or discourage any development that is permitted by the Local Plan.

9.8. Policy GDP reinforces the Local Plan approach to development within Ardleigh's Settlement Development Boundaries. It provides some additional flexibility outside of Settlement Development Boundaries in order to:

- support the retention, growth and new provision of a wide array of small businesses provided that these are compatible with their countryside settings; and
- encourage the provision of replacement dwellings that would benefit local character and improve energy-efficiency/sustainability.

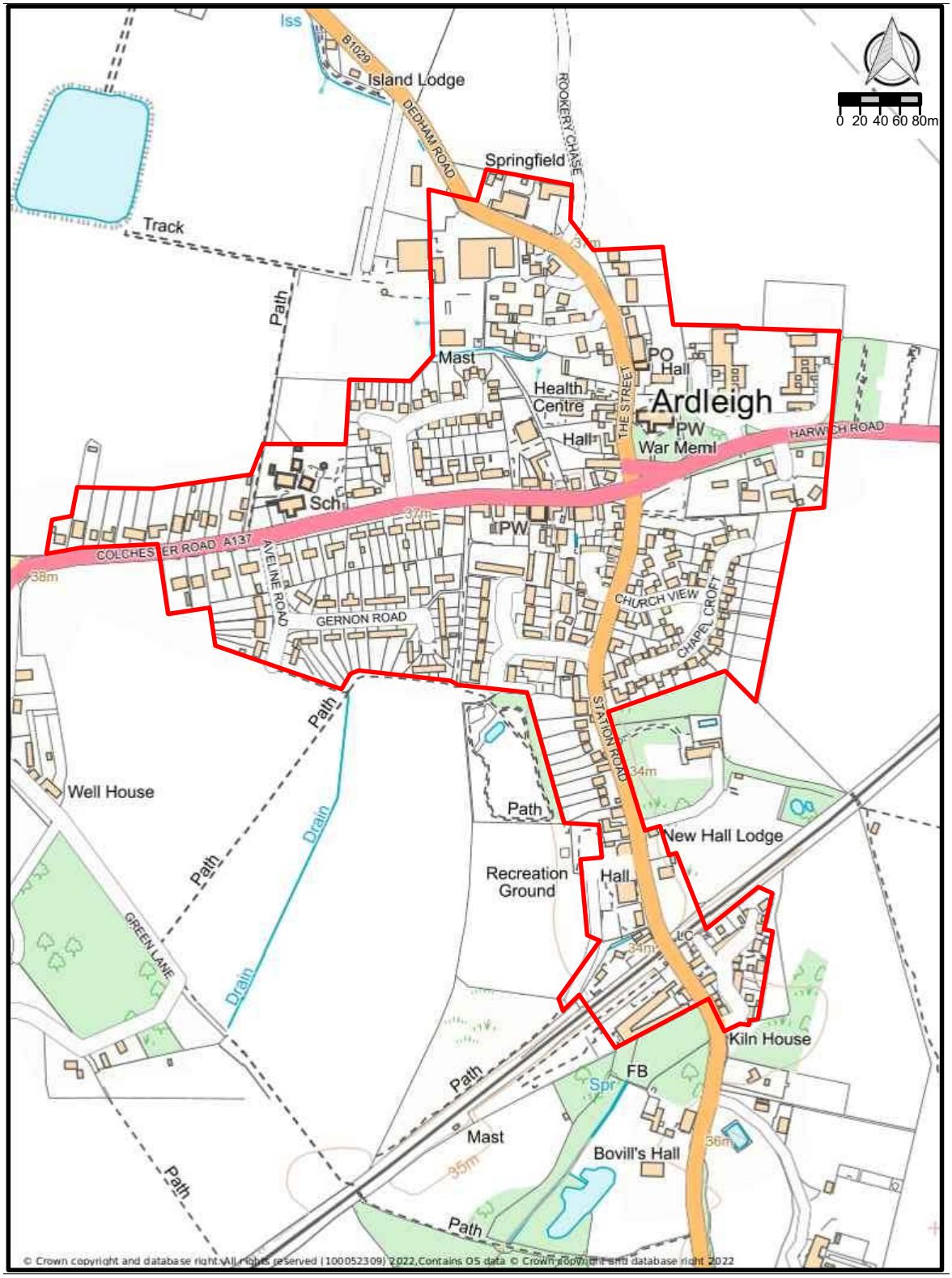


Fig. 27. Ardleigh's Settlement Development Boundaries in red

Policy GDP - General Approach to Development

Within the Settlement Development Boundary, small scale development for no more than 10 dwellings or for community and employment uses will be supported in line with policies in the development plan.

Outside the Settlement Development Boundary and outside of the Tendring Colchester Borders Garden Community, new development will not generally be permitted unless it is consistent with all other relevant Development Plan policies and:

Housing development

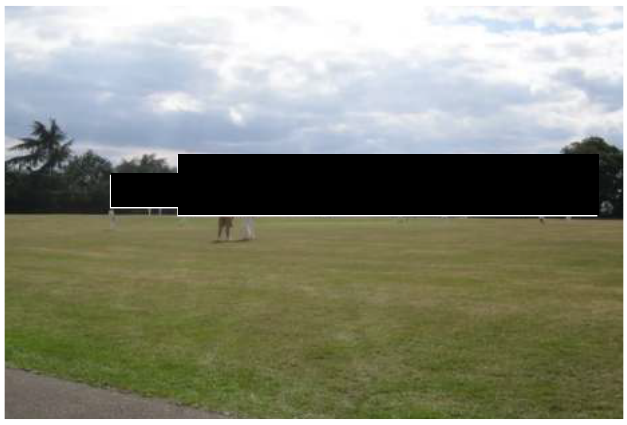
a. It is a Rural Exception Site in full accordance with local plan policy LP 6;
b. It is a small development of Self/Custom Build Homes in full accordance with local plan policy LP 7; or
c. It is for the 1:1 replacement of an existing dwelling that would both enhance local character and improve the site's overall energy efficiency and/or sustainability.

All other development

d. The proposal is appropriate in scale and impact to its location and context; and
e. It would provide necessary support for a new or existing business that is appropriate to the rural area; or
f. It would directly provide for the conservation, enhancement or appropriate enjoyment of the countryside.

All new residential development should also accord with any requirements specified in the Essex RAMS Supplementary Planning Document and local plan policy PPL 4.

10. Policy CFP: Community Facilities



Explanatory text

10.1. The Local Plan seeks to retain and enhance community facilities including, where relevant, supporting their new provision. The loss of community facilities is generally only permissible where replacement facilities are provided in an appropriate location or there is evidence of a lack of community need for the existing facility or a different community facility on the same site. Developments are also expected to meet any need(s) for new or enhanced community facilities that arise from the delivery of the development (policy HP 2).

Community consultation

10.2. In response to the local consultation exercises, the local community has expressed a very strong desire to see the re-introduction of gym, swimming and tennis/squash/badminton facilities to the area.

10.3. The overwhelming local opinion is that the recent permanent loss of Ardleigh's well-located Squash and Leisure Club (previously a Safeguarded Open Space and Asset of Community Value) to market housing in c. 2016 (application ref. 16/00878/FUL) - contrary to the Development Plan in place at that time - was unjustified and unfortunate.

10.4. Tendring District Council approved the loss of this community facility in spite of this being strongly objected by the following parties:

- The District Council's Regeneration Team;
- The District Council's Leisure Services Team;
- Sport England;
- England Squash;
- Ardleigh Parish Council;
- Ardleigh Hall Fall Outs Group; and
- around 69 individual members of the public.

10.5. The local community is consequently very keen to see the delivery of new similarly well-located leisure facilities that would appropriately mitigate for the unfortunate loss of the above highly valued community facility.

10.6. The introduction of other outdoor facilities and activities, such as walking/cycling routes, a BMX track, an enclosed dog walking space and easy access to

recycling facilities and new allotments, would also be welcomed by the community.

10.7. The Parish Council advises that The Ardleigh Recreation Ground recently contained a football pitch but this is no longer the case. The Parish Council would be keen to see this facility reinstated.

10.8. In addition, a significant number of local people wanted to see a 'community hub' of sorts introduced to Ardleigh, with perhaps another cafe, more restaurants and a greater variety of retail shops available too.

10.9. There was a feeling that young children were well catered for in relation to play areas, but that there were insufficient leisure/recreational facilities for older young people.

10.10. Overall, people were satisfied with the school and GP Surgery but some were concerned that both were under pressure from recent housing development.

10.11. This section of the Neighbourhood Plan seeks to provide clear encouragement for the retention and new development of community facilities in line with the expressed desires of the local community.

10.12. Further work would need to be done to explore options for the development of certain community facilities in the Parish, particularly in relation to a Community Hub and improved leisure/recreational facilities for young people.

10.13. It is known that there is currently a deficit of around 1.70 hectares of equipped play/open space in Ardleigh.

10.14. Based on statutory consultation responses to recent applications for new housing in Ardleigh[15], it is also understood that:

- Ardleigh's GP Surgery is overcapacity[16]; and

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[15] see, for example, the consultation response to refused application 20/00592/OUT (appeal reference APP/P1560/W/20/3260443) for up to 50 dwellings on Land North of Wick Lane

[16] In June 2020, the NHS (North East Essex) reported that The Ardleigh Surgery (including its Branch The Dedham Surgery) has a "Spare Capacity (NIA m2)" of -207.29

- Ardleigh's Primary School is overcapacity[17] and likely to remain at or close to capacity in the near future.

10.15. It is important that these community facilities can be retained for the benefit of current and future generations in Ardleigh. The local community is concerned that too much housing development is likely to lead to these highly valued local facilities being relocated away from Ardleigh, notwithstanding any financial contributions. This would be likely to have serious negative implications for all of the following:

- The general health and wellbeing of residents - reported in the most recent census to be very good;
- Community cohesion - with fewer opportunities for residents to meet and engage with one another;
- Children's socialisation - with the Primary School offering various extra-curricular activities which are especially valuable given the local play/open space deficit;
- The overall sustainability of Ardleigh - in spite of having both a GP Surgery and Primary School, Ardleigh sits at the lowest possible tier of the Settlement Hierarchy. Loss of the Primary School and GP Surgery could cause it to lose its settlement status entirely; and
- Community reliance on the private car - the GP Surgery and Primary School are located in safe and convenient walking distance of most village residents. If these facilities were relocated out of the Parish confines, it is highly likely that all residents of Ardleigh would be reliant on the private car to access them.

10.16. This Neighbourhood Plan does not seek to prevent any development that is permitted or encouraged by the Local Plan.

10.17. Policy CFP reinforces the Local Plan approach to community facilities. It provides strong support for the new provision of certain community facilities for which there is an established local need[18]. All of these preferred facilities would make welcome contributions towards the Local Plan's ambitious goals to improve

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[17] In January 2020, there were 113 pupils on roll, compared to an indicated capacity of 105 places

[18] not precluding the delivery of other community facilities in Ardleigh, provided local need can be established

community health and wellbeing (policy HP 1).

10.18. The policy also provided necessary acknowledgement of the recent evidence concerning the total lack of capacity at Ardleigh's GP Surgery and Primary School. As a result of these vital facilities' evidenced lack of current capacity[19], it is clear that any new housing development in Ardleigh of any size will need to make a proportionate contribution towards their expansion in line with part a. of local policy HP 2.

[19] and in the absence of any more recent evidence to suggest new capacity has been found

Policy CFP - Community Facilities

1. Applications for new or enhanced community facilities will be supported in appropriate locations where the proposal:

a. Provides a gym, swimming pool, squash/tennis/badminton courts and/or exercise related or leisure facilities; or
b. Provides on site enhancement of the Village Hall that would develop its role as a Community Hub; or
c. Is for a business with a clear community role or function such as meeting rooms, restaurant or café, shop, pub, dog training facility/walking area; or
d. Would contribute to meeting any identified deficiency in Ardleigh's equipped play/ open space.

2. New or improved community facilities should be designed to be accessible to all, including those with mobility restrictions. Community facilities that are intended or able to meet the needs of young people are particularly welcomed.

3. Proposals that would cause the loss or closure of existing community facilities will be refused unless they are in full accordance with local plan policy HP 2. In order to meet this policy, it will be expected that:

a. In relation to part b. of local plan policy HP 2, any existing community facility located within the Settlement Development Boundaries should be replaced by a facility also located within or within convenient walking distance of the Settlement Development Boundaries;
b. In relation to part c. of local plan policy HP 2, evidence provided by the Parish Council and/or members of the local community demonstrating that regular community use is made of a facility and/or the facility meets a clear community need, will be taken into account.

4. All housing applications outside of the Tendring Colchester Borders Garden Community that would result in a net addition of housing must be accompanied by:

a. Evidence that there is sufficient capacity at the GP Surgery and Primary School to meet the needs arising from the new household(s); or

b. A proportionate financial contribution towards the enhancement or new provision of appropriate medical and primary education facilities within the parish confines.

5. Development (including cumulatively) that would lead to the closure or relocation of Ardleigh's GP Surgery or Primary School outside of the parish confines will be resisted unless satisfactory replacement or improved provision is provided.

11. Policy HP: Housing






Explanatory text

11.1. In order to achieve a sustainable increase in housing stock over the plan period, the Local Plan anticipates delivery from the following key sources only:

- Existing permissions;
- Housing site allocations; and
- Other suitable sites within Settlement Development Boundaries (Section 3.3.2).

11.2. The Local Plan does not allocate any housing sites in Ardleigh or set any minimum housing figure for the Parish. The adopted housing strategy is such that Ardleigh could deliver 0 additional homes over the plan period and the District would still meet or exceed its minimum housing requirements.

11.3. Furthermore, the District Council's projections for small sites and windfall development (based on past trends for the whole District) assumes that a total of 122 new dwellings will be delivered throughout the Smaller Rural Settlements between 2021 and 2033. For argument's sake, this equates to only approximately 10 - 11 dwellings per year. Split equally amongst the 18 Smaller Rural Settlements, this equates to an approximate annual housing projection per Smaller Rural Settlement of just 0.5 - 1 dwelling(s).

11.4. Notwithstanding the above provisions, the Local Plan adopts a positive and proactive approach to the delivery of new housing in line with the national objective to significantly boost the housing land supply.

11.5. To this end, the Local Plan provides "in principle" support for all of the following types of new housing in Ardleigh:

- Developments of 10 or fewer infill dwellings located within the Settlement Development Boundaries of the village (see paragraphs 3.3.1.4.3 & 3.3.1.4.4);
- Developments of affordable housing on sites physically adjoining the village's Settlement Development Boundaries provided the development meets an identified affordable housing need in Ardleigh that could not otherwise be met and is supported by the Parish Council; and
- Developments of self-build and custom-built housing anywhere in the Parish if it comprises a 1:1 replacement of an existing dwelling OR it would redevelop vacant or redundant brownfield land that is evidenced to be unviable for employment use.

11.6. Ardleigh Parish Council is supportive of the District's ambition to exceed minimum housing requirements. However, this must be balanced against other important planning considerations, including the capacity of infrastructure/ facilities and the retention of Ardleigh's built/landscape character and rural identity.

11.7. Ardleigh has already seen a considerable amount of housing growth in recent years, far in excess of previous Local Plan predictions. Since 2011, this modest and historic rural settlement has seen a c. 20% increase in its total housing stock. Prior to this, growth had occurred more gradually over many years.

11.8. The Parish Council believes that better use can be made of existing residential plots to meet the changing/growing accommodation needs of local households, including the rise in multigenerational living. This approach is far preferred to the new residential development of previously green and open sites, especially in the rural areas. To this end, policy HP provides express support for the creation of ancillary residential accommodation (such as "granny annexes") throughout the Parish.

11.9. Although it is acknowledged that parts of the Parish lie in proximity of the more sustainable Colchester, there is legitimate concern that allowing housing growth in these areas will cause the rural Parish of Ardleigh and urban City of Colchester to coalesce. It is of vital importance that the sense of physical and functional separation between the City of Colchester and the rural Parish of Ardleigh is preserved throughout and beyond the current plan period. Great importance will be attached to this matter in the consideration of any relevant planning applications.

11.10. Additionally, the Tendring/Colchester Borders Garden Community (part of which is located in Ardleigh) is expected to deliver a very substantial number of new homes throughout and beyond the current plan period[20]. No matter where these new houses are delivered in Ardleigh, they will have considerable impacts on the Parish's rural character, infrastructure, sense of community and, of course, its overall housing stock.

Community consultation

11.11. The community consultation exercises underpinning the preparation of this

[20] *2000 total homes up to 2033 and a further 5500 homes post 2033*

Neighbourhood Plan have made it clear that an overwhelming majority of local residents strongly object to any further housing development taking place over the plan period.

11.12. Many expressed concern in response to the Consultation Questionnaire that recent housing development has threatened the community. Concerns were specifically raised about harm to the rural environment arising from developments taking place away from the village confines and about impacts on the school and GP surgery which were widely agreed to be at breaking point.

11.13. There is clearly little community support for any form of housing development. However, in terms of size, 4+ bed dwellings were felt to be the least needed whilst 2 and 3-bed dwellings were the most needed, with 1-beds not far behind.

11.14. In terms of residential design, a small community preference was indicated for the inclusion of sustainable/eco-friendly design and construction techniques. Policy HP therefore provides support for housing schemes that achieve high levels of sustainability. This could include houses that achieve zero carbon status or meet the Living Building Challenge.

11.15. Also preferred were infill schemes[21] and designs that harmonise with the traditional architectural character of the area. There was clear consensus that if new residential development is to be allowed, it should only be within the Settlement Development Boundaries.

11.16. Whilst there was some limited local support for affordable housing in the Parish, any affordable housing needs are likely to be met in full by development already planned for and/or approved (such as the Tendring/Colchester Borders Garden Community). It is also the case that the existing number of socially-rented properties in Ardleigh is closely aligned with the figure for the district as a whole which includes the urban localities of Clacton, Harwich and Manningtree.

11.17. In the event that additional need arises, Local Plan policy LP 6 already provides scope for the delivery of suitable affordable housing schemes in the Parish over the plan period.

11.18. Where the Parish Council is satisfied that:

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[21] "infill" meaning small plots with development on both sides, usually forming part of an otherwise continually built-up road frontage of buildings

1. a Parish need for an affordable housing scheme put forward under policy LP 6 has been demonstrated (with evidence); and
2. the application complies with all other provisions of policy LP 6 and any other relevant development plan policies;

they will provide their formal support for the application, as required by policy LP 6.

11.19. Per the above discussion, there is currently no established need or local community support for any additional housebuilding in Ardleigh over and above that already permitted by the Local Plan.

11.20. This Neighbourhood Plan does not seek to prevent or discourage any development that is permitted by the Local Plan.

11.21. Policy HP reinforces the Local Plan approach to housing development within and without Ardleigh's Settlement Development Boundaries. It identifies a number of specific design features that applications for new housing in Ardleigh should seek to incorporate in order to increase their chances of approval. It also provides additional scope for the creation of ancillary residential accommodation throughout all parts of the Parish in order to better support local residents to meet their changing housing needs.

Policy HP - Housing

1. Housing development will be supported within the Settlement Development Boundary where:

a. The proposal is for limited infilling* of no more than 10 dwellings.

*For the purposes of this policy, infilling means the development of a plot with buildings on both sides, usually a plot in an otherwise continuously built up road frontage.

2. New housing development outside the Tendring Colchester Borders Garden Community, is encouraged to incorporate:

a. Smaller units of 1 – 3 bedrooms to address local need;
b. Sustainable design and construction features; and
c. Accessibility features which would allow occupiers to remain in their homes over their lifetimes.

3. The creation of ancillary residential accommodation (e.g. granny annexes) within the curtilage of existing dwellings will be supported throughout the parish but outside the Tendring Colchester Borders Garden Community provided:

a. Evidence is supplied that the accommodation is required to provide necessary care and/or support to a member of the site's immediate family or household; and
b. A restrictive condition to prevent the future use of the ancillary accommodation as a separate or self-contained dwelling is applied to any grant of planning permission.

4. For developments that include the provision of affordable housing, it will be expected that affordable homes are interspersed appropriately throughout the market housing and are indistinguishable from the market housing in terms of their external appearance, design, standards and build quality.

12. Policy EP: Natural, Built & Historic Environment






Explanatory Text

12.1. At the highest level of planning, the achievement of “sustainable development” requires the protection and enhancement of the country’s natural, built and historic environments (paragraph 8 of the NPPF).

12.2. The Local Plan contains various detailed policies concerned with the conservation and enhancement of Tendring’s natural, built and historic environments, including:

Built

- Policy SPL 3 which expects all new development to make a positive contribution to the quality of the local environment and protect or enhance local character. In particular:

  - new buildings and building alterations should be well-designed and maintain or enhance local character;
  - development should relate well to its surroundings by way of its siting, height, scale, massing, form, design and materials;
  - Development should respect or enhance local landscape character, views, skylines, street patterns and open spaces;
  - Boundary treatments and hard/soft landscaping should be designed as an integral part of the development and use locally distinctive materials and local/native species;

Natural

- Policy PPL 3 which seeks to protect the rural landscape and to refuse permission for any development that would cause overriding harm to its character or appearance, including to its estuaries, rivers, skylines, traditional buildings, settlement settings, native hedgerows, trees and woodlands, rural lanes, footpaths/bridleways and heritage assets;
- Policy PPL 4 which requires that new development avoids significant impacts on any protected species and is supported by appropriate ecological assessments. This policy also resists development that would have an adverse impact on designated wildlife sites (including Local Wildlife Sites) or aged/veteran trees;

Historic

- Policy PPL 7 which requires new development with the potential to affect designated or non-designated archaeological remains to be accompanied by an appropriate desk-based assessment and which resists development that would cause harm to the significance of an archaeological heritage asset or its setting;
- Policy PPL 8 which expects new development to preserve or enhance Conservation Areas and their settings, especially in terms of scale and design, materials, finishes and boundary treatments, landscaping, trees and spaces and important views;
- Policy PPL 9 which states that permission will be refused for proposals that fail to protect the special architectural or historic interest of an affected listed building unless approval is justified by the provisions of the NPPF.

12.3. The Ardleigh environment has a pleasant and modest rural character that derives from a variety of factors, including (but not limited to) its:

- Visual qualities, including the architectural styles of buildings and the way manmade features (such as buildings and lanes) relate to natural features (such as trees and hedgerows) in the landscape;
- Use(s) of buildings and land, especially agricultural and other rural land-based uses which are a long-preserved and defining feature of the Ardleigh landscape;
- Wide array of natural and biodiverse landscape features including woodlands, ancient hedgerows, water bodies, meadows and orchards;
- Heritage assets, including the Conservation Area, the significant number of impressive old farmhouses and the medieval village church;
- Noises, including a lack of noise. For example, there are remote areas of the Parish (including parts of Crockleford Heath) where there is a lack of any road or traffic noise and birdsong dominates. Elsewhere, the noise of agricultural vehicles and machinery can be prominent throughout the working landscape;
- Smells. For example, in woodlands compared to agricultural areas;
- Lack of development, especially how this assists places and spaces to relate to one another. This includes: soft green spaces (formal or otherwise) that provide visual relief in built-up environments; gaps between buildings; open fields, especially where these are “hard-up” against the village’s built-up areas; and
- Type/amount of activity. For example, parts of the village and surrounding working agricultural landscape have a vibrant and bustling character, whereas other areas in the Parish are notably quiet and tranquil.

12.4. The defining character of the Parish is as a working agricultural settlement. The historic settlement's origins reside firmly in the agricultural working of its surrounding landscape and many of its statutory heritage assets reflect the critical social, economic and environmental importance of this local industry throughout the many thousands of years of the settlement's existence. Although (in common with all other parts of the country) agriculture is no longer as significant a local industry as it was historically, it does continue to employ a statistically significant number of local residents.

12.5. Furthermore, arable agricultural fields continue to strongly define the Parish's rural landscape character and a good deal of its field boundaries (and hedgerows) are many hundreds of years old. Ardleigh also retains a generous amount of "best and most versatile" agricultural land which should be permanently retained in agricultural use wherever possible.

12.6. The need to retain "best and most versatile" agricultural land is rendered all the more significant by the ongoing coastal erosion that continues to reduce agricultural land supply in this eastern region of the country. Local residents are also conscious of contemporary concerns surrounding food insecurities (arising from economic recession, Brexit, the pandemic and international conflicts).

12.7. A Conservation Area encompasses the heart of the historic Ardleigh village. The Conservation Area Appraisal prepared by Tendring District Council (2006) summarises its special interest as follows:

"Ardleigh is a small medieval village at an important road junction, and retains its fine church and sequences of attractive vernacular buildings. The well-treed approaches to the north and the east are essential to the character of the village and are also included in the Area. The village expanded southwards in the 19th century, resulting in further groups of distinctive buildings, which with their settings are also recognised by Area designation."

12.8. In December 2011, the Parish Council published a Village Design Statement (VDS). This document was prepared in consultation with Tendring District Council and seeks to describe the distinctive characteristics of the various parts of the Parish (including the village, the Conservation Area and some of the outlying hamlets) and provide design guidance for new development in these areas. Since its publication, the VDS has been a material planning consideration for all

relevant planning applications in the Parish.

12.9. The VDS (see Annex 2) has been updated as part of the preparation of this Neighbourhood Plan. The update is based on detailed desk- and field- based assessments. It seeks primarily to identify and assess developments undertaken in the Parish since 2011. For example, it evaluates the design success of these recent developments, including the extent to which they have complied with the former VDS and its design requirements. Where relevant, the guidance of the VDS has been updated to describe changes to local character, to clarify design expectations and/or to provide necessary additional protection against the design shortcomings of developments implemented in the Parish since 2011.

12.10. The desirable and undesirable design features for new development in Ardleigh outside the Tendring Colchester Borders Garden Community are set out in the tables below.

Roofs	
Desirable	**Undesirable**
45 degree pitch	Shallow pitch
Natural slate	Sheet roofing
Handmade plain clay tiles or modern equivalent	Clay or concrete pantiles
Traditional small dormer windows	Large, unrelieved expanses of roof
“Laced” valleys and “bonneted” hips	Large, disproportionate and flat-topped dormer windows
Chimneys	Absence of chimneys
Green and blue roofs, where appropriate	

Table 2.

Walls	
Desirable	**Undesirable**
Red, handmade brick to match local “soft” red bricks	Large expanses of unrelieved render with bland glossy or semi-matte paints

Rendered walls, ideally finished with traditional limewash or other truly matte finish	“Shiplap” style weatherboarding (machined with face profiles or bevels)
Sawn or feathered weatherboarding with black stain or matte paint finish	
White “Suffolk” handmade bricks	
Pebbledash render, ideally finished with traditional limewash or other truly matte finish	
Any arches or decorative features to use fine joints	

Table 3.

Windows	
Desirable	**Undesirable**
Windows in extensions to match windows of existing building	Large unrelieved areas of glazing
Glazing bars, if added for effect, to be no wider than 25mm	UPVC windows
In semi-detached and terraced housing, unity in window style should be achieved throughout the building	Obscure glazing with large-pattern designs
Honest, simple glazing in wood (or metal) frames based on traditional sizes	
Cottage' pattern side-hung, multi-pane windows ('landscape' format) based on traditional sizes, without small fanlights and with glazing bars no wider than 25mm	

Where double or secondary glazing is proposed, narrow glazing bars should be added as an applied grid to the exterior and not inserted between double-glazing OR incorporated as a functional part of traditional single-glazed windows alongside internal secondary glazing.	

Table 4.

Doors	
Desirable	**Undesirable**
Doors in extensions to match doors of existing building	Non-vernacular design, especially where visible from the public realm
In semi-detached and terraced housing, unity in door style should be achieved throughout the building	UPVC doors
Solid timber	
Where metal windows are provided (and appropriate), matching metal doors may be considered	
Ideally, the door colour should take its cues from the historic local usage of traditional mineral or vegetable paint colours (which characterise many of the houses in the village).	

Table 5.

Landscaping & boundary treatments	
Desirable	**Undesirable**
For hardstandings, clay (brick), stone or concrete individual 'setts' of square or rounded non-geometric design (if brick or concrete, batches should be well-mixed to avoid colour patches), gravel	For hardstandings, large unrelieved areas of tarmac, monolithic concrete, or geometric pavers
Hedges using native species such as hawthorn, especially in country lanes	Patterned concrete (e.g. monolithic concrete with surface designs to mimic real stone finishes)
Low brick walls as for buildings, with brick copings	Suburbanisation' of country lanes with expansive sections of close-boarded fencing and overly elaborate or ornate tall brick walls and metal fences
Timber picket and post-and-rail fencing (again stained, not painted)	Hedges of non-native or generic species such as laurel
Simple modern or genuinely traditional light fittings	Poorly sited, intrusive or excessive exterior lights
Traditional timber joinery gates	
Traditional low iron fences and gates in simple styles, without too much ornamentation	
New housing developments that include electric vehicle charging points within the residential curtilage(s) will be looked on more favourably than those that do not	

Table 6.

12.11. This Neighbourhood Plan now requires all new development in the Parish to pay due regard to the relevant contents of the updated VDS. The VDS comprises an annex to the Neighbourhood Plan.

Community consultation

12.12. In response to the community consultation exercises, an overwhelming majority of local residents reported that they value and wish to preserve the Parish's rural character, including its open spaces, trees, hedgerows and the visual qualities of its buildings. Respondents did not wish to see the Parish's cherished footpaths, bridleways or rural lanes adversely affected by any new development. Some concern was also expressed about the Tendring/Colchester Borders Garden Community, particularly the harm this might cause to the rural environment of Crockleford Heath.

12.13. This Neighbourhood Plan does not seek to prevent or discourage any development that is permitted by the Local Plan.

12.14. Policy EP reinforces the Local Plan approach to the natural, built and historic environments of the District. It provides valuable guidance to enable applicants to understand Ardleigh's specific character and identify how new development can be designed to maintain or enhance this. Given the considerable importance of working agricultural land to the character and appearance of Ardleigh's historic rural landscape, it directly resists any unnecessary loss of best and most versatile agricultural land to non-compatible uses.

Policy EP - Natural, Built & Historic Environment

1. Outside of the Tendring Colchester Borders Garden Community, development will be supported provided:

a. Its design is of a high quality and takes account of the Village Design Statement or any successor document, paying particular attention to appropriate:

   i. Siting;
   ii. Layout;
   iii. Form and scale;
   iv. Architectural style
   v. Materials;
   vi. Relationship to surrounding development;
   vii. Impact on important built and landscape features;
   viii. Landscaping and boundary treatments;
   ix. Car parking provision; and
   x. Accessibility.

b. It does not result in a harmful urbanising effect on a rural lane or street (for example, as a result of hedgerow removal or loss of an open view);
c. There is no urban intrusion (including as a result of light or noise pollution or increased vehicular traffic) into currently tranquil rural areas;
d. There is no net loss of good quality green landscape features (including trees, hedges and shrubs) and all new green landscape features are of appropriate local or native species;
e. Appropriate opportunities are incorporated to support local biodiversity and wildlife including net gain;
f. There is no unnecessary loss of best and most versatile agricultural land to non compatible uses (the onus will be on the developer to establish the quality of any agricultural land proposed for other uses);
g. Development in the Conservation Area or within its setting preserves or enhances its character or appearance and takes the Conservation Area Appraisal into account; and
h. Development affecting a Listed Building or its setting preserves or enhances its significance and is supported by a proportionate Heritage Impact Assessment.

13. Policy LGP: Local Green Spaces

Explanatory Text

13.1. The National Planning Policy Framework (NPPF) supports the designation of land as Local Green Space through both local and neighbourhood plans (paragraph 101).

13.2. Designated Local Green Spaces are considered to be “areas or assets of particular importance” (per paragraph 11 and its supporting footnote) and are consequently given additional protection against inappropriate development.

13.3. The Local Green Space designation should only be used where the green space is:

a) In reasonably close proximity to the community it serves;
b) Demonstrably special to a local community and holds a particular local significance,
for example because of its beauty, historic significance, recreational value, tranquillity
or richness of wildlife; and
c) Local in character and not an extensive tract of land (paragraph 102).

13.4. Further guidance on Local Green Space designation is provided in National Planning Policy Guidance (NPPG), including:

- Whether to designate land is a matter for local discretion;
- Local Green Space designation will rarely be appropriate where the land has planning permission for development. Exceptions could be where the development would be compatible with the reasons for designation or where planning permission is no longer capable of being implemented;
- “Reasonably close proximity” depends on local circumstances including why the green area is seen as special. If public access is a key factor, then the site should normally be within walking distance;
- Land can be considered for designation even if there is no public access (e.g. green areas which are valued because of their wildlife, historic significance and/or beauty);
- Designation of a site does not confer any rights of public access over what exists at present;
- There is no need to designate linear corridors simply to protect public rights of way (as they are already protected by other legislation);

- A site does not need to be in public ownership, however landowners should be contacted and provided the opportunity to make representations in respect of proposals in a draft plan; and
- Designating a green area as Local Green Space would give it protection consistent with that in respect of Green Belt, but otherwise there are no new restrictions or obligations on landowners.

13.5. This Neighbourhood Plan is able to designate Local Green Spaces (LGS) provided the national criteria are met.

13.6. Locality[22] has also published a toolkit for neighbourhood planners entitled "Neighbourhood Planning Local Green Spaces". This contains more detailed guidance concerning the identification and designation of LGSs as well as the drafting of relevant neighbourhood plan policies for their protection.

Locality toolkit

Some of the most relevant advice provided by the Locality toolkit is extracted below:

Some of the community and environmental benefits of green spaces are:
- *Being part of the public realm, where informal social interaction can take place*
- *Forming part of a network of paths and spaces, enabling movement through an area*
- *Providing habitats for wildlife and a natural corridors and spaces through urban areas*
- *Adding to local amenity, providing an attractive setting and outlook for surrounding residential and commercial properties*
- *Forming part of the character or setting of historic areas, buildings and townscape*
- *Providing areas and opportunities for growing local food.*

Community and Stakeholder engagement:
Where Local Green Space designations are being considered, it is also advisable to engage with those controlling the land.

