

## **Kingfisher Pond – Northstowe Hydrogeological Assessment - Action Plan (draft)**

1. This note provides an 'Action Plan' in response to the Northstowe Hydrogeological Assessment produced by Hydraulics Research (HR) Wallingford.

### **Dewatering**

2. The report concludes that dewatering during the early development at Northstowe initially reduced groundwater levels to 5m below surface water. Large quantities of water were abstracted during two dewatering phases. This caused an almost immediate and significant drying out of the Kingfisher Pond and the River Terrace Deposits.

### **Post dewatering**

3. The groundwater levels have not recovered for a number of reasons, including –
  - a) Recharge has been affected by urbanisation;
  - b) The greenways on Northstowe might provide a preferential flow pathway for water from the River Terrace Deposits to the greenways and to the attenuation ponds, and it is not clear that the design of the greenways has been met. These greenways provide a mechanism for maintaining groundwater levels at below their pre-2015 levels.

### **Post 2020**

4. Groundwater levels mostly recovered during winter 2020/21, although the water levels in the pond were approximately 0.3m below those shown in historic photographs. This period coincided with regional high groundwater levels and above average rainfall recorded between December 2000 and February 2021. Rainfall in March 2021 was similar to the long-term average.
5. HR have stated that it is unclear whether the levels in Kingfisher Pond will return to their pre-2015 level and it is also unclear if the pond will be more susceptible during periods of low rainfall in the future.
6. The historically low rainfall in the region since 2015 has compounded the difficulty in understanding the various impacts on water levels. The River Terrace Deposit is shallow and responds quickly to rainfall so during periods of dry weather water levels will decline.

7. The report recommends approaches dependent on whether Kingfisher Pond recovers or not.

### **Recommendations**

8. The report recommends the following -

#### **If the pond recovers -**

9. If the pond recovers, then regular monitoring will be required of Kingfisher Pond and other nearby ponds such as Nethergrove lake and Lady Walk Pond.
10. Regular monitoring of the groundwater elevation in the underlying River Terrace Deposits underlying Longstanton and Northstowe.
11. Regular monitoring of groundwater levels adjacent to and flows in the greenways to ensure that they have been constructed in accordance with the approved drawings and they are not dewatering the River Terrace Deposits.

#### **If the pond does not fully recover –**

12. It may be necessary to support water levels in the pond.
13. Deepening the pond.
14. Improving the greenways to ensure that they are in accordance with the approved drawings.

### **Action plan and timeframe**

15. Find the appropriate approved infrastructure / greenway plans and put them in an appropriate file – by the end of July 2021.  
Responsibility - SCDC Planning.
16. To investigate whether the appropriate Environment Agency permissions and licenses have been granted for dewatering and abstraction – by the end of July 2021.  
Responsibility - SCDC Planning.
17. To undertake a preliminary 'sample' survey of the approved infrastructure / greenway plans to determine whether the greenways have been built in accordance with the approved drawings – timeframe – by the end of September 2021, subject to employing an appropriate land surveyor.  
Responsibility - SCDC Corporate, with input from L&Q.
18. If the sampling survey suggests that there is a likelihood that infrastructure / greenway plans have **not** been built in accordance with the approved drawings, then

consider serving a planning contravention notice requiring submission of an appropriate survey of the phase 1 greenways.

Responsibility – SCDC Planning / L&Q.

19. Seek appropriate technical advice on the implications arising from the survey and potential on and off site mitigations if required having regard to the development plan and any other material considerations (expediency)

Responsibility – SCDC Planning.

20. If no mitigation required, proceed to monitoring.

21. If mitigation required, agree with developer and landowner(s), an appropriate delivery plan – together with any interim requirements to reduce adverse impacts.

Responsibility - SCDC Planning, Developer and Landowners

22. Regular monitoring of the water levels in the pond and other ponds in Longstanton – timeframe – to begin in September 2021 – timeframe to be agreed – suggest 3 years, with an annual review.

Responsibility - SCDC and L&Q.

23. Ecology – assess the impact of the change in water levels on the surrounding ecology.

Responsibility – SCDC Built and Natural Environment team – Ecology. Monthly monitoring from August 2021 – July 2022.

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