# WRMP guideline supplementary document

# WRMP 2019 - Water company checklist





This checklist has been developed for companies in both England and Wales. Where there are differences in approach for England and Wales, these are indicated throughout.

This checklist has been designed to help you make sure that all the requirements of the Water Resources Planning Guideline (WRPG) have been met and that your water resources management plan (WRMP) complies with statutory obligations. The checklist sets out the main considerations from the WRPG in tabular format with references to the relevant WRPG section and page number. It is an optional tool that you can use to confirm and reference where you have addressed each WRPG requirement in your WRMP. It is not a requirement to publish the checklist alongside your WRMP, however it should provide a useful way for both statutory and non-statutory consultees to see and cross-reference what has been included in the plan.

The document can be amended as required for your own use. For example, you may wish to edit the titles or the number of columns. Deleting or adding questions/rows or amending the numbering of questions is, however, not recommended.

The WRMP guideline and all supporting documents are available at [Huddle.com](http://www.huddle.com/) or upon request from [water-company-plan@environment-agency.gov.uk](mailto:water-company-plan@environment-agency.gov.uk)

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**Section 2 – Process of forming and maintaining a WRMP**

Section 2 can be used throughout the process to gauge progress and understand the next steps. If you choose to include this section with your draft plan you will only need to consider Section 2.1 though to 2.7 inclusively. Sections 2.8 through to 2.11 would be filled out following the consultation period.

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**2.1 The legal requirements**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 1 | You have considered and taken into account links between your WRMP and River Basin Management Plans. | S2.1,  Page 3 |  |  |  |
| 2 | You have considered and taken into account links between your WRMP and your Business Plan. | S2.1,  Page 3 |  |  |  |
| 3 | You have considered and taken into account links between your WRMP and your Drought Plan. | S2.1,  Page 3 |  |  |  |
| 4 | You have considered and accounted for links between your WRMP and the Environment Agency’s drought plans and/or Natural Resources Wales’ drought plans as appropriate. | S2.1,  Page 3 |  |  |  |
| 5 | You have considered and taken into account links between your WRMP and flood risk management plans. | S2.1,  Page 3 |  |  |  |
| 6 | You have considered and taken into account links between your WRMP and any local plans produced by Local Authorities. | S2.1,  Page 3 |  |  |  |
| 7 | You have considered and taken into account the requirements of the relevant legislation listed in section 2.1, including the WRMP Direction 2017 for water companies in England and WRMP (Wales) Directions 2016 for water companies in Wales. | S2.1,  Page 3 |  |  |  |

**2.2 Early engagement with regulators, customers and interested parties**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 8 | You have followed the principles of UKWIR’s ‘Decision Making Process’ and ‘Risk Based Planning’ frameworks to:   * characterise the problem you need to solve * choose the best decision making process for appraising the options available to you * determine your approach for dealing with risks in your plan * determine methods for supply, demand, outage and headroom calculations that are consistent with your chosen options appraisal method and risk composition. | S2.2, Page 4 |  |  |  |
| 9 | You have prepared a method statement which clearly explains the choice and justification of methods, and communicated your statement to statutory consultees including the Environment Agency and/or Natural Resources Wales, Ofwat, licensed suppliers in your area that operate through your supply system any other relevant parties. | S2.2, Page 4 |  |  |  |
| 10 | You have engaged with the Environment Agency and/or Natural Resources Wales to discuss the approaches laid out in your method statement and have appropriately recorded the outcomes of this engagement. | S2.2, Page 3 |  |  |  |
| 11 | You have engaged with your Board, customers and other parties to discuss the approaches laid out in your method statement. You have appropriately recorded and incorporated the outcomes of this engagement. | S2.2, Page 3 |  |  |  |

**2.3 Hold a pre-consultation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 12 | You have held pre-consultation discussions with statutory consultees including the Environment Agency and/or Natural Resources Wales, Ofwat and licenced water suppliers that operate through your supply system, revising your proposed approach accordingly. | S2.3, Page 5 |  |  |  |
| 13 | You have accounted for outcomes of pre-consultation discussions with other consultees (including consumers, companies with which you share supply or have bulk supply) and have revised your proposed approach accordingly. | S2.3, Page 5 |  |  |  |
| 14 | You have indicated how consultee feedback has been incorporated into the methods and approaches you will use to produce your draft plan. | S2.3, Page 5 |  |  |  |

**2.4 Write a draft plan**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 15 | You have accounted for pre-consultation outcomes and followed any written Directions received from the Secretary of State and/or Welsh Ministers. For water companies in England, follow the WRMP Direction 2017. For water companies in Wales, follow the WRMP (Wales) Direction 2016. | S2.4, Page 5 |  |  |  |
| 16 | You have used a logical structured layout for your draft WRMP and included a separate non-technical overview, and supported the main technical document with appendices. | S2.4, Page 5 |  |  |  |

**2.5 Send your draft plan**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 17 | You have appropriately flagged national security information or data within the draft WRMP, ready for redaction if necessary following security checking. | S2.5, Page 5 |  |  |  |
| 18 | You have flagged commercially confidential or sensitive information or data that you prefer should not be published. | S2.5, Page 5 |  |  |  |

**2.6 Publish and distribute your draft plan**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 19 | You have not published your draft plan until instructed to do so by the Secretary of State or the Welsh Ministers and have followed the WRMP Regulations 2007 in making your plan publically available. | S2.6, Page 6 |  |  |  |
| 20 | You have redacted sensitive information prior to publication. | S2.6, Page 6 |  |  |  |
| 21 | You have prepared a statement for issue with the draft plan, which explains where commercially sensitive information has been redacted and clearly explains the process for making representations on the draft plan. | S2.6, Page 6 |  |  |  |
| 22 | You have taken appropriate steps to advertise the publication of the plan and to explain its contents to key stakeholders at the start of or during the consultation period. | S2.6, Page 6 |  |  |  |

**2.7 Carry out a public consultation on your draft plan**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 23 | You have allowed for a consultation period appropriate for the complexity of the plan, and that gives you adequate time to prepare a response to consultation feedback by the specified deadline (26 weeks after publication). | S2.7, Page 6 |  |  |  |

**2.8 Publish a statement of response**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 24 | You prepared and published your statement of response by the specified deadline. | S2.8, Page 7 |  |  |  |
| 25 | You have considered all consultation responses in your statement and have explained whether/how you have acted on them and why. | S2.8, Page 7 |  |  |  |
| 26 | You have set out any changes due to other factors during the consultation period (for example, external influences). | S2.8, Page 7 |  |  |  |
| 27 | You have clearly set out the main changes you have made for the final plan and have accompanied your statement with an updated version of the draft plan if changes are substantive. | S2.8, Page 7 |  |  |  |
| 28 | You have notified any party that responded to the consultation as you publish the statement of response (and revised draft WRMP if necessary). | S2.8, Page 7 |  |  |  |
| 29 | You have considered the impact of any changes to your draft WRMP that might affect your Drought Plan, Business Plan or other plans. | S2.8, Page 7 |  |  |  |

