

Gladman Hearing Statement
Gloucester City Plan Examination

Matter 5: Promoting Healthy and Safe Communities

Prepared on behalf of Gladman by BLBB Consulting Ltd



April 2021

1 MATTER 5 – PROMOTING HEALTHY AND SAFE COMMUNITIES

Q50 – is the extent of the Cordon Sanitaire, identified on the Policies Map, justified by robust, up-to-date evidence? Is Policy C6 an effective means to ensure that future development will not be subject to unacceptable levels of odour nuisance?

1.1 Summary of Gladman’s and BLBB Consulting’s Position

- 1.1.1 We do not believe that the approach taken to define the Cordon Sanitaire as identified on the policies map is justified.
- 1.1.2 Policy C6 seeks to create an exclusion zone within which no development will be permitted. Gloucester City Council (GCC) are relying on a report (Phlorum) (HW001) and specifically on a 3-odour unit contour depicted within the report as being an absolute limit within which there is a level of certainty in relation to the likelihood of there being an unacceptable risk of nuisance to residential receptors living within the boundary of the 3-odour unit contour.
- 1.1.3 We believe the exclusion zone has been developed using information of the odorous emissions produced at the Netheridge/Severn Trent Wastewater treatment works (WWTW) first reported in a survey completed in 2008.
- 1.1.4 We are concerned that the approach detailed in the City Plan will not be an effective means of identifying development that would be subject to unacceptable levels of risk from odour nuisance and that development not at risk of odour nuisance may be unnecessarily prevented.
- 1.1.5 Specifically, we believe this approach will unnecessarily restrict development to the north of the WWTW while allowing development in areas to the south of the WWTW (because they fall outside the proposed exclusion zone) where there is evidence of odour nuisance.
- 1.1.6 We have been in direct discussion with Severn Trent Water who have confirmed that they share our concerns in this regard.
- 1.1.7 We believe that GCC have misunderstood Severn Trent’s Sludge recycling strategies and think that certain areas are reserved for sludge disposal activities and therefore have the potential to cause odour nuisance when there is no such likelihood. We have been in direct communication with the previous occupants of the land referred to in the GCC plan as an area

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- “designated for sludge disposal” and confirmed that this use ceased in 2003 and since that time the land in question has been developed as a conservation area and would not be used for sewage sludge disposal in the future. We have also confirmed this with Severn Trent Water directly and conclude that the statement made by GCC is not accurate.
- 1.1.8 From our discussion with Phlorum it is our belief that the contours produced within their report were not meant to be used to form some type of prescriptive delineation but more to inform areas of concern where developers would be asked to demonstrate that they had undertaken enough work with suitably expert practitioners to be able to confirm the risk and likelihood of odour nuisance issues.
- 1.1.9 This does not appear to be aligned with the use of the Cordon Sanitaire designation and the wording of Policy C6 and its supporting text, which are out of step with current best practice and guidance on how to assess and mitigate the risk of odour nuisance. Such an approach puts no responsibility on the operators of the WWTW to manage and control odour emissions and limit the likelihood of causing nuisance. Such an approach takes no account of changes that take place over time and will inevitably mean that there is no effective control of the risk of odour nuisance when considering proposed development.
- 1.1.10 Significantly, we also believe that the Cordon Sanitaire as proposed is already likely to be unrepresentative of the current odour contour as it is based on a report that used data from 2008 reworked to incorporate more up to date wind direction data. This is analogous to attempting to predict the weather for 2031 by using wind direction data from 2016-2018 and rainfall, cloud and air pressure data from 2008.
- 1.1.11 We understand that Severn Trent Water have concerns that the proposed exclusion zone would allow development to the south of the works where current sludge related activities have led to an increase in odour related complaints from residents. This further suggests that the boundary of the proposed Cordon Sanitaire requires further justification.
- 1.1.12 Obviously, any development proposed in close proximity to a WWTW needs comprehensive risk assessment and mitigation strategies to be detailed before approval should be given. Such approaches are well documented in the latest IAQM guidance for planners on tools for assessing odour impacts (Institute of Air Quality Management 2018 “Guidance on the assessment of odour for planning”).
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- 1.1.13 The Plan makes the following statements in relation to Odour nuisance and its justification for the creation of a cordon sanitaire area (exclusion zone) within which development would be restricted.

3.3.31 "Severn Trent Water PLC (Severn Trent) is responsible for sewerage and sewage disposal. They operate Netheridge Sewage Treatment Works (NSTW) south of Hempsted, a facility that processes a significant amount of waste from Gloucester City and beyond. The fields adjoining Netheridge are used for sludge disposal that, in addition to the works itself, create unavoidable smell problems within the area. In order to reasonably prevent development that would be adversely affected by smell, a cordon sanitaire area is shown on the proposals map within which development will not be permitted."

