STRATEGIC PLANNING AND INFRASTRUCTURE COMMITTEE MEETING

Date: Tuesday 22 September 2020
Time: 6.30 pm
Venue: Remote Meeting - The public proceedings of the meeting will be broadcast live and recorded for playback on the Maidstone Borough Council website.

Membership:

Councillors D Burton (Chairman), Clark, English, Garten, Mrs Grigg (Vice-Chairman), McKay, Munford, Parfitt-Reid and Spooner

The Chairman will assume that all Members will read the reports before attending the meeting. Officers are asked to assume the same when introducing reports.

AMENDED AGENDA Page No.

1. Apologies for Absence
2. Notification of Substitute Members
3. Urgent Items
4. Notification of Visiting Members
5. Disclosures by Members and Officers
6. Disclosures of Lobbying
7. To consider whether any items should be taken in private because of the possible disclosure of exempt information.
8. Minutes of the Meeting Held on 8 September 2020 - To follow
9. Presentation of Petitions (if any)
10. Question and Answer Session for Members of the Public
11. Questions from Members to the Chairman (if any)
12. Committee Work Programme
13. Reports of Outside Bodies

Issued on 18 September 2020 **Continued Over/:**

Alison Broom

Alison Broom, Chief Executive

MAIDSTONE Borough Council

14. Council Response to the Government's Proposed Planning Reforms: 'Changes to the current planning system' and 'White Paper: Planning for the Future'

15. Local Development Scheme 2020-2022 (September 2020 edition) and Maidstone Statement of Community Involvement September 2020

16. Report on the Local Plan Review Evidence Base

17. **Urgent Update : Item 16 - Report on the Local Plan Review Evidence Base** **2259 - 2311**

INFORMATION FOR THE PUBLIC

In order to ask a question at this remote meeting, please call **01622 602899** or email **committee@maidstone.gov.uk** by 5 p.m. one clear working day before the meeting (i.e. by 5 p.m. on Friday 18 September 2020). You will need to provide the full text in writing.

If your question is accepted, you will be provided with instructions as to how you can access the meeting.

In order to submit a written statement in relation to an item on the agenda, please call **01622 602899** or email **committee@maidstone.gov.uk** by 5 p.m. one clear working day before the meeting (i.e. by 5 p.m. on Friday 18 September 2020). You will need to tell us which agenda item you wish to comment on.

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Strategic Planning and Infrastructure Committee

22nd September 2020

Urgent Update

Agenda Item 16

Report on the Local Plan Review Evidence Base

This urgent update provides information to the committee in respect of item 16 - Report on the Local Plan Review Evidence Base. The committee are informed that:

- The Council is now in receipt of the completed Transport Modelling Report and Appendices which had previously been included in draft form.
- KCC have undertaken an initial review of the updated report and are satisfied that it does not result in any significant changes from the version that was initially published in Appendix 10.
- The completed report now includes Appendix B – Air Quality Assessment Technical Note.
- For clarity, KCC have produced a briefing note which outlines the additions and changes to the Transport Modelling Report.

This update therefore adds an addendum to Agenda Item 16 Appendix 10, to now include the KCC Briefing Note, along with the Air Quality Assessment Technical Note.

Maidstone Local Plan Review

Air Quality Assessment: Technical Note

August 2020

Kent County Council

Maidstone Local Plan Review

Project No:	BESP0016
Document Title:	Air Quality Assessment: Technical Note
Document No.:	1
Revision:	Final Issue
Date:	August 2020
Client Name:	Kent County Council
File Name:	Air Quality Assessment_Technical Note_ v1

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
1	Aug 2020	Final Issue	JW	ALS	HP	CH

Contents

1. Introduction

Jacobs were commissioned to undertake a review of relevant planning documents for Maidstone Borough Council (MBC) in relation to air quality, to understand the potential impacts of the Local Plan Review (LPR) i.e. developments in addition to those detailed in the current Adopted Local Plan, upon air quality.

The following documents and datasets have been reviewed and (where necessary) analysed to establish an understanding of the air quality baseline environment in Maidstone and potential air quality exceedance areas both within Maidstone and in the surrounding area:

Baseline Environment

- Department for Environment, Food and Rural Affairs (Defra) air quality monitoring data;
- Maidstone Annual Status Report (ASR) 2020;
- Defra Pollution Climate Mapping (PCM) data;
- Local Air Quality Management Areas (AQMAs);
- Designated Sites; and
- Defra background air quality mapping data.

Maidstone Planning Documentation

- 2017 Adopted Local Plan;
- Low Emission Strategy;
- Infrastructure Delivery Plan (IDP); and
- Air Quality Planning Guidance.

The review of the above information has been used to provide the likely areas which have existing, or the potential to have, air quality issues, and a general background to the existing planned actions that could impact upon future air quality.

2. Local Planning Document Review

The relevant local planning documentation has been obtained and reviewed with regard to air quality, and the potential for additional housing development sites (and their impact). A summary of the review is provided.

2.1 Adopted Local Plan 2017

The Adopted Local Plan sets the framework for development in the borough through to 2031. Whilst the Local Plan includes the need for housing developments, and a number of individual properties, the actual figure is now required to be higher due to additional housing development need since the Local Plan has been adopted.

2.1.1 Local Plan Spatial Portrait

The plan has a focus for new development in the following locations (as shown in

Figure 1 and **Figure 2**):

- Principally within the Maidstone urban area, at the strategic development locations at the edge of town, and at junctions 7 and 8 of the M20 motorway;
- To a lesser extent at the five rural service centres of Harrietsham, Headcorn, Lenham, Marden and Staplehurst consistent with their range of services and role; and
- Limited development at the five larger villages of Boughton Monchelsea, Coxheath, Eyhorne Street (Hollingbourne), Sutton Valence and Yalding, where appropriate.

Figure 1: Air Quality Baseline (District Wide)

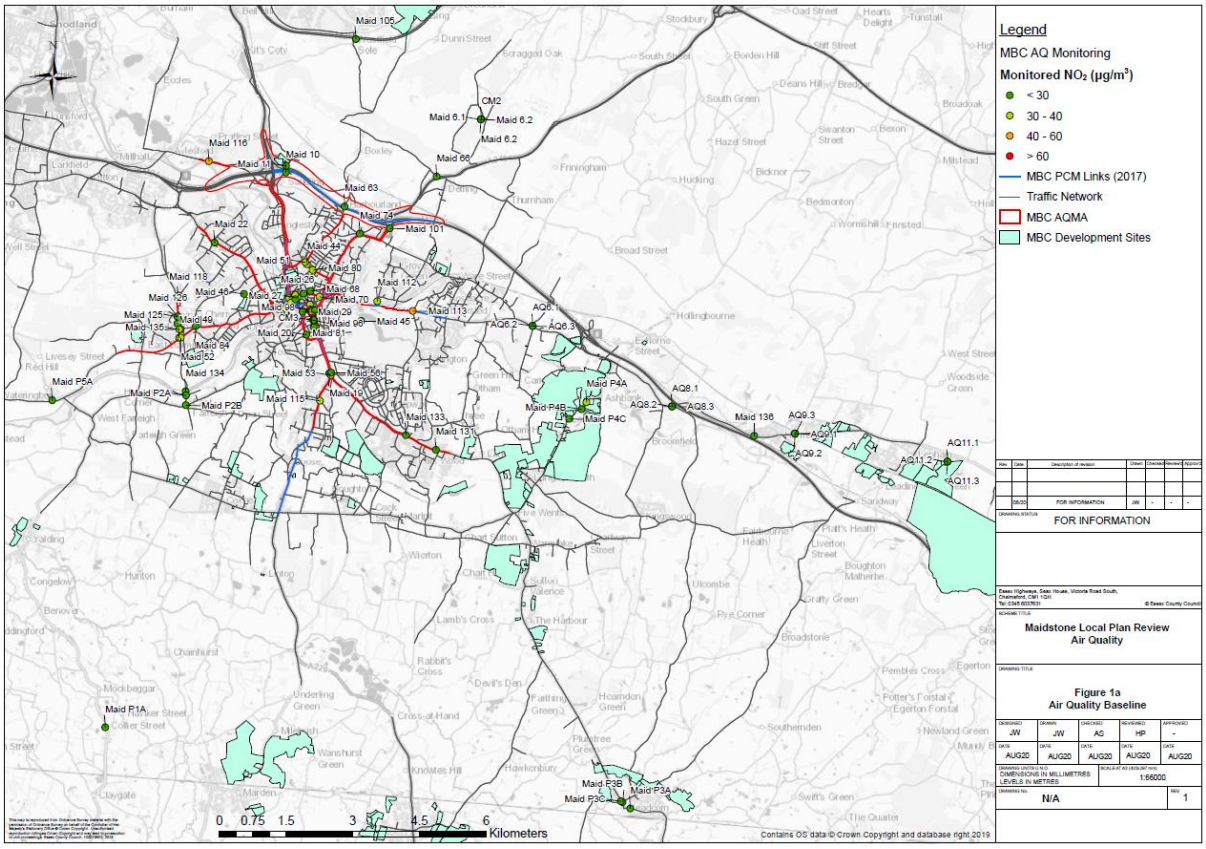
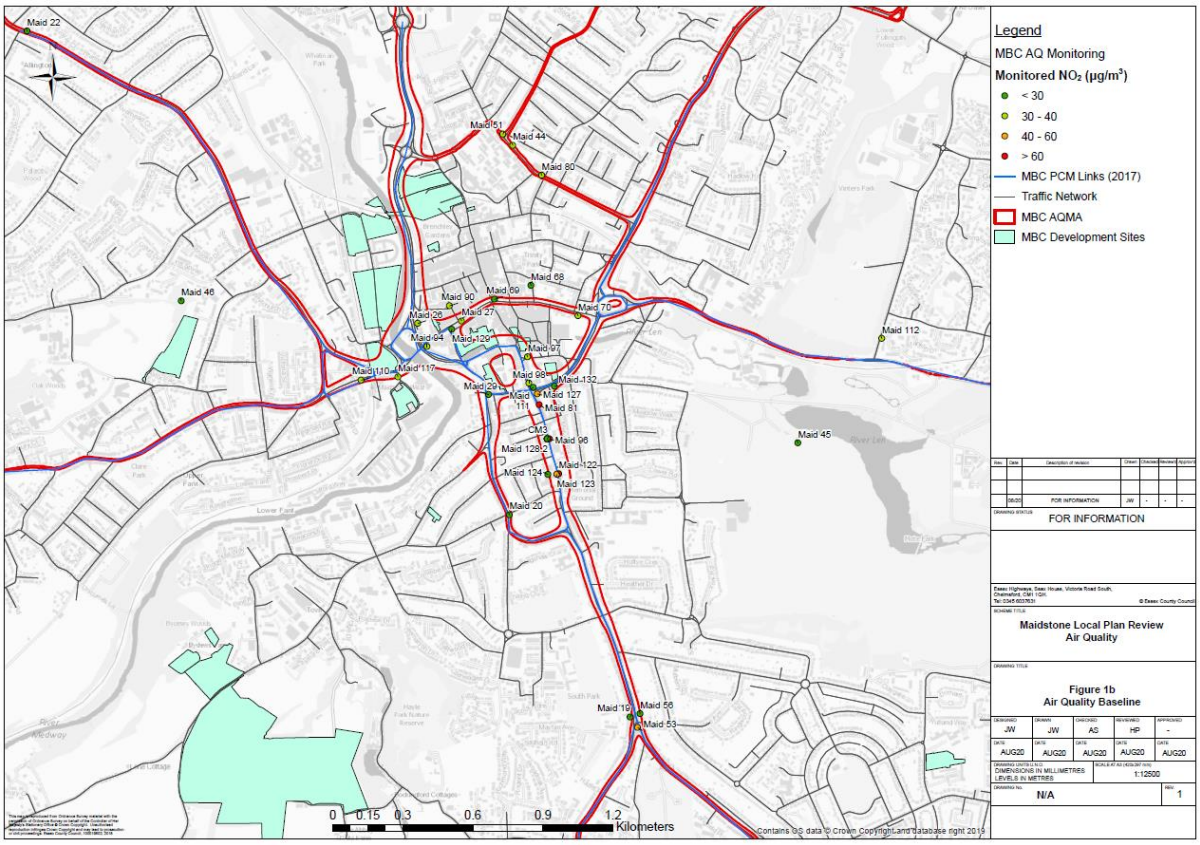


Figure 2: Air Quality Baseline (Town Centre)



The Adopted Local Plan details various housing growth opportunities that are within the current AQMA. These include:

- Maidstone East > 83 residential units from 2025;
- Maidstone East Station > 54 residential units from 2025;
- Maidstone West > 130 residential units from 2033 (fully within AQMA);
- 34-35 High Street > 3 residential units by 2032 (fully within AQMA);
- Invicta Park > large scale residential housing – up against the AQMA boundary with main access route within AQMA (A229);
- Rochester Meadhow / Land at Willow Farm > within AQMA boundary; and
- Land West of North Street > 182 residential units > Main access route to the site is through the AQMA.

The plan has been reviewed in relation to the adopted policies regarding air quality, housing and transport, and how these support the other planning documentation (such as the IDP, Low Emission Strategy and Air Quality Planning Guidance). **Table 1** provides a summary of the Adopted Plan Housing and Transport policies of note:

Table 1: MBC Adopted Local Plan - Notable Housing and Transport Policies

Policy	Details
SP23 (Sustainable Transport)	Details how MBC and its partners will ensure the transport network can support the projected growth, deliver modal shift through enhancing public transport and continued Park and Ride facilities, improve Highway capacity at key locations and junctions, and "*address the air quality impact of transport*". The policy refers to the IDP. However, the policy makes no reference to low emission vehicles, or electric vehicle charging points. The policy also does not detail how the air quality impacts might be addressed.
H1 (Housing Site Allocations)	The policy details how site allocations were submitted by landowners, developers and the public. Suitable sites went through an appraisal process (and site visits) covering topography, conditions and surrounding land uses, landscape, ecology, ancient woodland, heritage, archaeology, and agricultural land loss, and impact on the existing residential amenity. Site conditions can constrain development or require mitigation, so the appraisal looked at the impact of air quality, noise, land contamination and flooding. However, there is no mention of whether air quality was a specific consideration. Whilst allocations listed total 8409 new homes, the number required is likely to be higher, and it is not clear where the additional housing is allocated. The wording of the policy itself does not mention air quality (ecology and transport assessment are mentioned however).
H2 (Broad locations for Housing Growth)	The policy details Invicta Park as one of the potential development areas. This is 500 m from the existing AQMA (A229). The site is due for release in 2027, with a minimum of 500 dwellings (capacity for 1,300). It looks likely that the A229 (AQMA) would be the main access route to the development, which has potential to increase pollutant concentrations. The policy notes that council is minded to encourage earlier delivery of this site. Maidstone Town Centre is ear marked for delivering 940 additional homes through the plan– however, this could be in areas where transport links to these new developments are through the existing AQMAs.
ID1 (Infrastructure Delivery)	The policy notes that there is concern that future growth in the area will intensify already congested road networks, and that a co-ordinated effort is required to ensure essential infrastructure accompanies new development "*at all times*". The policy notes that where a development requires infrastructure above the existing provision, developers are expected to provide or contribute to the additional requirement through the delivery of S106 agreements, and a plan to implement a

Policy	Details
	Community Infrastructure Levy to help fund strategic infrastructure to support sustainable growth.

2.1.2 Air Quality

The Adopted Local Plan will support measures identified in the Air Quality Action Plan (AQAP) to deliver improvement of air quality in the urban area, to reduce pollutant levels below Air Quality Objectives (AQOs).

