SA38: Air Quality - Index by ID Number

ID	Respondent	Organisation	BehalfOf	Respondent Category	Participate
625	Mrs J Nagy	Worth Parish Council		Town & Parish Council	☑
689	Mr M Brown	CPRE Sussex		Organisation	☑
710	Mr N Burns	Natural England		Statutory Consultee	☐
1036	Mr D Johnson			Resident	☐
1036	Mr D Johnson			Resident	☐

625

Site Allocations DPD: Regulation 19 Consultation Response

Policy: **SA38**

ID:	**625**
Response Ref:	Reg19/625/8
Respondent:	Mrs J Nagy
Organisation:	Worth Parish Council
On Behalf Of:	
Category:	Town & Parish Council
Appear at Examination?	✓

WORTH PARISH COUNCIL

Clerk: Mrs Jennifer Nagy
CiLCA; PLCC

24th September 2020

Planning Policy,
Mid Sussex District Council,
Oaklands Road,
Haywards Heath,
West Sussex,
RH16 1SS

Dear Sirs,

Draft Site Allocations DPD (Regulation 19) Consultation

Following a thorough review of the above DPD and the associated documents, Worth Parish Council has the following comments.

Employment

Site SA4 – Land north of the A264 at Junction 10 of the M23

In the original application for development of this area (13/04127/OUTES refers), this site was designated as informal open space. It was to be used as landfill with spoil from the site – "the landfill site will provide an interesting sculptured landform which will be retained as informal open space. The landform will also help screen the development from potential views from the A264".

Despite the existing permission for industrial units on the site specifying B1/B8 use, only B8 units have been approved under reserved matters applications. The landscaping originally proposed for this area is now more than justified, in order to screen the large mass and height of the B8 units already in situ.

The amenity space also serves to avoid perceived coalescence with Crawley.

Removal of this 2.7-hectare site can be justified, given its current designation as protection for an existing development, whilst still leaving sufficient residual employment land to meet the revised economic development targets.

Should the site be allocated despite these objections, the Council asks that only B1 smaller business units be permitted, with the provision for any B8 units to be removed. This would give a wider range of industrial development, providing more opportunities for local businesses and thus meeting sustainability and economic objectives.

Given the location right on the junction, smaller low rise B1 units would be more suitable to mitigate the impact on the area. The landscaping screen should be of sufficient mass and depth as to provide protection both against perception of coalescence and against traffic noise and pollution from the M23 and Junction 10 itself.

As land levels have been heightened as part of the landfill operations, this should be taken into account to ensure that buildings are low rise from the A264 road level, and that screening is of sufficient depth and height to fulfil its purpose.

Site Specific Housing

Site SA19 – Land South of Crawley Down Rd, East Grinstead; 200 dwellings.

Site SA20 – Land South and West of Imberhorne Upper School; 550 dwellings.

The proximity of these developments means that their impact on local infrastructure should be assessed as a single development and should be undertaken in the context of existing permissions to the South of SA20 for 200 new homes and East of SA19 for 100 new homes (approx.).

Both Worth Parish Council and Surrey County Council have expressed concerns over capacity along the A22/A264 corridor. The associated local road network at the Turners Hill crossroads and the Sandy Lane, Vicarage Road and Wallage Lane junctions with the Turners Hill Road through Crawley Down should also be considered– see comments on Transport below.

Site SA22 – Land north of Burleigh Lane, Crawley Down; 50 dwellings

Worth Parish Council commented as part of Regulation 18 consultation that the location of the access is not clear. MSDC has responded by including reference to possible access via Sycamore Lane or Woodlands Close.

The Parish Council reiterates its concerns over access to this site. Both Sycamore Lane and Woodlands Close lead to the junction of Kiln Rd and Woodlands Close, a junction which has already been highlighted to WSCC Highways as being dangerous due to lack of clarity with regard to priority, and due to problems with obstructive parking.

An alternative access to the site via Burleigh Lane has obviously been discounted as it is a private, single track lane.

Therefore, this site should be removed on highways grounds

Housing Numbers

It was noted that during the various iterations of the Site Selection Paper, the wording as to supply across settlement categories has changed. SPP2 refers to unmet residual need being passed down i.e. unmet need to be passed from Category 2 to Category 3 (para 2.10 refers). However, SSP3 refers to unmet need to be passed up (para 2.4.5 refers) This should be clarified.

The DPD allows for 1764 homes, when the residual need is 1280, which is an over- provision of 484. Whilst this figure seems reasonable, it should be noted that it is an over-provision of 37.8% which could be deemed excessive.

In the DPD itself, the residual requirements are tabled by Category and not by individual settlement. The figures are as follows

Category	Minimum Requirement	Minimum Residual	Allocated	Difference
1	10653	706	1409	+703
2	3005	198	105	-93
3	2200	371	238	-133
4	82	5	12	+7
Total	**16390**	**1280**	**1764**	**+484**

Category 2 settlements have been successful in achieving 93.41% of their target, whilst Category 3 settlements have only achieved 83.1% of their target. The Council argues that more effort could have been made to see what could have been done to mitigate the sites discounted for consideration in the Category 3 settlements.

The Parish Council considers that the methodology used by MSDC to calculate Minimum residual requirements penalises those settlements who have already met their DP6 minimum requirement targets by ignoring the completions and commitments in excess of the DP6 figure for each

settlement. If the excess above the DP6 minimum requirement was included, then the six Category 2 settlements have already met 102% of their over DP6 minimum requirement of 3005.

DP6 Settlement Hierarchy states that "the amount of development planned for in each settlement will need to have regard to the settlement hierarchy, and also take into account of existing delivery, local development needs including significant local infrastructure, and other constraints to development"

1005 of the 1764 additional houses are on sites in the northern half of the district. Worth Parish Council believes that the district would be best served by an equitable distribution of housing throughout the area. The Council recognises the need to concentrate housing around the three district towns which are best placed to support the increased demand on infrastructure; two of these towns are in the south.

Worth Parish will also be adversely impacted by significant development on its border with East Grinstead, with an additional 750 homes being proposed. (See comments on Transport below)

Windfall Sites

In responding to the Draft DPD in 2019, the Parish Council said that the windfall contribution of 588 dwellings was underestimated, and that evidence would justify 972 from small windfall sites and 500 from large windfall sites.

In the final version of the DPD, the windfall contribution has been reduced to 504 dwellings. This presumably is due to updated empirical evidence.

Para 70 of the NPPF requires compelling evidence that windfall sites will provide a reliable source of supply.

PPG Housing and Economic Land Availability Assessment states that Local Planning Authorities have the ability to identify broad locations in years 6-15, which could include a Windfall allowance.

However, other LPAs such as East Hampshire, have recorded a constant supply of Windfall numbers, so have justified including figures from Year 3 onwards, rather than Year 6.

The District Plan adopted March 2018 allowed for 450 windfall dwellings. With allowances for 450 in 2018, 588 in 2019 and 504 in 2020. Using the East Hampshire model, these figures could be re-visited to see if the 504 figure is realistic or has been under-estimated.

Worth Parish Council has noted Cuckfield Parish Council's comments relating to Windfall Sites, in that Cuckfield PC is of the opinion that "the allowance for windfall sites within the plan period has been underestimated by 168 dwellings (through the use of inconsistent methodology); 128 dwellings from small windfall sites (up to 9 dwellings) and 480 windfall sites over 9 dwellings."

Worth Parish Council concurs with this view that contribution from windfall sites have been incorrectly assessed, further evidence that the calculation needs to be re-visited.

Neighbourhood Plans

The DPD allows for known commitments of 9689, which includes allocations made in Neighbourhood Plans. The majority of parishes have made Plans, which should now be due for review. Some reviewed Plans may incorporate additional allocations, but no reference has been made to these.

Therefore, the Council believes that there is little justification to allocate an additional 50 homes to Crawley Down given that

- The parish has fulfilled its housing allocation
- Category 2 settlements have performed well in the delivery of previous allocations
- The distribution of additional sites has been unfairly biased to the north of the district
- This in turn has put unacceptable strain on the local road network, especially the A264 between East Grinstead and M23 J10.

- The over-provision of 484 dwellings/37.8% is too great, and that the windfall contribution of 504 is too small.
- No consideration has been given to future allocations via revised Neighbourhood Plans within the district.

It is noted that provision of supporting infrastructure is more site specific for strategic sites. Smaller allocations generate lower levels of contributions that are insufficient to fund improvement projects; little consideration is given to the cumulative impact of piecemeal development. It could be argued that larger strategic site allocations provide necessary infrastructure more efficiently and cohesively than smaller sites.

Transport

MSDC last carried out a Transport Study in November 2015 in preparation for the District Plan in 2018. DP21 of the District Plan makes reference to the West Sussex Transport Plan 2011 to 2026. The WSCC Plan only cites areas around the three towns – East Grinstead, Burgess Hill and Haywards Heath as being in need of improvement. It is noted that East Grinstead is affected by the A264 and the A22, but no reference is made to the impact of traffic on these roads as they travel away from the town.

Completion (almost) of the M23 Smart Motorway and Gatwick Airport's progression of a second runway have taken place since the date of the study; it should be updated as a matter of urgency.

Both Worth Parish Council and Surrey County Council has commented on the impacts of increased levels of housing in East Grinstead upon the A22/A264 network.

DP25 Transport requires any development scheme to "avoid traffic congestion, individually or cumulatively, taking account of any proposed mitigation"; any additional housing sites should be compliant with this policy.

SA35 in the DPD only identifies three transport schemes – A22 corridor upgrades at Felbridge, Imberhorne Lane and Lingfield Rd junctions, A264 upgrades at Copthorne Hotel roundabout, and A23 upgrade at Hickstead.

Junction improvements at all three East Grinstead locations will channel traffic more easily onto the A264.

Worth Parish Council argues that the Dukes Head roundabout should be considered for inclusion in SA35. The B2028 Turners Hill Rd joins this roundabout bringing traffic from the south to head on westwards on the A264 to access local employment centres at Gatwick and Crawley, and also to access the M23 itself for onward journeys.

Capacity studies should take place on all major junctions from M23 J10 eastbound on the A264 until its junction with the A22. This is particularly important given that the 772 homes proposed for East Grinstead are all on the eastern border of Worth Parish, so would have significant impact on the local road infrastructure.

Air quality assessments and modelling should take place to analyse the impact of increased traffic along this corridor to ensure compliancy with SA 38 Air Quality.

In addition, junction capacity on the associated local road network at the Turners Hill crossroads and the Sandy Lane, Vicarage Road and Wallage Lane junctions with the Turners Hill Road through Crawley Down needs to be considered.

Indeed, the Plan would benefit from a District Transport Strategy to promote sustainable development.

NB: There is an error in SA35 in that the maps for "A264 corridor upgrades at Copthorne Hotel Junction" and for A23 Junction upgrades at Hickstead" have been transposed.

Utilities

It is of concern that Southern Water has indicated that the local sewerage network within the parish has limited capacity.

Indeed, evidence was supplied to the Secretary of State in relation to the Call In of two sites in Crawley Down in 2017 that Copthorne pumping station was at capacity. Whilst developers can fund improvements, piecemeal contributions will not be adequate to address the wider issue of lack of local capacity

There have been very recent issues with water supply in Mid Sussex, in that the processing plants could not purify enough water to meet demand, leaving some household without water for days.

Summer heatwaves seem be the norm, leading to increase in overall demand.

Provision of an adequate water supply must be an inherent part of any Local Plan.

Digital infrastructure has historically been left up to commercial providers. However, recent Covid-19 events have highlighted the need to have access to efficient broadband speeds in order to support the local and national economy.

Oral Representation at the Examination

Worth Parish Council would like to send representation to the Examination hearing to argue the case for a District Transport Strategy to assess the impact of cumulative development along the A264 corridor, to include capacity and air quality studies. This should encompass feeder routes onto this corridor, such as the A22, the B2028 Turners Hill Rd, and the B2220 Copthorne Rd.

Yours faithfully,

Jennifer Nagy
Clerk to the Council

689

Site Allocations DPD: Regulation 19 Consultation Response

Policy: **SA38**

ID:	**689**
Response Ref:	Reg19/689/3
Respondent:	Mr M Brown
Organisation:	CPRE Sussex
On Behalf Of:	
Category:	Organisation
Appear at Examination?	✓

CPRE Sussex
Brownings Farm
Blackboys
East Sussex TN22 5HG
Telephone 01825 890975
info@cpresussex.org.uk
www.cpresussex.org.uk

The countryside charity
Sussex

Mid Sussex District Council,
Oaklands Road,
Haywards Heath,
West Sussex RH16 1SS

26th September 2020

Sent by e-mail to: LDFconsultation@midsussex.gov.uk

Dear Sirs,

SUBMISSION DRAFT SITES ALLOCATION DPD

1. INTRODUCTION

1.1 This letter is written on behalf of CPRE Sussex, the Sussex countryside charity and a member of the Campaign to Protect Rural England network. CPRE Sussex campaigns for the health and enhancement of Sussex's countryside and for the vitality of its rural communities and heritage. Nationally, CPRE has campaigned for a strong, effective and transparent planning system for nearly 100 years.

1.2 We are writing on the assumption that you aim to proceed with the public examination and adoption of this DPD notwithstanding recent Government radical proposals to streamline the planning system and replace the entire corpus of plan-making law in England within an uncertain timeframe.

1.3 This letter explains why we consider that the Regulation 19 draft Sites Allocation DPD (the Plan) is unsound in certain respects, and suggests ways in which it can be made sound. Our representations below relate to

- Policy SA25 (Land west of Selsfield Road, Ardingly);
- Policy SA37 (Haywards Heath to Burgess Hill Multifunctional Routeway);
- Policy SA38 (Air Quality); and
- The absence of any specific frame-setting climate change policy within your District Plan.

2. POLICY SA25 - LAND WEST OF SELSFIELD ROAD, ARDINGLY

2.1.2 Our reasons for objecting to this proposed allocation, in summary, are:

- National planning policy requires conservation and enhancement of AONBs from development to be given the "highest status of protection" as a public interest priority.

- That public interest priority, which LPAs are responsible for implementing, is already at severe risk of being undermined in the High Weald by the rapidly growing level of development permissions granted there.

- The provision of market housing that exceeds local community need is not a more important priority than AONB conservation where alternative sustainable site allocations outside an AONB are available or there is no essential Plan necessity for them to be sited within the High Weald.

- National AONB conservation policy is given effect in your Local Plan by policy DP16 which only permits small scale development there, and then only if it positively conserves and enhances the High Weald AONB.

- This proposed allocation would, on any reckoning, involve large-scale, relatively high density, development that exceeds both local need or to provide a cushion over the housing needed to meet your District Plan housing target. Most of it involves market housing that is not compatible with national policy limiting development within AONBs, or prioritising the social need for affordable housing.

- On a fair overall assessment of relevant factors, the development of this allocated site would be classified as major development for the purposes of NPPF para 172; and, as your Council has acknowledged, as such it would not be capable of meeting the exceptional circumstance and public interest tests that are a NPPF precondition to its approvability.

- A 70 dwelling development of this site has been assessed as having moderate potential to cause significant adverse effects on the High Weald AONB. Great weight must be given both to that finding of potential harm and to the fact that such development would not meet either DP16 criteria of being small scale or serving to conserve and enhance the AONB.

- The basis on which the site's sustainability appraisal was assessed is flawed;

- Whether or not it would constitute major development, any development proposal for the site would be unsustainable and ought to be rejected as contrary to your Local Plan AONB conservation and enhancement policy. DP16 is consistent with national planning policy and is the key Plan policy by reference to which planning decisions must be made.

2.2 Why a 70 dwelling development on site SA25 would not be approvable whether or not it constitutes major development

All development within an AONB must be limited

2.2.1 The statutory and NPPF policies for AONBs state that AONBs have a highest status of protection in relation to conserving and enhancing landscape and scenic beauty, and that within AONBs the scale and extent of development should be limited. As recognised in the recent Glover review on their safeguarding, AONBs and national parks also play an especially important part in public health and wellbeing, biodiversity, and climate change management terms. National planning policy in terms of their conservation in the public interest is given effect vis a vis the High Weald AONB via policy DP16 of your District Plan which requires approvable development there to be small scale and to demonstrate that it would conserve and enhance the High Weald's natural beauty.