Policy themes:
Purposes and themes for policies addressing green space and infrastructure could

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[22] Locality is an organisation providing support to neighbourhood planning groups on behalf of the Department for Levelling Up, Housing & Communities. They provide both grant (financial) and technical (assistance and advice) support

include -

- *Ensuring the space remains open and its community value is maintained*
- *Protecting the character of the area, including historic areas*
- *Ensuring adjacent development complements its setting*
- *Setting out design requirements for new development around green space, including providing access into the space, where appropriate*
- *Enabling changes of use to allow a wider range of activities to take place*

A policy specific to Local Green Space could make clear that development should not compromise the open character and community value of spaces or set out where limited development may be allowed to enhance the community use of the space.

Design policies could ensure that development adjacent to Local Green Space provide active frontages, to provide natural surveillance. Such policies could also deal with scale and character of development. Open Green Spaces could provide an ideal setting for creative modern buildings on adjacent sites.

13.7. The LGSs of this Neighbourhood Plan and the related LG policy have been identified and prepared in accordance with the national criteria, the NPPG and the Locality toolkit.

13.8. A comprehensive LGS Assessment was carried out as part of the preparation of this Neighbourhood Plan and comprises an important aspect of its evidence base[23]. A total of 24 spaces were nominated for consideration by the local community. Each of these spaces was then subject to a desk-based assessment, leading to 6 of the nominations being discounted from further consideration.

13.9. Field assessments were then conducted of the 18 remaining spaces to enable a more detailed appraisal of their accordance with the national criteria. The field assessments led to more sites being discounted or amended, with a total of 7 LGSs carried forward for nomination in the Neighbourhood Plan.

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[23] This section of the Neighbourhood Plan provides an overview of its key contents. However, for a detailed understanding of the assessment process and public consultation responses, regard should be had to the separate LGS Assessment at Annex 1

13.10. The 7 LGSs carried forward for nomination in the Neighbourhood Plan are:

1. Fishing lake north of Colchester Road
2. Manor House meadow
3. Woodlands attached to Birch Wood
4. Hart's Lane orchard
5. Car park land
6. Glebe Corner land
7. Harwich Road allotments.

13.11. A brief summary of the special community value and local significance (e.g. beauty, historic significance, recreation value, tranquility, richness of wildlife) of each LGS appears below[24]. These are the qualities which any new development in or adjacent to the space should seek to preserve or enhance. Development that would cause material harm to these features will be considered "inappropriate" in relation to policy LGP.

1. Fishing lake north of Colchester Road

Fig. 28. Space 1

[24] these summaries are not exhaustive - for full descriptions, reference should always be made to the separate LGS Assessment at Annex 1

13.12. The site comprises a fishing lake. Parts of the site support beautiful, far-reaching public views to be had both across the arable landscape and back towards the settlement edge. These views are genuinely representative of the Landscape Character Area and largely unchanged since historic times. The space is emblematic of the historic (and, in other places, eroded) abrupt spatial relationship between the medieval nuclear village of Ardleigh and the surrounding working countryside. It has been used for recreational walking by villagers for hundreds of years. It provides the only glimpse of open countryside available from Colchester Road (within the built-up area of the village). The fishing lake is replete with local wildlife, including a variety of birds and bats. Given its close proximity to the village centre, it is a surprisingly tranquil place with a perceptible sense of being far away from people and settlement. It is subject to regular recreational use by a local fishing club.

Space 2 Manor House meadow

Fig. 29. Space 2

13.13. The site is long-preserved amenity land enclosed by public footpaths and containing ancient woodlands. It is subject to daily recreational use by villagers. Part of the site is designated Local Wildlife Site Te10 in recognition of its significant value to wildlife. Salary Brook also passes through the area, supporting a wide variety of habitats. It has visual presence on the approach to

Ardleigh village along the B1029.

Space 3 Woodlands attached to Birch Wood

Fig. 30. Space 3

13.14. Space 3 comprises two small but dense sections of woodland located along the historic and picturesque Hart's Lane. The woodlands appear as natural extensions of the adjacent Birch Wood which is a designated Local Wildlife Site. Their trees appear to be of some maturity and good quality. In common with the adjacent Birch Wood, the space supports a wide variety of wildlife. Birch Wood is identified to be suffering from piecemeal conversion to residential garden. Given this ongoing threat, the retention of these sections of adjoining woodland is considered to be all the more important for both landscape and biodiversity reasons. The sites also make a notable positive contribution towards the special rural and sylvan qualities of the historic Hart's Lane and the setting of nearby listed buildings.

Space 4 Hart's Lane orchard

Fig. 31. Space 4

13.15. The space is a working apple orchard with a public footpath running along its boundary. Previously, the public footpath ran through the centre of the orchard but part of the orchard was recently lost to residential use. Historically and for many generations, the surrounding area (Hart's Lane) was replete with working fruit orchards, however these uses have nearly all been lost. This space now comprises the last remaining veteran fruit orchard on Hart's Lane. It consequently provides an evocative and highly valuable reminder of the specific agricultural origins of this part of the Parish. The Woodland Trust also recognises that fruit orchards of this scale and nature are "biodiverse hotspots" - given the modern loss of all other fruit orchards on Hart's Lane, this last remaining space is likely to provide a highly valuable refuge for local wildlife and its retention is important.

Space 5 Car park land

Fig. 32. Space 5

13.16. This space comprises a small section of public amenity land that sits adjacent to the village's central car park. It consists of undulating grassed land containing various trees and a well-used pedestrian pathway. It is located within the Conservation Area, in close proximity and in view of the landmark, Grade II* listed village church. It is also close to and overlooked by the nearby residential estate, providing a well-used informal play area for children living there. The land is considered to make a very valuable contribution towards the landscape qualities of the Conservation Area. In particular, it greatly softens the hard-edged character of the public car park, provides a welcome gap in built form and confers maturity on the adjacent modern housing estate.

Space 6 Glebe Corner land

Fig. 33. Space 6

13.17. This space comprises former glebe land (historically attached to the village church) that now appears as rough grassland, bordered by dense and mature hedgerows of some quality. The space is considered to provide a very important landscape function, marking the unofficial “entrance” to Ardleigh from the east. Its partial treed enclosure clearly distinguishes it from the wider open landscape and serves to signpost the transition from large-scale arable countryside to small-scale rural settlement. In its current state, the site has clear biodiversity value and appears to support an abundance of butterflies and bees. It also assists to preserve the tranquility and landscape qualities of the adjacent allotments and cemetery. Although it is no longer glebe land, it retains many of the undeveloped qualities that it would historically have held as glebe land and it continues to form part of the church’s heritage setting. Its retention provides an evocative reminder of the ecclesiastical origins of this part of the Parish.

Space 7 Harwich Road allotments

Fig. 34. Space 7

13.18. The site comprises private allotments that are used by local residents to grow vegetables, flowers and keep poultry. Produce grown here is frequently sold to the local community. It is believed that these are the only allotments in the Parish. Although open to members of the public for a fee, it is understood that the allotments are at capacity. Overall, the allotments appear tidy and well cared for and have a positive visual presence from the road on the approach to the village. Especially given modern concerns over food security and supply issues, these village allotments have considerable value to the local community.

13.19. The location and boundary of each LGS is indicated on the proposals maps (appendix A).

Community consultation

13.20. The local community and the landowners of the 7 remaining LGSs were provided with an opportunity to submit written representations on the nominations. In total, 9 written representations were received. Of the 6 landowner responses received, only 1 was supportive. A summary of the public/landowner comments, including the Parish Council's responses to objections raised, appears in the LGS Assessment (Annex 1). Ultimately, the Parish Council does not consider that any of the objections received weigh against designation of any of the 7 LGSs. The Parish Council would emphasise that designation of the sites:

- Will not confer any public rights of access over and above those already in

existence and the Parish Council will continue to support landowners to deal with any trespassing issues;

- Will not prevent any development on or around the space. In fact, development that is compatible with the space's established use and/or special community value will be encouraged; and
- Will not place any additional burdens or requirements on landowners other than to continue to maintain the space's special value as they do at present.

Policy LGP - Local Green Spaces

The following spaces are designated as Local Green Spaces:

- Space 1: Fishing lake north of Colchester Road
- Space 2: Manor House meadow
- Space 3: Woodlands attached to Birch Wood
- Space 4: Hart's Lane orchard
- Space 5: Car park land
- Space 6: Glebe Corner land
- Space 7: Harwich Road allotments.

In the LGSs, new development will be managed in a way that is consistent with national policy on Green Belts.

Development adjacent to a LGS will be supported provided it is compatible with the LGS.

14. Policy TP: Transport & Parking

Explanatory Text

14.1. The National Planning Policy Framework (NPPF) expects transport issues to be considered from the earliest stages of plan-making. Amongst other matters, plans should seek to address potential impacts on existing transport networks and identify opportunities for walking, cycling and public transport use (paragraph 104).

14.2. The NPPF also provides that:

- significant development should be focused on locations that are or can be made sustainable by both limiting the need to travel and offering a genuine choice of transport modes (paragraph 105); and
- development that will generate significant amounts of movement should be accompanied by a Travel Plan and Transport Statement or Transport Assessment (paragraph 113)[25].

14.3. Due to its position at the lowest possible rung of the Settlement Hierarchy, Ardleigh is only anticipated to deliver "small-scale development" over the plan period (per paragraph 3.3.1.4.2 of the Local Plan Part 2). Consequently, it is not anticipated that any significant/major development likely to generate significant amounts of movement or to have significant transport implications will be delivered anywhere in Ardleigh over the plan period.

14.4. Local policy CP 1 requires that all new development is sustainable in terms of transport and accessibility. To achieve this, new development should include and encourage opportunities for access to sustainable transport modes (including walking, cycling and public transport).

14.5. Local policy CP 2 provides support for new development that contributes towards the safety and efficiency of the transport network and that offers a range of sustainable transport modes.

Community consultation

14.6. In response to consultation, the majority of local people felt that the roads in and around Ardleigh are adequate overall. However, a large number of people

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[25] Local policy CP 1 sets similar requirements for "major development likely to have significant transport implications"

reported concerns about congestion and parking on certain Parish roads, particularly Old Ipswich Road and The Street at the heart of the village.

14.7. Since public consultation closed, the Parish Council advises that parking controls have been introduced to The Street in the form of double red lines. It is anticipated that this recent feature will mitigate at least some of the parking pressures and congestion along this street.

14.8. There were also concerns about the speed of traffic through the Parish and the general flouting of weight restrictions on the small roads and lanes. It was felt that greater efforts are needed to ensure these restrictions are enforced.

14.9. A lot of local people would also like to see the local transport network enhanced by improved cycle and walkways.

14.10. It is acknowledged that the Neighbourhood Plan is limited in what it can achieve in relation to certain local concerns. It cannot, for example, introduce policies to require motorists to abide by weight restrictions that are already in place. Essex Highways is the Authority responsible for enforcing Weight Restriction Orders and the Parish Council will continue to liaise with this body directly to address local concerns.

14.11. In respect of parking, the Parish Council is concerned that recent development throughout Ardleigh has given insufficient consideration to both the design and quality of car parking facilities. Recently, developers have not been providing parking in accordance with the adopted guidance and the serious harmful implications of this are plain to see. In many of Ardleigh's modern housing estates, the parked car is by far the most dominant feature in the streetscene and this is truly unfortunate.

14.12. These recent developments in Ardleigh have failed to provide the parking facilities required to meet the basic needs of their occupants at the point of their construction, let alone into the future. As cars inevitably grow in size and the number of cars per household inevitably increases too, the failure of these recent developments to incorporate sufficient well-designed parking will only become more apparent and the implications for local character and local road networks more severe.

14.13. This Neighbourhood Plan therefore seeks to ensure that parking provision is henceforth designed in accordance with the adopted regional guidance and also considered from the earliest stages of a development's design as an integral

feature. The provision of undersized garages, undersized or poorly arranged spaces and/or an inadequate number of in-curtilage spaces will no longer be entertained anywhere in Ardleigh.

14.14. This Neighbourhood Plan does not seek to prevent or discourage any development that is permitted by the Local Plan.

14.15. Policy TP complements the provisions of the NPPF and the policies of the Local Plan. In particular, it reinforces the Local Plan approach of resisting significant and major development in the Smaller Rural Settlement of Ardleigh and its surrounding countryside. It also identifies specific ways in which new development can contribute towards the safety and efficiency of Ardleigh's transport network, in accordance with local policy CP 2. Given the parking inadequacies of a number of recent developments in Ardleigh, it also seeks to reinforce the importance of well-designed parking facilities and the need to comply with established parking guidance.

Policy TP - Transport & Parking

1. Outside the Tendring Colchester Borders Garden Community, new development that has an unacceptable impact on highway safety or have residual cumulative impacts on the local road network will be resisted.
2. Outside the Tendring Colchester Borders Garden Community, development that otherwise complies with the development plan will be supported where it:

a. Improves highway safety;
b. Takes every available opportunity to improve parking provision including through innovative approaches to parking that contribute to modal shift;
c. Retains and enhances the existing footpath and cycleway networks including through the provision of new routes or connections.

3. Outside the Tendring Colchester Borders Garden Community, parking provision should be designed as an integral feature of a development's layout. New development should provide parking in accordance with the Essex Parking Standards and the Essex Design Guide or any successor guidance as well as considering modal shift opportunities.

15. Implementation, Monitoring and Review

Implementation

15.1. The Neighbourhood Plan forms part of the statutory Development Plan and will be used by decision takers to determine the outcome of planning applications and appeals in the Parish. The District Council, as the Local Planning Authority, will use it to determine the outcome of planning applications within the Parish.

15.2. In preparing the Neighbourhood Plan, care has been taken to ensure that all of its policies are achievable.

15.3. The Parish Council will rely on the Neighbourhood Plan to inform its representations on submitted planning applications. The Parish Council's formal support will be provided for all applications that are assessed to be in full accordance with all relevant policies in this Plan.

15.4. Once 'made', this Neighbourhood Plan will form part of the Development Plan for the district.

Monitoring

15.5. Ardleigh Parish Council will monitor both the implementation and the ongoing relevance of the Neighbourhood Plan on a regular basis.

15.6. Subject to available resources, the Parish Council will prepare annual monitoring reports. These reports will be published on the Council's website.

Review

15.7. The Plan will be subject to review every five years. As part of the five-year review, the views of residents will be sought and the Neighbourhood Plan will be updated as necessary. As part of its ongoing monitoring of the Neighbourhood Plan, the Parish Council will consider undertaking an early review if any of the following circumstances apply:

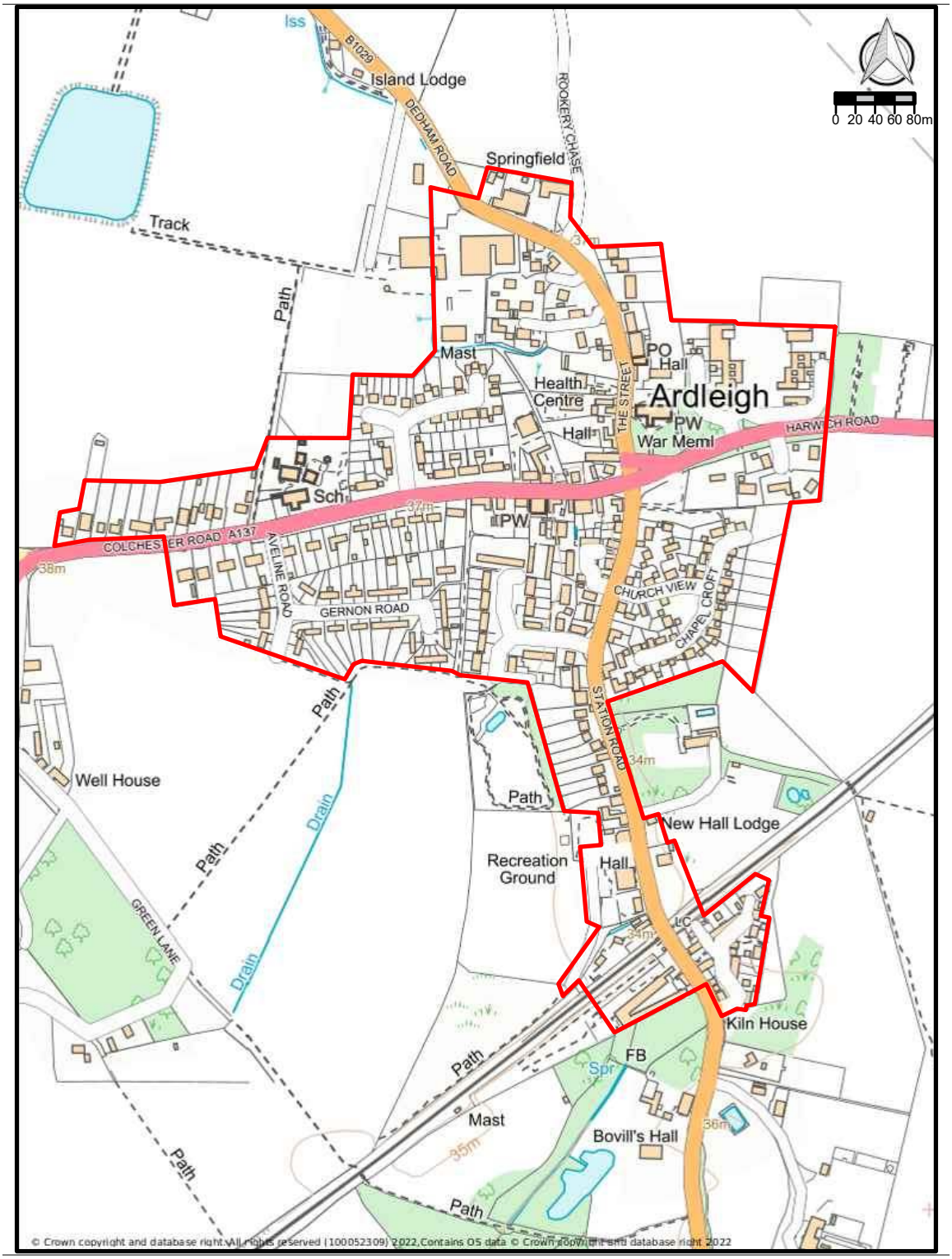
- Material change in local circumstances;
- Monitoring of the plan reveals an issue with policy wording; or
- There is an update to the Local Plan, the NPPF or a Ministerial Statement (etc.) that affects the Neighbourhood Plan.

15.8. The Parish Council will also pay close attention to the progress of the Tendring/ Colchester Borders Garden Community. In particular, they will work alongside the partner councils to identify any changes to the Neighbourhood Plan that might be necessary or appropriate in the light of advancements made.

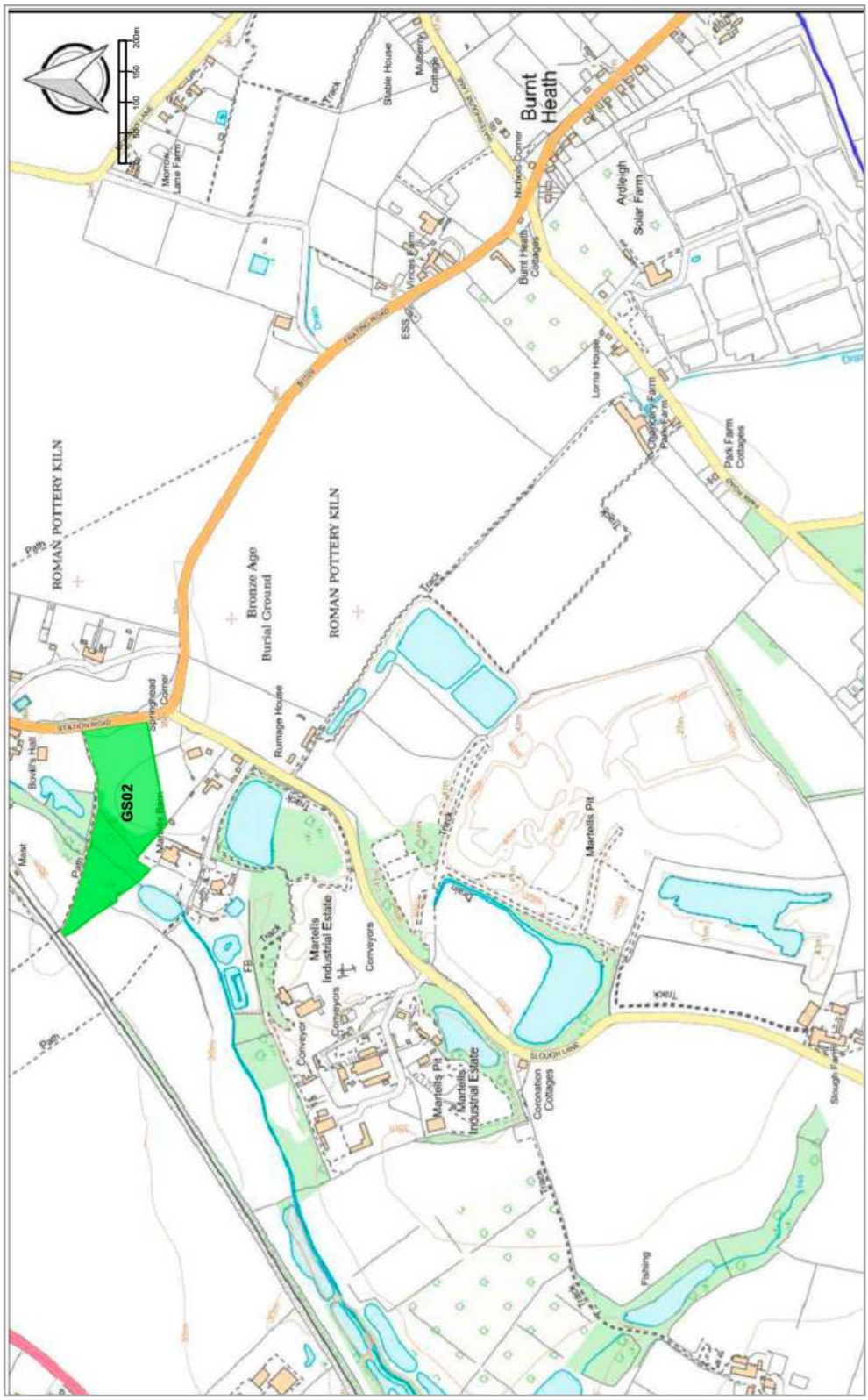
Appendix A: Proposals maps

Key

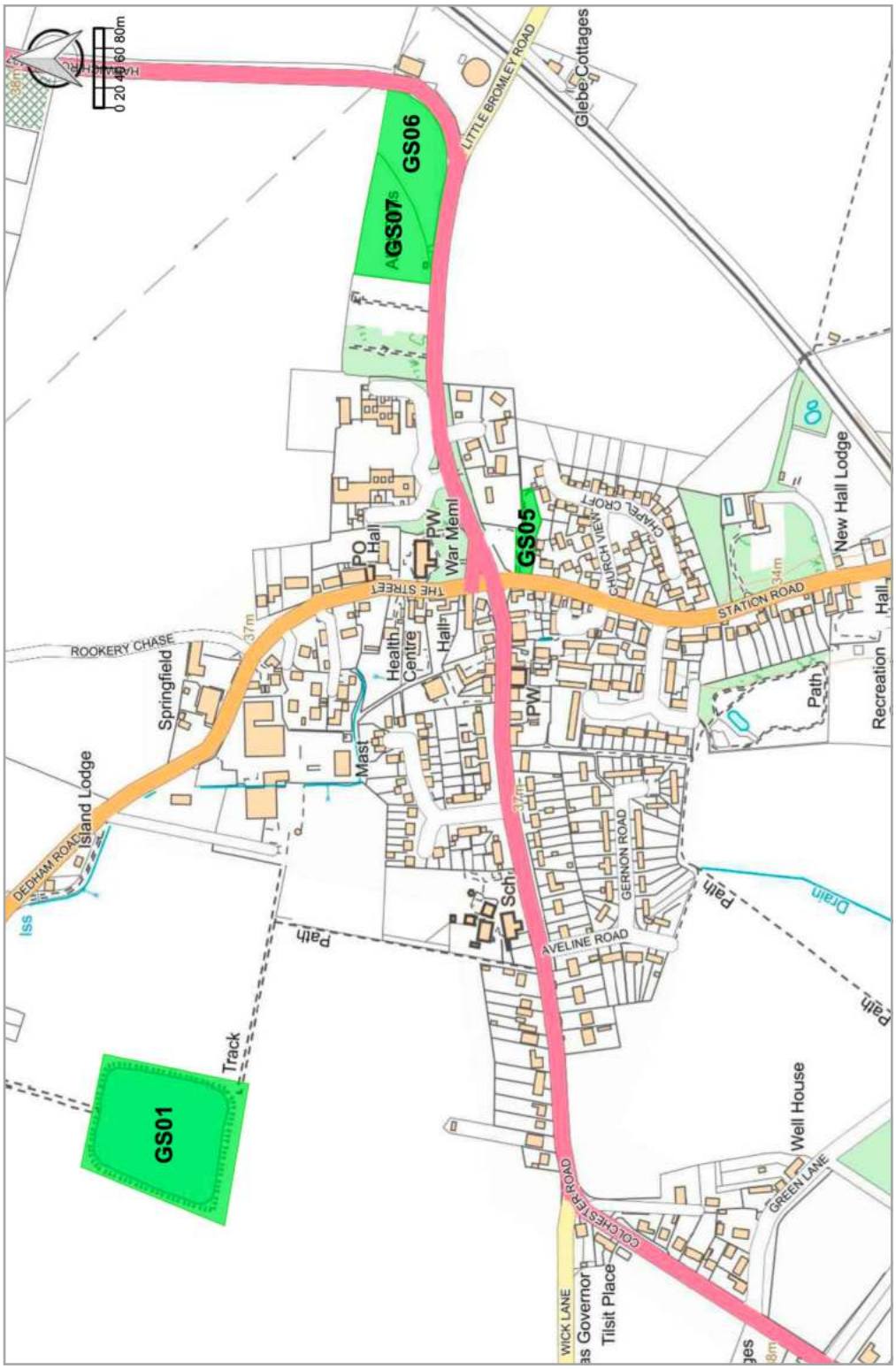
Map 1: Settlement Development Boundary



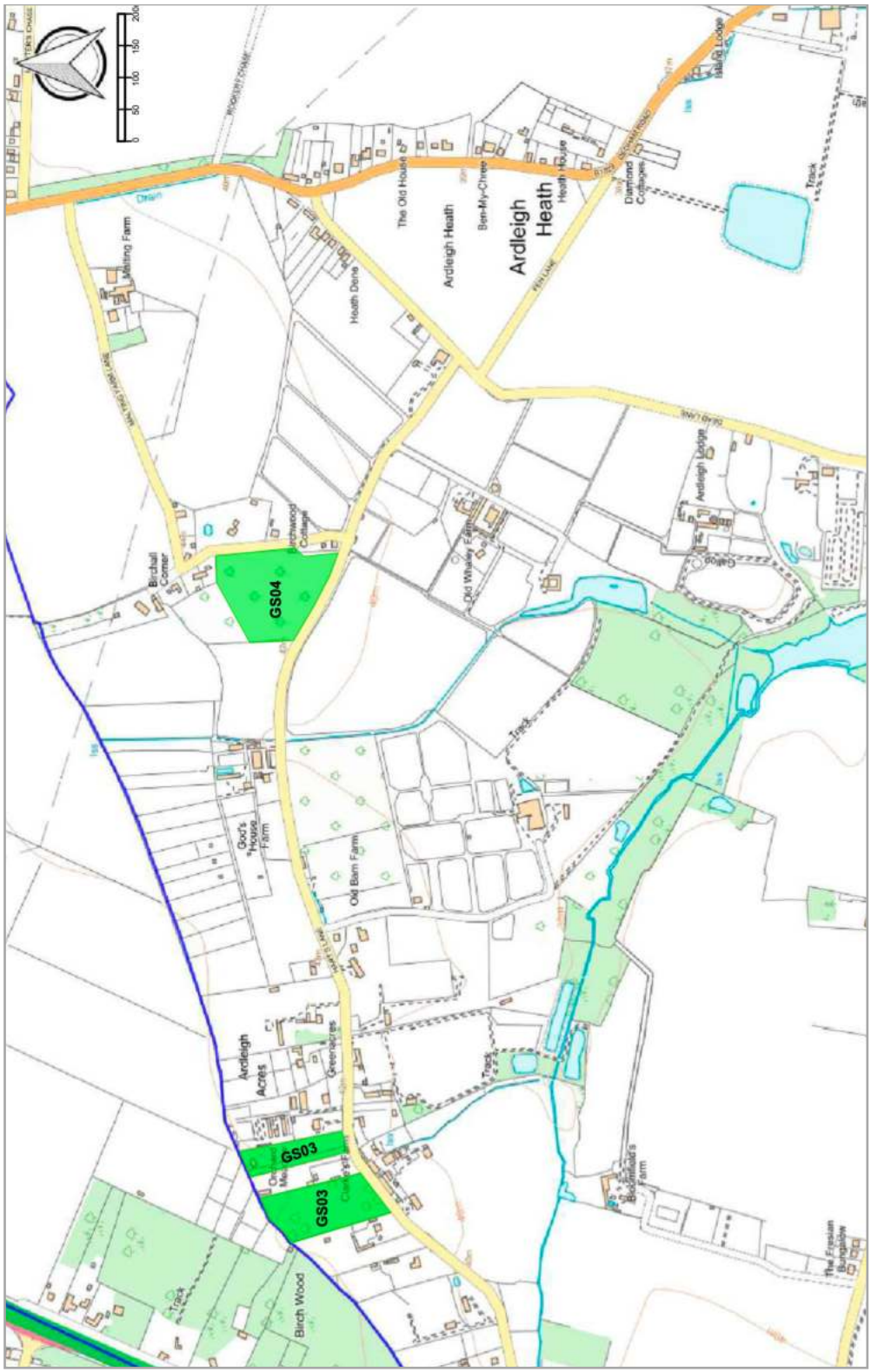
Map 2: Local Green Space 2



Map 3: Local Green Spaces 1, 5, 6 and 7



Map 4: Local Green Spaces 3 and 4



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August 2024

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Final Report

Essex County Council and Essex Local Nature Partnership

SQW temple

Contents

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Approved by:
Andy Smith
Director
Date: 09/08/2024

Disclaimer

Our Report is prepared for the use of Essex County Council and Essex Local Nature Partnership and solely for the purpose of providing an initial viability assessment to inform local planning authorities in Essex who may be considering a higher BNG target. It may not be relied upon for any other purpose whatsoever. SQW Limited neither owes nor accepts any duty to any other party and shall not be liable for any loss, damage or expense of whatsoever nature which is caused by their reliance on our Report.

Whilst SQW has used reasonable care and skill in the preparation of the Report, it has assumed and has not carried out any verification of the accuracy and completeness of all information provided to it by the client, applicant or third parties, and it does not accept liability for any loss, damage or expense of whatsoever nature which is caused by any such information being inaccurate, incomplete or misleading.

SQW Land and Property is regulated by the Royal Institution of Chartered Surveyors (RICS) for the provision of surveying services. This report has been prepared in accordance with PS1 and PS2 of the RICS Valuation - Global Standards ('the Red Book') but does not constitute a 'Red Book Valuation' and any commentary on values must not be relied upon as a valuation in any sense and specifically not for any regulated or secured lending purpose.

Executive summary

1. SQW and Temple Group have been commissioned by Essex County Council (ECC / The Council) and Essex Local Nature Partnership (ELNP) to undertake a viability assessment of the extra costs and impacts on financial viability of development for an increase from the mandatory minimum 10% to 20% biodiversity net gain (BNG) across Essex. The commission will primarily focus on assessing the high-level viability of Town & Country Planning Act 1990 (TCPA90) development across Essex for a range of residential and commercial development typologies at 20% BNG targets, and reviewing Nationally Significant Infrastructure Projects (NSIPs) coming forward across Essex and in particular, use the proposed nationally significant electricity transmission infrastructure project referred to as 'Norwich to Tilbury' (N2T) that is being promoted by National Grid Electricity Transmission (NGET) as a case study to analyse how BNG is presently being delivered.

2. The output of the assessment will allow the planning authorities in Essex and DLUHC to understand the viability implications of targeting higher BNG policy than the statutory minimum of 10% for TCPA90 development, and consider if and how such policy may influence / impact NSIPs delivery.

3. **It is important to note that this report is purposefully strategic in nature. The purpose of this report is to provide an initial viability assessment to inform local planning authorities in Essex who may be considering a higher BNG target for TCPA90 development or through engagement in the development consent process for NSIPs. This report does not constitute or replace the evidence base for any individual Local Planning Authority (LPA) Local Development Plan, nor remove the need for BNG to be tested at the local level or at the national level through the development consent process.**

Objectives of the commission

4. The key objectives of the TCPA90 element of the commission are as follows:

    - Provide an independent assessment of the potential effect of a 20% BNG target on the viability of residential and commercial development in Essex. The purpose of this assessment will be to determine if an uplift from the mandatory 10% BNG will materially affect the delivery of development in the county from a viability perspective;

    - The assessment will present a per dwelling cost of delivering 20% BNG across a range of site typologies. Though costs have been included to achieve 10% BNG we have not tested the viability of this specifically as it is

mandatory under legislation (Central government have already provided viability studies for 10% BNG across England, leading to the legislative 10%). In addition to the assessment, the project will devise a replicable approach, so that should an LPA within Essex wish to undertake an assessment specific to their area they can do so consistently.

