canterbury city council

Draft Canterbury District
Local Plan to 2045

AIR QUALITY ASSESSMENT OF THE DRAFT LOCAL PLAN STRATEGY FOR DEVELOPMENT AND TRANSPORTATION

(OCTOBER 2022)

Air Quality Assessment of the Draft Local Plan strategy for development and transportation
October 2022

1. Introduction

This report presents an air quality assessment of the preferred strategic growth option for the draft Canterbury District Local Plan to 2045, together with an assessment of the current available baseline air quality conditions in the district.

The preferred option includes an Eastern Movement Corridor and changes within Canterbury to reduce the number of private vehicles accessing the city centre, as well as interventions to increase sustainable transport and active travel.

The report provides a qualitative assessment of potential air quality changes due to the predicted traffic changes as a result of the draft Local Plan allocations and new transport strategy.

2. Methodology

2.1 Baseline Conditions

A review of existing air quality conditions in the district has been undertaken through a review of CCC's 2022 Annual Status Report (ASR).

2.2 Air Quality Assessment

An assessment of where the positive and negative effects are likely to be (using outputs of the Kent County Traffic Model[1] to support the Local Plan) and a high-level view on key areas that might be adversely or positively affected has been undertaken.

The assessment has considered whether or not the development of the proposed strategic site allocations will trigger, singularly and/or cumulatively, the creation of new air quality management areas (AQMAs) or the extension of existing AQMAs during the lifetime of the emerging Local Plan (up to 2045).

The assessment has considered the air quality impacts of the Local Plan on human health receptors such as residential properties, hospitals and schools.

3. Baseline Conditions

3.1 Local Air Quality Management (LAQM)

Under the LAQM process, local authorities have an obligation to review and assess air quality in their areas to determine whether the Air Quality Objectives are likely to be achieved. Each local authority must publish an annual report of their data as an ASR. The CCC 2022 ASR notes that the main source of air pollution in the district are traffic emissions from major roads notably the A2, A28 and A299.

3.2 Air Quality Management Areas (AQMAs)

Under the LAQM process, local authorities are required to designate an AQMA upon evidence of prolonged exceedance of Air Quality Objectives 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.

An AQMA was declared in April 2006 along parts of the A28 at Broad Street/Military Road, in Canterbury city centre, where exceedances of the annual mean objective for nitrogen dioxide (NO2) were predicted. This AQMA was then incorporated into an expanded area in 2011, which also included two small areas of Broad Street and Wincheap. The AQMA was expanded further in April 2018 to incorporate areas along Rheims Way, Old Dover Road, New Dover Road and Chaucer Road. The boundaries of the updated AQMA were conservatively selected to cover areas exceeding the annual mean air quality objective for NO2, as well as those areas within 10% of the objective.

An additional AQMA in Herne was also declared in April 2018 to cover the Canterbury Road/School Lane junction for predicted exceedances of the annual mean NO2 objective.
The AQMAs are illustrated in the figures below.