**2.9 Send your draft final plan**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 30 | You have submitted your statement of response and final draft plan (if different to the draft WRMP) to the Secretary of State or Welsh Ministers, repeating the checklist steps as given in Section 2.6. The final draft plan should take account of any additional works required by Defra or the Welsh Government or advised by the Environment Agency or Natural Resources Wales following your statement of response. | S2.9, Page 7 |  |  |  |
| 31 | You have undertaken any additional works as required by the Environment Agency or Natural Resources Wales following their review of your final draft plan, and have fully checked all changes. | S2.9, Page 7 |  |  |  |
| 32 | You have completed and submitted the WRMP tables alongside the final WRMP. | S2.9, Page 7 |  |  |  |

**2.10 Publish your final plan**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 33 | You have accounted for any relevant Directions with regards to publishing your final plan and the appropriate permissions from the Secretary of State or Welsh Ministers have been given. | S2.10, Page 7 |  |  |  |
| 34 | You have notified any party that responded to the consultation as you publish the final plan. | S2.10, Page 7 |  |  |  |

**2.11 Revise and review your final plan**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 35 | You have planned for annual review of the published plan in line with the Annual Review guidelines. | S2.11, Page 8 |  |  |  |
| 36 | You will consult with the Environment Agency and/or Natural Resources Wales on any material changes that you wish to make to your plan in future. | S2.11, Page 8 |  |  |  |

**Section 3 – Technical Methods**

[3.1 Developing your plan](#Section3_1)

[3.2 Defining a water resource zone](#Section3_2)

[3.3 Problem characterisation](#Section3_3)

[3.4 Drought risk assessment](#Section3_4)

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**3.1 Developing your plan**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 37 | Your plan consistently complies with relevant government policy documents/publications. | S3.1, Page 9 |  |  |  |
| 38 | You have provided a full explanation of the planning period assumed in the plan, which covers, as a minimum, the statutory period from 2020 to 2045. | S3.1, Page 9 |  |  |  |
| 39 | You have included a robust forecast of the water you have available to supply customers with for each year within the planning period, accounting for climate change, and demonstrating that supply is both efficient and sustainable. You have achieved this by following the steps in Section 4 of this checklist. | S3.1, Page 9 |  |  |  |
| 40 | You have included a robust forecast of customers’ demand for water during each year within the planning period, accounting for climate change. You have achieved this by following the steps in Section 5 of this checklist. | S3.1, Page 9 |  |  |  |
| 41 | You have allowed for uncertainties in your calculations and forecasts for both supply and demand over the planning period, and have used best practice methods to quantify uncertainty. | S3.1, Page 9 |  |  |  |
| 42 | You have compared supply and demand to determine whether there is a surplus or deficit in any of your resource zones. | S3.1, Page 9 |  |  |  |
| 43 | If you are in surplus in any of your resource zones you have flagged to other water companies that water is available for trading. | S3.1, Page 10 |  |  |  |
| 44 | If you are in deficit in any of your resource zones, you have considered all reasonable options for addressing the deficit, including options for increasing supplies, reducing demand and cross-company/third party options | S3.1, Page 9 |  |  |  |
| 45 | Where new options are required, you have given opportunity for neighbouring companies or third parties to bid into your plan. | S3.1, Page 10 |  |  |  |
| 46 | You have adopted options that support the environmental objectives set out in RBMPs and if required, have carried out a Habitats Regulations Assessment including appropriate assessments, and a Strategic Environmental Assessment (SEA). | S3.1, Page 10 |  |  |  |
| 47 | If you supply customers in Wales or your plan affects catchments in Wales, you have worked with Welsh Government and Natural Resources Wales with regards to understanding implications of the Environment (Wales) Act and Wellbeing of Future Generations (Wales) Act in developing your plan and how your plan contributes to Nature Recovery Plans. | S3.1, Page 10 |  |  |  |
| 48 | If you supply customers in England, you have adopted options that support the well-being of future generations, are compatible with Defra’s long term plans for the environment including Biodiversity 2020, and whose social and environmental benefits/costs are properly understood and taken account of. | S3.1, Page 10 |  |  |  |
| 49 | You have included confirmed or likely sustainability changes that you have been informed about. | S3.1, Page 9 |  |  |  |
| 50 | You have demonstrated a system that can cope with droughts of a magnitude and duration that you reasonably expect to occur in your area over your chosen planning period and have considered contingencies for challenging but plausible droughts beyond the capabilities of your supply system (with relevant links to your Drought Plan) including whether they require options to provide additional resilience. | S3.1, Page 9 |  |  |  |
| 51 | You have documented the impact of drought interventions on supply and demand and links with your Drought Plan. | S3.1, Page 9 |  |  |  |
| 52 | You have accounted for the views of customers, other interested parties, statutory and non-statutory consultees in developing your plan. | S3.1, Page 10 |  |  |  |
| 53 | You have produced a flexible and adaptive plan that allows for risks and uncertainties in decisions, calculations and forecasts undertaken as part of the development of the plan. | S3.1, Page 10 |  |  |  |
| 54 | You have gained Board buy-in with respect to the cost and long-term sustainability of proposals. | S3.1, Page 10 |  |  |  |
| 55 | You have provided all the necessary supporting information at WRZ level and entered this in the water resources planning tables. | S3.1, Page 9 |  |  |  |

**3.2 Defining a water resource zone**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 56 | You have defined your Water Resource Zones (WRZs) using the Environment Agency’s WRZ assessment methods (Water Resource Zone Integrity, 2016). | S3.2, Page 10 |  |  |  |
| 57 | You have demonstrated that, for each WRZ:   * the abstraction and distribution of supply is largely self-contained (excepting agreed bulk transfers). * the majority of customers experience the same risk of supply failure and same level of service for demand restrictions.   You have explained and justified any deviations from the above. | S3.2, Page 10 |  |  |  |

**3.3 Problem characterisation**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 58 | You have applied the problem characterisation step of the *WRMP 2019 Methods – Decision Making Process: Guidance* (UKWIR, 2016) to determine the nature of the planning problem (including scale and complexity) as well as related issues, risks and uncertainties. | S3.3, Page 10 |  |  |  |
| 59 | You have demonstrated that the effort and cost you have given to the selection of a decision-making process is proportional to the problem. You have described the significance of the choice of decision making method and its wider implications with respect to the plan outcomes. | S3.3, Page 11 |  |  |  |
| 60 | You have adopted processes outlined in *WRMP 2019 Methods – Decision Making Process: Guidance* (UKWIR, 2016) using methods that are most appropriate for your company. | S3.3, Page 11 |  |  |  |
| 61 | You have explained how/why the solutions(s) you have identified have been arrived at, and given assurance that uncertainties have not been double counted. | S3.3, Page 11 |  |  |  |
| 62 | You have applied the *Economics of Balancing Supply and Demand [EBSD] method* (UKWIR, 2002) to determine a benchmark solution for comparison. | S3.3, Page 11 |  |  |  |