Development in or affecting AQMAs should (where necessary) incorporate mitigation measures which are specific and proportionate to the likely impact. E.g. green infrastructure to absorb dust, encouraging modes of transport with a low impact on air quality, funding measures identified in the AQAP and low emissions strategies, design to offset the impact of the air quality arising from the new development.

Policy DM6 – Air Quality

1) Development proposals with potential negative air quality impacts upon areas of exceedance (under Local Air Quality Management (LAQM)) would need to submit an Air Quality Impact Assessment (AQIA) and demonstrate how air quality impacts will be mitigated to acceptable levels.
2) Development proposals with potential to have significant negative effect on AQMAs would need to submit an AQIA and demonstrate how air quality impacts would be mitigated to acceptable levels (even where no negative impacts are identified in exceedance areas).
3) Development proposals that don't fall into the first two categories above, and have the potential for negative air quality impacts within an AQMA, will not require an AQIA, but should demonstrate how air quality impacts would be minimised.
4) Development proposals with potential for negative air quality impacts outside of AQMAs will submit an AQIA to consider the impacts, and demonstrate how air quality impacts will be mitigated to acceptable levels.

MBC aim to prepare an Air Quality Development Plan Document taking account of the AQMA Action Plan, the Low Emission Strategy (Section 2.3) and air quality national requirements. It is understood that this is the Air Quality Planning Guidance subsequently published (Section 2.2).

The text around Policy DM6 notes that the policy will support the Infrastructure Transport Strategy and the AQAP by *"locating development close to transport infrastructure and community services and facilities to minimise trip generation, installing charging points to facilitate increased in electric vehicle ownership, requiring developers to include soft measures in support of the AQAP (such as landscaping and tree planting), and contribute to funding measures from AQAP and Low Emission Strategy, designed to offset the air quality impact of new development"*.

This supports the ideas recommended below regarding planning application conditions for housing growth areas.

2.2 Air Quality Planning Guidance

The Air Quality Planning guidance document was published after the Adopted Local Plan. It is assumed that this is the 'Air Quality Development Plan' as detailed in the Local Plan.

Key aspects of the guidance are clarified as being as follows:

- Setting out a process for assessing and addressing air quality impacts;
- Quantifies the scale of mitigation measures needed as part of the AQIA process;
- Supports Local Plan Policy DM6 and SP23 Sustainable Transport; and

- Emphasises pre-application advice, highlighting where development could have significant air quality impacts.

The guidance provides developers with various checklists (including a Screening checklist, and an Air Quality and Emission mitigation assessment checklist).

Section 3 of the Guidance provides standard mitigation requirements for certain types of development, including "*development within the AQMA which will create new dwellings and/or create additional traffic movements in the AQMA*". Developers are also required to minimise dust emissions through Institute of Air Quality Management (IAQM) measures. Mitigation requirements are as follows:

- **Residential** – One electric vehicle charging point (best available technology at time of planning approval) per dwelling, with dedicated parking or one charging point per ten spaces (unallocated parking);
- **Commercial/Retail/Industrial** – 10 % of parking spaces to be provided with electric vehicle charging points which may be phased with 5 % initial provision and the remainder at an agreed trigger level; and
- **Demolition/Construction** – mitigation in accordance with IAQM guidance on the assessment of dust from demolition and construction.

2.3 Low Emission Strategy

The LAQM ASR document references the Low Emission Strategy as being adopted in 2017, in which it incorporated an updated AQAP. This included a review of air quality monitoring sites in the borough. The strategy also notes:

- The predominant source of elevated levels of air pollution is road transport vehicles, for both NO_X and particulate matter, which have the potential for serious health effects; and
- The Low Emission Strategy and Action Plan replaces the Maidstone Carbon Management Plan which ended in 2015.

2.3.1 Aims of the Low Emission Strategy

The aims of the Low Emissions Strategy are noted as follows:

- Achieve a higher standard of air quality across Maidstone;
- Assist MBC in complying with relevant air quality legislation;
- Embed an innovative approach to vehicle emission reduction through integrated policy development;
- Improve emissions of the vehicle fleet in Maidstone through promotion and uptake of low/ultra-low emission vehicles; and
- Reduce emissions through an integrated approach covering all appropriate municipal policy areas.

2.3.2 Low Emission Strategy Actions (Themed)

The review of the Low Emission Strategy highlighted the key actions in line with the strategy aims. These actions have been grouped into themes, and are discussed below.

Theme 1: Transport

- The theme complements other council policies and strategies such as the Adopted Local Plan, Local Transport Plan (LTP), Integrated Transport Strategy (ITS) and the IDP;
- Previously, AQAPs have dealt with congestion issues, which MBC plan to continue to do. The Low Emission Strategy does not aim to duplicate this, but the emphasis is on improving the vehicle emissions themselves;
- The level of emissions is mainly dependent upon the emission technology (Euro classes). MBC want to investigate improvements to the bus fleet in the borough. A bus emissions standard may be developed in

consultation with the bus operators and an emissions standard for taxis may also be considered as part of the next review of taxi policy;

- The council aim to consider improvements to HGV/LGV emissions in fleets using the borough's road network (i.e. delivery time restrictions), as well as the consideration of fuel savings; and
- MBC are looking to consider the promotion of the uptake of electric vehicles (e.g. charging points in new developments, parking incentives for Low Emission Strategy vehicles etc).

Theme 2: Planning

- MBC planning policy will aim to sustain air quality improvements (i.e. discouraging high emission vehicles and encouraging an increase in low emission vehicles and infrastructure);
- The National Planning Policy Guidance (NPPG) states that where sustained compliance with EU Limit Values is prevented, a local authority is to "*consider whether planning permission should be refused*";
- Developers should be required to use mitigation measures to offset the environmental damage caused by their developments. These measures should be incorporated into scheme design; and
- MBC proposes to implement the planning guidance developed for the Kent and Medway Air Quality Partnership (in the short term) and intends to develop its own Development Plan Document (linked to the Adopted Local Plan). This is an important link between planning and air quality which is recognised in the strategy.

Theme 3: Procurement

- The strategy provides an opportunity to review sustainable procurement practices at borough and County level, and identify measures that could benefit both air quality and carbon reduction targets across the following three areas:
- **Contracts relating to goods and services provided to the council:** Public sector organisations are required to look for best value, rather than lowest cost, when making decisions. Local sourcing offers the potential for lighter goods/low emission vehicles to be used in delivery, and helping local suppliers develop emission strategies;
- **Procurement of vehicles by the council:** The Cleaner Road Transport Vehicles Regulations 2011 requires public sector organisations to consider the energy use/environmental impact of vehicles they buy or lease (whole life cost consideration). Changing MBC pool car fleet to electric or hybrid would also improve the council's profile; and
- **Partnerships:** The council should examine the cost savings through partnerships with both public sector organisations and the private sector. Maidstone's Commissioning and Procurement Strategy to be reviewed as part of the Low Emission Strategy.

Theme 4: Carbon Management

- MBC produced a Carbon Management Plan with a CO_2 emissions reduction aim of 20 % by 2015. The Low Emission Strategy doesn't detail whether this aim was met. The Carbon Management Plan comprised 44 actions. The Plan is now complete and replaced by the strategy; and
- Carbon management will form part of the Low Emission Strategy (instead of being a standalone). MBC will ensure that its buildings are performing efficiently (e.g. LED lighting, PV panels).

Theme 5: Public Health

- The key driver behind the Low Emission Strategy is that air pollution is known to cause (and worsen) existing health conditions and increase hospital admissions and premature deaths;
- The Low Emission Strategy will complement the work of the 'Healthy Living Team', promoting active travel and public transport, including the Walking and Cycling Strategy. This may become a key action as a result of the Covid-19 pandemic, especially if the government focuses upon public health;

- The Low Emission Strategy recognises that air quality issues often contribute to health inequality across the borough and so aims to support the work of West Kent Clinical Commissioning Group and the Maidstone Health Inequalities Action Plan; and
- Consideration is given to a scheme of rewarding behaviours that support the Low Emission Strategy (e.g. certification of business, premises or vehicles, similar to National Food Hygiene Rating Scheme).

2.3.3 Low Emission Strategy Review

- **Monitoring and Review** – Action plan progress will be reported to Defra annually (the Low Emission Strategy forms the basis for the AQAP). The Low Emission Strategy will be reviewed in 2021 (in line with the Local Plan); and
- **Areas for Future Action** – Potential areas for future consideration including agriculture and biomass energy generation (however, MBC are awaiting specific guidance from Defra).

2.4 Infrastructure Delivery Plan

The IDP links to the Adopted Local Plan, and in parts, the Low Emissions Strategy.

Whilst the IDP was not in the original proposal for Task D, it was felt necessary to review the document, as the Adopted Local Plan focuses on key housing growth areas in and around Maidstone centre. But in order to align with the Low Emissions Strategy and AQAP, this growth needs to be considered in line with transport infrastructure provisions that will be needed to support these developments, and to encourage sustainable travel.

If planned housing growth (both within and outside of the Adopted Local Plan) is not aligned with transport infrastructure improvements, there is potential for air quality concentrations within the already declared AQMA to be affected, and congestion issues could increase. These issues would go against the aims of the current action plans and policies, and may impact MBCs reputation and profile.

The IDP notes that key infrastructure projects are classed under three types, Critical (where the need for the scheme is critical to the delivery of planned growth), Essential, and Desirable. The schemes are also focused upon the risk that they may not be delivered.

From the review of the IDP, and focusing upon Schedule A (Highways & Transportation), the following points are noted:

- Plans for additional car parking for Maidstone East train station (Measure HTTT13). Whilst this is noted to be required to encourage 'sustainable travel' by train, the plans aim to include at least 550 additional car parking spaces into or through the AQMA area. This doesn't seem to align with the Low Emissions Strategy, or aims to reduce congestion, emissions or traffic flows in Maidstone Town Centre;
- A bypass section of the A229 is discussed, with funding already secured, and construction due to take place in 2016. However, it is unclear whether this has taken place, and is not detailed further;
- Bus priority measures planned to be put in place to help facilitate the H1(5) and H1(6) housing planning consents, in the area of the A274;
- Invicta Barracks, a site which is planned for large scale housing redevelopment. The IDP notes that revised signalisation measures on the A229 Royal Engineers Roundabout would 'mitigate impacts of development'. Whilst this is reflected in the IDP, it notes that further work is required to support delivery. The scale of housing at this location could add significant numbers of vehicles (and therefore emissions) on to the local road network, including the A229 (which is likely to be the main access route) – which is already within the AQMA boundary due to exceedances in annual mean NO_2 concentrations from road traffic. Whilst the area of the Barracks provides a potential development site, information is vague as to whether development conditions and supporting infrastructure changes would take place. As it stands, the development of this site doesn't align with the aims and actions of the AQAP or Low Emissions Strategy; and

- More rural/out of town centre areas are also mentioned in the IDP, including Lenham, which it states can accommodate the planned growth in the Local Plan without the need for infrastructure works to support this. Coxheath is also mentioned, including the need for improved bus services (although this isn't planned in the short term).

2.5 Planning Documentation Summary

The review of the MBC planning documentation has been undertaken. MBC have aligned the various current plans and policies (e.g. Adopted Local Plan, ASR, Low Emission Strategy and IDP). This alignment should allow for combined aims and objectives in delivery of the planned actions.

However, it is noted that some of the documentation is at a high level. Each development site (Adopted Local Plan or additional development site) needs to be considered against whether it supports or hinders the planned air quality actions within these documents, with relevant and appropriate air quality assessments in place.

With the demand for improvements to air quality, but equally good transport links and accessibility, the potential low emission recommendations (e.g. electric vehicle charging points, improvements to public transport etc.) need to become best practice going forward if the action plans are to be realised. As well as the required infrastructure that would be necessary, behavioural change from Maidstone residents will also be required in order for this to be achieved.

It should also be noted that at the time of writing, the impact of the Covid-19 pandemic may need to be considered in the planning of future developments. The changes to everyday life during the crisis have meant that further considerations may need to be incorporated into future housing development opportunities with regard to air quality, including:

- The need for comprehensive and reliable broadband at housing developments – in order to support home working in the future (and therefore a reduction in traffic on the road network);
- The potential need for transport infrastructure to be flexible to the needs of different groups in society (i.e. vulnerable groups, key workers etc), and allow for physical distancing where needed;
- The need to accommodate for increased numbers of residents working from home, and a reduced requirement for office space within the town centre, together with a reduction in required capacity for travel into the town centre (i.e. traffic congestion, train and bus capacity). This may result in additional office space becoming vacant to be considered for redevelopment into housing. New housing developments may also need to ensure space for home working;
- The pandemic has seen a drop in air quality pollutant concentrations as a result of a significant reduction in vehicle usage. These improvements in air quality should be used to educate and inform, and encourage the shift to other forms of transport and low emission technology in order to retain these improvements; and
- The Covid-19 lockdown restrictions have also helped to increase the interest in walking and cycling in the population. The positive impacts of this should be utilised to educate and promote walking and cycling strategies going forward, and be used to inform walking and cycling routes within and around new developments. As the government is now focusing on public health, this may become a key focus area.

2.6 Matrix of Local Plan Housing Growth

Using the information provided within GIS, which included Adopted Local Plan development sites, additional development sites, MBC monitoring data, PCM data and AQMA boundaries, the potential development sites have been reviewed and considered against air quality information to provide a review matrix.

The high-level potential impacts of the developments are considered, together with potential recommendations that could be implemented in line with the Action Plan and Low Emission Strategy actions as already discussed.

The matrix is provided in **Appendix A**. Housing Area Air Quality Matrix.

2.7 MBC Planning Policy Review Summary

The review of MBC planning and air quality documentation indicates detailed action plans for the control, mitigation and improvement of air quality within the borough, with a strong emphasis on the encouragement of both low emission vehicles and technology, as well as modal shift to public transport into the future. These aims and action plans are subsequently supported by the understanding of infrastructure improvement needs in order to deliver these aims.

Whilst the action plans and policies support air quality within the borough, the addition of multiple housing developments, over and above those detailed in the published Local Plan needs to be considered in context of the planning actions and objectives.

There is the opportunity for MBC to implement robust and sustainable planning conditions and requirements that support air quality, and encourage changes to more sustainable transport options and behaviours, helping to elevate these measures to become best practise in the future.

3. Air Quality Screening Exercise

3.1 Introduction

In addition to the review of the air quality planning documentation review, Jacobs have also undertaken a quantitative screening exercise to investigate the potential for air quality impacts of the estimated vehicle traffic associated with additional housing developments (outside of those detailed in the Adopted Local Plan), and whether such developments would have an influence on MBC successfully delivering the planned actions within the Adopted Local Plan, AQAP, and Low Emissions Strategy.

This section provides the air quality screening exercise assessment, together with an assessment of the current available baseline air quality conditions in the borough. The screening exercise results are then compared to the MBC action plans and planning policy, as provided in Section 2.

3.2 Methodology

3.2.1 Baseline Conditions

A review of existing air quality conditions in the borough has been undertaken through a review of the following resources:

- MBC 2020 ASR (MBC, 2020);
- Defra Background map concentrations (Defra, 2019); and
- Defra PCM projections (Defra, 2020).

3.2.2 Air Quality Screening Exercise

The air quality screening exercise has been undertaken in accordance with DMRB LA 105 air quality guidance. The guidance sets out screening assessment criteria, whereby the change in traffic data (a comparison between traffic data where a proposed scheme is in place (Do Something) and a Do Minimum scenario (without the proposed scheme in place). Any roads that meet these criteria are considered 'Affected' and form part of the 'Affected Road Network' (ARN).

