

Thames Water
Draft Water Resources
Management Plan 2019

Statement of Response

Technical Appendices

**Appendix C: Response to Natural
England's representation**



Table of contents

A.	Introduction	1
B.	Habitats Regulation Assessment	1
	Issue 1 Habitats Regulations - terminology	2
	Issue 2 Screening for likely significant effect (LSE)	2
	Issue 3 Objective and robust evidence	3
	Issue 4 Objective evidence – noise impacts on bird interest feature	4
	Issue 5 Walthamstow Marshes Site of Special Scientific Interest (SSSI)	4
	Issue 6 Assessment methodology	4
	Issue 7 Options and proposed mitigation measures	5
	Issue 8 Conceptual Design Reports and summary of mitigation measures	5
	Changes made to the draft plan	6
C.	Strategic Environmental Assessment	7
	Issue 9 SEA assessments	7
	Issue 10 SEA key indicator questions	8
	Issue 11 Sites of Special Scientific Interest (SSSIs)	8
	Issue 12 Impacts on landscape	10
	Issue 13 Marine Conservation Zones	13
	Issue 14 Biodiversity	14
	Issue 15 Invasive non-native species (INNS)	15
	Issue 16 Protected species	16
	Issue 17 Water Framework Directive	17
	Issue 18 Adaptation to climate change	18
	Changes made to the draft plan	19
D.	Putting people at the heart of decision making	20
	Issue 19 Demand management	20
	Issue 20 Shared plans for places	22
	Issue 21 Sustainable drainage systems (SUDS)	22
E.	Resilient landscapes and seas	23
	Issue 22 Natural capital and ecosystem services	23
	Issue 23 Enhancing resilience	24
	Issue 24 Climate change	26
	Changes made to the draft plan and commitments – (Sections D & E)	26

Appendix C.

Response to Natural England's representation

A. Introduction

- C.1 This document sets out the main issues raised by Natural England in their representation to the public consultation on our draft Water Resources Management Plan 2019 (WRMP19), hereafter referred to as draft plan. The structure of the appendix follows the structure of the Annex provided by Natural England in its representation. The issues raised by Natural England are shown **in bold font** and our consideration and response to the issues are shown in numbered paragraphs below each issue. We have also set out the changes that we have made to our draft plan as a result of the issues raised.

B. Habitats Regulation Assessment

Regulation 9 of the Conservation of Habitats and Species Regulations 2017 (S.I. 2017/1012) requires every competent authority, in the exercise of any of its functions, to have regard to the requirements of the Habitats Directive. Regulation 10 places a duty on a competent authority, in exercising any function, to use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds. In addition, regulation 63 places obligations on competent authorities in respect of plans or projects likely to have a significant effect on a protected site.

Water Companies have a statutory duty to prepare WRMPs and so they are the Competent Authority for Habitats Regulations Assessment (HRA) of the dWRMP. In England, as a matter of policy, sites listed or proposed under the "*Ramsar Convention on Wetlands of International Importance*" receive the same level of protection as European sites.

Natural England has reviewed Thames Water's '*Habitats regulation assessment – Stage 1 screening*' document (dWRMP Appendix C) and we advise that there are some specific points and terminology that will need amending within the document, and some areas of the assessment where there is insufficient information to exclude on the basis of objective evidence a likely significant effect on European designated sites.

- C.2 We have consulted with Natural England on their representation on the draft plan to ensure we fully understood their concerns and ensure we could address their concerns set out in their representation to their satisfaction.
- C.3 We have made corrections to the terminology used in the revised HRA report (revised draft plan Appendix C) and the objective evidence used in screening has been fully referenced in the updated report.

Issue 1 Habitats Regulations - terminology

In paragraph 1.1.1 of the HRA screening, the 2010 (as amended) Conservation of Habitats and Species Regulations are quoted. However, the Habitats Regulations were updated in 2017 due to updates in the supporting legislation. The Plan should be revised throughout, to ensure that the regulations are listed appropriately as 'The Conservation of Habitats and Species Regulations 2017'. This is also quoted in paragraph 9.8 of Section 9: Environmental Appraisal of the dWRMP19.

Furthermore, the following is stated in paragraph 1.1.1 of the HRA Screening, and paragraph 9.8 of the Environmental Appraisal:

"Under Regulations 61 and 102, any plan or project which is likely to have a significant effect on a European site (either alone or in-combination with other plans or projects) and is not directly connected with, or necessary for the management of the site, must be subject to a Habitats Regulations Assessment (HRA) to determine the implications for the site in view of its conservation objectives."

This is not quite accurate. Any plan or project within a potential zone of influence of a European protected site is subject to an HRA. The first stage of the HRA is screening for a likely significant effect (LSE). If an LSE cannot be ruled out on the basis of objective evidence on any European site, then an Appropriate Assessment should be carried out for the relevant projects and sites.

C.4 We note these comments. We have updated the text in the revised draft plan to ensure correct terminology and zones of influence are properly cited throughout.

Issue 2 Screening for likely significant effect (LSE)

Natural England has some concerns over the validity of some of the statements within 'Table 1 – Potential impacts of WRMP option elements on European sites':

- Table 1 is a broad summary of impacts, and does not reference specific options. If this table is being used to help inform later assessments of actual works and sites, it is important that the detail within it is accurate.
- Many references are made to standard evidence of impact pathways and critical distances (e.g. from light spill), however, these do not appear to be referenced. As a result, in some cases, we are not confident in their legitimacy as a tool to inform the HRA.
- The following is stated in Table 1: "*Creation of new pathway of non-native invasive species. This effect is only likely to be significant where the scheme is situated within the European site or an upstream tributary of the European site*". Whilst this will screen out the most significant risks, the potential for spread by other vectors (e.g. birds and boats) should also be considered where the new pathway could introduce INNS into the catchment of, or closer to, a European site.
- Natural England will discuss our more detailed concerns directly with the company.



Thames Water has concluded that there will not be any likely significant effects (LSE) on any European protected sites, citing mitigation measures to offset any potential impacts from both construction and operational option/option element phases. The use of mitigation to remove a likely significant effect and avoid undertaking an appropriate assessment has been the subject to a recent case law¹. Natural England recommends that the HRA is reviewed in light of this case and that Thames Water takes legal advice on this.

- C.5 We have revised the HRA Report to provide the references and objective evidence that support these points. Table 1 of the HRA Report has been updated to give wider consideration of the potential vectors of INNS transfer.
- C.6 We have revisited our HRA Stage 1 screening assessments in light of the April 2018 judgment of the Court of Justice of the European Union (CJEU) on the need to exclude mitigation measures from the screening assessment. Where screening decisions were reliant on mitigation to conclude no LSEs we have now concluded that Stage 2 Appropriate Assessment is required for those options included in the preferred programme. The HRA Report has therefore been updated to include Appropriate Assessment for relevant options.

Issue 3 Objective and robust evidence

Natural England advises that in some cases insufficient information has been provided to exclude on the basis of objective evidence a LSE. Thames Water must be able to exclude LSE on the basis of objective and robust evidence at this stage. Examples where robust evidence is required include:

- **Noise levels and assessment on impacts on SPA² birds, especially in relation to the standard noise thresholds discussed (Lee Valley SPA) – see further comments below.**
- **The potential dispersion of stag beetles, and the potential to incorporate habitat creation to offset their potential extended dispersal, during construction and operation (Richmond Park SAC³, TWRM⁴ extension – Hampstead to Battersea link; Epping Forest SAC, RWS_Chingford⁵ south intake capacity increase)**
- **Hydrological connectivity around Cothill Fen SAC from the new transfer pipe associated with the Abingdon Reservoir option.**

- C.7 We have provided more details on the objective evidence and references that support the assessments in relation to noise thresholds for birds, stag beetle dispersal, and hydrological connectivity around Cothill Fen. The HRA has been reviewed and updated to ensure more information on the objective evidence used for the screening assessments is provided throughout, not limited to these three examples cited by Natural England.