**3.4 Drought risk assessment**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 63 | You have explained how you have followed the processes outlined in *WRMP 2019 Methods – Risk Based Planning: Guidance* (UKWIR, 2016) to identify an appropriate design drought. | S3.4, Page 11 |  |  |  |
| 64 | You have clearly set out and justified the risk composition you have selected for each WRZ and the reasons that lead you to select that option, including the availability of data where more complex risk compositions have been used. | S3.4, Page 11 |  |  |  |
| 65 | Where different risk compositions are used in different parts of your supply system, you have explained this clearly and justified your reasoning. Also, where a more complex risk composition has been adopted but later abandoned to a simpler approach, this has been noted but your WRMP reflects the final risk composition adopted. | S3.4, Page 11 |  |  |  |
| 66 | You have included a drought resilience statement in your plan which is consistent with your chosen risk composition, and have explained how this reflects the hydrological risks that drought may impose on your supply system. | S3.4, Page 11 |  |  |  |

**3.5 Planning scenarios**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 67 | You have demonstrated that your plan is based on the dry year annual average for demand. | S3.5, Page 12 |  |  |  |
| 68 | You have reiterated the design drought you are basing your plan on for supply, and have based this on the drought risk assessment activities carried out under Section 3.4. | S3.5, Page 12 |  |  |  |
| 69 | If you have chosen to consider how you will deal with a period of peak strain (critical period), you have set out which WRZs this applies to, the reasons for this and have described the underlying factors that impact on the supply-demand balance during the critical period. | S3.5, Page 12 |  |  |  |
| 70 | You have explained the assumptions made when assessing your baseline figures for your demand forecast. Your documentation includes assumptions about mains renewal and capital maintenance, your baseline forecast of consumer need, losses through leakage and operating losses. You have demonstrated that the baseline case represents what happens excluding any changes in operations or company policy. | S3.5, Page 12 |  |  |  |
| 71 | You have described how/where you have allowed for uncertainty in your demand forecast and how this is appropriate to your selected methods. | S3.5, Page 12 |  |  |  |
| 72 | You have explained the assumptions made when assessing baseline figures for your supply forecast. You have demonstrated that the baseline case represents the supplies that can be maintained through a design drought as appropriate for your company area. | S3.5, Page 12 |  |  |  |
| 73 | You have reported the baseline figures for supply and demand in the water resources planning tables at WRZ level. | S3.5, Page 12 |  |  |  |
| 74 | For your final plan, you have explained any decisions related to developing options to manage or meet the forecast demand of your customers. | S3.5, Page 12 |  |  |  |
| 75 | You have documented each of the demand side options considered and the reason for choosing each option. If relevant, you have categorised your options as – change to existing policies, operations, infrastructure and resilience solutions (including drought measures and orders). | S3.5, Page 12 |  |  |  |
| 76 | You have considered all available demand and supply side options in the process of developing your preferred plan. You have explained how you have done this, and demonstrated how third party and collaborative options with other companies have been evaluated. You have accounted for opportunities to improve resilience at regional level. | S3.5, Page 12 |  |  |  |
| 77 | You have provided details of and explained your preferred programme of solutions to restore your supply-demand balance under a dry year average annual scenario. | S3.5, Page 12 |  |  |  |
| 78 | You have provided details of and explained your preferred programme of solutions to restore your supply-demand balance under a critical period scenario, if relevant. | S3.5, Page 12 |  |  |  |
| 79 | Where you are in deficit in dry year average annual or critical period scenarios, you have demonstrated how you have addressed these deficits and how your plan allows you to be compliant with your statutory duties. | S.5, Page 12 |  |  |  |
| 80 | You have indicated clearly if you have included resilience solutions for more challenging but plausible droughts beyond the capabilities of your final plan. | S3.5, Page 12 |  |  |  |
| 81 | If you are in surplus, and you have still decided to include options in your plan, you have explained the benefits from this (such as more efficient supply of water, improvements in long-term resilience, demand reduction etc.) | S3.5, Page 12 |  |  |  |

**3.6 Levels of service**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 82 | For water companies wholly or mainly in England you have clearly set out your level of service as an annual percentage risk of restrictions, and set out if/how you expect it to change across the planning period as you implement supply-demand or resilience measures. | S3.6, Page 13 |  |  |  |
| 83 | You have presented evidence to demonstrate that your level of service is appropriate and have used appropriate assumptions and methodologies to develop your levels of service. | S3.6, Page 13 |  |  |  |
| 84 | You have engaged with your customers and stakeholders and their views have been considered when developing your level of service. You have communicated your level of service appropriately. | S3.6, Page 13 |  |  |  |
| 85 | For water companies in England, you have set out a reference level of service that would mean resilience to an event of approximately 0.5% risk of annual occurrence (1:200 year drought event). You have presented this as a scenario and explained how you have modelled the drought event used. | S3.6, Page 13 |  |  |  |
| 86 | You have quantified the deployable output and incremental costs of your reference level of service scenario and explained how you have calculated these. You have set out if and how this could be achieved at any point in the planning period. | S3.6, Page 13 |  |  |  |

**Section 4 – Developing your supply forecast**

[4.1 How to develop your supply forecast](#Section4_1)

[4.2 What should be included in your water supply forecast?](#Section4_2)

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[4.4 Your role in achieving sustainable abstraction](#Section4_4)

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[4.6 How to include changes to your abstraction license in your plan](#Section4_6)

[4.7 Abstraction reform – evidence needs](#Section4_7)

[4.8 Climate change](#Section4_8)

[4.9 Water transfers](#Section4_9)

[4.10 Drinking water quality](#Section4_10)

[4.11 Outage](#Section4_11)

[4.12 Water available for use](#Section4_12)

**4.1 How to develop your supply forecast**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | | **Any issue identified** |
| --- | --- | --- | --- | --- | --- | --- |
| 87 | Your approach to calculating your supply forecast is consistent with your risk composition choice, and the risk and uncertainty involved have been quantified using appropriate methods. | S4.1, Page 14 |  |  | |  |
| 88 | You have discussed your approach to calculating your supply forecast as early as possible with the Environment Agency or Natural Resources Wales. | S4.1, Page 14 |  |  | |  |
| 89 | You have considered all individual components making up the supply forecast, and taken account of pressures on future supplies including (but not limited to):   * climate change * abstraction licence changes due to abstraction reform or sustainability improvements * pollution or contamination implication for sources * development and new infrastructure * changes in contractual arrangements relating to transfers.   You have clearly documented all assumptions made. | S4.1, Pages 14-15 |  |  | |  |
| 90 | You have recorded in the water resources planning tables the quantities for all baseline supply components as well as the amount of water that your analysis indicates you can reliably supply. | S4.1, Page 14 |  |  | |  |
| 91 | As part of your supply assessment, you have determined and explained how your supply system behaves during the design drought. | S4.1, Page 14 |  |  | |  |
| 92 | You have explained links between your WRMP and your drought plan, including the likelihood of achieving planned levels of service and their impact on available supply. | S4.1, Page 14 |  |  | |  |
| 93 | You have explained how drought interventions (drought permits and orders) that are contained within the drought plan have been dealt with in the WRMP in accordance with levels of service, and outlined any contingencies for extreme droughts that exceed the capability of your system to meet. | S4.1, Page 14 |  | |  |  |
| 94 | For water companies in England you have not included benefits drawn from supply drought measures (e.g. drought permits and orders) in your baseline supply forecast. | S4.1, Page 14 |  | |  |  |
| 95 | For water companies wholly or mainly in Wales, you should have discussed inclusion of supply drought measures in baseline forecasts with Natural Resources Wales or Environment Agency. | S4.1, Page 14 |  |  | |  |

