

Middlewick Ranges Water/Drainage/Sewage

Representation ID: 6290 Received: 03/08/2017

Respondent: Mr John Hobrough

My statement is based on my objection stated as *"Local amenities are at breaking point and can take no more."*

As technical documents were only published in December 2020, and there was no information provided at the time of the 2017 Consultation with regards to the water, drainage and sewage, I have researched this further for my statement. On behalf of the Save Middlewick Group, I request that the questions, comments and areas that I am unsure about are followed up by the Examining Inspector. Please see Appendix I for document references. Black highlighted areas are concerns from technical documents and my comments in red.

I am not an expert on this matter but I am concerned regarding the plans for Birch Brook and LoWs near to the SSSI the Roman River to be remodeled, the lack of information being given with regards to the sewage issues and issues with surface/groundwater and the disruption of the installation of water and sewage pipes causing distress for residents/many people across Colchester. I also consider that potable water is not the only abnormal cost for mitigation and the cost runs the risk of rendering the developer unable to supply affordable housing which does not meet the housing needs for Colchester.

Part of my statement relates to the NPRF Provision: *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.*

Statement

The December 2020 JJL report dated 2018 was recently reviewed and none of the conclusions or recommendations within it have changed. All DIO technical reports have stated that the overall risk of flooding from **all** sources on site is low as the proposed development site will be located **almost** wholly within Flood Zone 1. **There is, however, a small section of the site at the southern boundary which is within Flood Zones 2 and 3 and isolated patches associated with localised topographic lows, shown to be at low, medium and high risk of flooding** The

areas of increased potential flood risk are confined to the watercourse corridor of the Birch Brook and do not impact the developable areas of the site. **A possible flood risk has been identified outside the criteria of the Sustainability Assessment which pertains to the runoff from Birch Brook, flowing into the Colne at Rowhedge. Flooding is already an issue for gardens downstream at Rowhedge.**

The Colchester SWMP states surface water is predicted to flow generally from west to east towards the River Colne. The pluvial modelling indicates predicted surface water flooding across various locations of the CDA and **a possible lost watercourse. Ponding of surface water occurs as a result of natural valleys, depressions and topographic low spots. The main area of ponding is located east of Old Heath Road and the sewage treatment plant.**

Birch Brook goes underground at the field next to Firlie Walk and under Mersea Road, hence why the field is often water logged. The "swamp" next to School Rd is also part of this. The spring goes through Old Heath School playground and through the Speedwell Road field and there used to be a visible ditch that presumably ends its journey at the Hythe. If you walk on the Wick going towards Lidl and stray off the path, you will find the ground is very soggy even in the summer.

From old maps it seems that the source of the underground springs on Middlewick Ranges lay somewhere close to where Monkwick Farm used to be, where the TLA school is located now. The watercourse Birch Brook ran from near there and across the large field between Queen Elizabeth Way and Mersea Road, before crossing Mersea Road and running along behind what is now Birch Glen Housing Estate and onto behind the firing ranges on Middlewick.

It is proposed that sustainable Urban Drainage System, Swales and attenuation ponds will form part of the drainage infrastructure and will be integrated into the linear green corridors and other public spaces with areas of natural landscape. **There will need to be careful consideration of where swales will be located, additional protection with regard to land contamination and as the grass optimum length is 150mm will be mown this may affect the biodiversity/ecological of the area**

Annex 4 states: **Any future development may affect the levels of flood risk if appropriate sustainable drainage mitigation measures are not put in place.** Mitigation Measures may include: **locating the development and its working areas and access routes away from areas of high ecological interest**, fencing off sensitive areas during the construction period, or timing works to avoid sensitive periods. **Depending on circumstances, mitigation measures may be located**

within or outside the project site. **Due to the additional infrastructure required at the site, I do not believe that working areas for the development can be routed away from areas of high ecological interest.**

Birch Brook is not modelled along its entire length, which may impact current flood extents, depths and flows running through the site. It is likely that modelling of the brook may be required to ensure safe design of the site.

