

Climate and Biodiversity Emergency

**Assessment of the proposed
North Marden Garden Community
on Maidstone Borough Council's
declaration of emergency**

23rd July 2020



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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.

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)

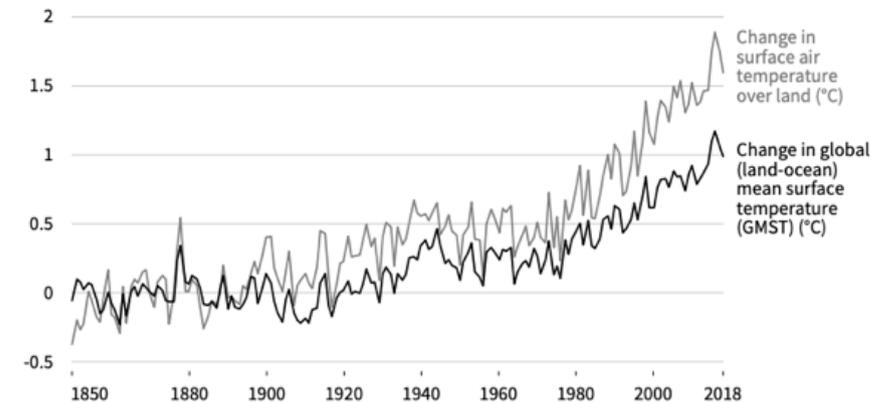
“Urban expansion is projected to lead to conversion of cropland leading to losses in food production. This can result in additional risks to the food system. Strategies for reducing these impacts can include urban and peri-urban food production and management of urban expansion, as well as urban green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

Land use and observed climate change

A. Observed temperature change relative to 1850-1900

Since the pre-industrial period (1850-1900) the observed mean land surface air temperature has risen considerably more than the global mean surface (land and ocean) temperature (GMST).

CHANGE in TEMPERATURE rel. to 1850-1900 (°C)



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.

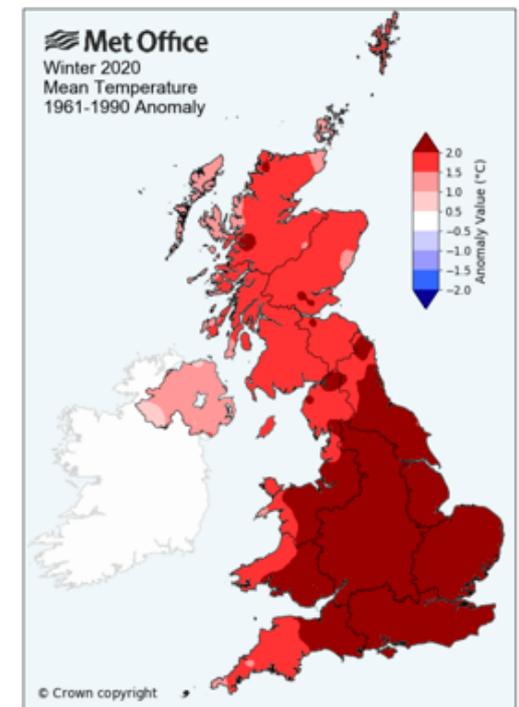
The UK's ten warmest years (as measured from 1884) have all been since 2002 and the risk of heatwaves is 30 times higher. Sea level rises will affect low lying coastal areas.

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 and significantly more in the winter.
- 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).



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.

Council's Declaration of an Emergency

Maidstone Borough Council (the 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.

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 Marden Neighbourhood Plan (MBC 2020d) was agreed by the Council and as such it now has a legal status in planning law and should be given full weight as a material consideration in any planning decisions. It is now part of the 'Development Plan for Maidstone' Section 38(3A) of the Planning and Compulsory Purchase Act (2004). The Neighbourhood Plan does not include provision for the Garden Community.

Marden Parish Council has stated its objection to the Garden Community proposal in their official response to the MBC Local Plan Review 'Scoping, Themes and Issues' consultation July-September 2019.