¹ Case C-23/17 People over wind and Sweetman. Ruling of CJEU

² SPA – Special Protection Area

³ SAC – Special Area of Conservation

⁴ TWRM – Thames Water Ring Main

⁵ RWS – Raw Water Supply



Issue 4 Objective evidence – noise impacts on bird interest feature

The HRA states the following in relation to noise impacts on bird interest features of the Lee Valley SPA: *“It is expected that due to the highly urban surroundings of this designated site, the qualifying feature bird populations would be habituated to a reasonably high degree of disturbance already.”* Natural England does not consider that enough evidence has been provided within the HRA to support this statement and to exclude an LSE on the basis of objective evidence. There is no reference to what the existing level of disturbance is, and whether further increasing local noise levels or introducing different patterns of noise will result in bird disruption. There has been no comparison between the current baseline noise levels and predicted construction noise levels, to ascertain whether resulting volumes would be beyond the optimal ranges for the SPA birds.

- C.8 We have updated the HRA report to fully cite the objective evidence relied upon, which includes previous noise studies in the locale (Deephams and National Grid's North London Reinforcement project). Following further consultation with Natural England, we have set out in more detail the baseline noise monitoring requirements that would be needed as part of the detailed design of the scheme.
- C.9 Those option elements in which mitigation was relied on to conclude no LSEs have been updated in light of the recent court judgment on HRA screening. Stage 2 Appropriate Assessment has been carried out where necessary as a consequence.

Issue 5 Walthamstow Marshes Site of Special Scientific Interest (SSSI)

Natural England notes that in the assessment for several schemes, Walthamstow Marshes SSSI is referred to as a constituent part of Lee Valley SPA and Ramsar site. However, it is not part of the SPA/Ramsar, and is not designated for its wintering birds. Impacts on birds on this site only need to be assessed if the site provides functional/supporting habitat for SPA/Ramsar bird features.

- C.10 We note Natural England's comment on this point. The text has been revised to correct this error. For options that have the potential to impact Walthamstow Marshes SSSI, the HRA assessment states that the SSSI is not a constituent part of the SPA/Ramsar and does not represent off-site functional habitat for the qualifying bird species as it lacks large areas of open water or reedbeds. Effects on this SSSI are assessed in the SSSI Assessment within the SEA Environmental Report.

Issue 6 Assessment methodology

Natural England notes that the Water Framework Directive (WFD) Assessment has been referenced within the HRA (for the Beckton Reuse, Deephams Reuse and Teddington DRA⁶ schemes). It is important to note that WFD assessments and HRA assessments are separate legislative requirements, and it may not be appropriate to use WFD assessments to draw conclusions of likely significant effects on SPA, SACs and Ramsar sites which may be affected by the plan. For the schemes

⁶ DRA – Direct River Abstraction



affected, we advise that it is made clear that suitable assessments have been undertaken in relation to their specific impacts on the European designated sites in the locality, and that this is separate from any WFD assessments.

- C.11 We note Natural England's comment on this point. The text has been updated to ensure the WFD is not relied upon in this context to draw conclusions in respect of the HRA. The WFD assessment does however provide context and semi-quantitative evidence to the magnitude of the environmental effects anticipated in respect of water levels and water quality. This information is used to inform the potential effects on bird habitat but we do not use WFD standards to draw conclusions as to the effects on the designated features and species of the European sites. We have used other objective evidence to support the conclusions reached in the HRA.

Issue 7 Options and proposed mitigation measures

More detailed technical information about options, including proposed mitigation measures, is set out in a series of Conceptual Design Reports. Some of the information in these reports has informed the HRA screening. Natural England advises that the HRA screening document should contain sufficient information to justify a conclusion of no LSE, without having to refer to separate documents.

- C.12 We note Natural England's comment on this point. It was agreed during the recent consultation meeting with Natural England that a table will be included as an Appendix of the HRA that contains all the applicable biodiversity mitigation contained within the CDRs and that the original CDR will also be referenced in the HRA report/screening tables. This mitigation table has now been produced and forms an Appendix of the HRA.

Issue 8 Conceptual Design Reports and summary of mitigation measures

Natural England has seen early draft versions of the Conceptual Design Reports (CDRs). We have not reviewed the full documents associated with the plan, though we have been sent a summary of the appropriate mitigation measures that have been included in the CDRs for the following preferred options:

- **Teddington Direct River Abstraction (DRA)**
- **Abingdon Reservoir**
- **Beckton Reuse.**

This summary explains how conclusions of no LSE have been reached for all of the preferred options within the dWRMP. While the summary is helpful and provides some indication of the mitigation measures that would be applied in order to ensure no LSE, in addition to consideration of the case law referred to above, we recommend the following:

- **It seems that some of the mitigation measures included in the CDRs have been lifted from the November 2017 HRA. As mentioned above, the information provided in the HRA screening is insufficiently robust to exclude a LSE. Natural**



England requires more information to provide advice on the likely impacts of these schemes

- In places, the summary document that Natural England was sent is difficult to follow, and it is not clear which mitigation principles relate to which option element. We have not reviewed the full CDRs, so we cannot comment on whether the information is clearer in those, however all the information we need to assess the impacts on European sites should be explicitly included within the HRA.
- In table '*Table 2.8: Environmental issues and mitigations*', a series of construction and operational impacts from the Teddington DRA option are summarised. Included within this table are the potential impacts on both landscape features and local designations (i.e. Local Nature Reserves (LNRs) and Sites of Important Nature Conservation (SINCs)). However, there does not appear to be any provision within this table for nationally and internationally designated sites. This is surprising, especially since there are several option elements associated with the Teddington DRA which have been flagged in '*Table 4: European designated sites potentially impacted by option elements*' (e.g. Teddington to Thames Lee tunnel shaft 300MLD, Coppermills WTW extension 150MLD). If the evidence provided within this document is to be used to support the HRA conclusions, then it should be made clear which aspects relate to European designated sites.

Natural England notes that the CDR mitigation summary that has been provided by Thames Water and Ricardo is not a formal document, and we would expect the above to be addressed and included within the formal HRA screening document to support the conclusion of no LSE.

- C.13 We note Natural England's comment on this point. It was agreed during the recent consultation meeting with Natural England that a table will be included as an Appendix of the HRA that contains all the applicable biodiversity mitigation contained within the CDRs and that the original CDR will also be referenced in the HRA report. This mitigation table is an Appendix of the HRA. Table 2.8 has been updated to ensure it gives proper consideration to nationally and internationally designated sites.

Changes made to the draft plan

- C.14 The HRA report and associated screening tables have been updated as follows:
- to correct accuracy of terminology including reference to the new 2017 Habitat Regulations and inclusion of full references;
 - to include further details of the objective evidence relied upon for the screening assessments;
 - to update the Stage 1 screening assessment in light of the recent court judgment;
 - to reference the requirement for HRA within the Zone of Influence of any European Site;
 - to ensure no erroneous reference to the Walthamstow Marshes SSSI as part of the Lee Valley SPA/Ramsar;



- to ensure the screening conclusions are not reliant on the WFD assessments but rather cite alternative objective evidence;
- to include a new biodiversity mitigation table as an appendix of the HRA report and references the original CDRs; and
- to include Appropriate Assessments for relevant options included in the preferred programme of the revised draft plan.

