

Crawley Borough Council Addendum to Water Cycle Study

Final Report

January 2021

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Crawley Borough Council

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Executive summary

In November 2019, JBA Consulting was commissioned by Crawley Borough Council acting on behalf of the councils in the Gatwick Sub-Region (Crawley Borough Council, Horsham District Council, Mid Sussex District Council and Reigate and Banstead Council), to undertake a joint Water Cycle Study (WCS) to inform and provide updated evidence for the councils pre-existing and emerging Local or District Plans. This study assessed the potential issues relating to future development within the Gatwick Sub-Region and the impacts on water supply, wastewater collection and treatment and water quality.

The study used a growth scenario that was based on every potential allocation coming forward during the local plan period, representing a "worst-case" in each wastewater catchment. In particular this produced an overestimate of employment land to the north of Crawley. In addition to this, the study modelled two options for growth at Gatwick Airport, one of which included the utilisation of the standby runway. The standby runway option is being pursued by Gatwick Airport Limited through a Development Consent Order, which will take place outside of the Local Plan process.

An addendum to the original work was required in order to better represent growth in Crawley.

The original study came to the following conclusions relevant to Crawley:

Although SES Water and Southern Water (SW) confirmed that they have sufficient water resources to serve the proposed level of growth, challenges have been identified with the Hardham groundwater abstraction and discussions are ongoing to investigate the sustainability of this abstraction.

Crawley WwTW would exceed its flow permit during the plan period if no action were taken. Schemes to address capacity concerns at this works may take a considerable time to deliver, it is therefore important that phasing of development within these wastewater catchments is aligned with the delivery of additional capacity and early and continued discussion with Thames Water is required.

Modelling of the impact of growth on water quality predicted that growth would cause a significant deterioration in water quality at many sites in the study area. However, this did not occur at WwTWs in the catchment impacted by growth in Crawley (River Mole catchment).

An assessment of water quality in the watercourses adjacent to protected sites identified a risk of deterioration of the conservation status as a result of higher phosphate concentrations. In all cases, improvement in treatment processes at WwTW to treat at the technically achievable limit could prevent this deterioration.

The land to the north of Crawley covered by the Area Action Plan (AAP) was highlighted as being at risk of nuisance odour due to its proximity to Crawley WwTW.

Scenario 1 - retain the current single runway, two-terminal configuration. In this scenario passenger numbers are expected to grow to 61 million passengers per annum by 2032.

Scenario 2 -

2 Impact on original assessments

2.1 Overview

Using the updated growth scenario, the probable impact on each assessment in the original study was reported and the requirement for further work defined. This is summarised in Table 2.1 below. It was found that further study of wastewater treatment capacity, water quality and environmental impact was required. All other

Original Assessment	Impact of revised growth scenario	Further study required in addendum?
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flow at affected WwTWs, the conclusions will be unaffected.