North Marden Garden Community Proposal

The Countryside Ltd has published a “Masterplan” for the Community Garden Development (Countryside 2020), “an opportunity to create a remarkable community with the residents of Marden and the distinct quality of place that respects the site’s landscape and natural and cultural setting”

The documents proposes:

- 2,000 homes across the 135 hectare site
- 40% affordable housing
- Masterplan claims this is “a highly suitable and sustainable location for the creation of a new garden community.”
- Transport hub with car parking (70 spaces) and a new bus service. 20mph speed limits with cycle routes.
- “All through” primary and secondary school
- Allotments, wellbeing hub, woodland and sports pitches and shops.

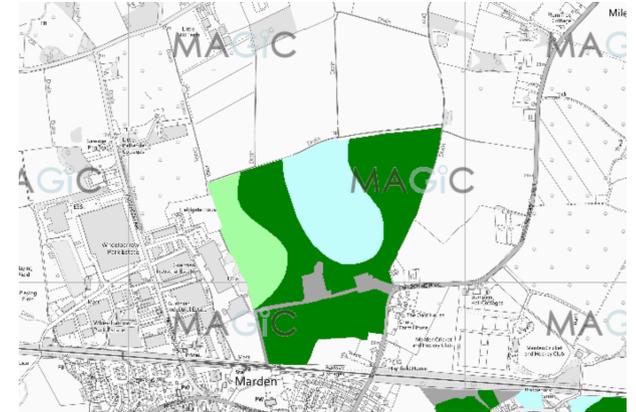


Other Sources

A search of DEFRA's database (DEFRA 2020) highlighted additional designations not contained in the Masterplan document: grade 2 agricultural land (light blue) and grade 3a (dark green).

The following additional documents were reviewed in this assessment:

- Marden Planning Opposition Technical Report (MPO 2019)
- Marden Neighbourhood Plan (MPC 2020b)
- Marden Parish Council "Call for Sites" (MPC 2020a)
- RSPB (2019) Statement of Opposition



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
<p>Active travel</p> <ol style="list-style-type: none"> 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? 	<p>The Masterplan refers to cycle and walking paths, giving travel times to the travel hub and station.</p> <p>There are no plans for new cycle paths to connect Marden with local towns, travel to these will be by car, bus or train.</p> <p>No reference to prioritisation over cars was found in the Masterplan however it states that the design will discourage short car trips.</p>	<p>Yellow</p>
<p>Public transport</p> <ol style="list-style-type: none"> 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? 	<p>A increased bus service to Maidstone is aspired to only. There are currently 4 buses per day. No reference to other bus routes was found in the Masterplan. The plan should include a guarantee of increased bus services to replace 90% of car journeys to Maidstone.</p> <p>No reference to carbon neutral public transport was found in the Masterplan. It is noted that the train service is electric and that buses are gradually being replaced with lower emission versions, however no current plans were found to fully replace ICE buses with electric buses. The current mainline rail service is at / over capacity (pre-covid) so is unlikely to support additional passengers.</p> <p>There is reference to the upgrading of the railway station.</p>	<p>Red</p>
<p>Car use</p> <ol style="list-style-type: none"> 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? 	<p>In the likely case of the enhanced public transport not being delivered, there will be a significant impact on the level of car use by residents. It should be assumed that there will be circa 4,000 additional car journeys per day.</p> <p>As the sale of internal combustion engine powered vehicles will not be banned until 2035 and the cost of electric vehicles remains prohibitive there will be significant resultant carbon emissions.</p> <p>There is a plan for 20mph limits and of a car club which are positive. Aside from the new school there is no significant employment creation – this will result in the majority of people commuting to work. While the train service is reasonable, albeit expensive, there are likely to be no other options than by car.</p>	<p>Red</p>