C. Strategic Environmental Assessment

The European Commission Directive 2001/42/EC “on the assessment of the effects of certain plans and programmes on the environment” is known as the ‘SEA Directive’. It requires “an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment” (EC, 2001; Article 1). The provision is explicitly applied to plans made for “water management”.

Natural England is happy with the indicator questions and the overall approach to assessment of options in the SEA. Both positive and negative impacts of options have been assessed separately.

An in-combination assessment of options, and an assessment of the cumulative effects of the preferred programme with other plans, programmes and projects (including other water companies’ draft WRMPs) has been undertaken. The latter will need to be updated in light of any material changes to other companies’ plans following the Statement of Responses. The findings of the SEA have informed the selection of preferred options in the plan.

- C.15 Natural England’s comment on the indicator questions is noted.
- C.16 The assessment of cumulative effects has been updated accordingly as part of the assessment. We note the comment regarding further updates.

Issue 9 SEA assessments

However, Natural England advises that there are some areas of the SEA which require further work or clarification. We have found the detail of the SEA assessments (in Appendices E and F) difficult to follow. We would expect each option (including all the elements that make up that option) to be assessed fully and presented in one place. By splitting the options into elements it is difficult to see the overall impact of each option. A clearer summary of designated site impacts (from the HRA and Appendix H) is sometimes required.

- C.17 We note Natural England’s comments on the clarity of the information presented. Appendix E provides the assessments of the elements. Appendix F provides the assessment of the options included in the preferred programme of the revised draft plan (with each option made up of one or more option elements). Appendix F therefore provides the assessment of the overall effects of each option. We have updated Appendices E and F to make clearer the assessment of the effects on designated sites, drawing on the detail from the HRA Report and the SSSI assessment (Appendix H of the SEA Environment Report). There are indexes,

pagination and summaries provided for both Appendix E and Appendix F in the revised draft plan.

Issue 10 SEA key indicator questions

It is also unclear where the answers to the SEA key indicator questions lie. We would expect it to be clear that all the key indicator questions have been answered, and have informed the overall assessment for each SEA objective.

More detailed comments relating to specific SEA objectives are presented below.

The Government recently published its 25 Year Plan to Improve the Environment⁷. Understandably (as it was published in 2018) this was not included in the list of Plans, Policies and Programmes against which the SEA policy objectives were developed. However, Thames Water should familiarise themselves with the 25 Year Plan, and ensure that the SEA and final WRMP aligns with its policies and supports its objectives.

- C.18 The SEA indicator questions provide guidance as to the issues to be considered in assessing the effects of each option against the relevant SEA objective, rather than representing specific questions to be "*answered*". Detailed commentaries have been provided for each SEA objective taking account of the indicator questions. This point was discussed with Natural England at the recent consultation meeting who commented that they were content with the approach adopted.
- C.19 The Government's 25 year plan published in 2018 has been added to the Plans, Policies and Programmes section of the SEA Environmental Report (ER). We have taken account of the 25-year plan in updating the ER, with a new section that reviews the revised draft plan against the key relevant goals set out in the plan.

Issue 11 Sites of Special Scientific Interest (SSSIs)

Point a

Section 28G of the Wildlife and Countryside Act 1981, as inserted by section 75 of and Schedule 9 to the Countryside and Rights of Way Act 2000, places a duty on public authorities, including water companies, to take reasonable steps consistent with the proper exercise of their functions to further the conservation and enhancement of SSSIs. These duties are mirrored in the general recreational and environmental duties placed on relevant undertakers in the Water Industry Act (1991) as amended.

The Water Industry Strategic Environmental Requirements⁸ (WISER, page 29) sets out the expectations for delivery of these obligations. Companies are expected "to contribute to maintaining or achieving SSSI favourable condition both on

⁷ A Green Future: Our 25 Year Plan to Improve the Environment, 2018, Department for Environment, Food and Rural Affairs (Defra).

⁸ Water Industry Strategic Environmental Requirements (WISER) was published in 2018 which replaced the Defra statement of obligations. It sets out the statutory environmental delivery objectives for water companies in the price review and through their statutory plans including the drought plans.



[companies'] own land and in the catchments [companies] manage or impact on". The rate of improvement going forwards is set out in the Defra 25 Year Environment Plan which aims to restore "75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term".

Natural England is pleased that there is a separate SSSI assessment (SEA Appendix H), which lists the features of interest for each site. It would be helpful if it was clearer that this only lists and assesses features which have not already been considered in the HRA. We would like to see a clearer link to the conservation objectives and Favourable Condition Tables for the sites.

Natural England has noticed some instances where the SSSI assessment appears incomplete, or where the features have been incorrectly assessed. For example, for the Beckton Reuse option:

- Chingford Reservoirs SSSI is designated for its wintering wildfowl and wetland birds, and it is also an important moult refuge for populations of wildfowl in the late summer months. The site is not designated as an SAC, SPA or Ramsar site, although impacts on wintering birds were assessed in the HRA as the reservoirs provides supporting habitat for them. The assessment in Appendix F needs to make it clear why impacts on the wintering birds at this site were assessed in the HRA, with reassurance in Appendix H that all SSSI features have been assessed.
- The assessment for 'CON_Beckton to Lockwood 300MLD' should also include Chingford Reservoirs SSSI. The proposed pipeline is adjacent to the western edge of units 1-3, and passes under one corner of unit 1. There are also three shafts located close to the SSSI boundary.
- Walthamstow Marshes SSSI is not designated as an SAC, SPA or Ramsar site, and therefore should not have been assessed in the HRA (as is stated in the commentary). All SSSI features should be assessed in Appendix H. The commentary on potential for effects on SSSI features of interests (against several option elements) refers to impacts on the wintering bird population, yet this is not an interest feature of the SSSI. For the 'NET_Pumping station to new header tank at Coppermills WTW' option element, the wrong features of interest are listed.

C.20 The comments made by Natural England are noted. The SSSI assessment (Appendix H) has been updated to address these comments fully and ensure accuracy and completeness. Appendix F has been updated to explain why Chingford Reservoirs SSSI was considered in the HRA (due to it being considered off-site functional habitat).

Point b - Further evidence of assessment of potential impacts

In addition, there are some sites where Natural England would like to see further evidence of assessment of potential impacts. For example:



- **Walthamstow Reservoirs SSSI – The commentary suggests mitigation against potential disturbance to birds from noise and visual disturbance, but does not consider vibration impacts associated with construction and tunnelling.**
- **The 'NET_TWERM extension - Coppermills to Honor Oak' passes below Walthamstow Marshes SSSI and 'RWS_Conveyance from Break Tank to Coppermills WTW' involves construction less than 500 metres from the SSSI. This site is designated for its wetland plant and invertebrate features, and breeding birds which depend on wetland habitat. Also, the 'NET_TWERM extension - Hampton to Battersea' passes within 500 metres from the boundary of Wimbledon Common SSSI, which is designated for (amongst other things) some wetland habitats. The assessments for these sites need to demonstrate a better understanding of the hydrology and hydrogeology of the site, and confidence that they will not be impacted by construction. It is not clear how "good practice construction mitigation measures such as dewatering of the shafts and tunnels" would prevent impacts on groundwater levels and flows, which might be required for maintenance of the wetland habitats.**

C.21 The comments made by Natural England are noted. The impact of ground vibration on birds has now been assessed in the SEA of the revised draft plan. The assessment has been updated to ensure sufficient consideration of the site's hydrology and the potential for any hydrological impacts.

Point c - Complete assessment of an option

In Appendix F, against Objective 1.1:

- **It is not clear whether the commentary covers effects on SSSIs which are not European designated sites. It says that non-designated features are assessed in individual element matrices. We would like to see impacts on all features associated with an option presented together in the SEA tables or a separate SSSI response.**
- **The commentary for the Beckton Reuse option states that Chingford Reservoirs SSSI is designated for breeding wildfowl. This is not the case. It is designated for wintering wildfowl and wetland birds, and moulting birds in the late summer months.**

We recommend that Thames Water should review the SSSI assessments in the SEA, and ensure that the correct sites and features have been assessed fully.

