Climate and Biodiversity Crisis

Assessment of the proposed Lenham Heathlands Garden Community on Maidstone Borough Council's declaration of emergency

16th November 2020

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1. Climate Crisis – Global Picture

Since pre-industrial times global average temperature has increased by about 1.0°C (IPCC 2018) and air temperature changes over land have exceeded those over oceans (IPCC 2020) with surface air temperatures over land now 1.5°C higher, globally, than the pre-industrial average. The evidence that this is a result of anthropogenic greenhouse gas emissions, predominantly CO2 from fossil fuel and methane, is unequivocal.

CO2 levels are currently rising by 2.5ppm per year and models suggest a trajectory of between 1.5°C and 4.5°C for global temperature increase. It should be noted that the risk of feedback loops driving the temperature higher are increased from 1.5°C and a 2°C rise is considered unsafe (PNAS 2018).

The impact of climate change is evident now, at just 1°C of warming.

The Centre for Alternative Technology's Zero Carbon Britain Report sets out the need to take into account future generations when planning action to tackle climate change . The Bruntland report (1987) stated that we should "provide for our own needs without compromising the needs of future generations".

According to the Breakthrough National Centre for Climate Restoration in Melbourne, climate change poses a "near- to mid-term existential threat to human civilization" (BNCCR 2019)

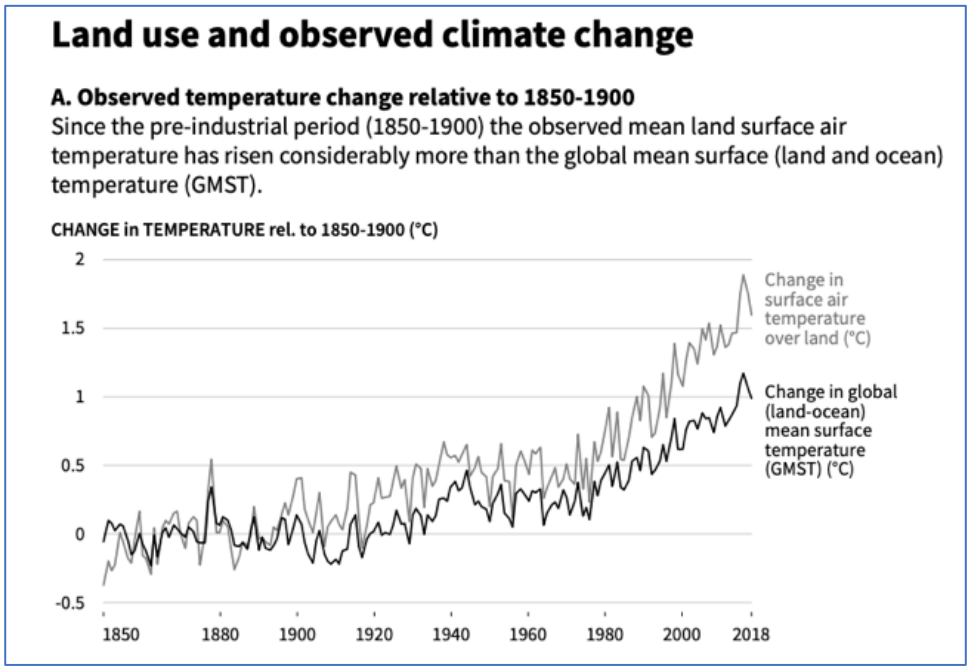
The adage, "Think global, act local" combined with the requirement that future generations are able to meet their needs is therefore essential to planning.

2. Climate Crisis – Land Impacts

Land based impacts include water scarcity, soil erosion, vegetation loss, wildfire damage and food supply instabilities (IPCC 2020). In addition climate-related risks to health, livelihoods, and human security are projected to increase with global warming of 1.5°C and increase further with 2°C (IPCC 2018).

"…urbanisation can enhance warming in cities and their surroundings (heat island effect), especially during heat related events, including heat waves" (IPCC 2020)

"Urban expansion is projected to lead to conversion of cropland leading to losses in food production. This can result in additional risks to the food system. Strategies for reducing these impacts can include urban and peri-urban food production and management of urban expansion, as well as urban green infrastructure that can reduce climate risks in cities." (IPCC 2020).



3. The Twin Emergencies– Local Impacts

The UK is already being affected by climate change (Met Office 2020a). Increased warm spells and decreased cold spells are identified as climate change related.