Figure 1: Canterbury Air Quality Management Area

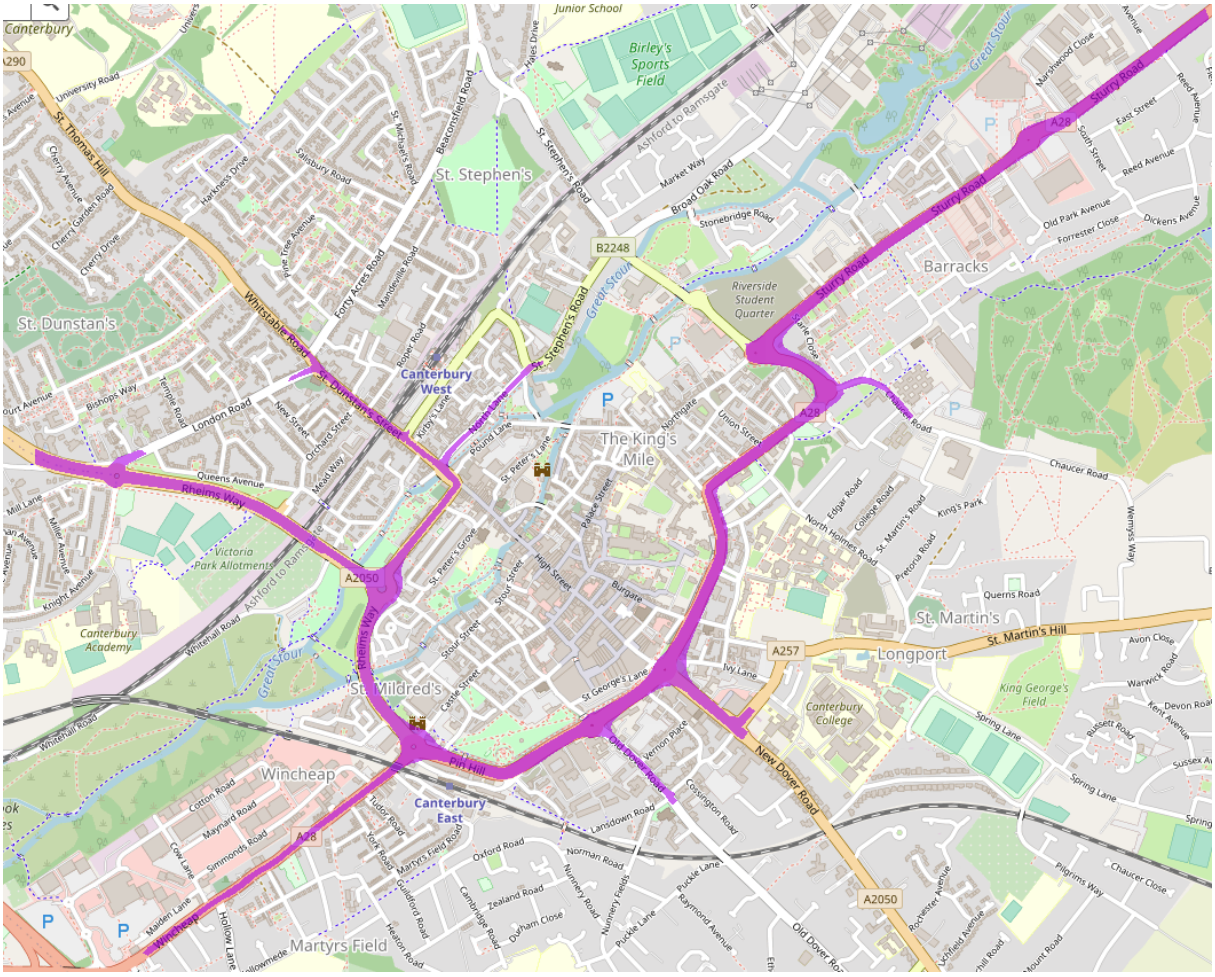
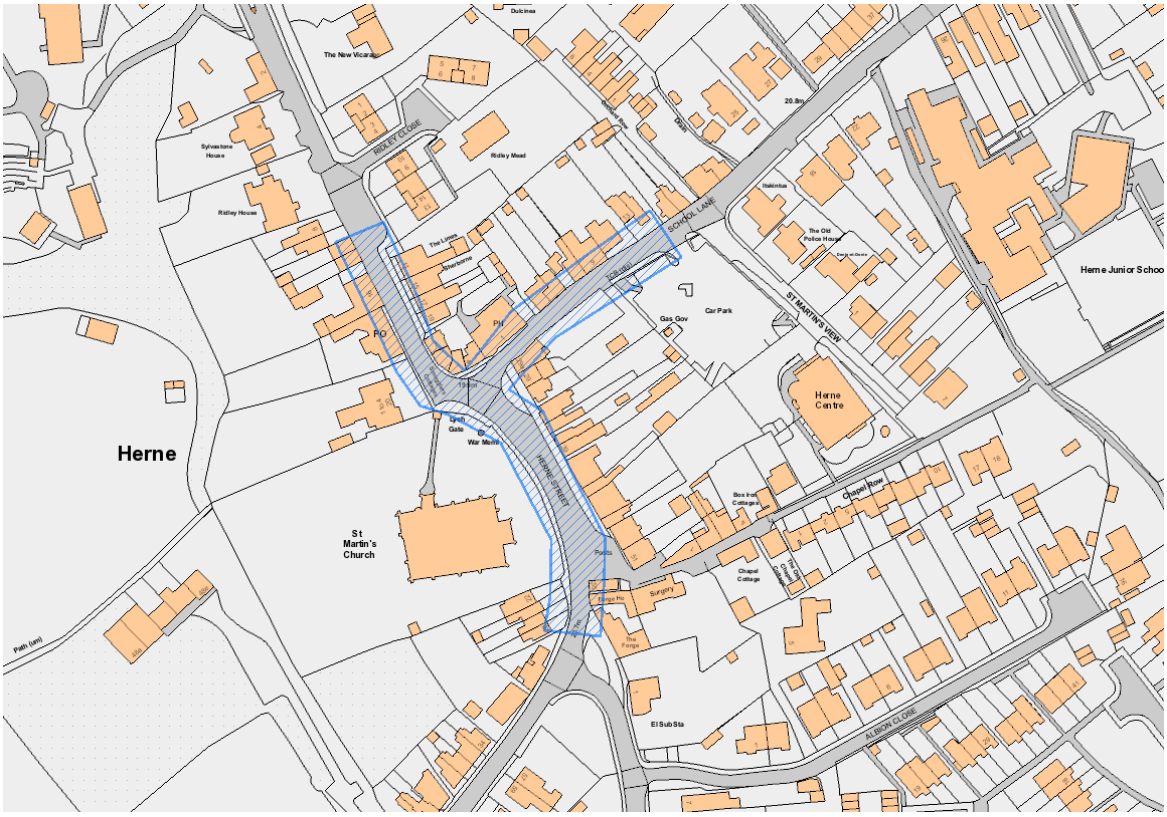