- Wider objectives are to support the ecological case, understand the wider benefits of BNG (through ecosystem services), and explore the questions of onsite provision and offsite provision.

5. To achieve these objectives, SQW and Temple have ensured that the viability assessments follow the viability standards set out in the revised National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG), RICS Professional Standard Financial viability in planning: conduct and report (May 2019), and RICS Professional Standard Assessing viability in planning under the National Planning Policy Framework 2019 for England (March 2021), as closely as possible.

6. The primary objective of the Planning Act 2008 (PA2008) element of the study is to answer the question: "**Would 20% BNG in Essex have a significant impact on the costs and financial viability of proposed NSIPs in Essex?**"

7. More specifically, this includes a broad review of extant NSIPs in Essex to estimate the likely effect of applying a 20% net gain target. This broad review would be informed, in part, using a more detailed case study of N2T to:

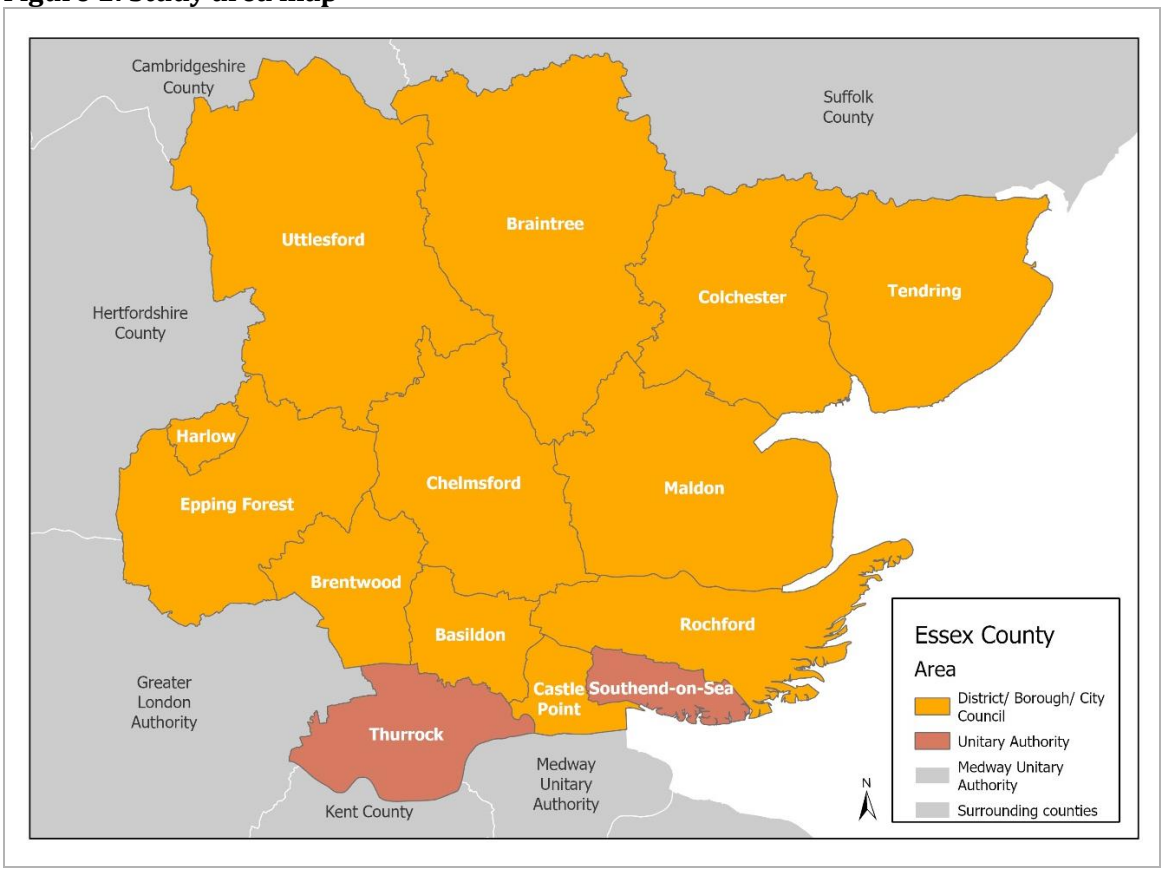
- Understand how BNG can be applied to linear NSIPs and what best practice may look like in terms of defining the extent of impacted habitat;
- Understand how BNG can be delivered, and what this may mean in terms of on and offsite options, how that may shape the development of both linear and single site NSIPs along with potential impacts on land take / retention and habitat management arrangements;
- Consider the potential magnitude of BNG / number of units that may be delivered;
- Consider how BNG investment may work 'cross-boundary' and the potential complexities / opportunities associated with prioritising local benefits vs regionally important priority habitats;
- Consider what opportunities and mechanisms there are for ECC and Local Authorities in Essex to engage with NSIPs to deliver enhanced levels of BNG both before and after the mandatory 10% BNG is in effect; and

- Consider the potential impacts of enhanced levels of BNG on overall project cost / viability and value for money from a public investment perspective.

Study area

8. This study covers Greater Essex, as shown in Figure 1. This includes 14 Authorities.

Figure 1: Study area map



Source: SQW, 2024

Conclusions

TCPA90

9. The key headline findings for BNG policy in Essex are as follows:

- **A shift from 10% to 20% BNG will not materially affect viability in the majority of instances when delivered onsite or offsite**.

- The biggest cost in most cases is to get to the mandatory, minimum 10% BNG. The cost increase to 20% BNG is, in most cases, much less and is generally small or negligible. Based on our scenario testing we estimate that:

- the additional cost of achieving 20% BNG ranges from £2 - £27 per residential unit on brownfield sites[1] and from £77 to £308 per residential unit on greenfield sites.
- this additional cost would impact residual land values by <0.1% for brownfield development land and <1.4% for greenfield development land.

- Because BNG costs are low when compared to other policy and development costs, in very few cases are they likely to be what renders development unviable for BNG policy of up to 20%.

- **The cost increase to 50% BNG is low for *brownfield* sites and unlikely to have a material impact on development viability in many cases, particularly in higher value areas. For *greenfield* sites, the additional cost associated with 50% BNG may have a more material impact on development viability but the costs remain small compared to other policy costs**. Based on our scenario testing we estimate that:
  - the additional cost of achieving 50% BNG ranges from £20 - £214 per residential unit on brownfield sites and from £636 to £1,232 per residential unit on greenfield sites.
  - this additional cost would impact residual land values by <0.7% for brownfield development land and between 3% and 5.4% for greenfield development land.

- Some developers report that they are having issues delivering the mandatory 10% BNG on some of their sites. This is not surprising during the transitionary period following the adoption of new policy because Local Plan site allocations and historic land deals will not have factored in the additional cost and land take requirements to achieve BNG. This demonstrates the importance of considering BNG from the outset during site allocation and master planning stages. Developers should ensure that they can efficiently provide it onsite if this is what they plan to do (mitigation hierarchy insists on onsite provision before moving to offsite). Because of these existing challenges, Local Authorities who wish to pursue BNG in excess of 10% may expect some pushback on the policy and therefore may need robust local viability assessment to support it. However, this study shows an assessment is likely to demonstrate viability will not be negatively impacted (to a material extent) for BNG increases of up to 20%, and even beyond this level in some areas. The above conclusion reflects the viability position where BNG requirements have been considered and factored in throughout the land acquisition and planning application process. **In the short term, enhanced BNG policy changes may**

[1] Brownfield scenarios assume sites are located on previously developed land that has not been allowed to re-establish vegetation of biodiversity value.

cause greater levels of disruption and viability impact where the cost and land take requirements of increased levels of BNG provision have not been factored into existing proposals. Local Authorities may wish to take this into account when designing and implementing policy. If onsite were to be the primary focus of enhanced provision, increasing land take may result in the lowering of average housing densities, so more land may be required to deliver housing. However, the majority of this burden relates to the mandatory 10% BNG and the increase to get to 20% BNG is comparably small; offsite solutions are also available. Therefore this should not be seen as a barrier to BNG policy in excess of 10%, but is a consideration for LPAs.

- In certain situations **where the starting biodiversity baseline is low i.e. on cleared brownfield sites**, it might prove easy for developers to provide considerably larger increases over 20%. In some cases, even an increase to 50% BNG or more will not render development unviable. LPAs may wish to consider this when developing new policies and could, for example, **consider a minimum threshold for BNG applied in absolute terms in addition to a percentage increase.** This may allow them to deliver higher levels of BNG where it is appropriate to do so.

PA2008 - NSIPs

10. Overall, our analysis indicates that **most types of NSIP can deliver somewhere between a small net loss and around 10% net gain within the project design**, with offsetting[2] assumed to be needed to make up shortfalls of biodiversity units, depending on the type of NSIPs.

11. NSIP promoters across Essex are concerned that high demand for biodiversity units could inflate costs, potentially forcing them to purchase more expensive statutory credits. Conversely, landowners are worried that an oversupply of biodiversity units could lower their value, reducing the economic incentives for providing these units.

12. These contrasting concerns highlight the need for a balanced approach to managing the demand and supply of biodiversity units. The public sector, principally host local authorities, could play a crucial role in analysing and coordinating the expected demand and supply of biodiversity units within local geographies. This balance is essential to avoid significant cost fluctuations of the biodiversity units required to deliver BNG for NSIPs, and offer confidence that

[2] Offsetting being the delivery of offsite biodiversity enhancements to provide biodiversity gain equivalent to any shortfall in biodiversity units required to achieve the biodiversity objective of the scheme.

escalating BNG costs will not undermine attempts to deliver enhanced BNG by making it too expensive to deliver, or justify in value for money terms.

13. The key areas of focus for discussion between Essex CC and its local authority partners in Essex and NSIP promoters should target opportunities **to enable scale of delivery of biodiversity offsetting units and to keep the cost of offsetting units down**, for example through economies of scale.

14. By **enabling discussion and seeking a position on how to address the issues of local offsetting delivery and balancing supply and demand of offsetting**, Essex CC and its local authority partners have the potential to influence the determination of how these details will be addressed in future legislation, guidance and national and local policy.

15. The study also raises a number of areas that should be considered in the development of Biodiversity Statements and associated legislation, policy and guidance for NSIPs.

16. Defining the extent of impacted habitat within many linear NSIPs is challenging and will depend on principles set out in national secondary legislation, policy and guidance on BNG for NSIPs. However, limited legislation, policy and guidance is available for implementing BNG, particularly for NSIPs. **Future policy and guidance should provide clarity on how the boundary for calculating BNG for NSIPs is defined, particularly for linear NSIPs that do not have clear boundaries.**

17. **The treatment of temporary loss of low distinctiveness habitats could be reviewed** where low distinctiveness habitats will be restored to their previous state on completion of construction works, but not within two years, and be returned to the landowner to control. Under the TCPA90 guidance, the effect of restoring these habitats would be excluded from the BNG outcomes because the management is not legally secured for 30 years, even though the habitats will revert to their pre-development state. This could have a negative impact on the NSIPs and biodiversity outcomes by increasing costs, potentially diverting funding from other investments, and removing the incentive to restore these habitats as soon as possible.

18. The approach to local delivery of offsetting does not necessarily deliver the best outcomes for NSIPs or biodiversity, particularly linear NSIPs, in the same way as TCPA90 development. **A review of different approaches to local offsetting delivery for linear NSIPs may yield insights into the benefits of alternatives in delivering better outcomes for biodiversity and local communities**, including investment in strategic biodiversity sites and ensuring local socio-economic benefits.

19. Different types of NSIPs have different and variable characteristics in relation to BNG. **The proposed system of biodiversity gain statements allows for variation between the biodiversity gain objectives that different project types can set as well as the detail of the mechanisms to achieve it.** This means that solar farm NSIPs, with or without battery storage, could set a higher biodiversity gain objective, which could be a positive step towards the Government's objectives as set out in the Environmental Improvement Plan 2023[3] (EIP2023). Conversely, maintaining a lower objective and allowing potential promoters of solar farm NSIPs, with or without battery storage to use excess units to provide offsetting could support other NSIPs or TCPA90 development in achieving net gain.

20. Whilst LPAs are central to setting the policy framework for enhanced BNG provision (in excess of the mandatory 10%) through local development plan policies for TCPA90 development as TCPA90 development must be determined in accordance with the local development plan unless material considerations dictate otherwise, local planning policies are only a material consideration of varying weight when the relevant Secretary of State is determining development consent for an NSIP. There is a need for greater clarity in national planning policy for NSIPs to support local host authorities and NSIP promoters seeking to justify the additional cost and value for money to the local economy, environment and health and wellbeing of host communities of delivering greater than the mandatory biodiversity objective for NSIPs.

21. **Future national planning policy and guidance should be clearer on the expectation of delivering BNG for NSIPs, including greater than the mandatory biodiversity objective.** This is especially relevant where there are BNG policies in local development plans requiring greater than 10% BNG for TCPA90 development. This study has highlighted how challenging it is for promoters of some NSIPs to assess the cost and justify value for money to government bodies and other regulators of delivering beyond 10% BNG for NSIPs.

The role for Essex CC across TCPA90 development and NSIPs

22. Essex CC has a potentially important role in enabling discussion and resolving key challenges to BNG delivery in Essex for both TCPA90 development and PA2008 NSIPs, which could influence national policy and guidance and set precedent for both planning regimes. This could include:

- **understanding the predicted scale of need for biodiversity units to facilitate TCPA90 development and NSIPs across the county** where this

[3] Environmental Improvement Plan 2023 – First revision of the 25-year Environment Plan. Defra: https://www.gov.uk/government/publications/environmental-improvement-plan

cannot be provided onsite, in particular in relation to specific habitat types, and the timing of demand;

- **a study of the potential availability of land in Essex for offsetting** could provide assurance as to whether the supply is likely to be sufficient to meet the demands of TCPA90 development and NSIPs. A study at the county-level geography would be particularly advantageous for the developers of major TCPA90 development and NSIPs promoters who require larger or multiple sites for offsetting, as well as providing a more comprehensive understanding of the county's potential offsetting resources;

- identifying **opportunities within the Local Nature Recovery Strategies to integrate the offsetting demands of NSIPs** and for NSIPs to support the delivery of the LNRS;

- **identifying key local priorities** for biodiversity enhancement from TCPA90 development and NSIPs (which will be largely delivered through the LNRS); and

- identifying priorities where offsetting investment can deliver additional value to the local economy, environment and health and wellbeing of local communities, such as access to nature, recreation, tourism, active travel and other ecosystem services, through a comparative analysis of needs and benefit opportunities.

Overall conclusion and implications

23. In summary, the additional costs to achieve 20% BNG is a relatively small percentage of overall cost, for both TCPA90 development and NSIPs in Essex.

24. There is a huge potential for NSIPs to provide a significant amount of BNG in Essex due to their size and scale, and the large number of NSIPs proposed. Whilst NSIPs can provide some level of BNG onsite, most of them have a shortfall and BNG will have to be delivered offsite through the purchase of biodiversity units. N2T has demonstrated that NSIPs will generate a high demand for biodiversity units in Essex that will continue to grow as Essex continues to host increasing numbers of NSIPs. This demand could further intensify if national policy and guidance require a biodiversity objective in excess of 10% for NSIPs and / or if local development plans were to include policies requiring all development to deliver BNG in excess of the 10% mandatory for TCPA development.

25. This study indicates that the cost of purchasing biodiversity units for offsetting can vary widely and notably, statutory credits could double the cost of BNG provision compared with the use of local biodiversity units. This variability in costs

necessitates careful consideration and strategic planning to ensure that there is sufficient availability of local biodiversity units in Essex at a reasonable price.

26. This study has shown that NSIP promoters are concerned that high demand for biodiversity units could inflate costs, potentially forcing them to purchase more expensive statutory credits. Conversely, landowners are worried that an oversupply of biodiversity units could lower their value, reducing the economic incentives for providing these units.

27. These contrasting concerns highlight the need for a balanced approach to managing the demand and supply of biodiversity units. The public sector, primarily host local authorities, could play a crucial role in analysing and coordinating the expected demand and supply of biodiversity units within local geographies. This balance is essential to avoid significant cost fluctuations of the biodiversity units that can negatively impact the viability of both TCPA90 development and NSIPs.

28. Assuming an adequate supply of biodiversity units to keep costs at or below the £25,000 figure used in this study, adopting 20% BNG policy across Essex would not have a significant impact on the financial viability of TCPA90 development.

29. The ability of NSIP promoters to delivery beyond any mandatory biodiversity objective will depend on a number of factors individual to the promoter, type and location of NSIP. The use of N2T as a case study has demonstrated that the lack of national policy and guidance on delivering beyond the anticipated mandatory 10% BNG for consumer funded NSIPs makes this particularly challenging to justify to the energy regulator, Ofgem, who require energy infrastructure to demonstrate (amongst other considerations) value for money to the public. The absence of local planning policy requiring all development to deliver greater than the mandatory 10% BNG set for TCPA development makes quantifying and qualifying BNG as value for money to the local economy, environment and health and wellbeing of host communities a challenge for all NSIPs. The uncertainty around the supply and cost of biodiversity units available for offsetting across Essex to meet the demand for BNG offsetting further complicates delivery.

1. Introduction

1.1 SQW and Temple Group have been commissioned by Essex County Council (ECC / The Council) and Essex Local Nature Partnership (ELNP) to undertake a viability assessment of the extra costs and impacts on financial viability of development for an increase from the mandatory minimum 10% to 20% biodiversity net gain (BNG) across Essex. The funding for this work has been provided to ECC by the Department of Levelling Up, Housing and Communities (DLUHC) through the National Infrastructure Planning Reform: Innovation and Capacity Fund[4]. The commission will:

- assess the high-level viability of Town & Country Planning Act 1990 (TCPA90) development across Essex for a range of residential and commercial development typologies at 20% BNG targets, and assess the potential viability impact of enhanced BNG policy requirements, and

- review Nationally Significant Infrastructure Projects (NSIPs) coming forward across Essex and in particular use the proposed nationally significant electricity transmission infrastructure project referred to as 'Norwich to Tilbury' (N2T) that is being promoted by National Grid Electricity Transmission (NGET) as a case study to analyse how BNG is presently being delivered. This will contribute to the evidence base being used to inform emerging national and local policy and guidance in relation to the provision of BNG for NSIPs, with a particular focus on the implications of and opportunities for enhanced BNG provision.

1.2 The output of the assessment will allow the planning authorities in Essex and DLUHC to understand the viability implications of targeting higher BNG policy than the statutory minimum of 10% for TCPA90 development, and consider if and how such policy may influence / impact NSIPs delivery.

1.3 **It is important to note that this report is purposefully strategic in nature. The purpose of this report is to provide an initial viability assessment to inform local planning authorities in Essex who may be considering a higher BNG target for TCPA90 development or through engagement in the development consent process for NSIPs. This report does not constitute or replace the evidence base for any individual Local Planning Authority (LPA) Local Development Plan, nor remove the need for BNG to be tested at the local level or at the national level through the development consent process.**

[4] https://www.gov.uk/guidance/national-infrastructure-planning-reform-innovation-and-capacity-fund-round-2

Objectives of the commission

1.4 The key objectives of the TCPA90 element of the commission are as follows:

- Provide an independent assessment of the potential effect of a 20% BNG target on the viability of residential and commercial development in Essex. The purpose of this assessment will be to determine if an uplift from the mandatory 10% BNG will materially affect the delivery of development in the county from a viability perspective;

- The assessment will present a per dwelling cost of delivering 20% BNG across a range of site typologies. Though costs have been included to achieve 10% BNG we have not tested the viability of this specifically as it is mandatory under legislation (Central government have already provided viability studies for 10% BNG across England, leading to the legislative 10%). In addition to the assessment, the project will devise a replicable approach, so that should an LPA within Essex wish to undertake an assessment specific to their area they can do so consistently.

- Wider objectives are to support the ecological case, understand the wider benefits of BNG (through ecosystem services[5]), and explore the questions of onsite provision and offsite provision;

- To achieve these objectives, SQW and Temple have ensured that the viability assessments follow the viability standards set out in the revised National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG), RICS Professional Standard Financial viability in planning: conduct and report (May 2019[6]), and RICS Professional Standard Assessing viability in planning under the National Planning Policy Framework 2019 for England (March 2021[7]), as closely as possible.

1.5 The primary objective of the PA2008 element of the study is to answer the question: **"Would 20% BNG in Essex have a significant impact on the costs and financial viability of proposed NSIPs in Essex?"**

[5] Ecosystem services are services provided by the natural environment that benefit people, such as health and wellbeing, food provisioning, pollution protection, carbon sequestration, flood resilience etc.
[6] The document was published in May 2019 as a Guidance Note and was reissued in April 2023 as a Professional Standard.
[7] The document was published in March 2021 as a Guidance Note and was reissued in April 2023 as a Professional Standard.

1.6 More specifically, this includes a broad review of extant NSIPs in Essex to estimate the likely effect of applying a 20% net gain target. This broad review would be informed, in part, using a more detailed case study of N2T to:

- Understand how BNG can be applied to linear NSIPs and what best practice may look like in terms of defining the extent of impacted habitat;
- Understand how BNG can be delivered, and what this may mean in terms of on and offsite options, how that may shape the development of both linear and single site NSIPs along with potential impacts on land take / retention and habitat management arrangements;
- Consider the potential magnitude of BNG / number of units that may be delivered;
- Consider how BNG investment may work 'cross-boundary' and the potential complexities / opportunities associated with prioritising local benefits vs regionally important priority habitats;
- Consider what opportunities and mechanisms there are for ECC and Local Authorities in Essex to engage with NSIPs to deliver enhanced levels of BNG both before and after the mandatory 10% BNG is in effect; and
- Consider the potential impacts of enhanced levels of BNG on overall project cost / viability and value for money from a public investment perspective.

Why are Essex considering the viability of a 20% BNG target?

1.7 ELNP is promoting that a county-wide target of 20% BNG be adopted within Essex. The County's Green Infrastructure Strategy identifies a need to "successfully integrate new and existing green infrastructure into new development such as housing, industrial premises and the transport infrastructure". This is in response to the following drivers[8]:

- Essex's biodiversity resources have been highly depleted, with around 14% of the County currently considered natural green infrastructure. This trend is also apparent nationally, with 1 in 6 species threatened with extinction in Great Britain[9]. This has led ECC and ELNP to aim to deliver 30% of Essex as natural

[8] Bullet points adapted from Essex Green Infrastructure Strategy: Evidence of the Green Infrastructure in Essex and Understanding the Key Drivers. 2020. Available here. Pages 26-27.
[9] State of Nature. 2023. Available here

green infrastructure by 2030. The proposed increase from 10% to 20% BNG will in turn assist in reaching this target.

- Essex is experiencing significant and unprecedented levels of growth. The County needs an additional 179,657 homes by 2036, and its population is expected to reach 2,133,100 by 2041. The greatest population increases are projected in Colchester, Basildon and Chelmsford. Infrastructure is required to support this.

- As of 2017, 18% of Essex's population had access to woodlands, and 36% of the population lived within 500m of accessible woodlands. Access to natural capital is crucial to the County's social and economic prosperity.

- Essex is one of the top 10 areas at risk of surface water flooding in the UK, and tends to experience more frequent extreme weather events due to climate change.

- As of 2017, 13,832 of Greater Essex's population lived in Air Quality Management Areas, and 22.1% of the population were inactive. This is contributing to a growing demand for health services.

1.8 Assessments by both Defra and Natural England[10] have shown that raising BNG requirement of up to 20% was not expected to have a significant effect on the financial viability of housing development. The studies, based on national figures, concluded that:

- With careful design and early consideration, onsite BNG can be delivered at little to no cost.

- When delivered onsite, BNG is usually cost-neutral.

- If BNG costs are significant, it is the landowner that will bear them rather than the developer through reduced land prices.[11]

- House prices and developer profits appear inelastic with respect to extra costs, with land prices absorbing the change.

- An increase in the BNG requirement does not need to impact the number of dwellings, as some of the net gain can be delivered offsite.

[10] Vivid Economics and Environmental Finance, Outline Business Case for a Natural Environment Impact Fund, report prepared for Defra, June 2018.
[11] In accordance with residual development appraisal methodology, all development costs including policy costs are deducted from the Gross Development Value of the scheme to arrive at the Residual Land Value, which is the maximum a developer is able to pay a landowner to acquire a development site.

- BNG is not expected to reduce the number of affordable housing units.
- It is unlikely to lead to a significant increase in existing average developer contributions.
- The level of net gain requirement makes relatively modest difference to the costs of mitigating and compensating for impacts when assessed against the more significant costs of achieving no net loss and wider development policy objectives and biodiversity requirements.
- The additional investment required to move from a 10% net gain to 20% does not mean twice the expense.

1.9 The case for a 20% BNG target in Essex has been discussed to varying extents by different Local Planning Authorities, with discussions in varying stages, from early consideration up to implementation within Local Plans. Therefore, it is hoped that the findings from this locally-based study can further inform local policy on BNG.

Wider environmental value

1.10 Environmental Net Gain remains a central part of the Government's Environmental Improvement Plan 2023[12]. This plan sets out a clear ambition to roll out BNG, aiming to enhance the built environment and ensure that habitats are left in an improved state than prior to development commencing.

1.11 The potential benefits of BNG include enhancing nature, promoting health and wellbeing, improving places, providing green jobs to support the economy, and contributing to climate change mitigation and adaptation[13]. Essex County Council's Annual Budget 2024-2025 also sets out that: "Increasing green infrastructure captures carbon, reduces flood risk, overheating and soil degradation, while supporting pollinators crucial to farming. Increasing green space for public access also benefits physical and mental health"[14].

1.12 When considering business cases for public sector investment or intervention, this value can now be monetised and quantified through various tools for aspects such as:

- Sustainable Drainage Systems (SuDS) that reduces risk of damage to property
- Mental and physical health benefits from access to nature and open space

[12] HM Government. Environmental Improvement Plan 2023. Page 9.
[13] Essex Local Nature Partnership BNG Guidance. See here
[14] Essex County Council. 2024. Annual Plan and Budget. Here

- Climate change resilience, such as droughts, heatwaves, and storms
- Improved landscape quality and heritage enhancement
- Air quality, land quality and water quality enhancements

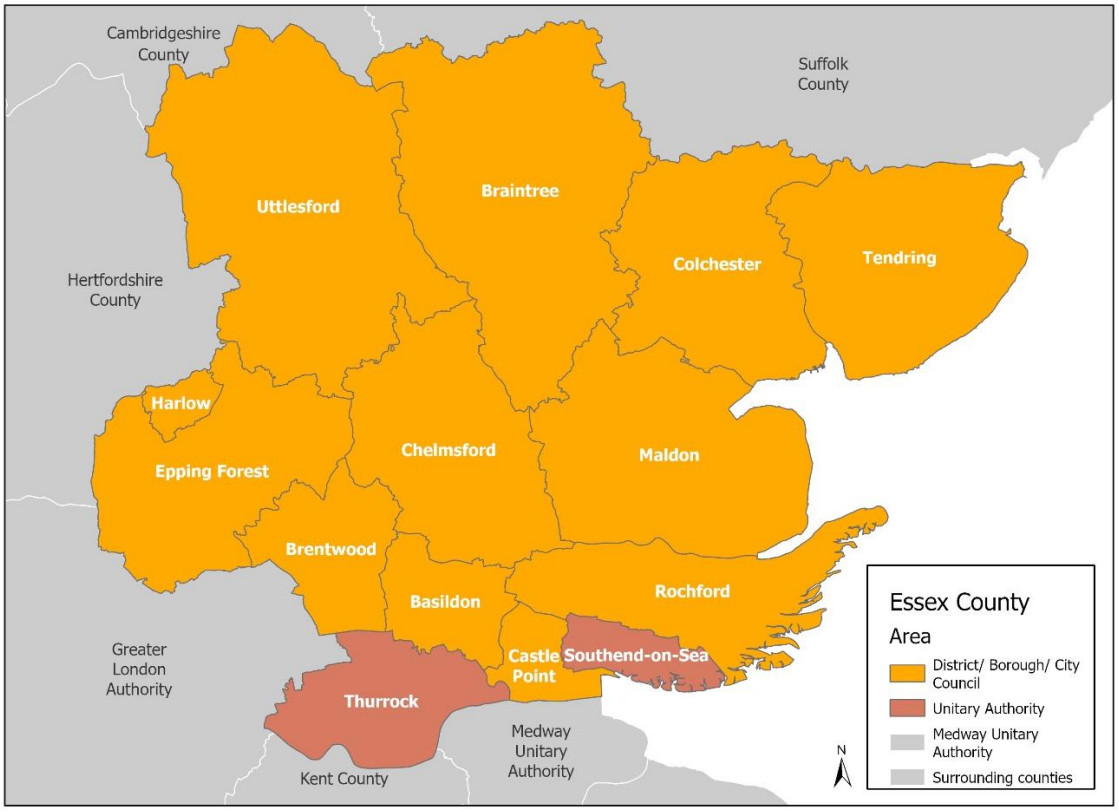
1.13 Although quantifying and monetising the benefits and costs of changes to natural capital is outside the scope of this study, and not part of the formal development viability process, it should be noted that the financial cost of implementing BNG may lead to enhanced values. We have not included a value premium associated with enhanced BNG for the purposes of this study.

Study area

1.14 This study covers Greater Essex, as shown in Figure 1-1. This includes 14 Authorities:

- Basildon Borough Council
- Braintree District Council
- Brentwood Borough Council
- Castle Point Borough Council
- Chelmsford City Council
- Colchester City Council
- Epping Forest District Council
- Harlow Council
- Maldon District Council
- Rochford District Council
- Tendring District Council
- Uttlesford District Council
- Southend-on-Sea City Council (Unitary Authority)
- Thurrock Council (Unitary Authority)

Figure 1-1: Study area map



Source: SQW, 2024

Report structure

1.15 This report follows the structure set out below:

Chapter 2 – Policy context

Here we consider the National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG); National BNG legislation and guidance, and National Policy Statements and guidance for NSIPs.

Town and Country Planning Act 1990 (as amended) (TCPA90)

Chapter 3 – Methodology

This section sets out our methodology used to assess the viability of

	development and the viability impact of enhanced BNG.
Chapter 4 – Development typologies	Here we set out our development typologies and accompanying assumptions around BNG.
Chapter 5 - Value inputs and assumptions	We provide evidence and conclude on development value inputs and underlying assumptions.
Chapter 6 – Cost inputs and assumptions	We provide evidence and conclude on development cost inputs and underlying assumptions.
Chapter 7 – Viability testing results	In this section, we set our viability results from our modelling alongside sensitivity testing

Planning Act 2008 (as amended) (PA2008) for Nationally Significant Infrastructure Projects (NSIPs)

Chapter 8 – Norwich to Tilbury Case Study	In this section, we focus on the Norwich to Tilbury case study.
Chapter 9 – Overview of NSIPs in Essex and the broader perspective	This section sets out our methodology used to analyse NSIPs and the analysis of the 10 other NSIPs in Essex.
Chapter 10 – What does this mean for BNG delivery in Essex?	This section sets out the results from our analysis and their implications
Chapter 11 – Conclusions	In this section we provide our conclusions on the viability of BNG in Essex, drawing

on key messages from our analysis of TCPA90 and PA2008 development.

Limitations of the report

1.16 The appraisals and conclusions contained within this report are intended for the purposes of informing policy and guidance formulation and to support local authority engagement in the development consent process. SQW's advice has been provided to support the authorities in policy making and in negotiation as outlined in Valuation Standards 1 of the RICS Valuation Standards - Global and UK Edition. It is not a formal "Red Book" valuation and should not be relied upon as such. Likewise, Temple has derived indicative costs per development typologies based upon a review of literature, experience of projects and professional judgement.

1.17 SQW and Temple accept no liability to any party other than ECC and ELNP.

RICS practice statement

1.18 Our study has been carried out in accordance with the RICS Financial Viability in Planning: Conducts and Reporting Professional Standard, May 2019, as such we confirm the following:

- **Objectivity, impartiality and reasonableness:** Throughout this commission from appointment to completion at all times we have acted with objectivity, impartially and without interference when carrying out our viability assessment. We can confirm that no performance-related fees have been paid in relation to this commission.

- **Conflicts of interest:** we confirm that we have no conflict of interest in providing this advice and we have acted independently and impartially.

2. Policy context

2.1 Though this is not a plan-wide viability assessment, our method and approach have been informed from national primary legislation and national, and local planning policy and guidance as closely as possible. This is important because ELNP can play a key role in encouraging Local Planning Authorities to amend policy to require 20% BNG.

2.2 We have reviewed the key sections in the relevant documents below, starting with the National Planning Policy Framework (NPPF) and associated viability Planning Practice Guidance (PPG). The revised NPPF was first published in July 2018 and was subsequently updated in February 2019, July 2021, September 2023 and December 2023. The PPG is continually updated with the most recent revisions to the viability section in February 2024.

2.3 We have also considered the relevant sections of the Environment Act (2021) in relation to BNG, Local Authority biodiversity policy and the Government's Environmental Improvement Plan 2023.

2.4 In terms of NSIP legislation and policy, we have reviewed The Planning Act 2008 (PA2008), the National Infrastructure Strategy 2020, The Environment Act 2021 (Section 99 and Schedule 15), the Government's NSIP Reform Action Plan (2023), and National Policy Statements (NPSs).

NPPF

2.5 The NPPF details the Government's planning objectives for England and how these should be applied. It also provides a framework within which locally prepared plans for housing and other development can be produced.[15]

2.6 It confirms the importance of the development plan in the decision-making stages through planning applications. The NPPF states that it should be followed when local plans are being prepared and that it should be a material consideration in planning decisions.[16]

2.7 The December 2023 revision of the NPPF focuses on deliverability which is demonstrated in the following sections:

[15] MHCLG, NPPF, July 2021, para 1
[16] MHCLG, NPPF, July 2021, para 2

Development contributions

2.8 Paragraph 34: 'Plans should set out the contributions expected from development. This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure). Such policies should not undermine the deliverability of the plan.'