C.22 The SSSIs are identified in the element matrices in Appendix E of the updated SEA Environmental Report. The reference to Chingford Reservoirs SSSI has been revised.

Issue 12 Impacts on landscape

Relevant Authorities (including water companies as a Statutory Undertaker) are to have regard to the purposes of National Parks (Section 11A (2) of the 1949 Act) and the similar duties towards Areas of Outstanding Natural Beauty (AONBs) (Section 85 of the Countryside and Rights of Way Act 2000) and the Broads (Section 17A of the



Norfolk and Suffolk Broads Act 1988). Duties to further the natural beauty and rural amenity are also included within the general recreational and environmental duties placed on relevant undertakers in the Water Industry Act (1991) (as amended). Protected landscapes are central to the delivery of aspirations in the Defra 25 Year Environment Plan to enhance the beauty, heritage and engagement with the natural environment.

- C.23 The comments made by Natural England are noted. Reference to protected landscapes in the 25 year plan has been included in the updated SEA Environmental Report.

Point a - Abingdon Reservoir

As it stands, Natural England does not consider that the assessment of the Abingdon Reservoir preferred option has fully acknowledged the risks it poses to the sensitive landscape features within the locality. The SEA (Appendix F) states that “the scheme is not within a designated landscape area. The nearest promoted viewpoint is over 10km to the east. There are localised areas of tranquillity in the landscape. The site is typical of the Upper Thames Clay Vales NCA (108)”. It would be helpful to explain where the “nearest promoted viewpoint” is, and whether it is in a protected landscape.

Should it go ahead, the Abingdon Reservoir will significantly and permanently alter the landscape in which it is built. Although not within a designated landscape it is less than 3 km from, and within the setting of, the North Wessex Downs Area of Outstanding Natural Beauty (AONB). It will have a significant impact on the landscape features of the AONB setting. This should be clearly acknowledged in the dWRMP and SEA.

The character of the northern portion of the North Wessex Downs AONB, the ‘Downs Plain and Scarp’, promotes long views to the north of the AONB, so long vistas across the landscape are important for the management of the AONB. For more information on this, please see the North Wessex Downs AONB Management Plan⁹.

- C.24 The comments made by Natural England are noted. The SEA matrix has been amended to reflect the comments made including reference to the North Wessex Downs AONB management plan. The SEA assessment has recognised the AONB and its setting and has acknowledged the landscape impact of the proposed scheme and potential benefits and enhancements that may result in rating the adverse impact as major and the beneficial effect as moderate. The SEA matrix relating to landscape has been reviewed and updated for the Abingdon reservoir options. Further detailed assessment work will be undertaken as part of any future application for development consent.

Point b - Reservoir - new opportunities

The SEA (Appendix F) states that the reservoir would create “new opportunities... for improved access, recreation and amenity provision across the area of the reservoir”. Whilst such opportunities are positive and should be encouraged, it will be helpful to identify what form they would take. The type of recreational activity

⁹ North Wessex Downs AONB Management Plan 2014-2019. Available from www.northwessexdowns.org.uk.



that Thames Water chooses to promote for the Abingdon Reservoir may influence how the option would impact the landscape characteristics during the reservoir's operational phase.

If the Abingdon Reservoir option is pursued, Thames Water will need to undertake a full Landscape and Visual Impact Assessment (LVIA) at the project stage. Reference to the AONB Management Plan might be helpful with this. We advise that Thames Water works with relevant parties (including Natural England and the AONB Board) in the option development in order to make sure that, despite the scale of impact, the option is designed to be as sensitive to its setting as possible and that the most appropriate landscape mitigation is selected. There are opportunities for landscape improvements, and careful design would be essential to ensure local landscape character is not just protected, but also enhanced. It would be helpful if the dWRMP made commitments to these principles, to ensure that they are incorporated at the next stage in the planning process.

- C.25 The comments made by Natural England are noted. The SEA matrix has been amended to reflect the comments made including reference to the North Wessex Downs AONB management plan. The SEA assessment has acknowledged the potential benefits and enhancements that may result in rating the beneficial effect as moderate. The assessment has regard to the recreational features included for the reservoir in the conceptual design report. Further work on mitigation and enhancement measures will be undertaken as part of the detailed design process, which will involve further consultation with consultees and stakeholders including Natural England and the AONB Board. The SEA matrix relating to landscape has been reviewed and updated for Abingdon reservoir options.
- C.26 It is accepted that a full LVIA, including identifying opportunities for local landscape enhancement where appropriate, would be undertaken in support of any application for consent. This work, together with related landscape studies, would be carried out in close consultation with Natural England, the AONB Board, relevant local stakeholders and the local community.

Point c - Cumulative landscape impacts

Some other WRMP options have also identified potential adverse effects on landscape, including the Henley to SWOX transfer, and Medmenham transfer (both involving a pumping station and pipeline within or close to the Chilterns AONB).

Cumulative landscape impacts should be assessed before the final plan is submitted to ensure mitigation is possible, and mitigation should not be left to a piecemeal approach at the project stage. Natural England recommends that Thames Water works with neighbouring companies and with Protected Landscape Officers to produce a cohesive Protected Landscape Mitigation Strategy for each AONB which could be affected by multiple schemes in the lifetime of the WRMP. These should be completed before implementation of the plans, and should address any cumulative landscape impacts which could occur.

- C.27 The comments made by Natural England are noted. We have updated the SEA Environmental Report to provide further information on potential cumulative landscape effects as part of the strategic level assessment taking account of latest available information from other water companies facilitated through the Water Resources in the South East (WRSE)



Group. We have set out mitigation measures in respect of identified landscape effects within the assessments and as detailed in Appendix I of the updated SEA Environmental report.

- C.28 As discussed at our recent consultation meeting with Natural England, we agree that once there is clarity on all of the proposed schemes and their timings in the final water company WRMPs (when approved), an integrated Protected Landscape Mitigation Strategy should be produced to guide relevant water resource developments. We will recommend to other water companies that this strategy is developed through the WRSE Group in dialogue with Natural England and relevant Protected Landscape Officers. This work will inform subsequent more detailed landscape assessment undertaken at Environmental Impact Assessment level and/or other more detailed assessments in support of development consent.

Issue 13 Marine Conservation Zones

Section 125 of the Marine and Coastal Access Act (MCAA) (2009) applies a general duty to public authorities to exercise their functions in a way that best furthers the conservation objectives of a Marine Conservation Zone (MCZ) or, where that is not possible, least hinders them. There is also an obligation to notify Natural England where a public authority's function might significantly hinder the MCZ's conservation objectives or significantly affect an MCZ. The relevant public authorities must take account of this duty in the assessment of the water company statutory plans including the d PLAN.

The Defra 25 Year Environment Plan states:

"We will achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife this includes [...]"

- *Reversing the loss of marine biodiversity and, where practicable, restoring it, [...]*
- *Increasing the proportion of protected and well-managed seas, and better managing existing protected sites."*

The assessment of effects of the dWRMP on MCZs has been summarised in section 9.4 of the SEA. Here it concludes that the only dWRMP option which might impact an MCZ is the Beckton Reuse scheme. Cumulative impacts with this option were also identified during operation of the Gateway desalination treatment plant in drought conditions. In both circumstances, moderate adverse effects on the recommended Lower Thames Estuary MCZ (rMCZ) might occur as a result of changes to salinity concentrations in the Thames tideway. Since the impacts are moderately adverse on a marine protected area the plan does not meet the 25 Year Environment Plan's aspirations for sea life (set out above) and additional mitigation measures are required.