- 1.1.14 We believe that the comments made above stating that "*the fields adjoining Netheridge are used for sludge disposal*" are out of date and relate to an approach that may have been in operation many years ago. We have been in direct communication with the previous tenants who farmed the land referred to within the plan from 1971 and they have confirmed in writing that no sludge applications have taken place since 2003. They have also stated that the area is now part of a conservation area and as such would not be used for sludge disposal.

- 1.1.15 We have also confirmed with Severn Trent Water that they no longer use the adjacent fields for sludge disposal as they may have done in the past. The processes at the WWTW now include a sludge dewatering facility where liquid digested sludge is dewatered to create a sludge cake that is stored on concrete storage pads prior to it being removed for recycling on to third party farmland well away from the works.

- 1.1.16 Our understanding is that liquid sludge would not be disposed of onto the adjoining land as described within the plan.

- 1.1.17 The Plan goes on to describe an assessment of likely odour nuisance which has been undertaken.

3.3.32 "To support this policy, an assessment of odour nuisance arising from NSTW has been undertaken and has informed the boundary on the policies map. The study is informed by a review of odour complaints, odour surveys, a detailed dispersion model assessment and a review of a previous model assessment. Severn Trent were engaged in the review process in order to understand currently and future operations, including plans for any proposed future infrastructure improvements to accommodate additional

waste and/or to reduce the impact of odour on the surrounding area. It categorises likely odour nuisance on the basis of odour contours from the sewage works."

- 1.1.18 We have significant concerns about the report relating to the odour emissions at the works. Most notably the use of a data set from 2008. Such old data is not likely to be representative of the current situation at the WWTW. We have confirmed with Severn Trent Water that significant changes in the process plant used at the works were made in 2016 which means that emissions produced at the works are likely to be very different to the situation prevailing in 2008.
- 1.1.19 The Phlorum report in paragraph 4.78 states that *"there have been no major changes to the works in the past 10 years"* and concludes that *"the report and their results should be comparable"*.
- 1.1.20 We visited the works on 21st October 2019 to assess the situation in relation to odour and current operation of the works.
- 1.1.21 We confirmed that a major improvement scheme took place at the works in 2016 which included refurbishment of the sludge handling and sludge storage equipment. Since 2008 the operation of the primary sedimentation tanks desludging process has been improved considerably and these tanks are now regularly de-sludged. Fresh (lower odour potential) thin sludge is thickened using mechanical equipment.
- 1.1.22 Liquid digested sludge is now dewatered using centrifuges and is stored on concrete sludge storage pads. With such changes it is inevitable that the nature and level of odours produced at the works will be significantly different than those produced in 2008 when the previous data set was produced.
- 1.1.23 Through direct communication with the authors of the report (Phlorum) we have confirmed that they have attempted to produce an indicative prediction of where nuisance from odours may cause problems. Their stated view was that the objective was *"to have left the door open to developers to look carefully on a case-by-case basis to demonstrate that a development would not create nuisance"*. Phlorum themselves state on Page 15 of their report *"Odour modelling inherently includes a number of uncertainties, these include: Model uncertainty - due to inaccuracies in the input data including emission estimates and meteorology; and variability – randomness of measurements used"*.

1.1.24 Thus, the use of the Phlorum report to delineate an area so prescriptively as proposed by the Policy C6 is not justified.

1.1.25 The Plan goes on to describe how they have used the Phlorum work to develop the extent of the Cordon Sanitaire.

3.3.33 "The extent of the cordon sanitaire has been drawn on the basis the area most likely to be affected by odour nuisance, within the 3 – 5 odour contour area. This boundary does not represent the absolute limit of the area where smells can be detected but is drawn so as not unreasonably to constrain development in the existing built-up area."

1.1.26 The way the boundary is drawn does indeed constrain a large area of land due to the very large distance that the Cordon Sanitaire runs to the north of the works. The 2008 data used predicts a very high concentration of odour at the boundary of the works and we believe that there should be further discussion with STW now to better understand the likely current position on odour concentrations at the site. As stated previously we believe that the changes made to the works operation in 2016 are likely to have made a significant change to the extent and impact of odours being released from the works. We also believe that Severn Trent Water has a role in effectively managing odour emissions through the use of odour management plans to reduce as far as practicable the impact of their activities on the surrounding area.

1.1.27 The Phlorum report states at paragraph 4.75 that *"the contour fits the complaints record particularly well in Hempsted where all 4 complaints from residential households fit within the 1.5 Odour unit threshold for potential nuisance advocated in the EA H4 Guidance"*. This statement fails to deal with the significant issue that to the south of the works there are 5 complaints that all fall beyond the predicted 1.5 Odour unit contour. This suggests that either the odour contour methodology is not an accurate representation of the actual odour nuisance caused by the works or, as we believe that the data set being used is not representative of the current situation.

