
REPORT

119442

LOWER RAINHAM NETWORK



INTERIM REPORT

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SWECO UK LIMITED

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1.1 Introduction

Medway Council requested the development of a new subnetwork which will include the Lower Rainham Road. The aim of this subnetwork is the evaluation of the impact of the proposed developments related to specific housing sites around Rainham in the traffic operations of the area. These sites equate to a total of 5,548 homes.

The extent of the subnetwork is presented in Figure 1 and the proposed development sites in Figure 2.



Figure 1: Extend of Lower Rainham Subnetwork



Figure 2: Proposed development sites at Lower Rainham

1.2 Methodology

In order to assess the impact of the development sites on the traffic operations of the road network in Lower Rainham, the Level of Service (LoS) for Junctions and Corridors will be employed. This metric has been used in the past to evaluate the performance of key junctions and corridors across the other Medway subnetworks and to identify the locations where capacity is exceeded.

The same methodology will be used for the Lower Rainham Subnetwork which is outlined below:

A reference case scenario will be run taking into account the traffic demand without any additional trips stemming from the development. This will be based on the 2035 Reference Case scenario as a worst case scenario.

- The LoS for key junctions and corridors will be computed for the reference case scenario and the locations where capacity might be exceeded will be identified.
 - Particular focus will be put on reviewing the adjacent subnetworks and their performance as a result of the additional development
1. The first sensitivity test will be undertaken with the modelling of the additional demand related to the new development.
 - A scenario with the minimum expected released development size e.g. a combination of multiple development sites totalling 500 houses will be modelled and the LoS for junctions and corridors will be calculated.
 - We can initially assess the wider network at a macro level as a starting point.
 - Where there are significant localised changes in flows, we can then use the relevant subnetwork to analyse the junctions or corridors with LoS F. For these locations we will then identify the level of development the road network can handle before it starts failing, based on a linear interpolation approach.
 2. The second sensitivity will proceed with the modelling of combination of multiple development sites totalling approximately 1,500 homes.
 - We will again review outputs to understand if there are junctions and links with LoS F are located and need break point analysis.
 3. The third and final scenario will be modelled with the maximum development for Rainham. Again, where junctions and links reach LoS F we can interpolate the breaking point.

If there are no corridors or junctions with LoS F in the maximum development size scenario, this means that the road network can accommodate the additional trips resulting from the new development. we combined multiple development sites on the peninsula and attributed impacts to the total number of dwellings built.

If the LoS F threshold is exceeded in any of the scenarios, our working assumption is that no further development in the Rainham area could be accommodated. However, we will discuss with the client on the specific junctions with LoS F to understand if there's value to continue with the remaining sensitivity tests to identify other LoS F junctions.

Where LoS F is identified, we will relay back through our interpolation data the level of development feasible before breaking point for that location.