DMRB LA 105 was recently published (2019) and supersedes the previous air quality guidance HA 207/07. The screening criteria remain the same between the two sets of guidance, with the exception of speeds, with speed-banding criteria now forming part of DMRB LA 105, which is largely used for Highways England assessments. The HA207/07 speed criteria are listed here for completeness.

The DMRB air quality screening criteria is as follows:

- Daily traffic flows would change by 1,000 Annual Average Daily Traffic (AADT) or more; or
- Heavy Duty Vehicle (HDV) flows would increase by 200 AADT or more; or
- The AM peak hour speed would increase by 20 km/hr or more; or
- The PM peak hour speed would increase by 20km/hr or more; or
- The daily average speed would increase by 10 km/hr or more; or
- A change in alignment of more than 5 m.

For the purposes of the assessment, the traffic data provided for the three LPR scenarios has been compared against the change in daily traffic flow (AADT) criterion above. Discussions with the traffic modellers confirmed that as the Do-Something is with additional housing developments there is unlikely to be any real increase in HGV's, so in line with the traffic modellers advice, the increase in HGVs was assumed to be zero. The main DMRB criteria that affect screening are the changes in AADT flow, so while the other criteria were not available for this screening exercise, the extent of the affected roads are expected to be broadly as the results indicate. The results of the screening exercise are discussed in Section 3.4.

The resulting road links that meet the screening criteria were then analysed spatially using GIS to determine their proximity to AQMAs, PCM links, human and ecological receptors.

It should be noted that the air quality screening exercise undertaken provides a high-level indication of the potential for air quality impacts, and does not provide a detailed assessment of specific locations of the air quality impact or significance, nor concentrations.

3.2.3 Traffic Data Scenarios

The traffic data used in the screening exercise was provided by Jacobs, and was the result of transport modelling and testing of the potential additional housing development locations in the borough, over and above what is discussed in the current Adopted Local Plan.

This testing was divided into three separate development scenarios. In order to determine whether each scenario could have potential air quality impacts, the following traffic data was utilised:

- Do Minimum scenario (without each of the three separate development scenarios in place) – this dataset included the traffic associated with:
  - The current Adopted Local Plan housing growth;
  - Committed developments; and
  - Background factoring (for future year projection).
- Do Something scenario (with each of the three separate development scenarios in place) – this comprised the same data as Do Minimum, together with traffic data associated with different combinations of development site areas in the borough.

Three separate Do Something scenario datasets were provided. **Table 2** shows the combinations of development sites included in each scenario.

Table 2: Do Something Traffic Scenarios

Traffic Scenario ID	Maidstone Urban Area	Countryside	Rural Service Centres and Larger Villages	Garden Settlements
RA1	Yes	Yes	Yes	
RA1a			Yes	Yes
RA2a	Yes		Yes*	Yes

*The rural service centres and larger villages data provided in scenario RA2a was approximately 1/3 of the data provided for RA1 and RA1a.

3.3 Baseline Conditions

A range of readily available desk-study information regarding background/baseline air quality information has been obtained and reviewed as part of this assessment. This is discussed below.

Local Air Quality Management

Under the LAQM process, local authorities have an obligation to review and assess air quality in their areas to determine whether the AQOs are likely to be achieved.

Each local authority must publish an annual report of their data as an ASR. The MBC 2020 ASR notes that the main source of air pollution in the borough are traffic emissions from major roads, notably the M2, M20, A20, A229, A249, A26 and A274.

Air Quality Management Areas

Under the LAQM process, local authorities are required to designate an AQMA upon evidence of prolonged exceedance of AQOs in their administrative area. Following declaring an AQMA, the local authority must put in

place an AQAP to encourage reduction in air quality concentrations to improve air quality within the declared AQMA.

The MBC ASR report confirms that the AQMA within Maidstone was amended following detailed modelling in 2017, reducing the boundary to key transport routes in the town centre (as shown in **Figure 3**) . The amended AQMA came into force on 1st January 2018, and uses the 36 µg/m3 modelling contour as the boundary of the area.

The new boundary is considerably smaller than the original AQMA which encompassed the entire Maidstone conurbation (as shown in **Figure 4**). The ASR further explains that in 2018, further modelling assessment work was undertaken (using 2017 base data), showing a further reduction in the area of exceedance (from the 2014 base data). This is shown below. However, this reduction has not led to any further revision of the AQMA so soon after the last amendment.

The AQMA in Maidstone encompasses the M20 to the north of Maidstone centre, the A229, the main routes in and around the town centre, and the A274 and A26. The AQMA is illustrated in

Figure 1.

Figure 3: Modelled Air Quality Contours in MBC (2017)

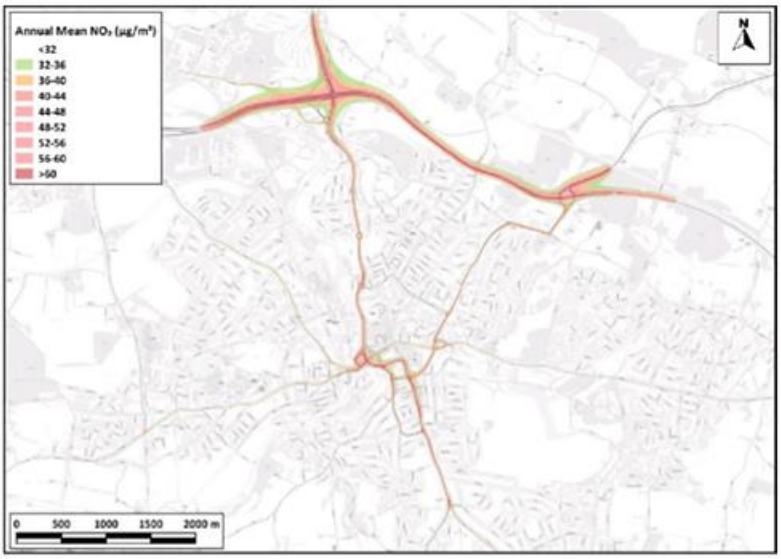
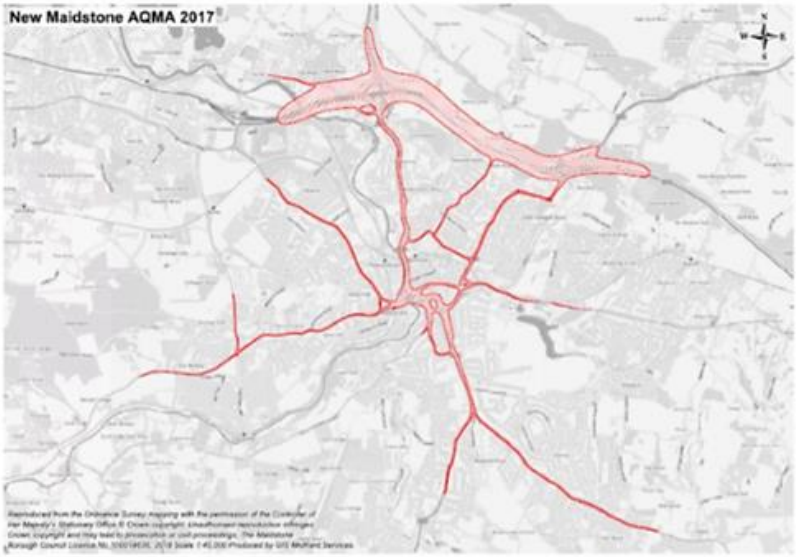


Figure 4: Map of Maidstone's New AQMA (2017)



Monitoring Sites

MBC undertook automatic (continuous) monitoring at two sites during 2019. In May 2018, a new monitoring station was installed in Upper Stone Street, measuring NO_2, PM_{10} and $PM_{2.5}$. As well as this, MBC undertook passive (diffusion tube) monitoring at 62 sites during 2019.

The MBC air quality monitoring results identified exceedances of the NO_2 annual mean AQO (40 µg/m^3) at eight non-automatic monitoring sites located within the AQMA, and one site outside the AQMA. These were located in Upper Stone Street and at the Wheatsheaf Junction. The ASR also notes that four monitoring locations showed results above 60 µg/m^3, all of which are located inside the AQMA, which indicates the potential for an exceedance of the 1-hour NO_2 objective. The ASR notes that Upper Stone Street, where all four aforementioned sites are located, is the main priority area to focus upon regarding air quality for MBC.

Appendix B of this document provides the MBC 2020 ASR monitoring data for reference. Monitoring locations are provided in

Figure 1 and **Figure 2**.

Air Quality Action Plan

As a result of the AQMA, the new AQAP has been based upon the principles and themes of the Low Emission Strategy, including adopting new Air Quality Planning Guidance, securing funding for a feasibility study into a Low Emission Zone for Maidstone, a review of procurement procedures, a review of Park and Ride provision, and raising public awareness of air quality issues and promoting good practise.

Defra PCM Data

The PCM model is a collection of models, used by Defra to fulfil part of the European Union (EU) Directive (2008/50/EC) requirements for the UK to report on the concentrations of pollutants in the atmosphere in terms of EU Limit Value compliance. The data are provided for the base year and every year up to 2030.

The 2017 base year projection dataset has been obtained and reviewed for links located within Maidstone (note that since the analysis has been undertaken a more up to date dataset has been released). A review of the dataset for NO_2 modelled concentrations (for 2020 current year, and 2030 future year (in line with the 2031 Adopted Local Plan) indicates that the modelled concentrations at all identified PCM links are within the relevant NO_2 EU Limit Value. This information is summarised in **Table 3**.

Table 3: PCM Link Data (Maidstone Area)

Area	NO_2 PCM link Concentrations (µg/m3)	
	2020	2030
M20 (north of Maidstone, within AQMA)	32.6 – 33.8	20.2 – 20.9
West Malling (west of Maidstone Town Centre)	26.6	16.5
Maidstone Town Centre (AQMA) (A249/A20/A229/A26)	15.9 – 34.7 (A229)	11.8 (A20) – 21.7 (A229)
A274 (southeast of town centre, within AQMA)	24.6	15.1
A229 (southwest of town centre, within AQMA)	18.8	11.5 – 17.6
NO^2 Annual Mean	40	

Human Receptors

Air quality sensitive receptors include residential properties and receptors used by the young, the elderly and other susceptible populations, such as schools and hospitals (DMRB LA 105). A preliminary desk assessment suggests that there are numerous potentially sensitive receptors within and around Maidstone centre. Along with numerous residential receptors, there are medical practices, schools and care homes.

To the north of Maidstone centre are a further number of schools and medical centres, such as St Pauls Infant Centre and North Borough Junior School along Hillary Road. Parallel to the M20, to the northwest of Maidstone are additional potential receptors too, including Aylesford School within 200 m of the motorway.

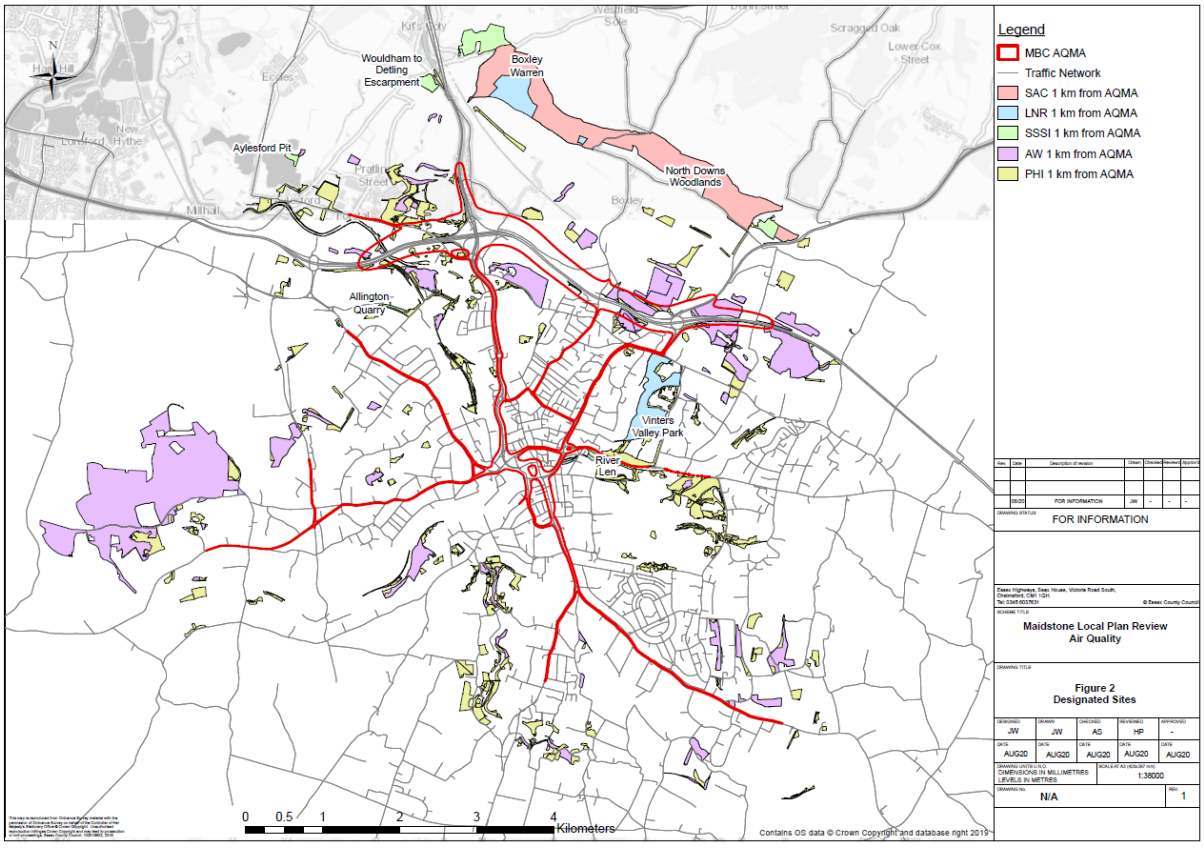
Designated Sites

A review of the available designated ecological sites in Maidstone and the surrounding area has been undertaken. Designated sites, and species within them have the potential to be affected by changes in air quality concentrations as a result of developments (i.e. increased traffic emissions). Selected key designated sites within 1 km of the Maidstone AQMA (Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) and Local Nature Reserves (LNR)), and located close to potential LPR development sites are summarised in **Table 4**, and are shown in **Figure 5**.

Table 4: Designated Sites Review (Maidstone Area) – Selected Sites

Site Name	Designation	Location
North Downs Woodland	SSSI/SAC	Located between the A229 and Sittingbourne Road, north of the M20, and has the potential to be affected by additional emissions from those roads and the M2, and the Binbury Park Garden Village development area.
Wouldham to Delting Escarpment	SSSI	Part of the North Downs Woodland SAC and located on A249, with the potential to be affected by additional traffic emissions from the same sources as above.
Aylesford Pit		Situated to the northwest of Maidstone, just under 1 km from the AQMA boundary.
Allington Quarry		Located adjacent to St. Lawrence Avenue to the northwest of Maidstone.
Vinters Valley Park	LNR	Located adjacent to the AQMA boundary.
Boxley Warren		Located adjacent 800 m north of AQMA boundary.
River Len		Located on the AQMA boundary, adjacent to Wat Tyler Way.

Figure 5: Designated Sites



A large quantity of additional local sites were identified within 1 km of the AQMA. 69 Ancient Woodlands were identified, of which 42 are unnamed, largely adjacent to the M20 and to the west of Maidstone. A further 191 Priority Habitat Inventory sites were identified, which are largely deciduous woodland from the National Forest Inventory, and located to the south of Maidstone.

The review of designated sites information did not identify any Ramsar, Nature Improvement Areas, or Special Protection Areas in the Maidstone area.