2.2.2 A 70 dwelling development at Ardingly cannot possibly be considered a small-scale development and would not be compatible with these provisions. It would be imprudent to allocate a site for a level of

development that your Council would be likely to have to reject on application as inconsistent with your Local Plan and national AONB conservation policy.

2.2.3 Given that the High Weald enjoys the "highest status of protection" from development, there should be no allocation of land within the High Weald for development beyond the level required to meet local neighbourhood needs (and concentrated on affordable housing) unless there are no sustainable developable sites outside the High Weald – which, as the Sustainability Appraisal demonstrates, is not the case in Mid Sussex. It is a legal flaw in the site assessment system to assess sites within the High Weald on a par with sites elsewhere, rather than as a last resort option, as appears to have happened with this draft DPD. It is a flaw because it fails to give effect to the public policy objective of CROW Act cl 82 of diverting new development away from AONBs, and to the NPPF para 172 directive which gives AONBs the highest status of protection from development. The sustainability appraisal is wrong to attribute no greater weight to the site's AONB status than to other 15 sustainability factors assessed: its conclusion that it performs relatively well against the Sustainability Appraisal framework demonstrates that the framework itself is flawed. Its conclusion is not justified.

2.2.4 Providing market housing for non-local people, and general Plan policies that permit that, should not take priority within the High Weald over these national AONB protective policies. The NPPF requirement to "limit" development there, and your own DP16 policy to support only suitable, sustainable "small-scale" development within the High Weald, would be rendered meaningless if a need to meet a District-wide housing target (a non-exceptional challenge faced by all planning authorities) could be used to justify overriding the public interest in conserving and enhancing the High Weald by building 70 houses here. Nor does your Local Plan support the allocation of larger sites within the AONB to meet Mid Sussex's housing target.

2.2.5 The importance of protecting the High Weald from inappropriate development is highlighted by the statistics which show that, since the introduction of the NPPF in 2012, the average annual number of dwellings permitted for development there has increased from 186 homes p.a. pre 2012 to 895 homes p.a. by 2017[1]. There is no other AONB in England where anything like this rate of housing growth or number of new homes is being allowed. The conservation purposes for which the High Weald AONB was so designated has already been seriously eroded by this unparalleled level of erosion. It is incompatible with the statutory duty imposed by CROW Act s.85 on local planning authorities to give effect to the Act's policy purposes.

Why the degree of harm to the AONB is not a material factor

2.2.6 We note that a 70 dwelling development of the Ardingly site has been assessed as having moderate potential to cause significant adverse impact on AONB purposes, even if the development is sited to minimise its visibility.

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[1] Independent Review of Housing in AONBs by the National Association of Areas of Outstanding Natural Beauty and The Campaign to Protect Rural England (November 2017). https://landscapesforlife.org.uk/application/files/5315/5552/0923/Housing-in-AONBs-Report.pdf. See table 4, p.26. See also Glover report on strengthening the protections and purposes of National Parks and AONBs (May 2018): https://www.gov.uk/government/publications/designated-landscapes-national-parks-and-aonbs-2018-review.

2.2.7 There is a common misconception that the degree of protection from development within an AONB depends on an assessment of the degree of harm that the development would cause. That is not so. Parliament, in designating the area and boundaries of an AONB, has determined the area to which the designation applies, and the whole of that area is entitled to the same level of protection against development within or proximate to the AONB that would be liable to harm the special visual amenity and/or landscape character that led to that AONB's designation. We accept that an assessment is required to establish whether a development proposal (of whatever scale) will harm or enhance the AONB's protected characteristics[2]; but, unless the conclusion is that it will conserve and enhance them, the overriding nature of AONB conservation policy imposes a strong presumption that an application should be rejected. This fact is reflected in your Local Plan policy DP16 which states that development within Mid Sussex's portion of the High Weald "*will only be permitted where it conserves or enhances natural beauty and has regard to the High Weald AONB Management Plan"*.

2.2.8 Once it is concluded that a development would fail to enhance the High Weald's essential characteristics, the trigger for rejecting the development is pulled, and arguing over the degree of harm is largely irrelevant. Every individual part of an AONB contributes to the whole, and it is no argument that a particular site is, in itself, not "special" in some way. Nor is it justifiable to argue, for example, that a development would be acceptable because it only just inside the boundary of the AONB or that the District has a housing shortage, or that it does not fall into the category of a major development in NPPF para 172 terms. <u>All</u> development applications affecting any part of the High Weald have to be viewed in the context of the "highest status of protection" purposes of DP16, CROW Act and para 172.

2.2.9 The position is akin to the statutory provisions that require great weight to be given to preserving and enhancing conservation areas and listed buildings (Planning (Listed Buildings and Conservation Areas) Act 1990 ss66(1) and 72(1)). The Court of Appeal has ruled that the statutory presumption against approving new development where harm would be caused must be given great weight whether or not that harm is substantial[3]. The position is no different where the potential for harm to an AONB has been identified.

2.2.10 We are further reinforced in our above views by a 2019 High Court decision[4] in which the judge ruled that, where the first sentence of NPPF para 172 applies and the potential for harm is identified, (i) the NPPF para 11(d) presumption in favour of development is not triggered and (ii) that is a sufficient freestanding reason to refuse planning permission within an AONB even where the development does not qualify as a major development and even in a district, unlike Mid Sussex, with a 5 year housing supply shortfall.

2.2.11 We conclude therefore that, were a planning application for 70 houses on the Ardingly site to be made your Council, acting rationally, would be bound to refuse that application as incompatible with your Local Plan's countryside and AONB protection policies. Your Council has already accepted our argument from the previous round of consultation that it should not allocate the site for major development (of 100

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[2] A sympathetic proposal to redevelop a derelict brownfield site within the High Weald might well enhance its essential characteristics, for example.

[3] *Barnwell Manor Wind Energy Ltd v. East Northamptonshire District Council, English Heritage and The National Trust [2014] EWCA Civ 137 (Court of Appeal)*

[4] *Monkhill v SSHCLG [2019]EWHC 1993.*

dwellings) because no development of that site would be approvable under the terms of your Plan. Whether or not a 70 home development is also a "major development" in para 172 terms (and we argue below that it is), the conclusion has be the same, namely that no planning application to develop the site to the extent proposed in draft policy SA25 is likely to be capable of approval.

2.3. Why a 70 dwelling development on site SA25 would constitute major development

2.3.1 Your Council is given the responsibility to judge whether or not to treat a development proposal within the AONB as major development for NPPF para 172 purposes. In our view, proper consideration of the factors that your Council is required by NPPF footnote 55 to consider, a 70 home settlement on this proposed AONB site would almost certainly need to be assessed as major. We appreciate that this view is contrary to the advice you have received from the High Weald AONB Unit, which has been influenced to change its previous negative advice by the reduction in the number of dwellings for which the site is to be allocated from 100 to 70. We consider the change in the advice to be unjustified, not least because the size of the site to be allocated (at 12.8 acres) is not reduced and the AONB Unit concludes in both their regulation 19 analyses that the alternative allocations would both have the same moderate potential to create a significant adverse impact on the AONB's purposes.

2.3.2 The only rationale offered by the AONB Unit for its changed opinion is based on an argument as to the impact of somewhat fewer houses - a 3% reduction in the growth of the village housing stock - on Ardingly's settlement pattern, a point which we address below. The AONB Unit's latest regulation 19 assessment does not suggest any other reason why it would not continue to advise that a development of this site would be major.

2.3.3 Applying the considerations listed in NPPF footnote 55, our reasoning, which we will ask the examining Inspector to endorse, as to why a 70 dwelling development on the site should on a common sense basis be treated in its local context as a major development for para 172 purposes, is as follows:

(i) ***Nature of development***: The proposal is an allocation for 70 dwellings to be built on part of a 12.8 acre site to the north of Ardingly village (a category 3 settlement), on a gently southwards-sloping open, prominent plot outside the village development boundary and beside the South of England Showground of which the land currently forms the southernmost part. The site girdles the village recreation ground, and there are public rights of way along the lanes that constitute the southern and northern site boundaries. The site is north-east of the nearby Butchers Field for which planning permission was refused on appeal in 2014 on grounds of harm to the historic pattern and character of Ardingly as a settlement and harm to the High Weald AONB[5]. This site involves similar considerations.

Development drawings show that the new housing would be densely packed. That packing would be all the more significant if any development was limited to the eastern section of the site in order to reduce its visibility within the landscape. This relatively high density layout offers minimal private outdoor space for individual homeowners. Greenfield is being turned irrecoverably into brownfield. Such a substantial, high density residential development building is alien to the AONB's character and existing small scale of the development in the area; it would change the long-term pattern of development within the village adversely and irrevocably.

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[5] PINS Reference APP/D3830/A/12/2172335.

(ii) ***Scale of development*:** Whilst the number of dwellings proposed has been reduced from 100 (accepted to involve major development) to 70, the 12.8 acre site to be allocated has not been reduced in size. A 70 dwelling development would represent an 18% increase in Ardingly's overall built-up area, and a 15% increase in the number of houses there. On any basis that is substantial. These percentages are all the greater if one argues that Ardingly should be viewed for planning purposes as constituting two communities based on their different historical development.

Even on its own, the proposed residential development would be of a sizeable scale, with a density level that is alien to the local character of village and the AONB and is disproportionate to the size of Ardingly's built-up area as a whole. The local large-scale impact is all the greater when considered cumulatively with other AONB development within the parish recently permitted, including the 37 houses on Standgrove Field.

The increase in population of, say, 160 people, would be liable to put noticeable additional pressures on local services and side roads, another factor that ought to be considered in assessing the scale of the development.

We also note that it is twice the size of a 35 dwelling, lower density development scheme proposed elsewhere within the High Weald that your Council has assessed as involving major development and rejected accordingly.

(iii) ***Setting of development*:** Relevant indicators of a major development include:

- The site is beyond the village built-up boundary and partially beyond the open recreation ground;
- The site is a greenfield site, albeit used on occasion for parking for visitors to the South of England Showground;
- The location is prominent in the local open countryside; any development there would be likely to detract from the village's landscape setting and views from the adjacent PROWs and, potentially further afield;
- The village's heritage assets: two conservation areas and 47 listed buildings: there is potential for any development to impact them (or some of them). The significance of any such impact will need to be addressed; and
- Any development would extend light pollution further out into the countryside to the north of the village, thereby harming the dark skies objectives of the High Weald's Management Plan in an open location otherwise ideal for sky watching.

(iv) ***The potential for significant adverse impact on the purposes for which the High Weald AONB has been designated*:** The High Weald AONB Unit's regulation 19 assessments of both the originally proposed 100 dwelling allocation and the current 70 dwelling allocation is identical, namely that "*it is considered that the potential for a significant adverse impact on AONB purposes is moderate*". We do not contest that conclusion that there is a reasonable potential for a 70 dwelling settlement to have a significant adverse impact on the High Weald. What is significant is that the reduction in the size of the proposed new settlement has not affected the AONB Unit's conclusion as to the potential for it to have a significant impact on its purposes and is not part of the rationale for their changed advice. It also has to be borne in mind that any development that fails to conserve and

enhance the High Weald's natural beauty is likely to be contrary to policy whatever the degree of significance of the identified harm.

2.3.4 Permitting the building here of 70 houses – way beyond Ardingly's own housing needs – is on any view a significant development that would, at a stroke, see a major increase in the size of the village beyond its current boundary, whilst putting substantial new pressures on local community services and causing harm to the AONB and potentially also to the Ardingly conservation area. In our view the only rational conclusion would be that any such development here must be treated as a major development for NPPF para 172 and footnote 55 purposes. Any other conclusion could be unlawfully inconsistent with other "major development" determinations by your Council.

2.3.5 If, as we argue above, a 70 home development on this site were properly to be considered a major development in para 172 terms, we understand that your Council has already accepted that it would almost certainly fail the two exceptional circumstance and public interest tests that are prerequisites to its approvability, and therefore be undeliverable. We agree with that conclusion, and so for the purpose of this submission we do not address here the reasons why that would be a correct conclusion, beyond arguing that it would be a nonsense to allocate for development a site on which no development of the scale proposed in this DPD would be likely to be acceptable in planning policy terms.

2.4 Summary re Policy SA25

2.4.1 In our view, whether or not development of this proposed site for allocation would constitute major development (as we believe it would be), the proposal to allocate this site for the scale of housing proposed in the draft DPD would be contrary to your Local Plan policies, contrary to the public interest protective purposes of the High Weald's designation under s.82 of the Countryside & Rights of Way Act 2000 (**CROW Act**) as an Area of Outstanding Beauty, and contrary to NPPF para 172 that gives effect in planning policy terms to the relevant part of the CROW Act.

2.4.2 For these reasons, the proposed allocation in the SADPD policy SA for a 70 home development on the SA25 site is neither justified nor consistent with national policy and should be withdrawn.

3 POLICY SA37 - BURGESS HILL TO HAYWARDS HEATH MULTIFUNCTIONAL NETWORK

3.1 CPRE Sussex supports the policy of safeguarding land for the creation of a multi-functional routeway for sustainable travel between Haywards Heath and Burgess Hill. We trust that the route will be extended down to Hassocks for whose residents Burgess Hill will be a magnet for its employment, shopping and recreational opportunities. The significance of the need to link people living in Haywards Heath or Hassocks with Burgess Hill is increased with the designation of the new Burgess Hill employment and science park areas and the decision to provide 6th form education in Haywards Heath rather than the Northern Arc.

3.2 However the policy unjustifiably lacks

(i) a timeframe within which the Multifunctional Network should be up and running: to say simply that its construction would ideally be "within the lifetime of this plan" is not good enough for a strategic

plan document given its significance for providing a sustainable transport option for so many local people;

(ii) promises to consult on route options early and fully not merely with "key stakeholders", but also with local communities liable to be affected, including in Lewes District; and to apply the net environmental gain principle to its development;

(iii) the absence within this safeguarding policy of a pledge not to allow the network to become a focus for allowing future ribbon development along its route. We believe that considerations of deliverability might favour development along the more western elements of the network over the more easterly ones.

4 AIR QUALITY POLICY SA38

4.1 In our view draft air quality policy SA38 is neither justified nor consistent with national policy on air quality improvement and monitoring, and therefore unsound.

4.2 Poor air quality kills. It has to be a key health and environmental policy issue for any public body responsible for controlling and/or monitoring it. Air quality policy, and its implementation, need to be comprehensive, robust and consistently applied. Neither proposed policy SA38, nor current District Plan policy meet the necessary high standard. The Air Quality Standards Regulations 2010 on which they depend are themselves out of date in that they fail to take account of the extensive science that has developed since they came into force. The degree of small particle particulates' role as a killer is now well understood. It is therefore not good enough for your Council to sit back and say that they will upgrade their air quality monitoring and mitigation if and when the Government gets round to tightening their decade-old discredited regulations. Reliance on those Regulations alone is unjustified.

4.3 Air quality guidance that the Council bases its policy on does not, for example, require the Council to measure for concentrations of particulate matter with a diameter of PM0.1 from combustion particles, organic compounds or metals, despite World Health Organisation advice that their small size makes them particularly invasive as they can be absorbed via the lungs straight into the bloodstream.

4.4 SA38 identifies the Ashdown Forest SAC/SPAs and the whole District's only AQMA in Hassocks as the only places of air pollution sensitivity. There is no evidence presented as to the last time on which there was a comprehensive survey was undertaken across Mid Sussex of air quality based on current (2020) standards to verify that no other locations required additional monitoring, AQMA designation or development impact minimisation, including for small diameter particulate pollution. The summary air quality modelling technical document prepared by Wood Environmental & Infrastructure Solutions Ltd to support SA38 did not consider any other sites and did not assess the effect of PM0.1 particulate matter pollution.