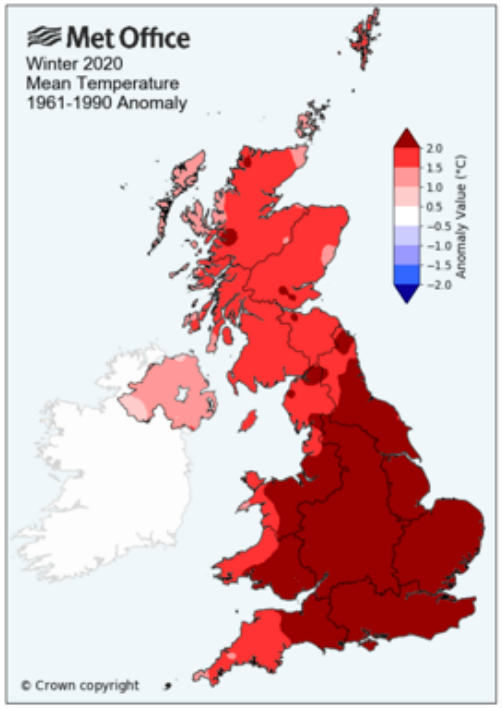
The UK's ten warmest years (as measured from 1884) have all been since 2002 and the risk of heatwaves is 30 times higher. Sea level rises will affect low lying coastal areas.

Heavy rainfall is also more likely with the winter storms in 2015 at least 40% more likely because of climate change.

The UK Climate Projection (UKCP 2018) predicts

- The temperature of hot summer days, by the 2070s, show increases of 3.7°C to 6.8°C, under a high emissions scenario, along with an increase in the frequency of hot spells.
- Significantly less rain in the summer (up to 57% drier) and significantly more in the winter (up to 33% wetter) under a high emissions scenario.
- An increase in extreme weather events
- An increase in sea levels of up to 1.15m by the end of the century under a high emissions scenario.

In addition a government report highlighted the increased risk of vector born diseases, e.g. from mosquitos and ticks (UK Gov 2019).



The Paris Agreement – Local Budget

The Tyndall Centre for Climate Change Research has derived carbon budgets for local authorities based on the United Nations Paris Agreement that the UK has signed. The Tyndall report (2020) states:

"…for Maidstone to make its 'fair' contribution towards the Paris Climate Change Agreement, the following recommendations should be adopted:

1. ***Stay within a maximum cumulative carbon dioxide emissions budget of 5.4 million tonnes (MtCO2) for the period of 2020 to 2100.*** *At 2017 CO2 emission levels, Maidstone would use this entire budget within 7 years from 2020.*
2. *Initiate an immediate programme of CO2 mitigation to deliver cuts in emissions averaging a minimum of -13.4% per year to deliver a Paris aligned carbon budget. These annual reductions in emissions require national and local action, and could be part of a wider collaboration with other local authorities.*
3. *Reach zero or near zero carbon no later than 2041. This report provides an indicative CO2 reduction pathway that stays within the recommended maximum carbon budget of 5.4 MtCO2. At 2041 5% of the budget remains. This represents very low levels of residual CO2 emissions by this time, or the Authority may opt to forgo these residual emissions and cut emissions to zero at this point. Earlier years for reaching zero CO2 emissions are also within the recommended budget, provided that interim budgets with lower cumulative CO2 emissions are also adopted."*

The Tyndall report therefore suggests that to meet its obligations under the Paris Agreement, the UK government will need Maidstone Borough Council to make significant and rapid reductions to carbon emissions across the borough.

4. Biodiversity Crisis

The UN Convention on Biological Diversity (UN 1993) defines biological diversity as “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”

A recent global assessment by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES 2019) stated that there are 1 million species facing extinction.

Diversity has a significant effect on the productivity and stability of ecosystems: “diversity increases the yield of agricultural crops, tree species diversity enhances wood production in plantations, plant species diversity produces better fodder in grasslands, and fish species diversity is associated with more stable catches.” (Lancet 2019)

The current “biological annihilation underlines the seriousness for humanity of Earth’s ongoing sixth mass extinction event” (PNAS 2017).

There are therefore two emergencies, climate change and biodiversity, that the Earth is facing and these will have significant impacts on humanity and future generations.

5. Council's Declaration of an Emergency

Maidstone Borough Council declared its recognition of climate and biodiversity emergencies in April 2019 (MBC 2019a) asking the Policy & Resources Committee to:

- undertake a short review of MBC governance policies and progress aimed at addressing locally these twin threats and to report on findings. This would include, inter alia, a review of the current provision of electric charging points throughout the Borough and bring forward an ambitious plan to make Maidstone Borough the friendliest place in the country for driving electric or hybrid vehicles;
- consider a target date of 2030 for the whole of the Borough of Maidstone to be carbon neutral;
- consider how the Council can strengthen local protection and enhancement of species, habitats and ecosystems services under available powers.

An action plan and report to the Policy & Resources Committee detailing the Council's approach to the twin emergencies has been delayed.

While the working group's report and action plan remains awaited, the Council (MBC 2020a) provides a list of projects to tackle climate change on its website. This range from encouraging staff to change their web browsers to 'advocacy for tough new Maidstone Local Plan policies'. The website also encourages individual actions to reduce carbon footprints.

Maidstone Borough Council Progress

CO2 emissions in the borough (UK Gov 2020) fell from 1125kt in 2005 to 827.9kt in 2017 with per capital emissions falling from 7.8t to 4.9t over the same period. Total reductions of 41% are noted for industrial and commercial sources and 33% for domestic use. Transport emissions were 6% lower. Reductions in industrial and domestic emissions are shown to be largely driven by changes to electricity generation, i.e. outside of the Council's direct influence.

