

Thames, Medway and Swale Estuaries – Strategic Access and Recreation Management Plan (SARMP)

		Activity specific?	Activities relevant	Likely Effectiveness	Practicality of delivery	Scale of measure	Mechanisms for delivery	Time to implement	Potential for phased delivery	Capital Costs	Maintenance Costs (annual/phased)	Notes
1a	New Habitat Creation	No		Likely to work but limited evidence	Some difficulties	Very local /site specific	Local landowner/stakeholder/Developer	Single one-off event	No	£10k - £100k	<£50k	Unlikely to be an option within European site boundaries as already designated. Creating habitat outside the sites a positive measure, but not acceptable if proposed as mitigation to offset harm to the designated site. Dependent on suitable locations with no disturbance; likely to be a very limited range of locations where could be implemented
1b	Habitat management	No		Effectiveness dependent on location and specific circumstances	Some difficulties	Very local /site specific	Local landowner	Requires continuous input	No	negligible	£?	Habitat management within the European sites is necessary to achieve favourable condition and taking place anyway. Habitat management outside the designated sites may provide some opportunities, but dependent on circumstances.
2a	Locate development away from sensitive sites	No		Good evidence that can work	Highly complex to deliver	Sub-regional	Local authority	Single one-off event	No	negligible	negligible	Distance at which development would have to be limited would be considerable and may be unworkable for many local authorities
2b	Management of visitor flows on adjacent land	Yes	General Shorebased	Likely to work but limited evidence	Straight forward & easy to implement	Very local /site specific	Directly linked to developer/local authority	Single one-off event	Yes - but over 5 years or less	£10k - £100k	<£50k	Depends very much on site specific details and opportunities available.
2c	Provision of alternative sites for recreation "SANGs"	Yes	General Shorebased	Effectiveness dependent on location and specific circumstances	Highly complex to deliver	Sub-regional /local	Strategic/partnership working	Single one-off event	No	>£1m	<£50k	large, carefully positioned sites only likelihood of success; 20ha site - land value could be around £1m; capital costs would also need to include landscaping, planting etc.; maintenance costs around £1500 per ha p.a. Very much dependent on opportunities. Inland SANGs may not attract shore users
2d	Provision of designated facilities for watersports outside SPA	Yes	Watersports	Effectiveness dependent on location and specific circumstances	Some difficulties	Sub-regional	Strategic/partnership working	Single one-off event	Yes - but over 5 years or less	£100k - £1m	<£50k	Many activities such as kite surfing rely on specific conditions - wind, tide etc. that mean limited options. Most applicable for jet skis and small craft from trailers.
2e	Enhance access facilities in general area	No		Effectiveness dependent on location and specific	Some difficulties	Sub-regional /local	Strategic/partnership working	Single one-off event	Yes - over many years	£10k - £1	<£50k	Costs, ease and details depend on the enhancement, location etc.

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	(away from SPA)			circumstances		I				00 k		
3a	Restricted access to parts of site	No		Likely to work but limited evidence	Some difficulties	Very local /site specific	Local landowner/stakeholder/Developer	Single one-off event	No	£10k - £100k	<£50k	Difficult on sites with rights of access
3b	Provide dedicated fenced dog exercise areas	Yes	Dogs/dog walking	Unsure/limited effectiveness	Straight forward & easy to implement	Very local /site specific	Local landowner/stakeholder/Developer	Single one-off event	No	£10k - £100k	<£50k	May draw dog walkers from wide area, therefore probably not effective if on edge of SPA. Likely to be effective only if off site or combined with other measures - i.e. Dogs then subsequently required to be on leads
3c	Zoning	Yes	Most applicable to watersports	Likely to work but limited evidence	Some difficulties	Local	Local authority/Strategic/partnership working	Single one-off event	No	£10k - £100k	<£50k	Single zones could be very local and site specific. Zoning for some watersports could alternatively be established at a broad scale. Would need to be combined with codes of conduct/enforcement etc
3d	Infrastructure to screen, hide or protect the nature conservation interest	Yes	Most applicable to General Shorebased	Effectiveness dependent on location and specific circumstances	Straight forward & easy to implement	Very local /site specific	Local landowner/stakeholder/Developer	Single one-off event	Yes - but over 5 years or less	£10k - £100k	<£50k	Different types of screening likely to work better in different locations.
3e	Management of car-parking	No		Likely to work but limited evidence	Some difficulties	Sub-regional /local	Local landowner/stakeholder/Developer	Single one-off event	Yes - but over 5 years or less	£10k - £100k	<£50k	May be unpalatable/unpopular. Reduction in spaces likely to work better than full closure. Parking charges may even help to cover costs. Dependent on organisations involved working together and agreeing charges
3f	Path design and management	No	Most applicable to General	Effectiveness dependent on location and specific	Straight forward & easy to	Local	Local landowner/stakeholder/Developer	Single one-off event	Yes	£10k - £1	<£50k	Marked routes can provide means to funnel access away from particular areas. Depends on opportunities at site/general area. Resurfacing and modifying particular routes or part of routes may provide opportunities at very local level

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			Shorebased	circumstances	implemented					00k		
4a	Signs, interpretation and leaflets	No		Unsure/limited effectiveness	Straight forward & easy to implement	Sub-regional/local	Strategic/partnership working	Single one-off event	No	<£10k	<£50k	Difficult to have much confidence of success. May raise awareness of disturbance.
4b	Voluntary codes of conduct developed with local user groups/users	Yes	Watersports/bait digging and others	Likely to work but limited evidence	Straight forward & easy to implement	Sub-regional	Strategic/partnership working	Single one-off event	No	negligible	<£50k	Intensive work to establish, set up and only likely to be effective where good link with users can be established and where scope to develop codes of conduct that resolve issues and do not inhibit users
4c	Wardening (with an education/communication role)	No		Unsure/limited effectiveness	Straight forward & easy to implement	Sub-regional/local	Strategic/partnership working	Requires continuous input	No	negligible	£50k - £500k	Wardens showing people wildlife but not actually asking people to behave differently. May have some success but unlikely to be effective with many user groups. Most likely to work if wardens in an engagement role, talking directly to users about activities and use of site etc.
4d	Provision of information off-site to local residents and users	No		Unsure/limited effectiveness	Straight forward & easy to implement	Sub-regional/local	Strategic/partnership working	Requires continuous input	Yes - over many years	<£10k	£50k - £500k	Labour intensive. Potentially beneficial in terms of local support/awareness for nature conservation, but may have little or no success in reducing disturbance.
4e	Contact with relevant local clubs	Yes	Watersports	Unsure/limited effectiveness	Straight forward & easy to implement	Sub-regional/local	Strategic/partnership working/ Local landowner/stakeholder/Developer	Requires continuous input	Yes - over many years	£10k - £100k	<£50k	Requires staff input to maintain dialogue and connection with clubs. Most likely to work where there is an active local group and potential to enforce further restrictions if self-policing doesn't work.
5a	Covenants regarding keeping of pets in new developments	Yes	Dog walking	Unsure/limited effectiveness	Some difficulties	Very local/site specific	Directly linked to developer	Single one-off event	Yes - over many years	<£10k	negligible	Impossible to be confident of effectiveness in perpetuity. Maintenance costs may need to be high to check and enforce

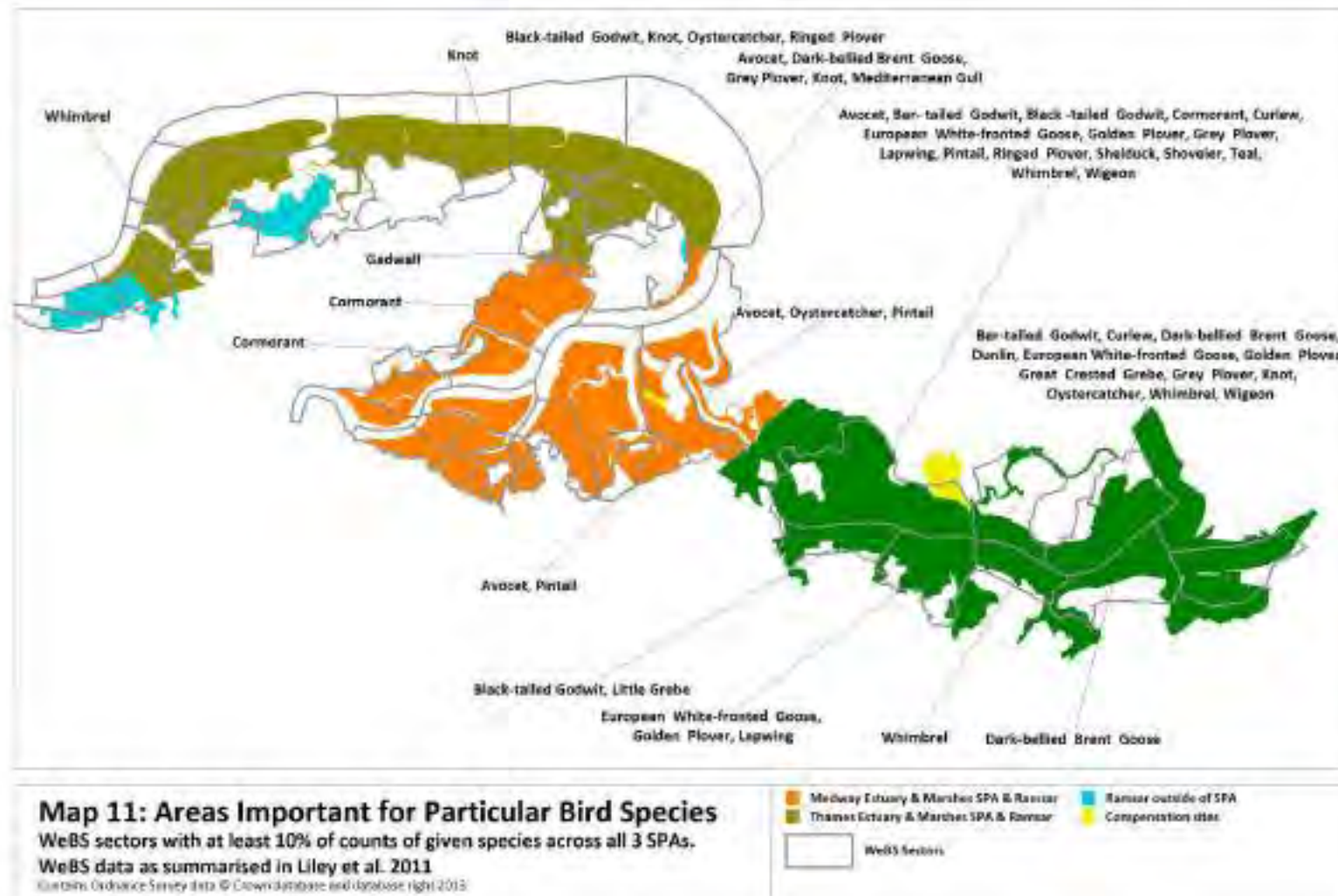
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5b	Legal enforcement	No		Likely to work but limited evidence	Some difficulties	Local	Legal framework needs to be established by local authority or other body with appropriate powers	Requires continuous input	No	£10k - £100k	<£50k	Byelaws may take some time to establish and potentially evidence base necessary to establish need
5c	Wardens on site to ask people to behave differently	No		Good evidence that can work	Straight forward & easy to implement	Sub-regional /local	Strategic/partnership working	Requires continuous input	No	<£10k	£50k - £500k	Presence of wardens costly but wardening is possible over wide area/multiple sites. Possibly more effective if wardens are able to enforce.
5d	Limiting visitor numbers	No		Likely to work but limited evidence	Some difficulties	Very local /site specific	Local landowner/stakeholder/Developer		No	<£10k	<£50k	Possible at nature reserves or sites where management of access formalised and in place, can only work where no legal right of access

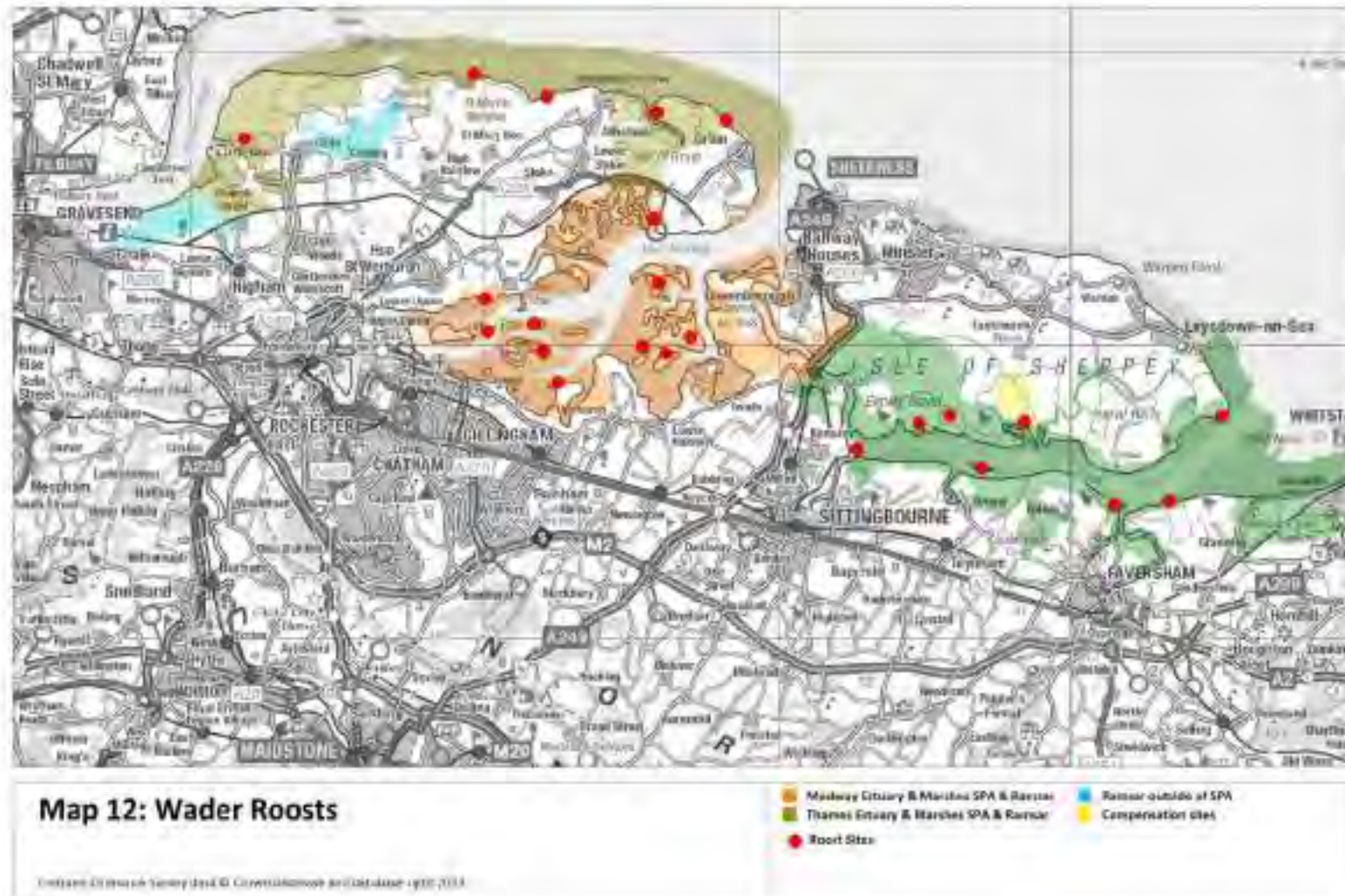
13. Appendix 6: Spatial Context: Identifying areas that should be a focus for the strategy

- 13.1 Map 11 shows WeBS sectors and those with at least 10% of the mean peak count for the period 1988-2010 for each species across all three SPAs. This allows us to highlight WeBS sectors that are particularly important for given species. A problem with this approach is that the WeBS sectors vary in size and the WeBS counts are high tide counts and therefore do not necessarily reflect the distribution of the birds at other tide states. The map will also not necessarily indicate areas where bird declines have already taken place. The map is however useful in summarising where birds can be concentrated, but other information is important too.
- 13.2 We therefore show roost sites in Map 12. The wader roost locations are extracted from the bird disturbance study. In Map 13 we show the priority habitats within the SPAs. The mudflats (grey) provide the main feeding areas for many species at low tide. The coastal grassland also will provide some important feeding areas for some species (such as golden plover and lapwing). The saline lagoons are used by some breeding species – such as avocets and terns – and also provide important roost and loafing areas for the wintering bird interest. While the intertidal habitat and wet grassland habitats are widely distributed, saline lagoons are more limited in distribution, with Cliffe and Oare Marshes being the main locations.
- 13.3 Visitor data indicates that most visitors live within 6km of the locations where interviewed. Identifying areas that have high levels of new housing within 6km provides a simple way of identifying areas that are most likely to see a change in access. In Map 14 we show these data, and it highlights that the most change will be around the Medway Estuary. The western part of the study area – towards Gravesend – and the Isle of Sheppey are also areas that appear likely to change in access levels.
- 13.4 In considering changes in access it is also important to consider which locations already have high levels of access and which have relatively low levels of access. In Map 15 we show comparative scores (scoring by local experts) that show relative levels of access. It can be seen that the Medway and the area towards Whitstable are the busiest areas currently. Some of the areas with the low scores for access have limited access to the shore. Access infrastructure – such as parking, jetties, slipways etc. are largely focused in the Medway and towards Whitstable (Map 16).