**4.2 What should be included in your supply forecast?**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 96 | You have provided a breakdown of your supply forecast for the dry year annual average scenario for all WRZs and presented this in the planning tables. | S4.2, Page 15 |  |  |  |
| 97 | You have explained your decision to include a critical period, if relevant, and have provided a supply forecast for it. | S4.2, Page 15 |  |  |  |
| 98 | Where you abstract water for supply, your supply forecast for that WRZ sets out the deployable output, future changes to deployable output (e.g. from sustainability changes or climate change), transfers and future inputs from third parties, outage and other short-term losses, operational losses related to abstraction or treatments. | S4.2, Page 15 |  |  |  |
| 99 | Where you receive a raw or treated water import from a third party, your supply forecast reflects the contractual arrangements with this third party supplier. | S4.2, Page 15 |  |  |  |
| 100 | You have demonstrated that your supplier will be able to maintain supply during your design drought and that levels of service can be achieved. You have demonstrated that your supplier has assessed that their statutory and policy obligations can be met. | S4.2, Page 15 |  |  |  |
| 101 | You have expressed the supply forecast as the Water Available for Use (WAFU). | S4.2, Page 15 |  |  |  |

**4.3 What should be covered in your deployable output assessment?**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 102 | You have explained which factors constrain deployable output, such as hydrological yield, licensed quantities/constraints, pumping constraints, transfer issues, water quality and treatment. | S4.3, Page 15 |  |  |  |
| 103 | You have identified where deployable output is constrained by licences that are time limited and due to expire in the period covered by the plan, and evaluated the risks of non-renewal. | S4.3, Page 15 |  |  |  |
| 104 | You have checked that licenced volumes are sustainable and that their use will not cause deterioration. | S4.3, Page 15 |  |  |  |
| 105 | Your method for deployable output determination is consistent with your risk composition and the methods outlined in *Handbook of source yield methodologies* (UKWIR, 2014) or *WRMP 2019 Methods – Risk Based Planning: Guidance* (UKWIR, 2016); you have fully explained and documented your choice of method and supporting techniques. | S4.3, Page 16 |  |  |  |
| 106 | You have described how deployable output will be affected by demand side drought restrictions according to the level of service you have planned for. | S4.3, Page 15 |  |  |  |

**4.4 Your role in achieving sustainable abstraction**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 107 | Your proposals support WFD obligations and RBMP objectives in relation to sustainable abstraction. | S4.4. Page 16 |  |  |  |
| 108 | You have determined if changes to your abstractions are required to meet RBMP objectives, and you have discussed the scope of changes with the Environment Agency or Natural Resources Wales as part of WINEP for PR19. | S4.4. Page 16 |  |  |  |
| 109 | You have determined that all existing abstractions (including any planned increases to abstracted volumes with current licence limits, and any time limited licences) are compliant with RBMP objectives and any other legally binding environmental objectives. | S4.4. Page 16 |  |  |  |
| 110 | You have liaised with Environment Agency and/or Natural Resources Wales to determine if you have any abstractions from water bodies that are at risk from deterioration. | S4.4. Page 16 |  |  |  |
| 111 | You have reviewed potential mitigation measures for any waterbodies at risk and put into place plans to manage the risk of deterioration, or where deterioration has occurred because of your actions, you have put in place plans to restore the waterbody. | S4.4. Page 16 |  |  |  |
| 112 | You have completed all investigations and options appraisals in your PR14 water industry NEP for AMP6 by the agreed dates and included any options needed to manage any sustainability changes in your plan. | S4.4. Page 16 |  |  |  |
| 113 | You have considered any regulator measures to improve fish/eel passage or water quality and accounted for likely impact on supply forecasts. | S4.4. Page 16 |  |  |  |

**4.5 Invasive Non-Native Species (INNS)**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 114 | You have considered whether/how any current or future abstractions or operations might cause the spread of INNS and have determined measures to reduce the risk of this. You have liaised with Environment Agency and/or Natural Resources Wales to discuss the risk of INNS and reflected the outcomes of this in your plan. | S4.5. Page 17 |  |  |  |
| 115 | For water companies in England, you have reflected the February 2017 position statement and its principles in your plan. | S4.5. Page 17 |  |  |  |

**4.6 How to include changes to your abstraction licence in your plan**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 116 | You have liaised with the Environment Agency or Natural Resources Wales to determine the likely impact of sustainability measures on abstraction licences and agreed a mutually acceptable timescale for the implementation of new licence conditions. | S4.6. Page 17 |  |  |  |
| 117 | You have determined the impact of any sustainability reductions on your deployable output and included these in your plan appropriately. | S4.6. Page 17 |  |  |  |
| 118 | You have assessed the impact of possible future sustainability changes on your plan through scenario testing and not included any uncertainty about sustainability changes within your plan. | S4.6. Page 17 |  |  |  |
| 119 | Where changes to abstraction licences or new options threaten security of supply and there are no alternatives, you have considered and prepared evidence for exemption under Article 4.7 of the WFD. | S4.6. Page 17 |  |  |  |

**4.7 Abstraction reform – evidence needs**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 120 | For catchments managed by the Environment Agency, you have not included any changes to DO from abstraction reform. You have identified sources having unused licence volumes that are required for emergency purposes and have explained how you define these (e.g. drought source or other purposes). | S4.7, Page 17 |  |  |  |
| 121 | For catchments managed by Natural Resources Wales, you have included evidence to justify retaining any of your daily or annual licensed volumes within your plan. You have discussed the evidence requirements with Natural Resources Wales. | S4.7, Page 17 |  |  |  |
| 122 | If you operate using licences within the three cross-border catchments (Rivers Dee, Wye and Severn), you have included information in your plan that justifies retention of any unused volumes associated with those licences. | S4.7, Page 17 |  |  |  |

**4.8 Climate change**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 123 | You have determined the impact of climate change on river flows and groundwater recharge using one of the three methods set out in the guideline. | S4.8, Page 18 |  |  |  |
| 124 | You have assessed and clearly demonstrated the vulnerability and risks your sources and supplies face for each of your WRZs. | S4.8, Page 19 |  |  |  |
| 125 | You have set out and justified your assessment methods, outlined any assumptions made and clearly presented your results, explaining any differences in methodology between your resource zones. | S4.8, Page 19 |  |  |  |
| 126 | You have clearly explained whether and how climate change has been accounted for in your headroom assessment and have reported this separately. | S4.8, Page 19 |  |  |  |
| 127 | You have set out if/how you have used scaling methods to account for climate change that has already happened, and how this has affected your supplies. | S4.8, Page 19 |  |  |  |
| 128 | You have calculated the impacts of climate change on supply and have entered this into the water resources planning tables as changes to DO. | S4.8, Page 19 |  |  |  |