4.5 As a vital public health issue, air quality is one that requires a robust policy. Both DP29 and the current draft SA38 fail that test. We call for a policy that is

- clear: so that developers and others know precisely what is required of them and of the Council, and the standards by which the effect of development proposals will be judged (when, for example, will a development be deemed by the Council to be "sensitive" or "major");

- comprehensive, including all relevant potential pollutants including PM0.1 particulates;
- objective, so that the types of pollutants of concern, and the criteria and thresholds by which they will be measured and monitored are precise rather than (as currently drafted) vague and subjective;
- fair: so we suggest that the policy be, at a minimum, expressly benchmarked against national air quality standard regulations, and not discretionary in its application;
- flexible, to recognise the likelihood that national regulations are expected to be tightened in future and that the suggested Council's minimum benchmarking policy remains at least in step with changing national standards (though we would welcome of a more progressive policy rather than a legal minimum, least-we-can-get-away-with one);
- legally compliant, which the current draft is not (in our opinion) as regards the requirements and language of the Habitats Regulations in respect of Ashdown Forest. We explained in detail why we believe that those Regulations are being misinterpreted by your Council in our 19th November 2018 representations to you in respect of the previous consultation draft of this Plan.

4.6 Changes to the current draft SA38 needed to make the policy suitably robust are suggested in our mark-up in the Appendix below. In any case the reference in SA 38 to the Air Quality & Emissions Guidance for Sussex 2019 should refer to the 2020 version of that guidance.

4.7 The sustainability appraisal of SA38 is unacceptable. It compares false options. Rather than comparing the merits of the current policy that you have already (and rightly) decided needs to be upgraded, you should, in our view be comparing practical alternative ways in which good air quality can be maintained throughout the District, in which that high quality can be effectively verified on an ongoing basis, and effective steps can be taken to ameliorate any problem locations. Delivery should be monitorable and measurable against clear minimum quality criteria which are identified within the policy, which neither SA38 or District Plan policy DP29 do.

5 CLIMATE CHANGE

5.1 We do not consider that the Council can any longer avoid having a specific, robust, policy as an integral part of its Local Plan to address its own commitments to reduce climate change impacts via the planning process, and its expectations of those who become involved in the planning process to do so. A robust climate change policy would feed directly into your Local Plan objectives, particularly those addressing environmental protection, healthy lifestyles and economic vitality. The absence from your District Plan of a specific climate change policy is unsound in being neither legally compliant nor achieving sustainable development.

5.2 Section 19 (1A) of the Planning and Compulsory Purchase Act, as amended under the Planning Act 2008 which, together with the NPPF, puts local authorities under a positive duty to reduce future climate risks through the planning system and to ensure that Local Plans contribute to climate adaptation. We note that this law is not even included in the list of applicable legislation in Appendix 1 of the Sustainability Appraisal. LPAs have a leadership responsibility to ensure through the planning system that all new and adapted buildings, and infrastructure supporting them, are climate resilient and energy efficient. How can the Council demonstrate its compliance with its legal obligations in the absence of a Local Plan policy that sets the ground rules for what is required of developers, and the Council's own role in securing reductions in atmospheric pollutants that increase temperatures and in promoting energy efficiency, not least in building design and retro-fitting?

5.3 We particularly commend the recent guidance "Preparing for Climate Change: Good Practice Guidance for Local Authorities" (June 2019) published by the Association of Directors of Environment, Economy, Planning & Transport in conjunction with DEFRA (https://www.adeptnet.org.uk/climategpg) as a starting point for the defining of the scope of an appropriate climate change policy for Mid Sussex. Opting out of having a comprehensive climate change policy would be an abnegation of responsibility to protect Sussex's citizens.

5.4 An essential element of an effective, sound, climate change policy is that it should seek to ensure that new development is sustainable through securing energy-efficient dwellings, both new builds and through retro-fitting the existing much larger housing stock. We appreciate that the Council's admirable Good Design Guidance does offer helpful guidance to developers on what the Council considers to be appropriate energy efficient new home design. However, as it stands, that guidance would exist in a policy vacuum. What is needed, and in our view legally required, is a clear Council directive in the form of Local Plan policy that gives force and weight to the guidance - in the same way as the NPPG would be ineffective in the absence of the NPPF.

5.5 The role of climate change mitigation also in enhancing public health, biodiversity, in reducing air pollution and avoiding flooding should also be acknowledged in a robust climate change policy that cross-references to appropriate other District Plan policies and puts those policies into a wider context (climate change currently gets no mention in Biodiversity policy DP38 or Flood Risk policy DP41 for example).

5.6 In our view, there is no justification for delaying setting policy now, or limiting the Council's policy to the outdated minimum current requirements of central Government. We would, amongst other ideas, urge your Council to take the initiative to set a time target within Mid Sussex for all new homes to be built to a zero net-emissions standard by a tough but realistic date.

6. PUBLIC EXAMINATION

6.1 CPRE Sussex will welcome the opportunity to expand on these representations at the Plan's public examination if the examining Inspector would find that helpful.

Yours faithfully,

Michael A Brown

On behalf of CPRE Sussex, the Sussex countryside charity

APPENDIX : CPRE Sussex's suggested changes to draft policy SA38 (Air Quality)

The Council is committed to ensuring that the Plan area's air quality at least meets the minimum legislative standards required from time to time (currently the Air Quality Standards Regulations 2010, as amended) and those set out in this policy SA38. The Council will measure and monitor for ambient air pollutants, as required by those standards and by reference their thresholds and criteria. We will additionally monitor PM0.1 particulates in accordance with at least World Health Organisation recommended standards.

Any development that is liable to result in any of those threshold limits being breached either during the construction process or at any time during the lifetime of the completed development, taking account of cumulative impacts from committed developments, and including from vehicle emissions, will be deemed to have an unacceptable impact on air quality. The Council will require applicants to demonstrate that there is no unacceptable impact on air quality. If that cannot be demonstrated to the Council's reasonable satisfaction, in order to be eligible for approval, the development must minimise any air quality impacts to an acceptable level through a redesign of the development proposal or, where this is not possible or sufficient, through appropriate mitigation.

Where sensitive development is proposed in areas of existing poor air quality and/ or where major development is proposed, including the development types set out in the Council's current guidance (Air Quality and Emissions Mitigation Guidance for Sussex (2019 or as updated)) an air quality assessment will be required. This assessment must be carried out as set out in 'Air quality and emissions mitigation guidance for Sussex authorities (2013) – Appendices, as updated or replaced from time to time.

[Development proposals that are likely to have an impact on local air quality, including those in or within relevant proximity to existing or potential Air Quality Management Areas (AQMAs), will need to demonstrate measures/ mitigation that are incorporated into the design to minimise any impacts associated with air quality] *[Delete this paragraph. It adds nothing to the above].*

Where required to ensure compliance with this policy SA38, mitigation measures will need to demonstrate how the proposal, including design and/or other mitigation would make a positive contribution towards the aims of the Council's Air Quality Action Plan and be consistent with this Policy SA38.

Mitigation measures will be secured either through a negotiation on a scheme, or via the use of planning condition and/ or planning obligation depending on the scale and nature of the development and its associated impacts on air quality.

In order to prevent adverse effects on the Ashdown Forest SPA and SAC, new development likely to result in any adverse air quality effects, including in combination impacts, from increased traffic will be required to demonstrate how those effects will be avoided to the Council's satisfaction. Any planning consent granted will be subject to any appropriate planning conditions or limitations to give effect to those necessary avoidance measures.

710

Site Allocations DPD: Regulation 19 Consultation Response

Policy: **SA38**

ID:	**710**
Response Ref:	Reg19/710/18
Respondent:	Mr N Burns
Organisation:	Natural England
On Behalf Of:	
Category:	Statutory Consultee
Appear at Examination?	×

Date: 28 September 2020
Our ref: 324095

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

T 0300 060 3900

Planning Policy
Mid Sussex District Council
Oaklands
Oaklands Road
Haywards Heath
West Sussex
RH16 1SS

BY EMAIL ONLY

Dear Sir / Madam

Planning consultation: Mid Sussex District Council Site Allocations DPD - Regulation 19 Consultation

Thank you for your consultation on the above dated 03 August 2020 which was received by Natural England on the same day.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Natural England welcomes the approach taken by your authority to consult with Natural England at various stages in the preparation of the Site Allocations Development Plan Document. We are pleased that our engagement has resulted in our comments/concerns being addressed in this version of the plan. In particular, we welcome the positive engagement by Mid Sussex District Council with both Natural England and the High Weald AONB Unit in the assessment of the Regulation 19 proposed site allocations within the High Weald Area of Outstanding Natural Beauty (AONB).

From this assessment, we recognise and welcome that a conclusion has been reached that none of the proposed site allocations (Policies SA7, SA8, SA25, SA26, SA27, SA28, SA29, SA32) constitutes major development within the AONB.

Our comments on your Regulation 19 Site Allocations Development Plan Document (DPD) Site allocations and development policies, followed by general comments are as follows.

Comments on specific allocations

SA 7 - Cedars, Brighton Road, Pease Pottage
We support the requirement of this allocation to undertake a Landscape and Visual Impact Assessment (LVIA) to consider potential impacts on the special qualities of the High Weald AONB.

SA 8 - Pease Pottage Nurseries, Brighton Road, Pease Pottage
We support the requirement of this allocation to undertake a Landscape and Visual Impact Assessment (LVIA) to consider potential impacts on the special qualities of the High Weald AONB.

We also support the requirements regarding nearby ancient woodland in line with Natural England's standing advice.

SA 18 - Former East Grinstead Police Station, College Lane, East Grinstead
We recommend a requirement be included for this development to contribute to the existing strategic solution in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC.**

SA 19 – Land south of Crawley Down Road, Felbridge
We recommend a requirement be included for this development to contribute to the existing strategic solution in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC.**

We support the requirement of this allocation to provide suitable SuDS and greenspace to address potential impacts on the Hedgecourt Lake SSSI.

SA 20 – Land south and west of Imberhorne Upper School, Imberhorne Lane, East Grinstead
We support the requirements of this allocation to provide an appropriately managed strategic Suitable Alternative Natural Greenspace (SANG) to mitigate increased recreational disturbance on Ashdown Forest Special Protection Area (SPA) and Special Area of Conservation (SAC); such a SANG proposal must be considered in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC**.

We also support the requirement for potential impacts of development on Hedgecourt Lake SSSI to be understood and adequately mitigated.

We also support the requirements regarding nearby ancient woodland in line with Natural England's standing advice.

SA 22 – Land north of Burleigh Lane, Crawley Down
We recommend a requirement be included for this development to contribute to the existing strategic solution in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC.**

SA 25 – Land west of Selsfield Road, Ardingly
We recommend a requirement be included for this development to contribute to the existing strategic solution in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC.**

We support the requirements of this allocation to undertake a LVIA to consider potential impacts on the special qualities of the High Weald AONB.

SA 26 – Land south of Hammerwood Road, Ashurst Wood have
We recommend a requirement be included for this development to contribute to the existing strategic solution in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC.**

We support the requirements of this allocation to undertake a LVIA to consider potential impacts on the special qualities of the High Weald AONB.

SA 27 – Land at St. Martin Close, Handcross
We support the requirements of this allocation to undertake a LVIA to consider potential impacts on the special qualities of the High Weald AONB.

SA 28 – Land South of The Old Police House, Birchgrove Road, Horsted Keynes
We recommend a requirement be included for this development to contribute to existing strategic solution in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC.**

We support the requirements of this allocation to undertake a LVIA to consider potential impacts on the special qualities of the High Weald AONB.

SA 29 – Land south of St. Stephens Church, Hamsland, Horsted Keynes
We recommend a requirement be included for this development to contribute to the existing strategic solution in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC.**

We support the requirements of this allocation to undertake a LVIA to consider potential impacts on the special qualities of the High Weald AONB.

SA 32 – Withypitts Farm, Selsfield Road, Turners Hill
We recommend a requirement be included for this development to contribute to the existing strategic solution in accordance with District Plan Policy **DP17: Ashdown Forest SPA and SAC.**

We support the requirements of this allocation to undertake a LVIA to consider potential impacts on the special qualities of the High Weald AONB.

Comments on Development Policies

SA38: Air Quality
Whilst we support the requirement of this policy for applicants to demonstrate there is not an unacceptable impact on air quality resulting from their proposals we recommend the following change in wording to strengthen the protection of designated sites.

"*Development proposals that are likely to have an impact on local air quality, including those in or within relevant proximity to existing or potential Air Quality Management Areas (AQMAs)* **or designated nature conservation areas sensitive to changes in air quality***, will need to demonstrate measures/ mitigation that are incorporated into the design to minimise any impacts associated with air quality.*

We recognise there is specific wording established for air quality impacts for Ashdown Forest and this suggestion is additional for any other relevant sites which could be potentially impacted by changes to air quality.

General comments

Biodiversity net gain
We strongly support the requirements of all allocations to ensure there is a net gain to biodiversity as well as the general principle for site allocations to: *"Conserve and enhance areas of wildlife value and ensure there is a net gain to biodiversity, using the most up-to-date version of the Biodiversity Metric. Avoid any loss of biodiversity through ecological protection and enhancement, and good design. Where it is not possible, mitigate and as a last resort compensate for any loss. Achieve a net gain in biodiversity (measured in accordance with Government guidance and legislation), for example, by incorporating new natural habitats, appropriate to the context of the site, into development and designing buildings with integral bat boxes and bird nesting opportunities, green/brown roofs and green walling, in appropriate circumstances in accordance with District Plan Policy".*

We would still however recommend that your DPD should include requirements to monitor biodiversity net gain. This should include indicators to demonstrate the amount and type of gain provided through development. The indicators should be as specific as possible to help build an evidence base to take forward for future reviews of the plan, for example the total number and type of biodiversity units created, the number of developments achieving biodiversity net gains and a record of on-site and off-site contributions.

We recommend that Mid Sussex District Council works with local partners, including the Local Environmental Record Centre and Wildlife Trusts, to share data and consider requirements for long term habitat monitoring. Monitoring requirements should be clear on what is expected from landowners who may be delivering biodiversity net gains on behalf of developers. This will be particularly important for strategic housing allocations, and providing as much information on monitoring upfront as possible will help to streamline the project stage.

Water efficiency

Your Authority contains areas of Serious Water Stress as designated by the Environment Agency. For developments in Southern Water Services drinking water supply area Natural England recommends water efficiency polices should be developed to support Southern Water's “Target 100”.

This target, of 100 litres per person per day by 2040 has been identified by Southern Water to avoid the need for water supply options that are likely to damage biodiversity or/and effect protected landscapes. For development in other companies’ supply areas Natural England supports the Environment Agency’s recommendation of a maximum of 110 litres per person per day.

Water efficiency measures will help reduce the current impact of water resources on the natural environment and thereby contribute to more resilient landscapes and seas, one of the aims in Natural England’s 'Building partnerships for nature’s recovery: Action Plan 2020/21' [1]. Reducing the water we use will also contribute to the Government’s 25 Year Environment Plan aspirations for clean and plentiful water and to restore sustainable abstraction.

Soil

Soil is a finite resource, and fulfils many roles that are beneficial to society. As a component of the natural environment, it is important that soils are protected and used sustainably.

The DPD should recognise that development (soil sealing) has a major and usually irreversible adverse impact on soils. Mitigation should aim to minimise soil disturbance and to retain as many ecosystem services as possible through careful soil management during the construction process.

Soils of high environmental value (e.g. wetland and carbon stores such as peatland) should also be considered to contribute to ecological connectivity, as such these soils should be conserved and protected from negative impacts.

We recommend that allocation policies refer to the Defra Code of practice for the sustainable use of soils on construction sites.

Comments on HRA

Natural England notes that your authority, as competent authority, has undertaken an appropriate assessment of this DPD in accordance with regulation 63 of the Conservation of Species and Habitats Regulations 2017 (as amended). Natural England is a statutory consultee on the appropriate assessment stage of the Habitats Regulations Assessment process.

Your appropriate assessment concludes that your authority is able to ascertain that the implementation of this DPD will not result in adverse effects on the integrity of any of European sites in question.

Having considered the assessment, and the measures proposed to mitigate for all identified adverse effects that could potentially occur as a result of the proposal, chiefly changes in air quality and increased recreational disturbance, Natural England advises that we concur with the assessment conclusions, providing that all required mitigation measures are appropriately secured in any future planning permissions given.

Comments on SA

We have no specific comments to make regarding our statutory remit and your sustainability appraisal.