Thames Water needs to be clear how impacts on the Lower Thames Estuary rMCZ from other schemes, in particular the Teddington DRA option, have been assessed and screened out or mitigated.

- C.29 Further details about the effects on salinity in the Thames Tideway have been provided to Natural England as part of the consultation process on the draft WRMP and we have provided



additional information on the cumulative effects of relevant schemes that may affect the rMCZ.

- C.30 Further work on the Teddington Direct River Abstraction (DRA) option has been undertaken since the draft plan was published to understand the impact of the option on the hydrology of the River Thames upstream and downstream of Teddington Weir.
- C.31 The work undertaken set out both an ecological need for mitigation of temperature effects of a DRA option in the freshwater River Thames and estuarine Tideway and potential mitigation approaches.
- C.32 The findings were discussed at meetings with the EA on 1 May 2018 and 13 July 2018 based on these further discussions both parties agree that the compliance with WFD objectives of a Teddington DRA option remains uncertain. Uncertainty remains in a WFD context around the required extent of temperature mitigation of a Teddington DRA option. Research to date has not been sufficient to satisfactorily determine the required extent of, or to identify, a viable mitigation option to deliver this. In consequence a Teddington DRA option cannot be considered a feasible option in a proposed WRMP programme at this time and has therefore been removed from our preferred programme in the revised draft plan.
- C.33 Furthermore the Beckton reuse scheme is not included in the preferred programme of the revised draft plan and instead the Severn-Thames transfer option has been included. As a consequence of the changes to our plan, we do not anticipate any adverse effects on the rMCZ due to the revised draft plan. The Marine Conservation Zone assessment in the SEA Environmental Report has been updated accordingly.

Issue 14 Biodiversity

Point a

Under Section 40 of the Natural Environment and Rural Communities Act 2006 every public authority, including water companies, must in the exercise of its functions have regard so far as is consistent with the proper exercise of those functions to the purpose of conserving biodiversity. Conserving biodiversity in this context includes restoring or enhancing a population or habitat.

WISER (page 30) states water companies are expected “to develop measures during the price review to contribute to biodiversity priorities and obligations on [companies’] own land or in the catchments [companies] influence and operate in”.

The Defra 25 Year Environment Plan states

“We will achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife this includes:

- *[...] Creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits and*
- *[...] Taking action to recover threatened, iconic or economically important species of animals, plants and fungi, and where possible to*



prevent human-induced extinction or loss of known threatened species in England and the Overseas Territories.”

During development of WRMP options, Thames Water should consider whether there are opportunities for achieving a net gain in biodiversity, in particular where new infrastructure or development requires ecological mitigation. At present, the plan does not appear to secure a net gain for biodiversity. Recognising opportunities for biodiversity net gain should be reflected in the SEA matrices (in line with the objectives), as a potential positive effect.

- C.34 The SEA includes assessment of each option and the programme as a whole against specific biodiversity and natural capital objectives. Net environmental gain has been included as a principle in the Government's 25 year Environment Plan, building on references to environmental gain in the National Planning Policy Framework (NPPF). The Government states that the 'net environmental gain' principle for development aims to deliver environmental improvements locally and nationally, primarily to "enable housing development without increasing overall burdens on developers". We have updated our draft plan to further explain the benefits that are expected to arise as a result of implementing our plan and measures aimed at delivering overall net biodiversity and net environmental gain. We consider that there will be opportunities with the development of new water resource schemes identified in the revised draft plan and we would like to continue to work with Natural England and other stakeholders to identify and provide opportunities for net environmental gain.

Point b - Priority habitats and species

Natural England has not located an assessment of Priority Habitats and Priority Species in the SEA. In the SEA Appendix F for the Beckton Re-use option, there is no mention of wood pasture and parkland Priority Habitat against objective 1.1. The Beckton to Lockwood pipeline passes under such habitat, and includes an intermediate shaft within it (adjacent to Epping Forest SSSI, unit 138). Thames Water should explain what mitigation they can undertake to maintain or enhance the condition of this Priority Habitat as a result of the works.

- C.35 We note Natural England's comments and have updated the Appendix F to include further information in respect of potential effects on Priority Species and Priority Habitats.

Issue 15 Invasive non-native species (INNS)

Point a

Only one option from the preferred programme (Teddington DRA) has identified any impact on the SEA objective 1.4 ('to avoid introducing or spreading INNS'). This option identified a minor adverse effect due to risks of INNS spread in the construction phase of the option. It is possible that this option's operation will increase environmental stress downstream of Teddington Lock, which may act to allow for further INNS exploitation, it would be advisable for Thames Water to explore this more thoroughly.

- C.36 As outlined above due to ecological concerns Teddington DRA has been removed from the revised draft plan as a feasible option. Further work will be undertaken over the next five



years to examine the concerns raised by the Environment Agency and other stakeholders in more detail to understand if these can be addressed to the satisfaction of the Environment Agency. We will include the concerns of Natural England in these further studies.

- C.37 We had included, as part of the mitigation measures, the minimisation of the development areas and construction mitigation also includes full reinstatement of temporary work areas. Where soil stripping is undertaken the soils are to be stored and reinstated following construction. If any impacts are identified on protected species or habitats prior to construction, then appropriate mitigation work will be undertaken including appropriate relocation of species. Steps will be taken to avoid the need for the removal of any trees, hedgerows or other important vegetation, or adverse effects on root structures. It would be helpful to get feedback from Natural England on the adequacy of the proposed approach.

Point b - INNS assessment

In addition, the INNS assessment for several options, including Abingdon Reservoir, also focus on the construction phase. There is a welcome commitment to identification and removal of invasive species in advance of construction. However the success of such measures is never certain, and the severity of impact should INNS be accidentally transferred should still be assessed.

It is unclear if the risk of INNS spread has been assessed for operational phases in all cases. In most cases, transfers involve treated water, or transfer of water directly to water treatment works, so Natural England accepts that in these cases the risk of INNS spread is low.

- C.38 The assessment of option elements (SEA Environmental Report Appendix E) has identified potential risks relating to the spread of INNS against SEA Objective 1.4 for both construction and operational stages of each option element. In light of Natural England's comments we have reviewed these INNS risks further and updated both Appendix E and Appendix F (option assessments) of the updated SEA Environmental Report where necessary to ensure we comment on both operational and construction risks, including to confirm where risks are negligible.
- C.39 Further work on the Teddington DRA option was undertaken since the draft WRMP to understand the impact of the option on the hydrology of the River Thames upstream and downstream of Teddington Weir as outlined above. It has been agreed by Thames Water and the Environment Agency that the compliance with WFD objectives of a Teddington DRA option remains uncertain and consequently the option is no longer considered a feasible option and has been excluded from the Feasible List of options and therefore from the preferred programme at this time. Further investigations will be carried out over the coming period to examine other mitigation options for this option which will inform the preparation of the next WRMP. We will consult with Natural England on the scope of these further studies and their findings.

Issue 16 Protected species

The dWRMP and SEA have not specifically assessed risks of options (including construction of new infrastructure) to European Protected Species. Natural England accepts that it is difficult to make a meaningful assessment as part of a strategic plan such as this. However, such assessment will be required as plans for options



are taken forwards. Natural England Standing Advice for Protected Species is available on our website to help local planning authorities and others including water companies better understand the impact of development on protected species should they be identified as an issue at particular developments or plans. This also sets out when, following receipt of survey information, the authority (or the undertaker in regards of the exercise of permitted development rights) should undertake further consultation with Natural England.