**4.9 Water transfers**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 129 | You have quantified all water transfers including all raw and potable imports/exports and entered this in the water resources planning tables. You have noted the direction of transfers along with the potential to change the direction if needed. | S4.9, Page 18 |  |  |  |
| 130 | You have documented agreed limits between supplier and recipient companies for all transfers, including any contractual variations that might apply (e.g. in times of drought). | S4.9, Page 18 |  |  |  |
| 131 | You have documented the total volume available to you via transfer for each year of your plan (accounting for operational or infrastructure constraints that may reduce quantities). | S4.9, Page 18 |  |  |  |
| 132 | You have assessed and documented the quality of transferred water and any impact of the transfer on the quality of receiving waters. | S4.9, Page 18 |  |  |  |

**4.10 Drinking water quality**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 133 | You have supported objectives for drinking water in protected areas. | S4.10, Page 20 |  |  |  |
| 134 | You have checked that the drinking water arising from the water treatment regime applied meets the Standards of the Drinking Water Directive plus any other legislation. | S4.10, Page 20 |  |  |  |
| 135 | You have abided by Section 68(1) of the Water Industry Act 1991 in terms of quality of supplied water, and applied this to water from your own sources as well as transfers. | S4.10, Page 20 |  |  |  |
| 136 | You have considered appropriate measures to prevent deterioration of water quality in a protected area. | S4.10, Page 20 |  |  |  |
| 137 | You have recorded how you have calculated treatment works losses and operational use for each WRZ. | S4.10, Page 20 |  |  |  |
| 138 | You have provided diagrams and other supporting evidence for complex major works that can be used in pre-consultation discussions with the Environment Agency or Natural Resources Wales. | S4.10, Page 20 |  |  |  |
| 139 | You have considered options to reduce losses where possible, especially if your plan has a supply-demand balance deficit. | S4.10, Page 20 |  |  |  |
| 140 | You have considered measures to protect supplies against long term risks of pollution. | S4.10, Page 20 |  |  |  |
| 141 | You have considered measures to reduce the treatment process whilst still complying with the requirements of the drinking water regulations. | S4.10, Page 20 |  |  |  |
| 142 | You have demonstrated that all sources you may rely on have been correctly identified and measures taken to provide protection where necessary, e.g. SPZs around groundwater abstractions. | S4.10, Page 20 |  |  |  |
| 143 | You have applied your approach consistently across all WRZs. | S4.10, Page 20 |  |  |  |

**4.11 Outage**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 144 | You have documented your outage allowance and your approach is in line with *WRMP 19 methods -Risk based planning* (UKWIR, 2016) or the *Outage allowances* (UKWIR 1995) approach. | S4.11, Page 20 |  |  |  |
| 145 | You have entered outage calculations in the water resources planning tables. | S4.11, Page 20 |  |  |  |
| 146 | You have included details of options you propose for reducing outage, particularly in cases of a supply-demand balance deficit. | S4.11, Page 20 |  |  |  |

**4.12 Water available for use**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 147 | You have clearly set out the total WAFU, and demonstrated how changes in deployable output, transfers, operational use and outage impact on the calculated total. | S4.12, Page 20 |  |  |  |

**Section 5 – Developing your demand forecast**

[5.1 What should be covered in your demand forecast](#Section5_1)

[5.2 Forecast household demand](#Section5_2)

[5.3 Forecast population, properties and occupancy](#Section5_3)

[5.4 Forecasting customers’ demand for water](#Section5_4)

[5.5 Forecasting your non-household consumption](#Section5_5)

[5.6 Forecasting leakage](#Section5_6)

[5.7 Other components of demand](#Section5_7)

[5.8 Metering](#Section5_8)

[5.9 Impacts of climate change](#Section5_9)

[5.10 Allowing for uncertainty](#Section5_10)

**5.1 What should be covered in your demand forecasts?**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 148 | You have provided a demand forecast for the dry year annual average where demand is unrestricted, which includes adjustments for likely future changes in demand due to factors such as climate change, population growth, household size, property numbers, and current company demand management policy/activity. | S5.1, Page 21 |  |  |  |
| 149 | You have provided a demand forecast for the critical period (if considered in your plan) that accounts for the factors you expect will drive demand during the critical period, such as seasonal changes or population growth. | S5.1, Page 21 |  |  |  |
| 150 | You have provided a demand forecast for the final plan dry year annual average which includes adjustments to reflect solutions identified through your options appraisal. | S5.1, Page 21 |  |  |  |
| 151 | You have provided a demand forecast for the final plan critical period which includes adjustments to reflect solutions identified through your options appraisal. | S5.1, Page 22 |  |  |  |
| 152 | You have explained how demand forecasts have been arrived at and documented any underlying assumptions, including how you have determined unrestricted demand. | S5.1, Page 22 |  |  |  |
| 153 | You have explained your reconciliation of current best estimates of demand with other parts of the water balance. | S5.2,  Page 22 |  |  |  |

**5.2 Forecast household demand**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 154 | You have demonstrated how you have arrived at your forecast of population and property numbers and the assumptions on which these are based. | S5.2,  Page 22 |  |  |  |
| 155 | You have demonstrated an understanding of what is driving future household demand and how you have estimated this. | S5.2,  Page 22 |  |  |  |
| 156 | You have included forecast savings data for existing water efficiency initiatives in your baseline forecast. | S5.5, Page 22 |  |  |  |

**5.3 Forecast population, properties and occupancy**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 157 | For water companies supplying customers in England you have aligned your method for forecasting population and property growth with the most recent local plans published for your area(s), and accounted for potential changes in published figures if a local plan is not yet finalised. | S5.3,  Page 22 |  |  |  |
| 158 | Where no local plan project(s) exist to inform your plan, you have used other appropriate methods such as household projections for Dept. for Communities, Local Government, those produced for DCLG by the ONS or the methods outlined in *Population, household property and occupancy forecasting* (UKWIR, 2016). You have documented and explained assumptions and data sources used. | S5.3,  Page 22 |  |  |  |
| 159 | You have provided evidenced justification if your property forecasts deviate from planned figures. | S5.3,  Page 22 |  |  |  |
| 160 | You have accounted for the planning period in your forecast property and population figures and have explained where/if different forecasting methods are applied for different time horizons, especially if your planning period is longer than 25 years. | S5.3,  Page 23 |  |  |  |
| 161 | For companies supplying customers in Wales, you have based your forecast population and property figures on the latest Local Authority population and property projections published by the Welsh Government. Your analysis of the uncertainties in your forecast population and property figures has been informed by local development plans in your supply area. | S5.3,  Page 23 |  |  |  |
| 162 | You have demonstrated that your plan does not constrain supply such that it may not meet planned property forecasts. | S5.3,  Page 23 |  |  |  |
| 163 | You have engaged with local planning authorities to inform your analysis and understand uncertainties in your forecast population and property figures. | S5.3,  Page 23 |  |  |  |
| 164 | You have properly communicated limitations in your forecast and uncertainty associated with your forecast. | S5.3,  Page 23 |  |  |  |
| 165 | You have described assumptions and supporting information that you have used to develop property and occupancy forecasts, including uncertainties. | S5.3,  Page 23 |  |  |  |
| 166 | You have explained how you have allocated unaccounted for populations for each WRZ, including your assumptions. | S5.3,  Page 23 |  |  |  |
| 167 | You have accounted for local council and neighbourhood plans, when calculating future demand. | S5.3,  Page 23 |  |  |  |