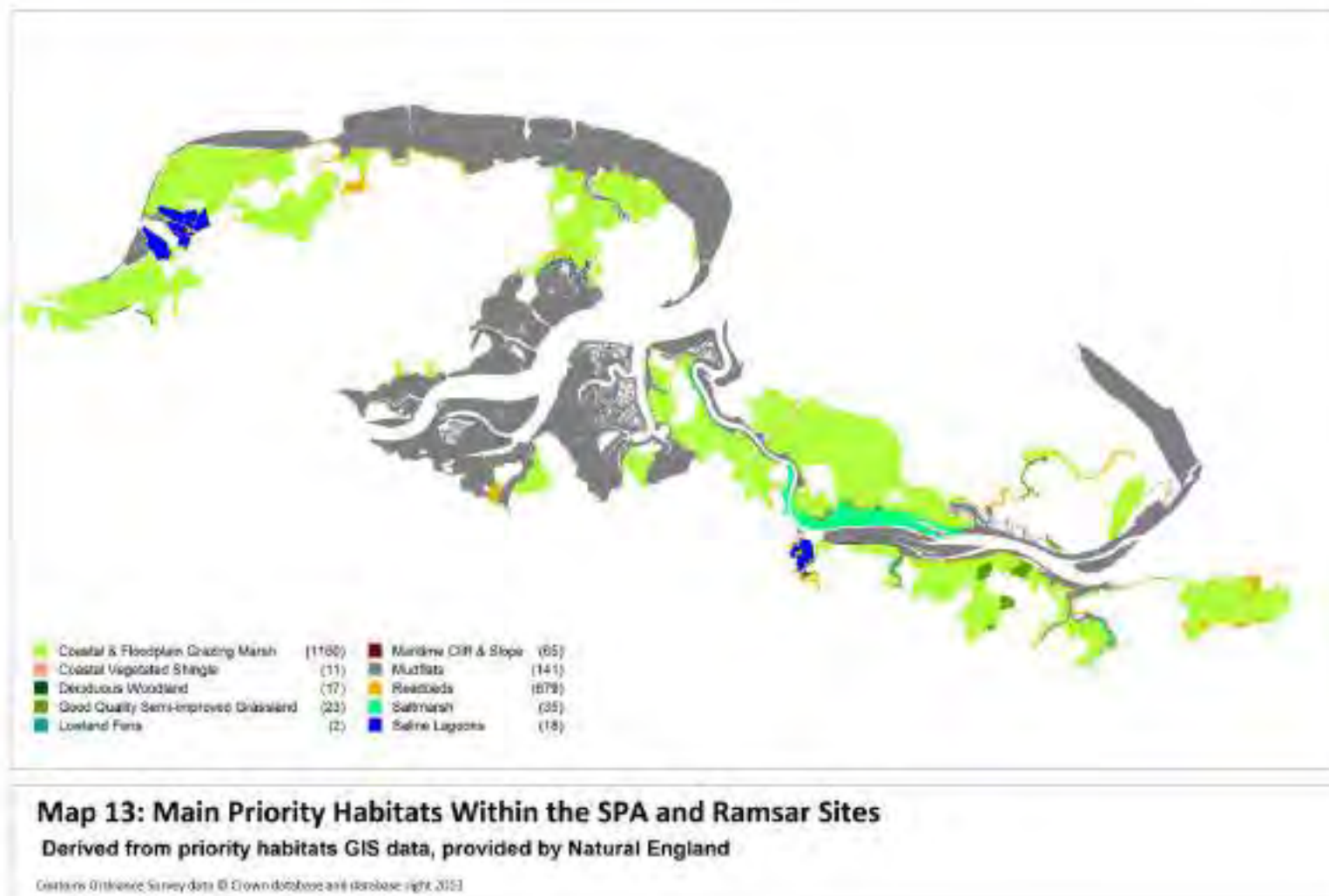
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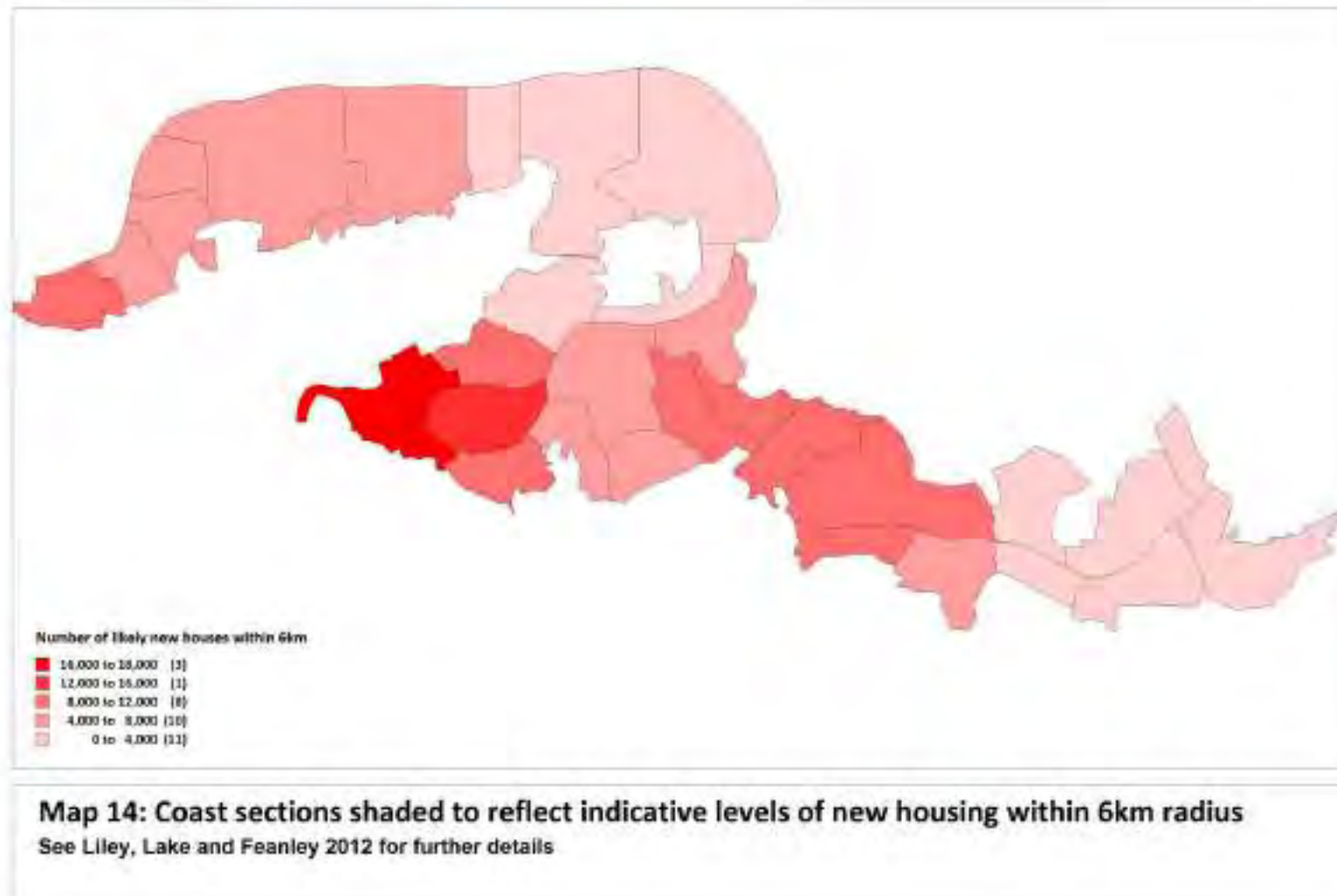
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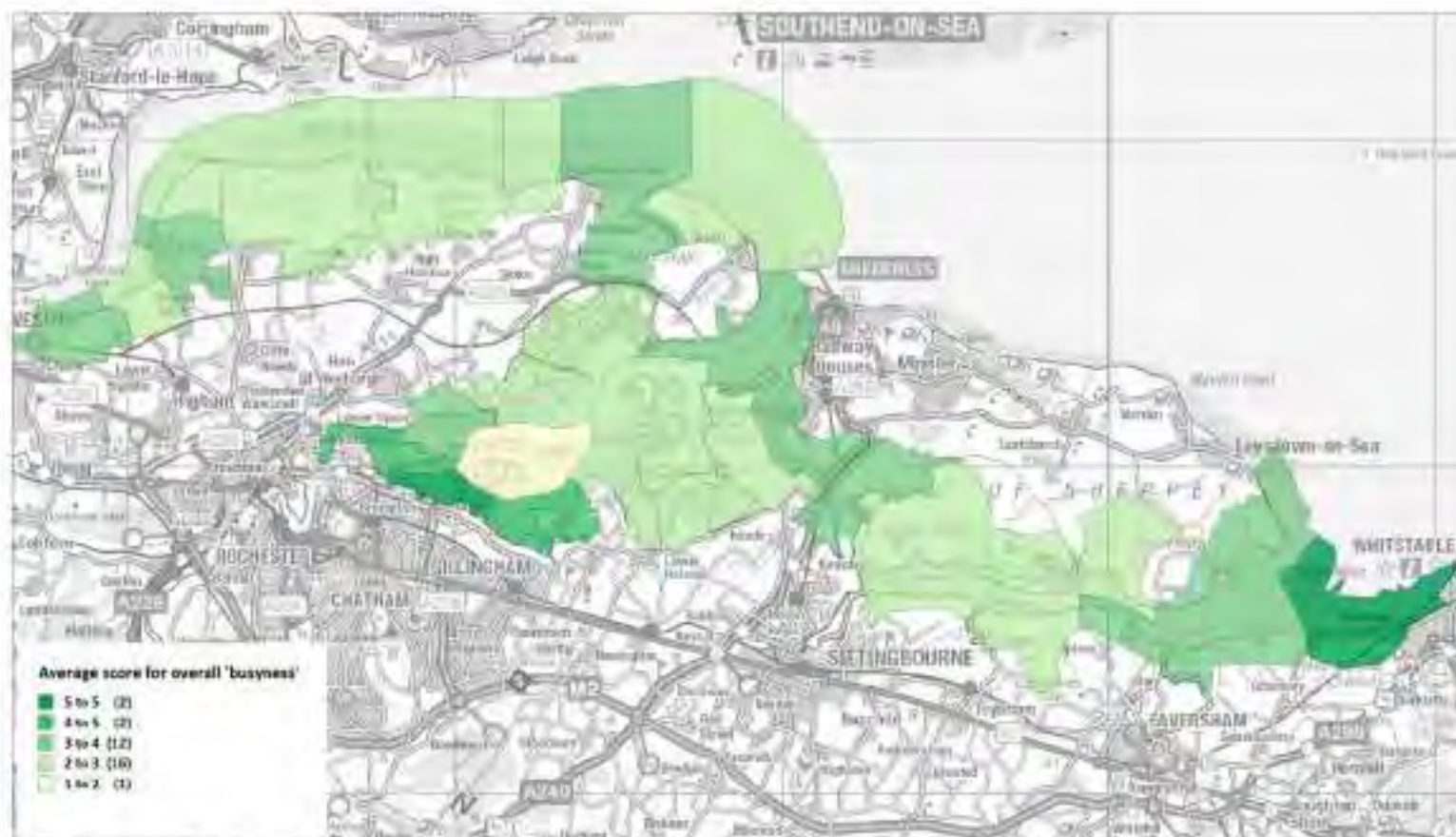
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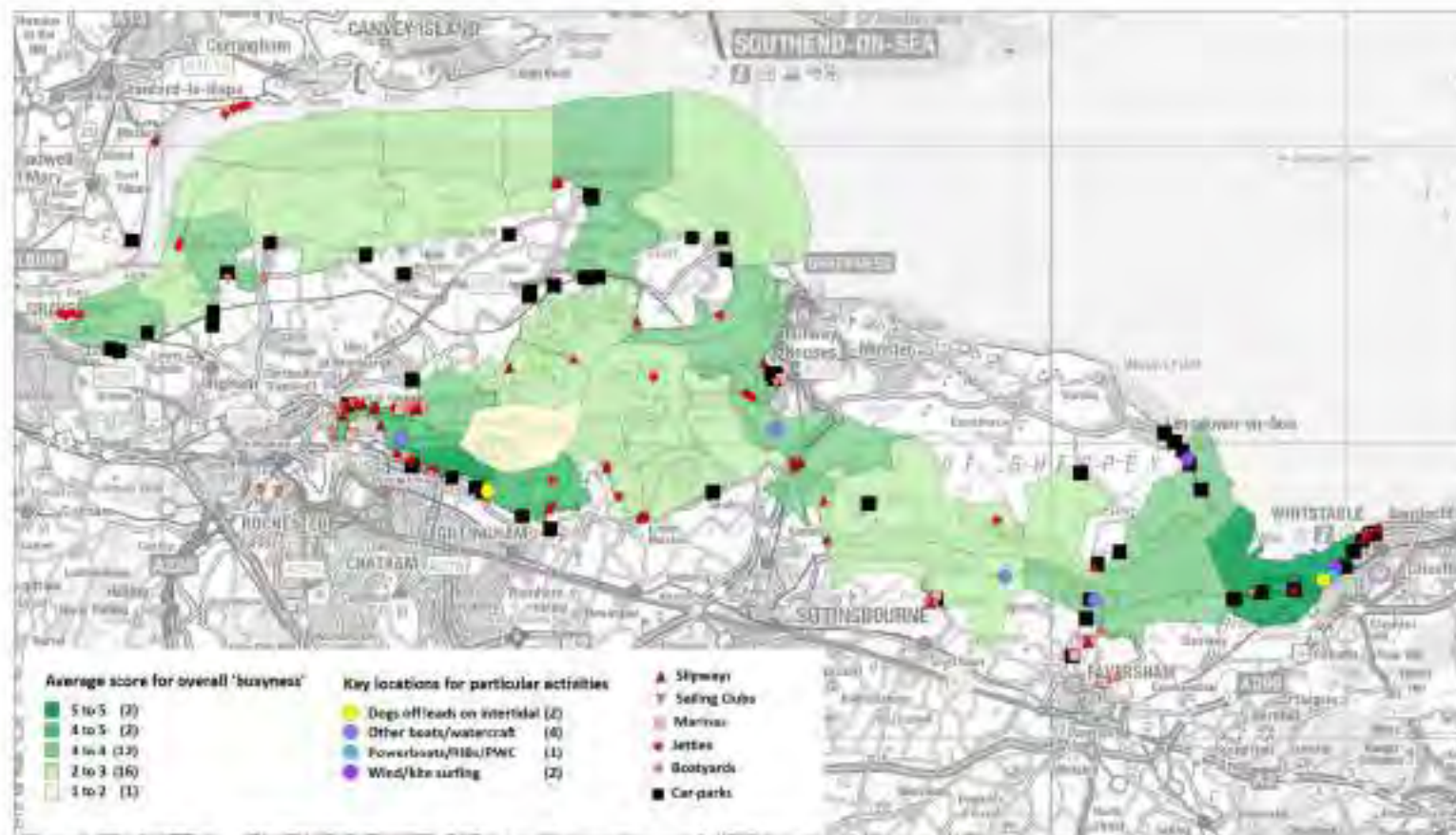
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Map 15: Levels of Current Access (from Fearnley & Liley 2012)

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Map 16: Levels of Current Access (see Map 14), Access Infrastructure and Key Locations for Particular Activities

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14. Appendix 7: Summary Map and Tables for Elements of the Plan

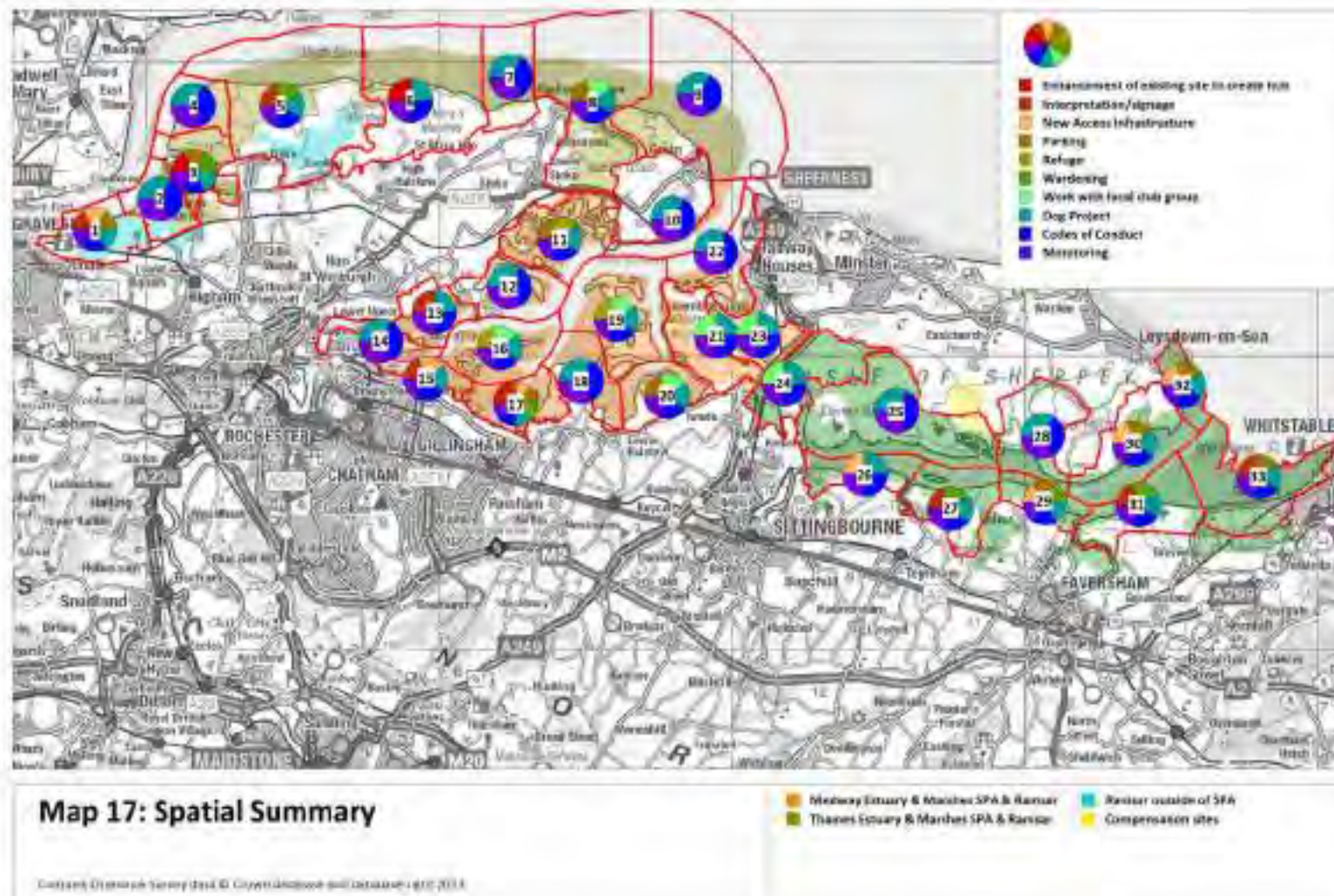
Summary of strategy elements by section. Sections are those used in Maps 14-16. See also Map 17 which shows each section and pie charts coloured to reflect measures within each. Within the table the number of new houses within 6km are the data in Map 14 (see Liley, Lake & Fearnley 2012 for details) and the score for 'busyness' is from Map 15 and reflects a score of 1 (quiet) to 5 (high general levels of access) (see Fearnley & Liley 2012). In all cases the ticks are indicative, additional areas or changes to locations are likely. The dog project, codes of conduct and monitoring are all elements that are generic and therefore difficult to map. Enforcement is an option that can be phased and used when other options fail, hence the brackets.

Map Ref (See Map 17)	LPA	No. of New Houses Within 6km	Score reflecting Current 'Busyness'	Enhancement of existing site to create hub	Interpretation/signage	New Access Infrastructure	Parking	Refuge	Wardening	Work with local club/group	Dog Project	Codes of Conduct	Monitoring	Enforcement
1	Gravesham	9349	3		✓	✓	✓				✓	✓	✓	(✓)
2	Gravesham	7320	2								✓	✓	✓	(✓)
3	Gravesham & Medway	6752	3	✓			✓		✓		✓	✓	✓	(✓)
4	Medway	5018	2								✓	✓	✓	(✓)
5	Medway	6534	2		✓				✓		✓	✓	✓	(✓)
6	Medway	6504	2	✓							✓	✓	✓	(✓)
7	Medway	183	2								✓	✓	✓	(✓)
8	Medway	166	3				✓			✓	✓	✓	✓	(✓)
9	Medway	3834	2								✓	✓	✓	(✓)
10	Medway	3874	3								✓	✓	✓	(✓)
11	Medway	3375	2				✓	✓			✓	✓	✓	(✓)
12	Medway	8951	2								✓	✓	✓	(✓)
13	Medway	16582	3		✓						✓	✓	✓	(✓)
14	Medway	17181	4								✓	✓	✓	(✓)
15	Medway	17155	5		✓	✓					✓	✓	✓	(✓)

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Map Ref (See Map 17)	LPA	No. of New Houses Within 6km	Score reflecting Current 'Busyness'	Enhancement of existing site to create hub	Interpretation/signage	New Access Infrastructure	Parking	Refuge	Wardening	Work with local club/group	Dog Project	Codes of Conduct	Monitoring	Enforcement
16	Medway	15029	1					✓		✓	✓	✓	✓	(✓)
17	Medway	8461	4	✓	✓	✓	✓		✓		✓	✓	✓	(✓)
18	Swale	6282	2								✓	✓	✓	(✓)
19	Swale	5256	2					✓		✓	✓	✓	✓	(✓)
20	Swale	6899	2				✓			✓	✓	✓	✓	(✓)
21	Swale	8426	2							✓	✓	✓	✓	(✓)
22	Swale	5173	3								✓	✓	✓	(✓)
23	Swale	8393	3							✓	✓	✓	✓	(✓)
24	Swale	9044	3							✓	✓	✓	✓	(✓)
25	Swale	9503	2								✓	✓	✓	(✓)
26	Swale	8985	2			✓					✓	✓	✓	(✓)
27	Swale	5225	2		✓				✓		✓	✓	✓	(✓)
28	Swale	2133	2								✓	✓	✓	(✓)
29	Swale	1006	3			✓	✓		✓		✓	✓	✓	(✓)
30	Swale	1414	3			✓	✓				✓	✓	✓	(✓)
31	Swale	2009	3		✓				✓		✓	✓	✓	(✓)
32	Swale	1282	3			✓	✓				✓	✓	✓	(✓)
33	Canterbury	3610	5		✓		✓				✓	✓	✓	(✓)

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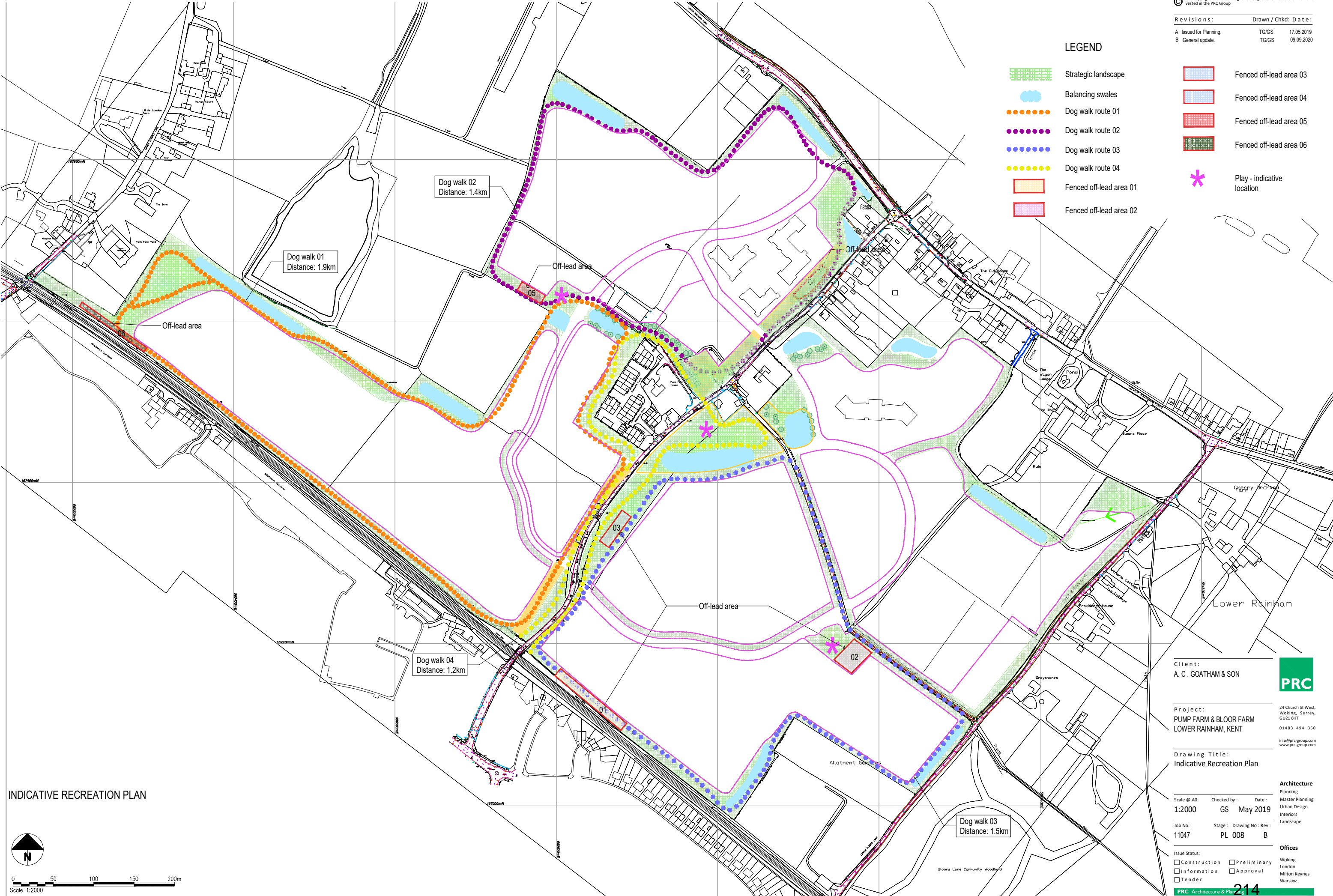


APPENDIX 2

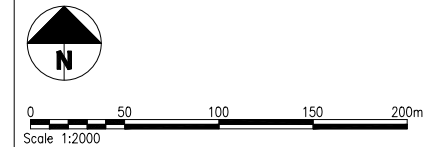
Indicative Recreation Plan (PRC Architecture and Planning)

LEGEND

- | | | | |
|--|-------------------------|--|----------------------------|
| | Strategic landscape | | Fenced off-lead area 03 |
| | Balancing swales | | Fenced off-lead area 04 |
| | Dog walk route 01 | | Fenced off-lead area 05 |
| | Dog walk route 02 | | Fenced off-lead area 06 |
| | Dog walk route 03 | | Play - indicative location |
| | Dog walk route 04 | | |
| | Fenced off-lead area 01 | | |
| | Fenced off-lead area 02 | | |