1.1.28 At paragraph 4.77 Phlorum conclude that *"As complaints can provide the most compelling evidence as to the reasonableness of any offensive odours, this suggests that the model might be under predicting odour concentrations to the south and south-east. It should be noted that there are four residential complaints just outside (within 200m of the works southern boundary) of the 1.5 Odour units' contour."*

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- 1.1.29 However even though Phlorum have correctly concluded that the model is not reliable at predicting a representative odour contour they ignore this fact when making their conclusions and recommend a Cordon Sanitaire profile that is likely too large to the north of the works and too small on the south side of the works. We have raised this point specifically with Severn Trent water and they have confirmed that *"We are concerned, and I'm grateful for this being highlighted, that there is a risk in the undeveloped land to the south-west of the works excluded from the proposed cordon sanitaire"*.
- 1.1.30 The authors of the Phlorum report failed to consider that the current operation of the works is such that the sludge treatment and storage is now mostly taking place on the south and western side and as such it is not surprising that the level of complaint is far higher on this side of the works.
- 1.1.31 This is highlighted further when we consider the results of the Odour (sniff) Survey undertaken by Phlorum where in paragraph 4.69 they state that *"the strongest odours emanating from the STW (5 on the VDI odour Intensity scale) were detected at the Fishing Lake roughly 120m to the south-east of the STW boundary and at the end of Rea Lane, within 50 m of the western boundary of the site. The odours detected at these locations were at times considered to be very strong with reference to the VDI intensity scale"*. Paragraph 4.70 states *"During the third survey and 470m to the south-east of the STW a weak odour associated with the STW could be detected. This is the furthest that ANY odour associated with STW could be detected"*. We believe it is no surprise that odours could be detected on the south and western side of the works as this is where all the sludge treatment and storage activities now take place.
- 1.1.32 The complaints data shows that since 2016 there have been no odour complaints reported from the north side of the works. In 2018 there are 6 reported complaints, all of these were from residents on the south side of the works. This indicates that odour from the works is far stronger on the southern side.
- 1.1.33 Phlorum state in paragraph 4.4 that *"2012 and 2018 were the worst years for odour complaints made against the STW"*.
- 1.1.34 However, in 2012 only 2 of the 10 complaints came from the north (Hempsted) area, all the others were from the southern side of the works.
- 1.1.35 In 2018 there were no complaints documented from the northern side of the works, all 6 were from the south side. We believe this is consistent with the changes made to the works in 2016
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- and is further evidence to suggest that the recommended Cordon Sanitaire is not supported by robust up to date evidence based on the current situation at the WWTW.
- 1.1.36 We are also concerned that although the Phlorum report refers to the Institute of Air Quality Management (IAQM) guidance on the assessment of odour for planning dated 2014, it does not appear to be referring to the latest version of the IAQM report dated 2018 which gives useful guidance on the “weight of evidence approach” that should be used when using several assessment tools.
- 1.1.37 The Phlorum conclusions appear to be based solely on the use of the odour modelling data. The latest IAQM guidance advocates the use of several odour assessment tools and a “weight of evidence approach”. So, where there is an existing odour source, empirical observations will normally be possible of what is happening on the ground. The IAQM report states that *“Considerable weight” should normally be given to the observational findings of community-based tools and sensory assessments (such as sniff tests). These may be supported by the findings of any dispersion modelling if these add tangible value to the study*”. It seems that the Phlorum report does not attach considerable weight to the sniff tests but appears to ignore them.
- 1.1.38 We believe that there is an obvious mismatch in the Phlorum report between the recommendation to retain a similar size and shape of Cordon Sanitaire as previously in place when the sniff tests together with the complaint history clearly indicate a higher incidence of odour being identified on the south side of the works. All of the 2018 complaints are on the south side of the works and there are 5 complaints that fall outside of the modelled predicted 1.5 Odour unit contour on the south side of the works. This is all clear evidence that the model outputs are not representative of the currently prevailing situation at the works and that the Phlorum report is not using the latest guidance to make best use of their own observational findings in the conclusions reported within their report.
- 1.1.39 We feel that the Cordon Sanitaire being recommended for adoption within the GCC plan will needlessly prevent development of certain areas to the north of the works where nuisance is less likely but will allow development of other areas to the south where nuisance is already being suffered by existing residents and if further development is allowed to proceed will provide unacceptable air quality and amenity for future residents.
- 1.1.40 This further underlines the requirement for a more up to date risk-based approach to be taken on a case-by-case basis ideally using a new and representative data set produced at the
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appropriate time that would take account of the operation and processes currently employed at the works.