**5.4 Forecasting your customers’ demand for water**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 168 | You have selected a method for forecasting demand that is appropriate to each WRZ, based on the supply-demand situation, any problem characterisation approaches you have considered and the data available. | S5.4,  Page 23 |  |  |  |
| 169 | Your method for forecasting demand is aligned with the following guidelines:   * *WRMP-19 Household demand forecasting - Integration of behavioural change into demand forecasting and water efficiency practices* (UKWIR 2016). * *Customer behaviour and water use – good practice for household consumption forecasting* (UKWIR, 2012). | S5.4,  Page 23 |  |  |  |
| 170 | You have documented your reasons for choice of method, including your assumptions and their associated uncertainties. | S5.4,  Page 23 |  |  |  |
| 171 | You have demonstrated a forecast demand for the critical period scenario (if appropriate) as well as the dry year annual average. | S5.4,  Page 23 |  |  |  |
| 172 | You have provided a breakdown of total consumption, per capita consumption and micro-components within the water resources planning tables. | S5.4,  Page 23 |  |  |  |

**5.5 Forecasting your non-household consumption**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 173 | You have calculated a demand forecast for non-households. | S5.5, Page 23 |  |  |  |
| 174 | You have described your assumptions about customer/property types that you have considered as non-household and demonstrated that your decisions are aligned with part 17C of the Water Industry Act 1991 and guidance on non-household customers as reported in *Eligibility guidance on whether non-household customers in England and Wales are eligible to switch their retailer*. You have consulted with retailers of water to non-household customers. | S5.5, Page 24 |  |  |  |
| 175 | You have accounted for the likely other retailers to non-household sectors in your area following the changes introduced in April 2017 and have consulted with retailers of water to non-household customers. | S5.5, Page 24 |  |  |  |
| 176 | You have determined non-household demand into different economic sectors, for example by using the UK SIC codes or applying a service and non-service split approach. | S5.5, Page 24 |  |  |  |
| 177 | You have assessed the likely new uptake of public water from non-household customers / sectors that previously used private supplies. | S5.5, Page 24 |  |  |  |
| 178 | You have examined and taken account of planned or existing water saving initiatives by both the wholesaler and retailer and have determined in the likely saving in non-household demand. | S5.5, Page 24 |  |  |  |
| 179 | You have included forecast savings data for existing water efficiency initiatives in the baseline forecast that you have presented. | S5.5, Page 24 |  |  |  |

**5.6 Forecasting leakage**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 180 | You have determined baseline leakage over the planning period and explained your method in the WRMP | S5.6, Page 24 |  |  |  |
| 181 | You have used *UKWIR Consistency of reporting performance measures (2017*) to forecast levels of leakage. | S5.6, Page 24 |  |  |  |
| 182 | If you are unable to use the guidance outlined in *Consistency of Reporting Performance Measures (UKWIR 2017),* you have explained why you have not used the revised approach for base year leakage, what steps you are taking to comply with the new approach and when this data will be available. | S5.6, Page 24 |  |  |  |
| 183 | Where the revised approach to calculating base year leakage leads to uncertainty or significant changes in your base year or projected leakage, you have used scenarios to demonstrate how this affects your plan and any options you have selected. | S5.6, Page 25 |  |  |  |
| 184 | You have described how your approach to calculating base year leakage affects your ability to meet government aspirations to reduce leakage over the planning period. | S5.6, Page 25 |  |  |  |
| 185 | You have accounted for any actions or policies that may reduce leakage (e.g. mains improvements) in your leakage forecast. | S5.6, Page 25 |  |  |  |
| 186 | You have accounted for your customers’ views on leakage reduction and their resulting willingness to participate in demand management activities. | S5.6, Page 25 |  |  |  |
| 187 | You have included all feasible options for further leakage control, and any other options you are actively investigating with support from your customers. | S5.6, Page 25 |  |  |  |

**5.7 Other components of demand**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 188 | You have included details on other components of demand, the methods you have adopted for their calculation and your source datasets. | S5.7, Page 25 |  |  |  |

**5.8 Metering**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 189 | You have reported household metering figures in the water resources planning tables. | S5.8, Page 25 |  |  |  |
| 190 | For water companies in England, you have complied with the WRMP Direction 2017 with regard to household metering. | S5.8, Page 25 |  |  |  |
| 191 | If you are in an area of serious water stress, you have considered the costs and benefits of compulsory metering. | S5.8, Page 25 |  |  |  |
| 192 | You have assessed which tariffs are appropriate to your company as part of your options appraisal and included in your plan as appropriate. | S5.8, Page 25 |  |  |  |

**5.9 Impacts of climate change**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 193 | You have documented the allowance included in your plan for the impact of climate change on demand, including the assumptions on which this is based. | S5.9, Page 26 |  |  |  |
| 194 | If your allowance is outside expected impact range (<3%), you have robustly demonstrated and justified the reasons for this. | S5.9, Page 26 |  |  |  |

**5.10 Allowing for uncertainty**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| --- | --- | --- | --- | --- | --- |
| 195 | You have reduced uncertainty by using the most up to date methods and data when determining supply and demand forecasts. | S5.10, Page 26 |  |  |  |
| 196 | You have analysed, quantified and discussed any uncertainties associated with your calculations of dry year annual average demand (and critical period scenarios if applicable). | S5.10, Page 26 |  |  |  |
| 197 | You have used risk-based planning techniques to assess individual components of uncertainty, avoiding any double counting for (e.g. for target headroom components) or omission of uncertainties. | S5.10, Page 26 |  |  |  |
| 198 | Alternatively, if you have applied an older target headroom approach to assess individual components of uncertainty, you have justified why this is appropriate. You have evaluated target headroom with regards to risk appetite and have allowed risk to increase with time as adaptations will occur in practice. | S5.10, Page 26 |  |  |  |
| 199 | You have documented all assumptions and information used in the assessment of uncertainties and have discussed the relative significance of uncertainties showing which impact most on each WRZ. | S5.10, Page 26 |  |  |  |
| 200 | You have considered options for reducing uncertainty in the planning period. | S5.10, Page 26 |  |  |  |
| 201 | You have communicated uncertainty such that customers can clearly understand the issues and risks. | S5.10, Page 26 |  |  |  |
| 202 | You have explained where there are any uncertainties related to non-replacement of time-limited licences (TLLs). | S5.10, Page 26 |  |  |  |
| 203 | You have not included an allowance for possible future sustainability changes in headroom, and where relevant you have explored this through scenario analysis. | S5.10, Page 26 |  |  |  |

**Section 6 – Deciding on future options**

[6.1 Considerations when choosing future solutions](#Section6_1)

[6.2 Resilience options](#Section6_2)

[6.3 Third party options](#Section6_3)

[6.4 Upstream competition](#Section6_4)

[6.5 Assessing solutions for your plan](#Section6_5)

[6.6 Unconstrained list](#Section6_6)

[6.7 Feasible list](#Section6_7)

[6.6 Environmental and social impacts](#Section6_8)

[6.9 Solutions driven by changes to existing abstraction licences](#Section6_9)