INDICATIVE RECREATION PLAN



Client:
A. C. GOATHAM & SON



Project:
PUMP FARM & BLOOR FARM
LOWER RAINHAM, KENT

24 Church St West,
Woking, Surrey,
GU21 6HT
01483 494 350

info@prc-group.com
www.prc-group.com

Drawing Title:
Indicative Recreation Plan

Scale @ A0: 1:2000
Checked by: GS
Date: May 2019

Job No: 11047
Stage: PL 008
Drawing No: B

Issue Status:
☐ Construction
☐ Information
☐ Tender
☐ Preliminary
☐ Approval

Architecture
Planning
Master Planning
Urban Design
Interiors
Landscape

Offices
Woking
London
Milton Keynes
Warsaw

APPENDIX 3

Bespoke Wardening Package

Land at Lower Rainham Road - Bespoke Wardening Package

1. Key Details

		Rationale / Justification
Role	Seasonal Warden / Ranger	<p>The role of the seasonal warden / ranger would essentially align with that of the North Kent SAMMS / BirdWise seasonal rangers (funded by strategic contributions), but would act in with more targeted geographical focus (see below).</p> <p>The seasonal warden / ranger's responsibilities are anticipated to include but not be limited to: actively patrolling sensitive areas (specifically Riverside Country Park in addition to other known areas of sensitivity in the locality of the site), engaging with visitors; putting up seasonal signs, fences etc.; familiarisation with the area and identification of disturbance issues; putting in place mitigation measures to remove sources of disturbance (such as illegal motor biking) or reducing disturbance from legitimate users (education, signs, screening etc.; liaison with local communities, landowners and land managers and other organisations; education initiatives with local schools etc.; monitoring impacts from human activities and the effectiveness of mitigation measures</p>
Type of Role	Part-time: August to March inclusive	Winter is the key period for adverse effects from recreational disturbance to qualifying species at the European designated site. The strategic approach as outlined in the SAMM Strategy involves seasonal wardens covering this period only; and the bespoke proposal would mirror coverage over this sensitive period
Geographical Scope	Riverside Country Park and Medway Estuary Sites	Primary focus for the additional warden / ranger would be the Riverside Country Park and Medway Estuary - i.e. all of those sites in closest proximity to the development site. This would either be in addition to the BirdWise ranger that covers this area (to double the likelihood of visitors being 'captured' in the various tasks), or alternatively would effectively free them up to visit other key locations, as deemed most appropriate
Cost	See 'Detailed Breakdown' worksheet - total cost of £198K	The annual cost of the seasonal ranger / warden is close to the costs as identified in the SAMM Strategy report (Footprint Ecology) of £20K per year for each seasonal ranger /warden, which underpins the costings for the strategic approach. The SAMM Strategy notes that the £20K figure is ' <i>inclusive of office and vehicle costs</i> ', and so it is considered that the detailed figures presented are appropriate and realistic as a total figure for an additional warden / ranger
Length of Role	10 Years	<p>In accordance with the approach set out in the SAMM Strategy, it is considered that a seasonal warden would not be required in perpetuity, as their role is educational and seeks to ensure that when new residents visit the site, they are aware of the key sensitivities, such that access patterns which could cause disturbance (such as dog walking off the lead) are minimised. In terms of dealing with potential effects beyond this stage - i.e. in perpetuity - this would be addressed via the financial contribution which the scheme is already committed to contributing towards (over £300K).</p> <p>This proposal is supported by information set out in the SAMM Strategy, which notes that seasonal ranger posts "<i>may not be required in perpetuity. This is because once access patterns have become established in particular ways that reduce disturbance (such as dogs on leads at particular sites) then there may no longer be a need for staffing to continue at such a level</i>".</p> <p>With regard to the length of time that seasonal wardening may be required, the SAMM strategy states that after eight to ten years the level of seasonal wardening would be reviewed. For this project, the time between occupation of the first new dwelling at the site (assuming grant of planning consent) and occupation of the last new dwelling is also estimated to be circa 10 years.</p> <p>As such, the bespoke wardening proposal would ensure that the seasonal warden / ranger would be in place throughout the entire 10 year period when new residents are moving into the new development to provide education, promote good visitor practices and discourage potentially harmful visitor behaviours before patterns are set.</p>

Land at Lower Rainham Road - Bespoke Wardening Package

Detailed Cost Breakdown

	Est. annual cost	One off cost	Cost over 10 years
Staff cost			
Seasonal Warden / Ranger salary ¹	£ 16,000.00		£ 160,000.00
Employers NI	£ 1,016.78		£ 10,167.80
² LPA Administration			£ 2,000.00
General Equipment			
Laptop and associated equipment		£ 600.00	
Computer: Programmes / Licenses (e.g. Office Home / Business, PDF)		£ 350.00	
Maps / stationery		£ 150.00	
Field Equipment			
Waterproof clothing		£ 150.00	
Boots		£ 100.00	
Rucksack		£ 50.00	
Binoculars		£ 700.00	
³ Mileage fund for personal vehicle use	£ 1,440.00		£ 14,400.00
Sub totals		£ 2,100.00	£ 186,567.80
Project subtotal			£ 188,667.80
Contingency @ 5% of project value over 10 years (to take into account inflation)			£ 9,433.39
Project total			£ 198,101.19

¹ based upon a 30hr working week over 8 months (August to March inclusive)

² To cover insurance uplifts and other administrative costs for post

³ Based on 100 miles per week @ £0.45 / mile



ECOLOGYSOLUTIONS

Part of the ES Group

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ANNEX 11

DAS Letter from Perdeep Maan (Natural England) to
Simon Taber (Ecology Solutions) dated 16
November 2020

Date: 16 November 2020
Our ref: DAS/323244
Your ref: 14125



Simon Taber
Ecology Solutions,
Farncombe House,
Farncombe Estate,
Broadway, Worcester,
WR12 7LJ

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

BY EMAIL ONLY

0300 060 3900

Dear Simon Taber

Discretionary Advice Service (Charged Advice)

DAS/14124/275569

Development proposal and location: Proposed residential development on land at Pump Farm and Bloors Farm, Lower Rainham, Kent.

Thank you for your consultation on the above dated 24 July 2020, which was received on the same date.

This advice is being provided as part of Natural England's Discretionary Advice Service. Ecology Solutions has asked Natural England to provide advice upon:

- The ecological mitigation plan
- The bespoke wardening package

This advice is provided in accordance with the Quotation and Agreement dated 31/07/2020.

The following advice is based upon the information within:

1. 8252 Bespoke Warden Package.vf (23/07/2020)
2. Conference Call dated 14/08/2020 attended Simon Taber and Perdeep Maan
3. Letter from Tim Goodwin (18/08/2020)
4. 8252: Land at Pump Farm and Bloors Farm, Lower Rainham, Kent Technical Note: European Sites Avoidance and Mitigation Strategy (26/10/20)

Due to the proximity of the proposed development to protected sites (Medway Estuary and Marshes Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar Site) a bespoke wardening package and alternative greenspace provision have been proposed in addition to financial contributions to the Thames, Medway and Swale Estuaries Strategic Access Management and Monitoring Strategy (SAMMS).

Greenspace measures

My advice is that the greenspace measures being proposed on the development site, in recognition of the development's proximity to the coast, provide sufficient mitigation. The recreational green spaces that are to be provided on-site are reasonable and their design has taken into account the responses from the visitor surveys. Therefore, my advice is that Natural England will be satisfied with the provision of on-site green space.

The circular walks and fenced off dog park areas proposed by the developer provide adequate facilities for residents.

Bespoke Wardening Package

The proposed mitigation also includes provision of an additional bespoke wardening strategy, with a bespoke warden in place for a 10-year period. I advise that Natural England will be satisfied with this additional measure. However, I recommend that the proposal is discussed with Birdwise to discuss how the wardening will work with and complement the activities of the project.

To further help this, I have made initial contact with the Birdwise Project. Their initial advice is that integrating the two projects will prevent confusion among visitors receiving the same messages from two separate projects. Additionally, the Birdwise project is to be delivered in perpetuity, and therefore if additional measures are delivered through Birdwise, they can be maintained through the project, safeguarding the messages and work.

I advise, however, that we are concerned that the ongoing impacts of the development beyond the 10-year bespoke wardening period will need to be mitigated. In order to address this, I suggest an enhanced and proportionate SAMMs contribution is made. I recommend that this is discussed with the Birdwise Project to ensure an appropriate contribution is secured. This contribution will allow for the continuation of the achievements made by the bespoke wardening package after the 10-year wardening period.

I am happy to provide further advice once you have had the opportunity to have this discussion with the Birdwise Project.

Senior adviser to QA letter and check box below

☒ The advice provided in this letter has been through Natural England's Quality Assurance process

The advice provided within the Discretionary Advice Service is the professional advice of the Natural England adviser named below. It is the best advice that can be given based on the information provided so far. Its quality and detail is dependent upon the quality and depth of the information which has been provided. It does not constitute a statutory response or decision, which will be made by Natural England acting corporately in its role as statutory consultee to the competent authority after an application has been submitted. The advice given is therefore not binding in any way and is provided without prejudice to the consideration of any statutory consultation response or decision which may be made by Natural England in due course. The final judgement on any proposals by Natural England is reserved until an application is made and will be made on the information then available, including any modifications to the proposal made after receipt of discretionary advice. All pre-application advice is subject to review and revision in the light of changes in relevant considerations, including changes in relation to the facts, scientific knowledge/evidence, policy, guidance or law. Natural England will not accept any liability for the accuracy, adequacy or completeness of, nor will any express or implied warranty be given for, the advice. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of Natural England.

Yours faithfully,

Perdeep Maan
Sussex and Kent

Cc commercialservices@naturalengland.org.uk

ANNEX 12

Email from Tim Goodwin (Ecology Solutions) to
Perdeep Maan (Natural England) dated 20
November 2020

Jodie Dixon

From: Vicky Locke
Sent: 20 November 2020 13:26
To: Maan, Perdeep
Cc: Seymour, James; Tim Goodwin; Simon Taber; Jodie Dixon
Subject: RE: Lower Rainham Road, Medway, Kent - European Sites Avoidance and Mitigation Strategy (8252)

Importance: High

Dear Perdeep

Further to your advice set out in your letter dated 16 November 2020 to Simon Taber, while we are very grateful for you confirming that the bespoke package of measures that we have put together for this scheme are acceptable to Natural England, you asked if we could liaise directly with Birdwise to discuss the integration of our proposed warden as part of their strategic avoidance and mitigation programme. You also asked if we could liaise with Birdwise on an appropriate overpayment against the SAMM tariff in order to take into account that the warden that we are proposing is funded for 10 years.

Following your advice we have engaged directly with Birdwise to seek further clarity on the two points above, however, they have made it very clear that they do not wish to comment or be involved in individual planning applications. On that basis, unfortunately we have not been able to progress those matters as you thought might be possible.

With regard to the integration of a new warden this appears to be a matter of logistics and not of substance in terms of the relevant tests set out in the legislation. No doubt those logistics can be discussed when and if planning permission for the scheme was granted.

With regard to any enhanced SAMM payment and being mindful that the Inspector at the Appeal will of course be looking for a very clear steer in terms of the position regarding European designated site mitigation and particularly Natural England's position, we would be grateful if you could review the offer set out below and come back to us as soon as possible.

Taking your lead that any further contribution should be proportional and appropriate, we have suggested an uplift of 25%. As such the 'standard' SAMM contribution associated with the project would be £306,950 (plus legal and monitoring costs). The enhanced contribution would equate to an additional £76,737.50, making the total contribution towards SAMM associated with this project **£383,687.50** (plus legal and monitoring costs).

As set out above I'd be grateful if Natural England can confirm that the total package of measures including the increased SAMM contribution provides the decision taker with the necessary certainty beyond reasonable scientific doubt that the development proposals will not adversely affect the integrity of any European site.

It would be very helpful given the date of the appeal if you could confirm the above by return.

Kind regards

Yours sincerely

Tim

Dictated by and sent on behalf of Tim Goodwin by
Vicky Locke | PA to Tim Goodwin



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From: Maan, Perdeep <Perdeep.Maan@naturalengland.org.uk>
Sent: 16 November 2020 08:17
To: Simon Taber <Simon.Taber@ecologysolutions.co.uk>
Subject: RE: Lower Rainham Road, Medway, Kent - European Sites Avoidance and Mitigation Strategy (8252)

Good Morning Simon,

I hope you're well, please find attached our latest advice and let me know if there is anything you would like to discuss.

Kind Regards,

Perdeep Maan

Lead Adviser – Sustainable Development
Sussex and Kent Team
Natural England
Dragonfly House, 2 Gilders Way
Norwich, NR3 1UB

Mobile - 07827992107

From: Simon Taber <Simon.Taber@ecologysolutions.co.uk>
Sent: 26 October 2020 09:50
To: Maan, Perdeep <Perdeep.Maan@naturalengland.org.uk>; Hanna, Sean <Sean.Hanna@naturalengland.org.uk>
Cc: Tim Goodwin <Tim.Goodwin@ecologysolutions.co.uk>; Vicky Locke <Vicky.Locke@ecologysolutions.co.uk>; Jodie Dixon <Jodie.Dixon@ecologysolutions.co.uk>
Subject: Lower Rainham Road, Medway, Kent - European Sites Avoidance and Mitigation Strategy (8252)

Dear Perdeep and Sean

Further to your recent correspondence regarding Lower Rainham Road, please find attached a comprehensive Technical Note which sets out the European Sites Avoidance and Mitigation Strategy which would be delivered. This provides significant further clarification, justification and detail relating to the bespoke wardening proposal and the strategy more widely, in order to address the queries and points raised in your latest letter dated 14 September 2020. As you will note, the package of measures clearly goes significantly above and beyond the strategic approach, and in our view would ensure that the development proposals would not lead to an adverse effect upon the integrity of the European designated sites (either alone or in combination).

I would be grateful if you could please consider the attached document and come back to us as soon as possible. As we have an existing (and open) DAS in place for this project I assume that no further paperwork is required, but should this be needed could you let us know ASAP and we will respond by return. As outlined previously, we are keen to engage positively with you as we consider that there is a solution for this site, but will require a clear steer please.

Should you have any queries please do not hesitate to let us know.

Kind regards
Simon

Simon Taber BSc (Hons) MSc MCIEEM | Director



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ANNEX 13

Email from Perdeep Maan (Natural England) to Tim
Goodwin (Ecology Solutions) dated 20 November
2020

Jodie Dixon

From: Maan, Perdeep <Perdeep.Maan@naturalengland.org.uk>
Sent: 20 November 2020 15:07
To: Vicky Locke
Cc: Tim Goodwin; Simon Taber; Jodie Dixon
Subject: RE: Lower Rainham Road, Medway, Kent - European Sites Avoidance and Mitigation Strategy (8252)

Categories: Green Category

Dear Tim,

Thank you for your email.

I have reviewed the figures which you have provided and can confirm Natural England are satisfied with the increase of 25% for the SAMMS contribution, increasing the original contribution of £306,950 to £383,687.50.

Kind Regards,

Perdeep Maan

Lead Adviser – Sustainable Development
Sussex and Kent Team
Natural England
Dragonfly House, 2 Gilders Way
Norwich, NR3 1UB

Mobile - 07827992107

From: Vicky Locke <Vicky.Locke@ecologysolutions.co.uk>
Sent: 20 November 2020 13:26
To: Maan, Perdeep <Perdeep.Maan@naturalengland.org.uk>
Cc: Seymour, James <james.seymour@naturalengland.org.uk>; Tim Goodwin <Tim.Goodwin@ecologysolutions.co.uk>; Simon Taber <Simon.Taber@ecologysolutions.co.uk>; Jodie Dixon <Jodie.Dixon@ecologysolutions.co.uk>
Subject: RE: Lower Rainham Road, Medway, Kent - European Sites Avoidance and Mitigation Strategy (8252)
Importance: High

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Kind regards

Yours sincerely

Tim

Dictated by and sent on behalf of Tim Goodwin by

Vicky Locke | PA to Tim Goodwin



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From: Maan, Perdeep <Perdeep.Maan@naturalengland.org.uk>

Sent: 16 November 2020 08:17

To: Simon Taber <Simon.Taber@ecologysolutions.co.uk>

Subject: RE: Lower Rainham Road, Medway, Kent - European Sites Avoidance and Mitigation Strategy (8252)

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Cc: Tim Goodwin <Tim.Goodwin@ecologysolutions.co.uk>; Vicky Locke <Vicky.Locke@ecologysolutions.co.uk>;
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Subject: Lower Rainham Road, Medway, Kent - European Sites Avoidance and Mitigation Strategy (8252)

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Appendix 6

AGRICULTURAL LAND (BWV) MEDWAY PLANNING APPLICATIONS

Case Study Consideration

Application MC/16/2051| Land At Otterham Quay Lane Rainham Kent - Urban extension comprising up to 300 new dwellings (of a range of sizes, types and tenures, including affordable housing), including public open and amenity space, together with associated landscaping, access, highways (including footpaths and cycleways), parking, drainage (including a foul water pumping station), utilities and service infrastructure works (all matters reserved except for points of access) - resubmission of MC/15/0761 which was subsequently withdrawn from appeal.

- 1.1. For ease, the location of this site is shown on the extract below:



Image showing Land at Otterhams Quay Lane, Rainham

- 1.2. The site comprised of 4.1 hectares of Grade 1 land and 6.6 hectares of Grade 2 land.
- 1.3. In application MC/16/2051, Richard Lloyd-Hughes maintained his objection to the loss of the best and most versatile agricultural land setting out the proposal was contrary to the guidance in the NPPF (then paragraph 112).

1.4. However, in the Committee report to members the Council's officer's recognised the following relevant points:

- *"Local Plan Policy BNE48 'Agricultural Land' is not a saved policy so is not relevant to the determination of this planning application";*
- *"In the absence of a development plan policy reference should be made to national policy, specifically paragraph 112 of the NPPF which states: "Local planning authorities should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of higher quality.";*
- *"Considering whether the loss of best and most versatile agricultural land is necessary, it is noted that Medway's housing land supply requirements are considerable and as such will certainly require the loss of agricultural land. Specifically, it should be noted that there is insufficient brownfield land within Medway to accommodate all, or even the majority of the Council's housing requirement over the coming years." – We do not see this situation having changed.*
- *"Considering whether there is alternative lower grade land available, it is noted that the MAFF 1:250,000 agricultural land classification map indicates that large parts of the land adjoining the Medway urban area are likely to be best and most versatile agricultural land. It is therefore considered unlikely that meeting Medway's housing land supply requirements can be accommodated on agricultural land of Grade 3a or lower. " – We do not see this situation having changed.*

- *“In summary, given the scale of Medway's housing requirement it is considered that the loss of agricultural land is necessary and, despite the uncertainty concerning the availability of lower grade agricultural land around Medway, it is unlikely that the development can be accommodated on lower grade land elsewhere. It is thereby considered that the application proposals do not conflict with NPPF paragraph 112.”* We do not consider this situation to have changed, and we are not aware of any evidence having been provided subsequently which directs more accurately map the classification. Indeed, we are mindful that the evidence base used in the current draft Local Plan references this map, as detailed in the Local Plan Development Strategy Consultation Report presented to Medway Council’s Cabinet Meeting on 6 March 2018 (see **Appendix 1** for full extract).

- Figure 5.26 of the Local Plan Development Strategy Consultation Report to Cabinet is clear that *“A notable feature of Medway is the high proportion of land that falls within the best and most versatile categories. Just under 40% of Medway’s agricultural land is classified as Grades 1 or 2”*. Going on to state *“In considering the options available to Medway to meet the development needs over the plan period, the council has had to weigh up complex and competing criteria and interests. Although potentially some good quality farmland could be lost to development, there will still be a high proportion of this resource in Medway [our emphasis].”* This point therefore openly accepts the loss of land like AC Goatham’s, whilst this statement is preceded by the sentence: *“The Council will also seek to secure agricultural businesses outside of allocated development sites by recognising its key role in the countryside”*. Therefore, alluding to being entirely supportive of situations such as the one presented at Pump Farm where the opportunity can be taken to secure agricultural business outside in the wider area. Furthermore, figure 5.28 is very clear *“Diversification and consolidation of farming activities is an important consideration in securing the rural sector [our emphasis]”*.

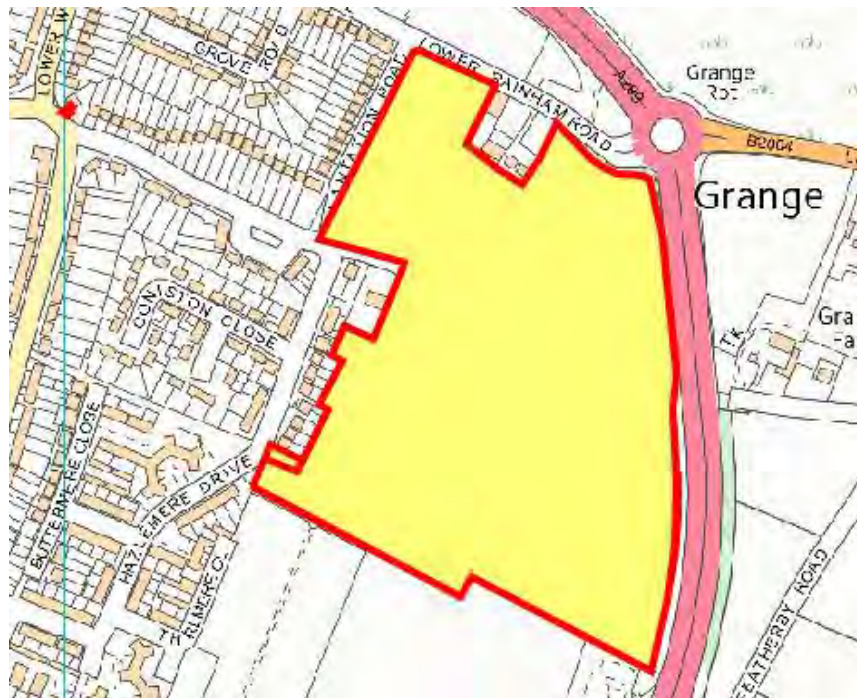
- Importantly, figure 5.30 of the Local Plan Development Strategy Consultation Report recognises that *“The development of a small rural town on the Peninsula as part of the proposed growth strategy for the Local Plan would require specific employment land provision to provide for its economic needs and function”*. With AC Goatham and Son arguable being the largest employer within Hoo and certainly the largest rural employer on the Peninsula it would appear entirely logical to support AC Goatham in their continued plans for orchard planting and business growth – supporting this application will go a long way to realisingg this potential.
- *“Since the Council does not have a five year supply of housing land and has a shortfall in supply that is likely to be substantial, significant weight should be given to the NPPF in the determination of this application. Having regard to the presumption in favour of sustainable development, as required by NPPF paragraph 49, it is considered that whilst the development would have adverse impacts in respect of the loss of agricultural land and a harm to a locally valued landscape, these are outweighed by the significant social benefits and associated economic benefits of delivering 225 units of market housing and 75 units of affordable housing. It is therefore recommended that planning permission is granted subject to conditions and Section 106 agreement”*.

1.5. Benefits derived in terms of social and economic benefit were recognised for this significantly smaller scheme (which had no regard to derivative benefits in terms of reinvestment elsewhere in the agricultural sector as a consequence of the proposal) it seems reasonable to expect the Council’s officers and the Committee members, to reach the same conclusion in respect of development on BMV land such as that proposed in this case. The same would equally apply in terms of the five year housing land supply position, which is understood still can’t be demonstrated.

