

### Introduction

1. Oxfordshire County Council responded to Thames Water's Draft Water Resource Management Plan (WRMP) in April 2018. The full response is contained in Appendix 2.
2. In July 2018, Oxfordshire County Council resolved to support the position of Group Against Reservoir Development (GARD) in their response to the Draft WRMP19 which asked Thames Water to undertake a second consultation and to:
  - a. Reduce leakage by half by 2050
  - b. Improve water-use efficiency to match the norms of other companies
  - c. Provide a proper analysis of water available through other measures, including Teddington DRA and water re-use.The full response is contained in Appendix 3.
3. The following comments are in response to Thames Water's Revised Draft WRMP published in October 2018.

### Leakage Reduction

4. Oxfordshire County Council previously raised issues around Thames Water's programme of leakage reduction. In the revised draft WRMP Thames Water have committed to reduce leakages by halve by 2050. Oxfordshire County Council supports this ambition.

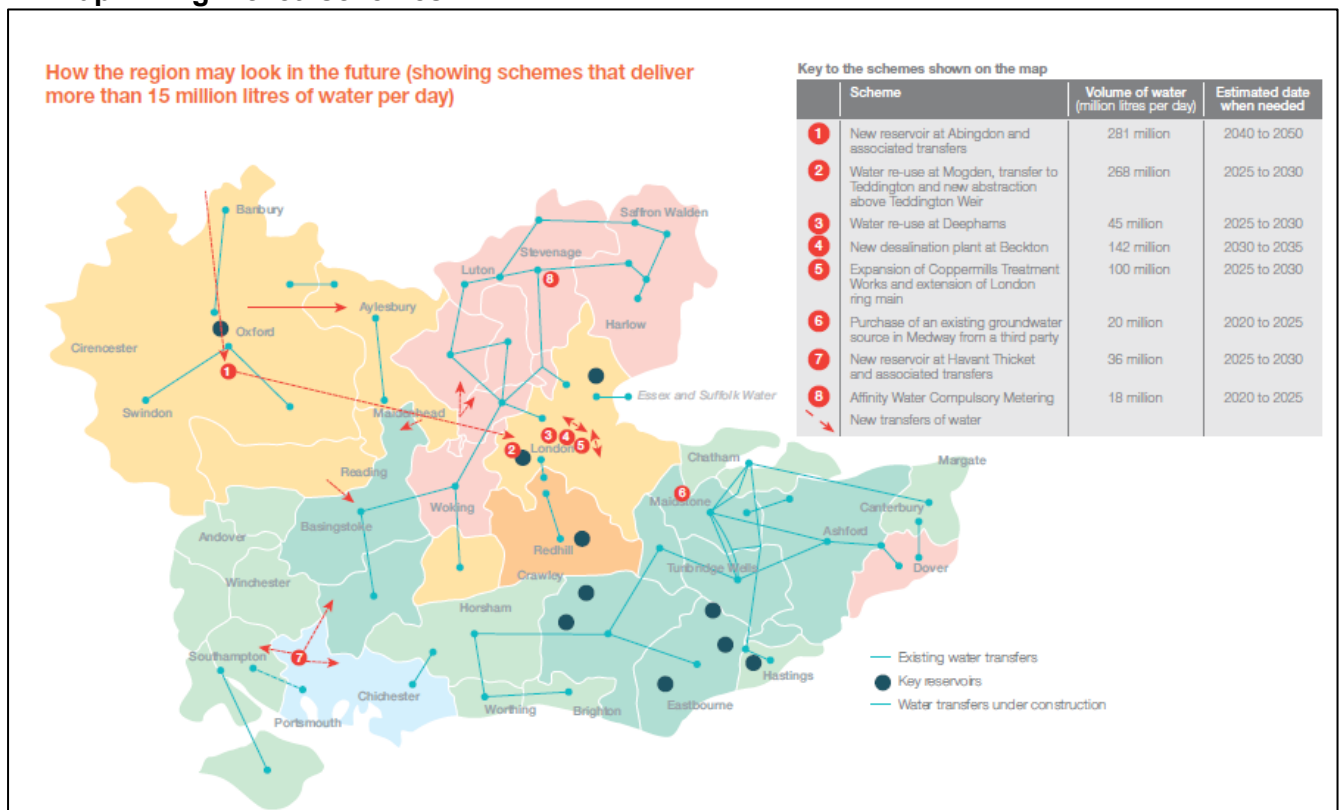
### Population Forecasts

5. Under statutory guidance Thames Water has planned for growth forecast in Local Authority Local Plans. They have collated forecasts for the 65 local authority areas where water is supplied to and used the figures to calculate the demand for water. Thames Water forecasts a gap between supply and demand in the Thames Water catchment area from the beginning of the 2020 planning period that increases through the century. The Thames Water catchment area is now expected to grow from 10.1m in 2019 to 13.9m in 2100 (this has been reduced from 15.4m in the previous draft WRMP).
6. Oxfordshire County Council accepts that Thames Water should follow statutory guidance. Nevertheless, the point made in April 2018 about the reliability of forecasts remains. Oxfordshire County Council also seeks to be presented with population forecasting undertaken by other water companies in the south-east region if those plans are to be reliant on a proposed reservoir in Abingdon.

### Proposed Abingdon Reservoir - Principles

7. The County Council is cognisant that Thames Water is following clear guidelines set out by bodies such as Ofwat, Defra, Government and the National Infrastructure Commission on the need to work with other regional partner companies, exploring options such as reservoirs to ensure resilience against population growth and impacts of climate change. It is proposed that Oxfordshire County Council is supportive of this approach.
8. Water Resources in the South East (WRSE) is an alliance that brings together the water companies within the south-east. In April 2018 it published a strategy<sup>1</sup> 'From Source to Tap – The South-East Strategy for Water' which considers the water issues facing the south-east collectively.
9. Map 1 shows the potential 'big ticket' schemes around the region by volume of water those schemes produce; with a reservoir in Oxfordshire producing the highest quantities of water within the south-east.

**Map 1: 'Big Ticket' schemes**



10. It is not clear from the WRSE Strategy whether water companies have collectively reviewed potential schemes across the south-east and reached a conclusion on the best option for all water companies and consumers, or if the proposed reservoir in Oxfordshire is simply presented by Thames Water as a 'good choice' for the south-east.

<sup>1</sup> [http://www.wrse.org.uk/wp-content/uploads/2018/04/WRSE\\_File\\_726\\_From\\_Source\\_To\\_Tap.pdf](http://www.wrse.org.uk/wp-content/uploads/2018/04/WRSE_File_726_From_Source_To_Tap.pdf)

11. It is noted that WRSE will publish a final report in Autumn 2018 outlining potential solutions available to meet the south-east regional deficit. Oxfordshire County Council is keen to understand if this will present the historic, sequential testing of scheme options around the south–east undertaken by all water companies which could include potential sites for large scale infrastructure such as reservoirs outside of the Thames Valley catchment.
12. The WRSE ‘From Source to Tap’ document also considers further work over the coming years, including to: *Develop one regional plan that is split up into the companies’ Water Resource Management Plans for them to consult on and deliver.* The County Council supports this ambition so all options for water resilience in a regional context are fully understood before a commitment to large infrastructure such as a reservoir, taking years to construct with huge impacts on the respective local population, is made.
13. The Executive Summary goes on to state that Thames Water has included funding in their business plan to support and drive further development of the regional plan. Again, the County Council is supportive of this.
14. Prior to Oxfordshire County Council accepting the need for a proposed reservoir anywhere in the south-east region it needs to understand clearly the sequential testing of supply options undertaken by Affinity Water, as well as other water companies in the South East, and then be presented with evidence to show that its current location in Abingdon is the best option in terms of business decision and for consumers. A proposed reservoir of this scale would take years to construct and have a significant impact on any nearby local population which must be taken into account when reaching a decision on a preferred programme of supply options.
15. Currently Oxfordshire County Council considers that Thames Water and other water companies in the south-east region have not produced a coherent plan that considers regional need. The Thames Water WRMP is flawed in that it has evolved quickly, has presented material which does not fully explain the wider regional need (for example it only includes population forecasts for the Thames Valley catchment area) and has concluded that a large reservoir is required in Abingdon.
16. It is therefore requested that water companies in the south east collectively and clearly present their supply needs in a regional context demonstrating jointly the demand and supply options to Oxfordshire County Council so that any potential reservoir’s location and size can be assessed accordingly in the context of regional need.

#### Proposed Abingdon Reservoir – Conceptual Design

17. The proposed reservoir is now being presented as being promoted by both Thames Water and Affinity Water with Thames Water supplying Affinity Water with 100ml/d in the 2030s. There is also potential for future demands from other water companies in the south-east.

18. The Thames Water WRMP19 'Resource Options' provides conceptual designs and related data for proposed reservoirs in Abingdon ranging from 30,000ml to 150,000ml in capacity. Options include single reservoirs and a combination of 2 reservoirs with split capacity.

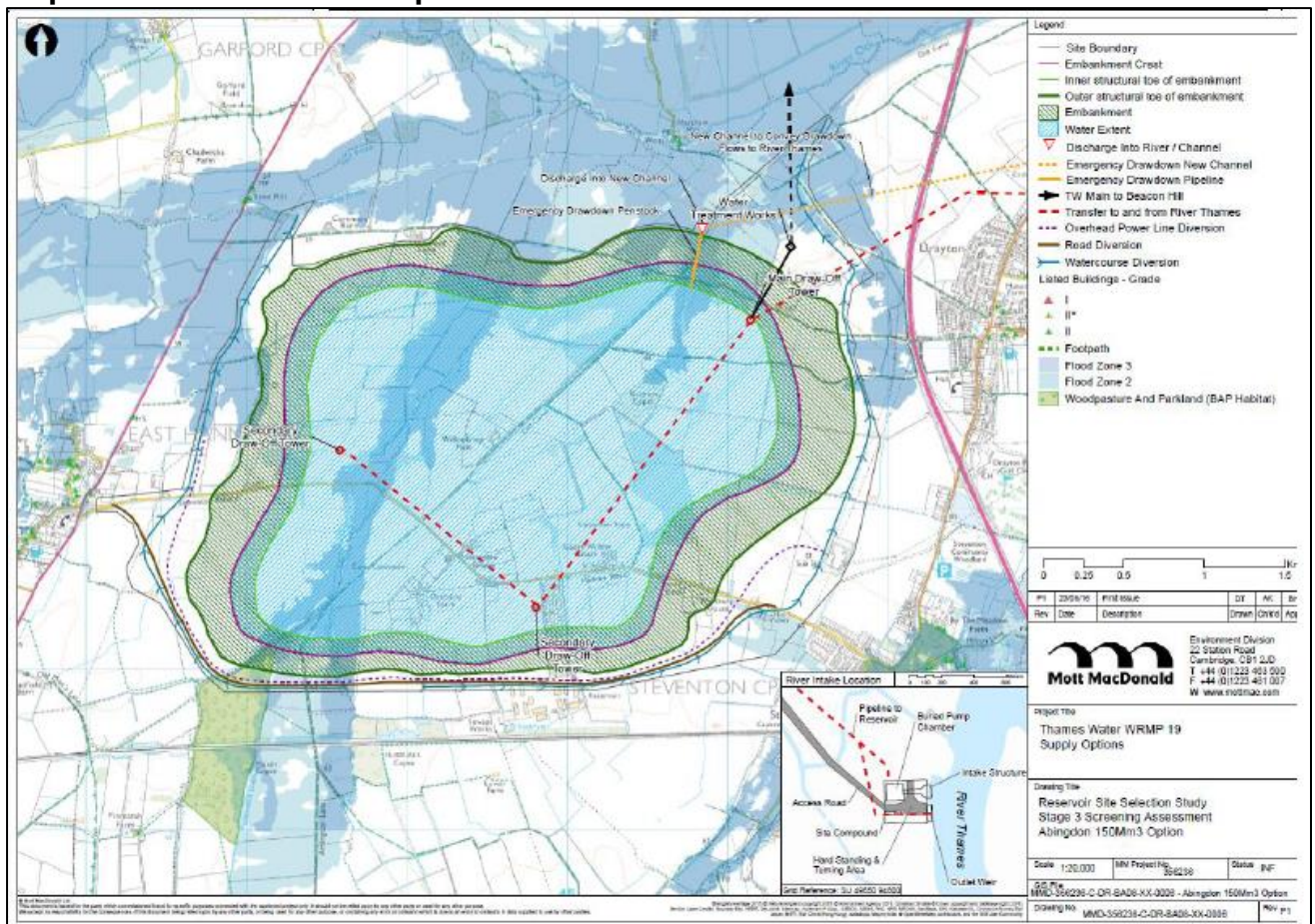
19. Each option also varies in hectarage of water surface area at full supply level (from 165ha to 675ha), size of perimeter (from 4.8km to 10.3km) and height of embankment (15m – 25m).

20. In each option the same access arrangements are suggested:

- a. A new road access to be provided by a new access off the A34 on the eastern end of the reservoir; and
- b. A new temporary railway siding constructed on the southern edge of the site for the delivery of sand and gravel.

21. Map 2 shows the preferred 150Mm3 reservoir option.

**Map 2: 150Mm3 reservoir option**



22. Oxfordshire County Council understands that that the various plans/maps within the report are concept only and that further work is required on these. However, they do raise a number of issues which OCC would seek clarity on

moving forward. Some of the issues raised below will have a material impact on whether the Abingdon Site can be delivered in terms of infrastructure required outside of the site. Below are the main issues we wish to raise.

### Highway access

23. OCC seeks clarity on the intended road access for the site. In *Appendix D: Stage 2: Site assessment*, the RAG assessment of the Abingdon site (p.36) states that “Site access does not involve local roads – access to A34 via A415 without the need to pass through built up areas”, this would appear to be confirmed by the site layout drawings in *Appendix U: Abingdon phased options*, which indicate an access road from the site joining the A415 to the west of the Marcham Interchange.
24. However, this would appear to be inconsistent with the wording in *Appendix M: Reservoir site descriptions*, in which access for each capacity option is described as “Road access to the site would be provided by a new access off the A34 road on the eastern end of the reservoir.” OCC seeks confirmation whether it is intended for the access road to be from the A415 or directly from the A34 itself.
25. Assuming the former is correct, OCC will need to understand the traffic impact of a new access taken from the A415, which experiences high volumes of traffic in the AM and PM peaks. There are also known capacity issues at Marcham Interchange. The impact of additional movements generated by the site will need to be understood and possible mitigation measures to the highway network identified where appropriate. This will need to include a thorough assessment of the impact of construction traffic and traffic generated by the site when it is operational, including trips generated by recreational users.
26. If access is to be taken directly from the A34 (and not via the A415), the impact of all types of traffic generated by the site (construction, operational, and recreational) will also need to be understood. In either scenario, Highways England will need to be consulted on the proposal for the reservoir at the earliest possible opportunity.
27. OCC is seeking to safeguard land immediately to the north of Milton Interchange in the submitted Vale of White Horse District Council Local Plan Part Two. This is to facilitate the potential for improving access to the A34 near Milton Park, OCC would like to understand whether a potential new access to the A34 serving the reservoir would prejudice the delivery of such a scheme.

28. Land is also safeguarded for an Abingdon Southern Bypass in the Vale of White Horse Local Plan Part 1 (Appendix E) and land is proposed to be safeguarded for a Marcham Bypass in the Vale of White Horse Local Plan Part 2 (Appendix B). OCC needs to understand whether these schemes could be impacted.
29. It will also be important to understand what is planned with regard to other highway accesses to the reservoir. Clarity is needed as to whether it is intended for the only access to be via the A415 or if there will be other accesses to other parts of the existing highway network. Additionally, if there are to be multiple accesses, it will be important to understand if some will be restricted to site traffic only and if others will be for public access.

#### Diversion of the Hanney / Steventon Road

30. A number of the capacity options will result in the need to divert the route of the Hanney / Steventon Road. Instead of the indicative route shown on the drawings in Appendix U, where the road joins back up with its original route immediately to the east of East Hanney, OCC would like to explore the possibility of the road joining the A338 further south. The precise location of the new access would need to be explored but this would be between the railway line and the southern end of East Hanney. The rationale for exploring this option is to more directly serve the proposed new Grove Railway Station, for which OCC is seeking to safeguard land adjacent to the A338 in the submitted Vale of White Horse District Council Local Plan Part Two. It also offers the opportunity to offer alternative bus routes across the area with reduced journey times.

#### Temporary railway siding

31. Although the construction of a railway siding is described as temporary (p.35 of the main report and various pages in Appendix M) for the delivery of sand and gravel, it is not made explicit that this is for use only during the construction period, clarity is required on this matter. Further to this, Network Rail will need to be consulted at the earliest opportunity to determine whether this proposal is feasible. Additionally, OCC would seek to ascertain whether the provision of a temporary siding may prejudice the delivery of the aforementioned Grove Station.
32. A temporary siding alongside the Great Western Main Line on the southern edge of the site for the delivery of sand and gravel is possible but there is insufficient detail to determine whether it is a realistic suggestion.

33. Thames Water states that if suitable granular material cannot be located on site with which to construct the embankment drainage, then a total of between 127,000m<sup>3</sup> and 290,000m<sup>3</sup> of sands and gravels will need to be imported (depending on the size of the reservoir built). Wet sand (that is sand stored in a natural setting and naturally compressed) has a nominal density of 1.9 metric tons per cubic metre (m<sup>3</sup>) so the requirement would be for between 241,300 and 551,000 tons.
34. Thames Water do not indicate the proportion of imported material which will be delivered by rail, whether it will require processing or what the facilities will be for unloading and stockpiling on site. It is noted that the site boundary does not appear to include the land needed for the construction of a temporary aggregate siding.
35. The siding, will in effect need to be two parallel sidings, each capable of accommodating up to 20 wagons and a locomotive, with a head shunt at each end to release the locomotive, and a separate siding for storing any crippled wagons. A storage area will be needed for the sand and gravel after it is unloaded from the train, probably by a mechanical grab. A similar facility at Water Eaton, suggests a site approximately 650m in length would be required.
36. The two-track railway between Didcot and Swindon is severely capacity constrained so works will inevitably be required to the existing infrastructure to facilitate the aggregate sidings, including additional track in the form of crossovers and connection into the site, along with new signals and associate cabling. It may even be necessary to provide loops alongside the existing railway where a freight train can stand clear of the high-speed main lines whilst waiting for acceptance into the sidings.
37. Whilst there are a number of active sites producing sharp sand and gravel in Oxfordshire they are mainly concentrated in the north of the county. The Minerals & Waste Local Plan Core Strategy predicts that they will be the only local source of sand and gravel by 2028 unless a new mineral working is agreed in the south of the county. None are rail-connected. The imported sand and gravel, if it is to be delivered by train, is likely to originate in the Kent and East London areas where there are rail-served wharves that land marine dredged sand and gravel from the North Sea, East English Channel and Thames Estuary. However, timetabling freight trains on the busy commuter lines around London may be challenging.
38. There is a possibility changes to the rail infrastructure may help increase rail capacity, alongside proposals being considered by Network Rail to extend the existing loops further towards Swindon. This will need to be considered in more detail but it could be a positive legacy of the construction works.

## Impact of proposed tunnel between the reservoir and the River Thames

39. Whilst it is appreciated that the drawings provided in Appendix U are described as conceptual, it is worth noting that a new tunnel is shown immediately to the north of Drayton. However, the OS base map used is out of date and does not show a number of recently built developments, including the residential development of Walnut Meadow, under which the tunnel would appear to run. Even assuming the correct position of the tunnel is to the north of the residential development, OCC would seek to understand the effect of that construction on roads and property in the area, including any requirement to close roads during construction.

## Construction Management Plan

40. A detailed construction management plan will need to be produced for this proposal. Answers to some of the above questions, particularly construction traffic usage of the A34/A415 and the potential for transporting materials by rail will need to be understood as these will be fundamental to the impact of construction traffic and therefore the necessary mitigation measures, including diversions, temporary improvements to capacity on effected roads, etc. In addition to the construction impact of the reservoir site itself, the management plan will need to take account of the impact on the highway network of the associated infrastructure between the reservoir and the River Thames.

## Oxford to Cambridge Expressway

41. Highways England are looking at possible route for a new expressway between Oxford and Cambridge. Currently Highways England are assessing route options around Oxford and there is potential that a route may come as far south as Didcot. The reservoir planning needs to be aware of these plans in any future design work.

## Future leisure use of the Reservoir

42. It is important to understand the potential future use of the reservoir for leisure activities such as walking, cycling, nature reserves and water sports. Other reservoirs/large bodies of water across the county attract high visitor numbers and the potential impact of visitors on a road network that already has significant capacity issues need to be fully assessed and understood – as well as the potential for building the offsite and onsite transport infrastructure to enable active and sustainable modes of travel to the reservoir. This should include the restoration of the Wilts and Berks Canal.



## Public Rights of Way and Countryside Access

43. As is recognised in the plan, all of the capacity options will have a significant impact on a number of public rights of way that cross the site area and the surrounding area – as well as on path users which include equestrians, cyclists and walkers. These impacts could be both negative and positive so a specific appraisal of public rights of way and users should be undertaken.
44. It appears that some alterations to the public rights of way and countryside access may be necessary to accommodate the reservoir and associated infrastructure so separate legal processes will be needed to alter these routes. The extent of these alterations should be minimised and enhancements to the existing network in the vicinity made – including surfaces, furniture and landscaping.
45. Further to this, although there are bridges shown in the drawings provided where public rights of way intersect with the Auxiliary Drawdown Channel, no bridges are shown where the channel crosses them. It will be expected that provision is made for the continued use of these public rights of way without significant diversion, i.e. for bridges to also be constructed at these locations.
46. The reservoir has the potential to create new routes for recreational access around the site and onward connections to settlements and the public rights of way network as well as upgrading existing routes in the vicinity to maximise their utility. This should include the restoration of the Wilts and Berks Canal on its historic or alternative route.

## Negative impacts of the reservoir (on access), that OCC would like to avoid or reduce

- Unavoidable loss of public rights of way on the site of the reservoir and associated infrastructure areas that currently provide a reasonable *traffic-free* access resource
- Reduction in quality of the remaining network caused by dead end routes, lack of connecting routes or inappropriate landscaping or other restrictions to visibility
- Loss of an equestrian centre <http://www.malthousecentre.co.uk> and associated social and economic benefits
- Loss of habitat corridors associated with public rights of way
- Loss of the historic route and potential future use of Wilts & Berks canal as a waterway and green corridor
- Reduction in users' enjoyment from construction noise, dust, barriers, traffic and route diversion/closure
- Conflicts between commercially run activities and the use of the site and surrounds for free public access and recreation

- Traffic generated for free and paid-for leisure uses on the site and the surrounding areas

#### Positive impacts of the reservoir – that OCC would like to see

- Onsite creation of a circular walking, cycling and riding route around the reservoir site with associated landscaping, interpretation and route infrastructure. As a destination in itself this could provide an important sustainable tourism resource in the county that encourages more and longer overnight stays in the area and encourages non-vehicular transport for leisure in the area
- Provision of a staffed and resourced countryside access, outreach, education and management centre on site
- Provision of a restored section of the Wilts & Berks canal and associated facilities throughout the site and onwards to the River Thames at Abingdon
- Creating a better off-site connected network of routes for walker, cyclists and equestrians that meets the aims of the Oxfordshire Rights of Way Improvement Plan ([www.oxfordshire.gov.uk/rowip](http://www.oxfordshire.gov.uk/rowip)), by connecting up the reservoir site to surrounding towns and villages with additional and improved rights of way and green routes. This should include Steventon, East Hanney, Abingdon, Marcham, Grove and Drayton, as well as access to the River Thames, Ock and other key recreation sites. To include improved and additional road crossings of local roads (including A338, A415, A34 and Steventon Road) plus rail and river crossing facilities.