[6.10 Deciding on a solution](#Section6_10)

[6.11 Water Framework Directive](#Section6_11)

[6.12 Testing your plan](#Section6_12)

**6.1 Considerations when choosing future solutions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 204 | You have considered all options that will address any deficit(s) between supply and demand in any WRZ at any time during the planning period. You have justified your preferred solution(s) in your final plan. | S6.1, Page 27 |  |  |  |
| 205 | You have distinguished whether options apply to the dry year annual average and/or critical period scenarios, and your final plan addresses deficits in all scenarios for all WRZs across the planning period. | S6.1, Page 27 |  |  |  |
| 206 | You have considered options that will allow you to improve your service to customers, provide long-term best value, benefit the environment or collaborate with other water companies. You have justified your preferred solution(s) in your final plan. | S6.1, Page 27 |  |  |  |
| 207 | You have documented all factors that have led you to consider options (whether in deficit or not) in your plan, including reasons. | S6.1, Page 27 |  |  |  |
| 208 | You evaluated the environmental impacts of all possible and discarded options that could have unacceptable impacts that could not be overcome. You have further considered only those options that support achievement of RBMP objectives and would not result in deterioration. | S6.1, Page 27 |  |  |  |
| 209 | You have considered the need to undertake an SEA or HRA for each option, and if appropriate undertaken them as a result. | S6.1, Page 27 |  |  |  |

**6.2 Resilience options**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 210 | You have evaluated whether options are needed to improve resilience to significant vulnerabilities which are not addressed within the planned level of service, and if needed explained this fully. | S6.2, Page 28 |  |  |  |
| 211 | The hazards you considered when evaluating resilience options were those listed in *Resilience planning: good practice guide* (UKWIR, 2013), and you have also considered hazards other than drought. | S6.2, Page 28 |  |  |  |
| 212 | You have considered the results of the *Water Resources Long Term Planning Framework* (Water UK, 2016), and WRSE and/or WRE as appropriate and incorporated the outcomes into your plan. | S6.2, Page 28 |  |  |  |
| 213 | If resilience options have been considered, you have considered the costs and benefits and justified the solution. | S6.2, Page 28 |  |  |  |
| 214 | You have demonstrated customer support for the options you have proposed to improve resilience and the level of resilience the options will provide, and have a business case for the additional spending that resilience measures will involve. | S6.2, Page 28 |  |  |  |
| 215 | You have described the option(s) in detail and have conducted the appraisal of resilience options to the same standard as non-resilience options. | S6.2, Page 28 |  |  |  |

**6.3 Third party options**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 216 | You have considered options, where appropriate, that involve engaging with third parties to help deliver solutions at lower cost, such as upstream services, leakage detection and demand management. You have used the Market Information Platform to assess third party bids (when available). | S6.3, Page 29 |  |  |  |
| 217 | You have subjected options involving third parties to the same scrutiny and testing as other options. | S6.3, Page 29 |  |  |  |
| 218 | Where relevant, your plans clearly sets out which options within the final planning scenario are third party options. | S6.3, Page 29 |  |  |  |

**6.4 Upstream competition**

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| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 219 | For water companies in England, you have checked that there are no requirements with regards to reforms relating to competitive services for supply to/removal from your network following the Water Act 2014. | S6.4, Page 29 |  |  |  |

**6.5 Assessing solutions for your plan**

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| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 220 | Your appraisal of options follows the eight stage approach outlined in *WRMP 2019 Methods – decision making process guidance* (UKWIR, 2016).   1. Collate and review planning information. 2. Identify unconstrained options. 3. Problem characterisation and evaluate strategic needs/complexity. 4. Decide modelling method. 5. Identify and define data inputs. 6. Undertake decisions making modelling / options appraisal. 7. Stress testing and sensitivity analysis. 8. Final planning forecast and comparison to EBSD benchmark. | S6.5, Page 29 |  |  |  |
| 221 | You have demonstrated that your final planning forecast is your best value plan, not necessarily the least cost solution, accounting for all criteria that sensitivity analysis has established are important to the plan. | S6.5, Page 29 |  |  |  |

**6.6 Unconstrained list**

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| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
| 222 | You have developed an unconstrained list of all plausible technically feasible options, including drought measures, and have at least considered options presented in *WR27 Water resources tools* (UKWIR, 2012) and the EBSD method. | S6.6, Page 30 |  |  |  |
| 223 | For water companies in England, you have included third party options (see 6.3) in the unconstrained list, and have demonstrated you have invited or considered third party collaborations or provide a clear explanation of why third party option have not been included. | S6.6, Page 30 |  |  |  |

**6.7 Feasible list**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
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| 224 | Your feasible list is a subset of your unconstrained list and you have demonstrated that all options on your preferred list are suitable for promotion. | S6.7, Page 30 |  |  |  |
| 225 | You have communicated your feasible list to the Environment Agency and/or Natural Resources Wales as soon as possible and discussed it with them. | S6.7, Page 30 |  |  |  |
| 226 | You have clearly described the screening criteria you have used to identify feasible options and have applied these consistently to achieve a balance between the number of options included and availability of realistic choices. | S6.7, Page 31 |  |  |  |
| 227 | You have provided a full description of all feasible options that you have considered, including main operational features, expected implementation extent, conceptual diagram etc. | S6.7, Page 31 |  |  |  |
| 228 | You have compared each feasible option to the baseline case, and provided a profile of the extra water available over the 80 years from initial investment in the option. | S6.7, Page 31 |  |  |  |
| 229 | Where you are transferring water / commissioning new sources and this increases the risk of non-compliance, you have included steps to mitigate those risks (e.g. INNS, discolouration, nitrates, pesticides). | S6.7, Page 31 |  |  |  |
| 230 | You have assessed the level of customer support for each option. | S6.7, Page 31 |  |  |  |
| 231 | You have appropriately estimated the amount of time needed to investigate and implement the option and have proposed an earliest start date based on your review. | S6.7, Page 31 |  |  |  |
| 232 | You have appropriately assessed and reported the risks and uncertainties associated with each option, including the likelihood of reduced yield due to factors such as climate change, environmental constraints and customer behaviour. You have considered the flexibility of the option to adapt to future uncertainty. | S6.7, Page 31 |  |  |  |
| 233 | You have explained any factors or constraints specific to the option, and have highlighted any links or dependencies on other existing schemes, other options and any mutual exclusivity with another option. | S6.7, Page 31 |  |  |  |
| 234 | You have described how the option will be utilised and the impact on costs. | S6.7, Page 31 |  |  |  |
| 235 | You have assessed the environmental impacts of the option, including implications for RBMP objectives, and have undertaken and reported the outcomes of a Habitats Regulations Assessment (HRA) if the option has been found to potentially affect any designated site. | S6.7, Page 31 |  |  |  |
| 236 | You have undertaken a cost-benefit appraisal of the option, including a cost breakdown over the 80 year period and covering capital, operating and financing costs. Your method is aligned to Ofwat’s most recent guidance for PR19 and the WRPG, and gives Average Incremental Costs (AIC) based on maximum capacity costs divided by maximum capacity outputs expressed as net present value (NPV). You have explained how you arrived at your AIC figure. | S6.7, Page 31 |  |  |  |
| 237 | As part of the cost-benefit appraisal, you have evaluated the environmental and social (including carbon) costs and benefits of the options and show either a monetised profile of Average Incremental and Social Costs (AISC), or a non-monetised assessment of impacts. You have stated your approach to calculation of AISC. | S6.7, Page 31 |  |  |  |
| 238 | For supply options, as part of your cost-benefit appraisal you have determined supplementary costs required to distribute the new supply (e.g. service reservoirs, pumping stations, mains upgrades), excluding costs associated with local infrastructure enhancements. | S6.7, Page 31 |  |  |  |
| 239 | You have evaluated whole-life costs that include treatment, pumping, network, storage, maintenance and operation costs (the latter included control measures relating to water quality optimisation, fluoridation, chemical stabilisation, aesthetic impacts on consumers and control of disinfection by-products. | S6.7, Page 32 |  |  |  |