If you have any queries relating to the advice in this letter please contact me on 07554226006 OR 02080266551.

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906289/natural-england-action-plan-2020-21.pdf

Should the DPD change significantly, please consult us again.

Yours faithfully

Nathan Burns
Area Team 14 - Kent and Sussex

[redacted]

23rd September 2020

To
Mid Sussex District Council
Oaklands Road
Haywards Heath
West Sussex
RH16 1SS

Regulation 19

To Whom It May Concern:
Having read the Site Allocations Development document I wish to comment as follows.

There is little to be gained from a consultation process in 2020 for a total of 1764 planned dwellings which will be inflated at a later stage by Case Officers at pre-planning meetings in order to boost housing targets. Planning applications DM/15/3448, DM/17/4190 and DM/17/2739 are all cases in point.

SA21
The inclusion of this site for development is difficult to comprehend due to the fact as DM/16/3998 it has already been refused planning permission. The following text submitted by Wivelsfield Parish Council explains some of the reasons for that decision.
"The application site is not allocated within the Haywards Heath Neighbourhood Plan, would diminish the strategic gap between Haywards Heath and Burgess Hill and encroach upon the green gap surrounding Wivelsfield. It is contrary to the stated objective of the Mid Sussex Submission Plan, (as detailed in policy DP10) which indicates, 'The primary objective of the District Plan with respect to the countryside is to secure its protection by minimising the amount of land taken for development and preventing development that does not need to be there.' The application is also at odds with policy DP11 which states, 'a strategic objective of the Plan is to promote well located and designed development that reflects the distinctive towns and villages, retains their separate identity and character and prevents coalescence'. 47 To give permission to the application in question would totally undermine the basis of policy DP11, stating as it does that: 'The individual towns and villages in the District each have their own unique characteristics. It is important that their separate identity is maintained. When travelling between settlements people should have a sense that they have left one before arriving at the next.' To allow this application would totally erode any remaining gap between the edge of the Parish of Wivelsfield and that of Haywards Heath. Policy DP11 says that 'development will be permitted if it does not result in the coalescence of settlements which harms the separate identity and amenity of settlements, and would not have an unacceptably urbanising effect on the area between settlements'. Given the distinctly contrasting nature of the small, rural Parish of Wivelsfield and the ever-growing urban town of Haywards Heath, Wivelsfield Parish Council cannot see how the application could be permitted, since it would clearly conflict with the values that the Plan purports to uphold. Residents of Wivelsfield have chosen to live in a small rural parish for a reason. They wish to maintain the small rural community feel of the Parish and prevent coalescence with neighbouring towns. It would be unacceptable for the Mid Sussex Plan to, on the one hand, claim to value the individual identities of communities and to seek to protect them, and on the other to approve this application which is entirely contrary to this. Furthermore, with plans already approved for an additional 100 homes at Gamblemead, 113 off Ridge Way (in addition to the 62 already being built) and the prospect of major development at Hurst Farm, Wivelsfield Parish Council has significant concerns about safety and capacity on the local roads, as well as the ability of general infrastructure to cope with ever-growing demand. In light of the many contra-indications to this application's approval, we would ask you to refuse it."
The issues with drainage, the location of Cleavewater Farmhouse and sustainability regarding public transport still remain resulting in an over dependence on single occupancy car usage. In the latest edition of the adopted District Plan Policy DP12 replaces DP10 and DP13 replaces DP11 with respect to the above text which remains as valid today, apart from now being included in the plan, as did on 23.11.2016 and therefore this site (SA21) should be excluded.

SA37 Burgess Hill to Haywards Heath Multifunctional Network
3.25 "A number of route options are being investigated to the east and west of the Brighton main railway line and these include, for example, opportunities to connect strategic development to the north and north west of Burgess Hill, including a new secondary school to be developed, and with Haywards Heath that is away from the road highway."
Sustrans have carried out a feasibility study which includes a proposed route from Burgess Hill to Haywards Heath via Theobalds Road (private and now gated) the existing Bridleway and Lunces Hill until reaching the Fox & Hounds. There are three proposed options for the remainder of the route terminating at Fox Hill roundabout. Options are for a segregated pedestrian/cycle track or shared provision pedestrian/cycle track both of which would use Fox Hill. The third option is via Hurst Farm, was not offered as part of the consultation for Regulation 18, which Sustrans state "Such a greenway would not provide the most direct route but would be pleasant and safe with the potential to link to local services as an alternative to travelling along Fox Hill."
The existing bridleway currently caters for equestrians, walkers (with or without dogs), joggers and cyclists and any of the long overdue improvements should not discriminate against any of those categories. As a daily user of the present bridleway, due to other footpaths being closed as result of development, one can not escape the signs erected depicting the prospect of a high speed cycle route. Any upgrade of the bridleway should primarily permanently rectify the poor surface condition, arising from 40 years of neglect, and not detract from the tranquillity presently enjoyed by users and be comprised of a permeable surface acceptable to the British Horse Society. Both ESCC and WSSC, like other local authorities, should be able to provide the Technical Guidance concerning the construction for Bridleways part of which states: "For all except urban paths, a non-metalled surface (i.e. "gravel" path, not tarmac) is strongly preferred. This should be smooth, of adequate width, well compacted and firm underfoot but with a little 'give', well-drained and useable in all weathers."
Both the segregated and shared cycle/pedestrian options will create potentially more dangerous situations as a result of removing grass verges on the western side of Fox Hill thereby restricting the vision of vehicle drivers, due to a reduced buffer zone, when attempting access to the highway. Health and Safety may well have an issue with southbound cyclists passing at speed close to the front door of the Fox and Hounds. There are three bus stops, between location E20 and the Fox Hill roundabout, at which school age children congregate whilst waiting for the

Warden Park bus during the peak morning period. Passengers boarding and alighting from buses will do so from the cycle path section of either a segregated or shared option, which is a recipe for disaster when every category of cyclist, as detailed in LTN 1/12, will be able to use the same cycle path. Currently it is possible for cyclists when descending Fox Hill to exceed the speed limit once abreast of the junction at Weald Rise (F5). A route through Hurst Farm, away from the road highway, for a Greenway would appear to be the better option on the grounds of health, safety and cost and would allow residents to use the existing Fox Hill footway in relative safety. There is little merit in exposing the public to higher levels of Nitrogen Dioxide (NO_2) concentrations by running either a segregated or shared cycle/pedestrian route over the entire length of Fox Hill tending to discourage rather than encourage walking which together with cycling is the main objective of the Greenways exercise. A fourth option would be to locate the cycle path element on the opposite side of Fox Hill segregated away from pedestrians. The aspirational concept of a multifunction network is a positive step forward despite the many stumbling blocks that lay ahead meaning it may not be achievable by the end of the plan.

Local Transport Note 1/12, Table 7.5 below indicates the minimum space required for an unsegregated shared use route to be 3.0 metres whereas a segregated route would require 4.5 metres. An unsegregated shared use route and a two-way cycle track both require 3.0 metres which appears to suggest that pedestrians could be placed in jeopardy if such an option results. A 5.0 metre segregated route through Hurst Farm would appear to be the safer option by eliminating all the pitfalls listed in LTN 1/12 associated with frontages, bus stops, side roads etc. Reconstruction of the carriageway in order to provide a segregated route along Fox Hill is likely to be costly and very disruptive.

Table 7.5

Minimum widths summary

Type	Minimum widths
Unsegregated shared use	3 m preferred (effective)
Pedestrian path unbounded on at least one side, e.g. segregated by white line	1.5 m (actual)
Pedestrian path bounded on both sides	2 m (actual)
One-way cycle track	2 m preferred (effective)
Two-way cycle track	3 m preferred (effective)

Additional width is needed where there are edge constraints – see Table 7.4

Table 1

SA38, Air Quality

Background

“Emissions of Nitrogen Oxides from Modern Diesel Vehicles Assessment: January 2016

Defra provides road traffic emission factors that predict how fleet-averaged vehicle emissions will change year-on-year as newer, cleaner vehicles populate the national vehicle fleet (Defra, 2015). These emission factors are routinely used in air quality modelling. Historically, modelling carried out using these emission factors has predicted large reductions in nitrogen oxides (NOx) emissions and concentrations, but in recent years it has been found that these reductions have not been reflected in ambient measurements (Carslaw et al., 2011).

The reason for the disparity relates to the on-road performance of modern diesel vehicles. New vehicles registered in the UK have had to meet progressively tighter European type approval emissions categories, referred to as "Euro" standards. While the NOx emissions from newer vehicles should be lower than those from equivalent older vehicles, the on-road performance of some modern diesel vehicles has often been no better than that of earlier models (Carslaw and Rhys-Tyler, 2013).

Defra has attempted to account for the historical discrepancies using a new set of emission factors, published in 2014. There remains, however, some uncertainty regarding whether these emissions reflect the on-road performance of modern vehicles. This report considers recent evidence of on-road emissions performance and analyses it in the context of Defra’s vehicle emission factors.

The report only considers emissions of NO_x from diesel vehicles. There is no evidence that emissions of other pollutants are affected by the issues discussed. Furthermore, there is good evidence that the on-road performance of petrol vehicles reflect the reductions imposed by the emission standards (TfL, 2015). Finally, this document only considers emissions of total NO_x.

No consideration is given to the function of NO_x emitted as NO_2 (fNO_2) or how this may change over time.”

Road Traffic Forecasts 2018 indicate that “Car traffic is forecast to grow at between 11% and 43% by 2050, whilst LGV traffic is forecast to continue growing significantly in all scenarios (between 23% and 108%). Strong LGV traffic growth has a significant impact on total traffic growth, particularly in Extrapolated Trip Rates (scenario 6). In this scenario although car traffic is forecast to grow by just 11%, overall traffic growth still reaches 17% with LGV traffic accounting for 19% of total traffic. HGV traffic growth is forecast to be lower than 6 other vehicle types, with growth ranging from 5% to 12% by 2050. Traffic growth on the Strategic Road Network (SRN) is forecast to be strong and positive in all scenarios, ranging between growth of 29% and 59% by 2050, driven by forecast increases in the number of car trips and trip distances, as well as increasing Light Goods Vehicle (LGV) traffic. Forecast growth on principal roads and minor roads is lower than the SRN, between 10%-44% and 11%-48% respectively.”

“Air pollution ‘more dangerous than driving’

Breathing in polluted air is more dangerous than driving a car, a report has found as it accuses councils of declaring climate change emergencies while failing to tackle the issue.

An analysis by Centre for Cities blames the failure of local authorities to introduce clean air zones and other measures that could reduce the death rate from pollution, which is 25 times greater than the risk of being killed in a car crash. “Local policy aimed at limiting air pollution in recent years has at best been slow and at worst absent,” the think tank stated in its annual study of urban areas.

“The rush to declare climate emergencies by local authorities in the last year, a global issue over which they have very little direct control, strongly contrasts with action on air pollution, an issue where their actions can more clearly make a difference.”

Overall, more than one in 19 deaths in UK cities and large towns are related to long-term exposure to air pollution, according to the analysis of official health and emission data for particulate matter ($PM_{2\,5}$) comprising soot, ash and dust from coal and wood fires as well as cars and lorries.

The worst five locations, where an estimated one in 16 deaths is linked to exposure to the deadly $PM_{2\,5}$ toxin, are London (6.4 per cent), Slough (6.4 per cent), Chatham (6.3 per cent), Luton (6.2 per cent) and Portsmouth (5.9 per cent)."

Modelling

The vagaries associated with modelling are many and the reliability of the output is not only dependent upon the model itself but also the accuracy of the input data. Classic examples of algorithms miss performing are the predicted death toll from Covid-19 and the exam results debacle and air quality models whilst not in the same league have tended to under perform due to poor data input. Models can be useful tools when attempting to predict the future but when comes to traffic forecasts there are many uncertainties which thankfully have been recognised by the DfT resulting in a substantial update of their forecasting models, with a changed in mindset, in 2018 probably due to the many reports indentifying the problems relating to the 2015 forecasts as identified under background. Air quality modelling initially attempts to predict the emissions for a baseline year using TEMPRO which then feeds into two other separate models, namely the Emission Factor Toolkit as AADT to calculate NO_x, and then into ADMS-Roads as emission factors.

Those engaged in air quality modelling, by recourse to the laqm helpdesk, will be aware of the uncertainties regarding emissions, background concentrations together with road traffic forecasts and TEMPRO factors have all tended to under predict the true situation due to various reasons and that results arising from modelling are the best minimum prediction at that moment in time. Standard methodology for air quality modelling is not a silver bullet or a one size fits all yet there are those at MSDC, with their heads in the sand, who seem to think that modelling is a panacea. Modelling may be regarded as being very good at quantifying the amount of change in pollution levels at a given point, even if absolute figures are slightly out, and it is the change in pollution levels caused by a development which is key to its impact. That said the over dependence upon output data derived from an unreliable (flawed) model fed with under predicting input data is farcical and undermines the credibility of those overseeing the process.

Since 2001 there have been ten revisions for background concentrations, nine upwards and the last in 2018 downwards, indicating that concentrations derived from background mapping may have peaked. Using the year 2020 as an example the background concentration derived from 2015 mapping the background concentration was predicted to be 8.370151. Using 2018 mapping data the background concentration for 2020 was predicted to be 9.156648 resulting in an increase of 9.396%.

Model verification

The Verification Study will attempt to reduce the difference between monitored and modelled NO_2 concentrations to within less than 25%. The monitored NO_2 concentrations which are provided to consultants by MSDC can predate the modelled by up to two years earlier than the modelled NO_2 concentrations depending upon the publication date of the ASR. The monitored concentrations do not necessarily have to consist of a 100% data capture within a calendar year and are therefore not fully representative of the air quality at the monitoring site. Defra accept data capture of above 75% for air quality reports without correction. It would be astonishing if Defra were to acknowledge that an erroneous bias corrected monitored concentration of 24.7µg/m^3 instead of the expected concentration for NO_2 of 28.8µg/m^3, for raw data, would be acceptable as part of an Air Quality Assessment Model Verification Study which seeks to remove the under prediction for modelled concentrations. In connection with a local planning application the revised concentration of 28.8µg/m^3 was derived from TG-16-February-18 v1, Box 7.9 (see Addendum) using a process known as annualisation. As a consequence of an increase in the monitored concentration of NO_x the numerical plot on the Y axis, relative to the same value of modelled NO_x on the X axis, increases the gradient (slope) of the trend line and increases the numerical value of the multiplier used to draw monitored and modelled concentrations towards closer alignment.

TEMPRO

TEMPRO (The Trip End Model Presentation Program) is used in conjunction with Regional Traffic Growth and Speed Forecasts (RTFs), both of which were updated in 2018, produces a logarithm [RTF factor x (Local TEMPRO factor / Regional TEMPRO factor x (future year factor)]. The product, from within the square brackets y say, can then be used to multiply the baseline AADT in order to obtain future a year AADT. TEMPRO also takes into account cumulative development.

The regional area is South East of England and comprises 18 local authorities of differing geographical sizes, including West Sussex with a total of 4.586 billion vehicle miles in 2018 ranking fifth behind Hampshire (9.773), Kent (9.565), Surrey (8.714) and Oxfordshire (4.848) and between them they account for 31.7% of the region where just 6 of local authorities are above the average of 3.0505 billion (54.909/18) vehicle miles in 2018. The local TEMPRO factor is based on the Mid Sussex 011 region which includes Haywards Heath and rural area to the west. The RTF and futures year factors are derived from the Nation Trip Ends Model (NTEM) as part of the modelling programme.

The regional average would be more representative as a factor for 18 similar size regions rather than the one size fits all application which TEMPRO attempts to achieve. West Sussex traffic growth is therefore under estimated by the TEMPRO algorithm, which is based upon best guess assumptions, should be at least 1.5 times higher than the average factor (4.586/3.0505 = 1.504).

