

Note dLP is used to refer to the “draft Local Plan”

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1 CLIMATE

City Council Objectives

The City Council declared a Climate Emergency in July, 2019, and subsequently set up a climate action plan (CCC Meeting 18/7/2019).

The word 'Emergency' implies a situation of serious and often dangerous nature, demanding immediate action.

Hence the draft Local Plan (dLP) should be full of things to actually rapidly reduce the emissions in the District, and provide much greater protection to undeveloped land and support biodiversity, all within a short timescale.

In contrast, the draft Local Plan (dLP) goes to 2045, which is only 22 years ahead, and in that time it proposes an enormous increase in housing, far above what is legally required and above what is actually needed by the district's population, and together with major new roads and other constructions will cause great environmental damage.

All of these will cause a huge rise in carbon and other emissions causing air pollution and ill health, and the “green” aspects of the dLP will take years to before they provide all their expected benefits.

It appears that: 'Climate Emergency (or Crisis)' is not understood by the Council.

The key aspect is Carbon Dioxide, and is explained in:

<https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>

The facts are:

“Fossil fuels like coal and oil contain carbon that plants pulled out of the atmosphere through photosynthesis over many millions of years; we are returning that carbon to the atmosphere in just a few hundred.”

Since the middle of the 20th century, annual emissions from burning fossil fuels have increased every decade, from an average of 3 billion tons of carbon (11 billion tons of carbon dioxide) a year in the 1960s to 9.5 billion tons of carbon (35 billion tons of carbon dioxide) per year in the 2010s”

So the consequence is:

“Because we put more carbon dioxide into the atmosphere than natural processes can remove, **the amount of carbon dioxide in the atmosphere increases every year.**”

As might be expected:

“The annual rate of increase in atmospheric carbon dioxide over the past 60 years is about 100 times faster than previous natural increases, such as those that occurred at the end of the last ice age 11,000-17,000 years ago.

This graph shows that the amount of carbon dioxide in the atmosphere (blue line) has increased along with human emissions (grey line) since the start of the Industrial Revolution in 1750. Emissions rose slowly to about 5 billion tons per year in the mid-20th century before skyrocketing to more than 35 billion tons per year by the end of the century.”

So the key issue is that the **carbon dioxide we are producing now will stay in the atmosphere for a hundred years. To stop global heating we must dramatically reduce our total carbon emissions now, and NOT add to them.**

So rapid reductions in emissions are needed now, not sometime in the future, as well as creating a lot more “sinks” to remove previous emissions.

If the sinks are slowly developing ones, such as planting trees, they will gradually increase the absorption of carbon dioxide over decades, but cannot be counted within the 22 year span of this draft Local Plan (dLP).

Unfortunately, the potential “offsets” created by the vague details of proposed onshore wind generators and solar farms, conflict with other needs for the land – See 3 Energy: Renewables below.

As noted above, the key issue is to reduce emissions now – not sometime in the future. For example Cleve Hill Solar Farm, is only now actually preparing for construction, although the application was lodged over four years ago, and even when complete it will take several years before its embodied carbon will have been paid back.

In contrast rooftop solar can be done rapidly, in less than a year, and the Council could start that now by covering all the suitable roofs, such as Whitefriars, multi-storey car parks etc.

So the dLP must be amended to “Roof top solar must be provided on all new roofs unless there are compelling reasons not to do so”.

For the UK, the government's Net zero Strategy has been declared by the High Court to be illegal and inadequate, and therefore the Government will need to take stronger and faster action to reduce emissions, and will therefore require Local Authorities to also decarbonise more rapidly.

This is also emphasised by the Climate Change Committee whose highly critical November, 2022 letter (CCC ref 221009-LD-JH) to the Chancellor (Jeremy Hunt) highlighted the especially poor performance in reducing emissions from buildings, so the Local Plan must take much stronger action on this, and actually specify the requirement to meet the PassivHaus standard (see also below, for more detail.

“Net Zero”

The dLP documentation is very misleading that in places in uses it uses the term: “Zero Carbon” (for example, Paragraph 4.4, in Climate Topic paper) and also uses “net Zero Carbon”, or even more carelessly 'net zero'.

Using 'net' in this context is wrong, and is meaningless in the dLP.

The Council should only use the expressions “Net Zero” or “Carbon neutral” if it can actually show how it will obtain 'Carbon Credits'. For example the Carbon Trust (<https://www.carbontrust.com/what-we-do/assurance-and-certification/carbon-neutral-certification>) only awards PAS 2060 certification, which is the internationally recognised specification for carbon neutrality published by BSI, if the organisation meets the requirements for quantifying, reducing and offsetting greenhouse gas (GHG) emissions for organisations and products.

In particular, it requires the organisation to: “Purchase high quality offsets such as Gold Standard, VCS and Woodland Code UK to compensate for all remaining emissions.”

Any Offsets that do not comply with the Gold Standard, VCS and Woodland Code UK are worthless because there is no certainty that the claimed offset will ever be achieved, nor if the time period of the offsets will cover the entire life of the scheme for which it is providing offsets.

There is no evidence of the Council doing this, so the term 'Net Zero' must not be used.

The University of Lancaster (<https://link.springer.com/article/10.1007/s10584-020-02732-3>) has shown the reasons why net zero or carbon neutral are highly misleading terms, and in reality, if used by everyone, would lead to an additional temperature rise of 1.4 C.

In other words it could nearly double the current objective of a maximum temperature increase of 1.5 C.

Although the dLP refers to tree planting, Natural England is very clear that: “It should however be noted that even the most ambitious afforestation plans will only be able to offset a small proportion of current emissions, so **large cuts in other sectors will still be necessary** to achieve net zero GHG emissions.” (page 18, <http://publications.naturalengland.org.uk/publication/5419124441481216>)

So the Council must always use the term “Zero carbon” and not use any other terminology which is meaningless.

Hence the dLP is unacceptable on these grounds alone.

In addition the Council meeting agreed that: “Council sets a target to reduce its carbon emissions to net zero by 2030”.

The 2030 target is admirable, but it must incorporate “Zero Carbon”, in the dLP, as was agreed at the Meeting on 18th July, 2019, nearly four years ago.

Also if it does achieve that target, all the proposed developments will have consequential impacts on the Council, which will increase its emissions, contrary to this objective.

To make it even worse, the proposals in the dLP will be added to the current Local Plan allocations which are being carried over and add their emissions. Currently, these allocations are not required to be Passivhaus, and will be to the deplorable standard shown by the AECB report in the Standards section.

The Climate Topic paper Table A 1.5 shows that Option 5V3 development will cause 2,654,574 emissions. The units are not stated, but this is clearly a huge increase. It also has a column for mitigation, which also has no units, but it is meaningless without clear and specific details of how that 'mitigation' will be actually provided.

Paragraph A1/5/2 says: “The policies **may** lead to a near 50% reduction in carbon emissions from new development.” This means that the new development will actually increase emissions – which is contrary to the Climate Change Act, and even this is with the so-called 'mitigation'. So this is totally unacceptable in view of the Council's Climate Emergency, to say nothing of other legal requirements.

2 BUILDINGS, HOUSING & INFRASTRUCTURE:

Research led by Dr Sophus O.S.E. zu Ermgassen, Post Doctoral Research Associate, in the School of Anthropology and Conservation, here at the University of Kent, with other colleagues, has shown that from 2022 to 2050 under current policy, **housing alone would consume 104% of England's cumulative carbon budget** (2.6/2.5Gt [50% chance of < 1.5 °C]) and in addition Housing expansion also potentially conflicts with England's biodiversity targets. This point has also been emphasised by the Climate change Committee (Net Zero: The Ambition Gap) and others, which demonstrates the importance of not adding to the existing problems. See: <https://www.sciencedirect.com/science/article/pii/S0921800922002245>

In contrast, “**transitioning to housing strategies which slow housing expansion and accelerate low-carbon retrofits would achieve lower emissions**”.

The paper also warns that policies to protect wildlife will have to be “very effective” if housing is not to undermine the government's big biodiversity target of halting species declines by 2030. This is because the “processes linked to housing provision are, under current production technologies, powerful drivers of both biodiversity loss and climate change. Twenty-four percent of all threatened species on the IUCN Red List are threatened by commercial and residential infra- structure expansion (<https://www.iucnredlist.org/>), and yet more by construction mineral supply chains (Torres et al., 2021, 2022). Infrastructure's climate impacts come from the greenhouse gas emissions embedded in the production, operation and maintenance of infrastructure ” Unfortunately, “Mattioli et al. (2020) identify a range of socio- political dynamics that lock society into a high car use, high ecological consumption pathway.”

This is totally unnecessary because “England represents a particularly salient case study, as it simultaneously has abundant housing stock, unmet housing need, and legally-binding environmental policy goals reflecting national contributions to addressing key planetary boundaries (Steffen et al., 2015). England has under-occupied housing stock (see Section 2; Mulheirn, 2019), but one recent estimate suggests up to 7.9 million people currently experience some symptoms of unmet housing needs (National Housing Federation, 2020); predominantly because England has one of the highest rates of housing un-affordability (Downie et al., 2018; National Housing Federation, 2020).”

The situation is made even worse because: “home energy and electricity use represents one-fifth of total emissions (CCC, 2019, p11)”, and “shifts towards more equitable consumption of floor space/capita are not mentioned in government strategy, despite having been empirically identified as essential to achieving decarbonisation targets (Serrenho et al., 2019; Hertwich et al., 2020; Pauliuk et al., 2021). This is particularly relevant because the proposed housing in the dLP is predominately larger houses rather than housing suitable for the increasing number of smaller households, as other dLP responses have shown.

To make things even worse: “**there have been no reductions in annual emissions from buildings observed since 2015** (Committee on Climate Change, 2020, p110). Fifty-four percent of all homes in England have energy performance certificate (EPC) ratings of D or worse, and the Committee on Climate Change recommends all homes exceed this standard by 2028 (EHS, 2021). Nearly all require retrofitting to be consistent with the 2050 Net Zero target (EAC, 2021). For newbuilds, the percentage possessing an EPC band ‘A’ has varied between 1 and 1.5% each year from 2014 to 2020 (MHCLG, 2021b). Homes constructed today which are not compliant with 2050's net zero goal will have to be retrofitted at potentially prohibitively high future cost (Serrenho et al., 2019).”

“The construction of poor quality housing today also induces ‘lock-in’ effects, passing additional decarbonisation costs into the future (Serrenho et al., 2019).”

Unfortunately, “**Reducing the operational emissions of existing housing is already recognised as one of the largest challenges in the UK's decarbonisation strategy** (CCC, 2019; Serrenho et al., 2019; RICS, 2020; EAC, 2021; NEF, 2021). However, emissions from new housebuilding are still a substantial contributor (Drewniok et al., 2022b).”

Importantly: **“By far the most impactful policy for reducing housing’s conflict with climate targets is rapid retrofitting of the existing stock (coupled with decarbonising the electricity grid) – retrofitting all homes to emissions standards of today’s newbuilds by 2035 could avoid 0.8GtCO₂e, equivalent to 32% of the cumulative carbon budget for 1.5 °C. Going even further and decarbonising the existing stock entirely by 2050 could save 38% of the budget for 1.5 °C.”**

“Alongside highlighting the recognised need for deep and rapid retrofitting of the existing stock, our analysis also reveals trade-offs between projected housebuilding as a mechanism for satisfying housing need and achieving national biodiversity and climate goals, empirically supporting multiple studies showing that reducing per capita demand for floor area from those with space in excess of their needs is essential to achieving sustainability goals (Serrenho et al., 2019; Pauliuk et al., 2021).”

Furthermore: “Alongside highlighting the recognised need for deep and rapid retrofitting of the existing stock, our analysis also reveals trade-offs between projected housebuilding as a mechanism for satisfying housing need and achieving national biodiversity and climate goals, empirically supporting multiple studies **showing that reducing per capita demand for floor area from those with space in excess of their needs is essential to achieving sustainability goals** (Serrenho et al., 2019; Pauliuk et al., 2021).”

And: “one key lever for meeting greater housing need whilst minimising housing expansion could be through policies incentivising greater equity in housing space consumption and more efficient use of the existing stock (Lund, 2019).”

The Climate Change Committee has reported on reforms to prepare the countryside for climate change (<https://www.theccc.org.uk/2018/11/15/reforms-must-prepare-the-uk-countryside-for-climate-change-and-ensure-that-our-use-of-land-supports-reduced-emissions/>) and emphasises that: “Steps should include a substantial increase in the use of wood in the construction of buildings” which dramatically reduce embodied energy and emissions caused by the alternatives of concrete and bricks.

The dLP must be amended to require: *ALL buildings to meet the PassivHaus Standard (or its equivalent) (mentioned in the Climate Topic document, CDLP2045-CC01 Page 6, Paragraph 4.3)* “.

This that would ensure all the life cycle emissions are included as well as providing very good quality assurance for the design, construction and performance in use, which the other standards mentioned cannot achieve.

The experience of occupants in the Social Rent Affordable Housing in Norwich, which was covered in the City Council's first Climate Action Conference is described as “‘Life changing’: the social rent affordable housing helping to cut heating bills in Norwich”(https://www.theguardian.com/society/2022/dec/09/social-housing-heating-bills-passivhaus-goldsmith-street-norwich): “Even on the coldest day of the winter so far, tenants of a pioneering housing scheme say they do not need to turn on their heating. A blast of Arctic air has brought a dusting of snow to the Goldsmith Street housing scheme in Norwich, but inside “it’s like summer”. At a time of [health fears for more than 3 million households](#) struggling to pay for heating, Jayed and his neighbours can provide a glimpse of how much better it would be if the UK’s homes were properly insulated and ventilated....these triple-glazed homes with 60cm-thick insulated walls, are saving tenants money.”

Also: “other councils and housing associations are building Passivhaus homes. The [death of two-year old Awaab Iskwak](#) in mouldy Rochdale flat has exposed the squalid state of much of England’s housing stock, with up to 450,000 homes hit with problems of condensation and mould.”

And: “**The Passivhaus Trust, which campaigns for the approach, estimates that while on average annual energy bills are capped at £2,500, in a Passivhaus home average annual bills are £947 – more than 62% cheaper.**”

So these are compelling reasons for ALL buildings to be Passivhaus Standard.

This must also apply to the potential new hospital here, see: “Baseline study - implementing the Passive House concept in hospitals www.passipedia.org/planning/non-residential_passive_house_buildings/ph_hospitals/baseline_study_-_implementing_the_passive_house_concept_in_hospitals”.

This is especially important here, because as Estates Manger at Kent & Canterbury Hospital, the Fuel and Energy budget was a major part of our costs. Hence we spent a lot of money improving insulation, equipment efficiency and other measures. The ensuing savings released funding for more patient care.

So a Passive Hospital provides a much better environment for patients and saves money, so please ensure that this is in the Local Plan.

The *House of Commons Environmental Audit Committee* in **“Accelerating the transition from fossil fuels and securing energy supplies Fourth Report of Session 2022–23 “(Paragraph 17, Conclusions”** provides a very critical report, which has been summarised by Carbon Brief as saying that: *“A “war effort” mobilisation is needed in the UK to accelerate the transition from fossil fuels, insulate homes and address rising energy costs”.*

In terms of excess housing numbers, Dr Sophus O.S.E. zu Ermgassen's report (above) says: “Government house-hold and housing stock data show that the UK has a surplus of dwellings relative to households. This surplus has grown from 660,000–1.23 million homes from 1996 to 2019 (Mulheim, 2019).” Also, “Using figures from the [English Housing Survey](#), the researchers estimate that there are 1.2m empty or underused homes.

In recent years the number of new households has been consistently outstripped by additions to the housing stock (ibid).

Even if there are housing supply constraints, evidence suggests that expansion of the housing stock may have a limited effect on housing affordability. Estimates of the sensitivity of UK house prices to increases in housing stock consistently show that a 1% increase in housing stock per household delivers a 1–2% reduction in house prices (Auterson, 2014; Oxford Economics, 2016; MHCLG, 2018). This is minimal in the context of a 181% increase in mean English house prices from 2000 to 2020 (£84,620–£253,561; HMLR, 2022).”

A major impact of current policies is: “Beyond the question of general housing shortages, it is more universally agreed that there are shortages in social rent affordable housing which targets the needs of those struggling to afford market-rate homes or rents. Recent estimates suggest there is currently a need for an additional 1.6 million dwellings at social rent affordable rent ([National Housing Federation, 2020](#)).”

Canterbury's own situation is that it has the highest rate of homelessness in Kent. The England rate of rough sleeping per 10,000 households is 1.1 for England but 1.5 in Kent, and Canterbury is the highest within Kent.

Pleasingly the number of empty homes went down in 2022 ([englandlongtermemptyand2ndhomessortatoz2022.pdf](#) from <https://www.actiononemptyhomes.org/facts-and-figures>) but only by 12, and second homes increased by four times that number, so more action on this issue is needed, as is happening in Wales for second homes, for example, to improve the situation.

So there is a clear need for more social rent affordable housing, especially in the current economic situation, because Social rent affordable housing are the **only type of housing where rents are linked to local incomes**, making these the most affordable homes in most areas across the country. Rents for social rent affordable homes are significantly lower than private rents, and rent increases are also limited by the government, which means homes should stay affordable long-term so people aren't priced out of their communities by rising rents. While the way social rents are set isn't perfect, they should always be affordable to local people, including people on low incomes. Finally: “one key lever for meeting greater housing need whilst minimising housing expansion could be through policies incentivising greater equity in housing space consumption and more efficient use of the existing stock ([Lund, 2019](#)).”, and “Densification can also play an important role in reducing both carbon emissions and biodiversity impacts by reducing urban land-take and reducing car-dependency ([OECD, 2020, 2021](#)). “

Additional evidence on the importance and need for social rent affordable housing is shown by the abysmal performance of a £21bn government programme to build more affordable housing in [England](#) which is missing its target by 32,000 homes with big shortfalls in rural areas (<https://www.theguardian.com/society/2022/dec/07/englands-affordable-housing-scheme-falls-32000-homes-short-of-target>). The national picture shows that numbers waiting for such housing are the highest since 2016, and there are rising concerns about safety, such as the [death of two-year-old Awaab Ishak](#) from mould in a social rent affordable housing property in Rochdale. This should not be happening, because building homes for social rent offers best value for money by slashing the need for costly temporary accommodation.

So the dLP must increase the proportion of social rent affordable housing in the revised Plan.

Also there is nothing about reducing emissions of existing buildings, infrastructure etc., which should be a key part of the dLP.

For example, planning permission will only be given for a development if an equivalent number of houses are retrofitted to reduce emissions.

Transitioning to housing strategies which slow housing expansion and accelerate low-carbon retrofits would achieve lower emissions.

The Climate Change Committee (CCC) wrote to the Chancellor of Exchequer on 9/11/2022 about Reducing energy demand in buildings, and although sent to the Government, most of its conclusions are relevant to Canterbury District Council.

They said:

“Households will continue to accrue the benefits of these improvements for years to come, including through lower bills, greater thermal comfort and better health outcomes. The Institute of Health Equity estimates that the **NHS spends at least £2.5 billion each year treating illnesses derived from people's living conditions, a high proportion of which are directly linked to living in cold and damp homes.**” So it is essential that the City Council includes in the Local Plan requirements for developers to pay for upgrading existing buildings in the district, by setting up a Loan Fund to enable funds to be re-used as recipients pay back loans over time.

Also:

“**Facilitating access to private finance.** Our updated analysis suggests that over 60% of households can achieve levels of energy efficiency that are compatible with Net Zero for less than £1,1002” (2 This originally formed part of our Sixth Carbon Budget analysis but has been updated to account for recent increases in costs of materials and labour.)

Furthermore:

“The technology exists to deliver high levels of thermal efficiency (staying warm in winter while cool in summer) in both existing and new homes, while being moisture- safe and with excellent indoor air quality. Achieving this requires a holistic approach in design, build and retrofit, which is currently not being driven effectively by existing policy. ”

Standards

And one conclusion in the letter Climate Change Committee (CCC) written to the Chancellor of Exchequer on 9/11/2022 about Reducing energy demand in buildings says:

“None of these approaches – either for new or existing standards – will work unless they are backed up by **effective enforcement regimes to ensure that standards are met.** ”

The Council's own “CDLP2045-CC01 Climate Change Topic Paper” on Page 6, paragraph 4.3, says:

“The Committee on Climate Change has published a report in 2019 named ‘UK housing – fit for the future?’. The report highlights the need to build new buildings with ‘ultra-low’ levels of energy use and makes a specific reference to space heating demand and recommends a maximum primary energy target of 15-20 kWh/m²/yr for new dwellings.”

Unfortunately that paragraph is wrong in saying that this is similar to the requirements of Passivhaus standard, LETI, RIBA Sustainable outcomes and Energy performance certificate level A.

Passivhaus (PH) requirement is 15kWh/m² annum,- not 15 to 20 kWh.m²/yr.

In addition PH has the advantage of 20 years of evidence to back up it and tens of thousands of completed homes and flats to prove it works. It has the highest level of quality assurance too, along with overheating risk assessment and assurance as to indoor air quality.

Dublin council has specified “Passivhaus (or equivalent) for several years now, and no-one has come up with an “equivalent”, so this adds to the evidence that it is the best.

The EPC standard is particularly inadequate as noted by the *House of Commons Environmental Audit Committee* (“**Accelerating the transition from fossil fuels and securing energy supplies Fourth Report of Session 2022–23** “,(Paragraph 17, Conclusions). Anything to do with EPC is inaccurate and does not have evidence of in-use energy consumption, just like VWs dieselgate issue.

Furthermore it is well known that the quality assurance by most developers is very poor.

For example, last year, 2022, the Association for Environment Conscious Building (AECB) were invited visit to the City Council's Kingsmead Field development of social rent affordable housing. Following the AECB site visit, a summary of the attendees considered opinions, was issued to Nicholas Thurston, Principal Policy Officer (Climate & Environment) and distributed to the relevant council members.

This report demonstrated the inadequate quality control of building design and construction, but PassivHaus certification would prevent this, as the design, construction and operational aspects would all have been considered, assessed and certified against the standard.

Even comparing these houses against the building regulations, which are not very stringent, shows that only the roof and the floor met the required standard. The others, wall, Glazing, window & air permeability should have been specified and checked by the designer, but PassivHaus would ensure that the certifier spotted this failing, even if the designer did not.

The Conclusion says it all:

“It is laudable that Canterbury City Council should create affordable homes and have a goal of creating more energy efficient housing. Regrettably this development is no better in terms of building standards than the average developer project. The estate has a single feature for the reduction of carbon emissions, air sourced heat pumps. It is highly likely that these homes will cost more to run than the equivalent heated by gas condensing boilers, as heat pumps only come into their own on very efficient buildings.

High efficiency is created by a combination of higher thermal insulation levels, lower air leakage rates, larger areas of south facing glazing, better quality glazing, and higher standards of workmanship, none of which were demonstrated here. We also have to challenge the energy standards used in conventional energy assessments, as relying on SAP and EPCs to compare buildings is inadequate and leads to the well known ‘performance gap’. We need to use much tougher assessment calculations such as the Passivhaus Planning Package and ensure that clients, designers, contractors and trades are better trained and more aware of the problems of current housing.

It is well known that: **A good project starts with a sound brief from the client.** ”

So the dLP must take much stronger and more effective action, and require Passivhaus Standard for all buildings.

It needs to be ALL buildings and this includes commercial buildings - Dover had its first PassivHaus offices over a decade ago, and Germany has a PassivHaus Hospital.

Strong evidence for the Passivhaus benefits are provided by the Norwich scheme which was described at the first Climate Conference in Canterbury by the architects of the scheme. Now inhabitants of those houses are very pleased at their performance.

See: <https://www.theguardian.com/society/2022/dec/09/social-housing-heating-bills-passivhaus-goldsmith-street-norwich>

3 ENERGY

The House of Commons Environmental Audit Committee (“Accelerating the transition from fossil fuels and securing energy supplies Fourth Report of Session 2022–23, Conclusions, Para 4) has emphasised:

“Climate breakdown threatens lives, livelihoods and infrastructure, and taking steps to ensure continued climate stability must be a national security priority for any government. The increasing frequency and ferocity of extreme weather events, floods, droughts and heatwaves which is manifest at the current 1.1°C average heating should serve as an alarm call. The impact that these weather extremes can have on national infrastructure has recently been all too apparent: there were striking examples of energy generating

facilities across Europe being affected by the heatwave and drought in the summer of 2022. The world is currently on track to exceed the 1.5°C threshold that the Paris Agreement was intended to prevent. (Paragraph 39) ” .

They go on to say (paragraphs 7 & 8); **“To deliver genuine energy security, the strategy should have placed far greater emphasis on energy saving measures. Transport should also have been included.”**

They go on to say (Paragraph 8) that there should be: **“targets to lift 100% of domestic properties to EPC C by 2035. Improving homes to EPC C or above will reduce the UK’s reliance on energy imports and cut carbon emissions while delivering a wealth of co-benefits, including warmer homes, improved health outcomes, and a job-creating boost to local tradespeople.”**

Similarly they advocate (Para 12); **“measures to incentivise energy efficiency improvements via the mortgage market.”**

Renewables and Energy Management

To reduce this problem, the Council must require the Local Plan to specify that in addition to requiring the PassivHaus Standard to be met for all buildings, renewable energy must be provided for all new buildings. This can be done very simply by requiring the Merton Rule to be applied.

This rule requires renewable energy to be provided on site, and this avoids problems with so-called “Net zero”, which may include funding of schemes far away to provide compensating carbon offsets for a site.

The Merton Rule is legal, and so the Local Plan needs to specify:

“All sites of new buildings must provide as much as possible of their energy needs from on-site renewable energy equipment, of at least 50%, and, if physically possible, 100%.”

Obviously the PassivHaus standard will ensure that the optimum orientation for the site is used, enabling a variety of technology to be used, such as thermal solar, photovoltaic panels (PV), thermal stores, battery storage, etc.

I can vouch for the ability of achieving this as our 1962, 3 bedroom, retrofitted semi detached house, 60 sq.m ground floor, has had thermal solar from 1984, plus 2 kW PV from 2001, and additional 2 kW PV in 2011. The PV faces west, for Conservation Area reasons - so is not optimum, nevertheless the PV generates over 80% of what we use, despite being more than ten years old.

