



Date: November 2023

File Ref: TR/CS/P22-2687/10TN Rev A

Subject: Non-Technical Summary for the Southern Green Infrastructure Parcel

Project: One Horton Heath, Secondary Road Infrastructure

1.0 INTRODUCTION

- 1.1 Create Consulting Engineers Ltd have been appointed by Eastleigh Borough Council to provide a Non-Technical Summary of the Air Quality Assessment (AQA) in support of the planning application of the Secondary Road Infrastructure at One Horton Heath and any potential impact on the Southern Green Infrastructure Parcel.
- 1.2 Construction of the Green Infrastructure includes open space landscaping, bridleways, footpaths, SuDS, play areas and ecological and biodiversity enhancements at One Horton Heath.
- 1.3 The Southern Green Infrastructure Parcel is an area of landscaping as shown in Figure 1.1. The route of the footways, cycleways and SuDS run adjacent to the Chalcroft Farm, Lower Acre 2 and Chalcroft Outfarm Works parcels.
- 1.4 The proposed development has been designed in full accordance with the Development Plan and Outline Planning Application (OPA) O/20/89498, which has a resolution to grant consent subject to S106 negotiations relating to education. The application is for full planning consent due to the time for these negotiations to complete. Submitting details of the Green Infrastructure Landscaping (GI) as a full planning application will deliver the GI in accordance with, and as part of the OPA, but enable commencement more quickly than waiting for the resolution of the OPA S106 and the determination of an application for reserved Matters Approval of details of the Green Infrastructure.

- 1.5 This Non-Technical Summary outlines the Air Quality Assessment (Ref: NP/VL/P22-2687/04 Rev A), which should be read in conjunction for the full context of methodologies, findings and impacts. This summary details the impact on the Southern Green Infrastructure Parcel only.



Figure 1.1: Southern Green Infrastructure Proposal

2.0 AIR QUALITY ASSESSMENT

- 2.1 The secondary road infrastructure will introduce new vehicles as a main source of pollution to the area. Vehicles movements will give rise to NO₂, PM₁₀ and PM_{2.5} emissions, and therefore has the potential to worsen the current air quality within the area and impact any existing sensitive receptors, located nearby in Horton Heath. As such, an AQA was required to determine potential impacts associated with the proposed development.
- 2.2 Dispersion modelling was undertaken, using ADMS-Roads Extra (version 5.0.1.3), to determine the predicted pollutant concentrations in the surrounding area for 2030. This looked at two scenarios. Scenario one determined the impact of the development without any additional features and scenario two looked at the impact of buildings adjacent to the Secondary Road Infrastructure, which were modelled as canyons at a height of 15 m.
- 2.3 Sensitive receptor locations were modelled along the Secondary Road Infrastructure and at the proposed school. Receptor locations along Burnetts Lane in Horton Heath were also modelled as the Secondary Road Infrastructure provides connections to the town via Fir Tree Lane. Transport emissions were input from the proposed Primary and Secondary Roads, Fir Tree Lane and Burnetts Lane.
- 2.4 The dispersion modelling results indicated that predicted annual NO₂, PM₁₀ and PM_{2.5} concentrations for all scenarios, at all receptor locations, were below the UK Air Quality Objectives (AQOs).
- 2.5 The overall significance of potential impacts as a result of NO₂, PM₁₀ and PM_{2.5} concentrations, from the operational phase, were predicted to be negligible at all sensitive receptor locations considered for the opening year scenario, in accordance with the EPUK and IAQM guidance.

3.0 SOUTHERN GREEN INFRASTRUCTURE PARCEL

- 3.1 The Southern Green Infrastructure Parcel is located on either side of the Primary Road and borders the Secondary Road Infrastructure to the east. Sensitive receptor locations were modelled to the north and south of the Primary Road and along southeastern boundary of the Secondary Road Infrastructure. Outcomes showed a negligible impact and AQOs below their respective levels. It is also noted that pollution concentrations decrease with distance from the source. Therefore, based on this information, the Primary Road and Secondary Road Infrastructure will have a negligible impact on the Southern Green Infrastructure Parcel.
- 3.2 The Southern Green Infrastructure Parcel is expected to have a positive impact on the area. Vegetation is shown to absorb various pollutants including PM₁₀, PM_{2.5} and CO₂. The removal of pollutants occurs through the absorption and conversion of the pollutant within the leaf interior. Pollutants are captured primarily through the stomata of leaves and/or removed by the plant surface. Healthy trees can remove significant amounts of air pollution in cities, where it is often concentrated.¹
- 3.3 The Southern Green Infrastructure Parcel is populated with existing mature Oak woodland, vegetated watercourses, including Alder, and field hedgerows of mixed native species, including Hawthorn, Blackthorn, Field Maple, Hazel.
- 3.4 The Woodland Trust's *Urban Air Quality Report*² shows that a variety of these trees will support the removal of pollutants, including particulate matter nitrogen oxides and ozone, from the atmosphere. Oak and Alder are shown to provide varying degrees of absorption of pollutants, which will be advantageous in reducing some of the pollution modelled along the adjacent Primary Road and southeastern link of the Secondary Road Infrastructure in the AQA.
- 3.5 In addition, their *Combat Climate Change At Home: 6 UK Native Trees To Plant In Small Gardens*³ report shows that Blackthorn and Hazel are suitable for removing high levels CO₂ from the atmosphere, further improving air quality.
- 3.6 Proposed planting will focus on supplementary woodland, woodland margin, linking hedgerow, seasonal wetlands and a range of grassland types that include specimen tree planting. This will include twenty different species, allowing a wider variety of vegetation to absorb pollutants from the adjacent Primary Road and southeastern link of the Secondary Road Infrastructure.
- 3.7 Overall, the Southern Green Infrastructure Parcel has a positive impact on the proposed development, expecting to reduce concentrations of predicted modelled pollutants studies within the AQA and particularly from the Primary Road and Secondary Road Infrastructure.

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¹ <https://enviroatlas.epa.gov/enviroatlas/DataFactSheets/pdf/ESC/Nitrogendioxideremovedannuallybytreecover.pdf>

² <https://www.palmstead.co.uk/content/downloads/Urban-air-quality-report-Woodland%20Trust%202012.pdf>

³ <https://www.woodlandtrust.org.uk/blog/2022/10/combat-climate-change-at-home-6-uk-native-trees-to-plant-in-small-gardens/>