Planning conditions and obligations

2.9 Paragraph 58: 'Where up-to-date policies have set out the contributions expected from development, planning applications that comply with them should be assumed to be viable. It is up to the applicant to demonstrate whether particular circumstances justify the need for a viability assessment at the application stage. The weight to be given to a viability assessment is a matter for the decision maker, having regard to all the circumstances in the case, including whether the plan and the viability evidence underpinning it is up to date, and any change in site circumstances since the plan was brought into force. All viability assessments, including any undertaken at the plan-making stage, should reflect the recommended approach in national planning guidance, including standardised inputs, and should be made publicly available.'

Biodiversity

2.10 Paragraph 8: Achieving sustainable development seeks to achieve net gains across economic, social and environmental objectives. This includes improving biodiversity.

2.11 Paragraph 180: Planning policies and decisions should contribute to and enhance the local and natural environment by "minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks…".

2.12 Paragraph 185: plans should "identify and pursue opportunities for securing measurable net gains for biodiversity".

Viability PPG

2.13 The viability PPG is extensive and has many relevant sections which have been considered as part of our assessment. Certain excerpts have not been included in this section as they directly relate to specific inputs i.e. land value. A summary of the key passages from the PPG are as follows:

2.14 Paragraph 010 provides context around viability assessments. It states that *'viability assessment is a process of assessing whether a site is financially viable,*

by looking at whether the value generated by a development is more than the cost of developing it' […] '*in plan making and decision making viability helps to strike a balance between the aspirations of developers and landowners, in terms of returns against risk, and the aims of the planning system to secure maximum benefits in the public interest through the granting of planning permission.*'[17]

2.15 Ensuring that policy and local plans are deliverable is discussed further in the PPG and it outlines the role of stakeholders/promotors and the local planning authority.

2.16 Paragraph 002 states:

'It is the responsibility of site promoters to engage in plan making, take into account any costs including their own profit expectations and risks, and ensure that proposals for development are policy compliant. Policy compliant means development which fully complies with up to date plan policies. A decision maker can give appropriate weight to emerging policies. The price paid for land is not a relevant justification for failing to accord with relevant policies in the plan. Landowners and site purchasers should consider this when agreeing land transactions.' [18]

2.17 This is continued in paragraph 006:

'Plan makers should engage with landowners, developers, and infrastructure and affordable housing providers to secure evidence on costs and values to inform viability assessment at the plan making stage.

It is the responsibility of site promoters to engage in plan making, take into account any costs including their own profit expectations and risks, and ensure that proposals for development are policy compliant. Policy compliant means development which fully complies with up to date plan policies. A decision maker can give appropriate weight to emerging policies. It is important for developers and other parties buying (or interested in buying) land to have regard to the total cumulative cost of all relevant policies when agreeing a price for the land. Under no circumstances will the price paid for land be a relevant justification for failing to accord with relevant policies in the plan.

Where up-to-date policies have set out the contributions expected from development, planning applications that fully comply with them should be assumed to be viable. It is up to the applicant to demonstrate whether particular circumstances justify the need for a viability assessment at the application stage.'[19]

[17]MHCLG, PPG, Paragraph: 010 Reference ID: 10-010-20180724, Revision date: 24 07 2018
[18]MHCLG, PPG, Paragraph: 002 Reference ID: 10-002-20190509, Revision date: 09 05 2019
[19] MHCLG, PPG, Paragraph: 006 Reference ID: 10-006-20190509, Revision date: 09 05 2019

National BNG legislation and guidance

2.18 The NPPF sets a requirement in current national policy for the enhancement of biodiversity through the planning process where it states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by […] minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures "…[20].

2.19 The Environment Act (2021) and the associated legislative framework introduced biodiversity gain as a condition of planning permission providing for a minimum of 10% increase in the post development biodiversity value compared to the pre-development value of onsite habitats. It applies, with limited exceptions, to all development governed by the Town and Country Planning Act from commencement in 2024 and will provide similar requirements for Nationally Significant Infrastructure Projects (NSIPs)21 when implemented. The Act came into force for TCPA applications in two phases, for large and small sites in February and April 2024 respectively, and the implementation of the requirement for NSIPs is planned for November 2025.

2.20 A BNG pre-commencement condition will now be attached to planning permissions. This means that once permission is granted, a biodiversity gain plan must be submitted and approved by the Local Planning Authority before the commencement of development. From here, the developer must implement the plan using onsite or offsite measures, or by exception and as a last resort purchasing statutory credits at a ratio of two credits for each biodiversity unit (BU). The Environment Act (2021) sets out a requirement for relevant authorities to develop local nature recovery networks and additionally provides mechanisms supporting conservation actions for the public good through the creation of conservation covenants. This provision in part supports the development of an offsite biodiversity unit market, which applies where development cannot achieve the target net gain onsite. As a last resort, it also provides for biodiversity units to meet the biodiversity gain objective where onsite and offsite delivery is unfeasible.

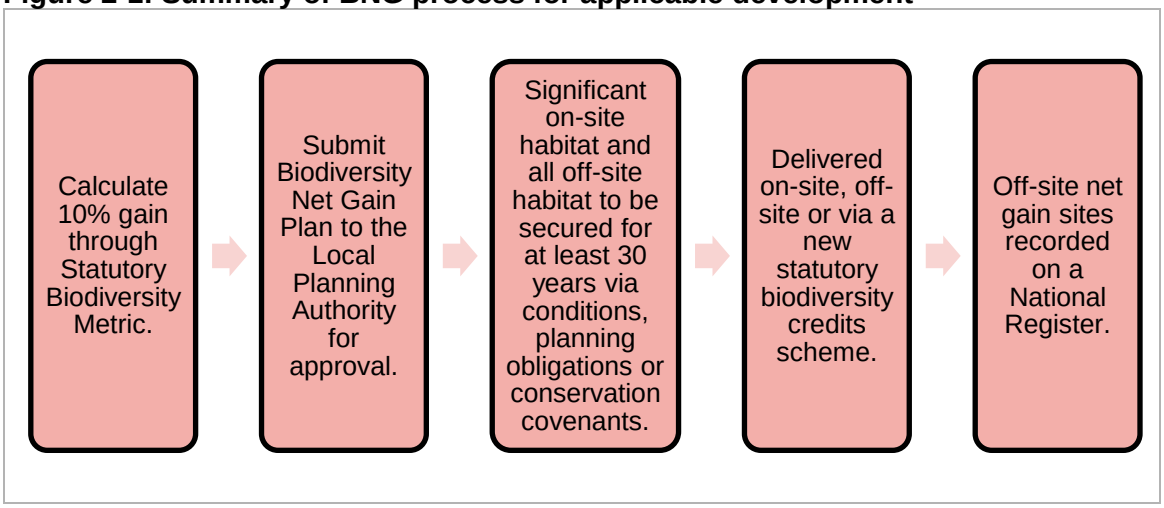
2.21 Significant onsite enhancements are areas providing significant uplift compared to the pre-development baseline, including medium or higher distinctiveness habitats, large changes in biodiversity units or large areas of habitat creation or enhancement. Once onsite options for delivering biodiversity net gain have been

[20] MHCLG, NPPF, July 2021, para 174
[21] Exemptions are set out within: The Biodiversity Gain Requirements (Exemptions) Regulations 2024

exhausted offsite biodiversity gains provided by registered providers and / or sites can be considered.

2.22 In cases with offsite or significant onsite gains, habitats must be managed and maintained for a minimum of 30 years. These responsibilities will be set out in a legal agreement. Offsite gains must also be registered on the public biodiversity gain sites register[22].

Figure 2-1: Summary of BNG process for applicable development



Source: Information adapted by SQW from PAS, 2024

2.23 BNG uses a standardised metric to assess impacts on biodiversity by using habitats as a proxy for biodiversity value. This is measured through the Statutory Biodiversity Metric, on which the Department for Environment, Food and Rural Affairs (DEFRA) published guidance in November 2023 and subsequently updated in February 2024[23]. The metric was used voluntarily for several years by professionals in the planning system, with previous versions published by Natural England. The tool assigns values to habitats by calculating four factors (Habitat size, distinctiveness, condition and location/strategic significance), which are multiplied by habitat areas to provide a score in 'biodiversity units'. Post-development habitats are evaluated in the same way, also taking account of additional factors in relation to time and difficulty of creation to provide a biodiversity unit score. This can be compared to the baseline score to produce a measure of BNG. The DEFRA Guidance also provides a simplified small sites metric, which can be used for small development, unless exempt[24].

2.24 Planning practice guidance on biodiversity net gain sets out expectations around how BNG should be applied through the planning process including practical guidance for applicants on submission requirements. The PPG's BNG chapter was

[22] DEFRA. 2024. Guidance: Understanding biodiversity net gain.
[23] DEFRA. 2024. Guidance: Statutory biodiversity metric tools and guides
[24] DEFRA. 2024. Guidance: Statutory biodiversity metric tools and guides

also updated in May 2024, to coincide with the introduction of the 10% requirement[25]. This sets out guidance for land managers, developers and Local Planning Authorities, on matters such as how BNG is applied and monitored through the planning process and which development are exempt. It also states that DEFRA's statutory tool should be used to calculate biodiversity value.

2.25 The PPG also provides specific advice for plan-makers of direct relevance to this report noting that where higher percentages above the statutory objective of 10% are sought "to justify such policies they will need to be evidenced including as to local need for a higher percentage, local opportunities for a higher percentage and any impacts on viability for development. Consideration will also need to be given to how the policy will be implemented."

2.26 In order to support small developers, non-profit organisation Future Homes Hub and the Local Government Associations Planning Advisory Service launched 'BNG Online' in April 2024[26]. This is a free digital resource which provides practical guidance to small developers on how to plan and manage BNG.

[25] Gov.UK. 2024. Guidance: Biodiversity net gain.
[26] Future Homes Hub and Planning Advisory Service. 2024. BNG Online. Here

Nationally Significant Infrastructure Projects (NSIPs)

2.27 A Nationally Significant Infrastructure Project (NSIP) is a large-scale development over a specific threshold that the government considers to be of national importance. Like its neighbouring counties Suffolk and Norfolk, Essex has specific natural and geographic advantages which make it an optimal location for NSIPs, particularly in relation to transport and energy.

2.28 NSIPs do not require planning permission from the local authority and the project promoter must make an application to the Planning Inspectorate (PINS) for a different type of permission called 'development consent'. An application for development consent is examined by PINS and a recommendation is made to the relevant Secretary of State (SoS), who will make the final decision.

2.29 An NSIP is primarily determined in accordance with National Policy Statements (NPS) that provide the planning policy framework for different types of nationally significant infrastructure. Development consent is often made in the form of a statutory instrument known as a Development Consent Order (DCO). The Planning Act 2008 (PA2008) provides the consenting regime for NSIPs[27].

2.30 The role of Essex CC in the development consent process is as an important statutory consultee, making representation on behalf of Essex. Any representation Essex CC or any host local authority makes in relation to an NSIP is a material consideration in the determination of an application by the SoS for development consent.

2.31 As set out in the Levelling Up and Regeneration Act 2023[28], Energy Act 2023[29] and National Infrastructure Strategy (2020)[30], the Government are seeking to make it faster, fairer and greener to gain consent for NSIPs[31]. In 2023, DLUHC produced a cross-government policy paper setting out a series of reforms to improve the planning system for NSIPs[32]. This set out a series of concerns surrounding the increasing time taken for DCO's to be granted; rises in extensions of time for project decisions; increasing documentation requirements and administrative burdens; and increases in the numbers of decisions successfully being legally challenged.

[27] Legislation.gov. Planning Act. 2008. Available here
[28] Legislation.gov. Levelling Up and Regeneration Act. 2023. Available here
[29] Legislation.gov. Energy Act. 2023. Available here
[30] HM Treasury. National Infrastructure Strategy. 2020. Available here
[31] Department for Levelling Up, Housing & Communities. 2023. Nationally Significant Infrastructure: action plan for reforms to the planning process
[32] Department for Levelling Up, Housing & Communities. 2023. Nationally Significant Infrastructure: action plan for reforms to the planning process

2.32 The Government has published National Policy Statements (NPSs), as defined under Section 65 of PA2008[33], which comprise the Government's objectives for the development of nationally significant infrastructure in a particular sector and state. They provide the framework within which Examining Authorities make their recommendations to the Secretary of State regarding decisions on NSIP applications, including reasons for the policy set out in the statement and an explanation of how the policy takes account of government policy relating to the mitigation of, and adaptation to, climate change, and how this will contribute to sustainable development. There are currently six NPSs for energy, prepared by the Department for Energy Security and Net Zero, three transport NPSs, produced by the Department for Transport, and three NPSs for water and waste, produced by the Department for Environment, Food and Rural Affairs.

2.33 Reform 3 of the Government's NSIP Action Plan sets out an ambition to realise better outcomes for the natural environment[34]. Paragraph 4.7 of the document states that BNG requirements will be incorporated for all NSIPs from November 2025. The application of BNG to NSIPs was first introduced in The Environment Act in 2021, which amended Section 103 to 105. A new Schedule 2a has also been inserted into The PA2008 to reflect the new BNG requirements. Schedule 15 of the Environment Act 2021 contains provisions which, when commenced, mean the Secretary of State may not grant an application for a Development Consent Order unless satisfied that a biodiversity gain objective is met in relation to the onshore development in England to which the application relates.

2.34 The biodiversity gain objective will be set out in a biodiversity gain statement (as defined under the Environment Act 2021[35]). Normally these statements would be included within an NPS, but the Act allows for the statement to be published separately where a review of an NPS has begun before the provisions are commenced. The mechanism of biodiversity gain statements allows for the biodiversity gain objective and calculation method to be set out for different types of NSIP, including allowance for offsite biodiversity gain and biodiversity units.

2.35 Whilst the biodiversity gain statements (and associated biodiversity gain objectives) are yet to be published, the existing NPSs do contain some initial guidance on the application of BNG to relevant NSIPs.

2.36 UK Government stated in February 2024 that "We have committed to BNG applying to NSIPs from November 2025. To support their readiness, we will consult on the

[33] Legislation.gov. Planning Act. 2008. Available here
[34] Department for Levelling Up, Housing & Communities. 2023. Nationally Significant Infrastructure: action plan for reforms to the planning process
[35] Legislation.gov. Environment Act 2021. Available here

biodiversity gain statement[s] in March 2024 and publish a final version, alongside further NSIP guidance, in September 2024"[36].

2.37 The Government's response to their consultation on BNG[37] includes an indication of their intentions in relation to NSIPs. The intent is for BNG to apply to all NSIPs (further regulations being required for marine projects) and to keep the approach broadly similar to TCPA90 development, completing a metric and biodiversity gain plan and applying a biodiversity site register for offsite gains (offsetting[38]). For NSIPs with mitigation areas within the project boundary, the Government does not intend to make a distinction between these mitigation areas and other onsite habitats (which are subject to BNG). The period for which gains must be secured will be set out in the relevant biodiversity gain statement but will be a minimum of 30 years, in line with the TCPA90 consenting regime.

2.38 The RTPI published a response to the Department for Environment Food and Rural Affair's (DEFRA) consultation on BNG in 2022. Questions 17 onwards covered guidance in relation to BNG and NSIPs, and Part 3 of the document Sectoral concerns

2.39 Following the announcement of these BNG requirements for TCPA90 development and NSIPs, there has been concern across the built environment sector surrounding the lack of guidance. The National Audit Office has raised concerns that the requirements are being launched without the necessary elements for their implementation. Echoing such concerns, the RTPI reported that as of February 2024, 81% of planners in the public sector needed further "guidance, advice, and support"[39]. Additionally, 68% of all planners needed more staff and skills, and 61% required more case studies of best practices.

2.40 The RTPI have raised concerns with the application of BNG for development under the Town and Country Planning Act 1990[40]. They caution that requiring a BNG Plan to be submitted after planning permission has been granted might pose challenges to planners, as biodiversity will have already been a key consideration in the

[36] Government Environment Blog – The Biodiversity Net Gain Statutory Instruments explained: https://defraenvironment.blog.gov.uk/2023/11/29/the-biodiversity-net-gain-statutory-instruments-explained/
[37] BNG consultation outcome: Government response and summary of responses https://www.gov.uk/government/consultations/consultation-on-biodiversity-net-gain-regulations-and-implementation/outcome/government-response-and-summary-of-responses
[38] Offsetting being the delivery of offsite biodiversity enhancements to provide biodiversity gain equivalent to any shortfall in biodiversity units required to achieve the biodiversity objective of the scheme.
[39] RTPI. 2024. RTPI echoes National Audit Office's concerns over lack of support for Biodiversity Net Gain implementation. here
[40] RTPI. 2022. Final RTPI response BNG regulations and implementation. Here

officers' prior assessments. They consider it counterproductive to approve an application without prior evidence that it can deliver a 10% BNG.

2.41 The RTPI also identifies a need for more detailed guidance and plans regarding the development of a local market for biodiversity land, as these will be crucial for the delivery of Biodiversity Plans where offsite delivery is required. They caution that currently, no equivalent market of this nature exists.

2.42 The document also raises a series of other concerns in relation to the proposals around habitat banking and the complexities associated with calculating additionality, such as differentiating between measures that protect existing biodiversity and those that deliver BNG. The RTPI has also called for more clarity regarding the type and level of information collected to monitor BNG, and how this might impact Local Authority resourcing and capacity.

2.43 The Chartered Institute of Ecology and Environmental Management (CIEEM) has shared that whilst they welcome the application of BNG to NSIPs, they believe the Government should expedite the implementation before November 2025[41]. This is because NSIPs are often the most damaging to the environment and have the largest budgets. CIEEM also advocates for BNG requirements extending beyond 10%, and the 30-year maintenance. CIEEM also raise concerns the metric must take into account the longer delivery timeframes which characterise NSIPs. For example, they note that 'temporary' habitat losses are likely to be present for several years.

[41] CIEEM. Biodiversity Net Gain Regulations and Implementation. 2022. Here

Town and County Planning Act 1990 (as amended) (TCPA90)

3. Methodology

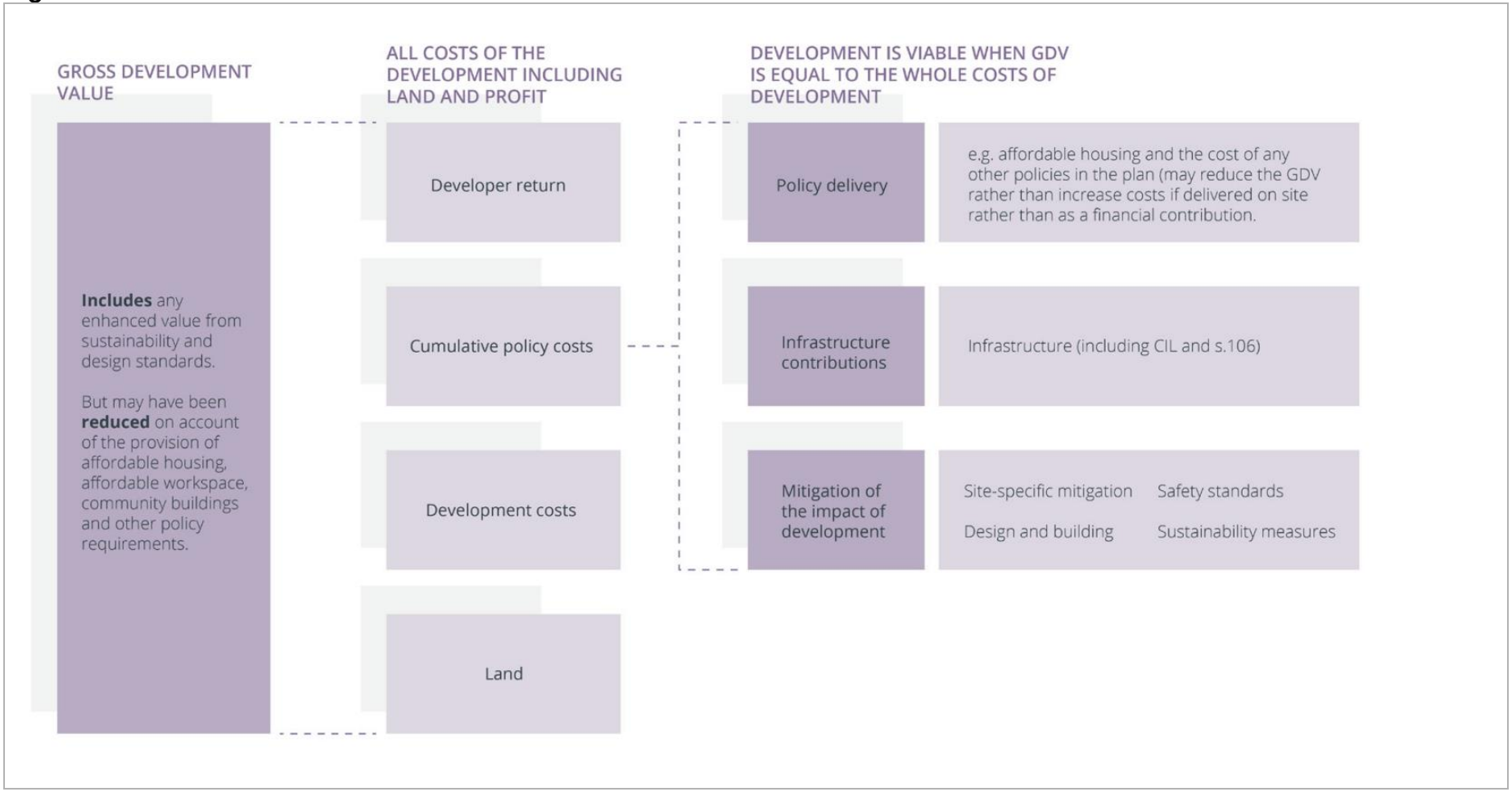
3.1 In this section of the report, we set out our methodology to establish the potential viability impact of increasing the BNG objective to at least 20% in Essex for TCPA90 development. We have outlined both the approach to viability testing and to estimating different costs and land take requirements for varying levels of BNG.

Viability principles

3.2 In principle, all planning gain will be deducted from the uplifted land value once planning permission is granted. In short, for financially viable development, the value of the land usually increases significantly once planning permission is granted when compared to the pre-permission state. Some of this increase in value goes to provide planning policy contributions, including affordable housing and S106/CIL, rather than to the landowner. When policies are being set it is important that a balance is struck to ensure that development remains viable. It is therefore critical not to take a one size fits all approach and that viability is understood on an individual site basis when possible.

3.3 We rely on a residual value approach to calculate viability and draw conclusions to whether there is additional surplus for planning gain. Figure 3-1 below shows the residual valuation framework set out by the RICS in their *Assessing viability in planning under the National Planning Policy Framework 2019 for England* (2021).

Figure 3-1: Residual valuation framework

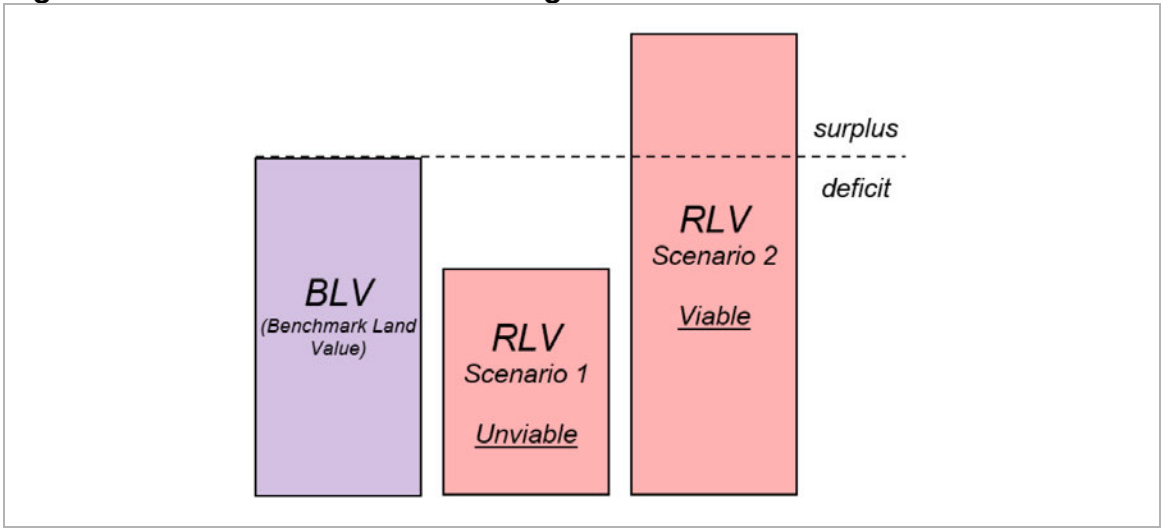


Source: RICS, 2021

3.4 We consider a scheme to be viable if the total gross development value (GDV) is more than the total development costs of the scheme. The total development costs include land costs, build costs, developers' profit, planning obligations and interest. If the sum of all cost elements listed exceeds the GDV then we consider the scheme to be unviable.

3.5 In order to advise on the ability of development to support an increase in BNG we have benchmarked the residual land value (RLV) from the viability analysis against a suitable benchmark land value (BLV). The BLV represents the minimum land value a reasonable land owner would require for the site to make it available for development. There is established guidance on calculating BLV that we have applied. If the RLV exceeds the BLV then the scheme is viable and produces a surplus you can see this illustrated in Figure 3-2.

Figure 3-2: Benchmark land value against residual land value



Source: SQW, 2021

Viability approach for this study

3.6 Essex is a large geographical area making viability testing challenging, as there are numerous variations in planning policy, market dynamics and the nature of development sites. There is an accepted methodology for testing emerging local plans for development viability and as we have outlined, we have followed this reasonably closely.

Typology based approach

3.7 In Local Plan viability testing a typology approach to viability testing is used and we have applied a similar approach here. Essentially a range of development typologies have been determined to best represent the type of development that is likely to come forward in the area. This approach allows viability to be tested for an

area without testing every individual site. Unlike in Local Plan viability testing, we have not tested strategic sites separately because there are too many across all 14 LPAs and it is not within the scope of this study. We have ensured that our typologies include larger sites to ensure they are considered.

3.8 In devising our typologies we have reviewed allocations in adopted and emerging Local Plans, existing Local Plan viability evidence bases and our own understanding of the market. Though as part of a Local Plan viability assessment, a quantitative assessment of proposed allocations can be undertaken, due to the strategic nature of this study this has not been possible. Our typologies are outlined in detail later in this report.

Development appraisal inputs – costs and values

3.9 The NPPF outlines that you do not have to use inputs which relate to specific sites and that standardised inputs are reasonable, *'All viability assessments, including any undertaken at the plan-making stage, should reflect the recommended approach in national planning guidance, including standardised inputs, and should be made publicly available.'*[42].

3.10 For plan-wide testing, national viability guidance states that '*For broad area-wide or site typology assessment at the plan making stage, average figures can be used, with adjustment to take into account land use, form, scale, location, rents and yields, disregarding outliers in the data. For housing, historic information about delivery rates can be informative.*'[43]

3.11 It is standard practice in plan-wide assessments to create a range of value zones across a local authority area to test the different values that can be achieved geographically. In this assessment, the geographical area is too large and creating value zones in this way would be confusing and may end up contradicting what has already been established in existing local plan evidence bases. Instead, we have tested a range of values through sensitivity analysis with the range informed by our market research.

3.12 Regarding development costs the PPG states that these should be reflective of the local market. Costs should be bespoke for the local area and take into account any local specific costs where possible. In this assessment, we have looked at costs over the whole study area and have sensitivity tested them using an evidence-based range in a similar fashion to values.

[42] MHCLG, NPPF, July 2021, paragraph 58
[43] MHCLG, PPG, Paragraph: 011 Reference ID: 10-011-20180724, Revision date: 24 07 2018

Planning policy costs

3.13 By planning policy costs we mean CIL, S106 and affordable housing costs. When undertaking a strategic viability assessment for local plan assessment purposes you would directly be testing the emerging planning policies. As we are considering a wide study area we have taken a view on the general level of these policy costs throughout the region. For example, we have assumed a starting point for affordable housing by considering all local plan policies and have sensitivity-tested this input in a similar way to costs and values.

3.14 BNG has been considered separately as this is the focus of this assessment. Our method regarding BNG costing is set out later in this document.

Benchmark land value (BLV) methodology

3.15 One of the most challenging inputs in any viability assessment is BLV (also referred to as threshold land value) and in recent years there has been much discussion around different methods of determining it. In this assessment, BLV is an even more challenging input to establish due to the large geographical area. To determine our BLV we have considered the secondary evidence presented in individual LPAs local plan viability assessments.

3.16 The primary approach for assessing the BLV is the existing use plus a premium (EUV+), or alternative use value (AUV) where appropriate as suggested in the PPG and the recently published RICS viability guidance[44]. For this study, AUV is not used as the AUV will have to be supported by evidence of the costs and values of the alternative use on an individual site basis. The PPG states in regards to existing use plus premium:

'To define land value for any viability assessment, a benchmark land value should be established on the basis of the ***existing use value (EUV) of the land, plus a premium*** *for the landowner. The premium for the landowner should reflect the minimum return at which it is considered a reasonable landowner would be willing to sell their land. The premium should provide a reasonable incentive, in comparison with other options available, for the landowner to sell land for development while allowing a sufficient contribution to fully comply with policy requirements. Landowners and site purchasers should consider policy requirements when agreeing land transactions. This approach is often called 'existing use value plus (EUV+)'.*[45]

[44] RICS, March 2021, Assessing viability in planning under the National Planning Policy Framework 2019 for England
[45] MHCLG, 05 May 2019, PPG, Paragraph: 013 Reference ID: 10-013-20190509

3.17 The PPG goes on to outline what should be taken into account when determining BLV:

- *'be based upon existing use value*
- *allow for a premium to landowners (including equity resulting from those building their own homes)*
- *reflect the implications of abnormal costs; site-specific infrastructure costs; and professional site fees'*

'Viability assessments should be undertaken using benchmark land values derived in accordance with this guidance. ***Existing use value should be informed by market evidence of current uses****, costs and values.* ***Market evidence can also be used as a cross-check of benchmark land value but should not be used in place of benchmark land value.*** *There may be a divergence between benchmark land values and market evidence; and plan makers should be aware that this could be due to different assumptions and methodologies used by individual developers, site promoters and landowners.*

This evidence should be based on developments which are fully compliant with emerging or up to date plan policies, including affordable housing requirements at the relevant levels set out in the plan. Where this evidence is not available plan makers and applicants should identify and evidence any adjustments to reflect the cost of policy compliance. This is so that historic benchmark land values of non-policy compliant developments are not used to inflate values over time.

In plan making, the landowner premium should be tested and balanced against emerging policies. In decision making, the cost implications of all relevant policy requirements*, including planning obligations and, where relevant, any Community Infrastructure Levy (CIL) charge should be taken into account.'* [46]

3.18 Determining an appropriate level of premium can be difficult and there is no accepted method. The PPG states *'The premium should provide a reasonable incentive for a land owner to bring forward land for development while allowing a sufficient contribution to fully comply with policy requirements.*

Plan makers should establish a reasonable premium to the landowner for the purpose of assessing the viability of their plan. This will be an iterative process informed by professional judgement and must be based upon the best available evidence informed by cross sector collaboration.' [47]

[46] MHCLG, 09 May 2019, PPG, Paragraph: 014 Reference ID: 10-014-20190509
[47] Ibid

3.19 We must also consider the balance between the different interests of stakeholders i.e. developers, landowners and the local planning authority: *'to secure maximum benefits in the public interest through the granting of planning permission.'*[48]

3.20 We have taken into account a number of factors when determining an appropriate level of premium these include:

- **RICS Assessing viability in planning under the National Planning Policy Framework 2019 – published March 2021 effective from July 2021.** The RICS guidance states: *"There is no standard amount for the premium and the setting of realistic policy requirements that satisfy the reasonable incentive test behind the setting of the premium is a very difficult judgement."*[49]. The guidance goes on to state *"For a plan-making FVA, the EUV and the premium is likely to be the same for the same development typology, but it would be expected that a site that required higher costs to enable development would achieve a lower residual value. This should be taken account of in different site typologies at the plan-making stage."*[50]

- **The Harman Report**[51] - now over 10 years old, this report was introduced alongside the 2012 NPPF to provide guidance around viability in the planning system as it became a greater consideration. Because of its age, the Harman Report does not align with the most recent PPG which advocates for the use of EUV plus premium as the single approach to benchmark land value. This being said the Harman Report does state that future policy will impact land values and landowners' expectations must adjust. The Harman Report is consistent with more recent guidance and does suggest that market values for land can be used as a 'sense check' though should not solely be relied upon to determine BLV. An interesting observation the Harman Report makes is that the fact that on large strategic sites landowners are likely to be able to take a very long term view when disposing of their assets. The reality is that when large amounts of greenfield land are sold it is usually a 'once in a lifetime' opportunity and landowners will often be family trusts or institutions that have held the land for a long period of time. To reflect these facts landowners on greenfield sites will expect a significantly higher premium than urban located brownfield sites.

- **HCA Area-wide Viability Model –** in Appendix 1 Transparent Viability Assumptions the document provides guidance on the amount of appropriate premium to apply. This piece of evidence is now dated though it is still useful to

[48] MHCLG, 24 July 2018, PPG, Paragraph: 010 Reference ID: 10-010-20180724
[49] RICS, March 2021, Assessing viability in planning under the National Planning Policy Framework 2019 for England . Paragraph 5.3.3
[50] Ibid paragraph 5.3.7
[51] Local Housing Delivery Group Chaired by Sir John Harman, 20 June 2012, Viability Testing Local Plans, Advice for planning practitioners

consider. The guidance states '*Benchmarks and evidence from planning appeals tend to be in a range of **10% to 30% above EUV in urban areas**. For greenfield land, benchmarks tend to be in a range of **10 to 20 times agricultural value**'.*

- **North Essex Authorities EIP – letter from the planning inspector -** A total of three garden communities in Essex were included in the local plan providing a significant amount of housing growth. The key area of interest in this letter is the consideration the planning inspector gave to the premium element of the land value in the viability assessment. The EUV included in the assessment was £10,000 per gross acre of agricultural land. The inspector determined that a premium of 10x would be sufficient to incentivise a landowner to release the land for development. The letter states, '*the necessarily substantial requirements of the Plan's policies' a price 'below £100,000/acre could be capable of providing a competitive return to a willing landowner'.59 The Inspector, however, judged that 'it is extremely doubtful that, for the proposed GCs, a land price below £50,000/acre – half the figure that appears likely to reflect current market expectations – would provide a sufficient incentive to a landowner. The margin of viability is therefore likely to lie somewhere between a price of £50,000 and £100,000 per acre.*'[52]

- **Planning appeal Land at Warburton Lane, Trafford (Appeal Ref: APP/Q4245/W /19/3243720) -** This planning appeal considered a greenfield development site where one of the main areas of disagreement was land value. The appeal was dismissed and the inspector agreed with the approach taken by the local authority. The council applied an EUV for agricultural land of £8,000 per acre to which a premium of x10 was applied though only to the net developable area of 33.75 acres. The undeveloped area of the site had only an EUV of £8,000 applied to it with no premium. The total benchmark land value equated to £2,900,00 against a total site area of 62 acres (25 hectares). The blended land value was therefore £46,945 per gross acre which equates to a 5.9x multiplier on the agricultural existing use value of £8,000 per acre.

3.21 The North Essex decision is interesting as it demonstrates that there is no fixed acceptable level for landowner premium. In fact, the premium could lie within a range which will vary based on the viability of the scheme when all costs are taken into account. When setting landowner premium it is important to not set it too high at the expense of planning obligations, or set it too low and risk the site not coming forward for development.

[52] Planning Inspectorate,15 May 2020, Examination of the Shared Strategic Section 1 Plan - North Essex Authorities, Paragraph 204

Approach to viability modelling

3.22 We have produced a bespoke Excel model to undertake our testing. Our model calculates the assumed BLV and includes it in the appraisal rather than using it as a separate benchmark. Therefore, as land value is taken into account in the development appraisal as a cost (and so is developer's profit) any residual value in excess of £0 constitutes viable development.

3.23 As we have noted above we have undertaken in depth sensitivity testing. This has allowed us to understand the viability of a range of values, costs and policy contributions across the region. We have used this sensitivity analysis to work out what levels costs and values need to be at to produce a viable scheme. Figure 3-3 below is a sensitivity table for costs and values. The examples show that at £410 psf, residential sale values, the development is viable, with build costs at £1,500 psm, but if build costs rise to £1,600 psm values need to be at least £430 psf to produce a viable scheme.

Figure 3-3: Example sensitivity test – residual land value in excess of BLV for residential GDV vs build costs

		Build cost £psm				
		£1,500	£1,525	£1,550	£1,575	£1,600
GDV £psf	£320	-380,108,428	-400,487,430	-420,866,432	-441,245,434	-461,624,436
	£330	-325,609,626	-345,988,628	-366,367,630	-386,746,633	-407,125,635
	£340	-272,335,849	-292,243,071	-312,622,073	-333,001,075	-353,380,077
	£350	-221,775,716	-240,859,378	-260,264,020	-279,894,795	-299,799,173
	£360	-175,121,639	-192,658,247	-210,687,931	-229,276,325	-248,397,716
	£370	-132,556,718	-148,655,646	-165,321,683	-182,479,361	-200,063,837
	£380	-93,294,123	-108,585,744	-124,048,252	-139,742,685	-155,907,127
	£390	-55,530,454	-70,266,841	-85,224,730	-100,384,925	-115,700,803
	£400	-20,234,947	-34,545,309	-48,949,383	-63,537,153	-78,332,513
	£410	14,425,451	283,099	-13,912,718	-28,175,788	-42,502,638
	£420	48,702,116	34,697,579	20,641,806	6,536,855	-7,619,097
	£430	82,678,487	68,779,332	54,840,828	40,860,533	26,836,662
	£440	116,322,984	102,563,447	88,749,324	74,871,991	60,958,325
	£450	149,624,457	135,993,682	122,313,920	108,578,878	94,793,758
	£460	182,667,789	169,111,670	155,543,041	141,931,113	128,275,025
	£470	215,596,708	202,083,395	188,550,153	175,007,347	161,443,505

Source: SQW 2024

The Baseline Biodiversity Approach to BNG

Typology BNG calculations

3.24 For each of the typologies identified, a typical baseline was determined in the form of a hypothetical development site. Areas of typical baseline habitat types were estimated with reference to previous project experience and reviews of planning applications to compare examples of similar schemes. Conditions of habitats were also estimated to represent typical sites. This stage of the process required assumptions to be made, for example, the proportion of arable land and grassland

in a greenfield site. Details of assumptions and the reasoning behind decisions made for each typology are presented in Technical Annex B. These habitat types, areas and condition values were inputted into the Statutory Biodiversity Metric Calculator to provide a score.

3.25 To determine the baseline habitat makeup of the sites, the following general assumptions were applied across all of the typologies:

- Development will be targeted on sites of lower biodiversity value, consisting typically of non-priority habitats.

- All sites are assumed to be in areas of low strategic significance for biodiversity (i.e. not in designated networks or sites and not important for maintaining or improving connectivity of strategic sites). This assumption does not materially affect the outcomes as it is applied across all pre-development and post-development habitats, so the Calculator Tool applies the same weighting to all habitat parcels. Calculations do not include consideration of linear (hedgerow) or watercourse biodiversity units. It is assumed hedgerows can be restored and enhanced within the context of the scheme, without significant additional expenditure being incurred to achieve relevant BNG targets. Achieving net gain for watercourses can be a significant challenge, which may result in material impacts on the feasibility of developing some sites. However, due to the limitations on developing within flood-risk zones and the cost associated with delivering BNG for watercourses, it is assumed for this study that the vast majority of development sites will exclude watercourses (and associated riparian zones) from their red-line boundary, thereby avoiding any requirement to consider them in delivering net gain.

3.26 Caveats have been placed on some of the typologies with regard to their baseline habitats, for the purposes of this study. Those caveats are noted below:

- Brownfield sites were assumed to be mainly bare ground with little vegetation. This was in order to differentiate them as much as possible from the greenfield site typologies. Thus they had relatively low pre-development biodiversity units. In a real-world situation, if sites become re-vegetated through lack of disturbance, they would have the potential to be more equivalent to a greenfield site in terms of pre-development habitats and biodiversity units. Additionally, brownfield sites can be very varied in terms of their vegetations and there is a potential for some sites to have mosaic vegetation habitats which would make them of high ecological value. These types of sites have been excluded from this study.

- Greenfield sites have the potential to be a lot higher in existing diversity than assumed for this study. The greenfield sites in these typologies were assumed

to be mostly arable/crop farmland but could of course be sites of much higher value, such as those including habitats of principal importance. However, as these are rarely the sites chosen for development we believe the habitat choices within this study reflect the real world value for the majority of sites in these typologies.

3.27 Post-development habitat types were determined similarly to the baseline habitats with reference to previous experience and projects. An initial suite of developed site habitats was drafted, including retention and enhancement where appropriate, taking account of the gross-to-net proportions for developed land and land available for biodiversity and public open space.

3.28 These habitat areas were then adjusted to achieve a 10% BNG, where reasonably achievable onsite within the area available, based on the given gross-to-net ratios. This mirrors the process employed in design-stage consultation in schemes being developed according to BNG principles, although in real schemes, the 10% figure should be taken as a minimum rather than a target. Where 10% BNG is not reasonably achievable, the highest reasonable final biodiversity score has been used. The process of revising the post-development habitats has then been repeated to deliver a net gain of 20% where reasonably achievable onsite.

3.29 Where the net gain does not reach the given target percentage, the shortfall of biodiversity units was reported to inform the estimated cost of delivering the difference through offsite provision[53].

3.30 For determining the post-development makeup of the sites, it was assumed across all of the typologies that the mitigation hierarchy will be applied through the design of schemes, such that features of ecological value are retained as far as possible and development areas are located on habitats of lower biodiversity value.

3.31 Specific assumptions for each typology are detailed in Technical Annex B.

Habitat costs

3.32 In order to estimate costs for delivery of BNG for each of the typologies onsite, costs per hectare were applied to the habitat creation, management and monitoring requirements over an assumed 30-year period, outlined in the net gain calculations. This required identifying appropriate cost values for the necessary activities and capital costs to deliver these habitat outcomes (land take costs were not included here as these are covered within the typology viability assessment).

[53] Providing improvements away from the development site, either directly by the developer, or financial contribution to a third party.

3.33 Costs were derived through an examination of previous research into habitat creation costs, including Defra Impact Assessment and the supporting Assessing the Cost of Environmental Land Management in the UK report. Alongside this evidence from previous projects carried out by Temple involving onsite habitat creation, and input from external companies and technical experts were considered.

3.34 It was found that often habitat creation cost estimates from external sources and literature reviews varied widely. This was in some part due to costs varying as to whether they included management and monitoring or not, and reflects variation in contract values including those associated with sectoral specific contracts or requirements (e.g. traffic management requirements on the roads network), as well as regional variation. For example, the Defra BNG Market Analysis Study had estimates for habitat creation costs for woodland ranging from £10,821 to £195,061. Our estimated costs fall within the mid-range for most habitats. A detailed breakdown of costs and assumptions can be found in Technical Annex B.

3.35 It should be noted that, in line with usual practice for viability assessments to use current prices to establish costs, future management and monitoring costs are not adjusted for potential inflation over the assumed 30-year management period.

Essex Developers Group consultation

3.36 As part of this commission, we shared our initial assumptions with Essex Developers Group and provided them with an opportunity to comment. This resulted in a variety of feedback on topics such as build costs and interest rates. These comments have been incorporated into our assessments and discussions regarding the final assumptions.

4. Development typologies

4.1 In this section we have set out the development typologies tested as part of our modelling. As we explained in the previous chapter using a typology-based approach is reasonable for strategic viability testing as it is not feasible to test each individual site over such a large geography.

4.2 In accordance with the brief and client instructions agreed for this commission, and reflecting budgetary constraints, we have replicated the development scenarios used for SQW's previous work on BNG in Kent[54], with only minor alterations. It was considered that these scenarios are appropriate as the form and range of TCPA90 development anticipated to come forward in Essex is considered to be broadly consistent with those typologies used for Kent. It is therefore worth noting the approach that was adopted to arrive at the scenarios.

4.3 Our preferred method of determining typologies is to undertake both qualitative and quantitative analysis of proposed allocations coming forward in an area. However, due to the fact there are numerous LPAs with local plans at different stages of the process it would have been impractical to undertake quantitative analysis of allocations (i.e. grouping together all of a similar size, development type, density etc. and taking averages of specific metrics). Instead, we took a more qualitative approach to determining typologies.

4.4 Based on our own experience of the market we devised a range of typologies. These were then considered against the emerging Local Plans to ensure that we had a suitable range of options. Because of the size of the study area with a range of different markets this method is imperfect and there will be certain developments that will come forward that will not be captured by the typologies.

4.5 But because this is a strategic study, as long as the range of typologies represents the bulk of development in the region, this is enough to advise ECC and the Local Authorities in Essex on the viability of developments with different degrees of BNG.

4.6 As the focus of this study is testing the impact of different levels of BNG we have provided some context in regard to the assumptions made around the existing use/status of this site. This is important because the first part of a BNG assessment on a specific site is considering the pre-development biodiversity score. This acts as the starting point to which a % net gain is applied. Habitat assumptions were adjusted to reflect the Essex context.

[54] SQW. 2022. Viability Assessment of Biodiversity Net Gain in Kent.

Residential typologies

4.7 We have defined the residential typologies set out in Table 4-1.

Table 4-1: Residential development typologies

No. units	Land type	Predominant unit type	Starting site gross to net	Net dev density (DPH)	Total site size (HA)
5,000	Greenfield	Houses	50.00%	35	285.71
500	Greenfield	Houses	70.00%	35	20.41
100	Greenfield	Houses	85.00%[55]	40	2.94
25	Greenfield	Houses – lower density	90.00%[55]	20	1.39
500	Brownfield	Houses	90.00%	40	13.89
100	Brownfield	Flats and Houses	95.00%	55	1.91
25	Brownfield	Flats	97.50%	100	0.26

Source: SQW, 2024

Residential development baseline habitat assumptions

4.8 Assumed baseline habitats for each of the residential typologies are shown in Table 4-2. Details and justifications behind these assumptions are provided in the Technical Annex B.

Table 4-2: Residential development baseline habitat assumptions

Habitat classification	Description	Area (Ha)
5,000 unit Greenfield		
Cropland - Cereal crops	Arable farmland – generally main habitat found on greenfield sites for development	193.00
Grassland - Modified grassland	Grazed pasture/ silage crop – secondary main habitat on greenfield sites for development.	50.7

[55] The small (25 unit) and small-medium (100 unit) greenfield sites could not reasonably deliver a 10% net gain within the baseline site area and gross to net parameters. Therefore purchase of some off-site biodiversity units has been assumed within the 10% baseline for these scenarios.

Habitat classification	Description	Area (Ha)
Urban - developed land sealed surface	Buildings and hardstanding – old barns, turning circles, tracks and storage areas	1.00
Woodland and forest - Other woodland; mixed	Managed woodland within farm ownership – large greenfield sites generally contain some form of woodland either plantation or managed/unmanaged edge habitats.	26.00
Lakes - Ponds (Non- Priority Habitat)	Existing ponds - often small ponds found on farmland surrounded by scrub.	0.01
Heathland and shrub - Mixed scrub	Mix of bramble, hawthorn, blackthorn at the edges of woodland and unmanaged margins. Scrub is usual on non-cropland areas of greenfield sites.	15.00
500 unit Greenfield		
Cropland - Cereal crops	Arable farmland – generally main habitat found on greenfield sites for development	14.16
Grassland - Modified grassland	Grazed pasture/ silage crop – secondary main habitat on greenfield sites for development.	4.00
Urban - developed land sealed surface	Buildings and hardstanding – old barns, turning circles, tracks and storage areas	0.25
Sparsely vegetated land - early successional plants and ruderal/ephemeral.	Early successional plants such as found on previously developed land as well as tall ruderal vegetation, such as nettles, thistles, willowherbs and bramble. Quite usual to find in old abandoned sites that have been left for some time, especially in areas of broken ground.	0.25

Habitat classification	Description	Area (Ha)
Woodland and forest - Other woodland; broadleaved	Managed woodland within farm ownership – large greenfield sites generally contain some form of woodland either plantation or managed/unmanaged edge habitats.	1.5
Heathland and shrub - bramble scrub	Encroaching scrub from site margins. Often bramble with additional plants from adjacent sites.	0.25
100 unit Greenfield		
Cropland - Arable field margins tussocky	Arable field margins –areas left to become slightly better habitats	0.18
Woodland and forest - Other woodland; mixed	Shelterbelt plantations at site boundary. Often left to be in poor condition due to lack of management.	0.02
Heathland and shrub - Mixed scrub	Mix of bramble, hawthorn, blackthorn at the edges of woodland and unmanaged margins. Scrub is usual on non-cropland areas of greenfield sites.	0.20
25 unit Greenfield		
Grassland - Modified grassland	Grazed pasture/ silage crop – secondary main habitat on greenfield sites for development.	1.18
Sparsely vegetated land - early successional plants and ruderal/ephemeral.	Early successional plants such as found on previously developed land as well as tall ruderal vegetation, such as nettles, thistles, willowherbs and bramble. Quite usual to find in old abandoned sites that have been left for some time,	0.01

Habitat classification	Description	Area (Ha)
	especially in areas of broken ground.	
Heathland and shrub - Bramble scrub	Encroaching scrub from site margins. Often bramble with additional plants from adjacent sites.	0.05
Woodland and forest - Other woodland; mixed	Shelterbelt plantations at site boundary. Often left to be in poor condition due to lack of management.	0.10
Urban - Vacant/derelict land/ bareground	Vehicle turning and storage areas. Also, areas where old buildings have become derelict and ground is cracked.	0.05
500 unit Brownfield		
Urban - Developed land; sealed surface	Existing buildings and hard standing. Potentially old offices or warehouses.	7.50
Urban - Vacant/derelict land/ bareground	Vehicle turning and storage areas. Also areas where old buildings have become derelict and ground is cracked.	2.00
Urban - Artificial unvegetated, unsealed surface	Broken hard standing and potentially rubble from old buildings	2.00
Urban - Introduced shrub	Previous landscape planting, often left to invade other areas of the site.	0.30
Grassland - Modified grassland	Previous amenity grassland, left to potentially become better habitat as no longer managed. Also includes current amenity grassland (i.e. sports pitches etc).	0.30
Sparsely vegetated land - early successional plants and ruderal/ephemeral.	Early successional plants such as found on previously developed land as well as tall ruderal vegetation, such as nettles, thistles, willowherbs and bramble. Quite usual to find in old abandoned sites that	0.7

Habitat classification	Description	Area (Ha)
	have been left for some time, especially in areas of broken ground.	
Heathland and shrub - Mixed scrub	Mix of bramble, hawthorn, blackthorn at the edges of woodland and unmanaged margins. Scrub is usual on non-cropland areas of greenfield sites.	0.20
Woodland and forest - Other woodland; mixed	Shelterbelt plantations at site boundary. Often left to be in poor condition due to lack of management.	0.45
Lakes - Ponds (Non- Priority Habitat)	Existing pond, or old SUDS feature, often in poor condition with potential for old ponds to have become polluted/silted up.	0.05
Sparsely vegetated land - early successional plants and ruderal/ephemeral.	Early successional plants such as found on previously developed land as well as tall ruderal vegetation, such as nettles, thistles, willowherbs and bramble. Quite usual to find in old abandoned sites that have been left for some time, especially in areas of broken ground.	0.39
Grassland - Other neutral grassland	Road verges at the edge of the site. May have been previously seeded and then left to go wild. Also includes old gardens and recreation grounds derived from older grassland and not impacted by agriculture or landscaping.	0.39
100 unit Brownfield		
Urban - Vacant/derelict/ bare ground	Vehicle turning and storage areas. Also areas where old buildings have become derelict and ground is cracked.	0.1

Habitat classification	Description	Area (Ha)
Urban - Developed land sealed surface	Existing buildings and hard standing. Potentially old offices or warehouses.	1.40
Urban - Built linear features	Access road, old potentially poor condition	0.36
Heathland and shrub - Bramble scrub	Encroaching scrub from site margins. Often bramble with additional plants from adjacent sites.	0.03
Sparsely vegetated land - early successional plants and ruderal/ephemeral.	Early successional plants such as found on previously developed land as well as tall ruderal vegetation, such as nettles, thistles, willowherbs and bramble. Quite usual to find in old abandoned sites that have been left for some time, especially in areas of broken ground.	0.02
25 unit Brownfield		
Vacant/derelict/Bare ground	Vehicle turning and storage areas. Also areas where old buildings have become derelict and ground is cracked.	0.03
Urban - Developed land sealed surface	Existing buildings and hard standing. Potentially old offices or warehouses.	0.23

Source: SQW, 2024

Residential development mix

4.9 To determine the appropriate development mix we used our own professional judgment and considered LPAs' housing need evidence bases.

4.10 Table 4-3 shows the development mix inputs we have applied for residential market units. To account for the higher density typologies we have varied the mix depending on the predominant housing type i.e. housing or flats. Even in the housing predominant mix, we have included a very small amount of 1-bed flats, because most LPAs housing needs evidence bases identify a need for 1-bed units. In practice, these units are rarely delivered as houses as they are too small so we have included them in our testing as flats.

Table 4-3: Residential market mix inputs

Unit type	Housing typologies mix (excluding 25 unit Greenfield)	Lower Density Housing mix (25 unit Greenfield)	Housing and flatted typology mix (100 unit Brownfield)	Flatted typologies mix (25 unit Brownfield)
1 bed flat	10%	n/a	15%	50%
2 bed flat	n/a	n/a	15%	50%
2 bed house	35%	20%	30%	n/a
3 bed house	35%	30%	30%	n/a
4 bed house	20%	50%	10%	n/a

Source: SQW, 2024

4.11 Table 4-4 shows a different mix of affordable units. We have separated the residential mixes as the need identified in the LPAs Local Plan evidence bases across Essex are generally weighted towards smaller unit types.

Table 4-4: Residential affordable mix inputs

Unit type	Housing typologies mix (excluding 25 unit greenfield)	Lower Density Housing mix (25 unit Greenfield)	Housing and flatted typology mix (100 unit Brownfield)	Flatted typologies mix (25 unit Brownfield)
1 bed flat	35%	0%	35%	50%
2 bed flat	n/a	n/a	20%	50%
2 bed house	40%	40%	20%	n/a
3 bed house	20%	40%	20%	n/a
4 bed house	5%	20%	20%	n/a

Source: SQW, 2024

Residential unit sizes

4.12 To determine appropriate inputs for residential unit sizes we have considered a range of sources including minimum space standards, unit sizes from recently completed schemes and the sizes adopted in the individual LPA Local Plan Viability assessments.

4.13 Table 4-5 below shows the national minimum space standards. None of our inputs are lower than these figures.

Table 4-5: Minimum gross internal floor areas – space standards

Number of bedrooms(b)	Number of bed spaces (persons)	1 storey dwellings	2 storey dwellings	3 storey dwellings	Built-in storage
1b	1p	39 (37)[2]			1.0
	2p	50	58		1.5
2b	3p	61	70		2.0
	4p	70	79		
3b	4p	74	84	90	2.5
	5p	86	93	99	
	6p	95	102	108	
4b	5p	90	97	103	3.0
	6p	99	106	112	
	7p	108	115	121	
	8p	117	124	130	
5b	6p	103	110	116	3.5
	7p	112	119	125	
	8p	121	128	134	
6b	7p	116	123	129	4.0
	8p	125	132	138	

Source: DLCG, 2015 - Technical housing standards – nationally described space standard

4.14 Based on the above we have adopted the unit sizes in Table 4-6 for all typologies apart from the 25-unit greenfield scenario at 20dph.

Table 4-6: Residential unit sizes

Unit type	Unit sizes
1 bed flat	60 sqm
2 bed flat	72 sqm
2 bed house	85 sqm
3 bed house	100 sqm
4 bed house	115 sqm

Source: SQW, 2024

4.15 Table 4-7 shows that we have adopted marginally higher unit sizes for the 25-unit greenfield scenario at 20dph as the density is lower than the rest of the typologies. The mix inputs have stayed the same.

Table 4-7: Lower density residential unit sizes

Unit type	Unit sizes
1 bed flat	60 sqm
	N/A
2 bed house	90 sqm
	110 sqm
4 bed house	130sqm

Commercial typologies

4.16 We have also tested a range of commercial typologies as part of our viability assessment. Again, in accordance with the agreed client brief and instructions, these reflect the typologies used for the SQW Kent BNG study as again those typologies were also considered suitable in the Essex context. The commercial typologies were derived from evidence from LPAs Local Plans and supporting evidence bases – Employment Land Reviews and Local Plan Viability Assessments; we have also used our professional judgement and experience of the commercial property market.

4.17 We have devised the following mix:

- Industrial
  - Small/medium – 500 sqm @ 40% site coverage
  - Large -10,000 sqm @ 35% site coverage
- Offices
  - 1,000 sqm footprint x 2 floors 2,000 sqm total
  - 40% site coverage
  - Approx. 2,500 sqm gross

Commercial development baseline habitat assumptions

4.18 Assumed baseline habitats for each of the commercial typologies, adjusted for the Essex context, are shown in Table 4-8. Details and justifications behind these assumptions are provided in the Technical Annex B.

Table 4-8: Commercial development baseline habitat assumptions

Habitat classification	Description	Area (Ha)
Small/medium industrial, 500sqm		
Urban - Developed land; sealed surface	Existing buildings and hard standing. Potentially old offices or warehouses.	0.07
Urban - Vacant/derelict land/ bareground	Vehicle turning and storage areas. Also areas where old buildings have become derelict and ground is cracked.	0.0245
Urban - Artificial unvegetated, unsealed surface	Broken hard standing and potentially rubble from old buildings	0.01
Sparsely vegetated land - early successional plants and ruderal/ephemeral.	Early successional plants such as found on previously developed land as well as tall ruderal vegetation, such as nettles, thistles, willowherbs and bramble. Quite usual to find in old abandoned sites that have been left for some time, especially in areas of broken ground.	0.015
Heathland and shrub - Mixed scrub	Encroaching scrub from site margins. Often bramble with additional plants from adjacent sites.	0.0125
Large industrial, 10,000sqm		
Cropland - cereal	Arable farmland – generally main habitat found on sites for development	2.20
Urban - developed land, sealed surface	Existing buildings and hard standing. Potentially old offices or warehouses.	0.30
Woodland; broadleaved	Shelterbelt plantations at site boundary. Often left to be in poor condition due to lack of management.	0.20
Heathland and shrub - Mixed scrub	Encroaching scrub from site margins. Often bramble with additional plants from adjacent sites.	0.15

Habitat classification	Description	
Offices, 1,000sqm		
Vacant/derelict/Bare ground	Vehicle turning and storage areas. Also areas where old buildings have become derelict and ground is cracked.	0.03
Urban - developed land, sealed surface	Existing buildings and hard standing. Potentially old offices or warehouses.	0.2
Bramble scrub	Encroaching scrub from site margins. Often bramble with additional plants from adjacent sites.	0.01
Sparsely vegetated land - early successional plants and ruderal/ephemeral.	Early successional plants such as found on previously developed land as well as tall ruderal vegetation, such as nettles, thistles, willowherbs and bramble. Quite usual to find in old abandoned sites that have been left for some time, especially in areas of broken ground.	0.01

Source: Temple. 2024

5. Value inputs and assumptions

5.1 In this section we have outlined the development appraisal inputs used to determine gross development value (GDV) for sites across Essex. We have considered several sources when determining our value inputs. For residential we have relied upon REalyse software which pulls from land registry transactions, quoting prices and EPC unit size data. For commercial we have considered comparable transactions on both CoStar and Egi databases. The market research was undertaken from January to February 2024, and the full market report can be found in Annex D. All inputs were discussed with the Essex Developers Group for feedback prior to being adopted.

Market residential

5.2 Table 5-1 sets out the individual value inputs by unit type. Due to the wide range of values across Essex, we have adopted a sensitivity analysis approach. The mid value acts as the starting point within our development appraisal – this is a value of £400 psf. for both flats and houses. We have also included the lower and higher values which will act as 'bookends' to our sensitivity testing range. For houses, the lower value assumption is £250 psf. and the higher £550 psf. Noting that flats tended to have a greater price range than houses, the lower value for flats is £150 psf. and the higher £600 psf.

5.3 As part of our sensitivity analysis we tested values at £10 psf increments to provide more granularity on the viability balance. Where viability is more challenging i.e. brownfield lower density development the increments were adjusted to £20psf because a wider range was needed in the testing.

5.4 Table 5-2 applies the same £psf values as above but applies them to the lower density small greenfield 25 unit at 20 dph scenario. The overall value per unit is higher because of larger unit sizes.

Table 5-1: Residential values – range

Unit type	Unit size (sqm)	Lower values			Mid values			Higher values		
		Unit price £	£ psm	£psf	Unit price £	£psm	£ psf	Unit price £	£ psm	£psf
1-bed flat	60	£96,900	£1,615	£150	£258,360	£4,306	£400	£387,480	£6,458	£600
2-bed flat	72	£116,280	£1,615	£150	£310,032	£4,306	£400	£464,976	£6,458	£600
2-bed house	85	£228,735	£2,691	£250	£366,010	£4,306	£400	£503,200	£5,920	£550
3-bed house	100	£269,100	£2,691	£250	£430,600	£4,306	£400	£592,000	£5,920	£550
4-bed house	115	£309,465	£2,691	£250	£495,190	£4,306	£400	£680,800	£5,920	£550

Source: SQW, 2024

Table 5-2: Low density residential values - range (only for 20dph typology)

Unit type	Unit size (sqm)	Lower values			Mid values			Higher values		
		Unit price £	£ psm	£psf	Unit price £	£psm	£ psf	Unit price £	£ psm	£psf
1-bed flat	60	£96,900	£1,615	£150	£258,360	£4,306	£400	£387,480	£6,458	£600
2-bed flat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-bed house	90	£242,190	£2,691	£250	£387,540	£4,306	£400	£532,800	£5,920	£550
3-bed house	110	£296,010	£2,691	£250	£473,660	£4,306	£400	£651,200	£5,920	£550
4-bed house	130	£349,830	£2,691	£250	£559,780	£4,306	£400	£769,600	£5,920	£550

Source: SQW, 2024

Affordable housing

5.5 Local plans across Essex were reviewed to identify an appropriate affordable housing requirement. It is acknowledged that these varied been Local Planning Authorities, however, an overall figure of 30% was deemed to be the most representative.

5.6 We have also made assumptions based on the affordable housing tenure split. We have assumed the following tenure split which is also based on current policy with the inclusion of first homes:

- 70% social rent
- 30% intermediate/ first homes

5.7 We have assumed that affordable housing values will be calculated using a transfer value as a % of open market value (OMV). We appreciate that some LPAs may disaggregate out social rent or have an intermediate tenure in addition to first homes. To simplify things for this study we have taken a more general approach. Like open market residential, affordable transfer values will vary over the area. To determine them we have considered existing Local Plan evidence bases and our own experience:

- Social/affordable rent 50% of OMV
- 1st homes 70% of OMV[56]

Commercial

5.8 We have assumed that uses would be valued using the investment method by determining a market rent and capitalising it at an appropriate investment yield taking account of reasonable voids and purchaser costs. Our rent and yield inputs are shown below – like other inputs, a range has been tested through sensitivity testing:

- Office space
  - Rent: £22 psf.
  - Yield: 8%
- Smaller industrial space

[56] The maximum value allowed by first home guidance is £250,000 per unit. We have capped our value inputs for first homes at this level in our appraisals.

  - Rent: £12
  - Yield: 5.25%

- Larger industrial space (logistics)
  - Rent: £10 psf.
  - Yield: 5.25%

5.9 Other assumptions include:

- Gross to net for the office lettable floor space of 85%
- 12% has been deducted for management costs
- Voids / rent free periods of 9 months

6. Cost inputs and assumptions

6.1 In this section we outline all cost elements assumed in our development appraisals including policy costs, base build costs, fees, disposal and acquisition costs, developer's profit etc. We have relied on a range of sources to determine development costs including BCIS, comparable schemes and our own professional knowledge. All inputs were discussed with the Essex Developers Group for feedback prior to being adopted.

What costs to include?

6.2 The PPG explains the types of development costs that should be considered:

- *'build costs based on appropriate data, for example that of the Building Cost Information Service*
- *abnormal costs, including those associated with treatment for contaminated sites or listed buildings, or costs associated with brownfield, phased or complex sites. These costs should be taken into account when defining benchmark land value*
- *site-specific infrastructure costs, which might include access roads, sustainable drainage systems, green infrastructure, connection to utilities and decentralised energy. These costs should be taken into account when defining benchmark land value*
- *the total cost of all relevant policy requirements including contributions towards affordable housing and infrastructure, Community Infrastructure Levy charges, and any other relevant policies or standards. These costs should be taken into account when defining benchmark land value*
- *general finance costs including those incurred through loans*
- *professional, project management, sales, marketing and legal costs incorporating organisational overheads associated with the site. Any professional site fees should also be taken into account when defining benchmark land value*
- *explicit reference to project contingency costs should be included in circumstances where scheme specific assessment is deemed necessary, with a justification for contingency relative to project risk and developers return'* [57]

[57] MHCLG, 24 July 2018, PPG, 012 Reference ID: 10-012-20180724

Policy and infrastructure costs

6.3 Table 6-1 outlines our policy cost inputs. Because this study cuts across multiple Local Authority boundaries it is challenging to include accurate levels of policy costs for all areas. We have therefore taken a high level view and included the most prevalent costs:

Table 6-1: Included policy costs

Name	Cost	Notes
Electric charging points (residential only)	• £1000 per dwelling	Most new development is likely to be required to include electric charging points. The cost has been based on our own experience and by considering Local Plan viability evidence bases.
Accessible home costs - M4(2) and (3)	• 100% M4(2) with £1,400 per dwelling • 10% M4(3) £22,791 per dwelling	The figure of 100% for M4(2) follows a review of local planning policy, which found a large number of local authorities now require all new homes to be M4 (2). Costs / unit have been based on the guidance set out in Housing and disabled people: A toolkit for local authorities in England: Planning for accessible homes 2018
Affordable housing (residential only)	• 30% baseline - but varied by sensitivity testing	This has been included as outlined in the previous section of this report.
CIL (residential only)	• Greenfield £200 / sqm.	Although the majority of LA's don't have a CIL charging schedule, the lower value areas of Chelmsford and Southend do. Therefore, to ensure the study accounts for CIL obligations where these are charged, we've included an allowance. This figure has taken into account the charging schedules in the County. It is anticipated that the higher charges in Brentwood and Castle Point should be offset by the higher values obtainable in those areas.
Future Homes Standards	• 4,847 per house, • £2,256 per flat	Costs have been taken from MHCLG – The Future Home Standard 2019 Consultation on changes to Part L (conservation of fuel and power) and Part F (ventilation) of the Building Regulations for new dwellings. These are based on 'option 2- Fabric plus technology'.

Name	Cost	Notes
Infrastructure and S106	• Brownfield - £0 /unit (except Brownfield 500 units = £5000/unit) • Greenfield 25-100 units = £5000/ unit • Greenfield 500 units = £15,000 / unit • Greenfield 5000 units = £20,000 / unit	Determinations are based on a review of Local Plan Policy across the County. Whilst smaller brownfield sites are usually infill sites located in urban areas with existing services and facilities, larger brownfield sites (i.e. 500-unit brownfield scenario) would normally require additional infrastructure to support the scheme. Therefore, we assumed an infrastructure and S106 fees of £5000/unit are required for the 500-unit brownfield scenario.

Source: SQW, 2024

BNG costs

6.4 Table 6-2 shows the total costs for delivering 10% net gain onsite (baseline) and 20% net gain onsite and offsite. For the purpose of this study, we have assumed where the site is unable to provide sufficient BNG, required biodiversity units will be purchased offsite and no additional land will be purchased. An assumption that each biodiversity unit costs £25,000 was made based on information from ECC and supported by a review of published literature, with market rates typically ranging between £20,000 to £35,000 per unit, although some habitats may significantly exceed this. Further details of the cost review are provided in Annex B.

6.5 The BNG costs for the 100-unit brownfield scenario are significantly lower than the other brownfield scenarios due to the types of habitat that it was assumed to provide onsite to meet the BNG targets are cheaper.

Table 6-2: Delivery costs for 10% and 20% net gain[58]

Typology	Site size (Ha)	Total Costs 10% BNG	Total Costs 20% BNG onsite (where possible)	Total Costs 20% BNG offsite
5000 Unit Greenfield	285.71	£ 2,470,000	£ 2,856,500	£ 3,627,403
500 Unit Greenfield	20.41	£ 478,873	£ 614,376*	£ 614,378
100 Unit Greenfield	2.94	£ 74,150*	£ 90,050*	£ 90,050

[58] Where BNG targets cannot be delivered onsite within the baseline site parameters (highlighted with an asterisk in the table), the costs were estimated through purchase of required additional biodiversity units at £25,000 per unit.

25 Unit Greenfield	1.39	£	44,835*	£ *	52,535	£	52,535
500 Unit Brownfield	13.89	£	38,256	£	51,756	£	66,640
100 Unit Brownfield	1.91	£	675	£	1,575	£	1,225
25 Unit Brownfield	0.26	£	11,545	£	24,145	£	11,595
Large Industrial	2.85	£	18,810	£	19,800	£	32,310
Small Industrial	0.125	£	248	£	248	£	448
Offices	0.25	£	150	£	1,095	£	250

Source: SQW, 2024

All other costs

Base build cost

6.6 We have relied upon BCIS to determine base build costs – our inputs are shown in Table 6-3. We have rebased these costs to Essex County and reduced the sample size to 5 years where possible. For commercial uses we have taken a 15 years sample. We have applied the median cost quoted for all uses. We have applied median build costs.

6.7 The Essex Developers Group were consulted on the cost assumptions, and it was raised that they felt they were a slight underestimation. Therefore, also owing to the time lag in BCIS rates, these were each raised by a figure of £10 per sq. ft.

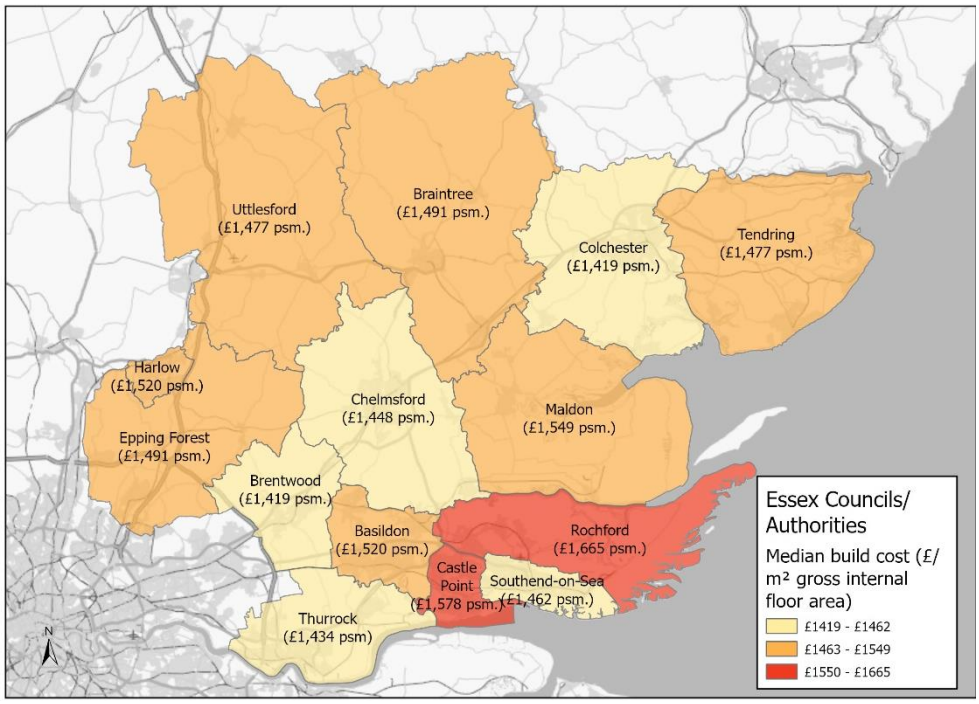
Table 6-3: Base build costs adopted

Unit type BCIS cost £ psm	Final cost assumption (BCIS median rate + £10 psm.)
Residential – houses (generally)	£1,603 / sqm. (£149/sqf.)
Residential – flats (generally)	£1,829 / sqm. (£170/sqf.)
Industrial (generally)	£1011 / sqm. (£94/ sqf.)
Offices(generally)	£2,454 / sqm. (£228/sqf.)

Source:

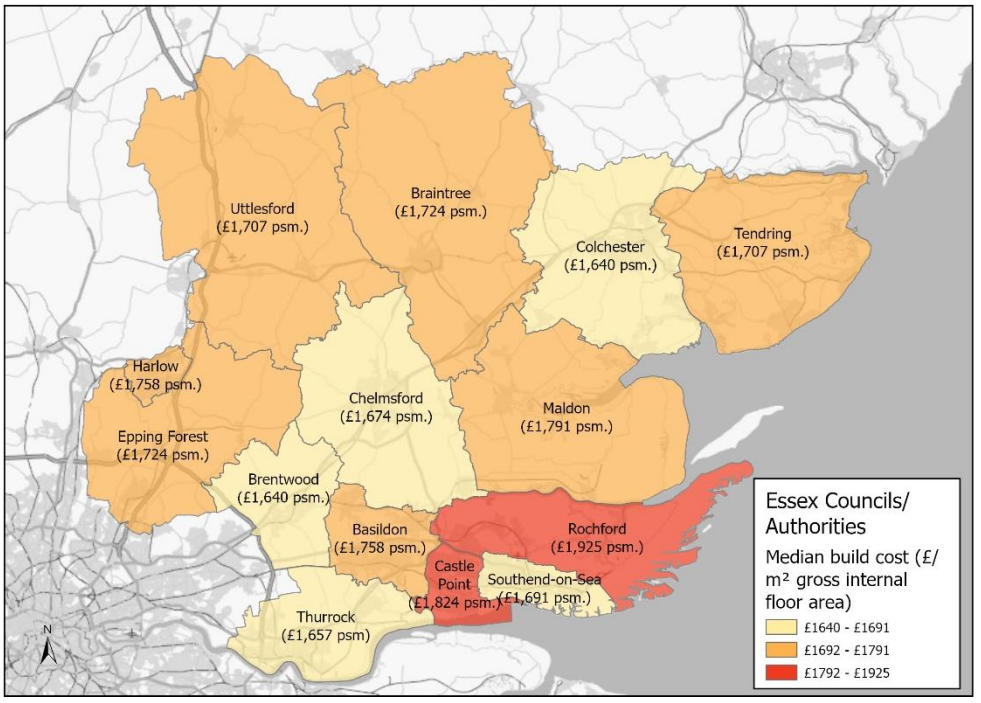
6.8 We have sensitivity tested build costs through considering the range of median BCIS costs across each LPA area. Figure 6-1 and Figure 6-2 shows the range of residential build costs for houses and flats rebased to each LPA.

Figure 6-1: Build costs for houses across Essex (Median BCIS)



Source: SQW with BCIS data, 2024

Figure 6-2: Build costs for flats across Essex (Median BCIS)



Source: SQW with BCIS data, 2024

External works

6.9 This allowance will cover all garages, services and onsite infrastructure. This has been based on our own professional judgement, from considering comparable sites and Local Plan Viability assessments in the region. We have applied an allowance of 15% of build costs to greenfield sites and 500 unit brownfield sites and 10% of build costs to the 100 unit and 25 unit brownfield sites.

Site abnormals

6.10 This has been included for brownfield development only. This is a challenging input to estimate as every brownfield site will face its own challenges. An allowance of £110,000 per net developable area is included, this is based on HCA (now Homes England) guidance on dereliction, demolition and remediation March 2015.

Planning fees

6.11 These have been included based on the nationally prescribed formula[59]. As stated in the formula these have been capped at a maximum of £405,000 per application.

Professional fees

6.12 We have drawn on our experience of similar schemes and have applied a professional fees allowance of 10% of build costs.

Development contingency

6.13 Our study found that Local Plan viability assessments in Essex adopt the assumptions of 2.5% to 5% for contingency, so we have used the 5% assumptions for the larger site typologies. However, noting industry feedback that smaller organisations are subjected to higher risks, we have used a 10% contingency on the smaller typologies with 25 units. This is to reflect current market conditions and bank lending requirements.

Developer profit

6.14 We have varied the profit by use which is a standard approach when undertaking viability modelling. For market residential we have allowed for a profit of 20% of GDV; this is in line with comparable schemes and is within the range included in the Viability PPG. We have applied a reduced level of profit at 6% of GDV to affordable units; this is a standard approach which is supported by the Viability PPG. For first homes, we have applied 20% on GDV to reflect that they are higher risk and not a traditional affordable tenure with units being sold to individuals rather

[59] Planning Portal, 2023. A guide to fees for Planning Applications in England. Available here

than registered providers. For the commercial uses we have targeted 20% profit on cost; profit on cost is an industry standard assumption for commercial uses.

Interest

6.15 Our study found that development finance companies are offering rates of around 7-8% per annum for reasonable covenant strength, so we have used a 7.5% assumption for the larger site typologies. However, noting industry feedback that SME borrowing is typically 9-13%, we have used a 10% interest rate on the smaller typologies with 25 units.

Marketing and disposal costs

6.16 We have included disposal costs at prevailing rates – these are reasonable allowances from our experience. The inputs are as follows:

- Marketing: 1.5% of GDV – only on market units
- Sales agents: 1% of GDV – only on market units
- Sales legal 0.5% of GDV
- Letting agent (commercial only) 10% of rental value
- Letting legal (commercial only) 5% of rental value
- Purchasers costs (commercial only) 6% of GDV

Land acquisition costs

6.17 We will discuss our land value inputs in the section below but have outlined our acquisition inputs here. We have assumed the following:

- SDLT – 5% of land (slabbed)
- Sales agents fees: 1% of land
- Sales legal fee: 0.5% of land

Land value assessment

6.18 In determining appropriate land values we have referred to the type of sites we have tested and the inputs used in Local Plan Viability assessments in the area. By its very nature land value is challenging to take a view on across such a wide area with a massive range of sites. As with other inputs we have sensitivity tested this input to show a wide range of possibilities.

6.19 Here we have provided a short summary of our land value inputs:

- Greenfield: drawing on local plan evidence base, we have assumed a benchmark land value of £500,000 per gross ha (£202,347 per gross acre).
- Brownfield: drawing on local plan evidence base, we have assumed a benchmark land value of £1,200,000 per gross ha (£485,633 per gross acre).

6.20 For the commercial typologies we have assumed that the small industrial and offices will be built on brownfield sites and the large industrial on a greenfield. We have assumed the following land values:

- Small industrial: £1,200,000 per gross ha (£485,633 per gross acre).
- Large industrial: of £500,000 per gross ha (£202,347 per gross acre).
- Offices: £1,200,000 per gross ha (£485,633 per gross acre).

Timescales

6.21 Our assumed timescales are set out in Table 6-4, they vary between typologies and we have made adjustments based on the type of units delivered.

Table 6-4: Development timescales

Typology	Lead in time	Build period	Sales period
5,000 unit greenfield - houses	8 months	120 months	120 months (starts 6 months into build period)
500 unit greenfield - houses	8 months	48 months	48 months (starts 6 months into build period)
100 unit greenfield - houses	8 months	24 months	24 months (starts 6 months into build period)
25 unit greenfield - houses	8 months	18 months	18 months (starts 6 months into build period)
500 unit brownfield - houses	8 months	48 months	48 months (starts 6 months into build period)
100 unit brownfield – houses flats	8 months	24 months	24 months (starts 6 months into build period)
25 unit brownfield - flats	8 months	18 months	18 months (starts on practical completion)
Small industrial	8 months	12 months	Sold fully let on practical completion

Typology	Lead in time	Build period	Sales period
Large industrial	8 months	24 months	Sold fully let on practical completion
	8 months	18 months	Sold fully let on practical completion

Source: SQW 2022

7. Viability results

7.1 In this section we set out the results of testing the viability impact of increasing BNG to 20% from mandatory 10% in Essex. We also explore the additional cost associated with 50% BNG.

Residential results

7.2 The results of the viability testing are discussed in this section but the development appraisal and full sensitivity testing can be found in Annex D.

7.3 Firstly, the costs for both onsite and offsite delivery on a total cost basis, as highlighted in the previous chapter in Table 6-2, are comparably small when considered against other sums included in the development appraisal. Table 7-1 below shows the additional BNG costs for each of the typologies. It assumes 10% BNG onsite as a baseline and then the additional £ per dwelling required to get to 20% BNG onsite and offsite respectively; offsite provision therefore inherently assumes a mixed approach, and in some of the onsite scenarios where onsite provision alone cannot meet the BNG target due to land area constraints the purchase of biodiversity units offsite are also assumed for top-up purposes.

7.4 Additional onsite provision is less expensive than additional offsite provision in large sites, including the 5,000 unit greenfield and 500 unit brownfield scenarios. Due to the site size of the 100 unit and 25 unit greenfield scenarios, offsite delivery is the only available option as they are unable to provide sufficient BNG of 20% onsite. For the 500 unit greenfield, 100 unit brownfield and 25 unit brownfield scenarios, the less expensive option is delivering the additional BNG with a mix of onsite and offsite delivery.

Cost per Dwelling

7.5 Table 7-1 shows the additional cost of achieving 20% BNG ranges from £2 - £27 per residential unit on brownfield sites[60] and from £77 to £308 per residential unit on greenfield sites. As demonstrated in Table 6-2 increasing BNG to 20% does not entail doubling the BNG costs due to economies of scale, the inclusion of higher scoring biodiversity uses for significantly less than double the cost on the same land, and the fact that the initial cost of replacing lost habitat associated with the development has already been accounted for. The cost increase of achieving 20%

[60] Brownfield scenarios assume sites are located on previously developed land that has not been allowed to re-establish vegetation of biodiversity value.

BNG is typically 15 – 35% higher than the cost of delivering mandatory 10% BNG (except for smaller brownfield sites where the cost is in any case negligible).

7.6 Table 7-1 also shows the additional BNG costs per dwelling to go from 20% to 50% BNG for each of the typologies assuming this additional provision is all delivered offsite. We can thus calculate that the additional cost of achieving 50% BNG over the mandatory 10% ranges from £20 - £214 per residential unit on brownfield sites and from £636 to £1,232 per residential unit on greenfield sites.

7.7 Whilst 50% BNG is not viability tested through scenario modelling, its potential cost impact is shown. Unsurprisingly, increasing BNG from 20% to 50% is significantly more expensive than increasing BNG from 10% to 20%. However, the cost increase of achieving 50% BNG is considerably less than 5 times the mandatory 10% BNG cost, and typically falls in the 0.5 to 2.5 times range (except for smaller brownfield sites where the cost is in any case negligible).

Table 7-1: comparison of BNG costs £ per dwelling

Typology	20% onsite per dwelling*	20% offsite per dwelling	The most commercially advantageous solution to 20%	Cost per dwelling	% increase in BNG cost from 10% to 20%	50% offsite per dwelling (from 20% BNG)
5,000 unit greenfield - houses	+£77.30	+£231.48	All onsite	+£77.30	15.6%	+£1,134.68
100 unit greenfield - houses	N/A	+£159.00	All offsite	+£159.00	21.4%	+£477.00
500 unit brownfield - [61]houses	+£27.00	+£56.77	All onsite	+£27.00	35.3%	+£186.83

[61] The brownfield typologies tested produce a low BNG cost because it is assumed that they comprise bare land and have a lower pre biodiversity score. Should a specific brownfield site have been left to go wild and have a higher pre-biodiversity score, the overall cost of BNG is likely to be closer to the greenfield scenarios.

25 unit brownfield - flats	£504.00	+£2.00	Mix of onsite and offsite	+£2.00	0.4%	+£18.00

Source: Temple & SQW 2024

Impact on Land Value

7.8 Table 7-2 shows the benchmark land value (BLV) for each typology and the total cost for 20% and 50% BNG. Benchmark land value is a constant cost for each typology even when costs and values are sensitivity tested, and represents the minimum land value a landowner would reasonably expect to receive for their land for development purposes. Because policy costs (including additional BNG costs) will negatively impact the development land value, using the benchmark land value as a comparison is useful because it clearly demonstrates the scale of BNG contributions and how they may impact the land value received. When compared to benchmark land value it is clear the cost of delivering BNG is comparatively small – in percentage terms, it does not exceed 6.02% for 20% BNG and 10.09% for 50% BNG and in some cases is considerably less. It also demonstrates that the *differences* in the cost of 10% BNG to 20% BNG are small with only marginal increases, ranging from 0.02% of the BLV to 1.33% of BLV. The differences in the cost of BNG from 10% to 50% are larger, ranging from 3.03% to 5.39% for greenfield sites, but are considerably smaller (<1% of BLV) for the brownfield scenarios.

Table 7-2: comparison of BNG cost against BLV

Typology	Benchmark land value	20% (onsite/offsite) total BNG cost[62]	Additional cost from 10 to 20% BNG	50% baseline total BNG cost	Additional cost from 10 to 50% BNG
5,000 unit greenfield - houses	£142,857,143	£2,856,500 2.00%	£386,500 0.27%	£8,529,875 5.97%	£6,059,875 4.24%
500 unit greenfield - houses	£10,204,082	£614,375 6.02%	£135,502 1.33%	£1,029,275 10.09%	£550,402 5.39%
100 unit greenfield - houses	£1,669,115	£90,050 5.40%	£15,900 0.95%	£137,750 8.25%	£63,600 3.81%
25 unit greenfield - houses	£1,015,435	£52,535 5.17%	£7,700 0.76%	£75,635 7.45%	£30,800 3.03%

[62] Utilising the most commercially advantageous solution according to Table 7-1.

		0.31%	0.08%	0.87%	0.64%
100 unit brownfield – houses flats					
25 unit brownfield - flats	£307,692	£11,595 3.77%	£50 0.02%	£12,045 3.91%	£500 0.16%

Source: SQW & Temple 2024

Comparison with Affordable Housing Costs

7.9 Affordable housing has been included in our testing at 30% on both brownfield urban sites and rural greenfield sites. Normally, this is the biggest policy cost for developers and the cost is considerably more significant than an increase in BNG. To demonstrate this, we have taken one of our typologies (500 unit greenfield) and run it at 100% market housing with 10% BNG to compare with its 30% policy target. Table 7-3 shows that the average cost of providing an affordable unit is £108,106 per unit for the developer.

Table 7-3: Cost of affordable housing calculation

Typology	500 unit greenfield typology
10% BNG (30% affordable) baseline surplus	-£1,729,869
10% BNG (0% affordable) baseline surplus	£14,486,100
Difference	£16,215,969
Difference per affordable unit (150 units)	£108,106

Source: SQW & Temple 2024

7.10 The costs for increasing BNG to 20% are shown in Table 7-1 range between £2 – £308 per dwelling. This equates to 0.002% - 0.28% of the cost of an affordable unit. Overall, this demonstrates that the cost of increasing BNG is comparably small compared to other policy costs like affordable housing.

Viability and sensitivity testing results

7.11 The purpose of this section is to test whether an increase from the mandatory 10% BNG to 20% BNG has a material impact on residential development viability by analysing the market values required to achieve viable development where 20%

BNG is applied in our scenarios and comparing this with the market values required to achieve viable development in the baseline 10% BNG scenario.

7.12 We have undertaken sensitivity testing across a range of cost and value inputs and Table 7-4 shows the headline results of the test. We have tested 20% onsite and 20% offsite BNG. The baseline 10% BNG is based on onsite provision where possible. Whilst the full sensitivity testing included in the viability appraisal is more incremental, we have only shown the lowest build cost of £1500 psm, the mid build costs of £1,600 psm and the highest build cost of £1,725 psm in this report summary. These build costs are set out in the columns three times under the different levels of BNG. In the rows, we have each of the residential typologies tested and in the respective cell, **we have noted the residential value required to render development viable on a psm/psf basis**.

7.13 As we noted in the methodology section of this report, our sensitivity testing uses £10psf increments of value, except 25 unit brownfield scenario where £20psf increments were used. It is impractical to use increments less than this because sensitivity testing tables become large and difficult to interpret.

7.14 Table 7-4 shows the threshold values required for onsite BNG to be viable across each of the typologies tested – full sensitivity tables are included in Annex D. The first thing to note is because the differences in BNG costs to increase to 20% are very small the impact on viability is also minimal. This results in all cases the same £psf value being included across 10%, 20% onsite and 20% offsite BNG.

7.15 Individual Local Authorities can compare value thresholds for Local Authorities with these figures to understand how the estimated costs of BNG provision compare to the build costs and values in their area. We have not sought to indicate specific districts where an increase may be viable because there are nuances/variations within districts regarding values and viability. The purpose of the table is to provide an indication of the values required at a specific build cost to viably provide enhanced BNG. As we have already noted this should not replace Local Plan evidence basis and Local Authorities should undertake their own detailed viability testing at a more granular level.

7.16 As a worked example, if you consider Table 7-4 and take the 5,000 greenfield scenario here the results show that at 10% BNG delivery onsite with build cost at £1,500 psm (£140 psf) residential sale values of at least £4,413 psm (£410 psf) are required to produce a viable scheme. If costs are higher at £1,600 psm (£149 psf) or £1,725 psm (£161 psf) then residential values of at least £4,629 psm (£430psf) and £4,844 psm (£450 psf) are required respectively to produce a viable scheme. If you move along the table to the right, for the same typology you can see the value thresholds required, at the same cost increments for both 20% onsite and

20% offsite BNG. The same process can be followed for all typologies both onsite and offsite.

7.17 Crucially**, the analysis shows that the additional cost associated with a shift from 10% to 20% BNG is sufficiently small that in all cases the residential value increase required to render development viable still lies within the same £10psf value increment.** This demonstrates the minimal impact on the viability of increasing BNG from 10% to 20% in all scenarios.

7.18 Another way to think about this is that the cost difference of changing to 20% BNG is not going to be a key determining factor of residential development viability in any area of Essex – other factors such as residential value, base build cost and other policy costs including affordable housing are so much more significant in the viability appraisal that they, not BNG, will determine overall scheme viability.

Table 7-4: viability and sensitivity results – residential cost to value viability threshold

Typology		10% BNG onsite baseline			20% BNG onsite			20% BNG offsite		
		Build cost £1,500 psm (£140psf)	Build cost £1,600 psm (£149 psf)	Build cost £1,725 psm (£161 psf)	Build cost £1,500 psm (£140psf)	Build cost £1,600 psm (£149 psf)	Build cost £1,725 psm (£161 psf)	Build cost £1,500 psm (£140psf)	Build cost £1,600 psm (£149 psf)	Build cost £1,725 psm (£161 psf)
5,000 unit gf – houses	*Psf*[63]	£410	£430	£450	£410	£430	£450	£410	£430	£450
	Psm	£4,413	£4,629	£4,844	£4,413	£4,629	£4,844	£4,413	£4,629	£4,844
500 unit gf – houses	*Psf*	£390	£410	£430	£390	£410	£430	£390	£410	£430
	Psm	£4,198	£4,413	£4,629	£4,198	£4,413	£4,629	£4,198	£4,413	£4,629
100 unit gf – houses	*Psf*	£360	£380	£400	£360	£380	£400	£360	£380	£400
	Psm	£3,875	£4,090	£4,306	£3,875	£4,090	£4,306	£3,875	£4,090	£4,306
25 unit gf – houses	*Psf*	£370	£390	£420	£370	£390	£420	£370	£390	£420
	Psm	£3,983	£4,198	£4,521	£3,983	£4,198	£4,521	£3,983	£4,198	£4,521
500 unit bf – houses	*Psf*	£390	£400	£420	£390	£400	£420	£390	£400	£420
	Psm	£4,198	£4,306	£4,521	£4,198	£4,306	£4,521	£4,198	£4,306	£4,521
100 unit bf – houses flats	*Psf*	£390	£410	£420	£390	£410	£420	£390	£410	£420
	Psm	£4,198	£4,413	£4,521	£4,198	£4,413	£4,521	£4,198	£4,413	£4,521
25 unit bf – flats[64]	*Psf*	£440	£500	£520	£440	£500	£520	£440	£500	£520
	Psm	£4,736	£5,382	£5,597	£4,736	£5,382	£5,597	£4,736	£5,382	£5,597

Source: SQW & Temple 2024

[63] Psf – per square foot; Psm – per square metre
[64] Cost for 25 unit brownfield flatted scenario Min: £1,550 psm, Mid £1,800 psm, Max £1,900 psm

Commercial results

7.19 We tested three commercial scenarios as part of our modelling – our sensitivity testing can be found in Annex E. Using the baseline inputs we found industrial development to be viable in some cases and marginally unviable in others. For the smaller industrial typology depending on the build cost development becomes viable when rents are between £13 - £15 psf (at the baseline yield of 5.25%) or if yields are between 3.25 – 4.75% (at the baseline rent of £12psf). For the larger industrial typology depending on the build cost development becomes viable when rents are between £12 - £14 psf (at the baseline yield of 5.25%) or if yields are between 3.25 – 4.50% (at the baseline rent of £10psf).

7.20 Office development is unviable in our baseline scenario. Sensitivity testing shows that there would have to be substantial decreases in build costs and increases in capital values (most importantly yield compression) to render development viable. Any increase in BNG provision would only further increase the viability deficit rendering office development even more challenging.

7.21 Table 7-5 below shows the additional BNG costs for each of the commercial typologies. Similar to the residential scenarios, it assumes 10% BNG onsite as a baseline and then the additional £ per dwelling required to get to 20% BNG onsite and offsite respectively. Additional onsite provision is less expensive than additional offsite provision in industrial sites, but offsite delivery is significantly less expensive in office sites.

7.22 As demonstrated in Table 7-5 increasing BNG from 10% to 20% onsite and offsite does not entail doubling the BNG costs due to economies of scale and the inclusion of higher scoring biodiversity uses for significantly less than double the cost on the same land, and the fact that the initial cost of replacing lost habitat associated with the development has already been accounted for.

7.23 Table 7-6 shows the build cost for each commercial typology and the total cost for 10% and 20% BNG (either onsite or offsite depending on which is more commercially advantageous). It is clear that the cost of delivering BNG is relatively small when compared to build cost. It does not exceed 0.19% for 10% BNG and 0.2% for 20% BNG. It also demonstrates that the *differences* in the cost of BNG from 10% to 20% are small with only marginal increases.

Table 7-5: Comparison of BNG costs - Commercial

Typology	10% baseline	20% onsite*	Additional cost from 10% to 20%	20% offsite	Additional cost from 10% to 20%
Industrial – Large (10,000 sqm)	£18,810	£19,800	£990	£32,310	£13,500

Industrial – Small (500 sqm)	£248	£248	£0	£447	£200
Office (1000sqm)	£150	£1,095	£945	£250	£100

Source: SQW & Temple 2024

Table 7-6: Percentage of BNG cost against Build Cost - Commercial

Typology	Build Cost	10% baseline total BNG cost	20% (onsite/offsite) total BNG cost	Additional cost from 10 to 20% BNG
	£10,110,000	£18,810 0.19%	£19,800 0.20%	£990 0.01%
Industrial – Small (500 sqm)	£505,500			
	£5,774,118	£150 0.00%	£250 0.00%	£100 0.00%

Source: SQW & Temple 2024

Planning Act 2008 (as amended) (PA2008) - Nationally Significant Infrastructure Projects (NSIPs)

8. Norwich to Tilbury Case Study

Description of the NSIP

8.1 N2T is part of the Great Grid Upgrade, intended to reinforce the existing power supply network to accommodate new generation sources, including nuclear power, on and off-shore wind and solar farms, as well as meeting increased demand for low-carbon energy, such as from electric vehicles and home heating systems. The Great Grid Upgrade is the largest overhaul of the electricity grid in generations. It comprises 17 major infrastructure projects that will scale up the grid and update existing networks, boosting energy security, affordability and helping the nation become more self-sufficient.

8.2 The Project comprises a 400kV electricity transmission line over a distance of approximately 184km. This would include(under the current draft proposals):

- a new 400 kV electricity transmission connection of approximately 184 km overall length from Norwich Main Substation to Tilbury Substation via Bramford Substation comprising:
  - approximately 159 km of new overhead line supported on approximately 510 steel lattice pylons (approximately 50 m in height) some of which are gantries (typically up to 15m in height) within proposed Cable Sealing End (CSE) compounds, or existing or proposed substations; and
  - approximately 25 km of 400 kV underground cabling (some of which is located through the Dedham Vale Natural Landscape (an AONB).
- six new CSE compounds, each with new permanent access, to connect the overhead lines to the underground cables.
- a new 400 kV EACN substation, with a new permanent access, on the Tendring Peninsula. This is proposed to be an Air Insulated Switchgear (AIS) substation;
- substation extension works at the existing Norwich Main, and Bramford substations and works within the existing Tilbury Substation to connect and support operation of the new transmission connection; and
- temporary works associated with the construction of the Project.

BNG value assessment

Methodology of assessment

8.3 NGET was consulted, along with their ecological consultants, Arcadis, for the project, to identify what BNG data were available that could be used to inform this assessment and to explore answers to the questions as to how BNG is being applied in this context.

8.4 As a result of the consultation, it was identified that NGET has a complete set of habitat data for the project, albeit subject to further confirmation of habitat details once onsite surveying is completed. Data from their February 2024 interim evaluation using the statutory metric were provided in a table summarising total areas and biodiversity unit values for habitats, grouped according to their distinctiveness and trading rules. Very low distinctiveness habitats were combined into a single group, as were low distinctiveness habitats; medium distinctiveness habitats were grouped by broad habitat type; and high and very high distinctiveness habitats were listed individually. This allowed for a concise dataset to be compiled that could be used to understand trading rule deficits as well as overall net habitat change. This has used the following assumptions.

- Assessment was carried out using the statutory metric and, although this is designed for use on TCPA90 development, the instructions, rules and principles have been applied to this assessment, noting the specific considerations detailed below.
- The data are for the section of the project within Essex, parcels where 50% of the area or more were outside the county of Essex were excluded from the results and parcels where over 50% of the area was inside the county were included.
- Where surveys are currently incomplete, the assumed condition is based on an average of the habitat condition values of that habitat type already surveyed.
- Temporary loss is assumed to be restored to baseline habitat and condition; except in areas underneath pylon routes or over underground cable routes, where any woodland/tree habitats would be reinstated as mixed scrub in moderate condition and orchards would be reinstated as other neutral grassland in moderate condition.
- Where irreplaceable habitats, such as ancient woodland, were present, these were excluded from the biodiversity unit figures, as such habitats would need bespoke compensation outside of the Metric evaluation.

- Watercourses have been excluded from this study as mostly any impacts will be avoided, although they will need to be taken into account in the project. Hedgerows are also excluded from the study on the assumption that loss would be minimal and easily compensated within the context of the project.
- While these figures are taken from the current working calculations for the project, they are to be taken as being indicative and do not necessarily represent the exact outcomes that the project will deliver. Discrepancies in the total habitat areas are due to the exclusion of watercourses and minor overlaps or gaps in coverage; these will be resolved for the project, but are not considered to be significant in relation to the indicative valuation required for the purposes of this study

Key considerations for BNG assessment and delivery

8.5 The analysis and consultation regarding this project have highlighted a number of key issues in relation to applying BNG to this specific type of linear energy transmission NSIP, some of which are applicable to other NSIPs.

Land ownership / control and long-term maintenance

8.6 Unlike many infrastructure projects, with significant areas of permanent land-take, NGET does not own, and will not require the purchase of, most of the land within the project boundary. With the exception of some structures, such as substations, most of the land is retained within existing land ownership, with licences providing NGET with an easement or wayleave for maintenance access. These rights may be voluntary or compulsory, but EN-5 strongly encourages the use of permanent arrangements over voluntary wayleaves that could be terminated by the landowner. This has implications for future management of the habitats within the project boundary where it cannot necessarily be guaranteed that they will be managed for BNG for the standard minimum term of 30 years in line with current metric user guidance, if management cannot be secured through licensing agreements.

8.7 Where land can be returned to its previous state within two years, the impact can be deemed to be temporary, resulting in an evaluation of no net loss, and may potentially be excluded from the BNG assessment.