Using the road traffic forecasts explorer to obtain traffic growth for 'all roads' is predicted to grow nationally by between 3.2% (Scenario 6) and 10.4% (Scenario 2) for the period 2016 to 2022 (Table 4). Given that traffic growth in West Sussex has been stated to increase by nearly double the national rate then the raw traffic growth factor on the A272 (Lewes Road) in the table below will increase by more than a factor of 1.0696 closer to 1.132 from 2016 to 2022 as opposed to 1.077 in 2010 to 2016. Not all roads within the local highway network will indicate similar increases and in the case of South Road a decrease of 7.52% was recorded between 2010 and 2014 due mainly, if not entirely, to the opening of the HHRR. The B2028, a minor road, north of Lindfield indicated an increase in traffic growth between 2012 and 2018 of 1.0493. Unfortunately there are no raw traffic counts for other 'B' roads (B2112 and B2272) within the grid square 533500/122500 (see Addendum) which are expected to exceed the growth rate of 1.0493 for the B2028, Lindfield High Street.

B2112	535000	123300	A272 Lewes Road		535250	123500
Count id	36887		36887		86008	
	04.06.2008		20.10.2010		05.07.2016	
hour	East	West	East	West	East	West
7	330	478	305	476	356	543
8	358	510	420	543	497	627
9	326	428	346	482	309	503
10	325	347	280	345	328	356
11	360	368	324	343	331	339
12	310	359	362	365	372	332

13	389	313	355	285	358	360
14	327	364	367	354	403	381
15	458	389	415	386	463	402
16	523	432	505	426	631	483
17	603	419	615	420	672	429
18	533	344	413	357	431	320
total	4842	4751	4707	4782	5151	5075
grand total		9593		9489		10226
West Sussex TEMPRO factor (y)				0.9892		1.0777

Table 3

Traffic points 36887 and 86008 are 320 metres apart and are not influenced by other roads. Traffic counts are for 12 hour periods and have been used to illustrate the change between counts which is equivalent to the TEMPRO factor applicable to West Sussex.

Department of Transport document RTF18 forecasts linear increases in road traffic growth, road traffic congestion resulting in longer journey times for trips whilst road traffic emissions are forecast to fall by a minimum of 30.2% by 2050, The growth forecasts for 2022 were obtained by interpolation due to the linear nature of the projection, based on the 'all roads' and 'all vehicles' options for each scenario, shown in Table 4, to indicate the national TEMPRO factor.

Scenario	2016	2022	Change %
1	291.66	311.966	1.0696
2	291.66	321.948	1.1038
3	291.66	301.598	1.0341
4	291.66	313.842	1.0761
5	291.66	309.902	1.0625
6	291.66	301.066	1.0322
7	291.66	312.698	1.0721

Table 4

Scenario 1 - Reference: Central Fuel and GDP Assumptions, 25% Electric Vehicles by 2050, constant trip rates from 2016, Central Office for National Statistics (ONS) projections of population.
Scenario 2 - High GDP, Low Fuel: High GDP Growth (+0.5pp Growth on OBR) and Low Fuel Cost Projection (Fossil Fuel Price Assumptions 2017, BEIS).
Scenario 3 - Low GDP, High Fuel: Low GDP Growth (-0.5pp Growth on OBR) and High Fuel Cost Projection (Fossil Fuel Price Assumptions 2017, BEIS).
Scenario 4 - High Migration: High Migration population variant (ONS) and decoupling of Income to Car Ownership relationship in London.
Scenario 5 - Low Migration Scenario: Low Migration population variant (ONS).
Scenario 6 - Extrapolated Trip Rates: Extrapolation of recent trip rate trends until 2050 and extrapolation of recent decreases in young person licence holdings.
Scenario 7 - Shift to Zero Emission Vehicles: 97% of car and LGV mileage powered by zero emission technologies by 2050.

Clearly by under predicting the AADT using TEMPRO has had repercussions for the whole modelling process resulting in under predicted emissions at various receptors located away from the highway. An Air Quality Assessment relating to a local contentious planning application utilised a TEMPRO factor of 1.0548, by omitting cumulative developments at Rookery Farm (320), Gamblemead uplift of 52 totalling 372 dwellings, when attempting to calculate AADT for 2022 from a 2016 baseline. The Air Quality Assessment was stated to be flawed, which it clearly was, yet MSDC had the effrontery to state that it was not in the Case Officer's Report to the Planning Committee, page 41 which reads "The Council's EHO has considered the correspondence from the applicants and the objectors on these points. He considers that the objectors' concerns have been addressed and that there is no reason to believe that the air quality assessment is flawed." There are two separate issues, the objectors concerns and the credibility of the Air Quality Assessment which should have been addressed separately. The SEHO was of the opinion that the objector concerns had been addressed should have been sufficient, full stop. Stating that the Air Quality Assessment was not flawed was an entirely different issue, not involving the objectors, based solely upon his professional judgement. The fact that the objectors did not flag up any additional failings, which have been presented subsequently, and which should have been dealt by MSDC is immaterial. The SEHO needs to apologise for such an obvious error of judgement and for misleading the Planning Committee who voted in favour of the planning application by being influenced by his statement in the Case Officer's report.

Cumulative developments and the effects of traffic growth

The question of the influence of additional traffic growth generated from the Northern Arc was raised with MSDC who responded, via the SEHO, as follows:

"As you know, traffic data is not my area of expertise, but I would expect only traffic from *relevant* developments to be included.

The N Arc development is likely to be distant enough that development traffic would not have any significant impact upon the (NO_2) levels at Hurst Farm. In any event, I understand that this type of development is already accounted for by the use of TEMPRO growth rates for the traffic data so there may be no need to include it specifically. WSCC should be able to answer any queries you have on the use of TEMPRO in this regard.

Please be reassured that, as there are no known air quality issues in the Hurst Farm area, the relatively low volume of additional traffic from the new development (in relation to the existing volumes) is unlikely to significantly change air quality in the area. We would only be concerned if there were predictions of significant adverse effects as a result of any new development."

The Northern Arc will by 2031 be comprised of 3500 dwellings, three schools together with community buildings and other structures which collectively will influence air quality and traffic growth upon the surrounding area as follows.

The document titled, Appendix 11-1: Traffic and Transport Technical Appendix, in support of planning application DM/18/5114, contains Table 11-5 and Table 11-9 which illustrates that air quality in way of Valebridge Road and Rocky Lane between Theobalds Road and A272 has been predicted to increase has a result of the Northern Arc development generating an increase in traffic volume (AADT). During the period 2017 to 2025, based upon TEMPRO-2015, traffic growth is predicted to increase by 98 vehicles per day and during the 2025 to 2033 by 574 vehicles per day. BEV contribute 4.7% by market share as of June 2020, whilst vehicles fitted with combustion engines are the overwhelming majority (95.3%), entering or exiting the A272 and will generate a directly proportional increase of oxidised Nitrogen (NO_x) mainly in the form of Nitric

Oxide (NO) which after having reacted with Ozone (O_3) to form Nitrogen Dioxide (NO_2) concentrations from vehicles transiting in both directions along the A272 corridor. Increases in traffic growth of 77 and 166 vehicles per day during the same periods will also occur in Janes Lane which potentially will impact upon the B2112.
The B2272, Butler's Green Rd, between the junction with Isaac's Lane and Beech Hurst Care Home, will also incur increases in AADT of 384 and 846 vehicles per day during the same time frame. Data collated from the planning portal indicates that a minimum of 74% of traffic transiting the B2272 in way of Butler's Green Road will also transit South Road. Clearly the Authors of the Traffic and Transport Technical Appendix adjudged it prudent to consider the influence of traffic growth arising from the Northern Arc development and the impact upon three separates routes into and out of Haywards Heath by an additional 4% by 2025 and 12% by 2033 excluding increases attributable to the annual traffic growth, which in West Sussex is almost double the national average. The largest increase of 5% by 2033 will be felt at Butler's Green Road, possibly Oaklands also, especially at peak periods thus hopefully prompting MSDC to take a leaf out of the Department for Transport's book and reappraise their mindset regarding the effects of cumulative developments. A prudent next step would be to run the Northern Arc through TEMPRO again now that both the National Trip End Model (NTEM) and the RTF18 have been updated in order to determine to what extent traffic generated by the NA will impact upon roads into and out of Haywards Heath. Better to be proactive now instead of waiting for the chickens to come home to roost.

One reason for there being no known air quality issues in the Hurst Farm area is because the monitoring sites MSAQ2 and MSAQ28 are located where traffic volumes are lower than the section of A272 between the Highbank roundabout and Bolding Way, MSAQ2 records 71% of traffic transiting whilst MSAQ28 records 87%. MSAQ28 has not yet produced a full set of published readings for a 12 month period which implies that MSDC have no idea, other that at monitoring sites, regarding air quality within Mid Sussex. Site allocations for 1409 dwellings within Burgess Hill and Haywards Heath area during the next 5 years will also impact, together with the annual traffic growth, upon traffic movements in way of the A272 and B2112 and lead to further increases in Nitrogen Dioxide concentrations. All new development will also adversely impact upon the background concentrations as characterised in Clean Air Strategy 2019, thus "Air pollution comes from many sources. Pollutants can travel long distances and combine with each other to create different pollutants. Emissions from distant and local sources can build up into high local concentrations of pollution."

The significance of locating monitoring sites where the NO_2 concentrations are at the highest level is best illustrated in the following article.
"A picturesque village in Dorset has been named as England's most polluted hotspot, ahead of taxi rank in Sheffield.
Residents of Chileock say they are blighted by pollution caused by traffic from lorries and holidaymakers on the A35, which runs through the village.
But it was only when they moved their air quality monitoring site to the village's main hill, where drivers are forced to accelerate, that they captured the extent of the problem.
The village is now top of the list of English locations where Nitrogen Dioxide (NO_2) levels breach the annual air quality objective, according to analysis by Friends of the Earth."

The question of traffic growth was asked of the SEHO as follows:
"In Table 5.1 of the Air Quality Assessment update 2019 the 2023 baseline+committed NO_2 annual mean concentration at receptor R5 is stated to be 24.4µg/m^3. From the provisional estimates, 2018-2019, which indicates that traffic increased on motorways and 'A' roads by 1.2%. The level of traffic in West Sussex on all major classes of road is almost double the national average which means that traffic growth increased by 2.24% (1.2 x 1.9) in 2019." The market share for alternative fuel vehicles is stated to be 7.3% at the end of 2019 (https://www.statista.com/statistics/299052/alternative-fuel-types-used-in-newly-registered-cars-in-the-united-kingdom/) where the annual growth rate was 1.33% since 2016 onwards.

TRA8901 indicates that the total motor vehicle traffic (vehicles miles) was 4.586 x 10^9 for the year ending 2018. Similarly TRA8902 indicated that car traffic (vehicle miles) was 3.664 x 10^9. Car traffic is therefore 80% of the total traffic on West Sussex roads which means that cars account for 5.8% (7.3 x 0.8) of the total traffic transiting R5 as of the end of 2019.

R5	Measured	Background	Emissions	Change ↓
2018	35.7	10.306933	25.393067	
2019	35.9	9.958167	25.961872	1.0224
2020	32.5	9.556437	22.950295	0.8840
2021	29.5	9.198918	20.288060	0.8840
2022	26.8	8.850430	17.934645	0.8840
2023	24.4	8.539590	15.854227	0.8840

Table 2

"From the above table (2) it is apparent that a decrease in emissions of 11.6%, is required annually from 2019 to 2023 in order to achieve an annual mean concentration of 24.4µg/m^3 in 2023. The market share of petrol cars increased by 3.6% as opposed to alternative fuel vehicles which increased by 1.33% from 2018 to 2019. Is it likely that the market share of alternative fuel vehicles will increase dramatically in four years, or have Phlorum got it wrong again?"

The response was:
"In answer to your question, the Government has based its emission factors, which is the authoritative basis on which vehicle emissions in future years are calculated, assuming a gradual decline in the more polluting vehicles and an increase in EV and other alternative fuel vehicles. Using these factors is the standard methodology for air quality modelling."

That question remains unanswered and it is apparent that annual decreases in emissions of 11.6%, which has since increased due to the background concentration now being 8.116717µg/m^3 instead of 8.539590µg/m^3 due to revised mapping data, could not be achieved against a back drop of increasing petrol cars sales of 3.6% in contrast to alternative fuel vehicles sales of 1.33%.

The above demonstrates that consultants, through no fault of their own, have carried out modelling in accordance with industry best practice that has tended to under predict emission concentrations, representing the very best case scenario, used in air quality assessments in support of planning applications for some considerable time. Pointing the finger of blame at the Government, who have attempted to correct the anomalies

associated with emission factors, does not absolve MSDC from their responsibilities of ensuring that documents submitted in support of planning application are adequately scrutinised.

Emissions

Air Quality Consultants has updated a previous study that examined trends across the UK covering the period 2005 to 2016. The new report presents trends for 112 sites over the period 2005 to 2018 and for 183 sites over the more recent period 2010 to 2018. The findings were recently reported by Prof. Duncan Laxen to the Institute of Air Quality Management's Routes to Clean Air Conference in London.

Overall downward trends have been identified across all sites, of -3.1% per year for NO_2 and -3.0% per year for NOx, for the period 2010 to 2018. The downward trends are steeper at rural sites, at -3.4% per year for NO_2 and -4.1% per year for NOx, than at road and urban sites, at -3.1 and -3.0% per year for NO_2 and NOx respectively. These downward trends are greater than those previously identified for the period 2005 to 2016.

"Air Quality Consultants previously found no significant trend over the period 2005 to 2016 for sites across central and northern England and north Wales, in contrast to the rest of the UK. This area of the UK has now caught up, with slightly steeper downward trends than the rest of the UK over the period 2010 to 2018.

The downward trends in NOx concentrations (2005 to 2018) are smaller than those for estimated UK NOx emissions (2005 to 2017), which suggests that emission reductions presented in the National Atmospheric Emission Inventory (NAEI) are overly optimistic. The report recommends that the validity of the NOx emissions estimates used in the NAEI, especially those for road vehicles, is reviewed in light of these observations.

Defra publishes projections of roadside and background concentrations. Recent projections of NO_2 concentrations, from a base year of 2017, now match the overall trends in measured roadside and rural NO_2 concentrations for the years 2017 and 2018.

The pattern of trends over time, which for NO_2 is of little change between 2005 to 2010 and then a steeper downward trend from 2010 to 2018, is consistent with evidence of an increasing ratio of NO_2:NOx in vehicle emissions in the period to 2010 and then a decline from 2010.

There is now evidence of the NO_2: NOx ratio increasing for Euro 6 light duty vehicles, which is likely to limit the current decline in NO_2 concentrations to be less than that of NOx.

While the observed reductions in NOx and NO_2 concentrations are encouraging, additional measures and actions will be required in order for the reducing trend to continue into the future. The report concludes that it is important to regularly monitor trends in ambient concentrations."

BUREAU VERITAS

Step 1	**How far from the KERB was your measurement made (in metres)?**	21.0
Step 2	**How far from the KERB is your receptor (in metres)?**	1
Step 3	**What is the local annual mean background NO_2 concentration (in µg/m^3)?**	9.643307
Step 4	**What is your measured annual mean NO_2 concentration (in µg/m^3)?**	20.5
Result	**The predicted annual mean NO_2 concentration (in µg/m^3) at your receptor**	**37.7**

Receptor R1 in 2016.

The above image, which MSDC should be familiar with, relates to planning application DM/17/2739 Environmental Statement Vol.1, Chapter 9, Air Quality Assessment 2016. Table 9.10 which indicated that the annual mean NO_2 concentration at R1 was 20.5µg/m^3, 2016 baseline. Receptor R1 is located on Lunces Hill at a distance of 21 metres from the kerbside at grid reference 533756/121897. The concentration at one metre back from the kerbside equates to 37.7g/m^3 which did not exceed to the objective 2016.

At receptor R5 in 2016 the result equates to 63.4µg/m^3. R5 measured at 19.0 metres from the kerbside and was predicted to be 31.5µg/m^3 at the receptor. In 2018 the result equates to 55.8µg/m^3, when R5 measured 9.0 metres from the kerbside and was predicted to be 35.7µg/m^3 at the receptor. Background concentrations are derived from 2015 mapping for 2016 baseline and from 2017 mapping for 2018 baseline. Receptor distance of 1 mete from the kerb was selected purely on the basis that MSDC use the same distance in their ASR's but under predicts the true concentration that pedestrians are exposed to due them being nearer to the kerbside and for vehicle occupants who are a further metre from receptor R5 and at the source which in 2016 equated to at least 63.4µg/m^3.