A huge benefit of rooftop solar is that it can be done rapidly, in less than a year, and the Council could start that now by covering all the suitable roofs, such as Whitefriars, multi-storey car parks etc.

So the dLP must be amended to include a **Policy: “Roof top solar must be provided on all new roofs unless there are compelling reasons not to do so”**.

Another key requirement that must be included in the Local Plan Policies is a requirement for all houses and commercial/business developments to have electric vehicle (EV) charge points, and most importantly, **that they include Vehicle to Grid (V2G) capability**. Most EVs are unused for significant parts of the day – for those who are retired, work part time or have variable hours, having V2G capability means that the car battery can be used to reduce the load on the grid at peak demand times. It can also ensure that the house is not affected by power interruptions as the vehicle battery can provide several days back up. It also means the vehicle can provide grid balancing and stabilisation. Research has shown that V2G can provide over £1,000 benefits, as well as increasing decarbonisation of the Grid.

The other key issue is grid flexibility, and Octopus energy is now offering Octopus Zero with NO bills five years (<https://octopus.energy/blog/introducing-octopus-zero/>). This for PassivHaus buildings with photovoltaic panels and heat pumps, because it can manage demand to be at times when the Grid has low demand, and so charges can actually be negative.

So the Local Plan must have a **Policy to “Require all new buildings to use heat pumps to enable occupants to take advantage of their benefits, as well as assisting decarbonisation”**.

For larger renewables it is imperative that sites such as Abbots Mill in Pound Lane, (<https://www.abbotsmillproject.co.uk/>) are supported because this has the benefit of not only providing renewable energy to decarbonise the District, but would also provide greater control of flood management (see also Flooding, below).

This is a key benefit, as floods are becoming more frequent, and the City depends on good flood management.

This is a scheme that should have priority over less important schemes such as the £1 million High Street upgrade.

Some renewable energy schemes conflict with the loss of agricultural land which is needed for food using agroecology methods, not to mention unacceptable biodiversity, noise, visual, landscape and other impacts.

So the Local Plan must have stronger restrictions on potential locations for any renewable technologies using more than half a hectare of land, as well as stronger restrictions on noise and flood lighting around installations.

For ground-mounted solar, the Local Plan must require that where all other factors allow solar panels to be installed on the site, then systems that allow, and preferably assist agriculture are used.

For example see: <https://www.baywa-re.com/en/news/details/baywa-re-accelerates-agri-pv-research-with-4-new-projects>

This scheme refers to cherry orchards, which is very relevant to Kent, as it can provide benefits from adding solar.

For example shading may be helpful for some crops, and could reduce evapotranspiration.

The article also refers to combining PV with cows or sheep, which is another option. A lot more evidence is provided on: <https://agri-pv.org/en/> and can even include fence panels with PV which may help to make it less intrusive.

4 TRANSPORT

Transport is the country's largest emitting sector, and produced 24% of the total in 2020.

(Note: BEIS data only goes up to 2020).

The Government is refusing to release the carbon emission figures behind its transport decarbonisation plan (https://www.theguardian.com/environment/2022/dec/19/co2-emission-figures-road-transport-uk-government-blocks-release?CMP=share_btn_tw&mc_cid=7c52cb7cdc&mc_eid=719dace952).

The secret data would show how much car use would have to be reduced in order to reach net zero commitments, which campaigners say could make proposed road schemes financially unviable.

This is because these legally binding targets will be possible **only with a drastic reduction in motor traffic**, which could make many new road projects such as those proposed here in the dLP, financially unviable.

In addition, scientists say a shift to electric vehicles alone is not enough and car use needs to be significantly reduced in order to meet zero targets, with [some reports](#) showing that [a reduction](#) of at least 20% is [needed](#) by 2030.

For transport, the Climate Topic paper, the table A2.7.2 2045 forecast show that the estimated 2019 emissions of 230 ktCO₂/y could increase to 293 ktCO₂/y !

That is nearly a 30% increase, at a time when emissions must decrease !

The table also suggests that the increase could be less, but only if the modal shift is achieved, and so far the Council's efforts and current proposals, provide no confidence that this will occur, as admitted in:

Climate Topic paper, A 2.8: "the Local Plan interventions to improve active travel and local public transport have a limited effect on reducing total transport carbon emissions."

It then goes on to recommend: 'a more detailed study', but what is the point of publishing a Draft Local Plan without this sort of detail, as the dLP cannot be approved until such studies are done and consulted upon ?

The House of Commons Environmental Audit Committee ("Accelerating the transition from fossil fuels and securing energy supplies Fourth Report of Session 2022–23, Conclusions, Para 27) recommend: "More must be done to improve the energy efficiency of our transport system and reduce its contribution to climate change. The International Energy Agency and other bodies have identified a range of demand side measures that could be used to cut oil use, make public transport more affordable and reduce transport emissions."

Astonishingly, the Council's Transport Topic Paper, in 'Background' second paragraph, says;

"In this Local Plan period 2022 - 2045 the key transport objectives to meet our overarching health and climate change goals are:

- reducing the total amount of vehicular movement of people and goods
- a step change increase in the proportion of active travel in the District's urban and suburban areas
- rapid electrification of road vehicles to reduce emissions "

To improve transport of everyone in the District and to meet its Climate Change and Biodiversity targets, the Plan **must include public transport, with the objective:**

"To divert a greater modal share from private vehicles to public transport, such as buses, trains, and smart transport options".

A key piece of evidence about ensuring transport meets the needs of everyone in the District has been provided by Transport the North (<https://www.smarttransport.org.uk/case-studies/uk/tackling-transport-related-social-exclusion>), which highlights that most transport plans do not consider provision for the poorer, lower income communities, nor are they properly assessing who would benefit from transport proposals.

What is needed is for the Local Plan to have a Policy which requires: " A social assessment so that schemes are designed for those who most need the benefits that a proposal may bring".

For Public Transport, which should be a key part of reducing road vehicle traffic and reducing congestion, the House of Lords report in November , 2022 (PUBLIC TRANSPORT IN TOWNS AND CITIES 89.pdf) reiterates the need to do much more to improve services, and their Recommendations must be included in the Local Plan.

Rail services are a key mode to reduce transport emissions, because they are electric and the grid is rapidly decarbonising.

So the Local Plan must include supporting use of this mode. This will include co-ordinating other modes with rail, such as rail-bus interchanges, and Canterbury West is a key station to make major improvements of this aspect, linking stations with bicycle and walking routes, and improving disabled access. For example at Whitstable there is a public pedestrian tunnel under the lines.

With good signposting this would be used more.

Similarly re-opening Hersden Station, would serve the huge developments there, and would provide improved access to much of East Kent,

as well as to the west. Having allowed Thanet Parkway to be built, the relevant rail organisations cannot complain of extra delays from this additional stop.

So please ensure that these are all included in the revised Plan.

A key lever to increase use of different modes rather private motorised vehicles, is to make the alternative mode more attractive.

A historic example is the pensioners' Bus Pass, which encouraged a lot more people to use the buses.

More recently, the Government announced bus subsidies to cap local fares at £2 (<https://www.theguardian.com/commentisfree/2022/dec/22/the-guardian-view-on-buses-a-subsidy-for-2-fares-is-money-well-spent>), which is particularly important as a tool to reduce car journeys in view of the fact that 91% of the UK's transport emissions come from roads. This also emphasises the importance of minimising road deliveries – The Council Leader has commented that there will be fewer shopping trips as a lot more things will be delivered. However in most cases that means a larger vehicle than a car making journeys to customers, when that customer could go to several shops with just one journey. Observation of traffic in Tyler Hill is that deliveries are made by different providers, so at times there are clusters of delivery vans, causing traffic congestion etc. As the quoted article says: “When more people use buses and bicycles, rather than cars, congestion and journey times are reduced. With single bus fares as high as £5 in some rural areas, people have been strongly incentivised to use cars, particularly when travelling in groups. Change in this destructive state of affairs is long overdue.”

The DfT is currently considering long term bus support from April, so it is important that Local Authorities such as Canterbury City & Kent County, maintain contact with the DfT to emphasise the importance of this to local councils.

Additional evidence is provided by our local bus provider, Stagecoach:

<https://www.smarttransport.org.uk/whitepapers/latest-whitepapers/every-journey-makes-a-difference-how-we-can-support-people-switch-how-they-travel> modal-shift-report Stagecoach Dec 2022.pdf

which says: “Despite the important role cars play in how we get to where we need to go, our research shows that *most people are open to using their car less. Already some people have responded to rising fuel prices by using their car less and taking journeys by other means.*”

Also:

“ **ouseholds can save each year by switching journeys1**

and: **Would be open to switching some or all of their car journeys as well as:**

Agreeing that local authorities should encourage communities to switch journeys,

and that: “ **Trees are needed to offset the 3,643kg of annual CO2 equivalent emissions from a four person household2 ”**

So the Local Plan must include Policies to implement co-operation with others, such as StageCoach to support these solutions.