Habitat Restoration

8.8 Where appropriate the BNG assessment has assumed that habitats affected by temporary or short-term impacts will be restored to its previous state. However, some habitats cannot be restored, particularly woodland and trees, as these would cause a hazard in interaction with the overhead lines or buried cables. As such,

there will be inevitable loss of such habitats, as well as possible suppression of the condition of others, such as scrub, requiring ongoing maintenance. In such cases, any loss cannot be considered within the definition of temporary losses set out in the metric user guide.

Definition of BNG Boundaries

8.9 The selection of baseline boundaries for consideration for BNG is an important factor that is not always clearly defined for many NSIPs. During the evolution of project design, the project boundary may change significantly, which may cause issues in determining the potential habitat loss and offsetting requirements. However, even once the draft Order Limits are set, the actual construction footprint is likely to continue to change and including habitat areas that are not essential for the project will give a higher baseline value, thereby increasing the number of biodiversity units that need to be delivered to achieve the target level of net gain. For N2T, much of the habitats within the proposed project boundary are only required for temporary construction, or access, or may not be directly impacted at all. Selection of an appropriate boundary is, therefore, an issue particular to this kind of linear energy transmission NSIP, that may not be as relevant to other NSIPs. For this evaluation, based on NGET's current approach, the baseline includes the current draft Order Limits.

8.10 The inclusion, or exclusion of watercourses from consideration in the BNG assessment for NSIPs is an important factor to be taken into account. For TCPA90 projects, any watercourse within the site boundary, or where the riparian zone overlaps the boundary, needs to be considered and the relevant level of net gain delivered, even where there is no impact on it. For projects such as N2T, the majority of watercourses will be avoided and protected, or only subject to temporary impacts, and will have no permanent infrastructure or habitat change within their riparian zone, apart from oversailing (or tunnelled) cables. As such, delivering a 10% (or higher) net gain on all watercourses within the order limits is likely to result in a significant requirement for watercourse habitat enhancement that is disproportional to the scope and effects of the project.

Habitat Strategic Significance

8.11 Currently there is no Local Nature Recovery Strategy for Essex as this is still being drafted and will be subject to public consultation. This means that the criteria in the metric user guidance need to be used, and this introduces uncertainly over alignment with future biodiversity priorities, so there is no clear framework for the future determination of the strategic significance of habitat parcels. High strategic significance increases the biodiversity unit value of habitats in recognition of their location in relation to local strategic biodiversity networks. Within the metric user

guidance, habitat areas can be classified as 'high' where they deliver the specific habitats in the relevant location identified in strategic documents specified by the relevant planning authority, or as 'medium' where the habitat type can be shown to be ecologically important within its specific location but is not listed in a specified document. This is, however, an interim solution and the classification of the strategic significance of habitats is liable to change once the relevant LNRS is published.

8.12 The draft Essex Local Nature Recovery Strategy (LNRS) is being prepared for public consultation at the time of this report (July 2024). The draft LNRS is due to go out for public consultation in late summer 2024. Suffolk and Norfolk are in a similar situation, with their LNRS being prepared by the Norfolk & Suffolks Nature Recovery Partnership.

8.13 LNRS play a key role in BNG by providing a county-wide strategic approach to offsite BNG delivery. BNG provides developers and landowners the opportunity to contribute positively to the delivery on the ground of the Essex LNRS, by generating measurable biodiversity enhancement and creation as part of development projects, whilst meeting the housing and business needs of residents.

8.14 The LNRS contains strategic opportunity maps, showing the locations which have been identified as having 'strategic significance', i.e. the most potential to deliver benefits for nature and the wider environment. Sites of strategic significance offer an uplift of 15% on biodiversity units compared with other sites. Therefore, buyers of offsite BNG effectively benefit from a 15% bonus on units purchased in sites of strategic significance within the LNRS.

8.15 This is a particularly complex issue for linear NSIPs, such as N2T, because it crosses three counties and numerous districts with different local characteristics and biodiversity priorities.

Cross Authority Boundary Issues

8.16 The large-scale linear nature of the project also has implications for the valuation of potential offsite habitat enhancement (either on land acquired by the developer or through offsetting, where management is agreed with a third party land-owner). Under Town and Country Planning Act 1990 applications, where offsetting is provided outside the local authority area of impact, a fractional multiplier is applied, which reduces the biodiversity unit value. Beyond the adjacent authority area, this modifier is 0.5, so twice the offsetting habitat enhancement would be needed at this distance compared to local delivery. With a linear NSIP crossing so many authorities, it is not practical to expect that each habitat parcel lost or affected should be compensated within the same immediate area. While there may be sufficient available land for offsetting in the county, there are likely to be local

districts where the relevant offsetting capacity is limited. It is also unlikely to result in the best outcomes for biodiversity in all cases as it may prevent more significant interventions. The suggestion of an organisational portfolio approach, whereby entities use their other land holdings to support offsetting may help to deliver the biodiversity objective for the project, but this would still be subject to considerations of local delivery. However, this approach may be restricted for some organisations. As NGET highlighted, the limited land holdings around existing assets need to be prioritised for potential electricity use and they are reserved for delivering their statutory electricity duties. Consequently, it is unlikely that there will be significant surplus land available for BNG compensation. Therefore, NGET focuses on ensuring the best BNG outcomes, including identifying the right locations for BNG that can effectively contribute to reversing nature decline, rather than relying on organisational land holdings for offsetting.

8.17 During the consultation, NGET expressed their commitment to delivering biodiversity improvements and their objective is to achieve a 10% net gain overall. Those representatives consulted would also welcome the opportunity to go further.

8.18 Due to the nature of the project, there is some flexibility in the placement of pylons and access routes to reduce the impacts on habitats through avoidance of features of high biodiversity value. However, some losses will be unavoidable. Wherever practical, habitats affected by construction works will be restored to their previous habitat and condition, but woodland and trees cannot be allowed to re-establish under the power lines, or over buried cable easements. There will also be a loss in terms of biodiversity unit value of restored habitats where there are reductions in value due to time delay or difficulty of creation. In order to reduce the net loss of biodiversity value, the project will include dedicated mitigation areas, which will be managed for biodiversity following construction works. These are assumed to be 'other neutral grassland' in moderate condition for the purpose of this study, but there may be opportunities to deliver higher distinctiveness habitats.

8.19 Due to the limited availability of mitigation sites within the project boundary and restrictions to improving habitats after the completion of the works, there is a predicted loss in biodiversity value. In order to compensate for this loss and provide additional enhancement to achieve a 10% net gain, the shortfall of units is proposed to be met by offsetting, and securing offsite habitat enhancements to an equivalent value. This would include specific habitats to correspond with the higher distinctiveness habitats affected to ensure the trading rules are met and there is no net loss of any one habitat type or group. Additional bespoke mitigation will be agreed with Natural England to provide compensation for irreplaceable habitats (which are excluded from consideration under the BNG assessment).

Results of estimated BNG outcome

8.20 Following consultation on data requirements and availability, NGET provided a data table summarising the habitats present within the boundary and the levels of change in terms of area and biodiversity value. These values are presented in Annex B. These habitats are grouped by their distinctiveness band to allow evaluation of compliance with trading rules.

8.21 The overall baseline value of habitats was estimated to be 4,953 biodiversity units (BU); this was derived mostly from low distinctiveness habitats, such as arable farmland and intensive grassland, (65%), with significant contributions from medium distinctiveness neutral grasslands (18%) and high distinctiveness lowland mixed deciduous woodland (11%). Very-high distinctiveness habitats were also present in smaller proportions, including lowland dry acid grassland (2%) and lowland meadow, lakes, lowland fens and wood pastures (all <1%).

8.22 N2T is predicted to result in the loss of approximately 40% of the baseline in terms of biodiversity unit value, primarily from the temporary loss of low distinctiveness habitats (28% of the total baseline value). Permanent loss is equivalent to just 1% of the baseline value. Restoration of habitats and creation of medium distinctiveness grassland in dedicated mitigation sites are responsible for delivering partial compensation for these losses.

8.23 In summary, the proposed project, as assessed, could achieve a net loss of 6% over the baseline. To achieve a net gain of 10% would require an additional 804 BU. In addition, the project would require some of these units to be targeted to specific compensation to meet trading rules for wood pasture and lowland fens (very high distinctiveness), as well as a deficit of medium distinctiveness grassland and scrub. To achieve 20% net gain would require a total of 1,299 BU, *i.e*. 495 BU more than achieving 10%.

Viability considerations

8.24 To understand the potential impacts of enhanced levels of BNG on overall project cost / viability, we have consulted NGET to discuss issues around opportunities and challenges in delivering BNG. Following email exchange, the consultation was undertaken on 18 June and further information was provided. Issues around funding of the project, delivery of BNG, regulatory framework and flexibility around increasing the BNG % were explored.

8.25 The following documents were reviewed to further understand the potential impact of enhanced BNG% on the financial viability of NSIPs:

- National Grid Electricity Transmission 2021–2026 Environmental Action Plan (April 2021)
- National Grid Electricity Transmission webpage: How we're regulated
- Norwich to Tilbury - 2023 - Non-Statutory Consultation Feedback Report (April 2024)
- Norwich to Tilbury - Strategic Options Back Check and Review (April 2024)

Viability findings

8.26 Other than the key issues highlighted above with applying BNG to this specific type of energy NSIPs, our analysis and consultation has also highlighted viability considerations.

Project costs

8.27 Due to the size of the NSIPs, an enhanced biodiversity gain objective will significantly raise project costs. From our estimated BNG outcomes above, it would require an additional 804 and 1,299 biodiversity units to achieve a net gain of 10% and 20% respectively. With our assumptions of offsite BNG costs of £25,000 per biodiversity unit, 10% and 20% offsite BNG delivery would cost £20.1m and £32.5m respectively from the presently assessed baseline position of 10% loss. The estimated cost of purchasing offsite units for enhanced BNG provision of 20% (over the mandatory 10%) is approximately £12.4m (1.38% of the capital cost) as shown in Table 8-1 below.

8.28 However, these estimates, assuming an offsite BNG unit cost of £25, 000, are considerably less than the estimates provided to us during consultation with the N2T project team, who estimate that achieving 10% BNG would cost £46-50m, with an *additional* £30-40m required to reach 20% BNG. They were unable to supply more exact figures at this time.

8.29 It is our understanding that the primary difference is the assumed cost of purchasing offsite BNG units. The N2T team are particularly concerned about the capacity of local BNG offsetting projects to supply an adequate number of biodiversity units to mitigate N2T, other NSIPs and TCPA90 development over the timescales required and the inflationary pressures this will inevitably have on the biodiversity units market. NGET is concerned that reverting to statutory credits at a much higher cost rate may be necessary, particularly if higher levels of BNG were to be targeted.

8.30 However, ELNP has received information from the three farm clusters in Essex that there is considerable interest among the farming/landowning community in supplying BNG at a price of £25,000 per unit. ELNP is optimistic that it will be possible to meet the demand for biodiversity units for offsetting within Essex. Nevertheless, it is difficult to be certain about the cost of units and demand/supply ratios, until there is more evidence of actual deals to deliver offsite delivery of BNG in Essex.

8.31 As shown in Table 8-1, when comparing the total capital costs of the optimal overall onshore combination option[65] of £894m, the 10% BNG costs are about 5.14% to 5.59% of the capital cost. The additional costs to get to 20% BNG from 10% are 3.36% to 4.47% of the capital cost. These are very significant sums and could potentially be passed on to the bill payers. Hence, the additional BNG costs will have to be justified through robust policy with consideration of economic efficiency, coordinated investment and social benefits.

Table 8-1: Comparing BNG costs with NSIPs capital cost

	Capital cost	BNG costs to achieve 10%	10% BNG costs as a % of overall project cost	Additional BNG costs to achieve 20% from 10%	20% BNG costs (from 10% BNG) as a % of overall project cost
Our assumptions (section 8.21)	£894m	£20.1m	2.25%	£12.4m	1.38%
NGET assumptions (section 8.22)	£894m	£46-50m	5.14%-5.59%	£30-40m	3.36%-4.47%

Source: SQW & Temple, 2024

Funding mechanism

8.32 As a regulated business, NGET is funded by a price control mechanism which is agreed with and set by the energy regulator, the Office of Gas and Electricity Markets (Ofgem). NGET pay upfront the millions of pounds it costs to build a new power transmission line. The cost is then gradually passed to consumers through their electricity bills over the next 40 years. As part of the energy regulatory framework, they have to demonstrate to the Ofgem that N2T is offering value for money for the billpayer.

[65] Onshore option combining EAN 4 – Norwich Main to Bramford with capital costs of £355m and Circuit Lifetime Costs of £548m and EAS 2 – Bramford via a new coastal substation to Tilbury with capital costs of £539.3m and Circuit Lifetime Costs of £684m.

8.33 The energy regulatory framework managed by Ofgem imposes limits on spending. NGET has a legal statutory duty to be efficient, economic and coordinated (Electricity Act, 1989) and transmission licence conditions to meet. Therefore, demonstrating economic efficiency, coordinated investment and social benefits is crucial to maintaining regulatory compliance. Consequently, any additional costs must be justified and efficiently spent within the context of value for money to adhere to the regulatory framework.

BNG regulatory framework for NSIPs

8.34 The Environment Act 2021 introduces a mandatory requirement for 10% BNG for NSIPs, which will be in force from November 2025. Whilst it is not yet in force, NGET commits to deliver a net gain of at least 10% or greater in environmental value (including biodiversity) for N2T.

8.35 However, as the statutory requirement is not yet in effect, there is presently a lack of guidance and experience in delivering BNG for NSIPs. Due to the high costs and complexity of managing BNG, especially with the need to find willing landowners and secure long-term agreements, it is crucial to have a strategic approach to resource allocation and management to ensure the process can be effectively managed to support BNG delivery without compromising other aspects of the project. For example, the viability of the project and the delivery of the planning obligations.

8.36 NGET and their BNG consultants, Arcadis, stated that they are eagerly anticipating guidance from Natural England and engagement with local authority working groups to allow them to more accurately assess and cost the BNG position for N2T. They were unable to conclude if and how enhanced BNG policy at a local level may impact the requirement for enhanced levels of BNG for NSIPs bought forward under the development consent process, however they were aware of the need for NGET to manage its commercial risk with regard to what, if anything, is offered over and above the statutory minimum. It was thought that it would be quite difficult for regulated bodies such as NGET to risk not being able to recover the additional millions of pounds of cost associated with delivering enhanced BNG without very clear regulatory guidance from Ofgem on whether or not such additional costs, incurred to align with local plan policy requirements, were acceptable.

8.37 Local Authorities seeking to impose BNG requirements in excess of the 10% statutory minimum, and eager to secure compliance from NSIPs within their areas, may consider lobbying the government to raise the issue of how enhanced BNG provision at a local scale is addressed in the emerging guidance.

8.38 Since linear projects often span multiple authorities, they represent opportunities to identify and deliver BNG at scale at strategically important locations. However,

this can lead to variations in BNG provisions across different individual authorities. As such, flexibility for linear projects should be considered to facilitate more strategic and comprehensive BNG delivery. Additionally, the wider benefits of BNG such as improvements in natural capital, flood resilience, carbon sequestration, and contributions to environmental education in schools, learning/ research in universities, skills and job creation in the locality could be considered.

9. Overview of other NSIPs in Essex and the broader perspective

9.1 In addition to N2T, ten other NSIPs were identified by ECC for review that are either approved or proposed:

- Bramford to Twinstead (energy transmission)
- North Falls Offshore Wind Farm (renewable energy)
- Five Estuaries Offshore Wind Farm (renewable energy)
- Longfield Solar Farm (renewable energy)
- Rivenhall Integrated Waste Management (waste)
- Bradwell B (new nuclear)
- Oikos Marine & South Side Development (ports)
- M25 (highways)
- A12 (highways)
- Lower Thames Crossing (highways)

BNG value assessment

Methodology of assessment

9.2 A preliminary review of the ten other proposed NSIPs was carried out, collating publicly available data from the PINS website[66], these results are listed in Table 9-1. Because the nature and specific considerations of the NSIPs vary widely, they were grouped into similar project types to enable comparison and aid prediction of applicability for future NSIPs. Four categories of NSIPs were devised, which can be related to the project types covered by relevant National Policy Statements:

- linear energy transmission NSIPs, as described in NPS EN-5 (Electricity Networks Infrastructure), and including on-shore transmission elements of offshore generation projects, described under NPS EN-3 (Renewable Energy Infrastructure) ;

[66] https://national-infrastructure-consenting.planninginspectorate.gov.uk

- a solar energy farm, as described under NPS EN-3 (Renewable Energy Infrastructure);

- single site NSIPs, including a nuclear energy generation site as described under NPS-EN6 (Nuclear Power Generation), an energy-from-waste project as described under NPS EN-3 (Renewable Energy Infrastructure); and a port as described under the NPS for Ports; and

- highways NSIPs as described under the National Networks NPS.

9.3 It should be noted that some projects may consist of multiple elements that can fall under different NPS project types; for example, energy generation projects may have separate grid connection elements and major projects such as new nuclear sites may have multiple sites and include significant highways project elements.

9.4 Three strategies were used to identify baseline habitats and to calculate the baseline biodiversity units for each NSIP. The strategy used depended upon the available data for each project. Each is outlined below:

- For each NSIP where full BNG calculations were available, the baseline habitat data and conditions were transferred from the metric used within the project (e.g. version 3.1 or 4) to the new statutory metric. This method provided the most accurate data on baseline units for the project. Conditions had to be assumed to be as presented in the project data, but this is a limitation to the accuracy of the outcome as the condition assessment criteria have changed between versions of the metric.

- For NSIPs where the outline BNG results table was available, but not the habitat areas or conditions, the outputs provided were used, noting that they were derived from previous versions of the metric, A review of the habitats present from habitat survey maps and aerial imagery allowed for a degree of verification of the baseline evaluation with reference to the statutory metric.

- For NSIPs where no BNG calculations or habitat areas were available, Temple's GIS team undertook to derive habitat areas from available phase 1 habitat maps or based on similar scenarios. An assumption of moderate condition for habitats was used, except where this was not appropriate to the habitat type of specific evidence of management. Project experience demonstrates that typical management regimes result in limitations to the condition of habitat such that 'good' condition is usually only found under specific conservation management.

9.5 As with the baseline habitat units a range of methods was used to calculate the post-development evaluation:

- Where full BNG assessments were available these were transferred into the statutory metric.

- Where overviews were available, but no detailed calculations, these metric outputs were used, with a review of available project design information to verify the evaluation with reference to the statutory metric.

- Where no BNG data were available, estimated post-development values were estimated. Where NSIP design information was readily available, habitats and areas could be estimated, with assumptions on conditions made to get to the best reasonable estimate of BNG outcomes. If no post-development mapping was available then assumptions were made on likely permanent and temporary habitat loss and the likely footprint of the development depending on the category of NSIP.

9.6 For all of these projects, the metric used (whether the statutory metric or previous versions) was intended for application to TCPA90 development, not NSIPs. The evaluations follow the instructions, rules and principles of the statutory metric (or previous version), but are subject to NSIPs-specific considerations discussed below.

9.7 Similarly to the approach to TCPA90 development, the evaluations excluded consideration of linear (hedgerow) biodiversity units and watercourse biodiversity units. It is assumed hedgerows can be restored and enhanced within the context of the project, without significant additional expenditure being incurred to achieve relevant BNG targets. Watercourses were assumed to be avoided for the purposes of assessing TCPA90 projects; however, NSIPs are less likely to be able to avoid impacts on watercourses. Mitigation would normally be provided for impacts within the scope of the project design, but the application of a biodiversity gain target may require additional enhancement measure to be delivered.

Results of BNG analysis

9.8 The ten NSIPs considered are presented in Table 9-1, along with N2T for comparison. This includes a brief description of each project and its current status and classification into a broad project type to assist with understanding the relevance of outcomes to other potential future projects. It also includes a summary of the scope of data used for the assessment and the approach used to determine the estimated BNG outcomes, as described in the methodology section.

Table 9-1: Summary of NSIPs considered

Project name	Type	Status	Description	Scope of data and approach
Norwich to Tilbury (N2T)	Linear energy transmission	Pre-application stage, submission expected by August 2025. Construction anticipated between 2027 and 2031	A new 184km 400kV overhead powerline installation.	Discussion with NGET and analysis of BNG data outputs provided.
Bramford to Twinstead Reinforcement	Linear energy transmission	At decision-stage, due September 2025. Construction anticipated to be completed by 2030.	Reinforcement of approximately 18km of overhead powerlines (including roughly 50 new pylons) and 11km of underground cabling systems. Approximately 27km of the existing overhead line and associated pylons are to be removed and the creation of a new Grid Supply Point substation.	Headline metric outputs (Version 3.1), taken directly from the Environmental Gain Report, 2023.
North Falls Offshore Wind Farm	Linear energy transmission	Pre-application stage, submission expected in 2024. Project construction due to be completed by 2030.	An offshore electricity generating station approximately 24.5km from its nearest point at the Port of Lowestoft. It is estimated to have an installed capacity in excess of 100MW and will principally comprise offshore wind turbines together with associated infrastructure (onshore and offshore) including a connection to the electricity transmission network.	No BNG has been completed, only a list of HPIs in the onshore scoping area; BNG estimates based on assumed baseline habitats and outline design plans.
Five Estuaries Offshore Wind Farm	Linear energy transmission	Pre-examination stage, application accepted in April 2024. Construction is anticipated between 2027 and 2030.	The Project includes an offshore wind farm located approximately 37 kilometres off the coast of Suffolk at its closest point in the southern North Sea; including up to 79 wind turbine generators and associated infrastructure making landfall between Frinton-on-Sea and Holland-on-Sea, the	Headline metric outputs (habitat condition assessment in v3.1 and metric completed in v4.0).

Project name	Type	Status	Description	Scope of data and approach
			installation of underground cables, and the construction of an electrical substation and associated infrastructure in the vicinity of Little Bromley in order to connect the development to NGET's proposed East Anglia Connection Node substation. All onshore infrastructure would be located in Tendring District, Essex.	
Longfield Solar Farm	Solar energy farm	Consent granted June 2023, but subject to a correction notice November 2023. Construction planned in 2024 to 2026.	Longfield Solar Farm is a new solar farm project which will use ground mounted solar photovoltaic (PV). The Project will be connected to the national electricity transmission network by an underground cable and includes an extension to the existing Bulls Lodge Substation. The site area is approximately 435ha.	BNG carried out in Metric 3.1 and converted into Statutory Metric.
Rivenhall Integrated Waste Management	Single site NSIP	At examination stage, due to close October 2024. Proposed to be operational in 2025.	The Rivenhall Integrated Waste Management Facility (IWMF) and Energy Centre development is for an extension to a generating station to enable electrical generating capacity of up to 65MW together with associated development. The Proposed Development will be contained within the IWMF building and will not result in any changes to the external works undertaken as part of the Consented Project.	It was considered that an assessment of the potential for impact on ecology and biodiversity would not be required for the Proposed Development and that this assessment was recommended to be scoped out of the EIA.

Project name	Type	Status	Description	Scope of data and approach
Bradwell B	Single site NSIP	Pre-application stage. Construction expected to start around 2027 and last 9-12 years	Proposal to build a new nuclear power station – the Bradwell B power station - comprising two UK HPR1000 nuclear reactors, together with associated buildings, structures, and components. Located to the south-east of the Bradwell A nuclear power station. The Main Site is c. 500ha, and the adjacent Accommodation Site is c.40ha. This study considers only the nuclear power station's operational footprint and does not include associated development, such as highways, grid transmission or subsidiary sites.	No BNG calculations have been carried out; BNG estimates are based on baseline habitats and outline design plans. An overview of the habitats covers several HPIs and close to coastal and floodplain grazing marsh.
Oikos Marine & South Side Development	Single site NSIP	Pre-application stage, submission expected in 2025. Construction anticipated to start around 2027.	The project, known as the Oikos Marine and South Side Development (OMSSD) project, will provide additional marine loading arms and infrastructure on two of the existing operational jetties, Jetty 1 and Jetty 2, at the Oikos Facility and include a capital dredge of the berth pocket to service Jetty 2. The OMSSD project will also include the redevelopment of the south side of the Oikos Facility to provide new storage tanks, providing an additional capacity of around 328,000m3 of storage, and associated operational infrastructure.	No BNG calculations have been carried out; BNG estimates are based on baseline habitats and outline design plans.
M25 Junction 28 improvements	Highways NSIP	Consent granted May 2022, subject to correction notice	The Project is an alteration of the existing junction 28 on the M25 which includes the provision of a dedicated loop road from the	No BNG completed, only baseline habitat mapping; BNG estimates

Project name	Type	Status	Description	Scope of data and approach
		February 2024. In construction and due to open in summer 2025.	M25 northbound carriageway heading eastbound onto the A12, the demolition and reconstruction of the existing A12 eastbound off-slip and of the M25 northbound entry slip road, together with other improvements to the existing junction 28 roundabout, M25 and A12 carriageways.	based on baseline habitats and outline plans
A12 Chelmsford to A120 widening	Highways NSIP	Consent granted 12 January 2024; completion due in 2027-2028	20b and 23. Move junctions 21, 22 and 24	
Lower Thames Crossing	Highways NSIP		The Project would provide a connection between the A2 and M2 in Kent and the M25 south of junction 29, crossing under the River Thames through a tunnel.	Headline metric outputs (metric version 3.1).

Source: Temple, 2024

9.9 The findings of the BNG analysis are discussed below, including particular considerations that are specific to each project type. These findings are summarised in Table 9-2: . It should be noted that values provided regarding the number of biodiversity units needed to meet relevant targets are presented as the net unit values; the creation of habitats to deliver these units will require higher equivalent amounts of habitat delivery due to the factors for time and difficulty of habitat creation/ enhancement, which reduce the total biodiversity units delivered.

Linear energy transmission NSIPs

9.10 Key considerations for this type of project are primarily represented in the case study for N2T, above. Some of these projects will have a greater proportion of underground cable installation, compared to the primarily overhead cables used for N2T. The main considerations of restoring and returning land to previous land use and third-party management and limitations to post-construction habitats within the utility corridor remain similar for both types of cable options.

9.11 The Bramford to Twinstead project includes the loss of ancient woodland excluded from the BNG assessment and subject to separate bespoke mitigation. It also includes high distinctiveness habitats (lowland mixed deciduous woodland and wet woodland) that are not sufficiently compensated to meet trading rules. At present there is no design information for post-development habitats available for North Falls, as the detailed design will be decided post-application. The habitats within the project footprint are majority cropland (cereal and non-cereal). The assumption has been made that the work footprint will result in a loss of these habitats with an additional small percentage of modified grassland lost. As with the Five Estuaries project, it is assumed that habitats removed within the cable route corridor will not be restored within 2 years, and therefore these are considered lost and re-created rather than retained. All habitats to be lost are low distinctiveness.

9.12 The Five Estuaries project identified two options for the restoration of habitats after construction: to exclude restoration of habitats that cannot be returned to their previous condition within 2 years where third-party land ownership limits the potential to guarantee management for 30 years; or, to include these habitats, with appropriate temporal delay factors. For the purpose of this study, the assumption is to include these habitats, in line with the approach taken for N2T. The project includes the loss of a very high distinctiveness lowland meadow, but the extent of loss and any shortfall to meet trading rules is not provided. It is assumed for this study that compensation for this loss can be incorporated into the overall offsetting needed to meet the target net gain. The data obtained for the Bramford to Twinstead and Five Estuaries projects are taken from the headline figures from the metric calculation as no detailed habitat areas were available; as this was carried

out in version 3.1 of the metric, the results are unlikely to be directly comparable, leading to a changed level of net gain value, particularly if individual trees have not been accounted for fully. The baseline and post-development habitats for the North Falls project have been based on broad estimates and are only indicative of the order of net gain achievable.

9.13 The Bramford to Twinstead project achieved a net gain of 12.8%. Although this exceeds 10%, an additional 29.1 BU of priority woodland would be needed in order to meet trading rules. A further 160.3 BU would be required to raise this to 20%.

9.14 The North Falls project resulted in a loss of 1.64%. An additional 387.5 BU would be needed in order to attain a 10% net gain. A further 332.9 BU would be required to lift this to 20% (720.4 BU in total). The Five Estuaries project is predicted to achieve a net gain of 8.55%, requiring 8.6 additional BU to achieve 10% and 67.5 additional BU to achieve 20% (58.9 BU above that needed for 10%).

Solar farms

9.15 Typically solar farm projects are sited on areas of arable farmland or intensively managed grassland. The detailed layout of panels can be adjusted relatively easily to avoid higher distinctiveness habitats, with loss of such being typically limited to occasional mature trees and small sections of hedgerow to enable access, as is the case for Longfield Solar Farm. The permanent footprint of these projects is relatively small, being limited to access, localised infrastructure such as substations and the footings of the panels. For the operation of the project, the habitats within the solar array area can be managed largely as wildflower-sown grassland, although condition may be suppressed by the overshading of the panels. Other areas within the site can usually be retained and enhanced to compensate for the change from arable crops to grassland

9.16 The assessment for Longfield Solar Farm was carried out using version 3.1 of the metric. This was converted into the Statutory metric for the purpose of this study, but there is potential for variations in condition and valuation of features such as tree planting that may not be captured. The output values of the metric may therefore vary slightly from what is actually deliverable, but this is unlikely to be a major difference.

9.17 The Longfield Solar Farm proposal is predicted to result in a net gain of 82.5%, delivered onsite. No additional offsetting would therefore be required to achieve either 10% or 20% net gain. This is in line with other solar farm developments outside Essex, that are reported to achieve in the region of 80% net gain.

Single site developments

9.18 This grouping of project types is based on proposals that have a discrete, largely permanent site footprint. This potentially covers projects arising from a variety of sectors, with the three examples considered being energy-from-waste, nuclear energy and harbour facilities. Sites can vary significantly in baseline character; two of the sites considered are on previously developed land of low or negligible ecological value, while Bradwell B is located predominantly on arable farmland of low distinctiveness, but includes high distinctiveness saltmarsh and habitats within internationally important sites for coastal birds. Such marine sites are likely to require detailed bespoke mitigation for habitats and fauna (particularly birds) as part of integral project design, so these elements of habitat loss will generally be at least compensated for outside the need for BNG.

9.19 The Rivenhall Integrated Waste Management project scoped out habitat loss and ecology from their EIA due to the proposals being limited to existing buildings and infrastructure, so there would be no loss of habitats, making it exempt from BNG. Bradwell B is a major development of a new nuclear energy facility. Little information is available regarding the proposed project design and no BNG assessment has been undertaken. Estimation of the potential achievable level of net gain is based on estimated baseline habitats and a precautionary assumption that all land within the site boundary will be lost to structures and infrastructure and all biodiversity compensation and enhancement would need to be delivered off-site. compensation and enhancement would need to be delivered off-site. There are some areas of higher distinctiveness habitat, in particular salt marsh and some areas of woodland within the site, but overall the baseline value has been estimated based on being dominated by cropland (arable grassland and cereal crops).

9.20 Oikos Marine & South Side Development is a redevelopment of a previously developed site of low biodiversity value, with two areas totalling c.2ha that were previously set aside as biodiversity mitigation for adjacent developments. No detailed designs or BNG assessment are available for this project, so broad assumptions have been made to estimate the likely achievable net gain. The previously developed area of the site was assumed to be ‘vacant or derelict land’ (low distinctiveness habitat) in poor condition and the mitigation areas to be ‘other neutral grassland’ (medium distinctiveness habitat) in good condition. The project scoping report sets out the proposal to create a new habitat mitigation area in existing intensively grazed grassland to provide biodiversity enhancement, although specific details are not given. For the purpose of this study, it has been assumed that the proposed mitigation area will be of sufficient extent to provide 10% net gain for the project (equivalent to 14.1ha); any additional enhancement to achieve 20% would have to be delivered through offsetting.

9.21 The estimation of achievable net gain for both Bradwell B and Oikos Marine & South Side Development is based on broad estimations of both baseline and post-development habitats, assuming total loss of habitat within the site boundary as a precautionary scenario. Actual achievable outcomes could deliver significantly higher levels of net gain if elements of biodiversity value can be incorporated into the project design.

9.22 Bradwell B: The baseline value of the site is estimated at 1080 BU, so achieving 10% net gain would require 1,188 BU and 20% would require 1,296 BU (an additional 108 BU above achieving 10%). The Oikos Marine & South Side Development is assumed to achieve a net gain of 10% through the implementation of an offsite mitigation area; an additional 7.4 BU would be required to achieve a 20% net gain.

Highways projects

9.23 Highways projects will vary significantly in the characteristics of their biodiversity impacts depending on the scope of the proposals. Those projects considered generally involve the creation of new road elements or widening/ expansion of existing road elements, resulting in permanent loss of habitats, as well as a swathe of temporary or short-term loss for construction. Whilst route optioneering should take account of important biodiversity features, including high and very-high distinctiveness and irreplaceable habitats, there is often limited flexibility to avoid these features. These projects may, therefore, require bespoke mitigation and/ or dedicated compensation measures to make up for these losses. Unlike linear energy transmission NSIPs, land required for highways NSIPs would normally be acquired, by agreement or, if necessary, under compulsory purchase, and largely retained after construction is completed. In such cases, a compelling argument needs to be made to support the CPO. This includes any dedicated mitigation areas that are needed to minimise onsite habitat net loss or potentially to deliver net gain.

9.24 No BNG calculations were available for the M25 junction 28 improvements project, so habitat survey data were used to determine the baseline habitat values and outline design plans were used to estimate post-development habitats. The results are significantly limited by the broad estimation of habitats and assumption of condition, which was taken to be moderate unless evidence indicated otherwise.

9.25 The A12 Chelmsford to A120 widening project had a completed metric calculation available in version 3.1 of the metric. This was converted into the statutory version, although the condition was assumed to be as stated in the original calculations.

9.26 The Lower Thames Crossing project data available only included the headline results of the assessment using version 3.1 of the metric. These outputs were taken

at value for this study but are likely to be different if assessed under the statutory metric.