Flood modelling of the ordinary watercourse section of the Birch Brook is derived from high level JFLOW modelling, and output for Flood Zone 3b functional floodplain are not available. Further modelling is required to determine the extent of Flood Zones across the site. **As Birch Brook is an LoWs near to the Roman River SSSI, there is not enough information with regards to what the DIO means by remodelling and to what extent it would impact this area ecologically and how it affects the biodiversity net gain metric.**

The northern part of the site is within a critical drainage area, however the surface water flow is connected to this primarily along a valley feature beyond the northern site boundary. There are preferred options for managing this surface water risk which could be investigated fully and incorporated into the final masterplan. Overall, any potential sources of flooding risk is low/negligible and **in respect of ground water there is a medium risk which will require consideration** but is not a constraint to development. **It is noted that a full Flood Risk Assessment will be needed to support any future planning application with further detailed assessment required,** but at this stage flood risk, surface water management and foul water drainage is not considered a barrier to development at the site. **As the land is contaminated, it is important that additional real time surveys (not desk surveys or a one day walk over the land) assessment takes place.**

The site is located within an area served by AWS. There are two water mains running north to south along Mersea Road. The main closest to the edge of the site boundary is a 10in diameter PVC pipe, while a 4in GI water main runs in parallel. Meanwhile, a 125mm MDPE water main runs along the north side of Abbots Road, becoming a 180mm MDPE water main part way along its run, to the Mersea Road/Abbots Road intersection where it connects into the 10in PVC pipe along Mersea Road. **AWS confirmed that there is insufficient capacity in the current network.** Local reinforcements will be required to supply the proposed development. AWS advised that they would need to install 1.7km of 280mm HPPE water main from the site to the 500mm HPPE main running along Haven Road, Colchester. **This would constitute an abnormal cost** in respect of the development, but is not anticipated to render the site unviable, especially as the energy and telecommunications networks and foul water drainage are unlikely to incur any abnormal costs. **Haven Road is quite a distance to the Middlewick Ranges. The amount of pipework to be able to do this, will disturb and disrupt the whole of Colchester for a long period of time, not just near to Middlewick Ranges. Main**

Roads will need to be closed causing traffic, pollution, dust and undue stress. Haven Road is also a main thoroughfare for A roads and other areas of Colchester and Mersea Road and Abbots Road are the main roads to get to Colchester Town and to the other side of Colchester.

Haven Road already has incidences of flooding, with the worst flooding reported just a few weeks ago. The three authorities, Essex Highways, Environmental Agency and AWS are denying responsibility for solving this issue. There is a flap valve on the quay belonging to AWS that has been installed incorrectly and has not been fixed. The outflow pipes on Hythe Quay are under threat of collapse due to the condition of the quays. Additional water pipes being run to the Middlewick to the Hythe will cause additional flooding for the Hythe. Colchester Council have been unable to enforce a solution to these issues. I do understand that the Lincolnshire pipe will eventually reach Colchester to facilitate water availability for the new Garden village developments. It has been stated that Abberton Reservoir does not have the capacity to supply water.

AWS are responsible for the foul and surface water systems around the site. There is a drainage ditch on the north and western edges of the existing shooting range but this ditch does not connect or drain into Birch Brook. Two surface water sewers outfall into the head of the Birch Brook adjacent to Mersea Road at the west side. One sewer is shown as 825mm diameter. The other sewer size at the outfall is not labelled, however, sewers of 1524mm, 610mm and 375mm diameter all converge at a manhole upstream of the outfall and therefore the sewer is likely to be of significant size. There is a 914mm combined sewer running east to west through the site. The sewer enters from a green park on Speedwell Road between two residential estates next to Old Heath Road and runs west across the site towards the site entrance before exiting into Mersea Road. **This sewer forms a constraint on development immediately over it, but this can be accommodated within the proposed masterplan.** A further 525mm diameter combined sewer runs north to south along the edge of the site at Mersea Road. A 1350mm diameter surface water sewer enters the site from the south-east corner of the site boundary and runs along the eastern boundary to the Abbots Road/Mountbatten Drive intersection, where it turns north and exits the site into Mountbatten Drive. A 300mm diameter surface water sewer runs north along Abbots Road and the outside edge of the site boundary before turning north in West Mountbatten Drive. A 225mm foul water sewer splits from the 914mm combined sewer main in the green patch and runs north parallel to the 1350mm surface water sewer to the Abbots Road/Mountbatten Drive intersection, where it turns north and exits the site into Mountbatten Drive. The sewer enters the site at the existing access point on Mersea Road, bisects the site, and continues east through the park area at Old Heath Road. The sewer conveys flows to the sewage treatment works located approximately 700m east of the site.