Step 1	**How far from the KERB was your measurement made (in metres)?**	19.0
Step 2	**How far from the KERB is your receptor (in metres)?**	1
Step 3	**What is the local annual mean background NO_2 concentration (in µg/m^3)?**	9.643307
Step 4	**What is your measured annual mean NO_2 concentration (in µg/m^3)?**	31.5

Result	The predicted annual mean NO_2 concentration (in $\mu g/m^3$) at your receptor	63.4

Receptor R5 in 2016.

The Bureau Veritas calculator results should be treated with caution when the receptor is more that 10 metres from the kerbside as was the case in 2016 for all 11 receptors. The 2019 reading for R5 of 56.6$\mu g/m^3$ can therefore be regarded as being more reliable when using the BV calculator which is use in DMRB has been found to over predict NO_2 concentrations. A report prepared by Prof Duncan Laxen and Dr Ben Marner found that "Of the three models, ADMS-Roads appears to describe the rate at which NO_2 concentrations reduce with increasing distance from the road better than either the DMRB screening model or Caline-4. The DMRB, in particular, appears to significantly under-predict the rate at which measured concentrations reduce close to the road. The Caline-4 model comes slightly closer to predicting the measured rate of concentration reduction near to roads, although still underpredicting the decline with distance. However it seems to under-predict the rate at which concentrations reduce at distances greater than 20m. The predictions made using ADMS-Roads provide a better representation, although this model shows a smaller initial decline out to 5m then a larger decline from 5 to 20m than the trend derived from the measurements.
The study suggests that within the range of these measurements, and at these specific types of sites (i.e. motorways or busy dual-carriageways in open settings), it might be possible to use measurements made at one distance from the road to predict the concentration at any other distance from the road. Equation 4 shows the empirically-derived function that might be used."

Equation 4: $Cz = ((Cy-Cb) / (-0.5476 \times Ln(Dy) + 2.7171)) \times (-0.5476*Ln(Dz)+2.7171) + Cb$

Where: Cy is the total measured concentration (µg/m3) at distance Dy;
Dy is the distance from the kerb at which concentrations were measured;
Cz is the total predicted concentration (µg/m3) at distance Dz
Dz is the distance from the kerb (m) at which concentrations are to be predicted;
Cb is the background concentration (µg/m3); and
Ln(D) is the natural log of the number D

Using the above equation resulted in R1 to be 35.9$\mu g/m^3$ in 2016 and 27.0$\mu g/m^3$ in 2018. R5 was found to be 45.0$\mu g/m^3$ in 2016 and 48.1$\mu g/m^3$ in 2018. R5 has exceeded to objective of 40.0$\mu g/m^3$ at the kerbside since 2016. For 2020 other Local Authorities that have posted their ASR's have generally experienced a reduction in Nitrogen Dioxide concentrations at monitoring sites. Chichester has three sites that are unchanged while Horsham and Brighton & Hove each have increases at three of their sites.

A decrease in Nitrogen Dioxide levels is a welcome step forwards in the quest to achieve better air quality but unfortunately CO_2 levels, which can be harmful to humans in confined spaces, are heading in the opposite direction. The DfT RFT18 indicates that CO_2 will increase, for many years to come, due in part to the following.
While lab tests suggest that PHEVs emit on average 44g of Carbon Dioxide per kilometre new analysis by an NGO suggests that in the real world cars actually emit 117g per kilometre on average. That compares to 164g and 167g of CO_2 respectively for petrol and diesel cars. All the10 top-selling plug-in hybrids in the UK automatically switch on the car's engine as soon as the external temperature drops to below 14ºC in order to keep the car passengers warm. That can not be good for the environment especially during winter months when NO_2 concentrations will be higher due to atmospheric conditions.

Sustainability
Queuing delays
Under, Site Selection Reasonable Alternatives for Assessment, Technical Summary, 11-Transport states: "There are no 'severe' highways impacts expected from any of the three options. Policy requirements could ensure access or highways mitigation is provided to ensure no severe impacts arise." The same document as in Cumulative developments and the effects of traffic growth submitted in support of the Northern Arc development predicts changes in driver delays of 500 seconds by 2025 at the A273/Sussex Way roundabout and 562 seconds at A272/London Road T junction (leading to A23/A272 NB Slip) thus exposing the occupants of crawling or stationary idling vehicles, to 8 minutes and twenty seconds and 9 minutes and twenty two seconds respectively, to excessive concentrations of pollution, How long do the delays have to be before being considered severe? What prospects to behold! MSDC have not yet resolved the problem at Stonepound Cross Roads and there is a real possibility of them sleep walking towards major problems with regard chronic traffic congestion due a lack of highway infrastructure improvements at various locations within Haywards Heath together with an exceedance of the air quality objective at various roundabouts due to complacency.

From the foregoing it is apparent that Defra recognise that modelling has under predicted NO_2 concentrations due a variety of different reasons. The DfT have also acknowledged that traffic growth forecasts have been under predicted, as detailed in Road Traffic Forecasts 2018, resulting in trying to predict traffic growth in future years challenging. The traffic count carried out in 2020 at the request of WSCC when compared with that of 2016 will provide a definitive indication of the annual traffic growth rate, for a four year period relevant to the local highway network, for AADT input data into the emission factor toolkit. Air Quality Assessments, carried out prior to the substantial updates of the RFT's, will therefore be flawed.
Without significant improvements to highway infrastructure the likelihood of gridlocked roads during peak periods together with the associated increase in pollution that results alludes to Haywards Heath not being a thriving settlement and will as a place to avoid. Local residents submitted photographic evidence of heavy traffic congestion on the A272 (HHRR) section which was ignored by the Case Officer. The District Plan seeks the opposite in paragraph 2.9 and notwithstanding that the Site Allocations DPD Sustainability Appraisal 11 – Transport, which reads "None of the site options on their own are likely to contribute to negative impacts on the highways network. In-combination modelling of the package of preferred option sites will be tested as part of the evidence supporting the Site Allocations DPD. Access arrangements for the Science and Technology Park, and further testing of highways capacity will be required and further work has been identified to test this prior to submission." there should a full appraisal of future trends in traffic growth, emissions of NO_2, CO_2, $PM_{2\,5}$ and PM_{10} resulting from cumulative development currently under construction and from future allocations, in the form of a thorough risk assessment, which should be at the forefront of decision making when selecting and allocating sites for future development. The highway capacity should be tested based upon traffic counts where ever possible since previous modelling has been proved to be inadequate due mainly to input data under estimating when compared with reality as demonstrated earlier under TEMPRO. It is worth bearing in mind that traffic data presented by Phlorum suggests there was an average annual increase of 6.45% in AADT between May 2016 baseline and December 2018 baseline (say 2.5 years for best case scenario) for the local highways converging at the Fox Hill, Birch Hotel, and Sussex roundabouts (see Addendum).

A second issue regarding sustainability are future energy supplies which are forecast to be insufficient to meet demand when the wind is not blowing and the sun is not shining. One major energy supplier is seeking permission from Ofgem to be able turn off via smart meters appliances remotely in order to ration electricity such as heat pumps and electric vehicle chargers. If they fail to get that permission and demand exceeds supply then everyone, regardless of whether they have a smart meter or not, will be subjected at some point, to power disruption especially during winter. It would be highly irresponsible for any local authority to pursue a building programme without reassurance that power supplies will be adequate at least up until 2031.

Unless the issues relating to air quality and traffic growth forecasts are addressed and corrected MSDC are in danger of sabotaging their own District Plan strategies and policies, specifically with regard DP21 and DP29, due in part from their lackadaisical approach to ensuring that supporting documentation in connection with planning applications are both credible and fit for purpose. There is now a compelling argument for a full risk assessment to be undertaken, covering the next plan site allocation period, in view of the substantial updates to Road Traffic Forecasts 2018 and NTEM 2018, in order to ensure that the aged highway infrastructure can sustain the volume of traffic forecast for annual increases together with the additional increase generated from cumulative development including employment and science and technology parks. For developments based upon TEMPRO-2015 modelling traffic growth rates will now have increased due to the Trip End Model being updated in 2018. Local authorities are obliged to improve air quality and ensure that the objective will not be exceeded. Despite having been assured by the Chief Executive that MSDC take air quality very seriously I still remain sceptical due to the poor oversight and due diligence of a Planning Department which is perceived to be focused on the Council's policy of meeting housing targets. By all means plan for the future responsibly and transparently by ensuring that all other relevant District Plan policies are complied with and that the outcome is not detrimental to the existing community.

David Johnson

Addendum

Change in traffic growth between 2016 and 2018

Location	2018	2016	Change %	Annual %
Fox Hill (S)	14047	12131	15.79	6.32
Hurstwood Lane (S)	2727	2471	10.36	4.14
Fox Hill (N)	11842	10111	17.12	6.85
Fox Hill (N-j)	12415	10649	16.58	6.63
Rocky Lane	16716	13696	22.05	8.82
Wivesfield Road	16648	13789	20.73	8.29
A272	10086	8512	18.49	7.40
Hurstwood Lane N	2761	2502	10.35	4.14
B2272	16559	14310	15.72	6.29
Lewes Road	13472	11808	14.09	5.64
Average %			16.13	6.45

Annualisation for MSAQ28

Site	Am	Pm	Ratio Am/Pm
MSAQ5	32.575	30.911	1.053828560
MSAQ9	9.817	9.089	1.080075697
MSAQ26	25.725	24.200	1.063016529
MSAQ27	24.782	24.322	1.018896317
Average Ra			1.053954276

Annualisation proceeedure, example

Background Site	Annual mean 2015 (Am)	Period Mean 2015 (Pm)	Ratio (Am/Pm)
A	28.6	29.7	0.963
B	22.0	22.8	0.965
C	26.9	28.9	0.931
D	23.7	25.9	0.915
Average (Ra)			0.944

It has only been possible to carry out a monitoring survey at site for six months between July and December 2015. The measured mean concentration M for this period is 30.2µg/m3 . How can this be used to estimate the annual mean for this location? Identify two to four nearby, long-term, continuous monitoring sites, ideally those forming part of the national network. The data capture for each of these sites should ideally be at least 85%. These sites should be background (Urban Background, Suburban or Rural) sites to avoid any very local effects that may occur at Urban Centre, Roadside or Kerbside sites, and should, wherever possible lie within a radius of about 50 miles. If no background sites are available, and the site to be annualised is itself a Urban Centre, Roadside or Kerbside site, then it is permissible to annualise using roadside or kerbside sites rather than background sites, though this should be clearly stated in the annual report. Obtain the annual means, Am, for the calendar year for these sites. Work out the period means, Pm, for the period of interest, in this case July to December 2015. Calculate the ratio, R, of the annual mean to the period mean (Am/Pm) for each of the sites. Calculate the average of these ratios, Ra. This is then the annualisation factor. Multiply the measured period mean concentration M by this annualisation factor Ra to give the estimate of the annual mean for 2015. For this example the best estimate of the annual mean for site S in 2015 will be $M \times Ra = 30.2 \times 0.944 = 28\ 5\mu g/m^3$

1036

Site Allocations DPD: Regulation 19 Consultation Response

Policy: **SA38**

ID:	**1036**
Response Ref:	Reg19/1036/7
Respondent:	Mr D Johnson
Organisation:	
On Behalf Of:	
Category:	Resident
Appear at Examination?	×

[redacted]

From: eforms
Sent: 27 September 2020 14:20
To: ldfconsultation
Subject: Site Allocations DPD Consultation Response (Ref: DPDCon-1601212507)
Attachments: Unsupported File Types Alert.txt

Categories: SiteDPD, [redacted]

Name	David Johnson
Address	[redacted]
Email	[redacted]
Which document are you commenting on?	Site Allocations DPD
Sites DPD Policy Number (e.g. SA1 - SA38)	SA38
Do you consider the Site Allocations DPD is in accordance with legal and procedural requirements; including the duty to cooperate	Yes
(1) Positively prepared	Sound
(2) Justified	Sound
(3) Effective	Unsound
(4) Consistent with national policy	Unsound
Please outline why you either support or object (on legal or soundness grounds) to the Site Allocations DPD	National policy should be in accordance with NPPF.
Please set out what change(s) you consider necessary to make the Site Allocations DPD legally compliant or	Include a reference to NPPF.

sound, having regard to the reason you have identified at question 5 above where this relates to soundness.	
If you wish to provide further documentation to support your response, you can upload it here	https://forms.midsussex.gov.uk/upload_dld.php?fileid=fc4883e79d610c148aafd95d5a47b53e
If your representation is seeking a change, do you consider it necessary to attend and give evidence at the hearing part of the examination	No, I do not wish to participate at the oral examination
Please notify me when-The Plan has been submitted for Examination	yes
Please notify me when-The publication of the recommendations from the Examination	yes
Please notify me when-The Site Allocations DPD is adopted	yes
Date	27/09/2020

SA38, Air Quality

Background

"Emissions of Nitrogen Oxides from Modern Diesel Vehicles Assessment: January 2016

Defra provides road traffic emission factors that predict how fleet-averaged vehicle emissions will change year-on-year as newer, cleaner vehicles populate the national vehicle fleet (Defra, 2015). These emission factors are routinely used in air quality modelling. Historically, modelling carried out using these emission factors has predicted large reductions in nitrogen oxides (NOx) emissions and concentrations, but in recent years it has been found that these reductions have not been reflected in ambient measurements (Carslaw et al., 2011).

The reason for the disparity relates to the on-road performance of modern diesel vehicles. New vehicles registered in the UK have had to meet progressively tighter European type approval emissions categories, referred to as "Euro" standards. While the NOx emissions from newer vehicles should be lower than those from equivalent older vehicles, the on-road performance of some modern diesel vehicles has often been no better than that of earlier models (Carslaw and Rhys-Tyler, 2013).

Defra has attempted to account for the historical discrepancies using a new set of emission factors, published in 2014. There remains, however, some uncertainty regarding whether these emissions reflect the on-road performance of modern vehicles. This report considers recent evidence of on-road emissions performance and analyses it in the context of Defra's vehicle emission factors.

The report only considers emissions of NO_x from diesel vehicles. There is no evidence that emissions of other pollutants are affected by the issues discussed. Furthermore, there is good evidence that the on-road performance of petrol vehicles reflect the reductions imposed by the emission standards (TfL, 2015). Finally, this document only considers emissions of total NO_x.

No consideration is given to the function of NO_x emitted as NO_2 (fNO_2) or how this may change over time."

Road Traffic Forecasts 2018 indicate that "Car traffic is forecast to grow at between 11% and 43% by 2050, whilst LGV traffic is forecast to continue growing significantly in all scenarios (between 23% and 108%). Strong LGV traffic growth has a significant impact on total traffic growth, particularly in Extrapolated Trip Rates (scenario 6). In this scenario although car traffic is forecast to grow by just 11%, overall traffic growth still reaches 17% with LGV traffic accounting for 19% of total traffic. HGV traffic growth is forecast to be lower than 6 other vehicle types, with growth ranging from 5% to 12% by 2050. Traffic growth on the Strategic Road Network (SRN) is forecast to be strong and positive in all scenarios, ranging between growth of 29% and 59% by 2050, driven by forecast increases in the number of car trips and trip distances, as well as increasing Light Goods Vehicle (LGV) traffic. Forecast growth on principal roads and minor roads is lower than the SRN, between 10%-44% and 11%-48% respectively."

"Air pollution 'more dangerous than driving'

Breathing in polluted air is more dangerous than driving a car, a report has found as it accuses councils of declaring climate change emergencies while failing to tackle the issue.

An analysis by Centre for Cities blames the failure of local authorities to introduce clean air zones and other measures that could reduce the death rate from pollution, which is 25 times greater than the risk of being killed in a car crash. "Local policy aimed at limiting air pollution in recent years has at best been slow and at worst absent," the think tank stated in its annual study of urban areas.

"The rush to declare climate emergencies by local authorities in the last year, a global issue over which they have very little direct control, strongly contrasts with action on air pollution, an issue where their actions can more clearly make a difference."