Application MC/04/2230 | Land at Grange Farm, Grange Road, Gillingham, Kent ME7 2UP - Outline application for residential development comprising of not less than 325 dwellings, play area, open space and associated landscaping – Refused in 2005.

1.6. Although this application would have had regard to Policy BNE48: Agricultural Land of the 2003 Medway adopted plan, and it is accepted by the Council that this policy is now not saved, there are several points to note:

- Firstly, Policy BNE48 did not require any exercise to be done in assessing other individual sites in respect of their land classification;
- Secondly that the baseline assessment was against the Ministry of Agriculture, Fisheries and Food (MAFF) land classification grade, which is the same map as recognised above at paragraph 2.17 and which the Council and Committee found acceptable for use in the Land At Otterham Quay case which was approved in 2017 as per paragraph 3.5 above;
- Thirdly, that although refused, the application site is identified as being Grade one but this did not form a reason for the refusal, which was instead refused on the basis of loss of landscape and cultural heritage.



Indication of extent of land associated with application MC/04/2230

Application MC/18/2961 | Land West of Town Road Cliffe Woods Rochester -

Construction of ninety-two residential dwellings comprising of thirteen 2-bedroomed, thirty-seven 3-bedroomed, thirty-one 4-bedroomed, three 5-bedroomed dwellings and four 1-bedroomed and four 2-bedroomed apartments (Class C3), provision of 737sqm of employment floorspace to include offices and a nursery (Classes B1 and D1) with associated access, parking, public open spaces (play area), landscaping, new vehicular/pedestrian access from Town Road, provision of a pedestrian crossing, associated drainage, pumping station and earthworks -



Extent of land relating to Land West of Town Road, Cliffe Woods

- 1.7. At 4.4 hectares in size, it appears the application was not accompanied by an agricultural land classification assessment despite the site appearing as BMV land (Grade 1 or 2 based on the Agricultural Land Classification Map 2.17), but instead the application set out, *“The Site comprises a mosaic of long sward grassland, ruderal and scrub vegetation and young scattered trees with these habitats largely having been established since 1999, with the Site previously comprising a grassland field with no trees or other vegetation present. The Site has not been used for agricultural purposes for the last 20 years or so.”*. It would also appear, based on the lack of comments online and no reference being made in the Committee report that Mr Lloyd Hughes was not consulted on this proposal, despite its apparent BMV land status.
- 1.8. Notwithstanding this, the Council did not seem concerned by any perceived adverse impact of the proposal on BMV land, instead just choosing to conclude: *“The proposal is considered to be in a sustainable location and the principle of the proposed development is acceptable. No objection is raised in terms of design, siting, appearance, impact on residential amenity, highways and parking, the impact on ecology, contamination and flooding are acceptable subject to appropriate conditions”*. The application was subsequently approved by Committee members in April 2019.

Application MC/15/3104 | land North of Peninsula Way main Road, Chattenden, Rochester - Outline application with some reserved matters (Appearance, Landscaping, Layout and Scale) for residential development of up to 131 dwellings, landscaping, public open space and associated works (Resubmission MC15/0864) – Application approved 2016.

- 1.9. This application related to development on 6 hectares of land that Mr Lloyd Hughes identifies could constitute “good quality, BMV land”, and therefore suggested that *“to be certain of the grade of the land largely affected it would be necessary to conduct a detailed ALC field study of the area concerned”*. However, records do not appear to show that this was requested and in the Council officers’ report to Committee members it is observed that: *“Rural Planning Limited advises that the applicant’s submission does not appear to take account of the issue of agricultural land.”*.



Plan showing extent of land in respect of application MC/15/0864

Application MC/14/3405 | Land West Of Hoo St Werburgh Rochester Kent -

Outline application with some matters reserved (appearance, landscaping, layout and scale) for the construction of up to 475 dwellings including affordable housing, commercial floorspace (Use Classes A1/A3/A5, up to 200sqm), sports pavilion (Use Class D2, up to 200sqm), associated public open space, multi-functional green infrastructure, outdoor sports facilities, access, parking, infrastructure, landscaping, attenuation and earthworks – Dismissed at appeal 6 September 2016.



Extent of land in respect of application MC/14/3405

- 1.10. The original submission related to 32.8 hectares of land, of which 6.8 hectares comprised BMV land with the majority. It is understood from the Committee report to members that *“Rural Planning Ltd (the Council's agricultural advisor) have raised no objection to the development. The development results in the loss of 23.2 ha of Grade 3b quality agricultural land and some 6.8 ha of Grade 3a quality agricultural land. The proposal follows the advice in the NPPF which seeks to prioritise poor quality land in preference to that of a higher quality. The loss of the Grade 3a agricultural land is of some significance, although none of it has been used for intensive cropping and it is unlikely that the best and most versatile land would be used for anything other than cereal cropping.”* Whilst it was accepted that the land quality is not as good as that at Pump Farm site, it is interesting to note that the development on the BMV land element appears justified on the basis that *“none of it has been used for intensive cropping and it is unlikely that the best and most versatile land would be used for anything other than cereal cropping”* and there was no requirement to demonstrate or consider other uses across the site, unlike the latest submission for Pump Farm; which has been operating at an “intensive” commercial rate and is not demonstrating suitable production; and where other agricultural uses have been considered.

Application MC/16/2837| Land South Of Stoke Road Hoo St Werburgh Kent -
 Outline planning application with some matters reserved (appearance, landscaping, layout and scale) for up to 127 dwellings – Decision approved at Committee in 2017.

- 1.11. Proposed over 8.3 hectares of land the Committee report identifies that “*The majority of the site (80% Table 1 – Soil Resources and Agricultural Quality of Land south of Stoke Road, Hoo St Werburgh, by Land Research Associates) falls within grades 2 and 3a and so the best and most versatile agricultural land value. It has been accepted in recent appeal decisions in Medway (Moor Street and west of Hoo) that to meet its housing requirement, there will have to be some loss of the best and most versatile agricultural land. While this is therefore an issue for consideration it must be balanced against the other issues of sustainability. It is viewed in this instance that the loss of land is outweighed by the provision of new housing within an area considered to be sustainable within the definition of the NPPF.*” It would appear from the lack of comments online and the lack of mention in the Committee report that Mr Lloyd Hughes was not consulted in this case.



Extract showing extent of site in respect of application MC/16/2837

- 1.12. Of further note is the lack of requirement for the provision of evidence to consider 'alternative' sites or indeed alternative agricultural enterprises that could have been considered on the land south of Stoke Road. This is obviously not comparable to the suggestions made by Mr Lloyd Hughes; and we would suggest the Council would maintain their approach accordingly in this case.
- 1.13. Whilst it is noted that application MC/16/2837 for 127 dwellings would "*provide social, and economic gains and these would outweigh any limited environmental impacts*", unlike the proposal at Pump Farm, no case was developed for potential gains deriving to the benefit of a business based in Medway and potential to offer wider gains to the local landscape in terms of orchard planting (including prolonged management), employment and the provision of home grown fruit which have already been demonstrated over the years.

Application MC/17/4424 | Stoke Road Business Centre Stoke Road Hoo St Werburgh Rochester ME3 9BP - Outline planning application for up to 200 residential dwellings (including 25% affordable housing), open space, drainage, access and associated works, with all matters reserved except for access – Application approved at Committee August 2018.

- 1.14. Extending over 14.8 hectares, 13.7 hectares of this land was identified in the submission as BMV land (Grade 2 and 3a). Despite this the publicly available information indicates that Mr Lloyd Hughes was not consulted in this case, whilst the report to Committee members highlighted "*the development will result in the loss of Best and Most Versatile agricultural land (grades 2-3a). This is a concern however it is acknowledged by the Council that some agricultural land will have to be released to meet housing need over the Plan period due to other environmental constraints of greater significance restricting development across Medway and therefore while this loss is a concern it should not be used as a sole reason for refusing an application which is otherwise considered to be Sustainable*".



Indication of extent of land from application MC/17/4424

Application MC/18/3160 | Land Off Lower Rainham Road (West Of Station Road)
Rainham Gillingham Medway ME8 7UB - MC/18/3160 | Outline planning application with some matters reserved (appearance, landscaping, layout and scale) for up to 64 dwellings (including 25% affordable), planting and landscaping, informal open space, vehicular access point from Lower Rainham Road and associated ancillary works – Application approved November 2019.

- 1.15. This site which extends to 3.44 hectares is recognised as being BMV land (Grade 2). The extent of this site, which is located next to the Berengrave Nature Conservation site is shown on the plan below.



Plan indicating land off Lower Rainham Road

- 1.16. As part of this application it does not appear that Mr Lloyd Hughes was consulted (which is supported by the lack of reference to him in the Committee report), nor does it appear that the application was accompanied by an agricultural land report considering the use of the site or possible available alternatives in respect of use.

- 1.17. Instead, the report to Committee, which ultimately supported the recommendation of approval concludes “*The proposal would result in the development of Grade II (very good quality) agricultural land. However, there is no record that since the early 1950s the land has been used for farm and food production. Also, the site is relatively small. It is therefore considered that its loss to housing would not have a detrimental impact on the local or national agricultural production.*” We would duly observe the criteria under which the justification here is given for the loss of BMV land is on the basis of whether or not something has occurred on site for some time (as opposed to whether viable alternatives may even be explored – which in this case they were not) and that the loss of such land would have a detrimental impact on local or national agricultural production. If the same tests are applied to the land at Pump Farm case, then historic evidence would show that the applicant has a proven track record of being able to increase the level of food production as a consequence of their farming after a site is ‘released for housing’ by focusing food production in the right areas and with modern technology. Something, which, as already identified in previous submissions, shows is not the case at Pump Farm. Respectfully, we would therefore expect a level of consistency in approach to be adopted in this case.

Application MC/19/2530 Land At Westmoor Farm (North) Moor Street Rainham Gillingham Medway ME8 8QF - Construction of a secondary school with formation of new access from Otterham Quay Lane together with associated car parking and drop-off area, pedestrian access, drainage, landscaping, sports pitches and areas for formal and informal outdoor play – Approved February 2020.



Indication of extent of land in respect of application MC/19/2530

- 1.18. It should be noted that this application follows a refused application on the same site (reference MC/14/3784) which was an outline application with some matters reserved (Appearance, Landscaping, Layout and Scale) for residential development of up to 200 dwellings (including a minimum of 25% affordable housing), planting and landscaping, informal open space, children's play area, surface water attenuation, a vehicular access point from Otterham Quay Lane and associated ancillary works. Application MC/14/3784 was subsequently dismissed at appeal (ref APP/A2280/W/15/3012034) in August 2016.
- 1.19. The Committee report accompanying the subsequent application MC/19/2530 for the secondary school sums up the Inspectors reasons for the dismissal of application MC/14/3784. Setting out:

“A planning application for residential development (MC/14/3784) was refused and then dismissed at appeal. The main reason for the dismissal of the appeal related to the impact on the setting of the conservation area, West Moor Farm House and Westmoor Cottage. The Inspector concluded that whilst the residential development had the potential to deliver some enhancement, the setting of the two aforementioned properties, with its clear visual link to the open land surrounding Moor Street that they were once linked to, is an important contributor to their significance.

The Inspector went on to explain that the whilst the harmful impacts on the settings of the conservation area and the listed building were considerable, they did not attain that high threshold as there would be places where the settlement would still be appreciated as a separate entity. He concluded that the harm would be less than substantial. The Inspector also noted that in terms of the NPPF specified that harm to the significance of the conservation area must attract great weight on the negative side of the balance but in relation to the impact on the listed building, the same principle applies but is bolstered by the operation of s66 (1) of the Act which creates a strong presumption against development that would have a harmful impact on a listed building or, as was the case, its setting.

Given the proposal was for residential development, the Inspector also had to consider the Council’s housing supply position. The Inspector states that, ‘Given the parlous situation in terms of housing land supply in Medway, and the Government’s commitment to economic growth as well as boosting significantly the supply of housing, and ecological enhancement, the public benefits set out above carry significant weight in favour of the proposals.’

In balancing the two conflicting factors, the Inspector found that the public benefits of the proposal, while substantial, were insufficient to justify the harm to the significance of the designated heritage assets that would be caused.

The Inspector also considered that the proposed development would cause some harm to the ALLI given the erosion of the sense of separation. This conclusion was to a degree driven by the heritage issues explained above and the Inspector stated that if ignoring the heritage impacts for a moment, the benefits of the proposal would outweigh the landscape harm.

Finally with regard to highways matters, the Inspector considered that the additional traffic generated by the proposal would not increase congestion and delays at the junction to any significant degree. Certainly, the impact could not properly be described as severe.

In summarising the Inspector's decision with regard to new development:

- It should seek to retain meaningful open land to continue to form an important part of the setting of the conservation area, the listed buildings and the integrity of the Moor Street settlement.*
- If less than substantial harm is achieved with regard to the heritage assets, the public benefit of a development should outweigh the harm.*
- The Inspector did not give much weight to the impact of development on the ALLI in its own right.*
- The inspector did not consider the additional traffic generated by the proposal for 190 new dwellings would increase congestion and delays at the junction to any significant degree."*

- 1.20. It is pertinent to note that the Council, in this summary do not consider the agricultural land classification to be a reason for the appeal dismissal, despite application MC/14/3784 identifying that circa 8.5 hectares of this site is BMV (Grade 1 and 2) land. This lack of concern is followed through the consideration of application MC/19/2530, which does not consult Mr Lloyd Hughes nor does it appear to mention the ALC classification being a consideration in the Committee report. We of course note that the application in respect of Pump Farm also proposes a school, among various other previously identified benefits.

MC/17/3687 | Berengrave Nursery Berengrave Lane Rainham GILLINGHAM ME8 7NL - Outline planning application with some matters reserved (appearance, landscaping, layout and scale) for demolition of existing structures and construction of up to 121 residential dwellings including new vehicle access, internal roads, car parking, open spaces, sustainable urban drainage systems, earthwork's and associated landscaping and infrastructure – Application approved March 2018.

- 1.21. With the site extending to 5.83 hectares and located very closely to site at Pump Farm, the application was accompanied by a land classification report which highlighted that 14% of the site was buildings, over 38% of the site was BMV land (18% Grade 2 and 20.4% Grade 3a), and the residual 47% was classified as Farm Woodland. However we would note that no land grade analysis was done of the soil which was given the title as 'Farm Woodland'.

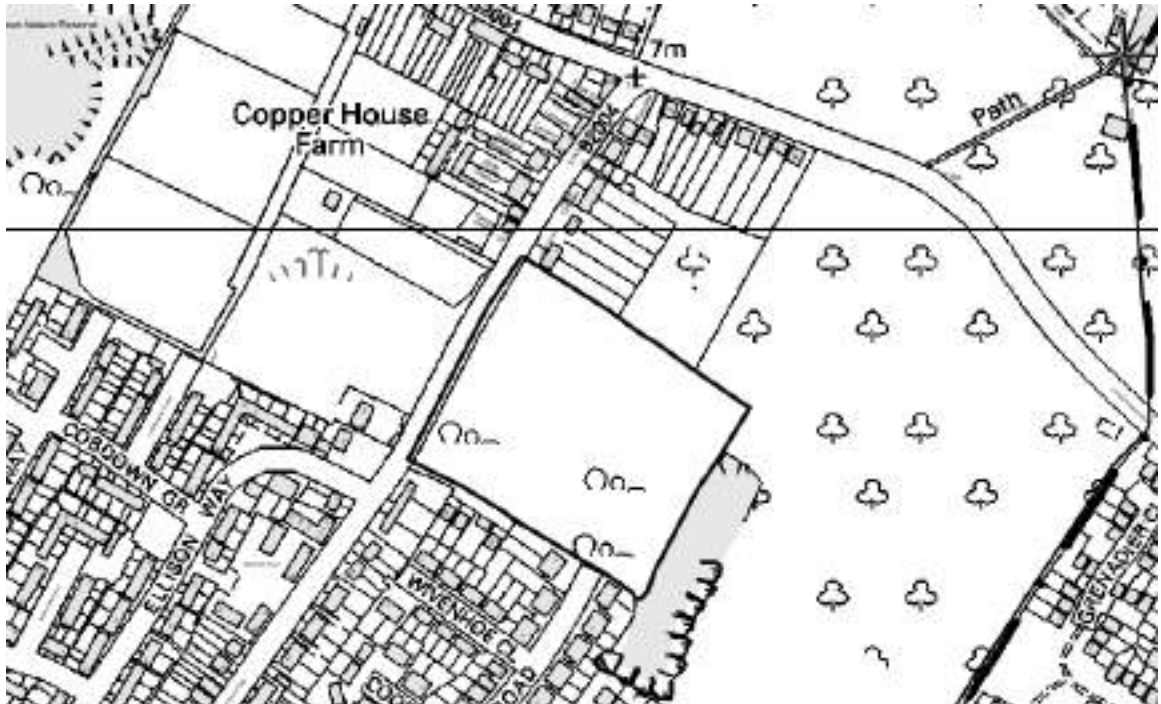


Extract showing extent of site for application MC/17/3687

- 1.22. Public records would imply that Mr Lloyd Hughes was not consulted (and the lack of reference to him in the Committee report would confirm this). However, in the Committee report it is concluded that *“The proposal would result in the development of Grade II (very good quality) agricultural land; however, there is no record that since the early 1960s the land has been used for farm and food production. Furthermore, only a small part of the site is used as a nursery or for other economic activities. Also, the site is relatively small. It is therefore considered that its loss to housing would not have detrimental impact on the local or national agricultural production.”*

- 1.23. As with application MC/18/3160 (Land Off Lower Rainham Road), the justification for development on this site is on the basis on past active farming or not, and not the productive potential. We note there is no requirement for the applicant to review other sites or to consider other enterprises and their possible productivity. Whilst it is also concluded that the loss of 6ha to housing would not have a detrimental impact on local or national agricultural production. Again, this differs from the case at Pump Farm where the applicant is arguing the loss of land actually has the potential to improve productivity and increased levels of management albeit on not on the application site itself. Notwithstanding this, we observe that the Council go on to set out: *“It is therefore considered that having regard to the Council’s position with regard to lack of 5 years deliverable housing land supply, the construction of 121 dwellings would help to contribute towards the provision of housing and therefore help in meeting the shortfall in housing supply and help to provide much needed 30 affordable units. This would represent a strong material [our emphasis] social consideration in favour of the development. The economic case is based on the construction jobs that would relate and to the additional local spend that would result from additional occupiers in the new properties.”*. Together with various reasons set out elsewhere by Rapleys, it would appear that this proposal would meet this very same criteria and it should therefore be reasonable to assume their approach in this case is consistent.

Application MC/14/0285 | Land At Station Road (Bakersfield), Rainham Kent ME8 7QZ - Outline application with all matters reserved for residential development comprising approx 90 dwellings. Although this application was refused at Committee in July 2014, it was later allowed at appeal.



Indication of extent of land comprising ‘Bakersfield’

- 1.24. In the Committee report prepared by officer's it appears that the LPA concluded that the site was “greenfield” but did not consult Mr Richard Lloyd Hughes on the proposal nor did it request further evidence in respect of land classification. This is despite the London & South East Region 1:250 000 Series Agricultural Land Classification Map (as per 2.17 above) indicating that the land it considered BMV. At appeal the Inspector, who did not raise concern in this regard, in short, went on to justify the proposal on the basis that:

“45. It is common ground that the Council cannot demonstrate a five year supply of deliverable housing land. Furthermore, as set out within the SoCG, there was a substantial shortfall in housing delivery, when set against housing requirements, in previous years. The table produced at paragraph 4.15 of the SoCG shows that the housing delivery target was only met in 3 out of 23 years and that the Council has failed to achieve its target in 4 out of the last 5 years. On the evidence presented, this represents persistent under-delivery.....

51. Consequently, in the overall balance, the proposal would result in significant social benefits in terms of housing provision and associated economic benefits. It would result in moderate harm to the character and appearance of the local area. However, with regard to other environmental matters, the site is well located in terms of shops, services and transport links and can be developed without undue harm to ecological assets. Based upon the three-stranded definition of sustainable development at paragraph 7 of the Framework, and paragraphs 18 to 219, taken as a whole, I consider that the proposal would represent sustainable development.

52. Moreover, with regard to the presumption in favour of sustainable development at paragraph 14 of the Framework, the significant benefits of granting planning permission would not be significantly and demonstrably outweighed by the adverse impacts that I have identified.

53. In the context of saved policy BNE34 of the Local Plan I consider that the social and economic benefits of the proposal, as described above, are of sufficient importance to outweigh the material harm to the character and function of the area, particularly considering the pressing need for housing and the aim of paragraph 47 of the Framework to provide a significant boost to housing delivery. Accordingly, the proposal would not contravene the terms of the policy which contains a requirement to balance environmental, social and economic factors.”

Appendix 7

SOUTHERN WATER CONSULTATION RESPONSE



Development, Economy and Transport Division
Medway Council
Gun Wharf
Dock Road
Chatham
Kent
ME4 4TR

Your ref
MC/19/1566

Our ref
PLAN-028747

Date
19/07/2019

Contact
Tel 0330 303 0119

Dear Sirs,

Proposal: Outline planning application with some matters reserved (appearance, landscaping, layout and scale) for redevelopment of land off Pump Lane to include residential development comprising of approximately 1,250 residential units, a local centre, a village green, a two form entry primary school, a 60 bed extra care facility, an 80 bed care home and associated access (vehicular, pedestrian, cycle).

Site: MC/19/1566:- Land Off Pump Lane, Rainham, Kent ME8 7TJ.

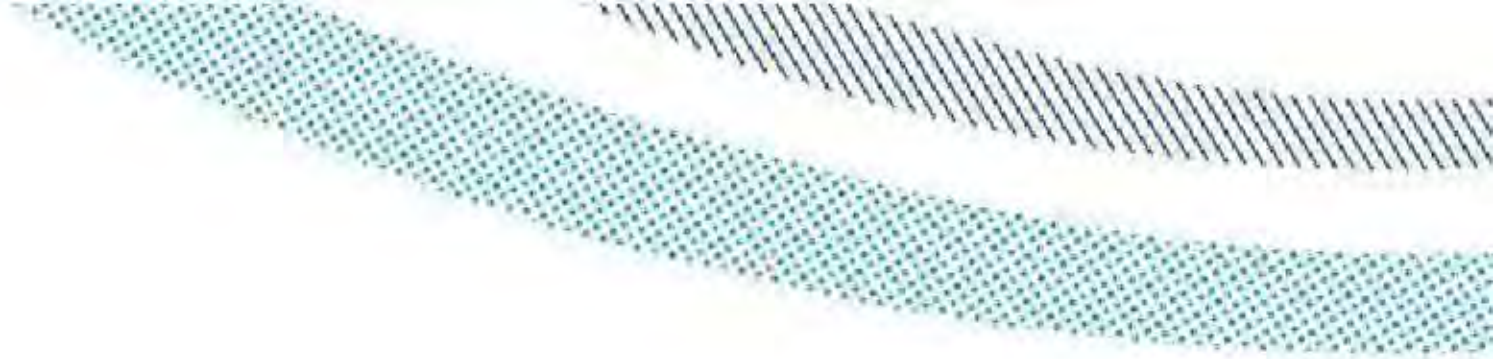
Thank you for your letter of 28/06/2019.

Please find attached a plan of the sewer and water records showing the approximate position of a public sewers and water mains crossing the site. The exact position of the public sewers and water mains must be determined on site by the applicant before the layout of the proposed development is finalised.

The attached plan shows that the proposed development lies within a clearance distance of public critical sewer and water mains, which is not acceptable to Southern Water. We request that if this application is determined, the applicant should produce a suitable layout maintaining the statutory clearance distance for public sewers and water mains.

Please note that:

1. The 2200mm, 2100mm & 1500mm combined sewer requires a clearance of 5.0 metres either side of the sewer to protect it from construction works and allow for future access for maintenance. No development or new tree planting should be located within 5.0 metres either side of the centreline of the public combined sewers.

- 
2. The 1500mm & 1600 foul trunk sewers require a clearance of 5.0 metres either side of the sewer to protect it from construction works and allow for future access for maintenance. No development or new tree planting should be located within 5.0 metres either side of the centreline of the public foul trunk sewers.
 3. The 1500mm & 900mm surface water sewers require a clearance of 5.0 metres either side of the sewer to protect it from construction works and allow for future access for maintenance. No development or new tree planting should be located within 5.0 metres either side of the centreline of the public surface water sewers.
 4. The 525mm surface water sewers requires a clearance of 3.5 metres either side of the sewer to protect it from construction works and allow for future access for maintenance. No development or new tree planting should be located within 3.5 metres either side of the centreline of the public surface water sewers.
 5. The 375mm & 150mm surface water sewers, 225mm foul sewer & 450mm foul rising main requires a clearance of 3.0 metres either side of the sewer to protect it from construction works and allow for future access for maintenance. No development or new tree planting should be located within 3.0 metres either side of the centreline of the public surface and foul water sewers.
 6. No excavation, mounding or tree planting should be carried out within 6 metres of the public water mains without consent from Southern Water.
 7. No new soakaways, swales, ponds, watercourses or any other surface water retaining or conveying features should be located within 5 metres of a public sewers and water mains.
 8. All other existing infrastructure should be protected during the course of construction works.

Please note there are water communication pipes within the site.

In order to protect drainage apparatus, Southern Water requests that if consent is granted, a condition is attached to the planning permission. For example "The developer must advise the local authority (in consultation with Southern Water) of the measures which will be undertaken to protect the public sewers, prior to the commencement of the development."

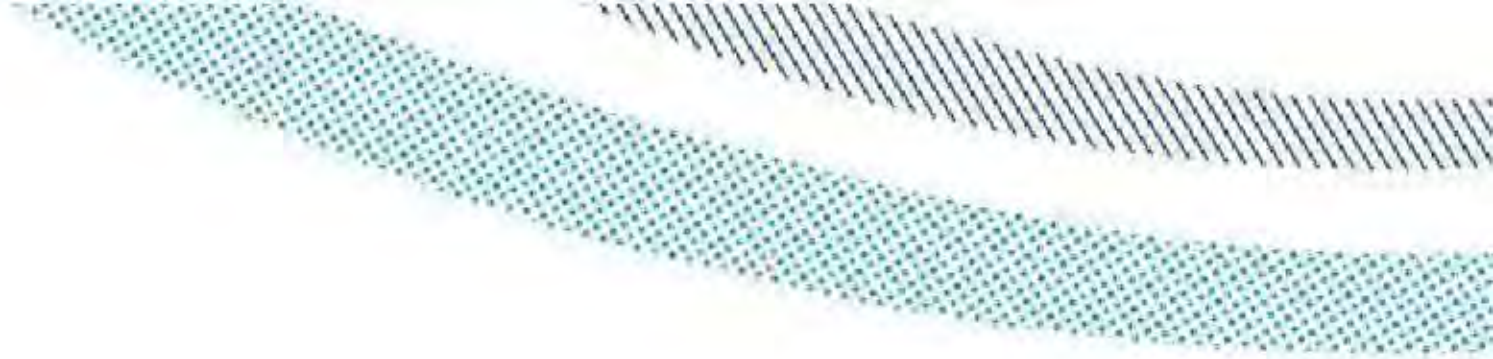
Due to changes in legislation that came in to force on 1st October 2011 regarding the future ownership of sewers it is possible that a sewer now deemed to be public could be crossing the above property. Therefore, should any sewer be found during construction works, an investigation of the sewer will be required to ascertain its condition, the number of properties served, and potential means of access before any further works commence on site.

Southern Water has undertaken a desk study of the impact that the additional foul sewerage flows from the proposed development will have on the existing public sewer network.

This initial study indicates that there is an increased risk of flooding unless any required network reinforcement is provided by Southern Water. Any such network reinforcement will be part funded through the New Infrastructure Charge with the remainder funded through Southern Water's Capital Works programme.

Southern Water and the Developer will need to work together in order to review if the delivery of our network reinforcement aligns with the proposed occupation of the development, as it will take time to design and deliver any such reinforcement.

Southern Water hence requests the following condition to be applied:



“Occupation of the development is to be phased and implemented to align with the delivery by Southern Water of any sewerage network reinforcement required to ensure that adequate waste water network capacity is available to adequately drain the development”

It may be possible for some initial dwellings to connect pending network reinforcement. Southern Water will review and advise on this following consideration of the development program and the extent of network reinforcement required.

Southern Water will carry out detailed network modelling as part of this review which may require existing flows to be monitored. This will enable us to establish the extent of works required (If any) and to design such works in the most economic manner to satisfy the needs of existing and future customers.

Our assessment of the timescales needed to deliver network reinforcement will consider an allowance for the following:

- Initial feasibility, detail modelling and preliminary estimates
- Flow monitoring (If required)
- Detail design, including land negotiations
- Construction

The overall time required depends on the complexity of any scheme needed to provide network reinforcement. Southern Water will seek however to limit the timescales to a maximum of 24 months from a firm commitment by the developer to commence construction on site and provided that Planning approval has been granted.

The planning application form makes reference to drainage using Sustainable Urban Drainage Systems (SUDS).

Under current legislation and guidance SUDS rely upon facilities which are not adoptable by sewerage undertakers. Therefore, the applicant will need to ensure that arrangements exist for the long term maintenance of the SUDS facilities. It is critical that the effectiveness of these systems is maintained in perpetuity. Good management will avoid flooding from the proposed surface water system, which may result in the inundation of the foul sewerage system.

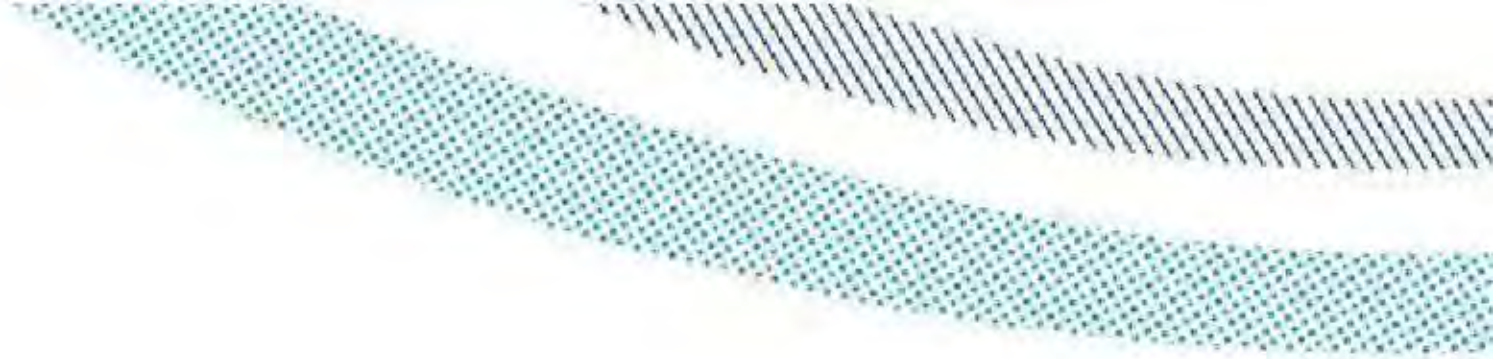
Thus, where a SUDS scheme is to be implemented, the drainage details submitted to the Local Planning Authority should:

- Specify the responsibilities of each party for the implementation of the SUDS scheme
- Specify a timetable for implementation
- Provide a management and maintenance plan for the lifetime of the development.

This should include the arrangements for adoption by any public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime.

The Council's Building Control officers or technical staff should be asked to comment on the adequacy of soakaways to dispose of surface water from the proposed development.

The design of drainage should ensure that no land drainage or ground water is to enter public sewers network.



We request that should this application receive planning approval, the following condition is attached to the consent: "Construction of the development shall not commence until details of the proposed means of foul and surface water sewerage disposal have been submitted to, and approved in writing by, the Local Planning Authority in consultation with Southern Water."

This initial assessment does not prejudice any future assessment or commit to any adoption agreements under Section 104 of the Water Industry Act 1991. Please note that non-compliance with Sewers for Adoption standards will preclude future adoption of the foul and surface water sewerage network on site. The design of drainage should ensure that no groundwater or land drainage is to enter public sewers.

Southern Water can provide a water supply to the site. Southern Water requires a formal application for connection and on-site mains to be made by the applicant or developer. We request that should this application receive planning approval, the following informative is attached to the consent: "A formal application for connection to the water supply is required in order to service this development."

For further advice, please contact Southern Water, Sparrowgrove House, Sparrowgrove, Otterbourne, Hampshire SO21 2SW (Tel: 0330 303 0119), www.southernwater.co.uk or by email at developerservices@southernwater.co.uk.

Yours sincerely



Claire Smith
Developer Services

Appendix 8

AIR QUALITY NOTE - STANTEC

TECHNICAL NOTE

Job Name: Land at Pump Farm and Bloors Farm, Lower Rainham
Job No: 44538_AQTechNote_Jan2021
Note No: 1
Date: 22nd January 2021
Prepared By: J. Kirk & P. Branchflower
Subject: Air Quality - Update and Response to EHO Concerns

1. Executive Summary

- 1.1. An air quality assessment was undertaken in relation to the proposed mixed-use development on land at Pump Farm and Bloors Farm, Lower Rainham, in April 2019, details of which are set out in Chapter 13 of the associated Environmental Statement (ES).
- 1.2. Following submission, comments were provided by the EHO at MDC, however ongoing concerns have been raised relating to the uncertainty in prediction of future air quality background concentrations and vehicle emissions. To provide further clarity on this issue, an updated review of local monitoring data and updated modelling has been undertaken as detailed in this Note.
- 1.3. Monitoring data within the study area (as presented in Appendix A) shows lower concentrations in 2018 and 2019 at all monitoring locations than in previous years indicating an overall downward trend in concentrations since 2014. This aligns with research which shows an overall downward trend in NO_x concentrations across the UK between 2013 and 2019.
- 1.4. The results of the update modelling confirm the overall findings of the original ES and emissions from traffic generated by the development is predicted to increase annual mean NO₂, PM₁₀ and PM_{2.5} concentrations at receptor locations by no more than 2% of the AQAL. Given that concentrations of all three pollutants are predicted to remain below the objectives into 2025 under the with development scenario the overall impact would be negligible.
- 1.5. Additionally, the project ecologist has reviewed the revised modelling information and can confirm that, for the reasons outlined in Section 6 of the IHRA, it can be concluded that the development proposals are not likely to lead to an adverse effect on the integrity of the designated site, either considered alone or in combination with other plans and projects.
- 1.6. Therefore, it is considered that the assessment results presented in the ES represents a worst case scenario as there is now more confidence in future reductions in emissions to air from traffic and background pollutant concentrations.

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
44538/TN001_DRAFT	DRAFT	21/01/2021	JK	PB	PB	N/A
44538/TN001_Rev1	1	22/02/2021	JK	PB	PR	ET

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

TECHNICAL NOTE

2. Introduction

- 2.1. An air quality assessment was undertaken in relation to the proposed mixed-use development on land at Pump Farm and Bloors Farm, Lower Rainham, in April 2019, details of which are set out in Chapter 13 of the associated Environmental Statement (ES).
- 2.2. Comments on the air quality assessment made by Stuart Steed, Environmental Health Officer (EHO) at Medway Council (MC) were received via email on 8th August 2019 (Email MC/19/1566 Land off Pump Lane, Rainham).
- 2.3. Following a response to the EHO comments, Stuart Steed acknowledged that the majority of concerns had been addressed sufficiently, however, in a follow up email dated 9th March 2020, he raised further concerns relating to the future prediction of air quality and the resulting impact predictions.
- 2.4. A response to these comments was provided in June 2020, however to provide further clarification on the predicted impacts of the proposed development, the air quality modelling assessment has been updated using the latest available vehicle emissions data and background pollutant concentrations published by the Department for Environment, Food and Rural Affairs (DEFRA) in August 2020. This data is considered to be more representative of existing and future air quality predictions than the data published in 2017 and used in the previous ES assessment.
- 2.5. This technical note provides an updated response to the MC comments of 9th March 2010, based on the previous modelling assessment and the updated modelling assessment work.

3. Response to Comments

Comments from Medway Council

- 3.1. Stuart Steed set out the following comments in an email dated 9th March 2020:

'The majority of my comments have been satisfactorily dealt with, however I maintain that my concerns about future predicted future improvements in air quality are still relevant. Whilst the response counteracts my concerns by stating that there was a small improvement in concentrations shown for the Chatham Roadside site in 2018 (and some diffusion tube sites), one year of improvement is not a long term trend and could as much be due to meteorological conditions as improvements to emissions. Indeed, as can be seen from the provisional annual mean for 2019, there was a slight increase in concentrations during 2019 at the site. Unfortunately we currently don't have the bias adjusted annual means for or diffusion tube sites yet for 2019 to see if there was a similar increase at these sites. The attached inspectors comments for a recently refused appeal for a development in Rainham discusses the concerns I have raised around predictions of future air quality possibly being unreliable. The developments impacts on concentrations are substantial at some receptor locations, notably R2, R3, R4, R9, R12, R13, R28, R29. I am not sure how confident we can be that baseline year air quality has been accurately predicted and how significant any uncertainty around this will impact upon future year predictions of air quality (with or without any predicted improvements) for the with or without development scenarios. This uncertainty is likely to be most relevant to receptors that are closer to the air quality objectives in 2017, for example R20, R21, R23 R36.'

Response to Comments Based on 2019 Modelling Assessment

- 3.2. Monitoring data within the study area is presented in Appendix A. The 2019 data shows a slight increase in concentrations between 2018 and 2019 at five of the monitoring locations, and a decline in concentrations at five locations. However, overall the data shows lower concentrations in 2018 and 2019 at all monitoring locations than in previous years indicating an overall downward trend in concentrations since 2014.

TECHNICAL NOTE

- 3.3. This aligns with research undertaken by Air Quality Consultants (AQC)¹ which shows an overall downward trend in NO_x concentrations across the UK between 2013 and 2019. The research carried out by AQC analysed roadside monitoring data from across the UK, including separate analysis that nominally removed the effects of inter-year differences in meteorology which can obscure any underlying trends associated with factors such as emission reductions. The resulting data showed that *'NO_x concentrations at roadside sites have reduced by an average of 5.14% per year since 2013, with the average reductions since 2016 being greater than this'*.
- 3.4. Monitoring carried out in Medway is considered to align with the results of this research and demonstrate an overall downward trend in concentrations since 2014 and it is expected that the slight increases seen between 2018 and 2019 are due to meteorological influences rather than increases in overall NO_x emissions. Based on this evidence it would be considered overly pessimistic to predict concentrations in future years assuming no reduction in both emission factors and background concentrations.
- 3.5. As it stands the approach employed in the original ES incorporated a cautious approach to the prediction of future concentrations to try and reduce the uncertainty associated with the emissions data and background data used in the assessment (which was taken from the emissions factor toolkit and background maps published in 2017). The assessment undertaken in 2019, as set out within Chapter 13 of the ES, used 2021 emission factors combined with 2029 traffic data to predict impacts in 2022.
- 3.6. It is also noted that the previous assessment used 2017 as the base year, with model verification carried out against 2017 monitoring data for monitoring sites Chatham AURN, DT09, DT15 and DT16. As concentrations in 2017 were higher at these locations than any other monitoring year (all sites have recorded lower concentrations in 2018 and 2019), use of this year for model verification also provided a worst-case approach to the verification process and prediction of local concentrations.
- 3.7. The approach used in the 2019 ES assessment to predict future year concentrations was agreed with MC during the consultation process. A copy of the email is provided in Appendix B.
- 3.8. The results of the previous assessment, as set out in Chapter 13 of the ES predicted a negligible impact on local air quality at the selected human receptors as a result of the operational development traffic.
- 3.9. The assessment could not conclude (on the grounds of the dispersion modelling data alone) that impacts on NO_x concentrations within the Medway Estuaries and Marshes Site of Special Scientific Interest (SSSI) / Special Protection Area (SPA) / Ramsar site would be 'not significant' in EIA terms, and therefore further assessment was undertaken by the project ecologist. For the reasons outlined in detail in Section 6 of the Information for Habitats Regulations Assessment (IHRA) report, it is concluded that the predicted increase in NO_x arising from the proposed development is unlikely to pose a credible risk to habitats within the European designated site, such that it can be concluded that the development proposals are not likely to lead to an adverse effect on the integrity of the designated site, either considered alone or in combination with other plans and projects. Impacts in terms of Nutrient Nitrogen Deposition at Medway Estuaries and Marshes SSSI / SPA / Ramsar site were found to be 'not significant' on the basis of dispersion modelling data, and likely significant effects can therefore also be robustly scoped out.

Response to Comments Based on Updated 2020 Modelling Assessment

¹ Air quality Consultants (2020) Nitrogen Oxides Trends in the UK 2013 to 2019, January 2020 (<https://www.aqconsultants.co.uk/CMSPages/GetFile.aspx?guid=af089039-6a2f-49b5-9533-fe31205f3134>)

TECHNICAL NOTE

- 3.10. In further response to the comments made by MC, updated modelling of the operational traffic associated with the development proposals have been carried out using emissions data and background concentrations published in August 2020. The overall methodology employed for the updated modelling remains unchanged from the previous assessment, therefore full details of the methodology are provided in Chapter 13 of the ES. The main changes incorporated into the revised modelling relate to model version, emissions data and updated model verification. Details of the updated methodology are provided in Appendix C.
- 3.11. The revised modelling has used emission factors set out within the DEFRA emission factor toolkit EFT2020², published in August 2020. Research carried out by Air Quality Consultants Ltd (AQC) has shown that emissions of NO_x from vehicles within EFT2020 are now correlating well with concentrations recorded at roadside locations between 2013 to 2019. The report³ concludes that *'the EFT is now unlikely to over-state the rate at which NO_x emissions decline into the future at an 'average' site in the UK. Indeed, the balance of evidence suggests that, on average, NO_x concentrations are likely to decline more quickly in the future than predicted by the EFT'*. This has removed the need for the use of any sensitivity tests for future year scenarios.
- 3.12. In light of the above research, 2025 emission factors have been used to predict concentrations in 2025 (prior to 2025 limited operational site traffic will be present). However, to ensure a conservative approach and reduce uncertainties relating to traffic data assumptions, traffic data predicted for the 2029 future year scenarios have been used within the 2025 assessment scenarios.
- 3.13. Background concentrations for 2019 and 2025 have been taken from the DEFRA 2018 based background maps published in August 2020⁴.
- 3.14. The predicted model results have been verified against 2019 monitoring data, the latest available monitoring data for Rainham and the surrounding area. The results of the verification process and the resulting adjustment factors that have been applied to the predicted results are set out in Appendix C.
- 3.15. In light of research and data published by AQC in February 2020, Ammonia (NH₃) emissions have also been modelled as part of the revised modelling assessment to assess the impact of operational traffic on NH₃ concentrations within the Medway Estuaries and Marshes SSSI. The main habitats within the Medway Estuaries and Marshes SSSI adjacent to the roads being considered within the assessment are open water, mud flats and littoral sediments. These habits are not considered sensitive to NH₃, however for completeness the predicted NH₃ concentrations at the selected ecological receptors have been presented. The contribution of NH₃ to nutrient nitrogen deposition has also been included within the revised assessment of impacts. Full details on this are provided in Appendix C.
- 3.16. The results of the revised modelling are set out in Appendix D.
- 3.17. The results of the assessment show that under the 2019 base scenario annual mean NO₂, PM₁₀ and PM_{2.5} concentrations are predicted to be meeting the relevant objective limits at all the selected human receptors. Concentrations are predicted to decline between 2019 and 2025 with the objective limits being met in the future 2025 base scenario (Table D1, Appendix D).
- 3.18. Traffic generated by the operational development is predicted to increase annual mean NO₂, PM₁₀ and PM_{2.5} concentrations at receptor locations by no more than 2% of the AQAL. Given that concentrations of all three pollutants are predicted to remain below the objectives into 2025 under the with development scenario the overall impact would be negligible. This is consistent with the results of the 2019 assessment.

² <https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html>

³ <https://www.aqconsultants.co.uk/news/march-2020/defra%E2%80%99s-emission-factor-toolkit-now-matching-measu>

⁴ <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

TECHNICAL NOTE

- 3.19. Impacts on the Medway Estuaries and Marshes SSSI / SPA / Ramsar site have been found to be less than 1% of the Critical Loads for annual mean NO_x, 24- hour NO_x, NH₃ and nutrient nitrogen deposition at all the locations considered in the previous modelling assessment with the exception of annual mean NO_x at E3 and E3 +10m. At this location the impact is 1.1% and 1% of the CL, respectively and therefore the impact can not be classed as 'not significant' in EIA terms without further investigation (i.e. on the grounds of dispersion modelling data). However, the project ecologist has reviewed the revised modelling information and can confirm that, for the reasons outlined in Section 6 of the IHRA, it can be concluded that the development proposals are not likely to lead to an adverse effect on the integrity of the designated site, either considered alone or in combination with other plans and projects.
- 3.20. The revised assessment is predicting a lower impact on both human and ecological receptors compared to the 2019 assessment. It is considered that this is due to the conservative assumptions assumed for the previous modelling such as the use of 2021 emissions and background data in combination with 2029 traffic data and the use of 2017 monitoring data for the model verification. The 2019 modelling assessment was based on a more conservative approach, while the revised modelling is based on more up to date data which has been shown to be more consistent with actual changes in concentrations shown at roadside locations across the UK and expected to provide a more realistic prediction of future concentrations, as discussed in the AQC research documents.