Anglian Water have indicated that the development site is within 15 metres of a sewage pumping station. The pumping station is located in a residential estate near Queensland Drive, west of the site boundary. The site layout can easily accommodate the proximity of the sewage pumping station and **the need for a local cordon sanitaire to ensure that development is not within 15 metres of the boundary of the facility**. AWS advised that the site falls within the catchment of Colchester Water Recycling Centre, which has capacity to accommodate the flows. **A new 225mm diameter foul sewer would be needed to drain foul water from the development site. This would be likely to connect to the 600mm diameter combined sewer located on Mersea Road.**

It also has also been stated, that due to the relatively flat nature of the undeveloped northern area of the site, **it is possible that new foul water pumping facilities will be required; in accordance with Sewers for Adoption Edition**, adequate consideration must be given for potential constraining associated with a foul pumping stations such as standoff distances from habitable rooms, compound sizes and maintenance access, as well as the possible need to maintain third party connections. **This will bring more development to the site, taking up more green space and another cost to developers. There are currently huge concerns with regards to sewage. Hythe Quay has structural issues, identified in November 2020 with the sewage overflow pipe in danger of collapse. The Colchester sewage system is Victorian and last upgraded in 1972. Anglian Water, however, have stated that the sewage system can cope to 2025 and beyond. A colleague of mine attended a meeting with regards to the Northern Gateway development where Anglian Water stated they didn't have the capacity for that development without updating the sewage pipes within Colchester Town to be a much bigger size, which was not possible. They were reminded by CBC that they had a legal duty to ensure the infrastructure was there even if that wasn't possible. With the threat of the main overflow pipe collapsing on Hythe Quay where treated and untreated sewage discharges in the Colne river this hugely complicates this issue and could herald an ecological disaster.**

No ponds were located within the Allocation Boundary. Five ponds are present within the Mitigation Land and located within areas of woodland or strips of trees which are heavily shaded. All ponds held water at the time of the survey with connections to ditches present. The majority of vegetation surrounding the ditches of four of the five ponds did not suggest they hold water for any length of time. **These ponds are part of the ecosystem for Middlewick Ranges and contain an abundance of wildlife. There have been no detailed surveys conducted with regards to the ponds.**

Targeted thinning of the trees within the Birch Brook LWS, particularly western boundary of the Allocation Boundary would create a more structurally diverse habitat which would benefit a range of species groups. **The DIO does not have a good**

record of managing trees as evidenced by the recent tree management at Friday Woods where incorrect trees were cut down.

The CBC Level 2 SFRA mapping shows that the site is located within a 1km square of which at least 75% is susceptible to groundwater emergence. The risk of groundwater flooding in the area is considered to be high. This will need to be confirmed during the site investigation survey. The EA response dated June 2018 said the modelled groundwater flow is generally to the east in the chalk. There is little vertical movement of groundwater and modelled groundwater flow in the superficial sands and gravels is not laterally consistent tending to be towards the nearest watercourse to the easterly direction of the River Colne. The modelled depth to the water table ranges between approximately 0m and 5m. CBC has stated that the proposed development entails More Vulnerable residential development located in Flood Zone 1, which is considered compatible development in accordance with the NPPF. The proposals are therefore not subject to the Exception Test. **We have no groundwater monitoring sites in the vicinity that measure the depth to the water table. Groundwater flooding records have only been kept for report events in the area since 2010. ECC has specified that additional criteria for flood risk assessments in Flood Zone 1 are needed and must be submitted with planning applications for developments on sites of 1 hectare (ha) or more or for development proposals in Flood Zone 2 and 3, and in Flood Zone 1 for sites over 1 hectare (ha), land which has been identified by the Environment Agency as having critical drainage problems, land identified in a strategic flood risk assessment as being at increased flood risk in future, or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.**

It is possible that surface water run-off could be managed by infiltration. Infiltration testing to the BRE365 standard will be required to confirm the rates of infiltration. Given there is uncertainty regarding ground conditions until intrusive investigation takes place, an infiltration drainage solution is discounted at this stage. For the purposes of assessing constraints and the deliverability of a scheme this is considered a conservative approach **as some contribution from infiltration solutions is anticipated. The cost of the infiltration system is likely to be high.**

Anglian Water asset plans indicate the presence of surface water sewers within the northern and eastern boundaries of the site. These sewers ultimately outfall to the Birch Brook to the south-east of the site. **For the southern part of the site it is proposed to discharge surface water run-off to the Birch Brook by gravity connections. For northern and eastern areas of the site it is proposed to discharge attenuated surface water run-off into the existing surface water sewers, which will ultimately drain to the Birch Brook. Birch Brook is a LoWs site, is this permitted with NPPF?**

Finally, the land registry document - W.A. Heritage ref:- Paragraph 3.7.3 states, in reference to Middlewick Ranges "The site is too wet for human habitation.
Flood Risk EX774246pdf - Land Registry.

I consider that the potable water issue is not the only abnormal amount for mitigation. The abnormal costs of this development has the risk of rendering the developer unable to supply affordable housing which does not meet housing needs for Colchester.

Appendix I - Reference documentation:

Local Plan Evidence Base - Middlewick Ranges Prepared on behalf of Defence Infrastructure Organisation (DIO) December 2020 JJL

<https://cbccrmdata.blob.core.windows.net/noteattachment/CBC-Local-Plan-Annexe-8---Middlewick-Ranges-Vision-Document-Annexe%208%20-%20Middlewick%20Ranges%20Vision.pdf>

Middlewick Ranges Local Plan Housing Allocation: Ecological Evidence Base Report Stantec Report/Annex 4 Middlewick Ranges, Colchester Flood Risk, Surface and Foul Water Drainage Scoping Report PPA Peter Brett 2018

Middlewick Ranges Flood Risk and Drainage Scoping Report Annex 4

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/956272/Annexe_4_-_Middlewick_Ranges_Flood_Risk_and_Drainage_Scoping_Report.pdf

Middlewick Ranges Phase 1 Land Quality Assessment

<https://cbccrmdata.blob.core.windows.net/noteattachment/CBC-Local-Plan-Annexe-5---Middlewick-Ranges-Phase-1-Land-Quality-Assessment-Annexe%205%20-%20Middlewick%20Ranges%20Phase%201%20Land%20Quality%20Assessment.pdf?fbclid=IwAR13x7le8sQyE2gKBcgbDg5OgyAju9aYuVzI4CtrlMuzrXpti3yLs8W6njg>

Foul and Surface Water November 19, 2020 Page 4 of 4 Reference: Utilities Summary

n:\planning\dio middlewick\reports\non-technical sustainability appraisal and development delivery statement\annexe 6 - middlewick - utilities summary 19- 11-2020.docx

Middlewick Ranges Utilities Summary Annex 6

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/956285/Annexe_6_-_Middlewick_Ranges_Utilities_Summary.pdf?fbclid=IwAR1g9_h1RGgB9VS2U0E6AVUsf5IFIX1-cv37gDfVrw37fXhhquwPNi1f3f0

Anglian Water - Our Strategies and plans - water resources.

<https://www.anglianwater.co.uk/about-us/our-strategies-and-plans/water-resources-management-plan/?fbclid=IwAR2lmtppcy9Pdizp6yPXRgz1ViSZJvu5PURxLnVhouMCPFQdw1fQv1HnjQg>

Colchester SWMP Para 15.139 Colchester's Surface Water Management Plan (SWMP) which only covers urban Colchester, identified 9 Critical Drainage Areas (CDAs) and Local Flood Risk Zones (LFRZs). An update to the SWMP is currently being prepared by Essex County Council. As of April 2018, there are now 12 CDAs and LFRZs within urban Colchester. These can be found on the Essex County Council Asset Register.

Braintree Level One Strategic Flood Assessment Update

<https://www.braintree.gov.uk/downloads/file/409/cbc-0032-1-8-level-one-strategic-flood-risk-assessment-update>