KLOE 2: Energy

Issue	Assessment	RAG
<p>Zero carbon</p> <ol style="list-style-type: none"> 1. What plans are there for energy provision? 2. What sources will be used? 	<p>There is no mention of energy sources in the Masterplan document. There is no mention of local community owned schemes nor rooftop solar.</p> <p>There is no mention of support for electric vehicles.</p> <p>It is therefore assumed that traditional energy sources will be used for travel, heating homes etc.. While electricity sources are increasingly lower carbon, gas is generally not, therefore the net increase in homes and people will increase CO2 emissions significantly.</p>	<p style="background-color: red; color: white; text-align: center;">RAG</p>
<p>Community energy</p> <ol style="list-style-type: none"> 1. Are there plans for community energy schemes? 2. Will community energy schemes be from renewable sources? 	<p>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.</p>	<p style="background-color: red; color: white; text-align: center;">RAG</p>
<p>CO2 reduction</p> <ol style="list-style-type: none"> 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? 	<p>There are no specific proposals for greenhouse gas emission reductions, simply a “strong focus” which provides no assurance.</p> <p>There is strong evidence to suggest that the development will increase CO2 emissions overall. 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.</p>	<p style="background-color: red; color: white; text-align: center;">RAG</p>

KLOE 3: Pollution

Issue	Assessment	RAG
<p>Air Quality</p> <ol style="list-style-type: none"> Are air pollution limits being exceeded already? Will car journeys be minimised? Are there other sources of air pollution? What anti-pollutions measures are proposed? Are there impacts on other areas? 	<p>The development is unlikely to exceed legal limits for air pollution however air pollution impacts on health below legal limits.</p> <p>Given the likelihood of significant car journeys there will be impacts on the health of residents and particularly Maidstone residents. Marden is accessed via Lower Stone Street / Upper Stone Street which are currently exceeding legal limits for air pollution.</p> <p>No significant anti-air pollution measures are specifically proposed.</p> <p>Air pollution will harm wildlife as well as people.</p>	<div style="background-color: red; width: 100%; height: 100%;"></div>
<p>Waste</p> <ol style="list-style-type: none"> Is there a zero waste strategy for the homes once built? Is there a zero waste strategy for the construction? Is the area performing well on waste reduction? 	<p>There is no mention of waste within the Masterplan, it should be planning for zero waste using well understood and documented principles.</p> <p>The Council is currently above average on waste reduction (58% recycled UK Gov 2020b, 51% FOE 2020).</p> <p>Waste uses energy to recycle and while some energy is reclaimed in the Allington Waste to Energy plant, overall higher levels of waste will increase CO2 emissions and landfill / fly tipping will cause habitat damage.</p>	

KLOE 4: Consumption

Issue	Assessment	RAG
<p>Food</p> <ol style="list-style-type: none"> 1. Are there local shops? 2. Is lower meat consumption promoted? 3. What is the impact on local food production? 	<p>There is some mention of food within the Masterplan, a proposal for a farm shop which would be beneficial to the local economy.</p> <p>There is no mention of dietary change so it is assume that average consumption styles would remain. The greenhouse gas impacts of meat and dairy products are significant along with transportation of food.</p> <p>The farmland is a mixture of grassland, arable farming and orchards. Some of the land has Grade 2 agricultural designation, i.e. is high quality land for farming.</p> <p>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 rather than for development. It should also be promoting a move towards plant based diets.</p>	<p style="background-color: red; color: white; text-align: center;">RAG</p>
<p>Water</p> <ol style="list-style-type: none"> 1. Are water saving measures proposed? 2. Are there issues with supply? 	<p>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)</p>	<p style="background-color: red; color: white; text-align: center;">RAG</p>
<p>Items</p> <ol style="list-style-type: none"> 1. Is there consideration to reduction in general consumption? 	<p>There is no mention of reducing general consumption. An increase in population would therefore result in increased overall consumption and carbon emissions in the borough against the Council's stated aim.</p>	<p style="background-color: red; color: white; text-align: center;">RAG</p>