A report from Friends of the Earth (FOE 2020) sets out how climate friend boroughs / districts are. The Council's area report covering five key indicators states:

- *Transport:* 25% of commuter journeys are made by public transport, cycling and walking. Maidstone should aim for 50% of journeys to be made by public transport, cycling or walking by 2030.
- *Renewable energy:* Maidstone has 19,518 megawatt hours of renewable energy available, enough to power 2% of homes in the area. Maidstone should aim for 161,970 MWh (16%) to match the best of similar local councils.
- *Waste:* 51% of household waste is reused, recycled, or composted. Maidstone should aim for 100% by 2030.
- *Housing:* 45% of Maidstone homes are well insulated. Maidstone needs to ensure 100% of homes are properly insulated by 2030.
- *Tree cover:* Maidstone needs to double tree cover.

6. Local Plan

The current Local Plan (MBC 2017) focuses on planning for the impact of climate change above reductions in greenhouse gases. As it was adopted prior to the emergency declaration it contains emissions' targets that are not in line with the declaration, 80% reduction from 1990 baseline by 2050 and 60% from 1990 baseline by 2030. Both targets are out of line with the latest IPCC reports.

The Local Plan has one specific paragraph on climate change (6.17) but a longer section biodiversity (6.20 to 6.25). For example 6.23 states *"Proposals should particularly seek to avoid damaging and fragmenting existing habitats".*

A timetable for a Local Plan Review was agreed in April 2020. No new 'tough' policies have been identified as being agreed by the Council since the declaration of the emergencies.

The Council updated its Infrastructure Delivery Plan in 2019 (MBC 2019b). The revised plan makes no reference to climate change.

The Lenham Neighbourhood Plan (MBC 2020d) was consulted on by the Council in 2020 after it had been passed by an Independent Examiner commissioned by the Council in 2019. The Neighbourhood Plan does not include provision for the Garden Community.

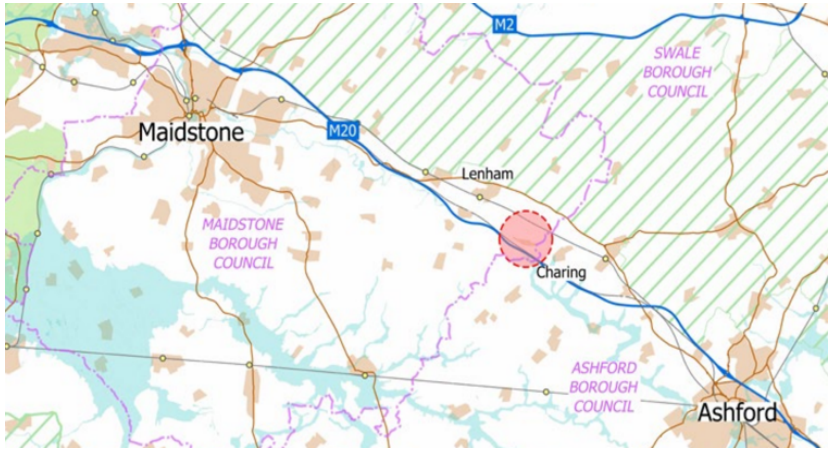
Lenham Parish Council has stated its objection to the Garden Community proposal.

7. Garden Community Proposal

The Council published its initial “Vision” document for Lenham Heathlands in 2019 (MBC 2019c) and a subsequent one entitled “Masterplan” in 2020 (MBC 2020b).

“The council is pursuing this project as it is consistent with its Strategic Plan priority of “embracing growth and enabling infrastructure”.

The documents set out:



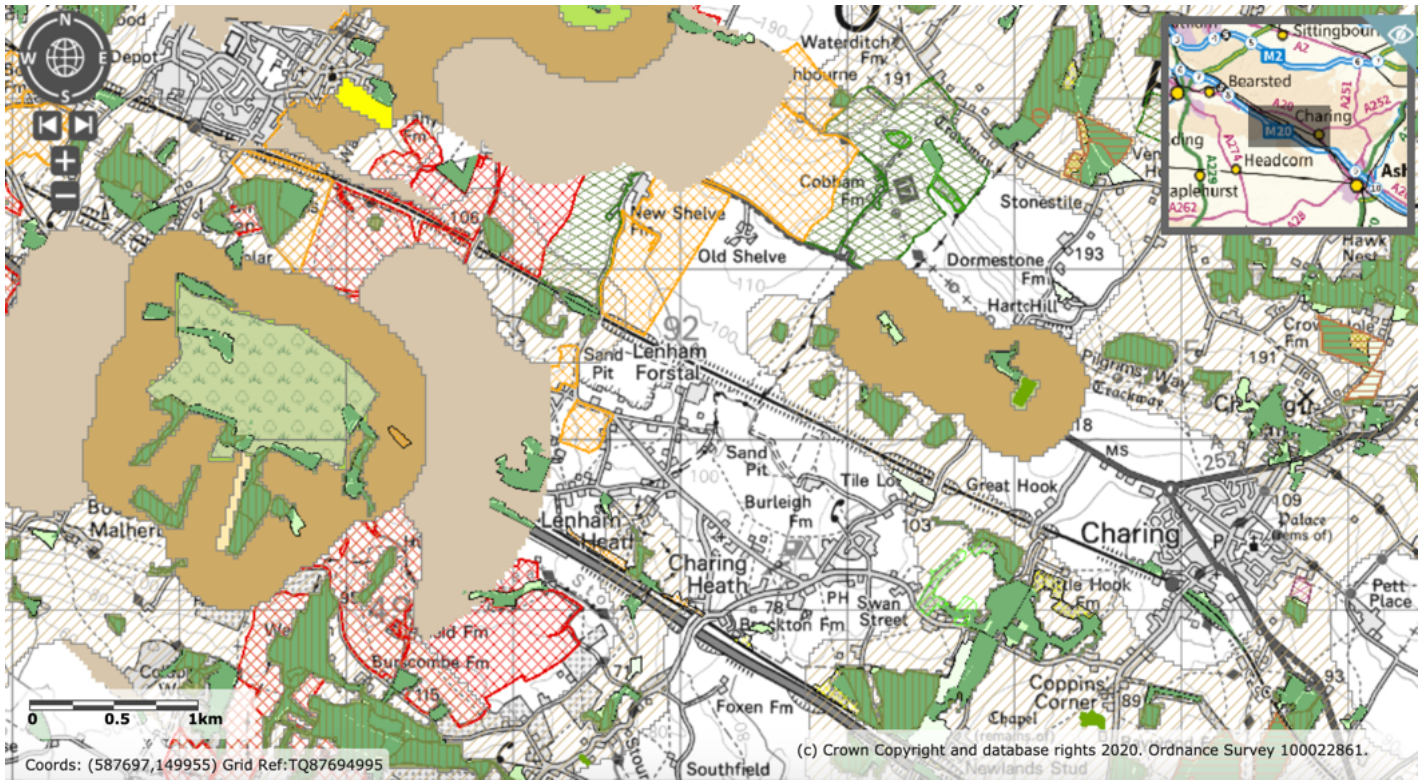
- 4,000 homes across the 770 acres site
- 40% affordable housing
- Council as ‘Master Developer’
- Vision includes:
  - “Self-sufficient community with day to day needs a short walk or cycle ride away”
  - “district centre, somewhere with a vibrancy and unique character. A place to work, shop and catch up with friends”
  - “exemplar eco credentials and bio-diversity net gain”
- The site is not in the AONB but 1.5km south of it.
- New bus links with a potential rapid transit route to Lenham and Charing
- 2 primary schools
- 27.4 acres of employment land and 117.3 acres of country park

8. Other Sources

A search of DEFRA's database (DEFRA 2020) highlighted addition designations not contained in either Vision document.

The area contains a number of designations not shown on the Council's map. These include: National Habitat Network (brown areas) and Countryside Stewardship Agreement Management Areas (orange hash). It should also be noted that the area contains ancient woodland.

Lenham Quarry is just north of the site and is a Site of Special Scientific Interest.



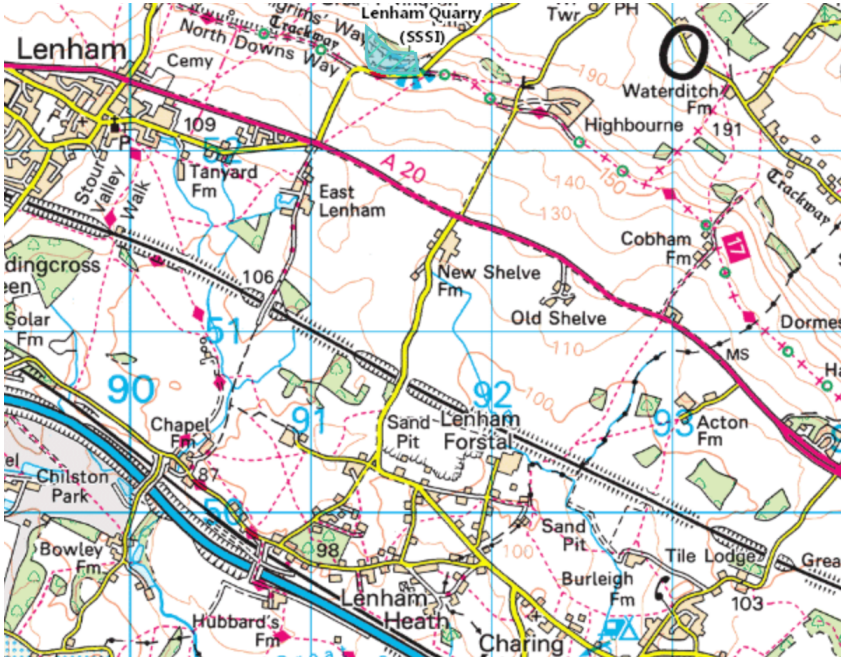
Water Pollution

The source of the Great Stour is in Lenham Heath. This course of this river goes through Ashford, Canterbury and the Stodmarsh Nature Reserve before entering the Channel.