- C.40 For the options set out in the revised draft plan, assessment of the potential impacts on protected species will be carried out as the option is taken forward for detailed design and environmental surveys are carried out for protected species to inform the assessments.

Issue 17 Water Framework Directive

Point a

The Water Framework Directive¹⁰ (WFD) sets specific objectives for the protection of the water environment which include for surface water bodies the prevention of deterioration and achievement of good ecological status/potential. For groundwater bodies the objectives are to prevent deterioration and achieve good chemical and quantitative status.

The Defra 25 Year Environment Plan has ambitions to achieve a clean and plentiful water supply including:

“improving at least three quarters of our waters to be close to their natural state as soon as is practicable by:

- *Reducing the damaging abstraction of water from rivers and groundwater, ensuring that by 2021 the proportion of water bodies with enough water to support environmental standards increases from 82% to 90% for surface water bodies and from 72% to 77% for groundwater bodies.*
- *Reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water as per our River Basin Management Plans.*

- C.41 We are working to deliver our WFD obligations as set out in the River Basin Management Plans and taken forward into the water industry National Environment Programme (WINEP). This includes the reduction in abstraction from specified water sources (“Sustainability Reductions”) where it has been identified to be causing environmental damage and it is cost beneficial to do so. These identified Sustainability Reductions at our Hawridge and Bexley sources which are included in our baseline supply forecast (Revised draft plan, Section 4).
- C.42 We are also undertaking investigations into the risk of deterioration as a result of use of existing licences and will make abstraction reductions if it is shown that these are necessary

¹⁰ Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy is referred to as the Water Framework Directive



to avoid deterioration. We have included scenario analysis in our revised draft Plan to understand the impact of such changes. Furthermore we have a long term aspiration to reduce abstraction from our sources where it is confirmed that the abstraction is having an adverse impact on vulnerable chalk streams and water courses.

Point b - WFD assessment - programme appraisal

A WFD assessment has been undertaken and has informed the selection of the preferred programme. Natural England notes that two schemes have been identified as having potential to fail to comply with the WFD 'no deterioration' objective. For Teddington DRA, further mitigation measures will need to be identified and incorporated into the scheme to ensure WFD compliance. For the Beckton Reuse scheme, further investigation is required to confirm whether reductions in freshwater flows to the Middle Tideway WFD waterbody will cause failure of WFD objectives. Natural England defers to the Environment Agency (EA) to comment on the WFD assessment of the dWRMP, and the implications for the preferred programme. We fully support the EA's views and advice on this matter.

- C.43 Further work on the Teddington DRA option has been undertaken since the publication of the draft plan to understand the impact of the option on the hydrology of the River Thames upstream and downstream of Teddington Weir. This work has concluded that the Teddington DRA option cannot be considered a feasible option in a proposed WRMP programme at this time and further work will be completed over the next five years. We will continue to work with Natural England, Environment Agency and other stakeholders on these further studies.
- C.44 Furthermore, the Beckton reuse option is no longer included in the preferred programme of the revised draft plan.

Issue 18 Adaptation to climate change

In addition to improving the natural capital including enhancing biodiversity (covered in the SEA and HRA above) the Defra 25 Year Environment Plan aspires to "take all possible action to mitigate climate change, while adapting to reduce its impact". WISER (page 54) states "a priority for all should be to work together to build an evidence-based understanding of the likely effects of climate change and identifying and implementing low carbon solutions that address any negative environmental impacts that may arise".

We note that Thames Water has made provision in its dWRMP to address the challenges of climate change, and for the Abingdon Reservoir option this includes opportunities for renewable energy production as part of the option. Natural England encourages the assessment of potential ways to negate the threat of climate change. Further work on catchment management to improve the underlying resilience of river catchments by restoring water quality and natural processes will help adaptation to climate change. The biodiversity enhancement work that Thames Water hopes to undertake for the Abingdon Reservoir option may also work to facilitate adaptation. We direct Thames Water to Natural England's 'Climate Change Adaptation Manual', which may be of some help in identifying such principles.

- C.45 The projected impacts of climate change in south-east England will compound a difficult situation where water resources are already stressed and the population is increasing. Since 2010 we have put a lot of effort into improving our understanding of how climate change could affect our ability to deliver our services to our customers. We believe that a twin track



approach of managing the unavoidable impacts of climate change on our business ('adaptation'), combined with a reduction in our greenhouse gas emissions ('mitigation'), is essential if we are to manage the challenges that climate change represents. Our response to these challenges needs to be positive and equitable, contributing to our wider aspiration of becoming a more sustainable business. We cannot do this alone and rely on delivering better outcomes in partnership with customers, stakeholders, alliances, suppliers and regulators.

- C.46 Furthermore one of the six initiatives under our Smarter Water Catchments banner is seeking to identify mechanisms to enhance the natural resilience of the environments on which we are dependent to deliver our services, working with South East Rivers Trust.

Changes made to the draft plan

- C.47 There have been a number of changes to the SEA in response to comments made by Natural England and new information. In summary the changes are as follows:

- The environmental assessments in the SEA Environmental Report have been revised in light of changes and new information on options and programmes;
- The SEA Environmental Report has been updated to take account of the Government's 25 year plan to improve the environment in England in the "Plans, Policies and Programmes" section;
- The clarity of the information presented in Appendix E and Appendix F has been improved;
- The updated SEA Environmental Report includes further information on the effects on protected landscapes and landscape features, including cumulative effects with other plans and projects where applicable. We have also provided further information on mitigation measures for identified landscape effects;
- The SEA Environmental Report plus Section 9 and 11 of the revised draft plan have been updated to reflect the net environmental gain principles of the 25-year Environment Plan and the NPPF;
- The SEA Environmental Report and Sections 10-11 of the revised draft plan has also been updated to set out the ways in which net environmental and net biodiversity gain will be sought during implementation of the plan. This includes further information on how potential environmental benefits of the Abingdon Reservoir scheme have been considered in determining our preferred WRMP strategy, such as consideration of potential benefits from being able to reduce abstraction from some vulnerable chalk streams and water courses once the reservoir has been commissioned;
- The cumulative effects assessment and text has been updated in the SEA Environmental Report to reflect some significant changes to the Preferred Programme of the revised draft plan;
- The Marine Conservation Zone assessment section of the updated SEA Environmental Report has been updated to reflect the removal of the Teddington DRA scheme and Beckton reuse scheme from the Preferred Programme of the revised draft plan;
- Appendix E and Appendix F of the SEA Environmental Report have been updated to ensure INNS risks are made clearer for both construction and operation phases;

- Appendix F of the SEA Environmental Report has been updated to make clearer the assessment of the effects on designated environmental sites for each option including why Chingford Reservoirs SSSI was considered in the HRA and to include more information on potential effects on Priority Habitats and Species and the mitigation that has been committed to; and
- Appendix H (the SSSI assessment) of the SEA Environmental Report has been updated to ensure accuracy and completeness of the SSSI interest features assessed, that it clearly excludes features already included in the HRA, whilst covering those features not applicable to the European Sites. Reference has been made to both the Favourable Condition Tables and conservation objectives and how these relate to each other and to ensure a thorough impact assessment with regard to vibration and hydrological impacts.

D. Putting people at the heart of decision making

Issue 19 Demand management

Point a

Natural England's Conservation 21 seeks to drive a fundamental change in mind-set, to make a healthy natural environment a central part of health, wealth and prosperity. This includes encouraging the public to value the water they use.

Ofwat has set ambitious leakage targets for all companies to strive to minimise the amount of water lost through leakage year on year, with water companies expected to reduce leakage by at least an average of 15% by 2025. This target is supported in the Defra 25 Year Environment Plan.

Defra's 25 Year Environment Plan aspires to reduce the risks of drought to the public by:

- **Ensuring interruptions to water supplies are minimised during prolonged dry weather and drought.**
- **Boosting the long-term resilience of our homes, businesses and infrastructure.**

Section 82 of the Water Act 2003 places an environmental duty on the water undertakers 'to further water conservation', in addition to duties in the Water Industry Act (section 3(2)(a) 1991) to promote efficient use of water by its customers. The plan (section 2, part C) demonstrates that this duty has been taken into account and that this has been pursued as far as possible through demand management within the first fifteen years of the plan, minimising the need to increase supply during this time. We strongly support the demand management options in the dWRMP which include:

- **Leakage reduction**
- **Metering (including smart meters in selected water resource zones)**
- **Water efficiency measures including home/business visits**
- **Customer and school engagement programmes.**



In particular:

- **Paragraph 2.18 mentions the creation of a 'Detailed Leakage Recover Plan', which will aim to address Thames Water's missed leakage target in 2016/17, and ensure that it meets its leakage reduction target for 2019/20.**
- **Natural England is pleased to see the degree to which Thames Water has committed to 'smart meter' installation to improve its demand management, and appreciate the candid assessment and explanation of the difficulties associated with this work (paragraphs 2.26-2.27).**
- **Thames Water's 'water efficiency' proposals are promising, especially given the saving of nearly 40MI/d during AMP6 through water efficiency measures. We are happy to see the high degree of public engagement that has been undertaken as part of Thames Water's AMP6, but it is less clear how such work will be taken forward during AMP7.**

C.48 We note Natural England's comment in support of further activity to manage demand and encourage more efficient use of the resources that we have available. We also note the comments around further clarity on the specific activities to achieve these commitments. We have included additional information in Section 8 and Section 10 of the revised draft plan.

Point b - Demand management programme

There are areas of the demand management programme which Natural England would be interested to understand better:

- **It would be helpful to understand how reliant the supply side options are on Thames Water reaching its leakage reduction goals, especially if there is any risk that its leakage reduction ambitions cannot be met.**
- **Natural England is not aware of any provision for Sustainable Drainage Systems (SUDS) or catchment improvement schemes as part of Thames Water's commitment to improve the resilience of its water resources.**
- **Several of Thames Water's landholdings include some form of public access (e.g. Farmoor Reservoir, the recent Walthamstow Wetlands Nature Reserve). Providing education to its customers at some of its recreational sites may afford further opportunities for the company to explain the issues around water availability within its WRZs.**

C.49 We note Natural England's comments. We have extended the leakage reduction targets included in our revised draft plan, committing to a 15% reduction by 2025 and a 50% reduction by 2050. A number of stakeholders commented on the confidence that Thames Water has to achieve these targets. In revising our draft plan we have completed further analysis around the confidence in delivery and to ensure there are contingency options available should we fail to meet our targets thereby providing the resilience for a secure supply of water for our customers and protection of the environment.

C.50 We have included a variety of catchment management schemes in our five-year Business Plan. However they have not been designed to explicitly deliver water resource benefits and



hence are not set out in our revised draft plan. We recognise the importance of catchment management in providing a secure, resilient and high quality water supply and anticipate that our catchment schemes will make a contribution to water resources resilience but not on a scale that can be quantified at this time. We note comments on providing education at some of our sites on the water resources challenges, and will explore how we can incorporate these messages as part of our overall education activities.

Issue 20 Shared plans for places

Water companies should ensure that the WRMP is used to influence options in the relevant local plans including those on the quantum of growth and its location. Paragraph 109 of the National Planning Policy Framework (which local plans must be consistent with) requires that local plans should contribute to and enhance the natural environment.

The Defra 25 Year Environment Plans sets strong new aspirations for sustainable planning:

“New development will happen in the right places, delivering maximum economic benefit while taking into account the need to avoid environmental damage. We will protect ancient woodlands and grasslands, high flood risk areas and our best agricultural land.

High environmental standards for all new builds. New homes will be built in a way that reduces demands for water, energy and material resources, improves flood resilience, minimises overheating and encourages walking and cycling. Resilient buildings and infrastructure will more readily adapt to a changing climate.”

- C.51 We note Natural England's references to policy which encourages sustainable planning and enhancement of the natural environment, and support these objectives. We have undertaken environmental assessments to inform the development of our draft plan and our customers have highlighted their support for the consideration of environmental matters in determining the long-term strategy. We will continue to work with Natural England and environmental organisations to ensure through our plan we protect and enhance the environment as far as possible.

Issue 21 Sustainable drainage systems (SUDS)

Companies are expected to take a leadership role in partnership schemes for sustainable flood risk management. WISER (page 45) sets out expectations on companies to have “a clear and systematic approach to assessing partnership opportunities” and to demonstrate how they are “taking a strategic approach to contributing to flood alleviation schemes in order to maximise the benefits to customers, the economy and the environment”. WISER (page 44) encourages companies to work with others to actively identify and build in sustainable drainage options.

Whilst drainage is principally a matter for Thames Water's Business plan there are opportunities for integrated schemes which improve drainage, reduce flood risk and enhance environmental resilience and recharge in Thames Waters Supply Area.



Natural England notes significant work has been provided within section C of Appendix L of the d PLAN, exploring the possibility of non-potable reuse (NPR) to secure more resilient water supply into the future. The premise works through NPR offsetting the use of potable (drinking) water in areas where it is not required (e.g. toilet flushing and washing machines). Natural England supports this work and encourages Thames Water to expand this work in conjunction with LPAs (and Natural England and EA). With consideration to planning at the water resource zones scale, under the Localism Act 2011, local authorities are required to work with neighbouring authorities and other prescribed bodies in preparing their development plan documents. There is a need for a continued and iterative process of engagement between both local authorities and water companies to ensure that plans are consistent and mutually supportive.

- C.52 We note Natural England's comments with respect to integrated water management, and support technical approaches which can contribute to environmental resilience by promoting schemes for sustainable flood risk management and the use of non potable water where appropriate. Whilst drainage is principally a matter for our Business Plan, we have considered opportunities for catchment management as part of water resources management and pilot schemes are being promoted through our Business Plan which we have discussed with Natural England. There are also other strands to work in this area including working with the Greater London Authority (GLA) and Developers to look for opportunities for sustainable construction and design in new developments. Furthermore the work that we are now undertaking to develop drainage and wastewater management plans to inform the next round of business plans will highlight opportunities for more collaborative multi objective schemes delivering a wider range of benefits.

E. Resilient landscapes and seas

Issue 22 Natural capital and ecosystem services

Point a

Conservation 21: NE's conservation strategy for the 21st century and Defra's 25 Year Environment Plan encourage growth in natural capital and measurement of ecosystem services. WISER recommends that companies consider how natural capital accounting can inform water industry planning. WISER recommends that companies trial natural capital asset accounts (including quantity and condition) and ecosystem service assessments (including qualitative and quantitative assessments) to help companies better understand the flow of benefits.

Natural capital and ecosystem services are discussed within Section 9: Environmental Appraisal of the WRMP19, specifically in paragraphs 9.50 and 9.51. It is stated that Thames Water has looked into the use of the Natural Capital Accounting (NCA) assessment approach to its supply side options, but that the data weren't robust enough to inform its decision making. We recommend that Thames Water provides the conclusions from the NCA assessment approach, to clarify the challenges it has had with the approach.

- C.53 We have carefully considered the application of Natural Capital Accounting and ecosystem services assessment for the WRMP, as set out in Section 9. We have provided Natural England with further details of the work we carried out to explore the potential use of these



approaches and the conclusions we reached that the approach was not yet sufficiently robust for application to all of the options being considered for the draft WRMP. We are committed to continue to work with the industry and interested parties in developing this approach and we have included a performance commitment on natural capital accounting within our Business Plan. This commits us to an assessment of natural capital on all our landholdings by the end of AMP7.