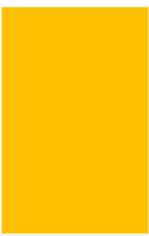
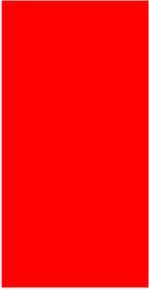
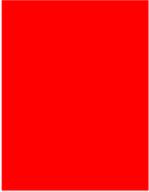
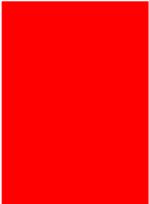
KLOE 5: Built Environment

Issue	Assessment	RAG
<p>Homes</p> <ol style="list-style-type: none"> 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? 	<p>The Masterplan refers to a “strong focus on energy efficiency, reduced carbon emissions and climate change mitigation” however this is text from MBC’s guidance. No references to energy efficiency, green roofs, insulation or heating were found.</p> <p>Simply building the homes will cause significant CO2, e.g. building a two bedroom house may generate 80t of CO2.</p> <p>The houses will therefore increase the CO2 emissions of the borough against the Council’s stated aim.</p>	<p style="background-color: red; color: white; text-align: center;">RAG</p>
<p>Affordability</p> <ol style="list-style-type: none"> 1. What is the proposed ‘affordability’ level of the development? 	<p>40% of homes are proposed to be classed as “affordable”.</p> <p>It is unclear whether they will be sold to a housing company for social renting or built to be sold to individuals.</p> <p>Higher income households tend to have larger carbon footprints leading to increased CO2 emissions.</p>	<p style="background-color: yellow; text-align: center;">RAG</p>
<p>Density</p> <ol style="list-style-type: none"> 1. What is the density of the proposed homes? 	<p>Proposed density ranges from 33 dph to 37 dph.</p> <p>Higher density would reduce land loss to building.</p>	<p style="background-color: yellow; text-align: center;">RAG</p>
<p>Roads</p> <ol style="list-style-type: none"> 1. What will be the impact on local roads? 	<p>With no new rail stations and even with increased bus frequencies if they are agreed, there will be an increase in car journeys which will increase CO2 and air pollution emissions.</p> <p>A significant proportion of journeys will be via the A229, increasing congestion and air pollution along this corridor, particularly in Maidstone.</p> <p>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.</p>	<p style="background-color: red; color: white; text-align: center;">RAG</p>