Figure 2: Herne Air Quality Management Area



3.3 Monitoring Sites

CCC undertook automatic (continuous) monitoring at two sites during 2021 and passive (diffusion tube) monitoring at 56 sites during 2021.

The CCC air quality monitoring results identified only one location at which the measured annual mean concentration was within 10% of the NO2 annual mean Air Quality Objective (40µg/m^3) in 2021 at Broad Street in Canterbury which is a narrow street canyon which is an in area with buildings on both sides of the road, which leads to the formation of vortices and recirculation of air flow that can trap pollutants and restrict dispersion.

3.4 Air Quality Action Plan (AQAP)

The AQAP published in December 2018 outlines the actions CCC will take to improve air quality in Canterbury city and Herne over the period 2018-2023. A number of initiatives will be implemented to increase modal shift away from private car use for workplace travel to increased use of more sustainable transport including walking, cycling and enhanced bus and Park & Ride provisions and raising public awareness of air quality issues and promoting good practise. The construction of the Herne Relief Road due to be completed in 2023 will remove a significant amount of traffic from the centre of Herne which is expected to significantly improve air quality resulting in the removal of the AQMA.

The monitoring data highlights the continued need for the Canterbury AQMA, with levels of NO2 along Broad Street close to the NO2 annual mean Air Quality Objective. Additional development in the district would therefore have the potential to worsen pollutant concentrations within the Canterbury AQMA. Additional development site allocations therefore need to be taken into consideration in order to support the AQAP.

4. Air Quality Assessment

4.1 Canterbury City Centre AQMA

Traffic volumes in the city centre show significant decreases across the entire AQMA which will have a beneficial impact on air quality. The reduced traffic on the ring road results from transport schemes that provide alternative routes such as the Eastern Movement Corridor and city centre schemes that support pedestrians and cyclists which restrict car space specifically within these areas.

4.2 Herne Village AQMA

Traffic volumes in Herne Village show significant decreases which will have a beneficial impact on air quality. The reduced traffic through Herne village results from the Herne Relief Road that provides an alternative route into Canterbury.

4.3 Existing roads across the District

High traffic flows on the two main corridors, A2 to the south and A299 to the north will have a negative impact on air quality. However, both these strategic routes have sensitive receptors set back at a sufficient distance from the roadside to ensure that new AQMAs would not be created.

Herne Bay Road leading into Sturry will experience an increase in traffic flow as traffic from Herne Bay accesses the city centre. The Sturry link road scheme which is due to be constructed between autumn 2023 to summer 2025 will provide a road that crosses both the railway and the Great Stour river which will allow traffic to avoid the level crossing, ensuring that a new AQMA will not be created during the lifetime of the draft Local Plan.

Rough Common Road linking the Whitstable Road with the A2050 into Canterbury city centre will experience an increase in traffic flow. Sensitive receptors are set back from the roadside and as baseline concentrations of air pollutants in this area are low; it is considered that the increase in traffic flow will not create any new AQMAs during the lifetime of the draft Local Plan.

4.4 New and realigned roads across the District

There are a number of new and realigned roads as shown in figures 3 and 4 below. These locations have relatively low baseline concentrations of air pollutants, and it is considered that traffic using the new or realigned roads will not cause exceedances of any pollutants at these locations.