Overall, more than one in 19 deaths in UK cities and large towns are related to long-term exposure to air pollution, according to the analysis of official health and emission data for particulate matter ($PM_{2.5}$) comprising soot, ash and dust from coal and wood fires as well as cars and lorries. The worst five locations, where an estimated one in 16 deaths is linked to exposure to the deadly $PM_{2.5}$ toxin, are London (6.4 per cent), Slough (6.4 per cent), Chatham (6.3 per cent), Luton (6.2 per cent) and Portsmouth (5.9 per cent)."

Modelling

The vagaries associated with modelling are many and the reliability of the output is not only dependent upon the model itself but also the accuracy of the input data. Classic examples of algorithms miss performing are the predicted death toll from Covid-19 and the exam results debacle and air quality models whilst not in the same league have tended to under perform due to poor data input. Models can be useful tools when attempting to predict the future but when comes to traffic forecasts there are many uncertainties which thankfully have been recognised by the DfT resulting in a substantial update of their forecasting models, with a changed in mindset, in 2018 probably due to the many reports indentifying the problems relating to the 2015 forecasts as identified under background. Air quality modelling initially attempts to predict the emissions for a baseline year using TEMPRO which then feeds into two other separate models, namely the Emission Factor Toolkit as AADT to calculate NO_x, and then into ADMS-Roads as emission factors.

Those engaged in air quality modelling, by recourse to the laqm helpdesk, will be aware of the uncertainties regarding emissions, background concentrations together with road traffic forecasts and TEMPRO factors have all tended to under predict the true situation due to various reasons and that results arising from modelling are the best minimum prediction at that moment in time. Standard methodology for air quality modelling is not a silver bullet or a one size fits all yet there are those at MSDC, with their heads in the sand, who seem to think that modelling is a panacea. Modelling may be regarded as being very good at quantifying the amount of change in pollution levels at a given point, even if absolute figures are slightly out, and it is the change in pollution levels caused by a development which is key to its impact. That said the over dependence upon output data derived from an unreliable (flawed) model fed with under predicting input data is farcical and undermines the credibility of those overseeing the process.

Since 2001 there have been ten revisions for background concentrations, nine upwards and the last in 2018 downwards, indicating that concentrations derived from background mapping may have peaked. Using the year 2020 as an example the background concentration derived from 2015 mapping the background concentration was predicted to be 8.370151. Using 2018 mapping data the background concentration for 2020 was predicted to be 9.156648 resulting in an increase of 9.396%.

Model verification

The Verification Study will attempt to reduce the difference between monitored and modelled NO_2 concentrations to within less than 25%. The monitored NO_2 concentrations which are provided to consultants by MSDC can predate the modelled by up to two years earlier than the modelled NO_2 concentrations depending upon the publication date of the ASR. The monitored concentrations do not necessarily have to consist of a 100% data capture within a calendar year and are therefore not fully representative of the air quality at the monitoring site. Defra accept data capture of above 75% for air quality reports without correction. It would be astonishing if Defra were to acknowledge that an erroneous bias corrected monitored concentration of 24.7$\mu g/m^3$ instead of the expected concentration for NO_2 of 28.8$\mu g/m^3$, for raw data, would be acceptable as part of an Air Quality Assessment Model Verification Study which seeks to remove the under prediction for modelled concentrations. In connection with a local planning application the revised concentration of 28.8$\mu g/m^3$ was derived from TG-16-February-18 v1, Box 7.9 (see

Addendum) using a process known as annualisation. As a consequence of an increase in the monitored concentration of NO_x the numerical plot on the Y axis, relative to the same value of modelled NO_x on the X axis, increases the gradient (slope) of the trend line and increases the numerical value of the multiplier used to draw monitored and modelled concentrations towards closer alignment.

TEMPRO

TEMPRO (The Trip End Model Presentation Program) is used in conjunction with Regional Traffic Growth and Speed Forecasts (RTFs), both of which were updated in 2018, produces a logarithm [RTF factor x (Local TEMPRO factor / Regional TEMPRO factor x (future year factor)]. The product, from within the square brackets ȳ say, can then be used to multiply the baseline AADT in order to obtain future a year AADT. TEMPRO also takes into account cumulative development.

The regional area is South East of England and comprises 18 local authorities of differing geographical sizes, including West Sussex with a total of 4.586 billion vehicle miles in 2018 ranking fifth behind Hampshire (9.773), Kent (9.565), Surrey (8.714) and Oxfordshire (4.848) and between them they account for 31.7% of the region where just 6 of local authorities are above the average of 3.0505 billion (54.909/18) vehicle miles in 2018. The local TEMPRO factor is based on the Mid Sussex 011 region which includes Haywards Heath and rural area to the west. The RTF and futures year factors are derived from the Nation Trip Ends Model (NTEM) as part of the modelling programme.

The regional average would be more representative as a factor for 18 similar size regions rather than the one size fits all application which TEMPRO attempts to achieve. West Sussex traffic growth is therefore under estimated by the TEMPRO algorithm, which is based upon best guess assumptions, should be at least 1.5 times higher than the average factor (4.586/3.0505 = 1.504).

Using the road traffic forecasts explorer to obtain traffic growth for 'all roads' is predicted to grow nationally by between 3.2% (Scenario 6) and 10.4% (Scenario 2) for the period 2016 to 2022 (Table 4). Given that traffic growth in West Sussex has been stated to increase by nearly double the national rate then the raw traffic growth factor on the A272 (Lewes Road) in the table below will increase by more than a factor of 1.0696 closer to 1.132 from 2016 to 2022 as opposed to 1.077 in 2010 to 2016. Not all roads within the local highway network will indicate similar increases and in the case of South Road a decrease of 7.52% was recorded between 2010 and 2014 due mainly, if not entirely, to the opening of the HHRR. The B2028, a minor road, north of Lindfield indicated an increase in traffic growth between 2012 and 2018 of 1.0493. Unfortunately there are no raw traffic counts for other 'B' roads (B2112 and B2272) within the grid square 533500/122500 (see Addendum) which are expected to exceed the growth rate of 1.0493 for the B2028, Lindfield High Street.

B2112	535000	123300	A272 Lewes Road		535250	123500
Count id	36887		36887		86008	
	04.06.2008		20.10.2010		05.07.2016	
hour	East	West	East	West	East	West
7	330	478	305	476	356	543
8	358	510	420	543	497	627
9	326	428	346	482	309	503
10	325	347	280	345	328	356
11	360	368	324	343	331	339
12	310	359	362	365	372	332
13	389	313	355	285	358	360
14	327	364	367	354	403	381
15	458	389	415	386	463	402
16	523	432	505	426	631	483
17	603	419	615	420	672	429
18	533	344	413	357	431	320
total	4842	4751	4707	4782	5151	5075
grand total		9593		9489		10226
West Sussex TEMPRO factor (ȳ)				0.9892		1.0777

Table 3

Traffic points 36887 and 86008 are 320 metres apart and are not influenced by other roads. Traffic counts are for 12 hour periods and have been used to illustrate the change between counts which is equivalent to the TEMPRO factor applicable to West Sussex.

Department of Transport document RTF18 forecasts linear increases in road traffic growth, road traffic congestion resulting in longer journey times for trips whilst road traffic emissions are forecast to fall by a minimum of 30.2% by 2050, The growth forecasts for 2022 were obtained by interpolation due to the linear nature of the projection, based on the 'all roads' and 'all vehicles' options for each scenario, shown in Table 4, to indicate the national TEMPRO factor.

Scenario	2016	2022	Change %
1	291.66	311.966	1.0696
2	291.66	321.948	1.1038
3	291.66	301.598	1.0341
4	291.66	313.842	1.0761
5	291.66	309.902	1.0625
6	291.66	301.066	1.0322
7	291.66	312.698	1.0721

Table 4

Scenario 1 - Reference: Central Fuel and GDP Assumptions, 25% Electric Vehicles by 2050, constant trip rates from 2016, Central Office for National Statistics (ONS) projections of population.

Scenario 2 - High GDP, Low Fuel: High GDP Growth (+0.5pp Growth on OBR) and Low Fuel Cost Projection (Fossil Fuel Price Assumptions 2017, BEIS).

Scenario 3 - Low GDP, High Fuel: Low GDP Growth (-0.5pp Growth on OBR) and High Fuel Cost Projection (Fossil Fuel Price Assumptions 2017, BEIS).

Scenario 4 - High Migration: High Migration population variant (ONS) and decoupling of Income to Car Ownership relationship in London.
Scenario 5 - Low Migration Scenario: Low Migration population variant (ONS).
Scenario 6 - Extrapolated Trip Rates: Extrapolation of recent trip rate trends until 2050 and extrapolation of recent decreases in young person licence holdings.
Scenario 7 - Shift to Zero Emission Vehicles: 97% of car and LGV mileage powered by zero emission technologies by 2050.

Clearly by under predicting the AADT using TEMPRO has had repercussions for the whole modelling process resulting in under predicted emissions at various receptors located away from the highway. An Air Quality Assessment relating to a local contentious planning application utilised a TEMPRO factor of 1.0548, by omitting cumulative developments at Rookery Farm (320), Gamblemead uplift of 52 totalling 372 dwellings, when attempting to calculate AADT for 2022 from a 2016 baseline. The Air Quality Assessment was stated to be flawed, which it clearly was, yet MSDC had the effrontery to state that it was not in the Case Officer's Report to the Planning Committee, page 41 which reads "The Council's EHO has considered the correspondence from the applicants and the objectors on these points. He considers that the objectors' concerns have been addressed and that there is no reason to believe that the air quality assessment is flawed." There are two separate issues, the objectors concerns and the credibility of the Air Quality Assessment which should have been addressed separately. The SEHO was of the opinion that the objector concerns had been addressed should have been sufficient, full stop. Stating that the Air Quality Assessment was not flawed was an entirely different issue, not involving the objectors, based solely upon his professional judgement. The fact that the objectors did not flag up any additional failings, which have been presented subsequently, and which should have been dealt by MSDC is immaterial. The SEHO needs to apologise for such an obvious error of judgement and for misleading the Planning Committee who voted in favour of the planning application by being influenced by his statement in the Case Officer's report.

Cumulative developments and the effects of traffic growth
The question of the influence of additional traffic growth generated from the Northern Arc was raised with MSDC who responded, via the SEHO, as follows:
"As you know, traffic data is not my area of expertise, but I would expect only traffic from *relevant* developments to be included.
The N Arc development is likely to be distant enough that development traffic would not have any significant impact upon the (NO_2) levels at Hurst Farm. In any event, I understand that this type of development is already accounted for by the use of TEMPRO growth rates for the traffic data so there may be no need to include it specifically. WSCC should be able to answer any queries you have on the use of TEMPRO in this regard.
Please be reassured that, as there are no known air quality issues in the Hurst Farm area, the relatively low volume of additional traffic from the new development (in relation to the existing volumes) is unlikely to significantly change air quality in the area. We would only be concerned if there were predictions of significant adverse effects as a result of any new development."

The Northern Arc will by 2031 be comprised of 3500 dwellings, three schools together with community buildings and other structures which collectively will influence air quality and traffic growth upon the surrounding area as follows.
The document titled, Appendix 11-1: Traffic and Transport Technical Appendix, in support of planning application DM/18/5114, contains Table 11-5 and Table 11-9 which illustrates that air quality in way of Valebridge Road and Rocky Lane between Theobalds Road and A272 has been predicted to increase has a result of the Northern Arc development generating an increase in traffic volume (AADT). During the period 2017 to 2025, based upon TEMPRO-2015, traffic growth is predicted to increase by 98 vehicles per day and during the 2025 to 2033 by 574 vehicles per day. BEV contribute 4.7% by market share as of June 2020, whilst vehicles fitted with combustion engines are the overwhelming majority (95.3%), entering or exiting the A272 and will generate a directly proportional increase of oxidised Nitrogen (NO_x) mainly in the form of Nitric Oxide (NO) which after having reacted with Ozone (O_3) to form Nitrogen Dioxide (NO_2) concentrations from vehicles transiting in both directions along the A272 corridor. Increases in traffic growth of 77 and 166 vehicles per day during the same periods will also occur in Janes Lane which potentially will impact upon the B2112.
The B2272, Butler's Green Rd, between the junction with Isaac's Lane and Beech Hurst Care Home, will also incur increases in AADT of 384 and 846 vehicles per day during the same time frame. Data collated from the planning portal indicates that a minimum of 74% of traffic transiting the B2272 in way of Butler's Green Road will also transit South Road. Clearly the Authors of the Traffic and Transport Technical Appendix adjudged it prudent to consider the influence of traffic growth arising from the Northern Arc development and the impact upon three separates routes into and out of Haywards Heath by an additional 4% by 2025 and 12% by 2033 excluding increases attributable to the annual traffic growth, which in West Sussex is almost double the national average. The largest increase of 5% by 2033 will be felt at Butler's Green Road, possibly Oaklands also, especially at peak periods thus hopefully prompting MSDC to take a leaf out of the Department for Transport's book and reappraise their mindset regarding the effects of cumulative developments. A prudent next step would be to run the Northern Arc through TEMPRO again now that both the National Trip End Model (NTEM) and the RTF18 have been updated in order to determine to what extent traffic generated by the NA will impact upon roads into and out of Haywards Heath. Better to be proactive now instead of waiting for the chickens to come home to roost.

One reason for there being no known air quality issues in the Hurst Farm area is because the monitoring sites MSAQ2 and MSAQ28 are located where traffic volumes are lower than the section of A272 between the Highbank roundabout and Bolding Way, MSAQ2 records 71% of traffic transiting whilst MSAQ28 records 87%. MSAQ28 has not yet produced a full set of published readings for a 12 month period which implies that MSDC have no idea, other that at monitoring sites, regarding air quality within Mid Sussex. Site allocations for 1409 dwellings within Burgess Hill and Haywards Heath area during the next 5 years will also impact, together with the annual traffic growth, upon traffic movements in way of the A272 and B2112 and lead to further increases in Nitrogen Dioxide concentrations. All new development will also adversely impact upon the background concentrations as characterised in Clean Air Strategy 2019, thus "Air pollution comes from many sources. Pollutants can travel long distances and combine with each other to create different pollutants. Emissions from distant and local sources can build up into high local concentrations of pollution."

The significance of locating monitoring sites where the NO_2 concentrations are at the highest level is best illustrated in the following article.
"A picturesque village in Dorset has been named as England's most polluted hotspot, ahead of taxi rank in Sheffield.
Residents of Chileock say they are blighted by pollution caused by traffic from lorries and holidaymakers on the A35, which runs through the village.
But it was only when they moved their air quality monitoring site to the village's main hill, where drivers are forced to accelerate, that they captured the extent of the problem.
The village is now top of the list of English locations where Nitrogen Dioxide (NO_2) levels breach the annual air quality objective, according to analysis by Friends of the Earth."

The question of traffic growth was asked of the SEHO as follows:

"In Table 5.1 of the Air Quality Assessment update 2019 the 2023 baseline+committed NO_2 annual mean concentration at receptor R5 is stated to be 24.4µg/m^3. From the provisional estimates, 2018-2019, which indicates that traffic increased on motorways and 'A' roads by 1.2%. The level of traffic in West Sussex on all major classes of road is almost double the national average which means that traffic growth increased by 2.24% (1.2 x 1.9) in 2019." The market share for alternative fuel vehicles is stated to be 7.3% at the end of 2019 (https://www.statista.com/statistics/299052/alternative-fuel-types-used-in-newly-registered-cars-in-the-united-kingdom/) where the annual growth rate was 1.33% since 2016 onwards.

TRA8901 indicates that the total motor vehicle traffic (vehicles miles) was 4.586 x 10^9 for the year ending 2018. Similarly TRA8902 indicated that car traffic (vehicle miles) was 3.664 x 10^9. Car traffic is therefore 80% of the total traffic on West Sussex roads which means that cars account for 5.8% (7.3 x 0.8) of the total traffic transiting R5 as of the end of 2019.