**6.8 Environmental and social impacts**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
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| 240 | You have considered the environmental and social impact of each option of the feasible list. | S6.8, Page 32 |  |  |  |
| 241 | You have assessed impacts using a method that is proportionate to the scale of the problem and have fully justified your approach. | S6.8, Page 32 |  |  |  |
| 242 | You have applied an Ecosystem Services approach to environmental evaluation, if appropriate, and your method gives accountable and transparent outcomes that consider stakeholder needs. | S6.8, Page 32 |  |  |  |
| 243 | You demonstrate that you have used the best available evidence and data in your assessment, and the conclusions you draw are robust, locally valid and justifiable. | S6.8, Page 32 |  |  |  |
| 244 | You provide a clear audit trail of your appraisal of environmental and social impacts and explain the data you use, the results and recommendations from the appraisal. | S6.8, Page 32 |  |  |  |

**6.9 Solutions driven by changes to existing abstraction licences**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
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| 245 | You have worked with the Environment Agency or Natural Resources Wales to understand the cost effectiveness of solutions that are driven by changes to existing abstraction licences. | S6.9, Page 32 |  |  |  |
| 246 | You explain how any solution driven by changes to existing abstraction licences meets the objectives of the Habitats Directive, Wildlife and Countryside Act and Water Framework Directive and prevents any deterioration of water bodies. | S6.9, Page 32 |  |  |  |
| 247 | You have considered whether measures needed to meet sustainability and environmental objectives (e.g. related to HD, WCA and WFD) are cost-effective and cost-beneficial, and are supported by customers. | S6.9, Page 32 |  |  |  |
| 248 | You have explained how the cost has been evaluated (where cost include non-monetised costs) and that the benefit outweighs the cost, the option is not disproportionately costly and has the lowest overall costs even when accounting for the need for customer support. | S6.9, Page 33 |  |  |  |

**6.10 Deciding on a solution**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
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| 249 | You have explained the approach you have taken to arrive at the best solution(s), making use, as appropriate, of the UKWIR Decision Making process to develop a decision-making framework and identify methods to determine which solution(s) is/are best. | S6.10, Page 33 |  |  |  |
| 250 | You have used the EBSD method within the process of identifying best solution(s), e.g. to provide a benchmark against which outcomes of alternative methods can be compared. | S6.10, Page 33 |  |  |  |
| 251 | You have explained which methods other than EBSD have been used within the process of identifying best solutions, including justification for their appropriateness, such as differences and improvements. | S6.10, Page 33 |  |  |  |
| 252 | You have clearly and transparently set out the economic, social and environmental justifications for your final choice of solution, and demonstrated why you have decided on this approach and discounted others. You have provided a clearly reasoned justification for how the decision has been made, as well as the decision. Your explanations are able to be clearly interpreted by customers, interested parties and regulators. | S6.10, Page 33 |  |  |  |
| 253 | You have considered how future changes might affect the solution or whether any potential future changes might make it redundant. | S6.10, Page 33 |  |  |  |
| 254 | You have considered the resilience of the solution against a range of possible futures. | S6.10, Page 33 |  |  |  |
| 255 | You demonstrate that the possible futures considered include potential future impacts of regional or cross sector demand. | S6.10, Page 33 |  |  |  |
| 256 | You have assessed the costs and benefits of the chosen solution, and have set out your assessment of whether the benefits of implementing the solution are greater than the costs. Your preferred solution is best value. | S6.10, Page 33 |  |  |  |
| 257 | You have described the steps you have taken to carry out a Strategic Environment Assessment and Habitat Regulations Assessment for your chosen solution, or demonstrated why this is not needed. Where relevant, you have incorporated any outcomes from the SEA and/or HRA into your final plan. | S6.10, Page 33 |  |  |  |
| 258 | Where the option involves sharing resources, you have explained who will have ultimate rights to the water and why. You have also provided details of how the option will operate, funding mechanisms, legal arrangements, drought implications. | S6.10, Page 33 |  |  |  |

**6.11 Water Framework Directive**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
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| 259 | You have considered and prioritised solutions that promote the requirements of Article 7 of the WFD and are consistent with RBMP objectives and solutions, highlighting how you will or are working with others to achieve this. | S6.11, Page 33 |  |  |  |
| 260 | You have described how the impact of changes to the operation of existing sources and / or the impacts of new sources on WFD water body status has been established, and that you have rejected sources that might cause deterioration or prevent the achievement of good status. | S6.11, Page 33 |  |  |  |
| 261 | You have described any intended actions that may cause deterioration of status/potential or prevent good status/potential being achieved. You have discussed this with the Environment Agency or Natural Resources Wales and made a clear statement in the plan of any potential impacts of any intended actions. | S6.11, Page 33 |  |  |  |
| 262 | You have included targeted and cost effective restoration measures, and have considered how you will apply adaptive management measures solely or working in partnership with other relevant organisations. | S6.11, Page 33 |  |  |  |

**6.12 Testing your plan**

| **No.** | **Action or approach** | **WRPG ref.** | **Draft WRMP ref.** | **Proposed inclusion (Y, N or n/a)** | **Any issue identified** |
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| 263 | You have explained the scenario testing you have undertaken to evaluate the resilience of your plan to a range of risks. | S6.12, Page 34 |  |  |  |
| 264 | Based on scenario testing, you have described the factors and risks having the most significant impact on your plan, and the possible timings of these impacts. | S6.12, Page 34 |  |  |  |
| 265 | You have explained the scenario testing you have undertaken to show the plan is robust to minor changes to supply and demand forecasts in the near future and to more moderate changes as the plan progresses. | S6.12, Page 34 |  |  |  |
| 266 | You have explained the scenario testing you have undertaken to compare your preferred plan with, or to identify, alternative options. | S6.12, Page 34 |  |  |  |
| 267 | Based on scenario testing, you have justified how you will manage risk and future uncertainties (e.g. in response to new evidence becoming available), and what you will monitor to help manage these risks. | S6.12, Page 34 |  |  |  |
| 268 | Based on scenario testing, you have explained when and why important decisions should be made within the period of the plan. | S6.12, Page 34 |  |  |  |
| 269 | You have explained how scenario testing demonstrates that you have not over-planned for a worst-case scenario that is very unlikely. | S6.12, Page 34 |  |  |  |