

## **Lynchmead Farm, Weston super Mare**

### Flood Risk and Surface Water Drainage Statement of Case

LPA Reference: 20/P/1579/OUT

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### **Introduction**

1. A Flood Risk Assessment (FRA) was prepared by Vectos in July 2019, which supported the planning application. It included a surface water drainage strategy. The FRA was informed through information from, and/or consultation with the Environment Agency (EA), Lead Local Flood Authority (LLFA) and North Somerset Levels Internal Drainage Board (IDB).
2. These statutory consultees had no objection with respect the FRA; flood risk and surface water drainage was not a reason for refusal.

### **Flood Risk**

3. According to the EA Flood Map for Planning, the proposed development site is in Flood Zone 3. Flood Zone 3 is defined as a high probability of flooding. Land in Flood Zone 3 is where there is a 0.5% or greater annual probability of flooding in any year. This probability is sometimes referred to as a 1 in 200-year flood.
4. In this case the Flood Zone 3 is a result of flood risk from the sea. Whilst the site is approximately 2.5 km from the coastline, ground levels are low lying and is susceptible to flooding under extreme tidal surges in the Bristol Channel.
5. When Flood Zone 3 is derived by the EA, the mapping methodology ignores the benefit offered by flood defences. However, as part of this mapping exercise, the EA also assess the benefit offered by the flood defences; this is referred to as the 'defended' scenario.
6. The Flood Map for Planning also shows that the site is in an area that has protection from flood defences. The defences align the coastline and prevent or reduce the inland propagation of floodwater in extreme conditions.
7. According to the 2019 North Somerset Level 1 Strategic Flood Risk Assessment (SFRA) the local coastal defences include sea walls and embankments, as well natural defences (i.e. cliffs and high ground / sand dunes).

8. Through data obtained from the EA, the FRA identified that the site is not at risk from present day tidal flooding due to the protection offered by the existing coastal defences. However, a residual risk remains, should the anticipated effects of climate change materialise and cause overtopping of the defences, or should the flood defences fail through a breach.
9. Further data has been obtained from the EA to inform this Statement of Case. This consists of the results of a breach failure modelling study and includes a series of flood maps, which are enclosed in Appendix A. These show that the site is not subject to flood risk in a breach scenario. Consequently, based on the information available, the residual tidal flood risk at the site relates to overtopping only (in a climate change scenario).
10. Whilst the Risk of Flooding from Surface Water maps shows some very limited areas of surface water flooding on the site, no other significant sources of flood risk have been identified.

### **Flood Mitigation**

11. Paragraph 159 of the National Planning Policy Framework (NPPF) states “Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.”
12. The Sequential Test was applied for the development by Walsingham Planning. This demonstrated that alternative sites were unavailable to meet the housing needs in North Somerset and development in the defended Flood Zone 3 was necessary. The Sequential Test was a reason for refusal and is a key element of the appeal. Additional supporting information on this regard has been prepared by Walsingham Planning.
13. The Exception Test was also necessary for the development. Walsingham Planning addressed ‘part a’ of the test, but ‘part b’ was addressed in the FRA. ‘Part b’ is consistent with paragraph 159 of the NPPF. To pass ‘part b’ of the exception test the following must apply “the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.”
14. Given that development was found to be necessary in an area of flood risk, the FRA aimed to demonstrate that the proposed development was safe for its lifetime without increasing flood risk elsewhere.
15. A series of key flood mitigation requirements were agreed with the EA to protect the site from the residual risk (i.e. overtopping of the coastal defences). This included a safe refuge above the extreme flood level (i.e. above the 1 in 200 year (0.5% AEP) undefended tidal flood plus climate change level). Ground floor finished floor levels were also agreed to be set a minimum of 300 mm above existing levels. Finally, it was agreed that a Flood Evacuation Plan would be prepared, which would typically be the subject of a condition.

16. Some improvements to the rhyne and ditch network were also identified to increase capacity and reduce surface water flooding. The elevated FFLs would provide further protection to the development from this minor source of flood risk.
17. The EA responded to the planning application on 14 August 2020 and made no objection in principle to the development, subject to the inclusion of a condition. The condition replicated the mitigation measures outlined in the FRA.

### **Surface Water Drainage**

18. Paragraph 167 of the NPPF requires that development “incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate”. Sustainable drainage systems help to manage surface water runoff from paved areas and roof surfaces, to ensure that the development does not increase flood risk elsewhere.
19. The FRA includes a surface water drainage strategy, which consists of an extensive network of permeable paving, swales and attenuation basins. These measures were designed to accommodate the 1 in 100 year rainfall event, including an allowance for climate change, as required by planning policy. These features were designed to mimic pre-development conditions and release surface water slowly into the adjacent ditch network at greenfield rates.
20. This meets with the key principles of the NPPF and Policy DM1 of the North Somerset Council Development Management Policies document.
21. The IDB responded to the planning application on 24 August 2020 and made no objection, subject to a condition. They also wrote “The Board is encouraged by the surface water drainage proposals and the use of shallow swales and other SuDS features such as permeable paving, these are the only way that the site will drain to the adjacent rhyne under gravity.”
22. In their consultation response dated 2 September 2020, the LLFA stated that the surface water drainage strategy included in the FRA required more detailed design consideration. The LLFA outlined four points that needed to be addressed.
23. Therefore, in February 2021 Vectos prepared an FRA Addendum, which summarised the work undertaken to address each of these points. A more detailed surface water drainage plan was prepared, which was informed by computer modelling of the drainage system. It included indicative proposed levels of the surface water drainage arrangements, impermeable areas, impacts of a surcharged outfall and exceedance flow routes.
24. Upon review of the FRA Addendum, on 1 April 2021 the LLFA confirmed that they had no objection to the proposed development, as submitted, subject to conditions.

## Summary

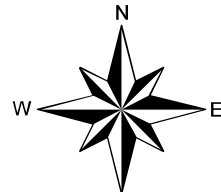
25. The proposed development will deliver much needed new housing in a sustainable way. The development has been designed to be safe from flooding, without impacting third parties. It considers the impacts of climate change and will be safe from flooding now and in the future with the implementation of a Flood Evacuation Plan. Surface water runoff from the development will be managed using sustainable drainage systems, which have been designed to mimic pre-development conditions.
26. Flood risk and surface water drainage matters were not a reason for refusal to the planning application and the EA, LLFA and IDB had no objection on this regard.
27. Whilst the Sequential Test considers flood risk matters, it was not part of the FRA prepared by Vectos. This was a reason for refusal and further supporting information has been prepared by Walsingham Planning.

## **Appendix A**

Environment Agency Flood Maps - Breach Failure



Scale:1:10,000 At A3



**Legend**

- 284661-WX\_Site\_Boundary
- Asset\_failure\_locations
- Main Rivers

**Stear to Clevedon\_depth**

**Depth (m)**

- 0.000024 - 0.5
- 0.51 - 1
- 1.1 - 1.5
- 1.6 - 2
- 2.1 - 2.5
- 2.6 - 3
- 3.1 - 3.5
- 3.6 - 4
- 4.1 - 4.5
- > 4.6

We strongly advise that you refer to the caveats in the letter accompanying this map, regarding the usability and appropriateness of the information contained within the map.