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Appendix A – Medway Monitoring Data

Site Name	Site Type	Distance from Application Site (km)	AQMA Location	Annual Mean Concentrations (µg/m ³)						Comment
				2014	2015	2016	2017	2018	2019	
Chatham Roadside AURN				24.8	23.5	25.7	25.4	23.4	24.4	Little change over the monitoring period between 2014 and 2019
DT01	Roadside	1.1 to the south east	Rainham	44.7	43.4	42.2	45.4	37.8	39.3	Slight increase between 2018 and 2019 but overall decline since 2014
DT04	Roadside	4 to the south west	Central Medway	38.2	36.8	38.6	37.9	32.9	33.8	Slight increase between 2018 and 2019 but overall decline since 2014
DT09	Roadside	3 to the south west	Central Medway	26.2	27.7	25.6	25.5	22.8	24.5	Small increase between 2018 and 2019 but overall decline since 2014
DT11	roadside	4 to the south west	Central Medway	35.2	36.3	35.6	35.7	32.5	32.7	Slight increase between 2018 and 2019 but overall decline since 2014
DT15	Roadside	1.5 to the south east	Rainham	34.4	34.4	35.3	36.0	32.2	30.8	Increase between 2014 and 2017 but decline between 2017 and 2019 with concentrations currently lower than 2014
DT16	Roadside	1.6 to the south east	Rainham	26.9	25.8	28.6	28.6	24.5	24.2	Increase between 2014 and 2017 but decline between 2017 and 2019 with concentrations currently lower than 2014

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DT17	Roadside	3 to the south west	Central Medway	43.7	45.0	43.5	45.3	41.2	38.8	Increase between 2014 and 2017 but decline between 2017 and 2019 with concentrations currently lower than 2014
DT18	Roadside	4 to the south west	Central Medway	45.4	45.4	46.3	48.0	40.9	42.9	Increase between 2014 and 2017 but decline between 2017 and 2019 (although an increase between 2018 and 2019) with concentrations currently lower than 2014
DT25	Roadside	3 to the north west	Gillingham	-	37.6	36.5	42.9	38.3	35.8	Increase between 2015 and 2017 but decline between 2017 and 2019 with concentrations currently lower than 2014
DT26	Roadside	3 to the north west	Gillingham	-	25.8	33.6	28.1	28.2	24.4	Increase between 2015 and 2016 but subsequent decline to 2019 with concentrations currently lower than 2015
DT27	Roadside	3 to the north west	Gillingham	-	37.6	33.5	39.1	36.1	34.1	Increase between 2015 and 2017 but subsequent decline to 2019 with concentrations currently lower than 2015

TECHNICAL NOTE

Appendix B – Consultation with Medway Council

From: steed, stuart <stuart.stead@medway.gov.uk>
Sent: 21 December 2018 13:09
To: Jo Kirk <jkirk@peterbrett.com>
Subject: RE: Lower Rainham AQA

Hi Jo,

That's fine.

Regards,

Stuart.

Stuart Steed
Environmental Protection Officer
Medway Council
Gun Wharf
Dock Road
Chatham
Kent
ME4 4TR
Tel: 01634 331105
email: stuart.steed@medway.gov.uk

From: Jo Kirk <jkirk@peterbrett.com>
Sent: 21 December 2018 10:08
To: steed, stuart <stuart.steed@medway.gov.uk>
Subject: RE: Lower Rainham AQA

Hi Stuart,

Thank you for getting back to me. We prefer not to use the CURED emission factors however understand that the current emission factors are not realistic in the future year scenarios. I am new to PBA and misunderstood their usual approach to assessing future year scenarios. I have talked this through with the team and we propose to undertake the following, to ensure we are undertaking a worst-case approach:

Our assessment year will be 2022. We will use 2021 emission factors and background concentrations to predict the with and without development scenarios and will use the 2029 traffic data to ensure worst-case traffic. This is our preferred approach rather than also using CURED and presenting various sensitivity scenarios which could get confusing.

In terms of cumulative impacts we have this week had confirmation of the developments included in the opening year scenario, so the assessment will consider cumulative impacts.

TECHNICAL NOTE

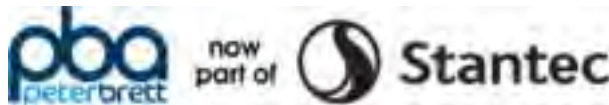
Hopefully the above approach is acceptable.

Kind regards

Jo

Joanna Kirk
Senior Consultant

Direct: 07921829862
jkirk@peterbrett.com
Bristol



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From: steed, stuart <stuart.steed@medway.gov.uk>
Sent: 20 December 2018 13:12
To: Jo Kirk <jkirk@peterbrett.com>
Subject: RE: Lower Rainham AQA

Hi Jo,

Generally, I am happy with your outline methodology.

However I am not convinced that the use of 2025 emissions factors is a conservative enough approach to emissions factors. Whilst holding emissions factors at baselines years is no longer reasonable given evidence from real world emissions studies, alternative approaches, such as using the CURED tool may be more realistic. My understanding is that EFT and CURED show close agreement up to 2021, but there is divergence after this time. I would probably prefer CURED to just using 2025 emissions factors. You could always present EFT 2025 and CURED in the sensitivity analysis.

You have not mentioned cumulative impacts from committed developments, and this needs to be included in the opening year baseline (without development) scenario.

The Medway Air Quality Planning Guidance (2016) has its origins from the Kent & Medway Guidance (we wrote it for the Kent & Medway Air Quality Partnership). So please use ours, and refer to it in the assessment.

I don't think I have any further comments for now.

Regards,

Stuart.

Stuart Steed
Environmental Protection Officer

TECHNICAL NOTE

Medway Council
Gun Wharf
Dock Road
Chatham
Kent
ME4 4TR
Tel: 01634 331105
email: stuart.stead@medway.gov.uk

From: Jo Kirk <jkirk@peterbrett.com>
Sent: 13 December 2018 12:58
To: stead, stuart <stuart.stead@medway.gov.uk>
Subject: Lower Rainham AQA

Dear Stuart,

WE are undertaking an AQA for a proposed residential development in Lower Rainham, Kent. The site is located to the south of Lower Rainham Road (OS 581219, 167227).

The proposals are for the provision of up to 1275 residential units, a local centre, 80 bed care home and 60 bed extra care facility, a two form entry primary sch plus landscaping.

In terms of assessing AQ we propose the following scope of works:

- Baseline assessment based on locally available monitoring data;
- Construction impact assessment – using the IAQM guidance to undertake a risk assessment and setting out mitigation based on the identified risk of significant effects;
- Operational impact assessment – detailed dispersion modelling of traffic impacts using ADMS Roads. The modelling will include the following:
 - Background data from DEFRA background maps for 2017
 - Mat data from Gravesend for 2017
 - Model verification against 2017 monitoring data (namely sites DT09, DT27, DT25, Dt26, DT01, DT15, DT16 and Chatham AURN)
 - Prediction of impacts in future year 2029. Mid-year emission factors of 2025 will be used for 2029 to take account of potential discrepancies between predicted emission factors and real-world emissions.
 - Significance of impacts will be assessed using the criteria set out in the EPUK/IAQM guidance and in accordance with the data set out in Table 1 of the Medway Air Quality Planning Guidance
 - The assessment will consider impacts within the nearby AQMA, including the Gillingham (Pier Road) and A2 Rainham AQMA.
- Emissions Mitigation Assessment – mitigation will be recommended based on the Medway Air Quality Planning Guidance. This will include the standard mitigation for all development, a mitigation emissions calculation and additional mitigation proposed for the development.

I would also note that consideration will also be given to the Kent and Medway Air Quality Planning Guidance, however, this document is dated 2015 while the Medway guidance is dated 2016. We would therefore use the Medway document, it being the most recently

TECHNICAL NOTE

published. Also it looks like both documents are very similar in their advice and approach to assessing air quality but please correct me if I am wrong.

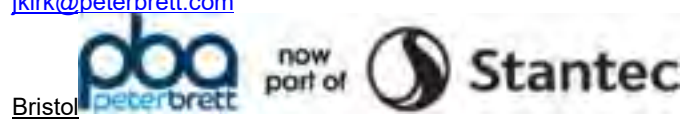
We would be grateful if you could confirm the above approach is acceptable.

Kind regards

Jo

Joanna Kirk
Senior Consultant

Direct: 07921829862
jkirk@peterbrett.com



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Appendix C - Methodology

The overall methodology employed to undertake the revised modelling follows that used for the previous modelling assessment, as detailed in the ES. Chapter 13 of the ES should therefore be referred to for full details of the methodology. However, in updating the modelling the following changes have been made.

The impact of operational traffic has been predicted using the ADMS-Roads dispersion model (version 5.0, released September 2020).

The emission factors released by Defra in August 2020, provided in the Emissions Factor Toolkit EFT2020_V10, have been used to predict traffic related emissions of NO_x, PM₁₀ and PM_{2.5}.

Emission factors and background data used in the prediction of future air quality concentrations predict a gradual decline in pollution levels over time due to improved emissions from new vehicles and the gradual renewal of the vehicle fleet. In recent years the Defra emission factors published within the Emission Factor Toolkits (EFT) have been found to predict lower NO_x concentrations in future years compared to concentrations measures at roadside locations across the UK. However, research carried out by Air Quality Consultants Ltd (AQC) has now shown that emissions of NO_x from vehicles within the recently released EFT are now matching concentrations recorded at roadside locations between 2013 to 2019. The report concludes that *'the EFT is now unlikely to over-state the rate at which NO_x emissions decline into the future at an 'average' site in the UK. Indeed, the balance of evidence suggests that, on average, NO_x concentrations are likely to decline more quickly in the future than predicted by the EFT'*. This has removed the need for the use of any sensitivity tests for future year scenarios.

However, to predict as far into the future as 2029 continues to hold some uncertainty. The assessment has therefore used 2025 emissions data to predict impacts in conjunction with 2029 traffic data to ensure a cautious approach to the assessment.

Meteorological data from East Malling meteorological site for 2019 has been used within the ADMS model.

Background data for use in the assessment has been taken from the DEFRA 2018 based background maps published in August 2020, as set out in Table C1 below.

Table C1: Defra Background Data from 2018 Based Background Data

Grid Square (OS Grid Reference)	NO ₂ (µg/m ³)		PM ₁₀ (µg/m ³)		PM _{2.5} (µg/m ³)	
	2019	2025	2019	2025	2019	2025
578500, 168500	16.4	13.6	18.1	16.8	13.0	12.1
579500, 168500	15.5	12.6	16.4	15.2	11.4	10.4
580500, 168500	13.2	10.9	15.1	13.9	10.3	9.3
581500, 168500	12.2	10.2	14.0	12.9	9.7	8.8
576500, 167500	17.8	14.6	18.3	17.0	13.1	12.1
577500, 167500	19.0	16.1	19.2	17.9	14.0	13.1

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Grid Square (OS Grid Reference)	NO ₂ (µg/m ³)		PM ₁₀ (µg/m ³)		PM _{2.5} (µg/m ³)	
	2019	2025	2019	2025	2019	2025
578500, 167500	16.1	13.3	17.6	16.4	12.6	11.7
579500, 167500	16.1	13.1	17.1	15.9	12.0	11.0
580500, 167500	14.2	11.7	15.7	14.5	11.0	10.0
581500, 167500	13.0	10.7	14.6	13.4	10.1	9.2
577500, 166500	16.5	11.7	17.6	16.4	12.6	11.7
578500, 166500	16.7	11.4	16.9	15.7	11.8	10.9
579500, 166500	18.1	14.3	16.9	15.6	11.7	10.7
580500, 166500	15.8	12.2	16.3	15.0	11.5	10.5
581500, 166500	14.6	11.8	15.9	14.7	11.2	10.3
579500, 165500	17.5	14.3	16.0	14.8	11.0	10.0
580500, 165500	14.9	12.2	16.1	14.9	11.4	10.4
581500, 165500	14.5	11.8	16.3	15.1	11.5	10.6
582500, 165500	13.6	11.1	15.3	14.1	10.6	9.6
579500, 164500	15.4	12.3	16.4	15.1	11.4	10.4
579500, 163500	15.6	12.3	16.2	15.0	11.1	10.1

The assessment of impacts on the Medway estuaries and Marshes SSSI has been updated to include emissions of ammonia (NH₃). Emissions of NH₃ are not included in the EFT2010. NH₃ emissions are produced by the control systems that are designed to reduce NO_x emissions from road vehicles. AQC published a report discussing emissions of NH₃ from road vehicles and the potential impact on nitrogen-sensitive habitats⁵. To accompany the report AQC have also published vehicle related ammonia emission factors within the Calculator for Road Emissions of Ammonia (CREAM) workbook⁶. NH₃ emissions for the assessment years 2019 and 2025 have been obtained from the CREAM workbook.

⁵ AQC (2020) Ammonia Emissions from Roads for Assessing Impacts on Nitrogen-sensitive Habitats, February 2020

⁶ <https://www.aqconsultants.co.uk/resources> 'Calculator for Road Emissions of Ammonia CREAM V1A

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NH₃ will also contribute to nitrogen deposition. The contribution to nutrient nitrogen has been calculated using the approach set out within the IAQM guidance on the assessment of air quality impacts on designated nature conservation sites⁷ by applying a dry deposition velocity of 0.02 m/s (for grassland habitats) and a conversion factor from µg/m³ to kg/ha/yr of 260.

In accordance with data set out on the APIS website a background NH₃ concentration of 0.96 µg/m³ and a critical load (CL) of 3 µg/m³ have been used for the assessment.

There has been no change to the traffic data used in the assessment.

The assessment has predicted impacts at the same receptor locations as set out in Chapter 13 of the ES to ensure consistency with the previous assessment.

The model verification has been updated to use the most recently available monitoring data for 2019 available within the Medway 2019 Annual Status Report (ASR)⁸.

The model output of road-NO_x has been compared with the 'measured' road-NO_x, which was calculated from the measured NO₂ concentrations and the DEFRA 2019 background NO₂ concentrations within the NO_x from NO₂ calculator published by Defra.

A primary adjustment factor was determined as the slope of the best fit line between the 'measured' road contribution and the model derived road contribution, forced through zero (Figure C1). This factor was then applied to the modelled road-NO_x concentration for each monitoring Site to provide adjusted modelled road-NO_x concentrations. The total NO₂ concentrations were then determined by combining the adjusted modelled road-NO_x concentrations with the predicted background NO₂ concentration within the NO_x from NO₂ calculator. A secondary adjustment factor was finally calculated as the slope of the best fit line applied to the adjusted data and forced through zero (Figure C2).

The following primary and secondary adjustment factors have been applied to all modelled NO₂ data:

- Primary adjustment factor: 2.2865
- Secondary adjustment factor: 0.9921

The results imply that the model was under-predicting the road-NO_x contribution. This is a common experience with this and most other models. The final NO₂ adjustment is minor.

Figure C3 compares final adjusted modelled total NO₂ at each of the monitoring sites, to measured total NO₂, and shows the 1:1 relationship, as well as ±10% and ±25% of the 1:1 line. All monitoring points lie within the ±10% line.

⁷ IAQM (2020) A guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites, Version 1.1, May 2020

⁸ Medway Council (2020) 2020 Air Quality Annual Status Report, June 2020

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Figure C1: Comparison of Measured Road-NO_x with Unadjusted Modelled Road-NO_x Concentrations

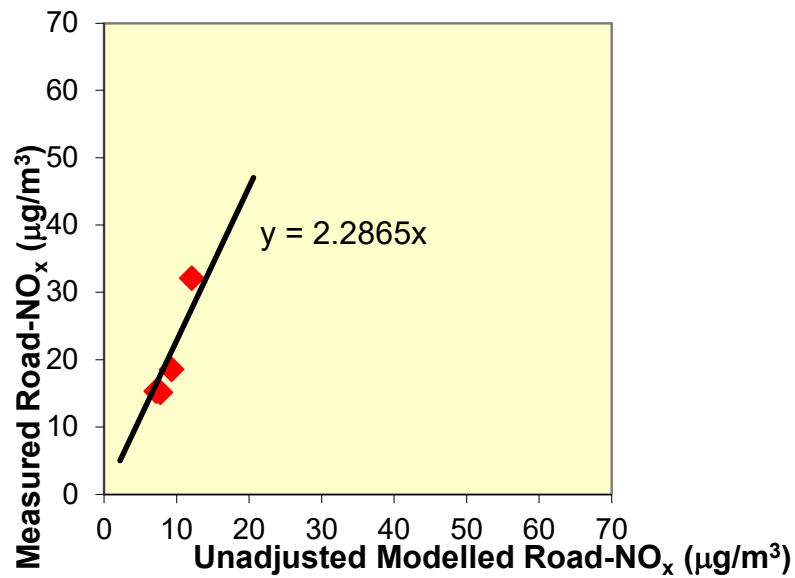
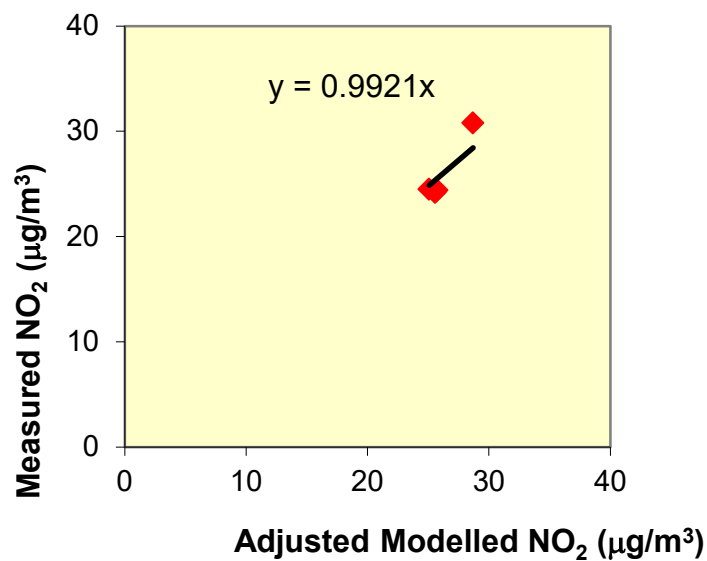
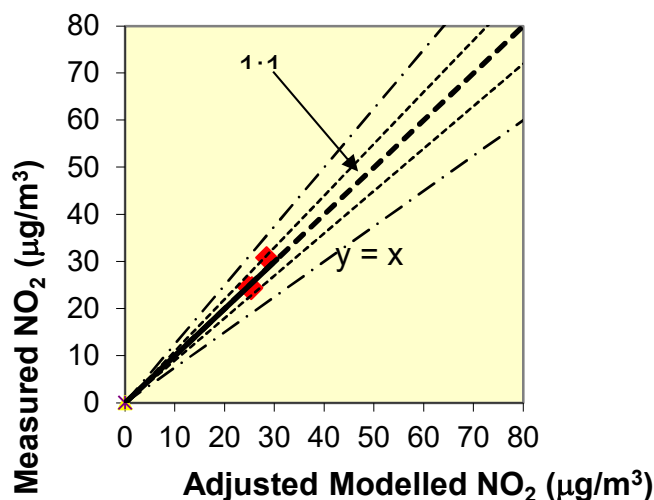


Figure C2: Comparison of Measured NO₂ with Primary Adjusted Modelled NO₂ Concentrations



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Figure C3: Comparison of Measured NO₂ with Fully Adjusted Modelled NO₂ Concentrations



Particulate Matter (PM₁₀)

A primary adjustment factor was determined as the slope of the best fit line between the 'measured' road contribution and the model derived road contribution, forced through zero. This factor was then applied to the modelled road-PM₁₀ concentration to provide adjusted modelled road-PM₁₀ concentrations. The total PM₁₀ concentrations were then determined by combining the adjusted modelled road-PM₁₀ concentrations with the 2019 DEFRA background PM₁₀ concentration..

An adjustment factor was determined as follows:

- Measured PM₁₀: 23.0 µg/m³
- Measured Rd-PM₁₀: 5.4 µg/m³
- Modelled Rd-PM₁₀: 0.83 µg/m³
- Rd-PM₁₀ adjustment factor: 6.469

Particulate Matter (PM_{2.5})

The model output of road-PM_{2.5} has been compared with the 'measured' road-PM_{2.5}, which was calculated from the measured PM_{2.5} concentrations and the DEFRA 2019 background PM₁₀ concentrations.