Point b - Reservoir - natural capital

Both the potential impact and benefits on natural capital have been discussed in relation to the Abingdon Reservoir option. However, the discussion of such benefits, which have been listed as 'moderate beneficial', does not extend beyond the "...creation of recreational and tourism services". Natural England considers that there is significantly higher natural capital and ecosystem services potential from the Abingdon Reservoir, and we would expect Thames Water to have taken full consideration of these. Such benefits could include, for example:

- **Local flood alleviation potential**
- **Increased carbon storage through wetland creation (to offset some of the considerable embedded carbon in building reservoirs)**
- **Energy generation from embankment hydropower**
- **Water for drinking and non-drinking purposes**
- **Increasing biodiversity by habitat creation.**

C.54 We have further reviewed the potential natural capital and ecosystem benefits of the Abingdon reservoir option and updated the SEA assessment accordingly taking Natural England's comments into consideration.

We advise Thames Water to readdress its natural capital and ecosystem services assessment in relation to the Abingdon Reservoir option, especially considering the scale of the proposed reservoir and the potential enhancements this affords. Such an assessment should provide an industry leading best practice example, clearly setting out the expansive benefits the reservoir could offer when it comes to the detailed design phase.

C.55 We have reviewed the natural capital and ecosystem service effects of the Abingdon reservoir option as set out in our response to the above comment. As part of the further development of this option through the detailed design stage, we will continue to examine and update the effects on natural capital and ecosystem services in dialogue with Natural England and other stakeholders.

Issue 23 Enhancing resilience

Point a

Conservation 21: Natural England's conservation strategy for the 21st century focuses on the importance of natural processes to build long term resilience in our wildlife, landscapes and seas. This ecosystem services approach at a landscape scale supports the Defra 25 Year Environment Plan objectives for clean and plentiful



water and thriving plants and wildlife. This approach also supports aspirations for using resources from nature more sustainably and efficiently set out in the Environment Plan.

Ofwat also stresses the importance of improving environmental resilience in its methodology guidance to companies for PR19¹¹ which states companies should take account of [Ofwat's] seven principles for resilience planning, including a naturally resilient sector reflecting the importance of ecosystems and biodiversity.

- C.56 We support the need to enhance environmental resilience and have taken account of the need for such resilience in determining our preferred programme of options. We did review the use of Ecosystem Services as part of the development of our draft WRMP but the approach and methodology were not considered to be sufficiently mature for this round of water resource planning. We are committed to continuing to work in this area recognising the potential benefits of this approach to decision making.

Point b - Catchment schemes

WISER advises companies that they should “consider whether [their] abstractions are truly sustainable, looking across a catchment as a whole and consider investment in integrated catchment schemes to improve drought resilience and water quality”.

Natural England encourages Thames Water to consider further catchment schemes which may contribute not only to improving water quality at its sources by reducing diffuse pollution, but could also improve the resilience of surface and groundwater sources by storing and retaining water and improving groundwater infiltration rates and helping ecosystems become more resilience to climate change.

- C.57 Most of the successful catchment management approaches promoted to date have concentrated in upland rural areas where the potential for water resources and quality benefits are more obvious. In contrast the lowland, frequently urbanised catchment of the River Thames is subject to different challenges which will demand a more nuanced approach. In response we are promoting our Smarter Water Catchments initiative which, through six different approaches, seeks to collect the evidence to demonstrate the instances where catchment management can make a material contribution to environmental resilience.

Point c - Habitat creation

Natural England encourages Thames Water to consider the contribution that the creation and restoration of wetland habitats and appropriate woodland planting within a wider catchment would make on reducing diffuse pollution, thereby contributing to water purification and also on storing and retaining water, reducing peak floods further downstream in the catchment. Local Nature Partnerships (LNP) and Biodiversity Action Plan (BAP) Partnerships will be able to give advice on which Priority Habitat creation and restoration would be appropriate in which location. Such schemes could include the creation and restoration of wetland habitats, appropriate woodland planting and sustainable drainage systems within a wider catchment. Such schemes can have wider benefits for biodiversity and society as a whole, including through flood risk management and provision of green infrastructure.

¹¹ Delivering Water 2020: Our final methodology for the 2019 price review. Ofwat 2017



We would welcome if you could share any such plans and eventual progress with implementation with Natural England and if any habitat creation was also logged on the Biodiversity Action Recording System (BARS: <http://ukbars.defra.gov.uk>).

- C.58 We have committed in our Business Plan, to enhance biodiversity on our landholding by setting a target of a net gain of 5% across our 253 sites of biodiversity interest. This is an area of approximately 4,000 hectares by 2025. Progress will be measured and monitored using the Defra biodiversity offsetting tool and will include the creation of wetlands and wildflower meadows alongside changing our habitat management regimes. In addition we will undertake a region wide tree planting programme on our landholdings with approximately 5,000 indigenous trees being planted in locations identified from our regular site-based tree surveys. We will continue to work closely with Natural England to deliver this ambitious target that will not only benefit wildlife but also local communities who visit our sites to get close to nature for health and wellbeing benefits.

Issue 24 Climate change

The Climate Change Act 2008 sets the legal framework for adaptation policy in the UK, preparing for the likely impacts of climate change. The 2nd Climate Change Risk Assessment (2017), identifies risks to water supply, and natural capital, including coastal communities, marine and freshwater ecosystems and biodiversity, as among the highest future risks for the UK relevant to the water industry.

In addition to improving the natural capital including enhancing biodiversity (covered in the SEA and HRA above) the Defra 25 Year Environment Plan aspires to “take all possible action to mitigate climate change, while adapting to reduce its impact”. WISER (page 54) states “a priority for all should be to work together to build an evidence-based understanding of the likely effects of climate change and identifying and implementing low carbon solutions that address any negative environmental impacts that may arise”.

Thames Water's plan will improve resilience of the water sector to climate change. However it misses many opportunities to help build resilience and adaptation to climate change.

- C.59 We have taken account of the comments raised by Natural England on our draft plan and have requested feedback from Natural England on the potential opportunities referred to; and are committed to exploring these. Our revised draft plan examines a wide variety of scenarios relating to climate change to ensure the options selected are best value against a wide variety of uncertain futures.

Changes made to the draft plan and commitments – (Sections D & E)

- C.60 There have been a number of changes in response to comments made by Natural England and other stakeholders. In summary the changes are as follows:
- We have extended the leakage reduction targets included committing to a 15% reduction by 2025 and a 50% reduction by 2050. We have completed further analysis around the confidence in delivery and to ensure there are contingency options available should we fail to meet our targets. This is presented in Section 10 of the revised draft plan;



- We are committed to work with the GLA and Developers to look for opportunities for sustainable construction and design in new developments;
- We have updated the potential natural capital and ecosystem benefits of the Abingdon reservoir option and updated the SEA assessment taking Natural England's comments into consideration. This is presented in Section 9 and Appendix B of the revised draft plan;
- We are committed to continuing to explore the use of Ecosystem Services recognising the potential benefits of this approach to decision making;
- We are promoting our Smarter Water Catchments initiative, which seeks to collect the evidence to demonstrate the instances where catchment management can make a material contribution to environmental resilience. This is presented in Business Plan 2020-2025;
- We have committed to enhance biodiversity on our landholdings with progress measured using the Defra biodiversity offsetting tool. We will undertake a region wide tree planting programme on our landholdings. This is presented in Business Plan 2020-2025; and
- In Section 10 of our revised draft plan we have examined a wide variety of scenarios relating to climate change to ensure the options selected are best value.