For impacts on air quality arising from traffic emissions, guidance produced by National Highways advises that contributions from vehicle emissions are generally imperceptible above background concentrations farther than 200 metres from the source[2].

A preliminary assessment of the locations has identified receptors located within 200 metres of some parts of the new or realigned roads, and therefore air quality assessments will be undertaken at the detailed design stage.

Figure 3: Road/ Infrastructure schemes – Canterbury City Area

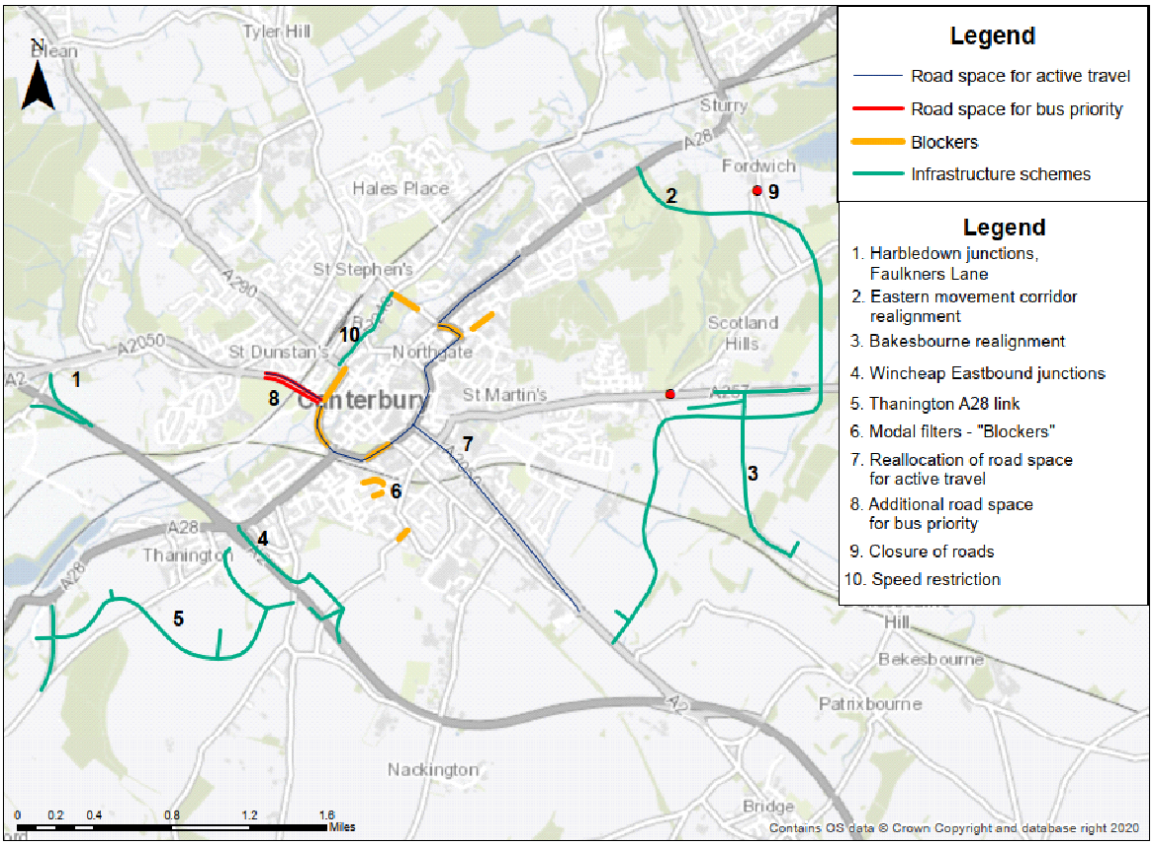
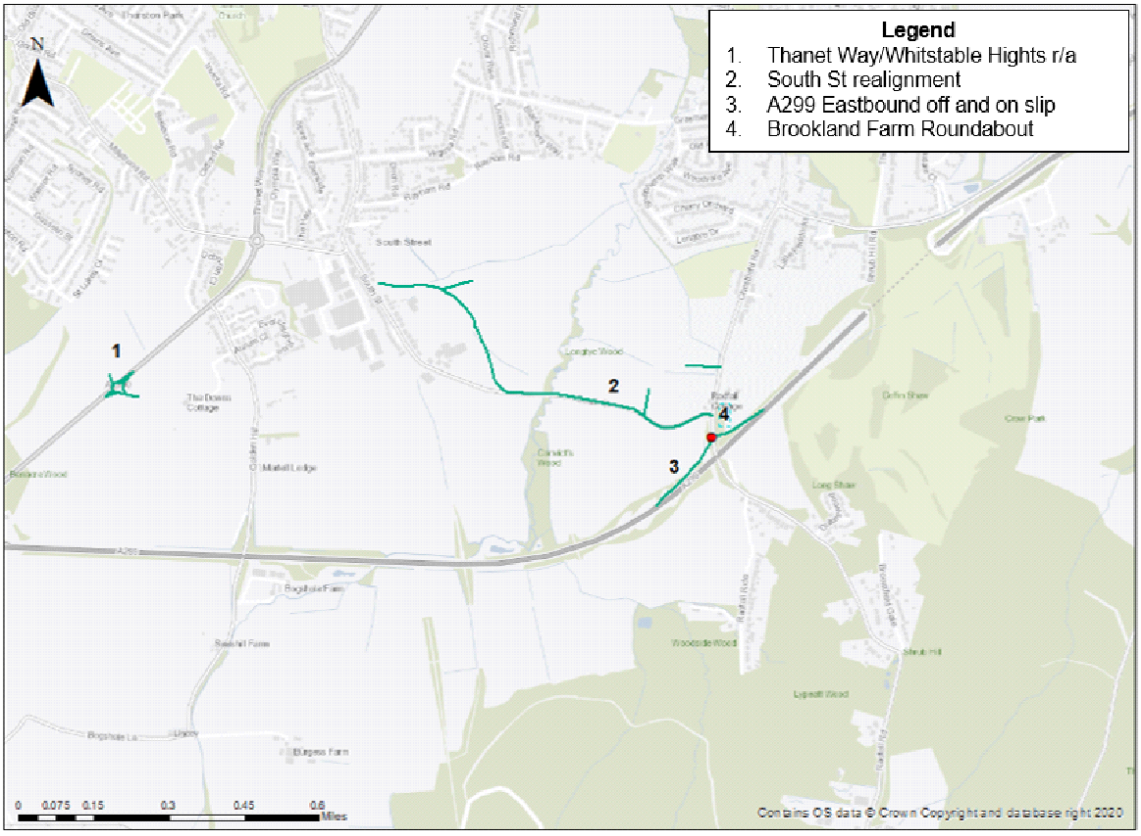