An adjustment factor was determined as follows:

- Measured PM_{2.5}: 13.7 µg/m³
- Measured Rd-PM_{2.5}: 1.1 µg/m³
- Modelled Rd-PM_{2.5}: 0.48 µg/m³
- Rd-PM_{2.5} adjustment factor: 2.2786

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Appendix D – Results of revised Modelling

Table D1: Baseline Concentrations at Existing Receptors

Receptor	Annual Mean ($\mu\text{g}/\text{m}^3$)							
	2019 Baseline				2025 Without Development			
	NO ₂	PM ₁₀		PM _{2.5}	NO ₂	PM ₁₀		PM _{2.5}
		Annual Mean	Days >50 $\mu\text{g}/\text{m}^3$			Annual Mean	Days >50 $\mu\text{g}/\text{m}^3$	
R1	15.2	15.9	0	10.4	12.1	14.8	0	9.5
R2	18.6	18.3	2	10.9	14.3	17.4	1	10.0
R3	17.4	17.6	1	10.8	13.5	16.6	1	9.8
R4	22.8	20.7	4	12.2	17.2	19.8	3	11.3
R5	20.1	18.8	2	11.9	15.4	17.7	1	10.9
R6	22.7	20.7	4	12.2	17.0	19.7	3	11.3
R7	26.8	24.3	11	14.3	20.0	23.4	9	13.4
R8	21.1	19.2	2	11.9	15.5	18.2	2	11.0
R9	24.8	21.4	5	12.9	18.4	20.4	4	11.9
R10	20.1	19.5	3	12.4	15.6	18.4	2	11.5
R11	22.7	21.5	5	13.4	17.4	20.5	4	12.5
R12	23.7	21.6	6	12.9	17.7	20.6	4	11.9
R13	21.5	20.0	3	11.8	16.1	19.0	2	10.9
R14	22.2	20.4	4	11.9	16.6	19.5	3	11.5
R15	16.7	17.1	1	11.5	13.2	16.0	0	10.5
R16	20.5	19.0	2	12.0	15.7	17.9	1	11.1
R17	20.8	19.8	3	12.5	15.9	18.7	2	11.6
R18	30.5	23.4	9	13.0	22.4	22.6	7	12.1
R19	21.7	19.9	3	12.4	16.7	18.9	2	11.5
R20	28.7	24.3	11	13.3	21.1	23.5	9	12.4
R21	30.6	26.3	16	14.4	22.4	25.5	14	13.4
R22	23.6	21.9	6	13.5	18.0	20.9	5	12.5
R23	31.5	25.3	13	15.6	23.8	26.0	15	14.6
R24	24.8	22.7	7	13.9	18.9	21.5	5	13.0

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Receptor	Annual Mean ($\mu\text{g}/\text{m}^3$)							
	2019 Baseline				2025 Without Development			
	NO ₂	PM ₁₀		PM _{2.5}	NO ₂	PM ₁₀		PM _{2.5}
		Annual Mean	Days >50 $\mu\text{g}/\text{m}^3$			Annual Mean	Days >50 $\mu\text{g}/\text{m}^3$	
R25	24.3	22.3	7	13.8	18.7	21.1	5	12.9
R26	20.6	20.2	4	13.4	16.3	18.8	2	12.4
R27	26.6	21.0	5	12.6	19.8	20.0	3	11.6
R28	26.1	21.5	5	12.6	19.5	20.5	4	11.7
R29	20.3	18.6	2	11.6	15.5	17.5	1	11.0
R30	20.3	18.4	2	11.9	15.6	17.3	1	11.0
R31	18.5	17.7	1	11.6	14.2	16.6	1	10.7
R32	22.2	19.8	3	12.3	16.4	18.8	2	11.3
R33	26.3	21.8	6	12.7	18.8	20.8	4	11.7
R34	22.2	19.8	3	12.3	16.4	18.8	2	11.3
R35	23.4	21.1	5	12.3	17.1	20.1	4	11.4
R36	28.9	24.1	10	12.7	20.4	23.3	9	11.7
R37	22.0	19.9	3	11.8	16.2	18.9	2	10.9
R38	26.6	22.8	8	12.6	18.5	21.9	6	11.6

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Table D2: Future Concentrations at Existing Receptors

Receptor	Annual Mean ($\mu\text{g}/\text{m}^3$)							
	2025 Baseline				2025 With Development			
	NO ₂	PM ₁₀		PM _{2.5}	NO ₂	PM ₁₀		PM _{2.5}
		Annual Mean	Days >50 $\mu\text{g}/\text{m}^3$			Annual Mean	Days >50 $\mu\text{g}/\text{m}^3$	
R1	12.1	14.8	0	9.5	12.4	15.1	0	9.5
R2	14.3	17.4	1	10.0	15.1	18.1	1	10.1
R3	13.5	16.6	1	9.8	14.1	17.2	1	10.0
R4	17.2	19.8	3	11.3	18.0	20.6	4	11.5
R5	15.4	17.7	1	10.9	15.5	17.8	1	10.9
R6	17.0	19.7	3	11.3	17.2	20.0	3	11.4
R7	20.0	23.4	9	13.4	20.3	23.7	10	13.4
R8	15.5	18.2	2	11.0	15.5	18.2	2	11.0
R9	18.4	20.4	4	11.9	18.9	20.8	4	12.0
R10	15.6	18.4	2	11.5	15.7	18.5	2	11.5
R11	17.4	20.5	4	12.5	17.5	20.7	4	12.5
R12	17.7	20.6	4	11.9	18.7	21.5	6	12.1
R13	16.1	19.0	2	10.9	17.0	19.9	3	11.1
R14	16.6	19.5	3	11.5	17.0	19.9	3	11.6
R15	13.2	16.0	0	10.5	13.3	16.1	0	10.6
R16	15.7	17.9	1	11.1	15.9	18.1	1	11.1
R17	15.9	18.7	2	11.6	16.0	18.8	2	11.6
R18	22.4	22.6	7	12.1	22.5	22.7	7	12.1
R19	16.7	18.9	2	11.5	16.8	19.0	2	11.5
R20	21.1	23.5	9	12.4	21.3	23.7	10	12.5
R21	22.4	25.5	14	13.4	22.7	25.8	14	13.5
R22	18.0	20.9	5	12.5	18.1	21.0	5	12.6
R23	23.8	26.0	15	14.6	24.0	26.3	16	14.7
R24	18.9	21.5	5	13.0	19.0	21.6	6	13.0
R25	18.7	21.1	5	12.9	18.7	21.2	5	12.9
R26	16.3	18.8	2	12.4	16.3	18.9	8	12.5
R27	19.8	20.0	3	11.6	20.0	20.2	4	11.6

TECHNICAL NOTE

Receptor	Annual Mean ($\mu\text{g}/\text{m}^3$)							
	2025 Baseline				2025 With Development			
	NO ₂	PM ₁₀		PM _{2.5}	NO ₂	PM ₁₀		PM _{2.5}
		Annual Mean	Days >50 $\mu\text{g}/\text{m}^3$			Annual Mean	Days >50 $\mu\text{g}/\text{m}^3$	
R28	19.5	20.5	4	11.7	20.2	21.3	5	11.8
R29	15.5	17.5	1	11.0	16.0	17.9	1	11.1
R30	15.6	17.3	1	11.0	15.7	17.4	1	11.0
R31	14.2	16.6	1	10.7	14.3	16.7	1	10.7
R32	16.4	18.8	2	11.3	16.5	18.9	2	11.3
R33	18.8	20.8	4	11.7	19.0	20.9	5	11.7
R34	16.4	18.8	2	11.3	16.5	18.9	2	11.3
R35	17.1	20.1	4	11.4	17.3	20.3	4	11.4
R36	20.4	23.3	9	11.7	20.6	23.6	9	11.8
R37	16.2	18.9	2	10.9	16.2	19.0	2	10.9
R38	18.5	21.9	6	11.6	18.5	21.9	6	11.6

TECHNICAL NOTE

Table D3: Change in Concentrations Brought About by Development

Receptor	NO ₂			PM ₁₀			PM _{2.5}		
	Annual Mean (µg/m ³)	As % of AQAL	Significance of Impact	Annual Mean (µg/m ³)	As % of AQAL	Significance of Impact	Annual Mean (µg/m ³)	As % of AQAL	Significance of Impact
R1	0.3	1	Negligible	0.3	1	Negligible	0.1	0.	Negligible
R2	0.8	2	Negligible	0.4	2	Negligible	0.1	1	Negligible
R3	0.6	1	Negligible	0.6	1	Negligible	0.1	0	Negligible
R4	0.8	2	Negligible	0.8	2	Negligible	0.2	1	Negligible
R5	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R6	0.2	1	Negligible	0.2	1	Negligible	0.0	0	Negligible
R7	0.3	1	Negligible	0.3	1	Negligible	0.1	0	Negligible
R8	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R9	0.5	1	Negligible	0.4	1	Negligible	0.1	0	Negligible
R10	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R11	0.2	0	Negligible	0.2	0	Negligible	0.0	0	Negligible
R12	0.9	2	Negligible	0.9	2	Negligible	0.2	1	Negligible
R13	0.9	2	Negligible	0.9	2	Negligible	0.2	1	Negligible
R14	0.4	1	Negligible	0.4	1	Negligible	0.1	0	Negligible
R15	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R16	0.2	0	Negligible	0.2	0	Negligible	0.0	0	Negligible
R17	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R18	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R19	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R20	0.2	1	Negligible	0.2	1	Negligible	0.0	0	Negligible
R21	0.3	1	Negligible	0.3	1	Negligible	0.1	0	Negligible
R22	0.2	0	Negligible	0.2	0	Negligible	0.0	0	Negligible
R23	0.3	1	Negligible	0.3	1	Negligible	0.1	0	Negligible
R24	0.2	0	Negligible	0.2	0	Negligible	0.0	0	Negligible
R25	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R26	0.0	0	Negligible	0.0	0	Negligible	0.0	0	Negligible
R27	0.2	1	Negligible	0.2	0	Negligible	0.0	0	Negligible
R28	0.7	2	Negligible	0.7	2	Negligible	0.1	1	Negligible
R29	0.4	1	Negligible	0.4	1	Negligible	0.1	0	Negligible

TECHNICAL NOTE

Receptor	NO ₂			PM ₁₀			PM _{2.5}		
	Annual Mean (µg/m ³)	As % of AQAL	Significance of Impact	Annual Mean (µg/m ³)	As % of AQAL	Significance of Impact	Annual Mean (µg/m ³)	As % of AQAL	Significance of Impact
R30	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R31	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R32	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R33	0.2	0	Negligible	0.2	0	Negligible	0.0	0	Negligible
R34	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R35	0.2	0	Negligible	0.2	0	Negligible	0.0	0	Negligible
R36	0.2	1	Negligible	0.3	1	Negligible	0.0	0	Negligible
R37	0.1	0	Negligible	0.1	0	Negligible	0.0	0	Negligible
R38	0.0	0	Negligible	0.0	0	Negligible	0.0	0	Negligible

TECHNICAL NOTE

Ecological Receptors

Table D4: Baseline Concentration and Deposition Rates at Ecological Receptors

Receptor	2019 Base				2025 Without Development			
	Annual Mean NO _x (µg/m ³)	Maximum 24-hour NO _x (µg/m ³)	Annual Mean NH ₃ (µg/m ³)	N-Deposition (kgN/ha/yr)	Annual Mean NO _x (µg/m ³)	Maximum 24-hour NO _x (µg/m ³)	Annual Mean NH ₃ (µg/m ³)	N-Deposition (kgN/ha/yr)
E1	21.0	30.0	1.0	13.6	21.0	27.5	1.0	13.5
E2	21.0	29.7	1.0	13.5	21.0	27.3	1.0	13.5
E3	26.6	55.9	1.3	15.8	26.6	43.1	1.4	15.4
E3 +10 m	25.9	52.4	1.3	15.5	25.9	41.0	1.3	15.1
E3 +20m	25.3	50.1	1.2	15.2	25.3	39.5	1.3	14.9
E3 +30m	24.9	48.2	1.2	15.1	24.9	38.4	1.3	14.8
E3 +40m	24.5	46.6	1.2	14.9	24.5	37.5	1.3	14.6
E3 +50m	24.2	45.3	1.2	14.8	24.2	36.7	1.2	14.5
E3 +60 m	23.9	44.2	1.2	14.7	23.9	36.0	1.2	14.4
E3 +100m	23.1	40.7	1.1	14.4	23.1	33.9	1.2	14.2
E4	26.1	41.2	1.2	14.6	23.6	34.2	1.2	14.4
E4 +10 m	25.7	40.2	1.2	14.5	23.4	33.6	1.2	14.3
E4 +20m	25.3	39.1	1.1	14.4	23.2	32.9	1.2	14.2
E4 +30m	25.0	38.4	1.1	14.4	23.0	32.5	1.2	14.2
E4 +40m	24.7	37.7	1.1	14.3	22.8	32.0	1.2	14.1
E4 +50m	24.5	37.1	1.1	14.2	22.7	31.7	1.1	14.1
E4 +60 m	24.3	36.7	1.1	14.2	22.5	31.4	1.1	14.0
E4 +100m	23.6	35.1	1.1	14.0	22.1	30.5	1.1	13.9
E5	24.4	37.4	1.1	14.2	22.6	31.9	1.1	14.1

TECHNICAL NOTE

Table D5: Future Concentration and Deposition Rates at Ecological Receptors

Receptor	2025 Base				2025 With Development			
	Annual Mean NO _x (µg/m ³)	Maximum 24-hour NO _x (µg/m ³)	Annual Mean NH ₃ (µg/m ³)	N-Deposition (kgN/ha/yr)	Annual Mean NO _x (µg/m ³)	Maximum 24-hour NO _x (µg/m ³)	Annual Mean NH ₃ (µg/m ³)	N-Deposition (kgN/ha/yr)
E1	21.0	27.5	1.0	13.5	21.2	27.9	1.0	13.5
E2	21.0	27.3	1.0	13.5	21.1	27.8	1.0	13.5
E3	26.6	43.1	1.4	15.4	27.0	44.0	1.4	14.5
E3 +10 m	25.9	41.0	1.3	15.1	26.1	41.8	1.3	15.2
E3 +20m	25.3	39.5	1.3	14.9	25.6	40.3	1.3	15.0
E3 +30m	24.9	38.4	1.3	14.8	25.1	39.1	1.3	14.8
E3 +40m	24.5	37.5	1.3	14.6	24.7	38.1	1.3	14.7
E3 +50m	24.2	36.7	1.2	14.5	24.4	37.3	1.2	14.6
E3 +60 m	23.9	36.0	1.2	14.4	24.1	36.5	1.2	14.5
E3 +100m	23.1	33.9	1.2	14.2	23.3	34.3	1.2	14.2
E4	23.6	34.2	1.2	14.4	23.8	34.7	1.2	14.5
E4 +10 m	23.4	33.6	1.2	14.3	23.6	34.1	1.2	14.4
E4 +20m	23.2	32.9	1.2	14.2	23.3	33.4	1.2	14.3
E4 +30m	23.0	32.5	1.2	14.2	23.1	32.9	1.2	14.2
E4 +40m	22.8	32.0	1.2	14.1	23.0	32.4	1.2	14.2
E4 +50m	22.7	31.7	1.1	14.1	22.8	32.1	1.1	14.1
E4 +60 m	22.5	31.4	1.1	14.0	22.7	31.8	1.1	14.1
E4 +100m	22.1	30.5	1.1	13.9	22.2	30.8	1.1	13.9
E5	22.6	31.9	1.1	14.1	22.8	32.3	1.1	14.1

TECHNICAL NOTE

Table D6: Change in Concentrations Brought About by Development

Receptor	Annual Mean NO _x			24-hour NO _x			Annual Mean NH ₃			N-Deposition		
	Annual Mean (µg/m ³)	AS % of AQAL	Significance of Impact	24-hour NO _x (µg/m ³)	AS % of AQAL	Significance of Impact	Annual Mean (µg/m ³)	AS % of AQAL	Significance of Impact	Deposition (kgN/ha/yr)	AS % of CL	Significance of Impact
E1	0.1	0.4	1% or less - not significant	0.4	0.6	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.2	<1% - not significant
E2	0.2	0.5	1% or less - not significant	0.5	0.7	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.3	<1% - not significant
E3	0.3	1.1	>1% further consideration	0.9	1.2	<10% - not significant	<0.1	0.7	<1% - not significant	0.1	0.5	<1% - not significant
E3 +10 m	0.3	1.0	>1% further consideration	0.8	1.1	<10% - not significant	<0.1	0.6	<1% - not significant	<0.1	0.5	<1% - not significant
E3 +20m	0.3	0.9	1% or less - not significant	0.7	1.0	<10% - not significant	<0.1	0.6	<1% - not significant	<0.1	0.4	<1% - not significant
E3 +30m	0.2	0.8	1% or less - not significant	0.7	0.9	<10% - not significant	<0.1	0.5	<1% - not significant	<0.1	0.4	<1% - not significant
E3 +40m	0.2	0.8	1% or less - not significant	0.6	0.8	<10% - not significant	<0.1	0.5	<1% - not significant	<0.1	0.4	<1% - not significant
E3 +50m	0.2	0.7	1% or less - not significant	0.6	0.8	<10% - not significant	<0.1	0.4	<1% - not significant	<0.1	0.3	<1% - not significant
E3 +60 m	0.2	0.7	1% or less - not significant	0.6	0.7	<10% - not significant	<0.1	0.4	<1% - not significant	<0.1	0.3	<1% - not significant
E3 +100m	0.2	0.6	1% or less - not significant	0.5	0.6	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.3	<1% - not significant
E4	0.2	0.6	1% or less - not significant	0.5	0.7	<10% - not significant	<0.1	0.4	<1% - not significant	<0.1	0.3	<1% - not significant
E4 +10 m	0.2	0.6	1% or less - not significant	0.4	0.6	<10% - not significant	<0.1	0.4	<1% - not significant	<0.1	0.3	<1% - not significant

TECHNICAL NOTE

Receptor	Annual Mean NO _x			24-hour NO _x			Annual Mean NH ₃			N-Deposition		
	Annual Mean (µg/m ³)	AS % of AQAL	Significance of Impact	24-hour NO _x (µg/m ³)	AS % of AQAL	Significance of Impact	Annual Mean (µg/m ³)	AS % of AQAL	Significance of Impact	Deposition (kgN/ha/yr)	AS % of CL	Significance of Impact
E4 +20m	0.2	0.5	1% or less - not significant	0.4	0.6	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.3	<1% - not significant
E4 +30m	0.1	0.5	1% or less - not significant	0.4	0.6	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.3	<1% - not significant
E4 +40m	0.1	0.5	1% or less - not significant	0.4	0.5	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.2	<1% - not significant
E4 +50m	0.1	0.4	1% or less - not significant	0.4	0.5	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.2	<1% - not significant
E4 +60 m	0.1	0.4	1% or less - not significant	0.4	0.5	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.2	<1% - not significant
E4 +100m	0.1	0.4	1% or less - not significant	0.3	0.4	<10% - not significant	<0.1	0.2	<1% - not significant	<0.1	0.2	<1% - not significant
E5	0.1	0.4	1% or less - not significant	0.4	0.5	<10% - not significant	<0.1	0.3	<1% - not significant	<0.1	0.2	<1% - not significant

TECHNICAL NOTE

Appendix 9

CLIMATE CHANGE NOTE - STANTEC

TECHNICAL NOTE

Job Name: Pump & Bloors Farm
Job No: 44583
Date: 27 January 2021
Prepared By: Jenny Hughes, Roxy Cottey
Subject: **Sustainability and Climate Change Appraisal**

Executive Summary

This Sustainability and Climate Change Technical Note has been prepared by Stantec to support the submission of appeal evidence to Medway Council in relation to the Proposed Development at Pump & Bloors Farm (Application no. MC/19/1566). The development proposals are for the redevelopment of land off pump lane for approximately 1,250 homes, a local centre, a village green, a two-form entry primary school, a 60-bed extra care facility, an 80 bed care home and associated access.

A sustainability appraisal has been undertaken of the Proposed Development using the Medway Local Plan Sustainability Appraisal (2018) methodology and objectives. The appraisal has been undertaken based on the proposed mitigation and enhancement measures being developed and delivered.

The Sustainability Appraisal demonstrates that the proposed development will have positive local effects in relation to the provision of affordable, sustainable housing and care facilities, and good access to services and facilities, including an on-site local centre. In addition, the primary school will provide wider benefits with additional capacity to support meeting the current local deficit in capacity. The development will aim to create safe and accessible environments and will seek to improve public health and wellbeing of local residents. Measures are proposed to conserve and enhancing wildlife/biodiversity on site, including the creation of enhanced habitats. The Proposed Development will encourage the uptake of active and sustainable forms of travel, through the provision of high-quality pedestrian and cycle links, and a package of associated measures. Additional opportunities and recommendations to further enhance the development proposals as the development progresses have been identified.

There are potential negative effects in relation to conserving the character of the District's landscapes, effects on heritage assets during the construction phase, and in relation to material assets, however, opportunities have been identified to reduce and mitigate these effects. Negligible effects have been identified with regards to flood risk and water resource management, and there is potential for minor positive or negative effects associated with impacts on climate change, and green and open spaces.

A review of how the Proposed Development seeks to reduce greenhouse gas (GHG) emissions associated with the construction and operation of the Proposed Development, and how climate change adaptation and mitigation measures have been embedded into the design has been undertaken. The Proposed Development will seek to reduce GHG emissions from transport by reducing the need to travel through co-location of facilities and encouraging the uptake of sustainable and active modes of travel. Measures to passively reduce energy demand have been embedded into the design, which will help to reduce GHG emissions from energy use. A summary of how the National Grid is anticipated to decarbonise over the next decade has been provided to demonstrate that GHG emissions associated with energy use will decrease over time. The Proposed Development has taken into consideration impact from climate change within the design of the Sustainable Urban Drainage Systems (SuDS). A series of further potential mitigation measures which can be incorporated as the design progresses to reduce the contribution of the Development to climate change and to increase resilience to climate change have also been identified.

At the reserved matters stage, further assessments will be undertaken, and strategies will be submitted, including a Construction Environmental Management Plan (CEMP), Operational Waste Strategy, Renewable Energy Assessment, Landscape and Ecological Management Plan (LEMP) and a Sustainability Statement. These assessments will further set out and confirm measures to reduce climate change impacts associated with the development.

TECHNICAL NOTE

1. Introduction

- 1.1. Stantec UK Limited (Stantec) has been appointed by A C Goatham & Sons to prepare a Sustainability and Climate Change Appraisal for the Proposed Development at Pump & Bloors Farm, to support the submission of appeal evidence to Medway Council in relation to the outline planning application (Application no. MC/19/1566).

Proposed Development

- 1.2. The Proposed Development at Pump & Bloor Farm is for:

“Redevelopment of land off Pump Lane to include residential development comprising approximately 1,250 residential units, a local centre (with final uses to be determined at a later stage), a village green, a two form entry primary school, a 60 bed extra care facility, an 80 bed care home and associated access (vehicular, pedestrian, cycle): Outline application with access for consideration (matters reserved scale, appearance, landscaping and layout)-Environmental Impact Assessment Development.”

Purpose and Structure

- 1.3. This technical note has been prepared to assess the proposed development in relation to delivering sustainable development, and to provide a commentary in relation to climate change. A high-level Sustainability Appraisal is first undertaken to assess the broader sustainability of the development relating to the site's delivery and the planning and regulatory context (see **Section 4**). A more detailed assessment of climate change mitigation (i.e. reduction in greenhouse gas emissions – GHG emissions) and adaptation is then provided in further detail in response to representations made through the planning process (See **Section 5**).
- 1.4. This note is structured as follows:
- **Section 2: Policy Context** – provides a summary and overview of the proposed development in relation to relevant local and national sustainable development and climate change policy and regulation;
 - **Section 3: Sustainability Appraisal** - appraises the site against the Medway local plan sustainability appraisal objectives;
 - **Section 4: Climate Change** - summarises key design features and commitments which have been incorporated to reduce climate change impacts and adapt to the effects of climate change, and sets out how further detail and measures will be established as the delivery of the scheme progresses; and
 - **Section 5: Summary** – summarises the note and confirms proposed next steps at the reserved matters stage.

2. Policy Context

- 2.1. This section will provide a brief overview of the following key national legislation and local policies with regards to climate change and sustainable development that are relevant to the Proposed Development.

Climate Change Act 2008 (2050 Target Amendment)

- 2.2. Climate change is recognised as one of the most immediate global environmental challenges. The Climate Change Act 2008 (2050 Target Amendment) Order 2019 mandates the UK to reduce emissions by at least 100% lower than the 1990 baseline by 2050.