#### More in-depth points

47. Although there are bridges shown in the drawings where bridleway 192/8, restricted byway 192/7, the B4017, and the A34 intersect with the Auxiliary Drawdown Channel, no bridges are shown where the channel crosses restricted byway 192/6, footpath 100/3, and bridleway 373/18 (the latter of which forms part of Route 5 of the National Cycle Network). It will be expected that provision is made for the continued use of these public rights of way without significant diversion, i.e. for bridges to also be constructed at these locations.
48. The reservoir will have significant impacts during construction and afterwards once it becomes operational. As a potential regional asset as a large water body for watersports, fishing and countryside access the transport and rights of way access issues should be expanded. When it comes to encouraging and enabling walker, cyclist and equestrian access as an option instead of cars, the plan needs to include Wantage, Didcot, Abingdon, and Oxford as well as the smaller settlements like Marcham and Steventon. From a tourism perspective these surrounding settlements are likely to be the focus for accommodation service providers.
49. Any application will need to balance nature conservation and access. One way to do this whilst still maintaining a circular route around the site would be to vary the route and landscaping treatments to provide people free zones on the inner and outer faces. Dog walkers will need additional positive

management and consideration in order to balance their requirements with other users and nature conservation objectives.

50. Detailed conversations are required with Oxfordshire County Council as to the physical, social and environmental impacts this reservoir would have if it should come forward. Joint liaisons would be required between OCC, Thames Water and partners, the Vale of White Horse District Council and Highways England to ensure a thorough and robust assessment will be undertaken.

#### Abingdon Flood Alleviation Scheme

51. Thames Water should also note that a proposed Abingdon Flood Alleviation Scheme is being developed. The Environment Agency and Thames Regional Flood and Coastal Committee are working with the Vale of White Horse and Oxfordshire County Council to gather evidence and conduct studies.

Information is available on our website:

<https://www.oxfordshirefloodtoolkit.com/contacts/abingdon-flood-alleviation-scheme/>.

52. The main issues the county council would have with a proposed Flood Alleviation Scheme at Abingdon would be the extent of the flood area and how this interfaces with the proposed reservoir, flooding and drainage associated with the reservoir and land acquisition matters; especially considering the respective powers of both Thames Water and the Environment Agency.
53. How a potential reservoir and potential flood alleviation scheme at Abingdon would interrelate, would need further discussion between authorities should both progress.

#### Innovation

54. The Executive Summary discusses a study produced by WaterUK together with water companies and regulators which looked at water trends and potential future scenarios, looking 50 years ahead. It then goes on to explain that Thames Water's approach looks at a longer time horizon for the plan which is longer than the statutory minimum of 25 years.
55. With innovation and industry disruption in mind, it could be argued that a plan that looks 80 years ahead and is based on existing technology to ensure a water supply might commit to a water resource management plan that does not provide, in the long term, the best solution for customers. Consequently, the land take and disruption caused by the construction and operation of a large reservoir could prove redundant in the decades to come.
56. Overall, the County Council would like to see a commitment to reviews of a long-term regional plan should more advance technologies become available.

## Conclusion

57. Oxfordshire County Council is supportive of the approach being taken by water companies to build in resilience in their investment programmes. However, it **OBJECTS** to the current Thames Water WRMP on the basis that it contains a proposed reservoir in Abingdon and also to the considerable proposed size of the reservoir. There is insufficient evidence to prove that it is required to support both Thames Water as well as other water company catchment areas in the WRMP period.
58. Oxfordshire County Council needs to be presented with evidence from all water companies in the south-east including their population forecasts and sequential assessments of supply schemes. This should be in the form of a Regional Water Plan.
59. Concerns are also raised about conceptual design of the proposed reservoir which are discussed above.