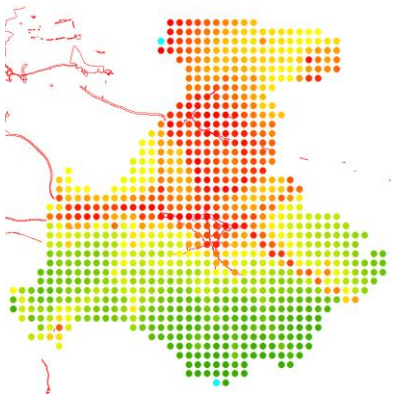
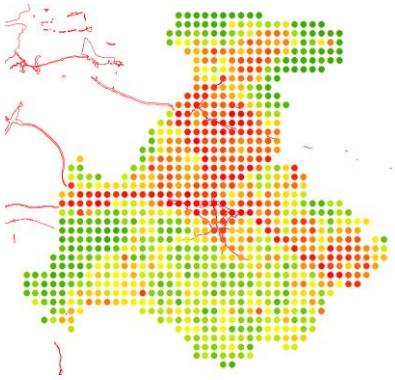
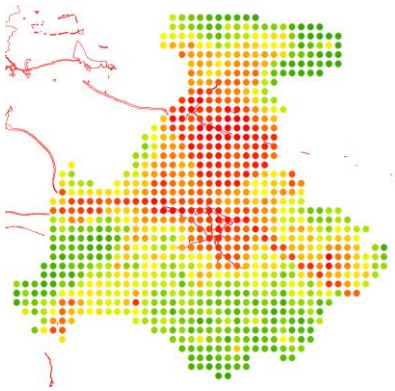
Defra Background Air Quality Mapping Data

Defra provide empirically-derived 1 km by 1 km air quality pollutant background concentration maps. These are accessed online based on 2017 base data, projecting concentrations forward to 2030.

For this task, NO_X, NO_2, PM_{10} and $PM_{2.5}$ data has been obtained and collated to allow the data to be shown in GIS. The data for 2020 has been obtained and collated, as shown in

Table 5.

Table 5: Defra Background Mapping Data (2020) (2017 Base Year)

Defra Background Mapping	Details
	▪ NO_2 for 2020 across the region illustrates that the motorways, and town centres of Maidstone, Rochester, Snodland, Chatham and Gillingham show the highest NO_2 concentrations. ▪ The colour scale has been used, but it should be noted that Red/Orange does not signify exceedances of the annual mean NO_2 AQO. ▪ The maximum concentration within the dataset is 22.92 µg/m^3, to the north (close to Gravesend), and the minimum concentration is 7.32 µg/m^3, at the south of the dataset. These locations are shown as blue highlighted dots in the figure. ▪ All other square concentrations are between 7.32 and 22.92 µg/m^3. Concentrations in the centre of Maidstone are approximately 16 µg/m^3.
	▪ PM_{10} for 2020 across the region illustrates that the motorways, and town centres of Maidstone, Rochester, Snodland, Chatham and Gillingham show the highest concentrations. ▪ The colour scale has been used, but it should be noted that Red/Orange does not signify exceedances of the annual mean PM_{10} AQO. ▪ The maximum concentration within the dataset is 18.20 µg/m^3, which is located on the M20 to the north of Maidstone Town Centre, and close to the AQMA boundary. The minimum PM_{10} concentration is 13.09 µg/m^3, at the north-east of the dataset (Wallend). No locations within the datasets reviewed identified exceedances of PM_{10} AQO (40 µg/m^3). ▪ Concentrations in the centre of Maidstone are approximately µg/m^3.
	▪ $PM_{2.5}$ for 2020 across the region illustrates that the motorways, and town centres of Maidstone, Rochester, Snodland, Chatham and Gillingham show the highest concentrations. ▪ The colour scale has been used, but it should be noted that Red/Orange does not signify exceedances of the annual mean $PM_{2.5}$ AQO. ▪ The maximum concentration within the dataset is 13.14 µg/m^3 in Chatham (north-east of Maidstone). The minimum $PM_{2.5}$ concentration is 8.91 µg/m^3, at the north-east of the dataset (Wallend). No locations within the datasets reviewed identified exceedances of $PM_{2.5}$ AQO (25 µg/m^3). ▪ Concentrations in the centre of Maidstone are approximately 11 µg/m^3.

Baseline Review

The latest ASR provides useful baseline information as to the current air quality situation within Maidstone. The data indicates that a good level of air quality monitoring is undertaken, and the air quality LAQM process has been aligned and linked to the Low Emission Strategy. By linking the documents and strategies together, there is a higher potential for successful implementation, and a reduced risk of overlap or duplication of work.

However, the ASR highlights the continued need for the AQMA, with exceedances of the NO_2 annual mean within the AQMA. Concentrations within Maidstone Town Centre remain high. Additional development within the town

centre would therefore have the potential to worsen pollutant concentrations within AQMA, rather than helping to reduce them. Additional housing development site locations therefore need to be taken into consideration in order to support the AQAP and Low Emission Strategy action plans.

The current background map concentrations are below the relevant AQOs, and as would be expected, concentrations are higher around the main road and motorway locations.

The PCM information indicates that projected modelled NO_2 data for 2020 and 2030 are not exceeding for those PCM links within and around the Maidstone AQMA where modelled concentrations are expected to be highest. Any potential development sites would need to assess whether the additional traffic emissions would result in potential exceedances against the PCM model.

The review also highlights the need for the consideration of designated sites within any future air quality assessment work, and liaison with ecologists to determine species locations, ensuring that development site impacts are assessed appropriately in line with DMRB guidance and other guidance.

3.4 Air Quality Screening Exercise

3.4.1 Screening Exercise Results

The scenario traffic data provided was used to determine the change in AADT traffic flow on each road link between Do Minimum and Do Something scenarios. The change in flow was then compared with the DMRB LA 105 screening criteria (i.e. a change of 1000 AADT). Those road links that 'met' the criteria were then classified as 'affected' and identified as the affected road network for that scenario (ARN). The results of the screening exercise for all three scenarios are shown in **Table 6**.

Table 6: Traffic Scenarios: Air Quality Screening Results

Local Plan Scenario	Number of Affected Traffic Links (ARN) (DS – DM)	
	> 1000 AADT	< - 1000 AADT
RA1	630	0
RA1a	616	0
RA2a	750	0

3.4.2 Scenario RA1

The results of the screening exercise indicate that there are 630 road links that meet the air quality criteria for scenario RA1. The road links (provided spatially in **Figure 6** and **Figure 7**) illustrate:

- The affected links encompass the Maidstone AQMA and extend around Maidstone along the M20, A20, A274, B2010 and B2163;
- The affected links further extend from the M26 in Dunton Green to west of Maidstone, along the M20 and reaching Ashford to the south-east;
- There are further affected links identified along the A229, M2 and A289 to the north of Maidstone, as well as the A2050 in Canterbury; and
- Using GIS datasets, 11 AQMAs were identified within 200m of the ARN for this scenario. These AQMAs should all be assessed.

Figure 6: Scenario RA1 Air Quality Affected Road Network (District Wide)

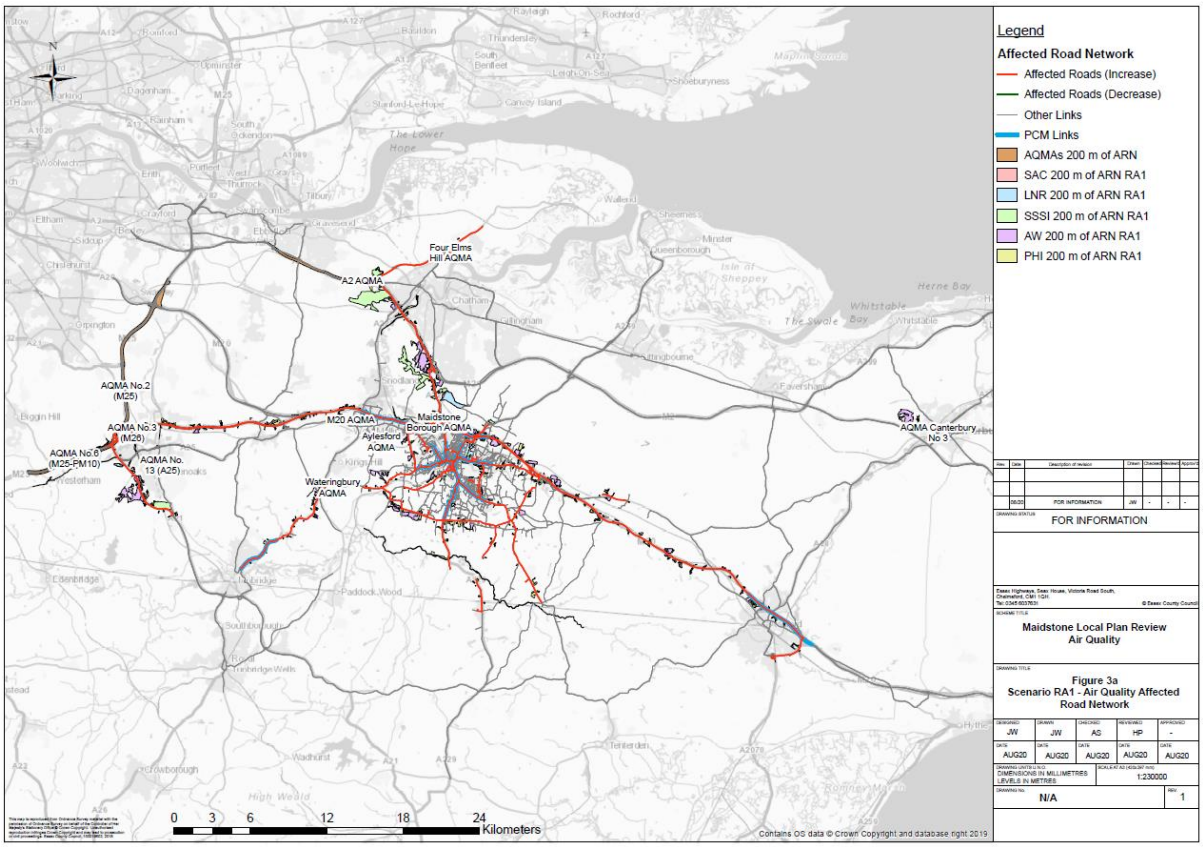
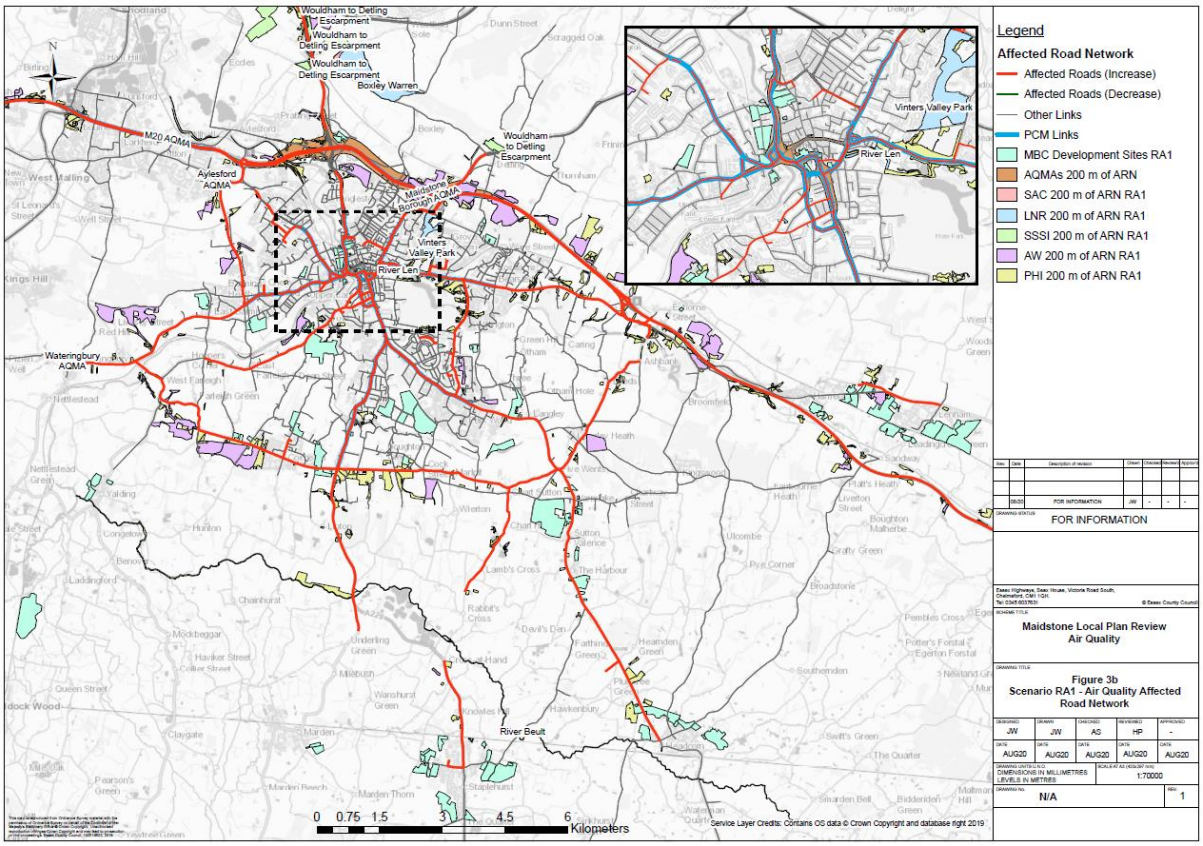


Figure 7: Scenario RA1 Air Quality Affected Road Network (Town Centre)



3.4.3 Scenario RA1a

The results of the screening exercise indicate that there are 616 road links that meet the air quality criteria for scenario RA1a. The road links (provided spatially in **Figure 8** and **Figure 9**) illustrate:

- The ARN for scenario RA1a encompasses a similar area to scenario RA1 including the Maidstone AQMA, however, there are fewer affected links in some key areas such as to the west of Maidstone and along the M20 reaching Ashford; and
- Nine AQMAs were identified within 200m of the ARN for this scenario. These AQMAs should all be assessed.

Figure 8: Scenario RA1a Air Quality Affected Road Network (District Wide)

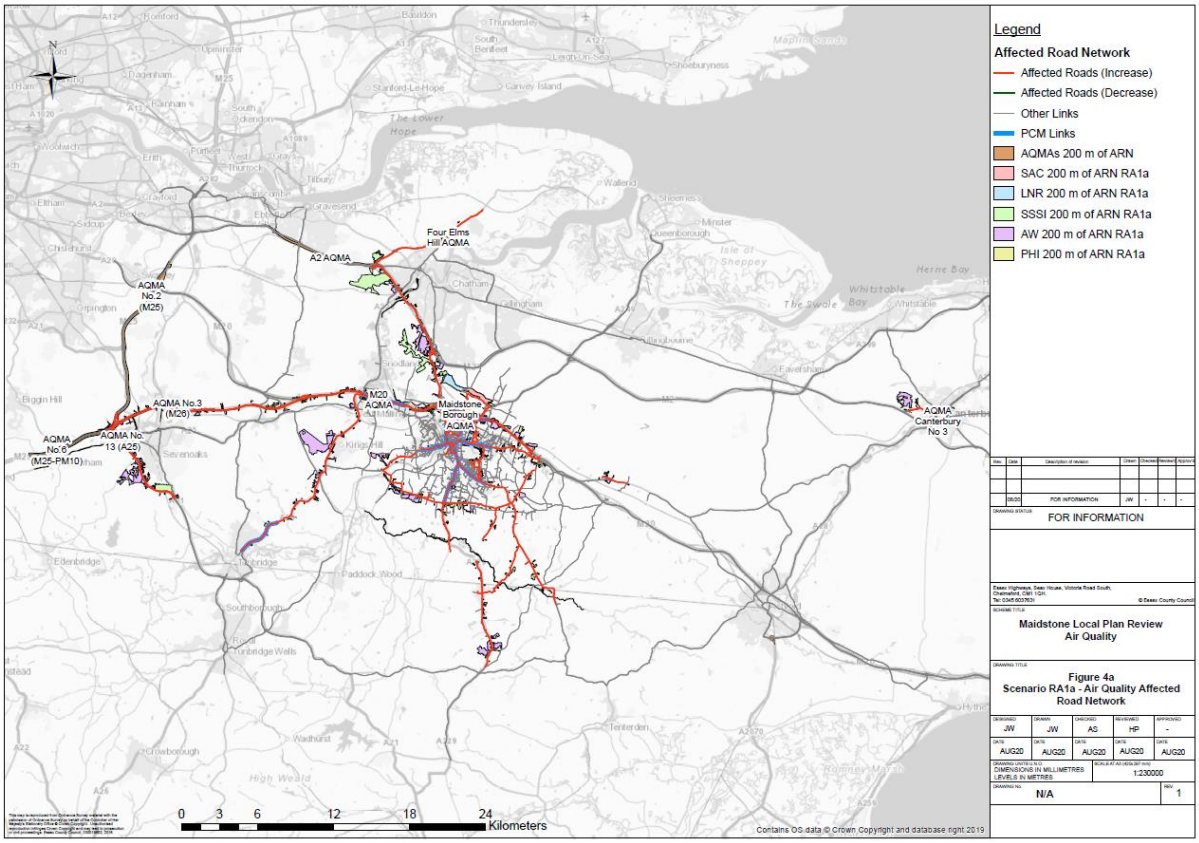
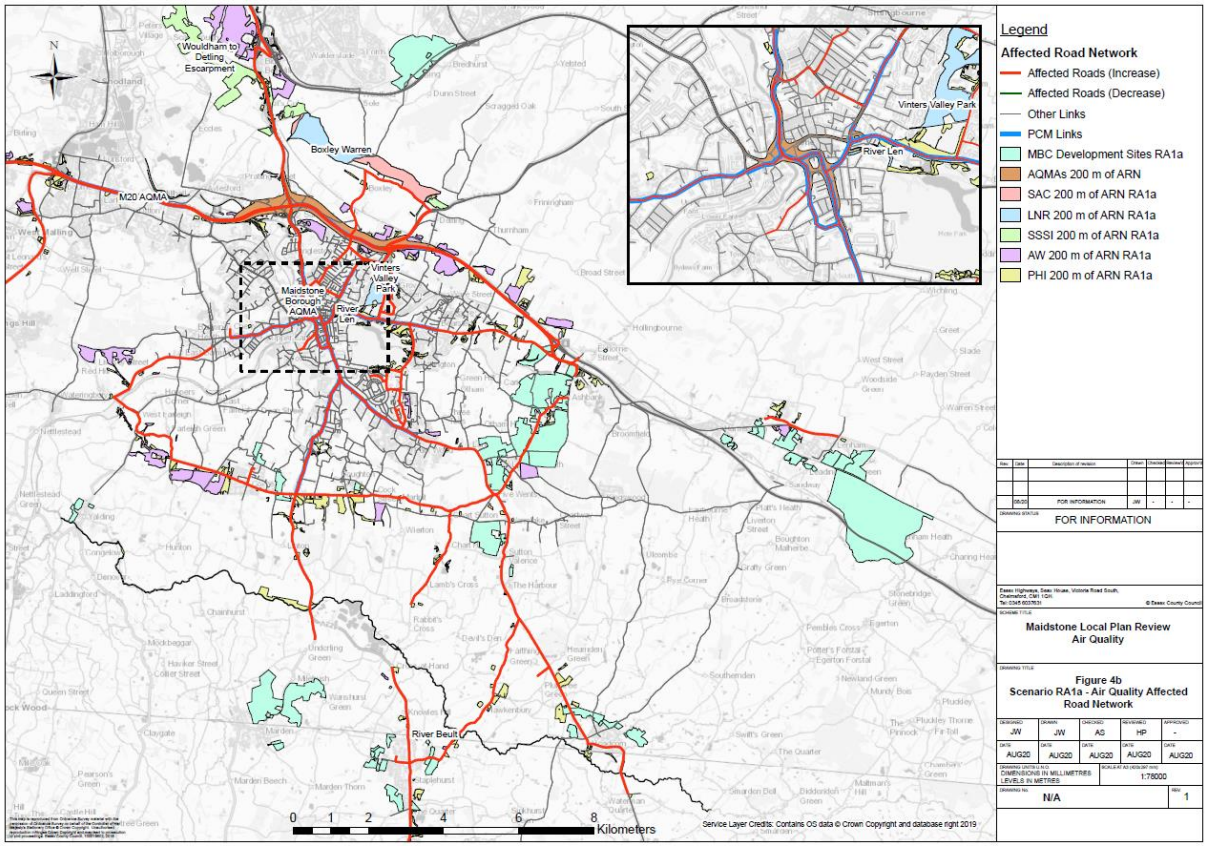


Figure 9: Scenario RA1a Air Quality Affected Road Network (Town Centre)



3.4.4 Scenario RA2a

The results of the screening exercise indicate that there are 750 road links that meet the air quality criteria for scenario RA2a. As displayed in **Table 6Error! Reference source not found.**, Local Plan scenario RA2a had the most affected links of all three scenarios, and as such the ARN covers a greater area than the other scenarios. The road links (provided spatially in **Figure 10** and **Figure 11**) illustrate:

- When compared to the other two scenarios, the ARN covers additional areas as along A249 and M2 towards Canterbury; and
- There were 10 AQMAs identified within 200m of the ARN for this scenario. These AQMAs should all be assessed.

Figure 10: Scenario RA2a Air Quality Affected Road Network (District Wide)

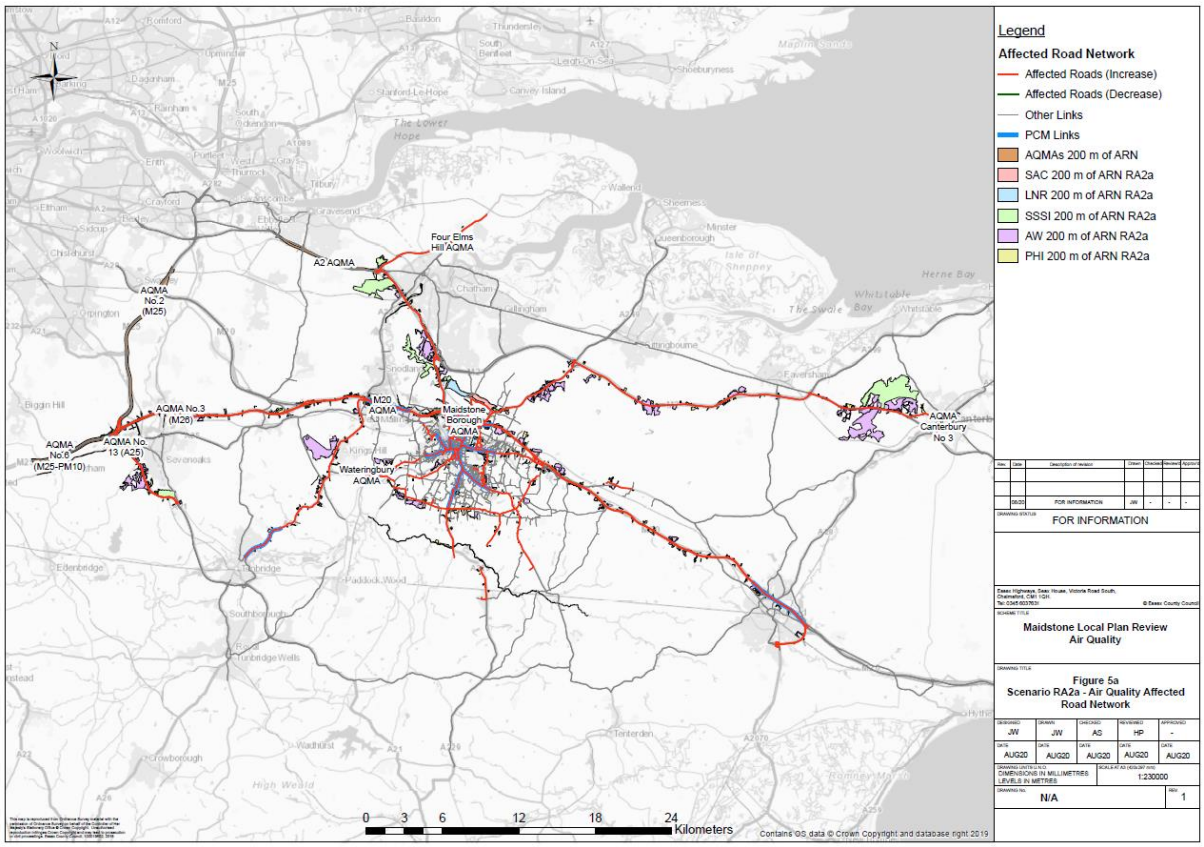
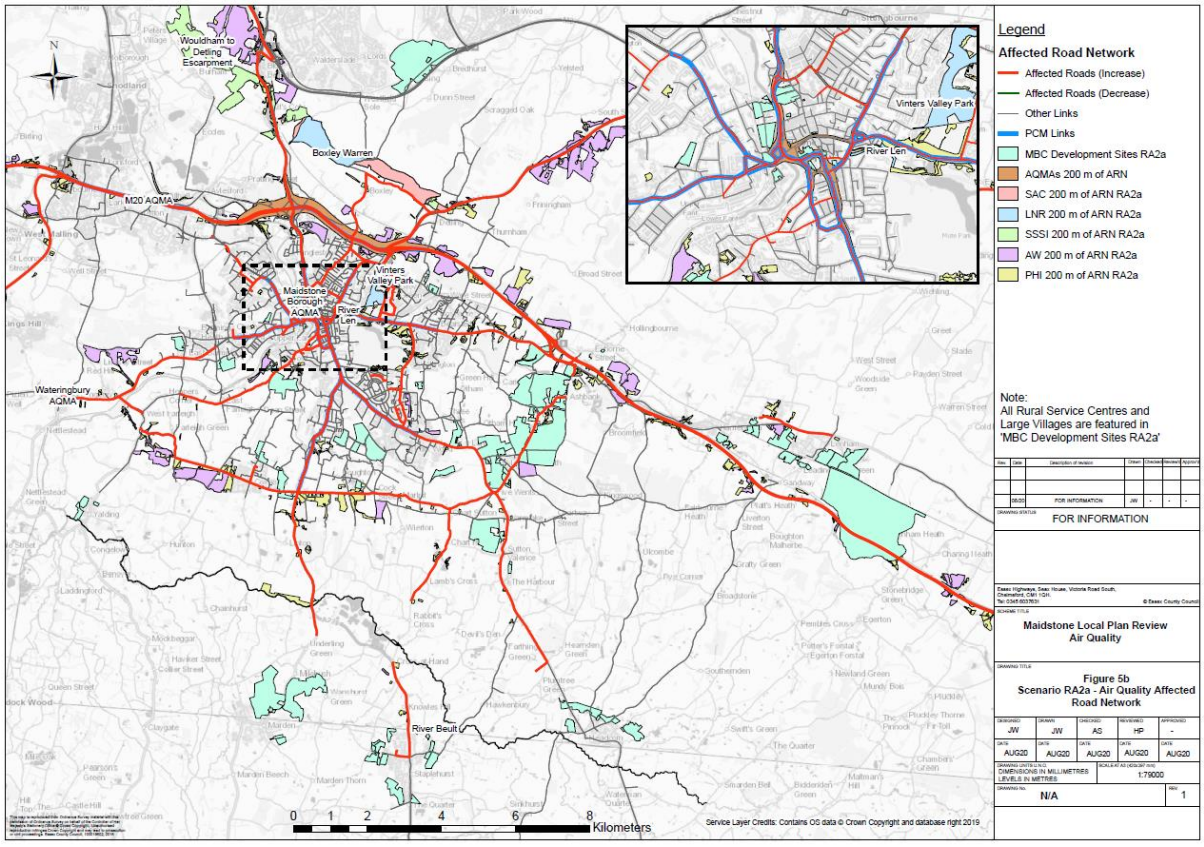


Figure 11: Scenario RA2a Air Quality Affected Road Network (Town Centre)



3.4.5 Air Quality Management Areas

In accordance with DMRB LA 105, AQMAs within 200 m of the respective ARNs have been identified. The ARNs for all three scenarios are located within 200 m of AQMAs, located across six different local authorities, including:

- Maidstone Borough Council – Maidstone Borough AQMA;
- Sevenoaks District Council – AQMA No. 2 (M25), No. 3 (M26), No. 6 (M25-PM10) and No. 13 (A25);
- Gravesham Borough Council – Gravesham A2 AQMA;
- Medway Council – Four Elms Hill AQMA;
- Canterbury City Council – AQMA Canterbury No. 3; and
- Tonbridge and Malling Borough Council – M20 AQMA.

In addition, the ARNs for scenarios RA1 and RA2a extended to include locations within 200 m of AQMAs in the Tonbridge and Malling Borough Council; Wateringbury AQMA, and the additional Aylesford AQMA for scenario RA1.

The AQMAs and ARN links for scenarios RA1, RA1a and RA2a are shown in **Figure 7**, **Figure 9** and **Figure 11** respectively.

3.4.6 Defra PCM Links

A review of available PCM link data has been undertaken with regard to the ARN links identified for each scenario. The number of PCM links that have been identified as ARN links in the screening exercise for each scenario, along with the associated ranges in modelled concentration for the 2017 projected data, for both 2020 and 2030, are displayed in **Table 7**.

Table 7: PCM Link Information for each Scenario ARN

Local Plan Scenario	Number of PCM Links Identified as ARN	NO_2 PCM link Concentration Range (µg/m3)	
		2020	2030
RA1	190	16.1 – 34.7	11.5 – 21.7
RA1a	153	16.1 – 34.7	11.5 – 21.7
RA2a	183	16.1 – 34.7	11.5 – 21.7

Table 3 indicates that despite the differences in ARN spatial coverage for each scenario, and therefore the coverage of the corresponding PCM links, that all modelled NO_2 PCM concentrations are within the relevant annual mean (40 µg/m^3). PCM link 27868 has the highest modelled concentration in all three scenarios, 34.7 and 21.7 µg/m^3 in 2020 and 2030 respectively (as shown in **Table 7**), located along the A229/Broadway in Maidstone within the Maidstone AQMA.

3.4.7 Human Receptors

There are numerous residential and other sensitive receptors were identified within 200 m of the ARNs for all scenarios. Due to the large spatial extent of the ARNs, it can be assumed that a large number of sensitive receptors would be potentially affected by the proposed additional developments, which have the potential to increase pollutant concentrations in the proximity of these roads.

The differing ARN spatial extents for scenarios RA1, RA1a and RA2a are shown in **Figure 6**, **Figure 8** and **Figure 10** respectively. It is assumed that there are likely to be more human receptors within and around Maidstone centre.

Scenarios RA1 and RA2a have the potential to lead to adverse air quality impacts at sensitive receptors further from Maidstone centre, in Ashford, with RA2a potentially having impacts at receptors close to Canterbury.

3.4.8 Designated Sites

Designated sites within 200 m of the ARN for each scenario have been identified. These include SSSI, SAC, LNR and Ancient Woodlands. As discussed in the baseline review, there are no Ramsar, Nature Improvement Areas, or Special Protection Areas within 200 m of the ARNs. However, assessment of Ramsars and SPAs sites should not be ruled out as the comparison of road traffic only included the additional traffic outside of the existing Adopted Local Plan (i.e. Natural England guidance suggest the cumulative traffic data should be assessed for these types (European) sites).

The screening exercise indicates that the proposed scenarios have the potential to result in air quality impacts at the identified designated sites within 200m of the ARN links. The number of identified designated sites are provided in **Table 8**.

Table 8: Number of Designated Sites Within 200 m of Scenario ARNs

Local Plan Scenario	Number of Designated Sites Within 200 m of the ARN			
	SSSI	SAC	LNR	Ancient Woodland
RA1	7	1	6	156*
RA1a	7	1	5	127*
RA2a	8	1	6	189*

*approximate count

3.5 Air Quality Screening Exercise Review

An air quality screening exercise has been undertaken to identify whether the traffic flows associated with additional housing developments within the MBC area have the potential to result in air quality impacts, and therefore affect the delivery of MBC planning and air quality policy and action plans.

The exercise used traffic data to determine whether the traffic in would meet the DMRB LA 105 screening criteria for air quality assessment (and therefore leading to potential air quality impacts).

The exercise is to support the wider LPR and to determine whether further assessment of the potential air quality impacts (associated with scenarios RA1, RA1a and RA2a) will be necessary. The constraints and affected roads identified for each scenario are shown in **Figure 6** to **Figure 11**.

The results indicate that all three scenarios trigger the DMRB LA 105 air quality assessment criteria for roads in the Traffic Reliability Area (TRA), where there are sensitive receptors within 200 m. All scenarios show the potential to have an adverse impact on air quality at sensitive receptors within MBC, and surrounding local authorities.

3.5.1 Potential Impacts on Receptors

The increases in traffic flow as result of the additional developments indicate the potential to adversely affect air quality concentrations in already exceeding areas, namely the AQMAs in and around MBC; albeit to differing degrees for each scenario.

In addition to this, a significant number of the road links (where changes met the DMRB screening criteria) were also PCM links. This may indicate that the additional housing developments in the borough have the potential to increase air quality concentrations at these locations, which may in turn affect EU air quality Limit Value compliance. This is particularly notable within the Maidstone AQMA.

National and Local designated sites have been identified within 200 m of the ARNs for each scenario. The potential impacts of the proposed additional housing developments at these sensitive locations would require further investigation with more detailed traffic data, in accordance with DMRB LA 105 and Natural England guidance, to determine if appropriate mitigation measures would be required.

Sensitive receptors have been identified within 200 m of the ARNs for each scenario, including schools and care homes. Further assessment is required to determine if increases in pollutant concentrations at these receptors would be potentially significant, and have adverse impacts on human health.

3.5.2 Scenario Comparison

Comparison of the scenarios indicates that scenario RA1a is likely to have an adverse impact on the fewest number of sensitive receptors. As evident in **Table 6** and **Figure 8**, scenario RA1a has the fewest number of affected links in the ARN, encompassing a smaller area than the other scenarios. This in turn leads to the smaller number of AQMAs and designated sites identified within 200 m, and corresponding PCM links.

Scenario RA2a, has the greatest number of affected links and identified AQMAs, PCM links and designated sites. This may indicate that that the inclusion of developments within the Maidstone Urban Area and Countryside leads to greater traffic flow changes across a wider area compared to other housing development area combinations.

It should be noted that the air quality screening exercise undertaken provides a high-level indication of the potential for air quality impacts, and does not provide a detailed assessment of specific locations of the air quality impact or significance, nor concentrations. The traffic data provided does not include detailed compositions relating to future improvements in low emissions vehicles, or the potential for increased public transport usage (and improvements to public transport fleets). The results therefore should be considered conservative, and further detailed air quality assessment is therefore required in the future.

3.6 Screening Exercise LPR

Following the air quality screening exercise, a review has been undertaken to identify whether the results of this exercise may impact upon the MBC planning policy and action plans previously discussed.

3.6.1 Adopted Local Plan 2017 Review

The Screening exercise indicates that the additional housing developments, within the Maidstone urban area and at the strategic development locations at the edge of the borough (including junctions 7 and 8 of the M20 motorway), have the potential to lead to a worsening of local air quality due to increased road traffic flows. This worsening is unlikely to support the objectives of the Local Plan Air Quality Policy DM6 and should be assessed further.

As detailed in Section 3.4.5, all three scenarios predict a potential worsening of air quality concentrations within the Maidstone AQMA, as well as the AQMAs of other local authorities. The increases in traffic flow within Maidstone for all three scenarios are also located where PCM model links are identified. The increases in air quality concentrations in these areas therefore have the potential to impact on EU Directive compliance. More detailed air quality assessments are required to quantify these potential impacts at sensitive locations within the AQMA and close to other sensitive receptors.

A review of the screening exercise results compared with the key air quality related Local Plan policies is provided in **Table 9**.

Table 9: Adopted Local Plan 2017 Policy comparison with Screening Exercise Results

Policy	Potential Air Quality Impact of Additional House Development Sites on Policy
DM6 (Air Quality)	Additional housing developments may have a potentially negative air quality impact upon areas of existing exceedance within MBC. Under LAQM, and in line with this policy, an AQIA would be required, including appropriate and identified mitigation. Worsening of air quality concentrations as a result of the additional housing would hinder the delivery of the AQAP actions and improvement of the AQMA concentrations.

Policy	Potential Air Quality Impact of Additional House Development Sites on Policy
SP23 (Sustainable Transport)	At this stage, a more detailed assessment is necessary to fully determine "*the air quality impact of transport*" at sensitive receptors within the local authority. It is likely that increased pollutant concentrations would occur with all three scenarios within the local authority and AQMA, with mitigation being required (see DM6 above). Complimentary infrastructure development may be needed, in line with this policy, as part of mitigation. It is unclear whether the scenarios take into account future usage (and potential increased usage) of public transport.
H1 (Housing Site Allocations)	The additional housing development sites indicate the potential for adverse air quality impacts at designated ecological sites. More detailed assessment would be necessary to accurately determine the degree of impact of increased NO_2 (and N deposition) at these sites for compliance of the developments with this policy, and in line with DMRB LA 105 guidance.
H2 (Broad locations for Housing Growth)	Increases in traffic flows are predicted along A229 (which is part of the AQMA) for all three scenarios and along Boxley Road for RA1a and RA2a, with the potential for worsening of pollutant concentrations within Maidstone AQMA. All identified affected roads, however, are more than 200 m in distance from the proposed Invicta Park development site for all three scenarios.
ID1 (Infrastructure Delivery)	At this stage, a more detailed assessment is necessary to fully determine the air quality impact of transport at sensitive receptors within the local authority. It is likely that increased pollutant concentrations will occur with all three scenarios within the local authority and AQMA, with mitigation being required (see DM6 above). Complimentary infrastructure development may be required for "*sustainable growth*", in line with this policy, as mitigation against potential air quality impacts. Further air quality assessment with more detailed traffic data may help to identify areas of potential future congestion, which in turn could focus and prioritise infrastructure improvements and funding.

3.6.2 Air Quality Planning Guidance Review

In support of policies DM6 and SP23 of the Adopted Local Plan, mitigation measures would require quantifying in line with Section 3 of the Air Quality Planning Guidance (2017), due to the identified additional traffic within Maidstone AQMA, for all three additional development scenarios.

3.6.3 Low Emission Strategy Review

The results of the Screening exercise indicate that the combinations of additional housing development sites would increase the level of traffic flow on the local and regional road network, and therefore result in an increase in emissions. Traffic modellers have confirmed the high-level traffic data provided did not include for the potential for increased use of low emission vehicles.

The additional housing developments therefore have the potential to hinder the delivery of the actions of the Low Emissions Strategy with regard to the Planning theme. An air quality assessment could be undertaken, and conditions considered regarding the support/uptake of low emission vehicles at the additional housing developments (e.g. 10% of vehicles from the developments are electric).

As detailed in Section 3.4.7, a wide range of sensitive receptors were noted to be within 200 m of the ARNs, for all three scenarios. Therefore, a detailed local air quality assessment is required to assess the full impact of the identified worsening to air quality of the proposed scenarios on public health.

For all three scenarios, PCM links were identified to correspond to the ARN links. In accordance with DMRB LA 105, a more detailed assessment is additionally necessary to determine compliance of the proposed developments with EU Limit Values for NO_2.

3.6.4 Infrastructure Delivery Plan Review

The additional housing developments within the scenarios have been predicted to increase traffic and potentially adversely affect the air quality concentrations within the Maidstone AQMA. There is also the potential for increased congestion issues as a result of the developments. These issues do not align with the IDP and the need to encourage sustainable travel. The IDP has specific target areas, but these do not include the potential for the additional infrastructure improvements to support these additional housing developments (proposed after the publication of the Local Plan).

A review of the IDP, and the infrastructure requirements of any additional housing developments may be required in order for funding to be prioritised, and classifications associated with the additional development needs to be assigned (i.e. Critical, Essential, or Desirable).

4. Summary

A review of the MBC Local Plan and associated planning documentation has been undertaken, together with an air quality screening exercise of the additional housing development traffic (scenarios RA1, RA1a and RA2a).

The review of MBC planning and air quality documentation indicates detailed action plans for the control, mitigation and improvement of air quality within the borough, with a strong emphasis on the encouragement of both low emission vehicles and technology, as well as modal shift to public transport into the future. These aims and action plans are subsequently supported by the understanding of infrastructure improvement needs in order to deliver these aims.

The review of the MBC planning documentation indicated that MBC have aligned the various current plans and policies (e.g. Adopted Local Plan, ASR, Low Emission Strategy and IDP), which should allow for combined aims and objectives in the delivery of the planned actions.

With the demand for improvements to air quality, but equally good transport links and accessibility, the potential low emission recommendations need to become best practice going forward if the action plans are to be realised. As well as the required infrastructure that would be necessary, behavioural change from Maidstone residents will also be required in order for this to be achieved.

With regard to the Screening exercise, all three scenarios identified the potential for a worsening of air quality within the Maidstone AQMA (as well as AQMAs of nearby local authorities), hindering the planned actions and aims detailed within the Adopted Local Plan and Low Emission Strategy for improving the air quality within the borough.

Under LAQM, and in line with the Local Plan, the additional developments would require an AQIA to be submitted including details of appropriate and identified air quality mitigation measures. An integrated approach for mitigation would be required that addresses all aspects of the local planning documentation, including additional infrastructure developments, sustainable transport improvements and further commitment to encouraging a lower emission fleet as part of the planning process.

The results of the screening exercise indicate the potential worsening of air quality from the additional housing developments upon designated ecological sites in the area, hindering the planned action for sustainable developments within the Adopted Local Plan. In line with the Design Manual for Roads and Bridges (DMRB) LA 105, a more detailed assessment would be necessary to accurately determine the degree of impact of increased NO_2 (and N deposition) at these sites, to fully assess compliance with Local Plan policies.

A more detailed assessment is necessary to determine compliance of the proposed developments with EU Limit Value for NO_2 for all three scenarios as many of the roads are predicted to exceed the DMRB screening criteria also corresponded to PCM links.

The results of the screening exercise indicate that including additional housing developments within Maidstone urban areas, and at strategic development locations at the edge of town, have the potential to result in air quality impacts at a significant number of sensitive receptors, and in turn, may impact MBCs ability to deliver the objectives and action plans detailed in its published guidance and policies.

It should also be noted that at the time of writing, the impact of the Covid-19 pandemic may need to be considered in the planning of future developments. As listed in Section 2.5, the changes to everyday life during the crisis have meant that further considerations may need to be incorporated into future housing development opportunities with regard to air quality as a result.

Appendix A. Housing Area Air Quality Matrix

Housing Areas	Local Plan (LP) or Dev Site (DS)	Policy/ Ref	Location	No. of Resid'l Units	Apx Year	AQMA?	PCM Links within 200m?	Near't PCM Link 2020 NO_2 µg/m³	Defra Maps NO_2 2020 µg/m³	NO_2 Monitoring above 36 µg/m³	Impact of Additional Traffic upon location?	Public Transport access?	Potential Planning conditions
Town Centre /AQMA	LP	H1(11)	Springfield	692	?	Adjacent to	Yes - A229	32.58	14.9	No (35.7)	Potentially adverse and within AQMA.	Yes, bus routes A229. Town centre shops accessible without car.	S106 to improve bus routes and frequency? Already under construction?
Town Centre /AQMA	LP	H1(12)	180 Union St	30	?	Adjacent to	Yes - A249	23.88	16.1	No (35.3)	Potential adverse but limited due to small development.	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	One parking space max per unit? Addition of EV charging points?
Town Centre /AQMA	LP	H1(13)	Medway Street	40	?	Within	Yes - A229	32.58	15.85	No (29.3)	Potential adverse but limited due to small development, but within AQMA	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	Restrict or avoid parking spaces as town centre? EV charging points?
Town Centre /AQMA	LP	H1(14) H1(15) H1(16)	American Golf 6 Tonbridge Rd Slencrest House	60 15 10	?	Adjacent to	Yes - A26	23.59	15.85	No (29.7)	Potential adverse but could be reduced as adjacent to Rail Station	Town centre bus routes. Next to train station. Town centre shops accessible without car.	Restrict/avoid parking spaces due to station proximity? Electric charging points?
Town Centre /AQMA	LP	H1(17)	Laguna	76	?	No	No	n/a	15.85	No (26.2)	Potential localised increases, but unlikely to be significant.	Not on bus route. Train station cyclable? Shops accessible with car.	S106 conditions to improve bus route accessibility? EV points for car parking.
Town Centre /AQMA	LP	H1(18)	Dunning Hall	14	?	No	No	n/a	14.9	No (32)	Unlikely - small development.	Town centre bus routes. Walkable/cycle to train station. Town centre	Restrict/avoid parking spaces as town centre? Electric charging points?

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Housing Areas	Local Plan (LP) or Dev Site (DS)	Policy/ Ref	Location	No. of Resid'l Units	Apx Year	AQMA?	PCM Links within 200m?	Near't PCM Link 2020 NO_2 µg/m³	Defra Maps NO_2 2020 µg/m³	NO_2 Monitoring above 36 µg/m³	Impact of Additional Traffic upon location?	Public Transport access?	Potential Planning conditions
												shops accessible without car.	
Town Centre /AQMA	DS	145	Len House	29	2025	Within	Yes - A229	15.85	16.1	No (33.2)	Potential adverse as town centre roads close by, but small development.	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	Restrict/avoid parking spaces as town centre? Electric charging points?
Town Centre /AQMA	DS	146	Maidstone East	83	2025	Within	Yes - A229	32.58	14.9	Potential (35.7)	Potential adverse, additional traffic within AQMA.	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	Restrict/avoid parking spaces as town centre? Electric charging points?
Town Centre /AQMA	DS	147	Gala Bino & Granada House	71	2025	Within	Yes - A229	29.86	16.1	Yes (40.3)	Potential adverse due to existing AQMA and concentration levels.	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	Restrict/avoid parking spaces as town centre? Electric charging points?
Town Centre /AQMA	DS	148	Maidstone Riverside	650	2025	Adjacent to	Yes - A229	32.58	15.85	No (29.3)	Potential adverse due to number of planned units close to AQMA.	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	Restrict/avoid parking spaces as town centre? Electric charging points?
Town Centre /AQMA	DS	149	Maidstone West	130	2025	Within	Yes - A229	34.67	15.85	Potential (34.5)	Potential adverse due to number of units close to AQMA, however train stations nearby.	Town centre bus routes. Next to train station. Town centre shops accessible without car.	Restrict/avoid parking spaces as town centre? Electric charging points?

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Housing Areas	Local Plan (LP) or Dev Site (DS)	Policy/ Ref	Location	No. of Resid'l Units	Apx Year	AQMA?	PCM Links within 200m?	Near't PCM Link 2020 NO_2 µg/m³	Defra Maps NO_2 2020 µg/m³	NO_2 Monitoring above 36 µg/m³	Impact of Additional Traffic upon location?	Public Transport access?	Potential Planning conditions
Town Centre /AQMA	DS	150	Mill Street Car Park	19	2025	Within	Yes - A229	31.32	16.1	No (31.5)	Potential adverse as within AQMA, but train stations nearby and smaller development.	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	Restrict/avoid parking spaces as town centre? Electric charging points?
Town Centre /AQMA	DS	296	Astor Hever	47	2025	No	No	n/a	12.32	No (14)	Unlikely - small development out of town centre.	Bus route 250m away to train station. Town centre shops accessible by bus.	Restrict/avoid parking spaces as close to town centre? Electric charging points?
Town Centre /AQMA	DS	305	Maidstone East Station	54	2025	Within	Yes - A229	32.58	14.9	No (35.7)	Potential adverse as AQMA area, but smaller development may minimise impact.	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	Restrict/avoid parking spaces as town centre? Electric charging points?
Town Centre /AQMA	DS	151	Mote Rd	84	?	Within	Yes - A249	23.65	16.1	No (30.8)	Potential adverse as AQMA area, but smaller development may minimise impact.	Town centre bus routes. Walkable/cycle to train station. Town centre shops accessible without car.	Restrict/ avoid parking spaces as town centre? Electric charging points?
Town Centre /AQMA	DS	182	Invicta Park Barracks	1300	2027	Adjacent to	Yes - A229	32.58	14.58	No (35.7)	Large development would attract potential significant traffic emissions to areas, possibly via AQMA (A229). Impact potentially significant.	Bus routes on A229. Town centre shops accessible by bus, on foot (longer distance).	Restrict parking for residents, EV charging points to encourage EV. S106 condition to improve bus accessibility to centre or improve congestion on A229. Potential for centralised heating system

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Housing Areas	Local Plan (LP) or Dev Site (DS)	Policy/ Ref	Location	No. of Resid'l Units	Apx Year	AQMA?	PCM Links within 200m?	Near't PCM Link 2020 NO_2 $\mu g/m^3$	Defra Maps NO_2 2020 $\mu g/m^3$	NO_2 Monitoring above 36 $\mu g/m^3$	Impact of Additional Traffic upon location?	Public Transport access?	Potential Planning conditions
													to control emissions centrally. IDP details roundabout signalisation but measures seem inadequate to mitigate potential impacts. Potential EV showcase development.
West of Town Centre (grouped allocation)	LP /DS	H1(2) H1(4) H1(23) 234 262	East Hermitage Ln LP North Street LP Oakapple Lane Land W of North St DS Fant Farm	500 35 187 182 260	?	No	No	n/a	12.11	No (26.2)	Potential adverse concentration increases on B2246. However, development sites away from centre.	Bus routes on A2246. Potential for cycle paths to Barming train station. Town centre shops accessible by bus, not walking distance.	Planning conditions to encourage cycling/walks/bus use to Barming train station, improvements to bus services. EV charging points to promote EV use. Potential for development areas to link well with Barming train station to reduce car usage.
South-west of Town Centre	LP /DS	H1(24) H1(25) H1(26) 010 095 203 262 265	Postley Rd, Tovil Bridge Industrial Tovil WMC Site 1 Bydews Pl Halfe Yoke Land Bydews Fant Farm Land Abbey Farm	62 15 20 16 46 47 260 527	?	No	No	n/a	14.71	No relevant monitoring locations	Potential for adverse concentration increases in localised areas from Fant Farm and Abbey Farm sites, however sites are further from AQMA areas, with potential links to East Farleigh station.	Local bus routes could be utilised, but would car journeys likely. Park and Ride and cycle paths to East Farleigh station may encourage modal shift. Shops accessible by bus, but likelihood of car use required.	Planning conditions to encourage cycling/walks/bus use to East Farleigh train station, improvements to bus services. EV charging points to promote EV use.

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Housing Areas	Local Plan (LP) or Dev Site (DS)	Policy/ Ref	Location	No. of Resid'l Units	Apx Year	AQMA?	PCM Links within 200m?	Near't PCM Link 2020 NO_2 µg/m³	Defra Maps NO_2 2020 µg/m³	NO_2 Monitoring above 36 µg/m³	Impact of Additional Traffic upon location?	Public Transport access?	Potential Planning conditions
Coxheath Village	LP /DS	H1(56) H1(58) H1(59) 005 050 084 202 225 257 288 312 328	Linden Farm Forstal Lane Nth of Heath Rd Dingley Dell Army H Stables Land Heath Rd Land Forstal Ln Tanglewood Land Heath Rd Land at Hill Farm Land Heath Rd Land Linton Rd	74 195 55 23 88 33 90 18 20 107 193 10	?	No	Yes (Hill Farm) - A229	18.78	9.82	No relevant monitoring locations	Clockhouse Farm and Heathfield sites already developed (apx 182 units). Potential for increase in air quality concentrations in and around Coxheath. Current air quality levels may mean increases would not result in exceedances.	No nearby train station (East Farleigh closest). Acceptable coverage of bus routes (thought frequency of service unknown). Town centre access possible by car, but more likely to be undertaken by car.	Planning conditions to promote/encourage bus usage (and improvements to bus services through Coxheath, linking to East Farleigh station?).
South of Town Centre (Broughton Monchelsea)	LP /DS	H1(27) H1(28) H1(51) H1(52) H1(53) H1(54) 227 235 270 328	Kent Police HQ Training School Hubbards Lane Broughton Mount Church St/Heath Rd Lyewood Farm Land Green Lane Land Broughton Ln Land Pested Bars Land 59 Linton Rd	112 90 20 25 40 25 53 69 463 10	?	Not within 200m, but main routes to sites are within AQMA	Yes - A274	24.63	10.8	No (20)	Several sites have potential to attract higher levels of traffic, which are likely to use A274 and A229 (Loose Rd) for access, both of which are in AQMA. Potential for increases in concentrations on these routes. However, sites themselves are further from AQMAs.	A229, A274 and B2163 have bus services (frequency not known). No nearby train stations (nearby in town centre). Bus services walkable, but likely that cars would be preferred mode. Shops accessible by bus, potentially on foot (though unikely), supermarket would likely be accessed by car.	Conditions to encourage EV ownership (including charging points at developments). Improvements to bus services.
East of Town Centre (Otham)	LP /DS	H1(8) 185 298	West of Church Rd Otham Glebe Dorothy Lucy	440 42 16	2024 onwards	No	No	n/a	11.18	No relevant monitoring locations	Potential for adverse concentration increases locally from	Bus routes nearby (within walking distance). No train station nearby.	Improved bus services (including Church Road), connected transport to train

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Housing Areas	Local Plan (LP) or Dev Site (DS)	Policy/ Ref	Location	No. of Resid'l Units	Apx Year	AQMA?	PCM Links within 200m?	Near't PCM Link 2020 NO_2 $\mu g/m^3$	Defra Maps NO_2 2020 $\mu g/m^3$	NO_2 Monitoring above 36 $\mu g/m^3$	Impact of Additional Traffic upon location?	Public Transport access?	Potential Planning conditions
		303 140	EIS Oxford Road Squerries Oast	14 10							Church Rd site, but likely to be localised.	Local shops accessible by bus, potentially on foot or cycle. Car likely preferred mode.	stations. On outskirts of urban area, promotion of cycle paths/walking routes may be beneficial here.
South-east of Town Centre (Park Wood and Otham)	LP /DS	H1(7) H1(9) H1(10) 127 174	North Bicknor Wd Bicknor Farm South of Sutton Rd Land at Sutton Rd Land S Sutton Rd	190 335 800 115 184	?	Approx. 280m from boundary	Yes - A274	24.63	12.2	No (28.5)	Two sites already developed (Langley Park and Sutton Road), apx 800 units. Potential for adverse increases in emissions from collective development (1600 properties) close to AQMA. Main access route from north to these sites would be through AQMA area.	A274 has bus services (frequency not known). No nearby train stations (closest are in town centre). Local shops accessible by bus, potentially on foot or cycle. Likely that preferred mode would be car.	Conditions to encourage EV ownership (including charging points at developments). Improvements to bus services and links to train stations. On outskirts of urban area, potential to provide cycle paths etc.
New Settlement Sites (Ashbank, Langley Heath, Sutton Valence)	DS	31 sites (largest listed)	Land/ Ashford Rd Waterside Park South of Leeds Land / Langley hth North/West Leeds	320 224 1443 1360 1359	2024 +	No	No	n/a	8.27-15.94	No relevant monitoring locations	Due to scale of development sites, air quality concentrations will increase in the area. Whilst access to area could be mainly from M20 junction, will also be through A274 and AQMA. Impacts may be significant if car usage/ownership uncontrolled.	Bus services on B2163, unlikely to be used as modal shift by majority of properties. Supermarkets and local shops unlikely to be within walking distance. Car is likely to be preferred mode of transport.	Recommend consideration of Park and Ride facility in the area as part of New Settlements to provide links to town centre for both employment and retail/commercial. Planning conditions should include EV charging points to encourage EV use/ownership.

Housing Areas	Local Plan (LP) or Dev Site (DS)	Policy/ Ref	Location	No. of Resid'l Units	Apx Year	AQMA?	PCM Links within 200m?	Near't PCM Link 2020 NO_2 $\mu g/m^3$	Defra Maps NO_2 2020 $\mu g/m^3$	NO_2 Monitoring above 36 $\mu g/m^3$	Impact of Additional Traffic upon location?	Public Transport access?	Potential Planning conditions
											Substantial numbers of residential units (3000+)		Additional air quality monitoring locations would be beneficial in this area if New Settlement sites progress.

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Appendix B. MBC NO_2 Monitoring Data

Site I.D	Site Name	Site Type	X (m)	Y (m)	In AQMA?	2019 Data Capture (%)	Monitored NO_2 Concentration (µg/m3)				
							2015	2016	2017	2018	2019
CM1	Maidstone A229 (Closed June 2016)	Roadside	575740	155615	Y	-	40.1	38	Site Closed		
CM2	Maidstone Rural	Rural	580108	159703	N	94.2	12.6	12	13	11	24.2
CM3	Upper Stone Street	Roadside	576337	155183	Y	96.7	-	-	-	70	68
Maid 6.1	Scragged Oak Lane	Rural	580101	159695	N	100	12.2	12.6	12.6	10.8	10.1
Maid 6.2						91.7	-	-	-	10.6	10.7
Maid 6.2						100	-	-	-	10.1	10.1
Maid 10	Grange Lane South, Car park of Yew Tree pub, Maidstone	Other	575714	158504	Y	100	27.4	31	30.3	26.7	23.9
Maid 11	Boarley Lane, Telegraph pole nr. letterbox, Maidstone	Other	575718	158653	Y	91.7	27	24.7	25.1	21.7	20.7
Maid 19	196 Loose Road, Maidstone	Roadside	576692	153992	N	83.3	22.4	23.8	22.8	22.1	19.7
Maid 20	Sheals Crescent, Maidstone	Roadside	576175	154858	Y	75	24.8	28.1	27.1	26.2	25.7
Maid 22	A20 London Road, Maidstone	Roadside	574109	156930	Y	100	25.6	28.6	28.5	25.4	26.2
Maid 26	Drakes pub (lamp post), Maidstone	Roadside	575782	155678	Y	91.7	30.7	31	33.5	29.3	30.8
Maid 27	JP s Bar, High Street, Maidstone The Stag PH	Roadside	575970	155688	Y	83.3	37	36.4	33.8	33.2	35.2
Maid 29	Knightrider Street, Maidstone	Roadside	576086	155373	Y	91.7	30.3	30.9	34.3	31.5	29.9
Maid 44	3-4 Well Road, Maidstone	Roadside	576189	156440	Y	100	34.2	38.1	36.2	35.1	33.1
Maid 45	Mote Park, Maidstone	Urban Background	577410	155166	N	91.7	17.1	17.8	16.6	13.7	14.6
Maid 46	Scrubbs Lane	Urban Background	574770	155774	N	50	13.2	14.9	14.5	14	13.4
Maid 49	454 Tonbridge Road, Maidstone	Roadside	573309	154789	Y	91.7	36.2	40.2	36.5	33	31.8
Maid 51	121 Boxley Rd, Maidstone	Roadside	576147	156488	Y	100	33.4	40.4	36.7	35.7	34.6
Maid 52	565 and 567, Tonbridge Road, Maidstone	Roadside	573349	154790	Y	83.3	37.7	42.9	38.2	29.7	33.6
Maid 53	Wheatsheaf PH, Maidstone	Roadside	576724	153948	Y	91.7	55.4	58.6	59.1	52.4	52.1
Maid 56	243 Loose Rd, Maidstone	Kerbside	576735	154007	Y	100	27.5	27.8	27	21.1	21.6
Maid 63	8 Harbourland Cottages, Maidstone	Roadside	577037	157739	Y	91.7	32.4	34.9	34.4	30.1	29
Maid 66	1 Pilgrims Way (by front door), Maidstone, Kent	Roadside	579106	158411	Y	91.7	29.5	31	29.1	28.4	26.5

Site I.D	Site Name	Site Type	X (m)	Y (m)	In AQMA?	2019 Data Capture (%)	Monitored NO_2 Concentration (µg/m3)				
							2015	2016	2017	2018	2019
Maid 68	On lamp post outside Burger King store, King Street	Roadside	576267	155840	Y	66.7	34.9	36.4	33.2	32	28.7
Maid 69	On parking sign info post, Church Street, Maidstone	Roadside	576111	155781	N	83.3	22	26	24.5	22.8	21.2
Maid 70	On information pole outside kebab house, 92 King St, Maidstone	Roadside	576469	155710	Y	91.3	38.3	38.5	37.6	35.3	33.5
Maid 74	Chiltern Hundreds pub, Maidstone, Kent	Roadside	577377	157131	N	91.3	32.9	33.3	34.8	29.6	28.4
Maid 80	On lamp post by 77B Well Road and Wheeler St junction	Kerbside	576314	156312	Y	83.3	33.9	35.2	35	31.9	31.1
Maid 81	The Pilot pub, Maidstone, Kent	Kerbside	576303	155329	Y	91.3	71.5	71.3	67.7	67.3	60.2
Maid 84	384 Tonbridge Road, Maidstone	Roadside	573686	155050	N	100	26.3	35.1	30.4	24.7	26.4
Maid 90	Unloading sign outside number 13, Pudding Lane, Medway Street, Maidstone	Kerbside	575918	155753	N	75	32.9	32.8	34.2	29.3	32.1
Maid 93	Hadlum Design and Print, Maidstone	Suburban	573347	154981	N	100	24.4	26.5	26.3	23.9	23
Maid 94	53 High Street, Maidstone Seekers River Court	Roadside	575822	155579	Y	83.3	31.3	35.5	35.4	35	33.1
Maid 96	Lampost KUBT 512 in bracket for "*One Way*" sign outside Lashings Sports Club (Upper Stone St)	Roadside	576346	155183	Y	100	94.8	83.8	79.3	77.2	75.2
Maid 97	Bracket for "*no loading sign*" outside Romney house in Romney Place	Roadside	576253	155534	Y	100	-	38.6	41.9	40.3	37.5
Maid 98	Bracket for "*no loading sign*" outside Miller House in Lower Stone St	Roadside	576258	155422	Y	83.3	-	35.2	34.8	34.7	30.8
Maid 101	Green fence post by sign for Kent Medical Campus at Newham Court	Roadside	578049	157248	N	50	-	33.1	33.1	27.4	23.9
Maid 105	Near Harp Farm Rd, Westfield Sole, Maidstone	Roadside	577289	161502	N	100	-	24.7	24.1	21.5	19.6
Maid 110	nr. 3 Tonbridge Rd, Maidstone	Roadside	575540	155435	Y	75	-	29	33.8	29.7	33
Maid 111	Mote Rd. On lamp post adjacent to pedestrian crossing on Wat Tyler Way	Roadside	576277	155404	Y	91.7	-	-	30.4	30	27.4
Maid 112	New Cut Rd Turkey Mill Rd sign, Maidstone	Roadside	577770	155613	N	100	-	-	41.4	34.9	34.1

Site I.D	Site Name	Site Type	X (m)	Y (m)	In AQMA?	2019 Data Capture (%)	Monitored NO_2 Concentration (µg/m3)				
							2015	2016	2017	2018	2019
Maid 113	Lamppost outside 1 Ashford Road	Roadside	578567	155392	N	75	-	-	44.5	46.4	46.2
Maid 115	On pole adjacent to side wall of Swan PH Loose Rd	Roadside	576477	153375	N	100	-	-	35.8	32.2	33
Maid 116	On telegraph pole by front garden wall of 36 Forstal Rd Cottages	Roadside	573979	158756	Y	100	-	-	58.5	53.3	49.2
Maid 117	On lamppost adjacent to drive through area of McDonalds	Roadside	575698	155448	Y	100	-	-	31.8	34.5	32
Maid 118	On down-pipe to left of main hospital entrance (forwardmost façade)	Roadside	573302	155735	N	100	-	-	17	17.6	17.7
Maid 121	On down-pipe to right of 62 Tarragon Road	Roadside	573273	155107	N	100	-	-	30.7	23.3	20.9
Maid 122	Down-pipe front façade 46 Springwood Lane	Roadside	576386	155034	Y	83.3	-	-	58.7	79.2	73.4
Maid 123	Loading sign to the right of the front of Papermakers PH Loading sign	Roadside	576378	155032	Y	83.3	-	-	59	53.5	55.5
Maid 124	Fence pole at back of site for proposed development at 102 Upper Stone St	Roadside	576340	155031	N	91.7	-	-	16.1	19.9	19.2
Maid 125	Tube located in no-loading sign on lamppost to rear of garden wall behind Langley House (replace Maid 120)	Roadside	573285	155266	N	83.3	-	-	-	23.3	24.3
Maid 126	Tube located opposite Maid 125 on lamppost adjacent to 5a Hermitage Lane (in addition to Maid 121)	Roadside	573269	155266	N	66.7	-	-	-	26.2	23.4
Maid 127	Tube located in bracket of Give Way sign on opposite side of Wren's Cross to Maid 111	Roadside	576295	155376	Y	100	-	-	-	36.2	49.1
Maid 128.1	Site located in cage for air intake of new urban air quality station in Upper Stone St.	Roadside	576337	155183	Y	91.7	-	-	-	67.7	61.3
Maid 128.2						91.7	-	-	-	67.3	61.7
Maid 128.3						91.7	-	-	-	68.1	62.5
Maid 129	Site located in bracket of road sign at South-West façade of club (opposite end to Town Hall) of Middle Row)	Roadside	575928	155652	Y	25	-	-	-	29.3	28.3

Site I.D	Site Name	Site Type	X (m)	Y (m)	In AQMA?	2019 Data Capture (%)	Monitored NO_2 Concentration (µg/m3)				
							2015	2016	2017	2018	2019
Maid 131	Lamp post near façade of nearest new home of new development for new road called Buffkin Way (replacing site Maid 89)	Roadside	579090	152270	N	83.3	-	-	-	28.5	27.1
Maid 132	Replaces Maid 86 on road sign 20 Mote Road, Maidstone	Roadside	576368	155408	Y	100	-	-	-	-	29.8
Maid 133	Replaces Maid 103 on down pipe Ashley Gardens Care centre ME15 8RA	Roadside	578412	152598	N	100	-	-	-	-	20.8
Maid 134	1-2 Station Rd East Farleigh on downpipe	Roadside	573458	153585	N	41.7	-	-	-	-	24.9
Maid 135	Rockin Robin PH on downpipe from Feb 2019	Roadside	573315	154978	N	83.3	-	-	-	-	32.8
Maid 136	Replaces Maid 75, 10 Tithe Mews ME17 on downpipe	Roadside	586250	152583	N	83.3	-	-	-	-	16.8
Maid P1A	Collier St. Junction of Green Lane with B2162 roadsign	Roadside	571648	146032	N	83.3	-	-	-	-	15.1
Maid P2A	Foot of Station Hill by bridge info board Station Rd, East Farleigh	Roadside	573467	153493	N	100	-	-	-	-	14.7
Maid P2B	Bull PH (Lower Rd) crossroads on pole in triangle at top of Station Hill ME15 0HD	Kerbside	573461	153272	N	100	-	-	-	-	25.6
Maid P3A	Down Pipe of Sainsburys façade facing High St. but adjacent to junction of track to car park.	Roadside	583461	144207	N	100	-	-	-	-	19.3
Maid P3B	Good Intent road sign pole, junction of Norht St. with Kings Rd.	Roadside	583292	144352	N	58.3	-	-	-	-	17.8
Maid P3C	On road sign bracket, junction of Mill Bank and Moat Rd.	Kerbside	583250	144370	N	100	-	-	-	-	16.7
Maid P4A	Leeds and Broomfield C of E primary school fence pole.	Roadside	582478	153340	N	100	-	-	-	-	38.1
Maid P4B	George PH downpipe, Leeds ME17 1RN.	Kerbside	582366	153182	N	100	-	-	-	-	25.1
Maid P4C	Height restriction gate pole for recreation sports field in Leeds.	Roadside	582087	152969	N	100	-	-	-	-	14.8

Site I.D	Site Name	Site Type	X (m)	Y (m)	In AQMA?	2019 Data Capture (%)	Monitored NO_2 Concentration (µg/m3)				
							2015	2016	2017	2018	2019
Maid P5A	Crown City restaurant roadsign bracket, junction of Tonsbridge Rd. with The Street	Kerbside	570452	153382	N	91.7	-	-	-	-	24.6
AQ6.1	On Pole supporting street camera, A20 near Chrismill Rd. Bearsted, ME14 3NT	Roadside	581266	155053	N	100	-	-	-	-	30.7
AQ6.2						100	-	-	-	-	29.9
AQ6.3						91.7	-	-	-	-	29.2
AQ7.1	Lamppost by sign for Leeds castle, South of junction 8 of M20 towards A20.	Roadside	576337	155183	N	75	-	-	-	-	21.7
AQ7.2						83.3	-	-	-	-	24.6
AQ7.3						91.7	-	-	-	-	24.2
AQ8.1	Road sign pole, junction of Chegworth Rd. to A20 Harrietsham (South of M20)	Roadside	584399	153247	N	100	-	-	-	-	25.5
AQ8.2						100	-	-	-	-	25.7
AQ8.3						100	-	-	-	-	26.4
AQ9.1	Road sign pole near crossing of CTRL with A20	Roadside	587169	152635	N	100	-	-	-	-	29.8
AQ9.2						100	-	-	-	-	30
AQ9.3						100	-	-	-	-	30
AQ11.1	Metal fencing by car was site adjacent to Old Ashford Rd.	Rural	590601	152006	N	83.3	-	-	-	-	11.5
AQ11.2						83.3	-	-	-	-	11.2
AQ11.3						83.3	-	-	-	-	11.7

Maidstone Local Plan Review Transport Modelling

Excerpt from Jacobs report (September 2020)

The following text has been extracted from the "Maidstone Local Plan Review – Stage 1 Transport Technical Note v2" document dated 16th September 2020.

Project Summary

The spreadsheet modelling initially tested three main spatial options or 'Reasonable Alternatives' (RAs) as defined by MBC, including:

- RA1 – the impact of the continued existing pattern of growth set out in the current Local Plan;
- RA1a – the impact of Garden Settlement sites alongside other rural allocations, excluding all urban area allocations; and
- RA2a – the impact of Garden Settlement sites with a combination of rural allocations and urban area allocations.

Results show RA1 has a slightly higher impact in the town centre and to the west of the borough, while the two RAs with the Garden Settlement sites (RA1a and RA2a) have a greater impact to the east and south of the borough, along the A20, A274 and A229. RA1a has the highest impact on the wider network, given the reliance on more dispersed sites across the borough to provide the required level of growth in the less connected RSCs and larger villages.

An assessment of the key links identified in both the AM and PM peaks, maximum development flows for the 3 main RAs remain within an additional 500-1,000 two-way vehicles across the highway network. RA1a generates the greatest increase in flows in comparison to background 2031 flows, with the highest impact noticed along the A20 East, A274 and the B2163 (approximate increase of 45%-55% per link in each peak period). Traffic increases of this level, particularly on routes that currently have high traffic flows and periods of congestion, would generally be considered severe and require significant mitigation to reduce the impact and reach an acceptable level of network performance.

Two of the three main RAs (RA1a and RA2a) were then further tested with minor adjustments, to identify the impact of initial sustainable travel measures within the Garden Settlement sites. This included initial public transport mitigation measures and higher proportions of trip internalisation as a result of active travel measures.

Results show RA1a has a much higher impact along the B2163 to the east, and the A229 to the south of the borough, with both RAs (RA1a and RA2a) also having a noticeable impact along the M20 between junctions 7 and 8 and the A274 towards the south of the borough. In line with the findings from the initial tests (three main RAs), RA1a continues to have a greater impact on the wider network, showing the same pattern of traffic routed to more

dispersed sites across the borough to provide the required level of growth, as a result of excluding all Maidstone urban area sites.

Similar to the findings from the initial tests (three main RAs) an assessment of the key links identified in both the AM and PM peaks, maximum development flows for the 3 main RAs remain within an additional 500-1,000 two-way vehicles across the highway network. While the flow values are shown to reduce as a result of the initial sustainable travel measures, there is a limited impact with regards to the overall noticeable impact on the highway network, with a maximum reduction of approximately 85-100 vehicles along the A20 East for both the AM and PM peaks for both scenarios. While these sites need to be considered further, these findings make clear the need to reduce the focus on car travel and work with more ambitious sustainable objectives, to fully align to the Garden Settlement principles.

The three main RAs were then further tested with minor adjustments, to identify the full build out of each of the sites (and maximum capacity for the Garden Settlement Sites), up to the following Local Plan period future year of 2047.

Results show the pattern of traffic demand is similar for each of the respective initial RAs tested for the current LPR period (2037) but with an increased impact from the traffic demand as a result of the increased development tested. While the AM peak appears to have a greater impact across the wider network, generally, the overall impact of the full build scenario is comparable across all three RAs, with the same key links identified as the main links affected by the development traffic, comprising of the A229, and B2163 towards the south, and M20 towards the east. Overall, RA1a shows the greatest impact, primarily in the south and east of the borough, with levels of demand of over 2,000 vehicles in the AM peak (impacting the B2163, A274 and A20 East) and from 1,500 to 2,000 in the PM peak (impacting the A229 from the Maidstone Bridges gyratory continuing southbound).

An assessment of the key links across the highway network identified the flows significantly increased in the full build scenario. While the greatest impacts remain on the same key links as the three main RAs, the maximum development flows are now largely illustrating an additional 1,000-1,500 two-way vehicles, in comparison to an additional 500-1,000 two-way vehicles for the initial tests (three main RAs). RA1a again shows the greatest increase, with an additional 1,134 vehicles in the AM peak and an additional 1,021 vehicles in the PM peak along the A20 East and A274 respectively. In turn, the full build scenario illustrates a more significant increase in flows in comparison to background 2031 flows. The greatest increase is 113% in the AM peak along the A274 and 112% in the PM peak along the B2163, both for the RA1a scenario, which generally shows the greatest uplift in comparison to RA1 and RA2a full build scenarios. Future traffic levels are almost doubled on some parts of the network, which reiterates the need for a comprehensive transport mitigation package to facilitate the level of growth proposed.

Conclusions and Next Steps

As part of this Stage 1 piece of work, the following components have been reviewed and are discussed within this Technical Note:

- A review of the existing transport network, to understand the transport baseline;

- A review of the existing 2018 Maidstone VISUM Traffic Model, to inform initial testing (**Appendix A**);
- Initial Air Quality review, including key documents, previous air quality work, baseline condition and high-level assessment of likely impacts of LPR options on air quality (**Appendix B**);
- Initial LPR site options 'soft-testing' through the development of a spreadsheet model to provide an indication of the likely order of magnitude of traffic impacts on key parts of the network; and
- Further testing for the Garden Settlement sites, with adjustments to test initial sustainable travel measures (following a review of the transport opportunities and challenges at these locations) and the full build out of the Garden Settlement sites to identify the impact of these sites at their potential capacity.

The initial soft testing, to feed into the Stage 2 work, indicates the following high-level findings:

- For all RAs, there will be a noticeable impact in the Maidstone Town Centre and the AQMA network;
- RA1 (Local Plan continued) pattern of growth has a slightly higher impact in the town centre and to the west of the borough;
- RA1a (excluding all of Maidstone urban area) & RA2a (Garden Settlement sites) which both include Garden Settlement locations, have a greater impact to the east and south along the A20 / A274 and A229;
- RA1a (excluding all of Maidstone urban area) has the highest impact on the wider network given the reliance on RSCs and Larger Villages to provide the growth required outside of the urban area;
- The Garden Settlement sites, in principle, should provide the critical mass to deliver sustainable options and a stepped change away from car use and should be considered further. This will be particularly critical for the full build of the Garden Settlement sites, which are expected to generate a significant number of trips, and in turn create further pressure on an already congested highway network; and
- Development in Maidstone Town Centre and within the urban area can also play a part to capitalise on higher density, lower parking/parking free sites, with more convenient access to existing and potential future transport networks, in order to achieve the required growth with a reduced reliance on the highway network.

Following this analysis, the key recommendations would be to:

- Move away from a reliance of allocating sites in RSCs and Larger Villages, as with scenario RA1a (excluding all of Maidstone urban area), which are less likely to be able to deliver significant sustainable transport improvements;
- Capitalise and maximise the sustainable transport opportunities that Maidstone Town Centre and Garden Settlements sites could offer, to deliver significant mode shift and reduce the reliance on car travel; and

- Overall, scenario RA2a (Garden Settlement sites) strikes the balance between allocating sites within Maidstone Town Centre – already offering better transport links and connections - and the Garden Settlement sites, which, if delivered correctly, has the potential to deliver transformational sustainable transport measures and reduce the overall need to travel.

When progressing onto the Stage 2 piece of work, the key challenges to consider include:

- The Garden Settlement sites need to implement more ambitious sustainable measures to deliver significant levels of modal shift and move away from a reliance on car travel;
- A greater mix of development and land uses will need to be tested, to encourage people to live / work within the Garden Settlement sites and reduce the need to travel (i.e. North of Marden and North of the M2 / Lidsing sites do not necessarily offer any real mix of development other than additional residential);
- High quality and frequent rapid transit services from the Garden Settlement sites to key destinations need to be explored fully and tested; and
- The Stage 1 findings need to be considered in a 'Sustainable Transport and Mitigation Strategy' in order to fully assess the cumulative impact of development traffic and the potential mitigation requirements as an integrated approach to providing a robust evidence base.

This Technical Note and the initial findings will be used as a basis to inform the Stage 2 work, which will involve more detailed transport modelling using the emerging Kent-wide transport model to underpin the eventual evidence base. The detailed assessment in the Kent-wide transport model will use the Stage 1 findings and further refine the spatial strategy options, air quality modelling assessments, and inform the mitigation/ intervention package required to deliver sustainable growth in the borough.