9.27 The M25 junction 28 improvements project achieved a 6.29% net gain over an estimated baseline value of 250 BU, requiring an additional 9.3 BU to achieve 10% and 34.3 to achieve 20% (25 BU above that needed for 10%).

9.28 The A12 Chelmsford to A120 widening project achieved a headline net gain of 39.35%, over a baseline value of 2540 BU. However, there was a net loss of higher distinctiveness habitats including priority habitat ponds, open mosaic habitat on previously developed land, lowland mixed deciduous woodland, wet woodland and reedbeds, which resulted in a trading rules deficit of 404 BU for high and very high distinctiveness habitats. It may have been possible, had this been considered as part of the project design at the time, for at least some of this to have been addressed through redesign on habitat restoration proposals, so that these priority habitats would have been delivered in place of the lower distinctiveness habitats proposed. A test of the values shows that replacing 'other neutral grassland' in good condition in the metric with the necessary areas of higher distinctiveness habitats to satisfy trading rules for these habitats, results in an indicative net loss of around 2.8 BU. For the purpose of this study, however, it is assumed that this loss would need to be offset in addition to the net gain achieved by the project to claim any overall net gain under current statutory (TCPA90) requirements. Therefore, the overall offsetting requirement for this project to achieve 10% is taken to be 404 BU (the trading rules shortfall); no additional offsetting would be needed to achieve 20% as the project can already deliver greater than this once the trading shortfall is addressed.

9.29 The Lower Thames Crossing project achieved a net gain of 7% over a baseline value of 7712 BU, requiring an additional 193 BU to achieve 10% net gain and 964 BU to achieve 20% (771 BU above that needed for 10%).

Summary of BNG outcomes

9.30 **Table 9-2** provides a summary of the BNG outcomes of each project, with the estimated number and cost of biodiversity units needed offsite to achieve a net gain of 10%, and the additional units needed to raise this to 20%. We assumed the cost for each biodiversity unit offsite is £25,000 per unit according to information from Essex County Council. The overall estimated project cost is also included, where available, to put these figures into the context of the scale of each project.

Table 9-2: Summary of BNG outcomes for NSIPs

Project Type	Project	Estimated BNG outcome	Offsetting BU/ cost to achieve 10%	Additional BU/ cost to achieve 20% from 10%	Overall project cost	Uplift to 20% from 10% BNG as a % of overall project cost
Linear energy transmission	Bramford to Twinstead Reinforcement	12.8%	29.1 / £727,500*	131.2 / £3,280,000	£499 million	0.66%
	North Falls Offshore Wind Farm	-1.64%	387.5 / £9,687,500	332.9 / £8,322,500	No information available	No information available
	Five Estuaries Offshore Wind Farm	8.55%	8.6 / £215,000	58.9 / £1,472,500	£3.5 billion	0.004%
Solar Farms	Longfield Solar Farm	82.5%	0 / £0	0 / £0	£240million (estimated)	N/A
Single site NSIPs	Rivenhall Integrated Waste Management	Exempt	n/a	n/a	n/a	n/a

Project Type	Project	Estimated BNG outcome	Offsetting BU/ cost to achieve 10%	Additional BU/ cost to achieve 20% from 10%	Overall project cost	Uplift to 20% from 10% BNG as a % of overall project cost
	Bradwell B	Assumed 100% loss	1188 / £29,700,000	108 / £2,700,000	No information available	No information available
	Oikos Marine & South Side Development	10%	0 / £0	7.4 / £185,000	No information available	No information available
Highways NSIPs	M25 Junction 28 improvements	6.29%	9.3 / £232,500	25 / £625,000	£140-£170 million	0.37%-0.45%
	A12 Chelmsford to A120 widening	39.35%	404 / £10,100,000*	0 / £0	£1.05-1.27 billion	0%
	Lower Thames Crossing	7%	193.2 / £4,830,000	771.2 / £19,280,000	£9 billion	0.21%
TOTAL UNITS			2,219.7	1,434.6 (3,654.3 units total for 20%)		

*entries marked with an asterisk include allowance for additional offsetting required to meet trading rules in excess of the units required to achieve the target net gain.

Source: SQW & Temple, 2024

Viability considerations

9.31 **Table 9-2** above shows that the additional costs to achieve a 20% net gain from a 10% net gain are insignificant as a % of overall project cost, ranging from 0.21% to 0.66% of the overall project cost.

9.32 The table also shows that 3,654.3 units (1,434.6 additional units) would be required to achieve a 20% net gain across the 10 selected NSIPs.

10. What does this mean for BNG delivery in Essex?

10.1 The estimated BNG outcomes determined from this study show that different types of NSIPs are capable of delivering differing levels of net gain within the project design and that there are different considerations and limitations to each type of project and specific to individual projects. Overall, however, they were mostly able to achieve some level of net gain, or a small net loss within the project.

10.2 Many of the projects considered had assessments carried out using earlier versions of the metric. While variations between the metric versions can go both ways, the overall trend is for the later versions to return lower BNG outcomes. This is particularly the case where individual scattered trees are present, which may not be fully captured in this review. However, the implementation of BNG legislation and policy is intended as a driver for change, so older projects that did not consider the need for net gain may have been able to deliver higher biodiversity benefits had they been designed with BNG in mind. This is illustrated by the A12 Chelmsford to A120 widening project that failed to meet current trading rules, but had these been taken into account during project design, mitigation could have focused on the appropriate habitats to compensate for the loss of higher distinctiveness habitats rather than over-delivering on lower distinctiveness habitats.

10.3 The assumption for all of these projects is that additional biodiversity units needed, beyond what is reasonably achievable within the project, to meet the assumed 10% target and any enhanced target, such as to 20%, would need to be secured through offsetting agreements with local landowners. This will depend on the availability of the relevant habitats in the offsetting market in the right location. Consultation with ELNP indicates that there is significant appetite from local landowners to invest in offsetting provision and the Green Essex Strategy[67] identifies that land cover of arable and horticultural land (which would be the likely target location for offsetting) accounts for 59% of the county's area. This suggests that there is potentially a significant resource for offsetting provision, but it will be important to identify the appropriate habitat types in the relevant locations in relation to the LNRS and demand from projects. The alternative of resorting to statutory credits is likely to be prohibitively expensive and detracts from the local benefits that would be derived from local delivery.

10.4 Of the large-scale nature and specific requirements of many types of NSIPs, impacts on high distinctiveness and irreplaceable habitats can be much harder to

[67] Green Essex, Essex County Council, 2019 https://consultations.essex.gov.uk/rci/green-essex-strategy/supporting_documents/GE_Appenddices_24042019_2%202.pdf

avoid than for most TCPA90 applications. This results in the need for costly, high difficulty offsetting or bespoke mitigation respectively. While bespoke mitigation for irreplaceable habitats is excluded from consideration in BNG, the overall costs of delivering should be considered alongside the typically high cost demands of these bespoke solutions.

10.5 For future developments that come forward, it is anticipated that BNG should be considered at the feasibility stage. However, as the assessment boundary is usually necessarily non-specific at this stage to allow for options appraisals and project design, assumptions need to be made to estimate the likely impact and BNG outcomes.

10.6 Securing offsetting sites and any dedicated mitigation areas in advance of works will be an important consideration in minimising the scale of biodiversity units needed to achieve any target net gain. The time taken for habitats to achieve their target state is a factor in the units delivered by any enhancement measures, so reducing the time this takes by advance implementation will increase the biodiversity unit value.

Linear energy transmission NSIPs

10.7 What should constitute 'local' offsetting in the context of major linear NSIPs is an open question at this stage. The approach taken under the TCPA90 BNG regulations is largely based on local authority boundaries, but this is not necessarily practical for such projects and may not deliver the best outcomes for biodiversity, local communities or the project. For N2T, it is anticipated that offsetting provision will be distributed within the relevant county (Essex, Suffolk and Norfolk). This will ensure some level of consistency in localisation of the investment of funds into biodiversity schemes. Delivering offsetting within the boundaries of the local authorities where impacts occur is likely to be an approach sought by the local authorities to maintain inward investment, but this will be limited by the availability of sites in the right location and could result in more piecemeal delivery and suppress investment in high-benefit strategic sites and regionally important priority habitats.

10.8 Linear energy transmission NSIPs in particular result primarily in temporary construction impacts, with most habitats being restored to their previous state on completion of works. The exceptions being for permanent structures and ongoing management restrictions, such as not allowing trees and woodland to develop along the cable route. However, mitigation onsite is generally limited as land is not owned by the developer, so mechanisms for ensuring long-term management are limited and potentially very complex and costly given the number of different parties that could be involved. Following the guidelines as they apply to TCPA90

applications means that land that is used for temporary access, but not returned to its current state within two years, would only be able to contribute to post-development values if it is held in management for net gain for at least 30 years, which is not a practical approach where the developer does not own the land. The Five Estuaries Off Shore Wind Farm project also highlighted this issue, citing a difference from a loss of 13.35% and a gain of 8.55% between discounting these habitats and including them in the evaluation. Similarly, if temporary losses are restored fully within two years could be excluded from the assessment boundary, this would significantly reduce the baseline value and therefore the number of biodiversity units needed to achieve the biodiversity gain objective. Future projects may need to take into account of this in programming construction work to minimise the temporary infrastructure that is not restored within two years.

10.9 These projects can generally minimise impacts on high distinctiveness and irreplaceable habitats, but some small-scale losses are likely to be unavoidable. The projects of this type that were considered, including N2T, were able to achieve a net gain of between -6% and 12.8%.

Solar farms

10.10 Solar Farms are typically able to achieve high levels of BNG, over 80% in the case of Longfield, as they can usually create higher value habitat, in the form of wildflower sown grassland, in the place of low distinctiveness arable farmland across the developed area of the project, as well as often having opportunities to deliver additional enhancement within the wider project boundary. The biodiversity value, and BNG valuation of land within the solar array will be suppressed by the presence of the panels, so projects claiming high levels of net gain may have to commit to significant and innovative solutions (such as controlled grazing) to ensure they achieve these results. It is perhaps also of note, that while the BNG metric does not differentiate in the value of cropland, there can be a correlation between lower grade agricultural land and higher biodiversity; solar farms generally target lower grade agricultural land and planning policy may restrict their installation in the best agricultural land. That this is not demonstrated in the metric means that there is a risk that the biodiversity benefits may not be as high as they appear.

10.11 As an outcome of 80% net gain is regularly achievable on solar farms, any increase of minimum requirement to 20%, or even higher would not have any implications for their delivery. If these projects achieve well above the target net gain requirement, they could sell the additional biodiversity units into the market as offsetting for other projects/ developments.

Single Site Projects

10.12 The single site projects considered were all located predominantly on previously developed land of mostly low biodiversity value. While these sites are likely to have been selected on the basis of access to infrastructure, it has the effect of reducing impacts on biodiversity. However, where there are features of importance, such as coastal habitats and bird populations at Bradwell B, these may not be practical to avoid. In such cases, bespoke mitigation outside the BNG framework is generally likely to be required, but some specific offsetting may be needed to compensate for the loss of high distinctiveness habitats.

10.13 In the case of the Rivenhall Integrated Waste Management project, there were no habitats of biodiversity value present as it sits within the existing development footprint, which exempts it from BNG. At the other extreme, although not present within the projects considered, there may be future cases where previously developed land supports high biodiversity value habitat mosaics. These are classified as 'open mosaic habitat on previously developed land', a habitat of principal importance, primarily for the high diversity and rarity of plant and invertebrate species it can support. In these cases, highly specific offsetting measures would be required to compensate for losses; while not difficult to recreate, suitable locations for this habitat type are not always readily available.

10.14 In the case of Bradwell B, the assumption in calculations was that all land within the site boundary would be developed, so although the habitats were largely of low value, the scale of the development means that a very high number of biodiversity units would be required to offset the losses. The Oikos Marine & South Side Development project is similar, but a dedicated offsite mitigation area has been identified as part of the project, which is an approach that is likely to be well suited to this type of NSIPs.

Highways projects

10.15 While the impacts of highways projects include a significant proportion of permanent land-take, the construction areas may be restored and managed to provide improved habitats post-development. With appropriate consideration of mitigation design, these projects are likely to mostly be able to achieve net gain, but will require provision of offsetting to achieve a 10% or higher target.

10.16 The nature of the road projects will have an effect on how mitigation is delivered. Widening projects within existing land take are likely to place additional pressure on residual land within the highway boundary, or require more offsetting. New construction highways projects, along with many other types of NSIPs, may create dedicated mitigation areas to compensate for biodiversity impacts, which would form part of the order limits and may be secured as part of land acquisition for the

project. However, the use of compulsory purchase orders is subject to restrictions that may not allow for additional land acquisition for BNG, especially to achieve an increased target net gain. Furthermore, the cost of land acquisition and subsequent management may be significantly higher than securing offsetting on third party land. These projects may, therefore, rely more on offsetting to achieve no-net-loss and net gain up to current targets as well as to deliver any additional requirements. In its BNG consultation response, the Government has stated that it does not intend to make any new provisions for compulsory acquisition; it will, however, consider providing guidance or reference in biodiversity gain statements that outline the reasonable alternatives developers should explore to deliver net gain before they consider compulsory acquisition of land.

Viability considerations

10.17 Whilst **Table 9-2** shows that the additional costs to achieve a 20% net gain from a 10% net gain are reasonable and insignificant as a % of overall project cost, the costs depend on the availability of local biodiversity units. Our case study on the N2T project found that the biodiversity unit cost assumptions from the project team are much higher than the £25,000 per unit cost we assumed. The main reason is the project team assumed that it may be necessary to utilise statutory credits instead of local biodiversity units.

10.18 As demonstrated in **Table 9-2**, NSIPs could make a major and valuable contribution to habitat enhancement in Essex due to their size. However, this is only possible if sufficient local biodiversity units are available at an affordable price. It would be extremely difficult for NSIP promoters to justify in value for money terms the provision of BNG in excess of the mandatory 10% were the costs excessive, and therefore if higher levels of BNG are to be targeted it is essential that a sufficient supply of local and affordable biodiversity units can be secured at design stage. ELNP have expressed confidence that there are enough farmers and other landowners interested in supplying biodiversity units across Essex that a sufficient supply of units can be sourced to meet this demand. The importance of robustly demonstrating such supply to promoters is clear.

11. Conclusions

TCPA90

11.1 Our testing has assessed the extra costs and potential impacts on financial viability within Essex of enhanced BNG over the mandatory minimum 10%. It is important to note that these conclusions are derived from testing seven residential and three commercial high-level generic typologies. Since BNG is inherently site-specific, this exercise provides only an indicative measure of viability. Individual Local Plan viability assessments are important to understand viability at a local level; **this study is not intended to replace or supersede Local Plan Viability Assessments but may be helpful in providing evidence to inform them**.

11.2 **In the typologies tested, increasing BNG to 20% has not significantly raised costs nor had a material impact on scheme viability.** Other factors such as local values and build cost are the key determining factors of viability, with additional BNG costs at the 20% level generally paling into relative insignificance in the development appraisal compared to these variables.

11.3 Whilst national policy advocates for an onsite first approach, some environmental groups including ELNP recognise that offsite provision also has an important role to play in delivering habitat enhancement particularly where this is supplied locally and strategically on opportunity areas that align with the emerging Essex Local Nature Recovery Strategy. This study has identified that in Essex **to achieve enhanced BNG at the 20% level the cost difference between onsite and offsite BNG provision is generally small.** Developers will generally pursue the most cost effective solutions which for the larger sites generally means onsite provision as this is typically less expensive due to site size, the availability of land for habitat enhancement (due to typically lower net to gross development area ratios), and the ability to provide a range of habitat types. However, in many instances it is unlikely that smaller greenfield sites would be able to deliver enhanced levels of BNG entirely onsite as the sizes and types of habitats deliverable are limited, therefore delivering offsite BNG to “top-up” what can be provided onsite is to be expected in these scenarios. Offsite provision may also be more feasible in areas where onsite BNG increases are challenging or expensive, such as brownfield urban sites.

11.4 Therefore, for more tightly constrained sites, whilst policy steers towards an onsite first approach, it is often commercially advantageous to purchase biodiversity units offsite once cost effective onsite provision has been exhausted. This is particularly true where onsite provision would require the acquisition of additional land. While offsite provision also requires land to be managed for BNG, the cost is included in the biodiversity units and land can be selected in areas with lower development

pressure, making it comparably cheaper than having to acquire additional land at development values or reduce development density by giving development land over to onsite BNG provision. Therefore, **it is important that a reasonable and affordable supply of biodiversity units are available to developers to enable them to achieve policy levels of BNG where onsite solutions are either impractical or prohibitively expensive**.

11.5 Our scenario modelling has demonstrated that **the magnitude of development viability impact of adopting a 20% BNG policy is in all instances small (and in some cases negligible).** However due to the wide range of market values and build costs across Essex we emphasise the importance of development viability testing for all policy contributions in Local Plan Viability Assessments. We recognise that in lower value areas development viability is a challenge. Therefore Local Authorities may wish to consider the benefits of enhanced BNG provision weighed against relatively small cost increases.

11.6 The key headline findings for BNG policy in Essex are as follows:

- **A shift from 10% to 20% BNG will not materially affect viability in the majority of instances when delivered onsite or offsite**.

- The biggest cost in most cases is to get to the mandatory, minimum 10% BNG. The cost increase to 20% BNG is, in most cases, much less and is generally small or negligible. Based on our scenario testing we estimate that:

  - the additional cost of achieving 20% BNG ranges from £2 - £27 per residential unit on brownfield sites[68] and from £77 to £308 per residential unit on greenfield sites.
  - this additional cost would impact residual land values by <0.1% for brownfield development land and <1.4% for greenfield development land.

- Because BNG costs are low when compared to other policy and development costs, they are unlikely to render development unviable for BNG policy of up to 20%.

- **The cost increase to 50% BNG is low for *brownfield* sites and unlikely to have a material impact on development viability in many cases, particularly in higher value areas. For *greenfield* sites, the additional cost associated with 50% BNG may have a more material impact on development viability but the costs remain small compared to other policy costs**. Based on our scenario testing we estimate that:

[68] Brownfield scenarios assume sites are located on previously developed land that has not been allowed to re-establish vegetation of biodiversity value.

- the additional cost of achieving 50% BNG ranges from £20 - £214 per residential unit on brownfield sites and from £636 to £1,232 per residential unit on greenfield sites.
- this additional cost would impact residual land values by <0.7% for brownfield development land and between 3% and 5.4% for greenfield development land.

- Some developers report that they are having issues delivering the mandatory 10% BNG on some of their sites. This is not surprising during the transitionary period following the adoption of a new policy because Local Plan site allocations and historic land deals will not have factored in the additional cost and land take requirements to achieve BNG. This demonstrates the importance of considering BNG from the outset during site allocation and master planning stages. Developers should ensure that they can efficiently provide it onsite if this is what they plan to do (mitigation hierarchy insists on onsite provision before moving to offsite). Because of these existing challenges, Local Authorities who wish to pursue BNG in excess of 10% may expect some pushback on the policy and therefore may need robust local viability assessment to support it. However, this study shows an assessment is likely to demonstrate viability will not be negatively impacted (to a material extent) for BNG increases of up to 20%, and even beyond this level in some areas. The above conclusion reflects the viability position where BNG requirements have been considered and factored in throughout the land acquisition and planning application process. **In the short term, enhanced BNG policy changes may cause greater levels of disruption and viability impact where the cost and land take requirements of increased levels of BNG provision have not been factored into existing proposals**. Local Authorities may wish to take this into account when designing and implementing policy. If onsite were to be the primary focus of enhanced provision, increasing land take may result in the lowering of average housing densities, so more land may be required to deliver housing. However, the majority of this burden relates to the mandatory 10% BNG and the increase to get to 20% BNG is comparably small; offsite solutions are also available. Therefore this should not be seen as a barrier to BNG policy in excess of 10%, but is a consideration for LPAs.

- In certain situations **where the starting biodiversity baseline is low i.e. on cleared brownfield sites**, it might prove easy for developers to provide considerably larger increases over 20%. In some cases, even an increase to 50% BNG or more will not render development unviable. LPAs may wish to consider this when developing new policies and could, for example, **consider a minimum threshold for BNG applied in absolute terms in addition to a percentage increase.** This may allow them to deliver higher levels of BNG where it is appropriate to do so.

PA2008 - NSIPs

11.7 Overall, our analysis indicates that **most types of NSIPs can deliver somewhere between a small net loss and around 10% net gain within the project design**, with offsetting assumed to be needed to make up shortfalls of biodiversity units, depending on the type of NSIPs.

11.8 Linear energy transmission NSIPs in particular must consider the loss and restoration of habitats, which are restricted by the promoter often not owning the land.

11.9 Linear highways NSIPs, appear to have comparable BNG outcomes to linear energy transmission NSIPs, although they have a greater permanent impact within the development footprint, they may be better able to secure land to deliver mitigation sites as part of the project.

11.10 NSIPs on single sites, such as ports and nuclear energy power stations are likely to result in the loss of onsite habitats, with the potential for delivering biodiversity gain through dedicated mitigation sites. This analysis did not consider potential associated development that may be linked to the principal development and form part of any DCO.

11.11 Solar farms with or without battery storage NSIPs have the potential to achieve relatively high BNG outcomes of around 80% net gain.

11.12 The detailed case study of N2T, with high level additional details from other NSIPs proposed in Essex provides some insight into the specific questions around delivering BNG for NSIPs, as opposed to TCPA90 development, and the implications of an uplifted minimum target.

Understanding how BNG can be applied to linear NSIPs and what best practice may look like in terms of defining the extent of impacted habitat

11.13 Defining the extent of impacted habitat within a linear energy transmission NSIP such as N2T will depend on the principles that are set out in any legislation and guidance on BNG for NSIPs. **The treatment of short-term impacts on land not owned by the NSIP promoter will have a significant impact on the cost of delivering net gain.**

11.14 To better predict the likely BNG outcomes of an NSIP at the feasibility stage, **a detailed review of an example NSIP, comparing estimated BNG outcomes at initial feasibility to final design**, could be valuable in developing more accurate projections of likely final BNG outcomes.

Understanding how BNG can be delivered, on and offsite options, land take, retention and habitat management arrangements

11.15 Traditionally, most types of NSIPs have relied on securing dedicated areas to deliver mitigation, including compensation for biodiversity impacts. **Dedicated areas for mitigation, including compensation are likely to remain an important component of the approach to BNG, but the availability of enhancements through the offsetting market provides a potential alternative**. Further studies could be valuable in comparing the costs and benefits of these different options.

11.16 Where dedicated mitigation areas cannot be secured directly as part of the NSIPs within their order limits, the assumption is that any shortfall to the biodiversity gain objective would be delivered through offsetting, by purchasing biodiversity units from local landowners willing to commit land to biodiversity enhancement and to maintaining it for at least 30 years. **Large landowners may be key to providing biodiversity units at the scale required for large, linear or multi-site NSIPs**.

11.17 **Securing offsetting sites and mitigation, including compensation areas in advance of works will be important to minimise the scale of biodiversity units needed to achieve biodiversity gain objectives** as the time delay in implementing habitat enhancements reduces the biodiversity units they are able to deliver.

11.18 Consideration of **programming temporary works to allow restoration of habitats within two years would minimise the loss of biodiversity units**.

11.19 **The cost of offsetting for BNG needs to be considered alongside any bespoke mitigation and compensation required for irreplaceable habitats**, which are excluded from BNG assessment, but would also need significant areas of land to be secured for biodiversity enhancement.

The potential magnitude of BNG / number of units / units that may be delivered

11.20 Due to the size and scale of most NSIPs, the overall baseline value of the habitats is usually very high compared to most TCPA90 development. Of the NSIPs considered, the highest baseline value was estimated at 7712 BU for the Lower Thames Crossing, N2T being the next highest at 4953 BU. As a consequence, the scale of biodiversity units needed to offset any percentage shortfall to the target net gain is likely to be sizeable**. As an illustration, the 804 BU needed for N2T to achieve 10% net gain would be equivalent to approximately 192ha of arable farmland being enhanced to wildflower-sown grassland** (‘other neutral grassland’, assuming no strategic significance or temporal modifiers). This area is

liable to increase significantly once the requirement for higher distinctiveness habitats, such as woodlands is considered.

11.21 **Overall, the eleven NSIPs reviewed would require an estimated total of 1930BU to increase from 10% net gain to 20% net gain**.

How BNG investment may work "cross-boundary" and the potential complexities / opportunities associated with prioritising local benefits vs regionally important priority habitats

11.22 The question of what should be considered 'local' is a key consideration for the future BNG framework for linear energy transmission and highway NSIPs (and potentially for other linear NSIPs, such as rail or pipelines). The local authority based approach taken for TCPA90 development (whereby offsite measures are subject to a reduction in biodiversity unit value if are not in the same local authority as the impacts) is not always suited to delivering the optimal solutions for either the NSIPs or for biodiversity. **A clear framework for determining local offsetting is needed for linear NSIPs.**

11.23 **N2T is working toward a county-level approach to offsetting**, which allows for investment in strategic biodiversity enhancement, but could result in conflict with district-level authorities where investment is taken to other districts.

11.24 **For projects on single sites, the TCPA90 approach to local offsetting is most appropriate**.

Opportunities and mechanisms for Essex CC and Local Authorities to work with NSIPs to deliver enhanced levels of BNG

11.25 NSIP promoters across Essex are concerned that high demand for biodiversity units could inflate costs, potentially forcing them to purchase more expensive statutory credits. Conversely, landowners are worried that an oversupply of biodiversity units could lower their value, reducing the economic incentives for providing these units.

11.26 These contrasting concerns highlight the need for a balanced approach to managing the demand and supply of biodiversity units. The public sector, principally host local authorities, could play a crucial role in analysing and coordinating the expected demand and supply of biodiversity units within local geographies. This balance is essential to avoid significant cost fluctuations of the biodiversity units required to deliver BNG for NSIPs and offer confidence that escalating BNG costs will not undermine attempts to deliver enhanced BNG by making it too expensive to deliver, or justify in value for money terms.

11.27 The key areas of focus for discussion between Essex CC and its local authority partners in Essex and NSIP promoters should target opportunities to **enable scale of delivery of biodiversity offsetting units and to keep the cost of offsetting units down**, for example through economies of scale.

11.28 By **enabling discussion and seeking a position on how to address the issues of local offsetting delivery and balancing supply and demand of offsetting**, Essex CC and its local authority partners have the potential to influence the determination of how these details will be addressed in future legislation, guidance and national and local policy.

Considerations for developing legislation, guidance and national and local policy

11.29 The study raises a number of areas that should be considered in the development of Biodiversity Statements and associated legislation, policy and guidance for NSIPs.

11.30 Defining the extent of impacted habitat within many linear NSIPs is challenging and will depend on principles set out in national secondary legislation, policy and guidance on BNG for NSIPs. However, limited legislation, policy and guidance is available for implementing BNG for NSIPs. **Future policy and guidance should provide clarity on how the boundary for calculating BNG for NSIPs is defined, particularly for linear NSIPs that do not have clear boundaries.**

11.31 **The treatment of temporary loss of low distinctiveness habitats could be reviewed** where low distinctiveness habitats will be restored to their previous state on completion of construction works, but not within two years, and be returned to the landowner to control. Under the TCPA90 guidance, the effect of restoring these habitats would be excluded from the BNG outcomes because the management is not legally secured for 30 years, even though the habitats will revert to their pre-development state. This could have a negative impact on the NSIPs and biodiversity outcomes by increasing costs, potentially diverting funding from other investments, and removing the incentive to restore these habitats as soon as possible.

11.32 The approach to local delivery of offsetting does not necessarily deliver the best outcomes for NSIPs or biodiversity, particularly linear NSIPs, in the same way as TCPA90 development. **A review of different approaches to local offsetting delivery for linear NSIPs may yield insights into the benefits of alternatives in delivering better outcomes for biodiversity and local communities**, including investment in strategic biodiversity sites and ensuring local socio-economic benefits.

11.33 Different types of NSIPs have different and variable characteristics in relation to BNG. **The proposed system of biodiversity gain statements allows for variation between the biodiversity gain objectives that different project types can set, as well as the detail of the mechanisms to achieve it.** This means that solar farm NSIPs, with or without battery storage, could set a higher biodiversity gain objective, which could be a positive step towards the Government's objectives as set out in the EIP23. Conversely, maintaining a lower objective and allowing potential promoters of solar farm NSIPs, with or without battery storage, to use excess units to provide offsetting could support other NSIPs or TCPA90 development in achieving net gain.

11.34 Whilst LPAs are central to setting the policy framework for enhanced BNG provision (in excess of the mandatory 10%) through local development plan policies for TCPA90 development as TCPA90 development must be determined in accordance with the local development plan, unless material considerations dictate otherwise, local planning policies are only a material consideration of varying weight when the relevant Secretary of State is determining development consent for an NSIP. **There is a need for greater clarity in national planning policy for NSIPs to support local host authorities and NSIP promoters seeking to justify the additional cost and value for money to the local economy, environment and health and wellbeing of host communities of delivering greater than the mandatory biodiversity objective for NSIPs**.

11.35 **Future national planning policy and guidance should be clearer on the expectation of delivering BNG for NSIPs, including greater than the mandatory biodiversity objective.** This is especially relevant where there are BNG policies in local development plans requiring greater than 10% BNG for TCPA90 development. This study has highlighted how challenging it is for promoters of some NSIPs to assess the cost and justify value for money to government bodies and other regulators of delivering beyond 10% BNG for NSIPs.

The role for Essex CC across TCPA90 development and PA 2008 NSIPs

11.36 Essex CC has a potentially important role in enabling discussion and resolving key challenges to BNG delivery in Essex for both TCPA90 development and PA2008 NSIPs, which could influence national policy and guidance and set precedent for both planning regimes. This could include:

- **understanding the predicted scale of need for biodiversity units to facilitate TCPA90 development and NSIPs across the county** where this cannot be provided onsite, in particular in relation to specific habitat types, and the timing of demand;

- **a study of the potential availability of land in Essex for offsetting** could provide assurance as to whether the supply is likely to be sufficient to meet the demands of TCPA90 development and NSIPs. A study at the county-level geography would be particularly advantageous for the developers of major TCPA90 development and NSIP promoters who require larger or multiple sites for offsetting, as well as providing a more comprehensive understanding of the county's potential offsetting resources;

- identifying **opportunities within the Local Nature Recovery Strategies to integrate the offsetting demands of NSIPs** and for NSIPs to support the delivery of the LNRS;

- **identifying key local priorities** for biodiversity enhancement from TCPA90 development and NSIPs which will be largely delivered through the LNRS; and

- **identifying priorities where offsetting investment can deliver additional value** to the local economy, environment and health and wellbeing of local communities, such as access to nature, recreation, tourism, active travel and other ecosystem services, through a comparative analysis of needs and benefit opportunities.

Overall conclusion and implications

11.37 In summary, the additional costs to achieve 20% BNG is a relatively small percentage of overall cost, for both TCPA90 development and NSIPs in Essex.

11.38 There is a huge potential for NSIPs to provide a significant amount of BNG in Essex due to their size and scale, and the large number of NSIPs proposed. Whilst NSIPs can provide some level of BNG onsite, most of them have a shortfall and BNG will have to be delivered offsite through the purchase of biodiversity units. N2T has demonstrated that NSIPs will generate a high demand for biodiversity units in Essex that will continue to grow as Essex continues to host increasing numbers of NSIPs. This demand could further intensify if national policy and guidance require a biodiversity objective in excess of 10% for NSIPs and / or if local development plans were to include policies requiring all development to deliver BNG in excess of the 10% mandatory for TCPA90 development.

11.39 This study indicates that the cost of purchasing biodiversity units for offsetting can vary widely and, notably, statutory credits could double the cost of BNG provision compared with the use of local biodiversity units. This variability in costs necessitates careful consideration and strategic planning to ensure that there is sufficient availability of local biodiversity units in Essex at a reasonable price.

11.40 This study has shown that NSIP promoters are concerned that high demand for biodiversity units could inflate costs, potentially forcing them to purchase more expensive statutory credits. Conversely, landowners are worried that an oversupply of biodiversity units could lower their value, reducing the economic incentives for providing these units.

11.41 These contrasting concerns highlight the need for a balanced approach to managing the demand and supply of biodiversity units. The public sector, primarily host local authorities, could play a crucial role in analysing and coordinating the expected demand and supply of biodiversity units within local geographies. This balance is essential to avoid significant cost fluctuations of the biodiversity units that can negatively impact the viability of both TCPA90 development and NSIPs.

11.42 Assuming an adequate supply of biodiversity units to keep costs at or below the £25,000 figure used in this report, adopting 20% BNG policy across Essex would not have a significant impact on the financial viability of TCPA90 development.

11.43 The ability of NSIP promoters to deliver beyond any mandatory biodiversity objective will depend on a number of factors individual to the promoter, type and location of NSIP. The use of N2T as a case study has demonstrated that the lack of national policy and guidance on delivering beyond the anticipated mandatory 10% BNG for consumer funded NSIPs makes this particularly challenging to justify to the energy regulator, Ofgem, who require energy infrastructure to demonstrate (amongst other considerations) value for money to the public. The absence of local planning policy requiring all development to deliver greater than the mandatory 10% BNG set for TCPA90 developments makes quantifying and qualifying BNG as value for money to the local economy, environment and health and wellbeing of host communities a challenge for all NSIPs. The uncertainty around the supply and cost of biodiversity units available for offsetting across Essex to meet the demand for BNG further complicates delivery.

Annex A: Review of Local Authority Housing Policies

Annex B: BNG technical note

Annex C: Property market report

Annex D: Residential testing example appraisal and sensitivity testing

Annex E: Commercial testing sensitivity testing

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