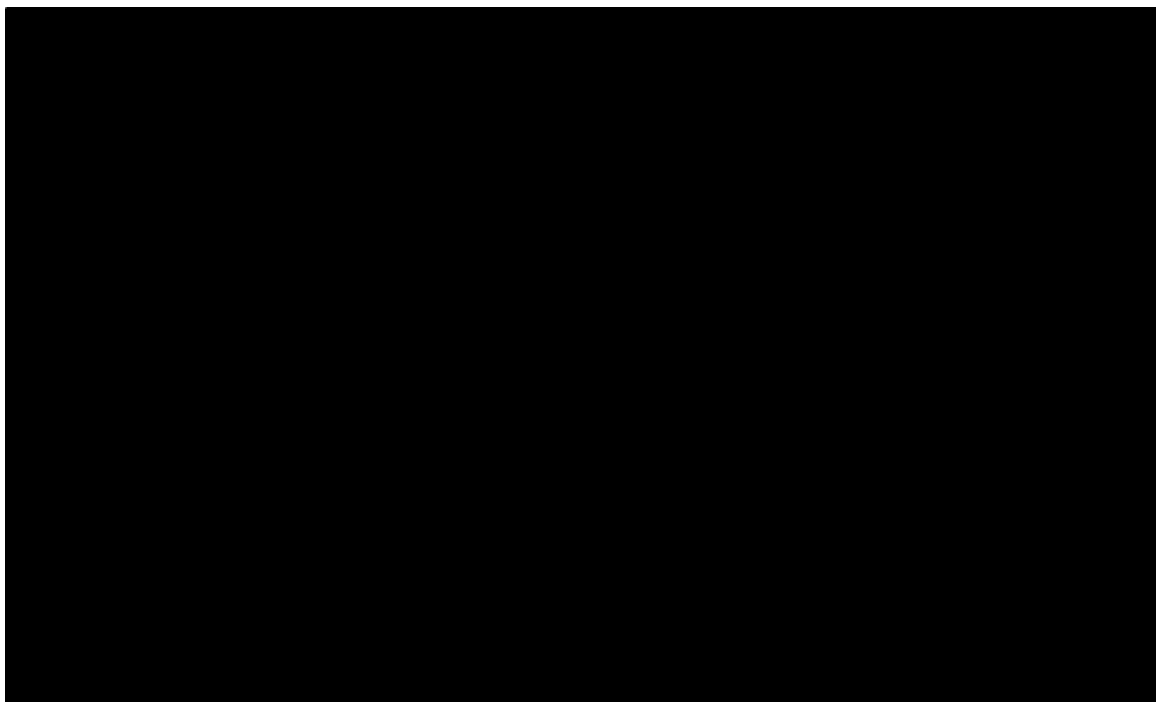


Figure 3.1 Prediction of DWF from Crawley WwTW over plan period

Table 3.1 Updated assessment of headroom

	Original assessment	Addendum assessment
Number of dwellings	22,717	15,802
Employment floor space	778,373 m ²	211,422 m ² *
Airport Option	Scenario 2 – Standby runway – 66,575 additional passengers per day	Scenario 1 – Continuity – 41,918 additional passengers per day
Flow permit assessment	Yes – between 2025 and 2030	Yes – between 2025 and 2030
Comments	JBA assessment shows the flow permit would be exceeded due to growth if no action was taken. TW gave this a “red” assessment due to the scale of infrastructure upgrades required.	The JBA assessment still predicts an exceedance in the flow permit, but this is likely to now occur later (closer to 2030).

* Consisting of employment land included in the Employment Land Trajectory (1 September 2020) and recent completions.

3.2 Conclusions and Recommendations

The addendum growth forecast reduces the magnitude of the predicted permit exceedance and shifts it later within AMP8 (closer to 2030). Early engagement with Thames Water, and Horsham and Mid Sussex District Councils is required to ensure that delivery of housing and employment land in Crawley is aligned with delivery of additional capacity by Thames Water.

4 Odour Assessment

In the original study, the area in the north of Crawley covered by the Area Action Plan (AAP) was given an “amber” assessment for odour highlighting the proximity to Crawley WwTW and the potential for sites to be affected by nuisance odour. The Local Plan review is no longer pursuing the AAP, and the addendum growth forecast contains the individual employment sites for Years 1-5 of the Plan, and a proposed allocation for

industrial-led strategic employment at Gatwick Green. It is now possible to extend the screening exercise to cover these sites as well as the new housing site added at Steers Lane.

No employment sites are now considered to be at risk of nuisance odour, however the site boundary of the Steers Lane site is 500m south east of Crawley WwTW. An odour assessment is recommended as part of the planning process for this site, funded by the developer. All other sites within Crawley have a "green assessment".

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Table

6 Environmental impact

6.1 Original findings

In the original study, the water quality modelling predicted significant deteriorations in water quality in watercourses adjacent to sites with environmental designations such as SSSI etc.