KLOE 6: Biodiversity and Land

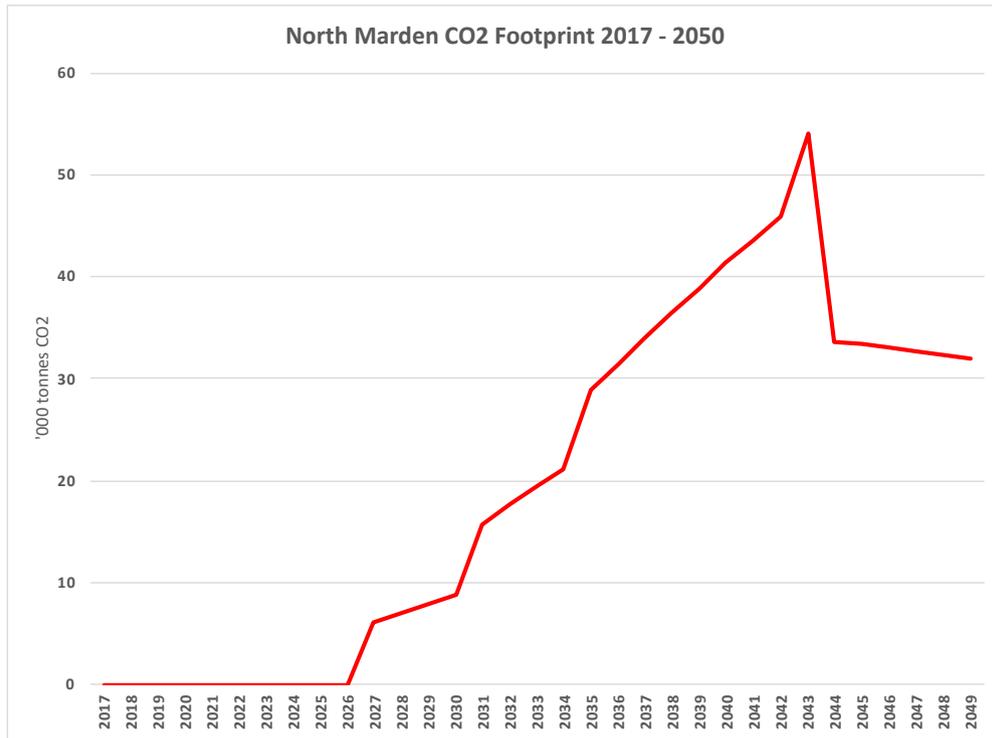
Issue	Assessment	RAG
Wild areas 1. What protection is there for biodiversity 2. Are schemes for rewilding included?	<p>The protection of ancient woodland is welcome and there is a plan to increase overall woodland areas.</p> <p>The RSPB's report states that there will be a loss of biodiversity with the delivery of the scheme.</p> <p>Increased biodiversity would be more easily achieved by re-wilding part of the land rather than building on it.</p>	<div style="background-color: red; width: 100%; height: 100%;"></div>
Woodland 1. Is ancient woodland protected? 2. Is there an increase in trees / woodland overall?	<p>The Masterplan suggests that ancient woodland will be protected. While there is an increase in woodland, this would be offset by the loss of orchards.</p>	<div style="background-color: green; width: 100%; height: 100%;"></div>
Farmland 1. What is the impact on farmland? 2. Is there promotion of organic farming?	<p>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. There is no mention of an increase in organic farming which would have beneficial impact on biodiversity.</p>	<div style="background-color: red; width: 100%; height: 100%;"></div>
Suitability 1. Is the land suitable for housing? 2. How is important archaeology dealt with? 3. Are there existing or planned quarries / landfills?	<p>A large part of the land is designated as Grade 2 farm land.</p>	<div style="background-color: red; width: 100%; height: 100%;"></div>
Flooding 1. What is the flood risk of the area?	<p>There is significant risk of flooding. SUDS are proposed, however this is a low lying site with tributaries to the Medway nearby.</p>	<div style="background-color: red; width: 100%; height: 100%;"></div>

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 including recreation, sports facilities, allotments and parks, 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 a new school on the site. It makes no mention of land based education such as forest schools. Given the rural nature of the site, this should be considered.	
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?	<p>There appears to be very little job creation within the scheme aside from the school. Therefore it is assumed that the majority of workers will be commuting to jobs and relying on that employment being available.</p> <p>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.</p>	
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?	<p>The Masterplan states: "Climate change mitigation will be possible through inclusion of a multifunctional green infrastructure resource that includes large areas of tree and woodland planting and inclusion of sustainable drainage features through the plan."</p> <p>This would mitigate only a small proportion of the additional CO2 generated by the new homes and additional people.</p>	

Carbon footprint of North Marden

Based on the assumptions below, a conservative view of the carbon footprint of the North Marden development has been produced. This covers the period to 2050 and shows that around 700,000 tonnes of CO2 will result from the development.



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.
- No CO2 is shown for infrastructure development, therefore true figure will be higher than shown.

Conclusion

Assessment of the KLOEs reveals **significant areas of concern** in each domain for the development of the North Marden 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, 700,000t of CO2 will result from the development by 2050. This goes against the Council's stated aim to be carbon neutral, potentially by 2030.

The impact of traffic is exacerbated by the likely congestion and air pollution, particularly on the A229 in Maidstone which will be detrimental to health.

The retention of ancient woodland and the provision of a local school will be beneficial, both to maintain some 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 Masterplan. The current farmland will not be especially diverse but is very likely to be more diverse than the proposed 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 significant negative impact on climate change and biodiversity which would therefore be contrary to its declaration of the twin emergencies.**

About the author:

Stuart Jeffery is the founder of The Cernunnos Centre, an organisation focused on supporting the learning and development of skills for the future and providing advice on environmental 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)

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