R5	Measured	Background	Emissions	Change ↓
2018	35.7	10.306933	25.393067	
2019	35.9	9.958167	25.961872	1.0224
2020	32.5	9.556437	22.950295	0.8840
2021	29.5	9.198918	20.288060	0.8840
2022	26.8	8.850430	17.934645	0.8840
2023	24.4	8.539590	15.854227	0.8840

Table 2

"From the above table (2) it is apparent that a decrease in emissions of 11.6%, is required annually from 2019 to 2023 in order to achieve an annual mean concentration of 24.4µg/m^3 in 2023. The market share of petrol cars increased by 3.6% as opposed to alternative fuel vehicles which increased by 1.33% from 2018 to 2019. Is it likely that the market share of alternative fuel vehicles will increase dramatically in four years, or have Phlorum got it wrong again?"

The response was:
"In answer to your question, the Government has based its emission factors, which is the authoritative basis on which vehicle emissions in future years are calculated, assuming a gradual decline in the more polluting vehicles and an increase in EV and other alternative fuel vehicles. Using these factors is the standard methodology for air quality modelling."

That question remains unanswered and it is apparent that annual decreases in emissions of 11.6%, which has since increased due to the background concentration now being 8.116717µg/m^3 instead of 8.539590µg/m^3 due to revised mapping data, could not be achieved against a back drop of increasing petrol cars sales of 3.6% in contrast to alternative fuel vehicles sales of 1.33%.

The above demonstrates that consultants, through no fault of their own, have carried out modelling in accordance with industry best practice that has tended to under predict emission concentrations, representing the very best case scenario, used in air quality assessments in support of planning applications for some considerable time. Pointing the finger of blame at the Government, who have attempted to correct the anomalies associated with emission factors, does not absolve MSDC from their responsibilities of ensuring that documents submitted in support of planning application are adequately scrutinised.

Emissions
Air Quality Consultants has updated a previous study that examined trends across the UK covering the period 2005 to 2016. The new report presents trends for 112 sites over the period 2005 to 2018 and for 183 sites over the more recent period 2010 to 2018. The findings were recently reported by Prof. Duncan Laxen to the Institute of Air Quality Management's Routes to Clean Air Conference in London.
Overall downward trends have been identified across all sites, of -3.1% per year for NO_2 and -3.0% per year for NOx, for the period 2010 to 2018. The downward trends are steeper at rural sites, at -3.4% per year for NO_2 and -4.1% per year for NOx, than at road and urban sites, at -3.1 and -3.0% per year for NO_2 and NOx respectively. These downward trends are greater than those previously identified for the period 2005 to 2016.
"Air Quality Consultants previously found no significant trend over the period 2005 to 2016 for sites across central and northern England and north Wales, in contrast to the rest of the UK. This area of the UK has now caught up, with slightly steeper downward trends than the rest of the UK over the period 2010 to 2018.
The downward trends in NOx concentrations (2005 to 2018) are smaller than those for estimated UK NOx emissions (2005 to 2017), which suggests that emission reductions presented in the National Atmospheric Emission Inventory (NAEI) are overly optimistic. The report recommends that the validity of the NOx emissions estimates used in the NAEI, especially those for road vehicles, is reviewed in light of these observations.
Defra publishes projections of roadside and background concentrations. Recent projections of NO_2 concentrations, from a base year of 2017, now match the overall trends in measured roadside and rural NO_2 concentrations for the years 2017 and 2018.
The pattern of trends over time, which for NO_2 is of little change between 2005 to 2010 and then a steeper downward trend from 2010 to 2018, is consistent with evidence of an increasing ratio of NO_2:NOx in vehicle emissions in the period to 2010 and then a decline from 2010.
There is now evidence of the NO_2: NOx ratio increasing for Euro 6 light duty vehicles, which is likely to limit the current decline in NO_2 concentrations to be less than that of NOx.
While the observed reductions in NOx and NO_2 concentrations are encouraging, additional measures and actions will be required in order for the reducing trend to continue into the future. The report concludes that it is important to regularly monitor trends in ambient concentrations."

BUREAU VERITAS

Step 1	**How far from the KERB was your measurement made (in metres)?**	21.0
Step 2	**How far from the KERB is your receptor (in metres)?**	1
Step 3	**What is the local annual mean background NO_2 concentration (in µg/m³)?**	9.643307
Step 4	**What is your measured annual mean NO_2 concentration (in µg/m³)?**	20.5
Result	**The predicted annual mean NO_2 concentration (in µg/m³) at your receptor**	**37.7**

Receptor R1 in 2016.

The above image, which MSDC should be familiar with, relates to planning application DM/17/2739 Environmental Statement Vol.1, Chapter 9, Air Quality Assessment 2016. Table 9.10 which indicated that the annual mean NO_2 concentration at R1 was 20.5µg/m^3, 2016 baseline. Receptor R1 is located on Lunces Hill at a distance of 21 metres from the kerbside at grid reference 533756/121897. The concentration at one metre back from the kerbside equates to 37.7g/m^3 which did not exceed to the objective 2016.
At receptor R5 in 2016 the result equates to 63.4µg/m^3. R5 measured at 19.0 metres from the kerbside and was predicted to be 31.5µg/m^3 at the receptor. In 2018 the result equates to 55.8µg/m^3, when R5 measured 9.0 metres from the kerbside and was predicted to be 35.7µg/m^3 at the receptor. Background concentrations are derived from 2015 mapping for 2016 baseline and from 2017 mapping for 2018 baseline. Receptor distance of 1 mete from the kerb was selected purely on the basis that MSDC use the same distance in their ASR's but under predicts the true concentration that pedestrians are exposed to due them being nearer to the kerbside and for vehicle occupants who are a further metre from receptor R5 and at the source which in 2016 equated to at least 63.4µg/m^3.

Step 1	**How far from the KERB was your measurement made (in metres)?**	19.0
Step 2	**How far from the KERB is your receptor (in metres)?**	1
Step 3	**What is the local annual mean background NO_2 concentration (in µg/m³)?**	9.643307
Step 4	**What is your measured annual mean NO_2 concentration (in µg/m³)?**	31.5
Result	**The predicted annual mean NO_2 concentration (in µg/m³) at your receptor**	**63.4**

Receptor R5 in 2016.

The Bureau Veritas calculator results should be treated with caution when the receptor is more that 10 metres from the kerbside as was the case in 2016 for all 11 receptors. The 2019 reading for R5 of 56.6µg/m^3 can therefore be regarded as being more reliable when using the BV calculator which is use in DMRB has been found to over predict NO_2 concentrations. A report prepared by Prof Duncan Laxen and Dr Ben Marner found that "Of the three models, ADMS-Roads appears to describe the rate at which NO_2 concentrations reduce with increasing distance from the road better than either the DMRB screening model or Caline-4. The DMRB, in particular, appears to significantly under-predict the rate at which measured concentrations reduce close to the road. The Caline-4 model comes slightly closer to predicting the measured rate of concentration reduction near to roads, although still underpredicting the decline with distance. However it seems to under-predict the rate at which concentrations reduce at distances greater than 20m. The predictions made using ADMS-Roads provide a better representation, although this model shows a smaller initial decline out to 5m then a larger decline from 5 to 20m than the trend derived from the measurements.
The study suggests that within the range of these measurements, and at these specific types of sites (i.e. motorways or busy dual-carriageways in open settings), it might be possible to use measurements made at one distance from the road to predict the concentration at any other distance from the road. Equation 4 shows the empirically-derived function that might be used."

Equation 4: $Cz = ((Cy-Cb) / (-0.5476 \times Ln(Dy) + 2.7171)) \times (-0.5476*Ln(Dz)+2.7171) + Cb$

Where: Cy is the total measured concentration (µg/m3) at distance Dy;
Dy is the distance from the kerb at which concentrations were measured;
Cz is the total predicted concentration (µg/m3) at distance Dz
Dz is the distance from the kerb (m) at which concentrations are to be predicted;
Cb is the background concentration (µg/m3); and
Ln(D) is the natural log of the number D

Using the above equation resulted in R1 to be 35.9µg/m^3 in 2016 and 27.0µg/m^3 in 2018. R5 was found to be 45.0µg/m^3 in 2016 and 48.1µg/m^3 in 2018. R5 has exceeded to objective of 40.0µg/m^3 at the kerbside since 2016. For 2020 other Local Authorities that have posted their ASR's have generally experienced a reduction in Nitrogen Dioxide concentrations at monitoring sites. Chichester has three sites that are unchanged while Horsham and Brighton & Hove each have increases at three of their sites.

A decrease in Nitrogen Dioxide levels is a welcome step forwards in the quest to achieve better air quality but unfortunately CO_2 levels, which can be harmful to humans in confined spaces, are heading in the opposite direction. The DfT RFT18 indicates that CO_2 will increase, for many years to come, due in part to the following.

While lab tests suggest that PHEVs emit on average 44g of Carbon Dioxide per kilometre new analysis by an NGO suggests that in the real world cars actually emit 117g per kilometre on average. That compares to 164g and 167g of CO_2 respectively for petrol and diesel cars. All the10 top-selling plug-in hybrids in the UK automatically switch on the car's engine as soon as the external temperature drops to below 14ºC in order to keep the car passengers warm. That can not be good for the environment especially during winter months when NO_2 concentrations will be higher due to atmospheric conditions.

Sustainability
Queuing delays
Under, Site Selection Reasonable Alternatives for Assessment, Technical Summary, 11-Transport states: "There are no 'severe' highways impacts expected from any of the three options. Policy requirements could ensure access or highways mitigation is provided to ensure no severe impacts arise." The same document as in Cumulative developments and the effects of traffic growth submitted in support of the Northern Arc development predicts changes in driver delays of 500 seconds by 2025 at the A273/Sussex Way roundabout and 562 seconds at A272/London Road T junction (leading to A23/A272 NB Slip) thus exposing the occupants of crawling or stationary idling vehicles, to 8 minutes and twenty seconds and 9 minutes and twenty two seconds respectively, to excessive concentrations of pollution, How long do the delays have to be before being considered severe? What prospects to behold! MSDC have not yet resolved the problem at Stonepound Cross Roads and there is a real possibility of them sleep walking towards major problems with regard chronic traffic congestion due a lack of highway infrastructure improvements at various locations within Haywards Heath together with an exceedance of the air quality objective at various roundabouts due to complacency.

From the foregoing it is apparent that Defra recognise that modelling has under predicted NO_2 concentrations due a variety of different reasons. The DfT have also acknowledged that traffic growth forecasts have been under predicted, as detailed in Road Traffic Forecasts 2018, resulting in trying to predict traffic growth in future years challenging. The traffic count carried out in 2020 at the request of WSCC when compared with that of 2016 will provide a definitive indication of the annual traffic growth rate, for a four year period relevant to the local highway network, for AADT input data into the emission factor toolkit. Air Quality Assessments, carried out prior to the substantial updates of the RFT's, will therefore be flawed.
Without significant improvements to highway infrastructure the likelihood of gridlocked roads during peak periods together with the associated increase in pollution that results alludes to Haywards Heath not being a thriving settlement and will as a place to avoid. Local residents submitted photographic evidence of heavy traffic congestion on the A272 (HHRR) section which was ignored by the Case Officer. The District Plan seeks the opposite in paragraph 2.9 and notwithstanding that the Site Allocations DPD Sustainability Appraisal 11 – Transport, which reads "None of the site options on their own are likely to contribute to negative impacts on the highways network. In-combination modelling of the package of preferred option sites will be tested as part of the evidence supporting the Site Allocations DPD. Access arrangements for the Science and Technology Park, and further testing of highways capacity will be required and further work has been identified to test this prior to submission." there should a full appraisal of future trends in traffic growth, emissions of NO_2, CO_2, $PM_{2.5}$ and PM_{10} resulting from cumulative development currently under construction and from future allocations, in the form of a thorough risk assessment, which should be at the forefront of decision making when selecting and allocating sites for future development. The highway capacity should be tested based upon traffic counts where ever possible since previous modelling has been proved to be inadequate due mainly to input data under estimating when compared with reality as demonstrated earlier under TEMPRO. It is worth bearing in mind that traffic data presented by Phlorum suggests there was an average annual increase of 6.45% in AADT between May 2016 baseline and December 2018 baseline (say 2.5 years for best case scenario) for the local highways converging at the Fox Hill, Birch Hotel, and Sussex roundabouts (see Addendum).
A second issue regarding sustainability are future energy supplies which are forecast to be insufficient to meet demand when the wind is not blowing and the sun is not shining. One major energy supplier is seeking permission from Ofgem to be able turn off via smart meters appliances remotely in order to ration electricity such as heat pumps and electric vehicle chargers. If they fail to get that permission and demand exceeds supply then everyone, regardless of whether they have a smart meter or not, will be subjected at some point, to power disruption especially during winter. It would be highly irresponsible for any local authority to pursue a building programme without reassurance that power supplies will be adequate at least up until 2031.

Unless the issues relating to air quality and traffic growth forecasts are addressed and corrected MSDC are in danger of sabotaging their own District Plan strategies and policies, specifically with regard DP21 and DP29, due in part from their lackadaisical approach to ensuring that supporting documentation in connection with planning applications are both credible and fit for purpose. There is now a compelling argument for a full risk assessment to be undertaken, covering the next plan site allocation period, in view of the substantial updates to Road Traffic Forecasts 2018 and NTEM 2018, in order to ensure that the aged highway infrastructure can sustain the volume of traffic forecast for annual increases together with the additional increase generated from cumulative development including employment and science and technology parks. For developments based upon TEMPRO-2015 modelling traffic growth rates will now have increased due to the Trip End Model being updated in 2018. Local authorities are obliged to improve air quality and ensure that the objective will not be exceeded. Despite having been assured by the Chief Executive that MSDC take air quality very seriously I still remain sceptical due to the poor oversight and due diligence of a Planning Department which is perceived to be focused on the Council's policy of meeting housing targets. By all means plan for the future responsibly and transparently by ensuring that all other relevant District Plan policies are complied with and that the outcome is not detrimental to the existing community.

Addendum

Change in traffic growth between 2016 and 2018

Location	2018	2016	Change %	Annual %
Fox Hill (S)	14047	12131	15.79	6.32
Hurstwood Lane (S)	2727	2471	10.36	4.14
Fox Hill (N)	11842	10111	17.12	6.85
Fox Hill (N-j)	12415	10649	16.58	6.63

Rocky Lane	16716	13696	22.05	8.82
Wivesfield Road	16648	13789	20.73	8.29
A272	10086	8512	18.49	7.40
Hurstwood Lane N	2761	2502	10.35	4.14
B2272	16559	14310	15.72	6.29
Lewes Road	13472	11808	14.09	5.64
Average %			16.13	6.45

Annualisation for MSAQ28

Site	Am	Pm	Ratio Am/Pm
MSAQ5	32.575	30.911	1.053828560
MSAQ9	9.817	9.089	1.080075697
MSAQ26	25.725	24.200	1.063016529
MSAQ27	24.782	24.322	1.018896317
Average Ra			1.053954276

Annualisation proceeedure, example

Background Site	Annual mean 2015 (Am)	Period Mean 2015 (Pm)	Ratio (Am/Pm)
A	28.6	29.7	0.963
B	22.0	22.8	0.965
C	26.9	28.9	0.931
D	23.7	25.9	0.915
Average (Ra)			0.944

It has only been possible to carry out a monitoring survey at site for six months between July and December 2015. The measured mean concentration M for this period is 30.2µg/m3 . How can this be used to estimate the annual mean for this location? Identify two to four nearby, long-term, continuous monitoring sites, ideally those forming part of the national network. The data capture for each of these sites should ideally be at least 85%. These sites should be background (Urban Background, Suburban or Rural) sites to avoid any very local effects that may occur at Urban Centre, Roadside or Kerbside sites, and should, wherever possible lie within a radius of about 50 miles. If no background sites are available, and the site to be annualised is itself a Urban Centre, Roadside or Kerbside site, then it is permissible to annualise using roadside or kerbside sites rather than background sites, though this should be clearly stated in the annual report. Obtain the annual means, Am, for the calendar year for these sites. Work out the period means, Pm, for the period of interest, in this case July to December 2015. Calculate the ratio, R, of the annual mean to the period mean (Am/Pm) for each of the sites. Calculate the average of these ratios, Ra. This is then the annualisation factor. Multiply the measured period mean concentration M by this annualisation factor Ra to give the estimate of the annual mean for 2015. For this example the best estimate of the annual mean for site S in 2015 will be $M \times Ra = 30.2 \times 0.944 = 28.5 \mu g/m^3$