The Stodmarsh Nature Reserve is an internationally important site with the following designations: Special Area of Conservation, Special Protection Area, Ramsar site, Site of Special Scientific Interest, National Nature Reserve. Natural England have warned councils about further development in the Great Stour catchment area due to high levels of nitrogen and phosphorus in the Nature Reserve.

Rainfall is potentially due to rise by 33% during winter months, increasing flooding and run off into rivers.

There is a Waste Water Treatment facility in Lenham which impacts on the Great Stour. Increased housing in the area is therefore highly likely to increase pollution levels in the Stodmarsh Nature Reserve unless specific measures are taken to prevent this.



9. Assessment

The following assessment has been made against the following areas that require action to reduce carbon emissions to net zero by 2030 and to protect and enhance biodiversity. The assessment is based on the limited information published by the Council, including aspirational plans set out in their Vision documents.

The key lines of enquiry (KLOE) have been developed from a synthesis of areas highlighted by leading climate change experts:

1. Transport
2. Energy
3. Pollution
4. Consumption
5. Built environment
6. Biodiversity and land
7. People

KLOE 1: Transport

Issue	Assessment	RAG
Active travel 1. Is this the focus of travel 2. Are there cycle and walking paths to key destinations? 3. Are cycle and walking prioritised over road traffic?	The Council's plans aspire to promote active travel, walking and cycling. It seems to want to connect active travel routes to new railway stations and bus routes that may not be provided. The inclusion of a dedicate cycle path to Lenham station is positive.	
Public transport 1. Are the infrastructure and services in place, planned or aspired to? 2. Is the public transport carbon neutral? 3. Are services regular enough to be of use? 4. Are the destinations sensible?	The Council aspires to have a new railway station the Maidstone East line plus new bus routes. It is unclear at what stage the agreement for these has reached, however the Council reports (MBC 2020c) that "Homes England are now leading on the more detailed exploration of this matter". The initial proposal for a railway station a HS1 is removed in the 2020 document and the 'halt' on the Maidstone East line is noted for later development, i.e. public transport will be limited to buses.	
Car use 1. How is this being discouraged? 2. Are road speeds minimised? 3. Are car sharing schemes planned? 4. Are enough jobs and facilities available locally? 5. What is the likely level of car use? 6. How will this impact on the environment?	Should enhanced public transport not be delivered, there will be a significant impact on the level of car use by residents. It should be assumed that there will be circa 8,000 additional car journeys per day for the completed development. Given the proposed timeline for the development, an initially lower number of additional car journeys would be likely by 2030 however as the sale of internal combustion engine powered vehicles will not be banned until 2035 there will still be significant resultant carbon emissions. The initial Vision document refers to an aspiration for a new junction on the M20 to serve the site. However in the subsequent document this plan is dropped and therefore access is predominantly via the A20 which will increase congestion and air pollution along this route.	

KLOE 2: Energy

Issue	Assessment	RAG
Zero carbon 1. What plans are there for energy provision? 2. What sources will be used?	There is one mention of energy sources in the Vision document, a solar farm is cited as an example of sustainable energy for the development however there are no other mentions of this and no land identified for a solar farm. The documents mention electric car provision for each property but fails to mention the impact of batteries on the environment or to make an assessment on the electricity supply for these vehicles. It is assumed that traditional energy sources will be used. While electricity sources are increasingly lower carbon, gas is generally not.	
Community energy 1. Are there plans for community energy schemes? 2. Will community energy schemes be from renewable sources?	There is no mention of community energy schemes in the documents. These can foster a sense of self-reliance, ownership and responsibility for energy use.	
CO2 reduction 1. Will the development reduce CO2 emissions overall? 2. Are there plans for mitigation or offsetting of emissions? 3. Will the development be carbon neutral by 2030?	There is no evidence to suggest that the development will reduce CO2 emissions and reasonable evidence to suggest it will increase them. This is contrary to the Council's stated desire to make the Borough carbon neutral by 2030 and contrary to the concept of the climate emergency.	

KLOE 3: Pollution

Issue	Assessment	RAG
Air Quality 1. Are air pollution limits being exceeded already? 2. Will car journeys be minimised? 3. Are there other sources of air pollution? 4. What anti-pollutions measures are proposed? 5. Are there impacts on other areas?	The development is unlikely to exceed legal limits for air pollution however air pollution impacts on health below legal limits. Given the likelihood of significant car journeys there will be impacts on the health of residents and neighbouring villages.	
Waste 1. Is there a zero waste strategy for the homes once built? 2. Is there a zero waste strategy for the construction? 3. Is the area performing well on waste reduction?	There is no mention of waste within the Vision or Masterplan. The Council should be planning for zero waste using well understood and documented principles.	
Water 1. Nitrogen and Phosphurus	Natural England (2020) have indicated that the risks to wildlife sites in the Stour Valley with some lakes being currently impacted by excess nitrogen and phosphorus. The Stodmarsh area has various significant designations and Natural England advise that all new housing developments are likely to increase this pollution and would therefore require a detail assessment of their impact.	

KLOE 4: Consumption

Issue	Assessment	RAG
Food 1. Are there local shops? 2. Is lower meat consumption promoted? 3. What is the impact on local food production?	There is little mention of food within the documents, only the expectation of local shopping facilities. The greenhouse gas impacts of meat and dairy products are significant along with transportation of food. The farmland is largely pasture for grazing for animals which result in increased methane emissions. There is no proposal to promote arable farming or more vegetable based diets. The IPCC warn of disruptions to food supplies under climate change and local food production is a key mitigation. The Council should be prioritising and protecting existing farm land for arable use while promoting a move towards plant based diets.	
Water 1. Are water saving measures proposed? 2. Are there issues with supply?	There is no mention of water supply. The IPCC warn of disruptions to supplies under climate change and the Environment Agency (EA 2018) has warned of both increased flooding and abstraction rates being at unsustainable levels. The NAO has warned that the South East could run out of water in the next 20 years (iNews 2020).	
Items 1. Is there consideration to reduction in general consumption?	There is no mention of reducing general consumption.	

KLOE 5: Built Environment

Issue	Assessment	RAG
Homes 1. What is the energy / environment standard proposed for buildings? 2. Are energy generating schemes incorporated? 3. Are the homes at passiv haus level? 4. Are green roofs proposed? 5. How insulated are the homes? 6. How are they heated?	The document refers to "Building for Life 12" but gives no indication of its assessment against the standards (which are arguably below the standards required in the light of the climate emergency). There is one mention of energy efficiency in the 2020 document. Housing is unlikely to meet "passive haus" standards and will therefire increase carbon emissions through excess energy requirement for heating. This is contrary to the Council's stated desire to make the Borough carbon neutral by 2030 and contrary to the concept of the climate emergency. Simply building the homes will cause significant CO2, e.g. building a two bedroom house may generate 80t of CO2.	
Affordability 1. What is the proposed 'affordability' level of the development?	40% of homes are proposed to be classed as "affordable". They will be sold to a housing company for renting rather than being built to be sold to individuals.	
Density 1. What is the density of the proposed homes?	Document 2 suggests densities ranging from 25 to 75 dph, with the higher densities in the centre of the development. They do now specify the overall average density. At 25 dph, houses would occupy an average of 400m2, e.g. a plot of 10m x 40m or 1/10th of an acre. Obviously a higher density would reduce land loss to building.	
Roads 1. What will be the impact on local roads?	With no new rail stations and even with new bus routes if they are agreed, there will be an increase in car journeys which will increase CO2 and air pollution emissions. Journeys will mostly go via the A20 and increase congestion and air pollution along this corridor. This is contrary to the Council's stated desire to make the Borough carbon neutral by 2030 and contrary to the concept of the climate emergency.	

KLOE 6: Biodiversity and Land

Issue	Assessment	RAG
Wild areas 1. What protection is there for biodiversity 2. Are schemes for rewilding included?	The protection of ancient woodland is welcome but there is only one schemes to increase biodiversity mentioned (the park is likely to be no more diverse than farmland), “an enhanced biodiversity corridor to the Great Stour River”. Increased biodiversity would be more easily achieved by re-wilding part of the land rather than building on it.	
Woodland 1. Is ancient woodland protected? 2. Is there an increase in trees / woodland overall?	The Vision suggests that ancient woodland will be protected but the creation of significant new woodland is not mentioned.	
Farmland 1. What is the impact on farmland? 2. Is there promotion of organic farming?	The need for local food to increase resilience as a mitigation to climate change will not be met with the reduction in farmland in the proposal. The loss of overall farmland will also reduce biodiversity which is contrary to the Council’s stated desire.	
Suitability 1. Is the land suitable for housing? 2. How is important archaeology dealt with? 3. Are there existing or planned quarries / landfills?	KCC’s Waste and Mineral strategy highlights a portion of the land for extraction, however there is reported agreement that “residential development could indeed follow extraction”. This would be dependent on the nature of the fill. Areas within the plan are designated “National Habitat Network” and “Countryside Stewardship Agreement Management Areas”. It is assumed that these designations will be lost to development.	
Flooding 1. What is the flood risk of the area?	Hard surfaces increase run off flooding compared to undeveloped land. Given the likely increase in extreme weather events there will be an increase in flooding. Winter rainfall will potentially increase up to 33% by 2100.	