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- 2.3. The Act requires the Government to set legally binding emissions targets, called carbon budgets, every five years, which will, in turn, steer the path to achieving the long-term climate targets, and determine associated regulatory action required in different sectors of the UK economy.

National Planning Policy Framework (2019)

- 2.4. The National Planning Policy Framework (NPPF) sets out the government's planning policies for England and how these are expected to be applied. The NPPF supports the role of the local plan process and maintains the "*presumption in favour of sustainable development*". The NPPF defines three objectives for sustainable development: economic, social, and environmental. The new village settlement has been developed, and will continue to be, with full regard to balancing and delivering the three objectives of sustainable development. This is assessed in further detail in **Section 4**.

National Building Regulations – Part L (Conservation of Fuel and Power)

- 2.5. The UK's international commitments are also transposed into the national Building Regulations. The energy efficiency requirements of the Building Regulations are set out in Part L (Conservation of Fuel and Power). Part L is subject to 'step changes', becoming increasingly stringent as new revisions are adopted.

- 2.6. In October 2019, the UK Government began a consultation on a proposed uplift to the energy efficiency requirements defined in the Building Regulations Part L, with the aim of implementing these changes by 2020, and a Future Homes Standard (FHS) for 2025. The consultation also set out what a home built to the FHS is likely to be like. It states:

"We expect that an average home built to [the Future Homes Standard] will have 75-80% less carbon emissions than one built to the current energy efficiency requirements (Approved Document L 2013). We expect this will be achieved through very high fabric standards and a low carbon heating system. This means a new home built to the Future Homes Standard might have a heat pump, triple glazing and standards for walls, floors and roofs that significantly limit any heat loss."

- 2.7. New developments are encouraged to reduce carbon emissions in accordance with the energy hierarchy of reducing energy demands in the first instance, supplying energy efficiently, and finally the provision of appropriate renewable and low carbon energy technologies. The Proposed Development will be required to comply with Part L of the Building Regulations and consider anticipated future changes at the Reserved Matters stages.

Energy White Paper

- 2.8. The Government's Energy White Paper, December 2020, aims to set out how energy, and the move towards a net-zero carbon economy, will play a critical role in enabling interdependent infrastructure and post-COVID economic growth. It is critical to the levelling up agenda.
- 2.9. Specifically relating to housing growth, the White Paper continues to set out the delivering of the Future Home Standard by 2025 has the mechanism for delivering zero carbon ready homes. It also notes that consultation on new energy performance of non-domestic buildings will be undertaken in due course.

Medway Council Climate Emergency

- 2.10. In April 2019, Medway Council declared a Climate Emergency, and are currently developing proposals to address the climate emergency and reduce greenhouse gas emissions through developing and delivering a cross-cutting action plan. The Proposed Development will seek to work with Medway where relevant and appropriate to contribute to the delivery of their climate emergency action plan and will continue to progress the design to reduce climate change impacts associated with the development at the reserved matters stage.

TECHNICAL NOTE

3. Sustainability Appraisal

- 3.1. This section presents a high-level sustainability appraisal of the Proposed Development against the emerging Medway Local Plan SA 2018, in **Table 1** below. The sustainability appraisal uses the revised SA Framework Methodology (Table 36 of the Local Plan SA¹), which has 14 objectives. The rating system is included in **Table 3.1** below. This is based on the currently available assessments and information. The appraisal rating has been undertaken based on the proposed mitigation and enhancement measures being developed and delivered, and in accordance with standard construction practices. Additional opportunities and recommendations have been identified to further enhance the development proposals as the development progresses.

Table 3.1: Sustainability Appraisal Rating²

Significance of Effect		Description of Effect
++	Significant positive	Likely to benefit a large area of Medway and neighbouring areas, or a large number of people and receptors. The effects are likely to be direct and permanent and the magnitude will be major
+	Minor positive	The extent of predicted beneficial effects is likely to be limited to small areas within Medway or small groups of people and receptors. The effects can be direct or indirect, temporary or reversible. The magnitude of the predicted effects will be minor.
0	Neutral	Neutral effects are predicted where the option being assessed is unlikely to alter the present or future baseline situation.
-	Minor negative	Minor negative effects are likely to be limited to small areas within Medway, or limited to small groups of people and receptors and or those with low sensitivity to change. The effects can be direct or indirect, temporary or reversible. The importance of the receptor is likely to be minor as is the magnitude of the predicted effect.
--	Significant negative	Likely to affect the whole, or large areas of Medway and neighbouring areas. Also applies to effects on nationally or internationally important assets. The effects are likely to be direct, irreversible and permanent and/or affecting areas or assets with high sensitivity to change. The magnitude of the predicted effects will also be major.
?	Unknown	This significance criterion is applied to effects where there is insufficient information to make a robust assessment. It is also applied to the assessment of options that can have both positive and negative effects and it is not clear whether the positive or negative effects outweigh each other.
N/A	Not applicable	This is applied to objectives that are not affected by the option or policy being assessed.

¹ https://www.medway.gov.uk/downloads/file/2585/medway_local_plan_sustainability_appraisal_-_appraisal_of_development_scenarios_and_draft_policies

² Combined ratings are also included where relevant- e.g. +/- where a combination of potential significant positive and minor negative effects are likely.

TECHNICAL NOTE

Table 4.1: Sustainability Appraisal of Proposed Development against Medway Local Plan 2018 SA

SA Objective	Rating	Development Proposals	Opportunities and Recommendations
1. To ensure equal access to education and skills at all levels to increase opportunities for individuals and improve Medway's future labour market.	++	As outlined within the Socioeconomics ES chapter (Rapleys, 2020), there is currently a deficit capacity for additional primary school children within the local area. The proposals include a 2FE Primary School which accommodate the specific need requirement for primary education onsite to support the new and growing community. These provisions are anticipated to be made during the plan period and will help reduce strain on existing local services.	The site should be designed to facilitate safe and accessible foot and cycle movements through the development. This should include streets with a good level of lighting, safety kerbing and tactile and coloured surfacing. Plans illustrating these measures should be developed at detailed design stage.
2. To encourage suitable employment opportunities in accessible locations.	++	During construction, the Proposed Development will create direct and indirect, temporary and permanent jobs, and will help to reduce local unemployment through partnerships between housebuilders, contractors and local employment agencies. During operation, there will be permanent employment opportunities within the primary school, 60-bed care home, 80 bed extra care facility and commercial and community facilities, located at the centre of the Site and will be highly accessible through the proposed transport network. The Site is located within the existing urban area of Medway, and will have excellent connectivity to the surrounding major employment areas, such as the Gillingham Business Park c.1.5 km to the south, and the Dockyard c.5 km to the west. In addition Rainham town centre is 1km from the development. The proximity of these employment areas allows active travel opportunities to work for residents support both health and climate change aspects of sustainability.	Possible pedestrian and cycle access developments have been included in the proposals, e.g. including improvements along Eastcourt Lane. These proposals should be developed and confirmed at the detailed design stage, and should seek to provide better access to local opportunities, key employment areas and transport hubs such as the Rainham railway station.
3. To establish Medway with a strong economic foundation which enables sustainable growth and competitiveness within the wider region.	+	The Proposed Development will create up to 1,250 new homes, which is likely to bring significant positive contributions to the local economy, through increased expenditure which will support local businesses. Additionally, it is anticipated that jobs will be created during the construction of the proposed development. A school and Village Centre are proposed, which includes small scale retail use and community centre, which will deliver employment opportunities.	The selection of a local workforce to build out the site should be prioritised, and the use of local materials during construction should be promoted.

TECHNICAL NOTE

4. To protect and support growth and prosperity in the town centres.	+	The Site is located within the existing urban area of Medway, and approximately 1 km from Rainham town centre. The net increase in the population of Medway will help to bring significant positive contributions to the town centre. The Proposed Development will connect with the established network of footways within the local area to provide enhanced connectivity.	
5. To conserve and enhance the existing green and open space network.	-/+	There are significant proposals to protect and enhance ecological networks throughout the Site, through provision of a multifunctional greenspace. The Landscape Framework Plan (TG, 2020) sets out measures including: retention and strengthening of hedgebanks and hedgerows; planting of community orchards; creation of a village green; trees and woodland planting; and provision of landscape buffers with tree belts and green corridors along recreation routes, foot cycleways and SUDs. The provision of on-site green space will encourage future residents to enjoy recreational activities locally and reduce recreational impact on surrounding sensitive green space.	The Landscape Strategy should be progressed in accordance with the Design Response set out in the DAS to provide open space for recreation which benefits both existing and new residents.
6. To protect and enhance biodiversity features.	++/-	The Ecology and Conservation ES Chapter states that the Site is currently dominated by a highly managed orchard habitat regarded as overall having a low ecological value (The Ecology Partnership, 2020). The whole of this habitat is to be lost to the Proposed Development, with proposals seeking to create a biodiverse, rich mosaic of habitat resulting in significant improvements to the biodiversity value of the Site. There are potential minor adverse effects on current species and habitats. The creation of enhanced habitats; with native species planting; varied hedgerow planting; additional tree planting in gardens, streets and open space; the establishment of wildlife boxes; and the creation and maintenance of connectivity around the Site, will provide optimal conditions for a range of species present on the Site and in the local area.	A sensitive lighting scheme to reduce the impact on species such as bats will be developed and submitted at detailed design stage. There are opportunities to provide resilience to the impacts of climate change through consideration of a planting regime which includes climate resilience species. This may be further considered during the detailed design stage.
7. To reduce our contribution to the impacts of global climate change and localised pollution.	- /+	During construction, the Proposed Development will generate GHG emissions from activities such as land clearance, combustion of fuels in construction plant/equipment and transport of materials. During operation, the Proposed Development will generate GHG emissions including from increased vehicle use and the Site's overall energy requirements.	Measures to further address the potential GHG emissions associated with the Proposed Development are outlined in Section 4 below.

TECHNICAL NOTE

		<p>There are opportunities to reduce dependency on vehicles and encourage sustainable travel (including rail and bus, and extensive walk and cycle network). A Framework Travel Plan has been prepared (David Tucker Associates, 2019) sets out a package of measures to promote sustainable transport, with the main aim of reducing travel by single occupancy vehicles.</p> <p>Overall, it is noted that the development would likely result in an increase of greenhouse gas emissions. However, it is noted that there may be opportunity for infrastructure to be delivered which reduces emissions associated with the wider community.</p>	
8. To adapt and mitigate the impacts of climate change.	O	<p>The Site is located within Flood Risk Zone 1 (less than 1 in 1,000 annual probability of flooding). The FRA (Stantec, 2019) demonstrates that future occupants of the Proposed Development will be safe from flooding and that the proposals will not increase flood risk elsewhere.</p> <p>As noted above, the proposals include provision of a mosaic of habitats which can support a wide range of species. This enhancement of existing biodiversity will help to provide climate resilience.</p>	Further measures to deliver climate resilient design are outlined in Section 4 below.
9. Promoting enhancing and respecting our historic/cultural heritage assets.	-	Minor to moderate adverse impacts are anticipated during the construction phase of the Proposed Development on local heritage assets. However, embedded measures have been outlined to protect the heritage assets within and surrounding the Site wherever possible, such as retaining boundary planting where possible and the creation of a belt of new orchard type planting as part of a community orchard.	Provide high quality designed dwellings and green open space which respects, retains and enhances the character of the Medway's landscapes and townscapes, such as Rainham Lower Conservation Area.
10. Making the best use of material assets.	-	<p>The Land Use and Agriculture ES Chapter (Reading Agricultural Consultants, 2020), identifies that the majority of the soils found on site are identified as Grade 2 quality (Very Good Quality). The farm is no longer generating a commercial yield when compared to modern requirements and is not deemed suitable to be retained.</p> <p>As outlined above, the site currently provides limited ecological value. The Proposed Development will significantly improve the diversity of habitats on site to support a range of species.</p>	See recommendations outlined in Objective 5 and Objective 6 with regards to green infrastructure provisions.

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11. To improve the health and wellbeing of the residents in Medway and reduce health inequalities across the borough.	+	<p>The Proposed Development will seek to avoid unacceptable impacts from noise, dust and water pollution during its construction and operation. The Air Quality Technical Note (Stantec, 2021) confirms that the Proposed Development will have a negligible impact on local air quality from operational traffic. The proposed SuDS will help to control contamination arising from surface water runoff which could enter a watercourse or groundwater.</p> <p>Furthermore, the Proposed Development will actively encourage healthy lifestyles through the promotion of the uptake of increased physical activity. This is achieved by delivering a range of multifunctional greenspace, including amenity space and play areas, and accessible walking and cycling routes.</p>	<p>A CEMP will be produced to manage the potential noise, air, water and ground pollution that may occur during construction.</p> <p>To further address health inequalities, it is recommended that community engagement is undertaken as the planning process progresses to help identify local needs. Principles of inclusion and age-friendly design should be considered further at the detailed design stage.</p>
12. To promote the resilience of communities by improving deprivation and promoting inclusive communities.	++	<p>The proposals include a Village Centre which will comprise of up to 1,000 sq. m of retail or other neighbourhood uses. This will provide a space for social interaction and establish a strong neighbourhood 'hub' at the heart of the development to promote community cohesion.</p> <p>As outlined in the transport proposals, the Proposed Development will provide excellent connections to the surrounding areas to facilitate an integrated community within Medway.</p> <p>Assuming a provision of 25% affordable housing, the Proposed Development will help to create mixed and inclusive communities.</p>	<p>Good design principles should be adopted such as layout and street scene to create an inclusive, attractive and welcoming neighbourhood. The design should allow neighbouring communities to connect through layout/movement to create space for social interaction, and avoid physical barriers.</p> <p>Ensure the affordable housing is provided 'tenure blind' i.e. both affordable and private housing are designed to a high standard.</p>
13. To reduce the levels, perception and fear of crime across Medway.	+	<p>The potential for the Proposed Development to reduce levels and fear of crime will be developed at the detailed design stage. Strategies to address these issues may be delivered through lighting design, which should address safety concerns, but should not cause light pollution nor detract from the street scene.</p> <p>The green open space proposed throughout the Site will also allow for natural surveillance, helping to eliminate areas with potential for crime.</p>	<p>A lighting design should be prepared at detailed design which will help to create a safe neighbourhood and reduce fear of crime whilst avoiding unacceptable light pollution.</p> <p>Use design to increase natural surveillance, such as fronting houses onto main roads.</p> <p>Provision of secure cycle facilities.</p>

TECHNICAL NOTE

14. To provide a sustainable supply of housing to meet the housing requirements of the borough.	++	It has been acknowledged by planning officers that Medway Council cannot demonstrate “a supply of specific deliverable sites sufficient to provide a minimum of five years’ worth of housing against their housing requirement” as required by paragraph 73 of the NPPF. The Proposed Development will deliver up to 1,125 dwellings within the plan period. The dwellings will consist of both market and affordable properties, designed as a range of family housing to meet the local need. Assuming a provision of 25% affordable housing, a total of 312 affordable homes would be delivered by the Proposed Development in the same period.	It is recommended that the Proposed Development provide a range of tenures, such as private-for-sale alongside the opportunity for Build-to-Rent homes. Consider potential of Specialist Housing for Older Persons, and Custom/Self-Build.
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Table 4.2: Overview of Appraisal Ratings

Appraisal Rating	++	++/-	+	+/- or ++/--	-	--/+	--	0
Number of SA Objectives	4	1	4	2	2	0	0	1

TECHNICAL NOTE

4. Climate Change

- 4.1. This section sets out how the Proposed Development seeks to reduce GHG emissions associated with the construction and operation of the Proposed Development, and how climate change adaptation and mitigation measures have been embedded into the design. The section then sets out further potential mitigation measures which can be incorporated as the design progresses to reduce the contribution of the Development to climate change and to increase the Development's resilience to climate change.

The Site

- 4.2. The Site is currently highly managed and is dominated by an orchard habitat regarded as overall having a low ecological value (The Ecology Partnership, 2020).
- 4.3. Due to the mature nature of the current orchard trees the carbon sequestration benefit is limited when compared to new tree growth and alternative species planting.
- 4.4. Land use GHG emissions relating to agricultural practices include soil management, fertilisation, waste produced as a result of farming activities, and emissions associated with machinery and buildings on site.

Proposed Development

Embedded Design Features

- 4.5. The Proposed Development incorporates several embedded design features to reduce GHG emissions and provide adaptation to climate change. These design features and measures are outlined below.

Reducing GHG Emissions

- The Proposed Development has been designed to reduce the need to travel by co-locating onsite facilities within the Village Centre, which includes scope for healthcare facilities, small scale convenience retail and community services. The greater the range of amenities on site reduces the need for journeys to be made off-site for shopping purposes (Transport Assessment, David Tucker Associates, 2020). This will reduce dependency on private vehicles, and in turn reduce GHG emissions associated with transport.
- The Proposed Development will encourage the uptake of active and sustainable forms of travel, which will help to further reduce GHG emissions associated with transport. The proposals include a network of high-quality pedestrian and cycle links, creating a permeable environment through the Site. The Framework Travel Plan (David Tucker Associates, 2019) sets out a package of measures to promote sustainable transport, with the main aim of reducing travel by single occupancy vehicles.
- The Proposed Development has incorporated design principles which help to passively reduce the energy demand of the development, which therefore reduces GHG emissions associated with energy use. The Proposed Development is set within a comprehensive green infrastructure network. Green open spaces provide evaporative cooling at night, helping to reduce the heat island effect³. The permeability of green spaces throughout the Proposed Development, as well as the selection of plot layout and building location, will help to facilitate air movement and enhance natural ventilation. The retention and creation of vegetation and tree planted areas will help provide shading and local cooling of the microclimate.

³ The term 'heat island' describes built up areas that are hotter than nearby rural areas. This is partly caused by the replacement of natural surface by built surfaces, which absorb a higher proportion of incident radiation, which is then released as heat.

TECHNICAL NOTE

- It is anticipated that the Proposed Development will be built out over the next 10 years. It is anticipated that, as a direct result of the rapid decarbonisation of the national electricity Grid, GHG emissions associated with energy for the Proposed Development will inherently decrease over the next 10 years. The development will therefore align to the zero carbon homes ready agenda set within the Future Homes Standard which will look to achieve a 70% to 80% reduction in GHG emissions for new home energy use compare to Building Regulation Standard pre 2020.

Adaptation to Climate Change

- In accordance with the NPPF, a Flood Risk Assessment (FRA) and Drainage Strategy was prepared to support the OPA (Stantec, 2019). The Site is located within Flood Risk Zone 1 (less than 1 in 1,000 annual probability of flooding). The FRA demonstrates that future occupants of the Proposed Development will be safe from flooding and that the proposals will not increase flood risk elsewhere. The Drainage Strategy adopts a 20% allowance for climate change to embed climate change resilience within the Proposed Development. The proposed surface water drainage strategy makes use of the network of interconnected swales and attenuation basins.

Further Mitigation and Enhancement

- 4.6. There are several opportunities to provide additional measures to reduce the GHG emissions associated with the Proposed Development, and incorporate climate resilience design measures at the detailed design stages. These measures are outlined below.

Reducing GHG Emissions

- A CEMP will be prepared prior to the commencement of construction works at the Site. This is considered as tertiary mitigation. The CEMP will include several mitigation measures covering transport, materials, waste and air quality during construction. Measures that will reduce GHG emissions during construction include, for example, no unnecessary idling of engines, maintenance of plant equipment to check they are operating optimally and efficient use of materials to reduce waste. A Site Waste Management Plan (SWMP) will be implemented specifically to mitigate the effects of waste arisings during the construction of the Proposed Development.
- There is potential for Carbon Dioxide Removal (CDR) associated with the Development and the green infrastructure strategy during operation. This relates to the land use changes from agricultural land to the creation of new habitats, and the retention and enhancement of existing habitats. In 2018, agriculture (livestock, agricultural soils and machinery) accounted for 10% of the UK's greenhouse gas emissions (BEIS, 2020). Mitigation response options analysed by the IPCC have the potential to reduce emissions and result in CDR. Options with the largest potential for CDR include afforestation and soil carbon sequestration in grasslands. In addition, "urban and peri-urban agriculture, and more generally urban greening, can contribute to mitigation (medium confidence) as well as to adaptation (high confidence), with co-benefits for food security and reduced soil-water-air pollution" (IPCC, 2020).
- To help reduce GHG emissions associated with waste, an Operational Waste Strategy will be prepared⁴, which will detail waste collection arrangements and agreed with the County Waste Authority. It is anticipated that domestic waste will be collected and disposed of in line with MC policy and that sufficient capacity exists for recycling storage and collection. Primary mitigation will allow for appropriate recycling practices and reduce emissions associated with operational waste.

⁴ It is noted that the Operational Waste Strategy could be prepared and included within the wider Sustainability Statement.

TECHNICAL NOTE

- A Renewable Energy Assessment will be undertaken and an Energy Strategy will be provided at each Reserved Matters Stage. This assessment will identify the most suitable zero and low carbon technologies which will reduce carbon emissions associated with energy for the operation of the Proposed Development.

Adaptation to Climate Change

- At detailed design a maintenance schedule will be developed, so that it can be put in place for the lifetime of the development to maintain any SuDS specified. Consideration will be given to the impact of a 40% climate change event to ensure flooding of buildings or off-site property does not occur (Stantec, 2019).
- To help provide further surface water attenuation and reduce potable water demand it is proposed that the development will use water butts, while consider the practicalities of rainwater harvesting and grey water recycling. At detailed design a maintenance schedule will be developed, so that it can be put in place for the lifetime of the development to maintain any SuDS specified.
- Development of a Landscape and Ecological Management Plan (LEMP), which would set out measures for ongoing management, maintenance and monitoring of habitats on Site (The Ecology Partnership, 2020). This would increase the long-term resilience of habitats and species within the Site and managing areas that may be affected by droughts.
- Building design should factor in potential climate change effects and changes to weather changes, to ensure thermally comfortable buildings are designed and delivered, and potential effects on residents (e.g. from heat waves) are reduced.

5. Summary

- 5.1. The proposed development has the potential to deliver a sustainable, accessible and attractive new neighbourhood at Rainham.
- 5.2. Responding to local policy, the local context, and associated opportunities are key drivers for the design and delivery of the proposed development as it progresses. Its planning and design have incorporated measures to promote sustainability from social, economic and environmental perspectives.
- 5.3. To provide further detail and confirm how the Proposed Development will deliver sustainable development and reduce greenhouse gas emissions, further assessments will be undertaken at the reserved matters stage. Documents proposed to be submitted at the reserved matters stage include a Construction Environmental Management Plan (CEMP), Operational Waste Strategy, Renewable Energy Assessment, Landscape and Ecological Management Plan (LEMP) and a Sustainability Statement.

DOCUMENT ISSUE RECORD

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