Local train journeys would also benefit from much lower fares - “Germany’s three-month experiment with €9 tickets was [credited](#) with saving about 1.8m tonnes of CO2 emissions. Tallinn, the Estonian capital, has the most radical scheme of all. There, all public transport has been free to residents since 2013.”

Trains are of course electric, so provide even greater carbon benefits than most current buses.

So instead of using developer contributions for major infrastructure with devastating effects, such lump sums should be invested to produce annual revenues for buses and trains.

5 FLOODING

The organisation, Climate Central, has published maps of areas at risk of flooding in the future. These maps have been used for the allocation of £2m of funding to places such as Bude to help them manage the climate risks (see:

<https://www.theguardian.com/environment/2023/jan/06/bude-in-cornwall-awarded-2m-pounds-to-fight-climate-threat>).

They are therefore recognised as showing the realistic risks of climate generated flooding .

These maps, (see:

https://coastal.climatecentral.org/map/12/1.0955/51.3141/?theme=warming&map_type=multicentury_slr_comparison&basemap=terrain&elevation_model=best_available&lockin_model=levermann_2013&temperature_unit=C&warming_comparison=%5B%221.5%22%2C%223.0%22%5D), show the areas in Canterbury District which are already at risk of being below annual flood level – the webpage shows the map for outcomes caused by a 1.5 C rise in blue, and for 3 C rise in red, and the area obviously increases in later decades.

On present climate trajectories, a rise of 1.5 C will be very hard to achieve, unless ALL the promises made are actually implemented successfully.

The maps also show that populations are likely to be displaced, and some proposed development sites are at risk, so the dLP will need to allow for housing displace people and resulting infrastructure challenges, plus any additional housing that is still considered to be essential.

The council has taken a premature decision to publish the dLP, without adequate evidence, so the dLP must be mothballed until such time as reliable evidence is available.

Sustainable Urban Drainages Systems (SUDS)

Although these are referred to on numerous pages, I have no reference to rainwater harvesting.

In this highly water scarce area, it is essential that the Local Plan also has a Policy requiring Rainwater Harvesting for all new buildings. As well as reducing the demand on the water supply system, it also reduces demand on the SUDS, so provides double savings.

The Water and Sewerage companies will charge less for new infrastructure to supply new buildings with such facilities, and therefore it rewards the developer as well as the building owners.

It is also necessary to ensure that maintenance is provided in perpetuity for these systems.

This is also supported by a government [review into surface water management, released yesterday](https://www.housingtoday.co.uk/news/government-to-mandate-sustainable-drainage-systems/5121227.article) by the Department for Environment, Food and Rural Affairs. (<https://www.housingtoday.co.uk/news/government-to-mandate-sustainable-drainage-systems/5121227.article>) and “The review recommends implementation subject to final decisions on scope, threshold and process once a full regulatory impact assessment has been completed. The assessment will look at different options and the expected costs and benefits. The government has accepted this recommendation.

The requirement is expected to be introduced in 2024, so must be in the new Local Plan

6 BIODIVERSITY & NATURE

The already quoted report above on Housing, (<https://www.sciencedirect.com/science/article/pii/S0921800922002245>) also says: “On the biodiversity side, the 2021 Environment Act commits the government to implementing a **legally-binding target to halt wildlife declines nationally by 2030**, and from late 2023 will mandate that all new developments achieve a ‘Biodiversity Net Gain’. Biodiversity Net Gain aims to resolve trade-offs between new construction and impacts on nature. The policy will mandate that all new developments leave biodiversity better off than they found it, as measured using the Biodiversity Metric, a simple habitat-based biodiversity indicator (zu Ermgassen et al., 2021).

However, recent empirical work has demonstrated that the policy’s impacts on biodiversity remain ambiguous – planning applications achieving ‘net gain’ in a set of early-adopter councils were associated with a **34% reduction in the area of greenspace** despite claiming a 20% improvement in biodiversity overall, and **major governance gaps were identified**, risking the successful delivery of these promised compensatory biodiversity improvements (zu Ermgassen et al., 2021). Given uncertainty about Biodiversity Net Gain’s effectiveness, **preventing unnecessary land use change consistent with the mitigation hierarchy remains essential** (Phalan et al., 2018; Bull et al., 2022).“

Although the dLP makes numerous references to biodiversity, and refers to 20% net gain in policy DS 21, this is inadequate to actually improve biodiversity sufficiently.

Furthermore there needs to be a guarantee of that gain being achieved, as noted above, so policies are needed to delineate the requirements to both guarantee that the net gain will be achieved and that it will be maintained in perpetuity.

The Biodiversity Intactness Index (<https://www.nhm.ac.uk/our-science/data/biodiversity-indicators/about-the-biodiversity-intactness-index.html>) See also: Biodiversity Boom or Bust Environmental Audit Committee 2021 Boom or Bust? clpDMK2W.pdf) is such a metric and must be specified in the Local Plan Policies, and that applicants for developments must use it to show that they are achieving their targets, and the target must be at least 90%, to be considered a safe space for humanity.

Depressingly The UK failed to achieve over 14 of the Aichi Biodiversity targets (Biodiversity Boom or Bust Environmental Audit Committee 2021 Boom or Bust? clpDMK2W.pdf) and Invasive species continue to cost the economy £1.8 billion per year.

It also highlights that: “Currently, local authorities do not have enough in-house ecologists to provide the monitoring which is expected to underpin the Government’s policy on biodiversity net gain. (Paragraph 80)”, so this must be remedied before any development goes ahead.

They make a key point about nature: “Nature recovery does not happen overnight and must be maintained and built upon for generations. The proposed 30 year minimum to maintain biodiversity net gains will achieve little in terms of delivering long-lasting nature recovery. (Paragraph 195) .”

If instead of the destructive Council “High Street improvement”, expected to cost £1 million, this would fund an ecologist for several years, as a start.

Hence the Local Plan must specify that the ‘Support and protection needed to achieve net gain must be maintained in perpetuity’. This is the only way to ensure that the benefits are achieved and continue, and can be achieved with commuted funding.

They also support the view that: “Nature-based solutions could substantially contribute to meeting the UK’s net zero goals **but must not be seen as a substitute from the urgent task of decarbonising all sectors of the economy, and in particular, the UK’s energy system.** (Paragraph 256)”

It also highlights the need for better action on soils: “*We support the recommendations of the Natural Capital Committee that the development of soil indicators should be fast-tracked; that a shadow target for soil health should be established urgently; and that a legally-binding target for soil health ought to be established as soon as monitoring data allows. Healthy soils should be a priority outcome for the Environmental Land Management Schemes, so as to encourage farmers to adopt beneficial agri-environmental practices.* (Paragraph 105) ”

Hence this must be a Policy in the Local Plan.

Last year, 2022, was the UK's hottest year on record, with the average annual temperature passing 10 C for the first time, and the daily temperature passed 40 C for the first time. Such heat is now expected every three to four years (<https://www.theguardian.com/environment/2023/jan/05/uk-average-annual-temperature-tops-10c-for-first-time>).

Prof Richard Allan, at the University of Reading, said: “Higher temperatures in the UK are contributing to more severe heatwaves, droughts and wildfires but also more intense rainfall events and flooding. **These impacts will become progressively worse until global temperatures are stabilised by cutting global carbon emissions to net zero.**”

The human impact was thousands of early deaths - this emphasises the need for improved insulation of housing, referred to above, but it also has huge impacts on nature and wildlife.

For example, The National Trust (<https://www.nationaltrust.org.uk/services/media/weather-and-wildlife-2022> AND <https://www.bbc.co.uk/news/uk-64107967>) warns that: “this year’s tumultuous weather is set to become the new ‘norm’ causing a range of impacts for nature if steps aren’t taken to tackle the climate and nature crises. A warm January followed by back-to-back tree-toppling storms in February, a dry spring, a summer of record breaking temperatures and a prolonged heatwave causing severe drought, ending with December’s cold snap, has given UK wildlife a bumpy and difficult year with many species and habitats struggling to cope. The UK is not the only country to have suffered with this year’s weather. Many countries across Europe also baked in the summer heat and wildfires, flooding, hurricanes and typhoons claimed countless lives around the world including in South Africa, Pakistan, California, Japan, The Philippines and Australia. A new record high UK temperature of 40.3 degrees Celsius was recorded at Coningsby, Lincolnshire, on July 19 during the heatwave, helping make this the joint hottest summer on record. Much of the country was, and still is, gripped by drought after months of low rainfall has yet to replenish groundwater, with the hot, dry conditions over the summer drying up rivers, impacting wildlife and landscapes, damaging crops, affecting livestock and fuelling wildfires, destroying land and homes of nature.”

The Environment Act 2021, includes: “clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030.” It also includes “clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030.”

Surprisingly the “Natural Environment and Open Space Topic Paper (2022).pdf’ makes no mention of this, and seems mainly concerned with open space. In addition it does not seem to recognise the value of open space, even if it is not accessible. For example on page 7 it includes SLAA029 Black Griffin Park, and it is not accessible so is not included in the Open Space Strategy. It is not clear what has been “Decommissioned” but it should be preserved as an “Open Space’ even if it is not accessible.

Even worse, SLAA139, Wincheap meadow is; “Site is not recommended as a Local Green Space as uncertain about its future and ability to endure past the draft Local Plan. ”

This is extraordinary ! The dLP should be protecting existing green space *and* creating additional new spaces.

It also needs to ensure that they are preserved in perpetuity, unless there are very strong reasons to change it and an equivalent area, at least double the size of what would be lost is provided nearby.

So here again the draft Local Plan should be called a 'First draft' Local Plan, and be revised to fully include the latest requirements of the Environment Act.

In particular, the revised Local Plan must include :

“Long-term (at least 22 years, starting in 2023) legally binding targets on air quality, biodiversity, water, resource efficiency and waste reduction ”

Further information on what the dLP should include on biodiversity is provided by Natural History Museum:

<https://www.nhm.ac.uk/our-science/data/biodiversity-indicators/about-the-biodiversity-intactness-index.html>

This warns that some abundance indicators that might show a stable or even improving species abundance trend, which hides the widespread historical loss of animal and plant populations in countries such as Europe and the UK.

It goes on to say: The [planetary boundary framework](#) aims to describe a set of nine boundaries within which humanity can continue to thrive. Only if we stay within these boundaries are we likely to avoid the major shocks to our lives that will occur due to the climate crisis. Within this framework, if the BII of an area is 90% then it is below what we consider a safe space for humanity.

Hence it is essential for dLP to actually identify the current situation and take actions to increase biodiversity accordingly.

Proposed Development Sites

The proposed development sites are mainly greenfield, but this shows no recognition of the vital roles provided by greenfield sites.

For example, “**Trees standing alone and in small groups worth billions to UK**”

(<https://www.theguardian.com/environment/2022/dec/02/a-uk-tree-provides-hundreds-of-pounds-of-benefits-a-year-report-finds>).

These trees make up 20% of all the nation's trees, and ““These trees are at least as valuable in terms of providing benefits to people as woodland trees and we still aren’t even considering all of the benefits”, so are a very valuable asset and need increased protection in dLP.

Additional evidence on the importance of nature, including trees, is provided in:

NERR094 Natural England Research Report

<http://publications.naturalengland.org.uk/publication/5419124441481216>

which has been updated in 2021, by: <http://nepubprod.appspot.com/publication/5419124441481216>

The importance of this is that it shows in, Fig 1.4, the inter-relation of carbon emissions, nature recovery and green infrastructure. Critically, for new buildings on greenfield sites, Fig 1.3 shows the very large loss of the carbon stored in the soil caused by disturbance of the soil.

Also Table 2.5, page 17, illustrates that carbon storage in soils down to 1 metre depth is far greater than the carbon in plant material above ground level, which emphasises the importance of not disturbing soil.

So building on greenfield sites causes a huge loss of soil carbon.

Also relevant to soil disturbance are earthworms, and **Populations of earthworms in the UK may have fallen by about a third in the past 25 years, an assessment has shown** (<https://www.theguardian.com/environment/2022/dec/19/earthworms-may-have-declined-by-a-third-in-uk-study-reveals>).

Earthworms are vital for the healthy soil that underpins all ecosystems and scientists said a large decline would sit alongside concerns about “**insectagedon**” and the global **destruction of wildlife**.

So the Local Plan must require maximum protection of undisturbed ground.

Also Fig 2.2 shows that the carbon storage by woodlands takes a very long time to increase – over 200 years before it starts stabilise.

Sequestration is more rapid, around 25 years to reach peak and then falls rapidly.

In terms of the dLP that means any trees planted as a result of the Plan will not reach sufficient maturity in the Plan timescale to achieve full effectiveness.

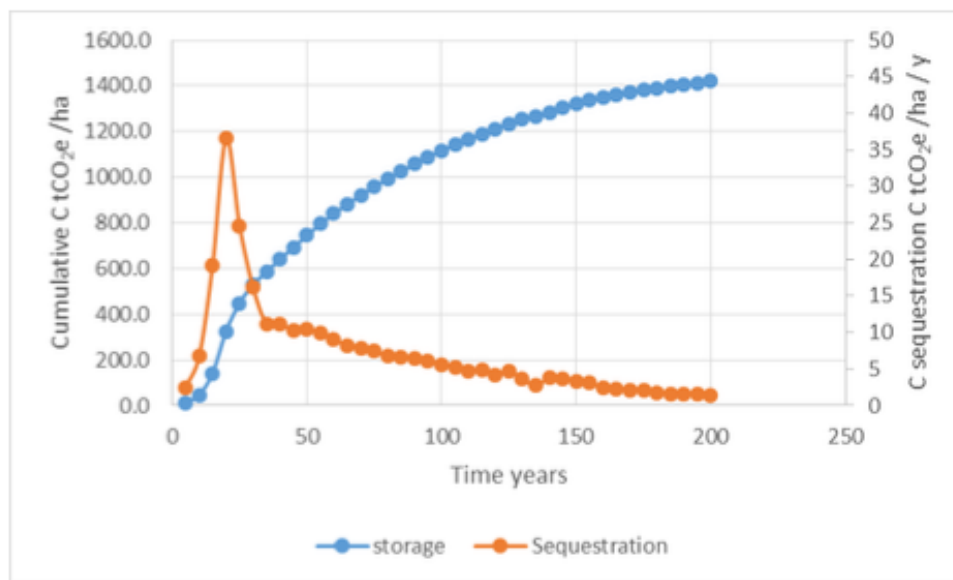


Figure 2.2 Illustration of how carbon sequestration of new woodlands peaks after a few decades, whereas carbon storage increases towards an equilibrium. (Based on Woodland Carbon Code data for un-thinned Yield Class 8 Oak in 5-year time intervals on a mineral soil with minimal soil emissions. Note: the modelling of early growth is limited by a lack of data so the timing and height of the early peak should only be treated as illustrative.)

Note that maximising timber use in construction, such as timber frames and wood fibre insulation, stores the large amounts of carbon sequestered, for a long time. Provided the timber comes from continuously replanted forests means live timber is also sequestering carbon at a high rate.

This is strongly supported by the Climate Change Committee who, four years ago, recommended that: “Steps should include a substantial increase in the use of wood in the construction of buildings,” <https://www.theccc.org.uk/2018/11/15/reforms-must-prepare-the-uk-countryside-for-climate-change-and-ensure-that-our-use-of-land-supports-reduced-emissions/>”

More recently, and more simply, they recommend that **all new houses** should be built of timber.

This ambition is supported by PHHomes, who say: “At its best, timber housing offers longevity, healthy and clean working environments – and extremely low upfront carbon footprint (ie embodied carbon).”

Also “A timber frame with timber based insulations can achieve more than a 65% reduction in up-front carbon emissions, but over-emphasis on carbon sequestration can disguise excessive timber use”. (www.phhomes.co.uk/ph15-system/ & passivehouseplus.co.uk issue 43).

Importantly for tree planting schemes, **a lot of work is needed to maximise benefits and minimise potential damage of tree planting schemes, so the Select Committee report: <https://committees.parliament.uk/work/595/tree-planting-and-woodlands/publications/> should be included as evidence for the Local Plan with a requirement for its recommendations to be followed in all proposals.**

Also the UK Inter-Agency Climate Change Group (IACCG) showcases some of the very best examples of projects on Nature-based Solutions from across the four countries of the UK (shown on the accompanying map and listed below), and highlights to new audiences how nature can provide important solutions to climate change, both by helping to lock up carbon and by helping us cope with inevitable change.

(https://jncc.gov.uk/our-work/nature-based-solutions-iaccg-case-studies/#:~:text=The%20UK%E2%80%99s%20Nature-based%20Solutions%20in%20action%201%20Keeping,Green%20Infrastructure%20Strategic%20Intervention%20%28GISI%29%20...%20More%20items.)).

Hence the Local Plan must make require this advice to be used.

The massive “State of Nature in Kent 2021” report covers Kent & Medway, but of particular relevance to the dLP are the following. Page 23:

“The State of Nature in the UK and around the world is startling, and scientists warn that we are entering a sixth mass extinction event (the first directly linked to human activity).

Nature is declining at unprecedented rates and that this decline will have grave impacts worldwide as the very foundation of economies, livelihoods, food, health, and quality of life are destroyed. Kent is no exception; species continue to go extinct from the county, and many more are threatened, along with their habitats.

The wealth of varied habitat in Kent supports more than 3,400 rare and threatened species, with some of these nationally rare and some only found in Kent within the UK. But it is not just the rare or endangered that matter; even the most commonplace species are vital within the wider natural environment, and bioabundance – as well as biodiversity – is under threat. We are fortunate to live in such a county, but also have a responsibility to hand a thriving natural environment over to future generations.”

Nature is in crisis, and we must act now if we are to halt and reverse this trend locally.

Page 26:

In the last century, 13 species were lost to Kent or went extinct.

In contrast in this century we have already lost 5 species, demonstrating the more rapid losses occurring now.

Page 27:

“The greatest pressure faced by Kent’s wildlife comes from significant and unprecedented levels of growth.

The Kent and Medway Growth and Infrastructure Framework identifies some 178,600 additional homes and 396,300 additional people by 2031 (24% and 23% growth respectively). This, along with the supporting infrastructure required – transport, education, health and social care, utilities and community facilities - all require land and resources. Furthermore, there are pressures on land-use which are specific to Kent’s location, such as proximity to London and as a gateway to Europe, through road, rail, sea and air links.

A growing population needs food, water, and materials, and intensive food production and farming places further pressures on the land. In addition to these pressures on land use, there are some general trends which, historically, have had a negative effect on the natural diversity of Kent, including:

- . Intensification of land management, such as use of chemical fertilisers and pesticides in agriculture, ploughing of semi-natural grasslands, loss of traditional orchards;
- . Direct loss of habitats through increased development, urbanisation and over-tidying and other land uses;
- . Degradation of soil health and productivity resulting from nutrient depletion, declines in levels of humus, and erosion and compaction of soils;
- . A wide range of pollutants, from many sources, that threaten wildlife and have an impact on all habitats, with the most widespread current harm from excess nutrients (phosphate and compounds of nitrogen) in air and water. There has also been a rise in concern over plastic pollution, particularly in the aquatic environment;
- . Lack of appropriate management, such as the loss of woodland management as woodland products become uneconomic to extract, or recreational overuse of sensitive areas;
- . Habitat fragmentation, which impairs species movement or migration, leading to populations becoming isolated and less resilient to changing climate conditions;
- . Invasive non-native species, which can out-compete native species, and pests and diseases, which can have impacts beyond the species they directly attack;
- . Climate change – loss of land through sea-level rise, temperature, rainfall and weather pattern change, and other environmental factors alter habitat composition and species movement and survival. Kent is a gateway for species colonising from Europe in response to climate change, including Invasive Non-Native Species (INNS);
- . Lack of investment and a drop in public sector expenditure on biodiversity, which in the UK, as a proportion of GDP, has fallen by 42% since a peak in 2008/9.

It will be necessary to respond locally to policy such as the Environment Act and make it work on the ground. “

Page 28: Page 29:

Kent’s population is growing at above average rates¹, the county has some of the highest rates of house building in the UK¹, and the number of vehicles on Kent’s roads increased by 14.3% between 2006 and 2016.

Levels of small particulate air pollution in Kent are double the World Health Organisation recommended annual average maximum

limit.

Water industry discharges are the biggest contributor of phosphorus to Kent's rivers and lakes, followed by agriculture and private sewage treatment plants.

In 2019, 79% of the rivers and lakes in Kent monitored for phosphorus did not meet the required standard for good ecological status as set out under the

Water Framework Directive. (Compared to 67% of water bodies across the South East, and 56% throughout England).

In 2019, 77% of Kent's groundwater bodies did not meet the required WFD standard for good chemical status and two groundwater bodies deteriorated, in part due to the presence of nitrates in the water. (It is a similar picture across England, with nitrate being the most common cause of groundwater test failures).

The area of land under conservation management in Kent declined by 3.8% (14,075 ha) between 2016 and 2020. (Losses are mainly due to the expiration of entry level environmental stewardship schemes between 2016 and 2020).

Page 29:

Fragmentation and loss of connectivity through development in the west of the county, and conversely through **under-management** and scrub encroachment in the eastern half, **have reduced the area of chalk grassland in Kent.**

Only 69% of SSSIs in Kent are in favourable condition, while Kent now has 11 Marine Conservation Zones, this does not always mean greater protection, management measures or enforcement is in place.

Of the 3,684 species in Kent that have had their UK threat status assessed, **372 (10%) of extant species are classified as threatened with extinction** from Great Britain. This compares with 1,188 (15%) of 8,431 species assessed that are threatened with extinction from the UK as a whole.

It goes to look at the Objectives for improving different habitats, most of which are not being achieved.

On Page 34, it says: **“Objective: New development to better provide for a greener urban environment, through increased urban tree planting, the inclusion of integral wildlife niches, and green building and landscape design.**

Unfortunately:

“Kent's population is growing at above average rates, the county has some of the highest rates of house building in the UK1, and the number of vehicles on Kent's roads increased by 14.3% between 2006 and 2016.”.

This emphasises the need to restrict new building and reduce road vehicles.

Page 37, it notes: **“Kent Biodiversity Strategy lists 387 priority species for Kent, identified as being the most threatened in the British Isles and requiring conservation action.”**

So the Local Plan must take much stronger actions to protect, enhance and maintain nature and biodiversity.

In addition in relation to public access to natural environments, such as the dLP proposed **Broad Oak Country Park**, it says:

Page 56: **“Objective: Whilst there is an increase in the number and quality of opportunities for Kent's residents to connect with the natural environment, this access is appropriately managed, and impacts from disturbance monitored,** so that the health and wellbeing benefits realised are not to the detriment of the natural environment through increased use and associated recreational disturbance.

Inappropriate engagement threatens Kent's wildlife. In the last 10 years we have seen:

- Increased pressure on wildlife sites and Public Rights of Way (PROW).
- Lack of public knowledge of impact of actions.
- Disconnect with nature leading to lack of care.
- Increases in dog attacks on livestock.
- Increases in fly tipping and littering.

Rural parishes are struggling to combat pressures.”

In the case of Broad Oak, it is vital that it is NOT promoted as a “family day out” with vehicle parking which would exacerbate the intrusion into a natural area of woodlands and open areas. A key concern at the 1979 Reservoir Inquiry was that road traffic would increase as people tried to view the reservoir causing congestion in Tyler Hill and around Broad Oak itself and the Sturry – Herne road, so was a very strong objection.

As managing car parking is a key tool to managing congestion, these car parks must be deleted from the Local Plan.

Equally, the existing PROW network should be maintained, but only improved to meet minimum standards, to minimise intrusion and the area monitored for disturbance.

Finally the global Biodiversity COP 15 meeting last year in Canada, added Agroecology (farming WITH, instead of against, Nature, to Target 10, and they also signed up to a newfound global ambition and commitment to halt and reverse biodiversity loss by 30 % this decade.

So these aspects also need to be in the Local Plan.

With regard to the Habitats Directive, **the UK High Court has ruled that key European nature conservation laws remain enforceable against the Environment Agency (and by implication other public bodies), despite the UK having left the European Union.**

This needs to be recognised in the Local Plan

See: <https://www.freeths.co.uk/2022/09/06/legal-article-landmark-environment-case-environment-agency/Habitats-Directive-case-in-the>

7 POLLUTION

As well as the vital issue of Global Heating, pollution is also a headline issue, because of its effects on human health and well-being, and its impacts on nature and biodiversity.

A key pollutant is nitrogen, and the world's mismanagement of the nitrogen cycle is 'our forgotten environmental crisis' (<https://theecologist.org/2021/jul/22/global-nitrogen-time-bomb>).

The UK has an outsized impact on the world, and our way of life is profoundly damaging and unsustainable - using up our share of the [resources of three planets](#) when we only have this one fragile, heavily damaged, one.

In the case of nitrogen, we are currently fixing at least 300 million tonnes of nitrogen each year - five times as much as the world can bear.

This shows that that applying and fixing nitrogen has huge costs:

Our profligate use of nitrogen fertiliser is a huge contribution to the [climate emergency](#).

Nitrous oxide has 298 times the global warming potential of carbon dioxide and stays in the atmosphere for an average of 114 years and the Haber process producing artificial nitrogen fertiliser is responsible for one percent of global carbon emissions.

And it also means huge ocean dead zones and massive amounts of [air pollution](#). This in turn has major impacts on human health. And harms our ecosystems, causing the loss of many wildflowers, fungi and lichen.

In healthy soils, with low levels of nitrogen, microbes do not metabolise carbon compounds but instead [excrete them as polymers](#) that act as a glue holding the soil together, with spaces between the "clumps" through which air, water, roots and mycelium can move.

Without the glue, there's more compaction, loss of fertility, and more flooding.

So much more effort is needed to promote and support agroecology, and an example of that is the proposed Community Orchard for Tyler Hill supported by South East Water (who own the land), so the Council must have a policy to promote and support such changes.

The recently published "**Chief Medical Officer's Annual Report on Air Pollution for 2022**", includes carbon dioxide as an air pollutant and says "**2022 saw record ever global releases of CO2 into the atmosphere and this maintains the long-term steady upwards trajectory in such emissions. Putting this another way, instead of the vital need to reduce CO2 emissions on a world scale they continue to rise. At the present rate of rise it will only take 9 years for the 1.5C warming target to be surpassed**".

So this reiterates the section above about the importance of reducing existing emissions NOT adding additional contamination, as the present dLP will do.

It highlights the impact of cars: "**at a local level there is a high relationship between emissions from motor vehicles and levels of air pollution.**"

Also that: "**London vehicle NO2 emissions are already in excess of pre-pandemic levels.**"

This emphasises the need for the dLP to actually reduce vehicle numbers, not increase them.

The proposed 'Bypasses' will actually increase vehicle movements and even if they are in the countryside the pollution will affect the District and damage nature too.

The Report goes on: "**Air pollution is a matter of life and death, leading to thousands of Londoners a year dying prematurely and developing life-changing illnesses, such as cancer, lung disease, dementia and asthma. And it's especially dangerous for children due to the long-lasting impact on their health and life chances, with children in our city growing up with stunted lungs**".

Worryingly, it adds: "**The UK is witnessing a rapid expansion of so-called "smaller fulfilment centres", where the picking, packaging, and shipping of on-line orders to the consumer all happens under one roof. In order to be as close to the end consumer as possible and to best enable rapid delivery, these fulfilment centres are moving closer into dense urban areas.**" and "**95% of the vans they use are diesel powered.**"

So all these effects will be felt here and the dLP must be amended to ensure effective management of these problems by reducing the sources within the District, such as vehicles as well as heating equipment.

The report emphasises that it can be done (page i):

"As this report lays out, we can and should go further to reduce air pollution – and it is technically possible to do so. Improvements in engineering for transport and industry, modifications to agricultural practice and improvements in the built environment are examples that should, once a change is made, be self-sustaining and allow us to reap health benefits for the foreseeable future. Many of the changes to improve outdoor air pollution have significant co-benefits. For example, reducing the use of fossil fuels for energy reduces both air pollution and carbon emissions; improving active travel reduces air pollution emissions from vehicles and has direct health benefits to those who are walking, wheeling or cycling.

In particular, we need to concentrate on the places where people live, work and study; the same air pollution concentration in a densely populated area will lead to greater accumulated health effects than in a sparsely populated area as more people will be affected.

The path to better outdoor air quality is clear, and we now need to go down it."

The Report has useful data, and "**Figure 4 Modelled annual average concentrations of PM2.5 in 2030 based on a 'baseline' (existing agreed government policies) emission reduction scenario6**" shows that London Essex and Kent are worst affected, and that Canterbury is visible as being higher than most of Kent at 8 to 9 micro g/cu.m. The most recent, 2021, WHO recommended maximum level is 5 micro g/cu.m, which is not achieved anywhere in Kent.

This reinforces the need to reduce vehicular traffic if we are to achieve WHO's recommendations.

The Report refers to Low traffic Neighbourhoods (LTN), and says:

“Low-traffic neighbourhoods (LTNs) reduce traffic and air pollution without displacing the problem to nearby streets, new research from Imperial College, London has shown. LTNs aim to reduce through traffic in residential areas, usually by the use of barriers which prevent cars from using certain streets, while leaving them open to pedestrians and cyclists. This recent research, carried out in inner London residential areas, effectively disproves the argument that low-traffic zones will necessarily cause an increase in traffic and air pollution in neighbouring streets.”

Hence the dLP must be amended to support and implement more of these, as well as ensuring that they are built into all new schemes.

8 WASTES

A key issue for the dLP is that of wastes, which can also increase pollution, but in addition improving re-use and recycling of wastes could have massive other benefits.

The IET reports (<https://eandt.theiet.org/content/articles/2022/06/how-to-cut-carbon-emissions-from-waste/>) reports: “Research by Green Alliance shows that improving the use of resources in the construction, vehicles, food and drink, electronics and appliances, and clothing and textiles sectors, could save nearly 200MtCO₂e between 2023 and 2032. Some 79.1MtCO₂e of those could come in construction through design to reduce material inputs, increased reuse of materials, and switching from high- to low-carbon materials. An 80 per cent reduction in avoidable household food waste could bring another 17.3MtCO₂e, while a rise in reuse of electronics to 32 per cent offers 10.2MtCO₂e.”

It goes on to highlight: “inert wastes from construction, demolition, excavation, and mining activities. These are hard to tackle, but offer considerable carbon savings potential: **construction, demolition and excavation created 137.8 million tonnes of waste** in the UK in 2018, five times that from households.”

Furthermore: “Continued use of weight as a metric in resource policies also appears outdated in a world focused on net-zero. Consider Scotland, for example, which has been measuring lifecycle impacts of its household waste since 2011. Data from this year’s report shows where we are on waste emissions and how far we must go. Landfill emitted 244,300tCO₂e and incineration 171,300tCO₂e (the highest recorded), while recycling ‘offset’ waste carbon impacts by 538,100tCO₂e. However, at 5.97MtCO₂e, **embodied carbon impacts from material production** are by far the greatest contributor.”

So the revised Local Plan must ensure that all possible actions are taken by the City Council and all organisations and people involved with these issue in the District, including Kent County Council, who also have responsibilities in this area.

9 BROWNFIELD SITES

It is widely recognised that brownfield sites should be used before greenfield, and indeed the imminent revisions to the National Planning Policy framework (NPPF) will include this.

Unfortunately, the City Council's brownfield register ([See the brownfield land register](#)) is not at all clear, and provides little help in finding out which sites have been developed or have approval for development.

So before the dLP is revised the Register needs updating, preferably with good publicity asking for more sites.

A more intense process is then needed in the dLP process with a strong Policy to support use of brownfield land development to ensure maximum use of it.

10 CONCLUSION

Finally, in: The City Council's Residents Survey 2016-17 Appendix C FINAL.pdf

it showed that: “Net feeling that people can influence decisions made by CCC decreases by 17%, to -38%, this is the second year this has decreased. (Q5)”

So I very much hope the Council will demonstrate it is taking account of responses to the dLP by major revisions to the Draft version.

This attention to the detail of cycling and walking is very much welcomed, and in particular the involvement of the relevant specialist bodies such as Sustrans and Spokes.

However similar 'walking' specialists should also be asked to be involved, such as the Ramblers, and also representatives of a more diverse groups, especially those who are deterred from walking and cycling, whether that be from personal abilities, such as hearing, vision or physical fitness, or from mental concerns, such as safety, including 'high speeds', or loneliness.

In addition those who may like to do more walking may be worried about finding their way or whether the route is sufficiently smooth for their capabilities.

With regard to the latter, the most important aspect for walkers is being able to walk from their house to the nearest facilities such as a bus stop, local shops, etc.

For example, Hackington Road, Tyler Hill, has pavements on both sides of the road, but they are narrow, and the surface is up and down and terrifying to anybody who is less sure-footed than average.

Similarly, Canterbury Hill has a very narrow path, which slopes towards the road in places, although it was a big improvement on the previous situation with no pavement, which was terrifying for walkers and drivers.

Although the Appendix includes 'Priority and infrastructure' it is not clear how these will be converted to actual Policy requirements and hence be funded as a priority.

So the revised Plan needs to have a Policy: “High quality Pavements must be provided for all new developments to enable people to walk without danger between dwellings and local services, such as Public Rights of Way, bus stops, village halls, shops, recreation grounds, open spaces etc... ”.

There also needs to be a policy to require regular maintenance of facilities – roads receive a lot of attention but not the active travel facilities.

Some of the damage to footways/pavements is caused by vehicle parking. It used to be the case that parking was forbidden on them, but now it seems it is forbidden in some areas only. This is made even worse by the relevant signs – we have one outside our house and it is a tiny sign, very high up 2 m above ground level, which no-one sees, least of all drivers who are low down.

So many drivers, especially delivery and service vehicles damage the footways by parking on them, so much more pro-active action is needed.

This is not helped by poorly installed access covers (manhole covers) and the very varied quality of patch repairs, which often make the situation worse.

Despite requests to the County Council, no priority seems to be given to these issues.

An access policy is needed for cycle routes – the Crab & Winkle Sustrans route is near us, but it is reached by a narrow and bendy country lane, which deters anyone less than very confident, and only slight less so for pedestrians.

So a priority is needed for local links to routes.

The new Highway Code should also feature as a priority for publicity because the Department for Transport has not publicised it properly, especially the transport hierarchy, with greater emphasis for drivers to give way to pedestrians and cyclists.

Regarding 'Innovation' section, the main problem with deliveries is the multiplicity of providers. While each supermarket understandably has their own transport, it would make a huge difference if Royal Mail, for example was used for all other parcels etc. It would be helpful if the Policy could require: “priority will be given to delivery consolidators”.

For 'non-standard cycles' this could be expanded to include tricycles and recumbents, and trailers.

It would also encourage pedestrians for motorised scooters being properly controlled and restricted to roadways and to stop illegal use on pedestrian or shared pedestrian/cycle routes.