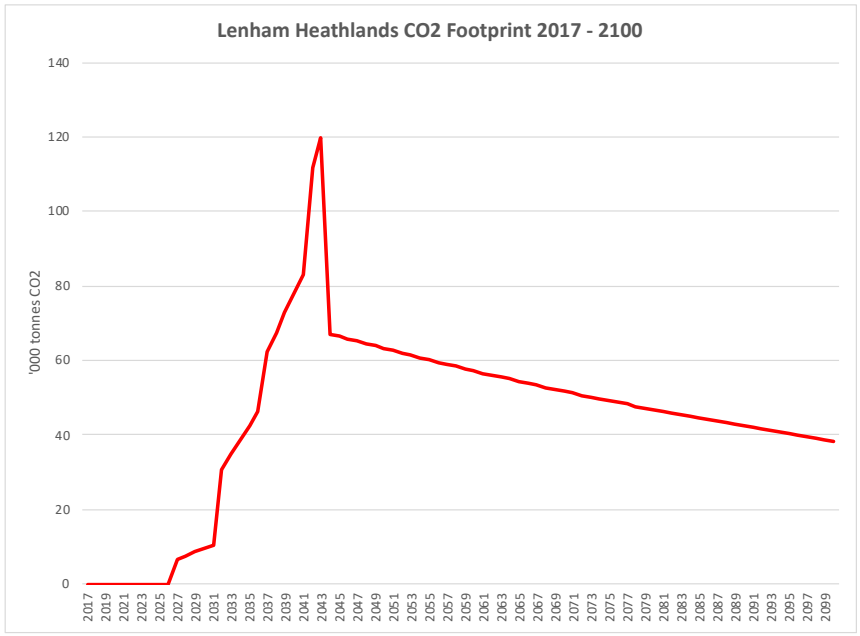
KLOE 7: People and Planet

Issue	Assessment	RAG
Health 1. How will the health of the local population be affected? 2. Are there specific schemes to improve health?	While consideration into promoting health is evident, the impact of climate change and air pollution are not covered and many of the health benefits rely on active travel which may not be possible, particularly those commuting to areas not easily accessible by public transport.	
Education 1. What is the education provision?	The document proposes two new primary schools on the site with secondary education provided at Lenham. It makes no mention of land based education such as forest schools.	
Work / jobs 1. What is the level of local job creation? 2. Is this sufficient for the new population? 3. Are the new jobs in the green or non-polluting sectors?	MBC 2020c states that 750 people are likely to work from home and 3250 are likely to commute. Of the large figure employment for 850 may become available within the development. Furthermore an estimate 1000 full time jobs will be needed for construction over 20year. These will add to commuting numbers. Given that transport will remain fossil fuel based for some time, this level of commuting is contrary to the Council's stated desire to make the Borough carbon neutral by 2030 and contrary to the concept of the climate emergency.	
Climate justice 1. Is there any support to affected peoples by the development (local, national or international)?	There is no mention of climate justice either to those in the world who will suffer most nor to the opportunity cost of the development to others within the borough.	
Climate mitigation 1. What mitigations are proposed? 2. What offsetting is proposed?	The documents claim that they are supporting the climate change agenda and the development will be "adopting sustainable principles", however there is little evidence of this when viewed in the wider context.	

10. Carbon footprint of Lenham Heathlands

Based on the assumptions below, a conservative view of the carbon footprint of the Lenham Heathlands development has been produced. This covers the period to 2100 and shows that around 3.8 mtCO2 will result from the development, including 0.4 mtCO2 from building.

According to the Tyndall Centre for Climate Change Research (2020), Maidstone's remaining carbon budget for 2020 to 2100 under the Paris Agreement is 5.4mt CO2.



Assumptions:

- Development is over 15 years and commences in 2026, gradually increasing.
- 100t CO2 on average is produced by the construction of each house.
- The footprint of new residents is 9.1t p.a. but falls 1% p.a. in line with current trends.
- The analysis does not take into account addition CO2 released from earth movement or benefit lost from reduced earth sequestration.

11. Conclusion

Assessment of the KLOEs **reveals significant areas of concern** for the development of the Heathlands Community Garden when viewed through the lens of the Council's declaration of Climate and Biodiversity emergencies.

CO2 emissions are likely to increase significantly both from transport and housing, including the building of the houses. This goes against the Council's stated aim to be carbon neutral and would contribute significantly to and exceedance of a localised carbon budget based on the Paris Agreement.

The impact of traffic is exacerbated by the likely congestion that will be generated on the A20. This will also increase air pollution which will be detrimental to health.

There would be a high probability of increased pollution in the Stodmarsh Nature Reserve in internationally important site that has already has concerning levels of pollution.

The retention of ancient woodland and the provision of local schools will be beneficial, both to maintain carbon sinks and biodiversity and to reduce travel needs for children.

A detailed assessment on the impact of biodiversity is not possible given the small amount of information in the Council's documents. The Great Stour corridor plan is positive however the loss of Habitat Network is negative. Grazing and arable land are not especially diverse but are likely to be more diverse than the new housing.

The Council should be considering rewilding to improve biodiversity. It should be increasing local food production to improve food security. It cannot do this while building houses on farmland.

Overall, it seems that this development will have a negative impact on climate change and biodiversity which would therefore be contrary to its declaration of the twin emergencies.

12. References

- IPCC 2018 https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf
- IPCC 2020 https://www.ipcc.ch/site/assets/uploads/sites/4/2020/02/SPM_Updated-Jan20.pdf
- PNAS 2018 Trajectories of the Earth System in the Anthropocene https://www.pnas.org/content/115/33/8252
- UN 1987 Report of the World Commission on Environment and Development: Our Common Future (Bruntland Report) http://www.un-documents.net/wced-ocf.htm
- CAT 2019 Zero Carbon Britain https://www.cat.org.uk/info-resources/zero-carbon-britain/research-reports/zero-carbon-britain-rising-to-the-climate-emergency/
- MBC 2019a Declaration of Climate Change and Biodiversity Emergencies https://www.maidstone.gov.uk/home/primary-services/council-and-democracy/primary-areas/your-councillors?sq_content_src=%2BdXJsPWh0dHBzJTNBJTJGJTJGbWVldGluZ3MubWFpZHN0b25lLmdvdi51ayUyRmRvY3VtZW50cyUyRmcyOTk1JTJGUHJpbnRlZCUyMG1pbnV0ZXMlMjAxMHRoLUFwci0yMDE5JTIwMTguMzAlMjBDb3VuY2lsLnBkZiUzRlQlM0QxJmFsbD0x
- MBC 2020a Climate and Biodiveristy Emergency websitehttps://www.maidstone.gov.uk/home/other-services/campaigns-and-projects/tier-2-primary-areas/biodiversity-and-climate-emergency (last accessed 22/7/20)
- MBC 2017 Local Plan https://www.maidstone.gov.uk/__data/assets/pdf_file/0005/171149/Local-Plan-v2-November-2017.pdf
- MBC 2019b Infrastructure Delivery Plan https://maidstone.gov.uk/__data/assets/pdf_file/0004/317965/Infrastructure-Delivery-Plan-2019.pdf
- UK Gov 2020 Local Authority CO2 Emissions https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017
- FOE 2020 https://friendsoftheearth.uk/climate-friendly-communities (last accessed 22/7/20)
- MBC 2019c Community Garden Vision 1 https://news.maidstone.gov.uk/__data/assets/pdf_file/0007/316348/29248-Heathlands-Maidstone-Vision-doc-n.pdf
- MBC 2020b Community Garden Vision 2 https://news.maidstone.gov.uk/__data/assets/pdf_file/0008/345626/2nd-stage-Vision-Document-June-2020.pdf
- DEFRA 2020 Magic Map https://magic.defra.gov.uk/MagicMap.aspx (last accessed 22/7/20)
- MBC 2020c Policy and Resource Committee papers https://www.maidstone.gov.uk/home/primary-services/council-and-democracy/primary-areas/your-councillors?sq_content_src=%2BdXJsPWh0dHBzJTNBJTJGJTJGbWVldGluZ3MubWFpZHN0b25lLmdvdi51ayUyRmRvY3VtZW50cyUyRnM3MTgxNiUyRkNvdW5jaWwtTGVkJTIwR2FyZGVuJTIwQ29tbXVuaXR5JTIwVXBkYXRlLnBkZiZhbGw9MQ%3D%3D
- MBC 2020d Lenham Neighbourhood Plan (consultation) https://localplan.maidstone.gov.uk/home/neighbourhood-planning/lenham-neighbourhood-plan-regulation-16-consultation-february-2020
- Lancet Planetary Health 2019 Biodiversity loss—more than an environmental emergency https://www.sciencedirect.com/science/article/pii/S2542519619301135#bib7
- UN 1993 Convention on Biological Diversity https://www.cbd.int/convention/
- IPBES 2019: Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. https://ipbes.net/global-assessment
- PNAS 2017 Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines https://www.pnas.org/content/114/30/E6089
- BNCCR 2019 https://docs.wixstatic.com/ugd/148cb0_b2c0c79dc4344b279bcf2365336ff23b.pdf
- Met Office 2020a https://www.metoffice.gov.uk/weather/climate-change/effects-of-climate-change
- UKCP 2018 https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index
- UK Gov 2019 https://post.parliament.uk/research-briefings/post-pn-0597/
- EA 2018 The state of the environment: water resources https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/709924/State_of_the_environment_water_resources_report.pdf
- iNews 2020 https://inews.co.uk/news/nao-drought-water-shortage-climate-change-411773
- Tyndall 2020 https://carbonbudget.manchester.ac.uk/reports/E07000110/
- Met Office 2019 https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp-headline-findings-v2.pdf
- Natural England 2020 https://maidstone.gov.uk/__data/assets/pdf_file/0003/372702/Natural-Englands-letter-to-local-authorities.pdf

About the author:

Stuart Jeffery is Director of The Cernunnos Centre, an organisation focused on leadership, climate change, healthcare, Nature, business development and other related issues. Stuart has been involved in the green movement all his adult life.

Climate speaker (2010 –)
Management Consultant (2008 –)
National Policy Development Coordinator for the Green Party (2012 – 2014)
Green Party Executive Committee (2012 – 2014)
National Spokesperson on Health for the Green Party (2007 – 2012)
Founder of Sustainable Maidstone (2006 – 2010)
Chair of Pagan Aid (2018 –)
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The views contained in this document are an assessment based on the evidence in the documents referenced.

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