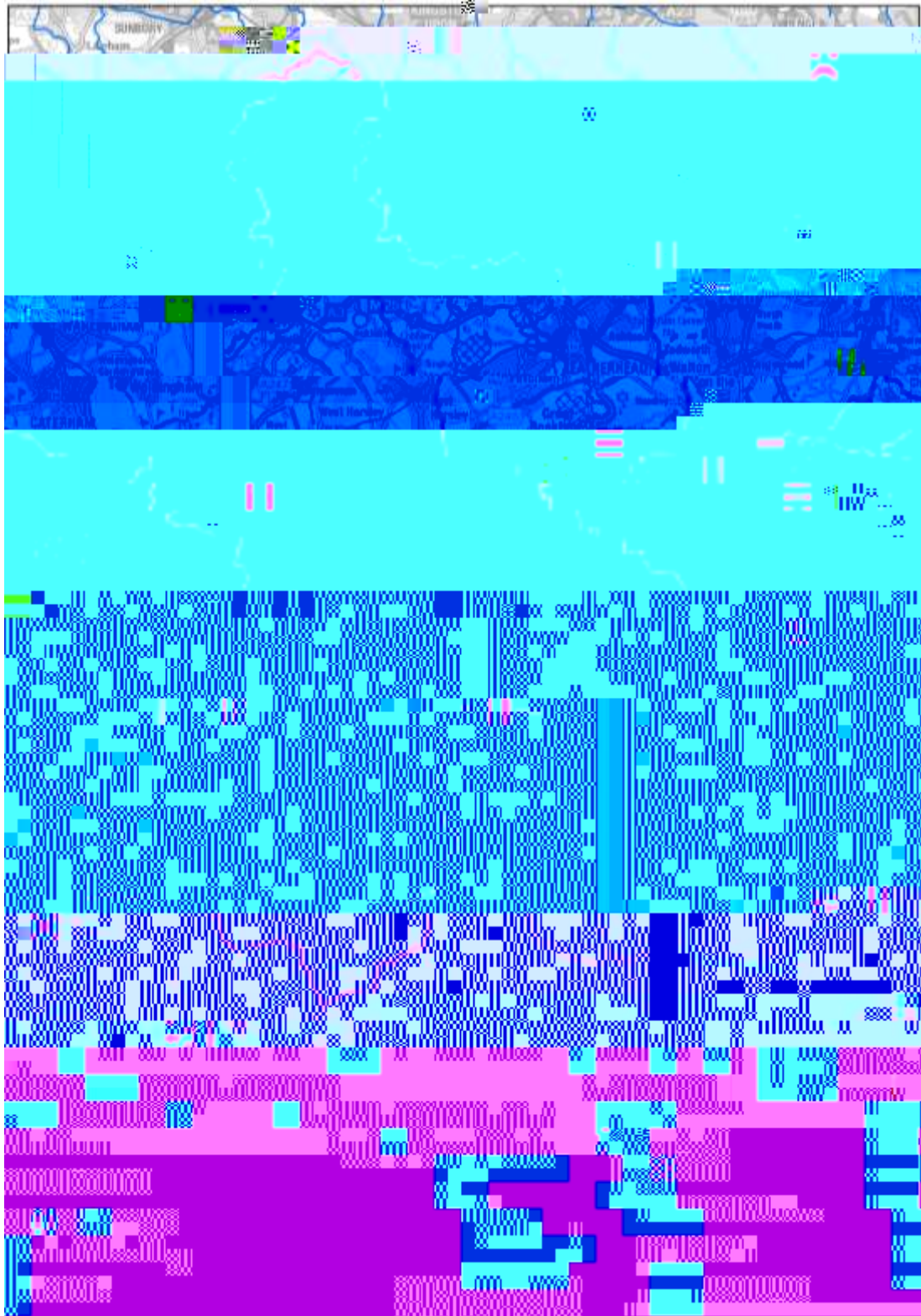


Figure 6.1 River Mole catchment protected sites

7 Summary and Conclusions

A new addendum growth forecast was collated incorporating:

- An updated employment forecast

- A new development site (Steers Lane)

- Change in scenario for Gatwick Airport

- Updated estimate of Growth in the north of Horsham

The impact of these changes is summarised in Table 7.1. Unless stated, conclusions in the original report in other topic areas still apply.

Table 7.1 Table of conclusions

Topic	Original conclusion (Crawley specific)	Updated conclusion
Wastewater treatment	If no action is taken, Crawley WwTW would exceed its flow permit during the plan period. Options exist to pump this flow to Horley, but both of these WwTWs are scored as "red" by Thames Water, indicating the scale of	

Appendices

A Site tracker spreadsheet



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- Haywards Heath
- Isle of Man
- Limerick
- Newcastle upon Tyne
- Newport
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