Figure 4: Road/ Infrastructure schemes – Coast Area



5. Air Quality Assessment Review

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

The assessment used outputs of the Kent CountyTraffic Model to assess where the positive and negative effects are likely to be.

The results indicate that strategic development allocations have the potential to have an adverse impact on air quality at sensitive receptors within CCC but that the new transport strategy will reduce traffic flow in already exceeding areas, namely the Canterbury AQMA.

5.1 Potential Impacts on Receptors

The significant reductions in traffic flow in the city centre as a result of the new transport strategy indicate the potential to improve air quality concentrations in already exceeding areas, namely the Canterbury AQMA.

Receptors located close to the largest increases in traffic or to new or realigned roads have relatively low baseline concentrations of air pollutants, and it is considered that the impacts of the development will not cause exceedances of any pollutants at these locations.

5.2 Uncertainties

It should be noted that the air quality assessment 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 flow data used 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), or the potential for people walking and cycling instead of driving. These factors could have a significant positive impact on the observations presented within this report and therefore these observations should be considered conservative.

In preparing for the next stage of the Local Plan - Regulation 19 - the council will examine these variables more closely, and the air quality impacts will be re-assessed as part of this work.

5.3 Conclusions and recommendations

The air quality assessment has demonstrated that the predicted traffic changes as a result of the draft Local Plan allocations and new transport strategy will have a beneficial impact on air quality within Canterbury city centre and will not create any new AQMAs in the district.

The results of the air quality assessment should be considered conservative due to the high-level assessment used, which has not taken into account the improvements in low emission vehicles or the potential for increased mode shift which are likely to improve air quality even further.

The key issue for further consideration is the interim years and it is recommended that a further air quality assessment for the Regulation 19 Local Plan includes an interim year in addition to the final year as part of its assessment.

[1]Jacobs, Canterbury Local Plan - Preferred Strategic Growth Local Plan Option Report, September 2022

[2]Highways England (2007). Design Manual for Roads and Bridges. Volume 11, Section 3. HA 207/07. http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf