

Strategic Solution Interim Update Submission Summary

27 September 2021



from
**Southern
Water** 

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1 Key Messages

Our Water Resources Management Plan 2019 (WRMP19) identified significant requirements for large new water resources in West Hampshire. These needs were confirmed in our Price Review 19 (PR19) business plan, and it is in our customers' interests that these needs are addressed as quickly as possible. Our ambition is to create an intelligent network which delivers greater environmental benefits and a resilient water future for the South East. We are considering a number of potential Options for delivering such water resources, including desalination, water recycling and an enhanced solution for the use of the proposed Havant Thicket Reservoir (HTR). The Options under consideration are being progressed through the RAPID Strategic Resource Option (SRO) process.

Water is hugely valuable for the environment, health and wellbeing and leisure activities, and is crucial for agriculture, business uses and all other economic uses. We fully support the measures already in place to protect chalk streams, particularly the iconic chalk streams of the Rivers Test and Itchen. In accordance with the Section 20 (s20) agreement we have with the Environment Agency (EA), we are using, and will continue to use, All Best Endeavours (ABE) obligations to deliver an appropriate long-term solution by the agreed date. This will contribute to achieving a permanent reduction in the abstractions from these rivers, whilst still delivering on our water supply obligations.

Our current Water Resources Management Plan (WRMP) is designed to deliver resilience against a 1-in-200-year drought event. The National Framework for Water Resources, published in March 2020, indicates a move for the whole sector to plan for resilience in a 1-in-500-year event, and for WRMPs to align with the optimal solutions chosen by regional plans. We are supportive of these changes and are seeking to develop flexible solutions that not only take account of higher resilience requirements for the future but can also adapt to emerging requirements and future challenges. We have developed three Strategic Objectives, which have been used as part of the Options Appraisal Process (OAP) to identify our Emerging Preferred Option (EPO).

At Gate 1 we presented a range of Options including desalination, water recycling and enhanced uses of the HTR proposed by Portsmouth Water (PW). Since Gate 1, we have developed a robust, evidence-driven OAP, in order to identify the best value Option for our customers, stakeholders and the environment, taking into account the Strategic Objectives for the solution, including flexibility and adaptability.

RAPID, the EA and SW are committed to selecting the best long term adaptable strategy for our customers and the environment. To achieve this, it is proposed that the best approach is to reschedule the date of Gate 2 to 6 December 2021, to be preceded by an Interim Update (IU) on 27 September 2021. This is to allow time for a more thorough examination of which of the remaining Option(s) can best meet the demands presented by increasing future needs, and including the needs of PW's customers, as well as our own.

The purpose of this Interim Update is to provide evidence of our technical development, Options Appraisal work and stakeholder engagement on all the Options.

In this Interim Update we report the outcome of our Options Appraisal Process (OAP) to date, concluding that:

- The Options that enhance the daily volume of water that can be extracted from the HTR are the highest ranking
- Water recycling Options that deliver the raw water to a new environmental buffer at one of our treatment works on the River Itchen are middle ranking

- The desalination Options are the lowest ranking in our assessment, and the site at Fawley presents difficulties such that we consider these Options are not likely to be consentable at this location at this time
- SW has come to the view that it is appropriate to no longer progress with any further work on the desalination Options as there is now clear evidence to show that these are the least preferable Options at this location and time
- Therefore, no further work is to be carried out on the Desalination Options at Fawley

To allow time for the further work to be undertaken we have requested of RAPID, and are anticipating reaching agreement, that the arrangements for Gate 2 are modified as follows:

- a) Gate 2 is rescheduled to 6 December 2021.
- b) RAPID will agree to expedited determination timescales in respect of the rescheduled Gate 2, to enable SW to get on at pace with progressing the Selected Option towards Gate 3. We suggest 21 January 2022 for a Draft Determination. This is on the basis that we commit to share the evidence we are developing for Gate 2 with the relevant regulators in good time before the gate and that their advice is incorporated.

At Gate 2 the highest-ranking Option or Options will be confirmed by SW as our Selected Option, and if appropriate a further Option will be confirmed as a 'Back-Up Option', to be taken forward to Gate 3 in the manner described in our submission. SW will detail how our Selected Option is planned to evolve to meet the challenge of a 1-in-500-year water resource planning world by submission at Gate 2 of a Selected Option Evolution Plan and a similar approach will be taken with any Back-Up Option selected.

We will continue to develop the remaining Options to Gate 2, and in this Interim Update we show the activities that we plan to carry out to test out the Options for adaptability for future needs, including, for example, taking into account a 1-in-500-year drought.

The decision, that we will confirm at Gate 2, is strategically important for us, PW, our regulators and stakeholders. We need to confirm a Selected Option at Gate 2 that can best deliver an appropriate long-term solution by the agreed date. We also want it to take into account the needs described above, to the extent it is possible to do so.

We will also identify a Back-Up Option that can be activated quickly in the event that the Selected Option became undeliverable. We will also detail how we plan to evolve our Selected Option to meet the challenge of increasing future needs.

In Appendix 1 - Submission Navigation and Glossary, we provide a guide to the structure of the Interim Update and the full Glossary of acronyms and terminology used throughout the update.

2 Introduction

We have entered into an agreement with the EA under s20 of the Water Resources Act 1991 under which we are obliged to use ABE to implement the Preferred Strategy published in WRMP19. The Preferred Strategy included a 75 Ml/d desalination plant at Fawley, and this is referred to as the "Base Case" for the purposes of this Interim Update.

In addition, Ofwat requested in the PR19 Final Determinations that we consider a number of alternative solutions to the Base Case. The alternative solutions act as 'back-up' Options in case the Base Case cannot be implemented. The consideration of alternatives is also required to support important assessments for regulatory requirements and consenting, such as Strategic Environmental Assessment (SEA), Habitats

Regulation Assessments (HRA), Water Framework Directive Assessment (WFDA) and Environmental Impact Assessment (EIA).

It is important that the OAP is robust, as it will underpin the 'need' case for the Selected Option and must meet the requirements for the consideration of alternatives in the context of future planning applications. The OAP will be tested, not just at Gate 2, but in future regulatory and planning consent processes.

We have therefore developed and applied a structured methodology to assess how the Options compare to one another. The process has:

- been based on industry guidance and consideration of robust evidence
- involved appraisal against appropriate criteria and Strategic Objectives
- been undertaken by qualified individuals
- been developed in consultation with key stakeholders; and
- been designed to withstand testing in future consenting processes.

As part of the OAP, we have considered a wide range of Legal and Policy Obligations and Strategic Objectives for the SRO. Our three Strategic Objectives for the SRO are:

1. **Best Value for customers** - We will deliver solutions which provide the best value to our customers whilst discharging our "all best endeavours" legal obligation in the s20 agreement and all other legal and policy requirements and obligations
2. **Net Zero Carbon** - We will deliver solutions which ensure that we can continue to make progress towards meeting, and to support and contribute to, Water UK's commitment to become net zero carbon by 2030
3. **Adaptability** - We will ensure that all projects within the WfLH programme are sustainable by being flexible and adaptable, including in terms of their:
 - a) Capacity and scalability
 - b) Ability to contribute to strategic reinforcement of the regional and national network
 - c) Ability to rely on appropriate transitional measures to manage risks around delivery timescales, and
 - d) Ability to allow for technological innovation.

Our Legal and Policy Obligations include, for example, that the Selected Option must meet the requirements of the WFD, the draft Water Resources Infrastructure National Policy Statement (dNPS) and must enable us to meet our Supply Duty. Please see the IU Options Appraisal document in which these are described in more detail.

3 Purpose of Interim Update and re-scheduling of Gate 2

In a recent correspondence between RAPID and SW, we set out the reasons for the re-scheduling of Gate 2. Ofwat's guidance in the *PR19 Final Determinations: Strategic Regional Water Resource Solutions* says:

"As gates two and three are aligned to the water resources management plan statutory process, namely the publication of draft and final plans, there is flexibility in these gate timings to acknowledge that external factors may cause the planned dates to change."

That alignment is the case for the standard gates but not for our accelerated gates. Our OAP to date has all been undertaken through a 1-in-200-year lens but one of our three Strategic Objectives is “adaptability” (see above), to ensure suitability to meeting long-term water supply requirements and therefore sustainability of supply. We therefore believe that it is in the best interest of our customers and the environment to take into account now, to the fullest extent possible at this point in time, these additional requirements driven by a move to 1-in-500-year drought.

We have requested of RAPID to move Gate 2 to allow additional work to be done in reviewing the long-term contextual position of Options against these future risks and demand. This change will ensure the Selected Option at Gate 2, is the right one for SW and can take into account the needs of PW, our regulators, stakeholders and our customers in that different context.

To allow time for the further work to be undertaken we have requested of RAPID, and are anticipating reaching agreement, that the arrangements for Gate 2 are modified as follows:

- a) Gate 2 is rescheduled to 6 December 2021
- b) RAPID will agree to expedited determination timescales in respect of the rescheduled Gate 2, to enable SW to get on at pace with progressing the selected Option towards Gate 3. We suggest 21 January 2022 for a Draft Determination. This is on the basis that we commit to share the evidence we are developing for Gate 2 with the relevant regulators in good time before the gate and that their advice is incorporated.

At Gate 2 the highest-ranking Option or Options will be confirmed by SW as our ‘Selected Option’, and if appropriate a further Option will be confirmed as a ‘Back-Up Option’, to be taken forward to Gate 3 in the manner described in our submission. SW will detail how our ‘Selected Option’ is planned to evolve to meet the challenge of a 1-in-500-year water resource planning world by submission at Gate 2 of a ‘Selected Option Evolution Plan’ and a similar approach will be taken with any Back-Up Option selected.

4 The Options Appraisal Process (OAP)

We presented the Base Case and alternative Options in the Gate 1 Submission. Option B.1 (61 MI/d DO recycled water (indirect) sent to the Lower Itchen abstraction and transferred for treatment at Otterbourne Water Supply Works (WSW)) was not progressed after RAPID’s Gate 1 Final Decision, which indicated that Option B.1 was not to be developed further following advice from the EA and Natural England (NE). We progressed all other Options beyond Gate 1, to further assess and determine their feasibility. The Options under consideration following Gate 1 are detailed in Table 1.

Table 1 - Options descriptions

Option	Description
Option A.1 (Base Case)	75 MI/d Deployable Output (DO) desalination at Fawley direct to Testwood WSW;
Option A.2	61 MI/d DO desalination at Fawley direct to Testwood WSW
Option B.2	61 MI/d DO recycled water (indirect) sent to Environmental Buffer Lake (EBL) and treated at Otterbourne WSW (Water Recycling Plant (WRP) supplied by Budds Farm Wastewater Treatment Works (WTW));
Option B.3	61 MI/d DO recycled water (direct) sent to Otterbourne WSW

Option	Description
Option B.4	75 MI/d DO transfer between HTR and Otterbourne WSW (augmented with a 15 MI/d WRP to supplement HTR)
Option B.5	75 MI/d DO of recycled water (indirect) sent to EBL and treated at Otterbourne WSW (WRP supplied by Budds Farm and Peel Common WTW);
Option D.1	A combination of 40 MI/d Desalinated water to a large coastal industrial facility with existing South West Water (SWW) supply diverted to SW 30 MI/d In addition a 40 MI/d DO recycled water (indirect) sent to EBL and treated at Otterbourne WSW (WRP supplied by Budds Farm WTW);
Option D.2	61 MI/d DO transfer between HTR and Otterbourne WSW

We have developed, and applied, in consultation with key stakeholders, a structured methodology to assess how the Options compared to one another. The purpose is to provide 'Best Value' for customers (as defined by the Water Resources Planning Guideline (WRPG)¹), whilst also being compliant with regulatory requirements and legislation and our Strategic Objectives for the SRO.

The OAP we have developed involves six steps, as illustrated in Figure 1, and detailed below:

- 1 - Discontinuation of a number of Options after Gate 1** based on clear evidence that the Options were not viable, as a result of additional work carried out after Gate 1
- 2 - Site and Route Assessment** to identify preferred sites and pipeline route corridors and identify a preferred configuration for each Option
- 3 - Consenting Evaluation** to assess each of the Options for consenting risks (for the recommended configurations and with the information available at this time) and rank the Options relative to each other based on consenting risk
- 4 - Multi-Criteria Decision Assessment (MCDA)** was developed as an 'appraisal tool for SW to rank each of the Options according to Best Value'
- 5 - Decision-making Process** took the outcomes of the MCDA and Consenting Evaluation and also the assessments against the agreed Legal and Policy Obligations and Strategic Objectives for the SRO and ranked the Options taking into account the output of those assessments²
- 6 – Option Evolution Plan** – for the EPO and any Back-up Option identified, a plan that will detail how each Option concerned is planned to evolve to meet the increasing future needs of water customers in our region

¹ Environment Agency, Natural England and Ofwat, Water Resources Planning Guideline, July 2021, Section 9.1

² Further work will be carried out to produce a Future Needs Assessment and Option Evolution Plan, see Interim Update Activity Plan to Gate 2 document for details

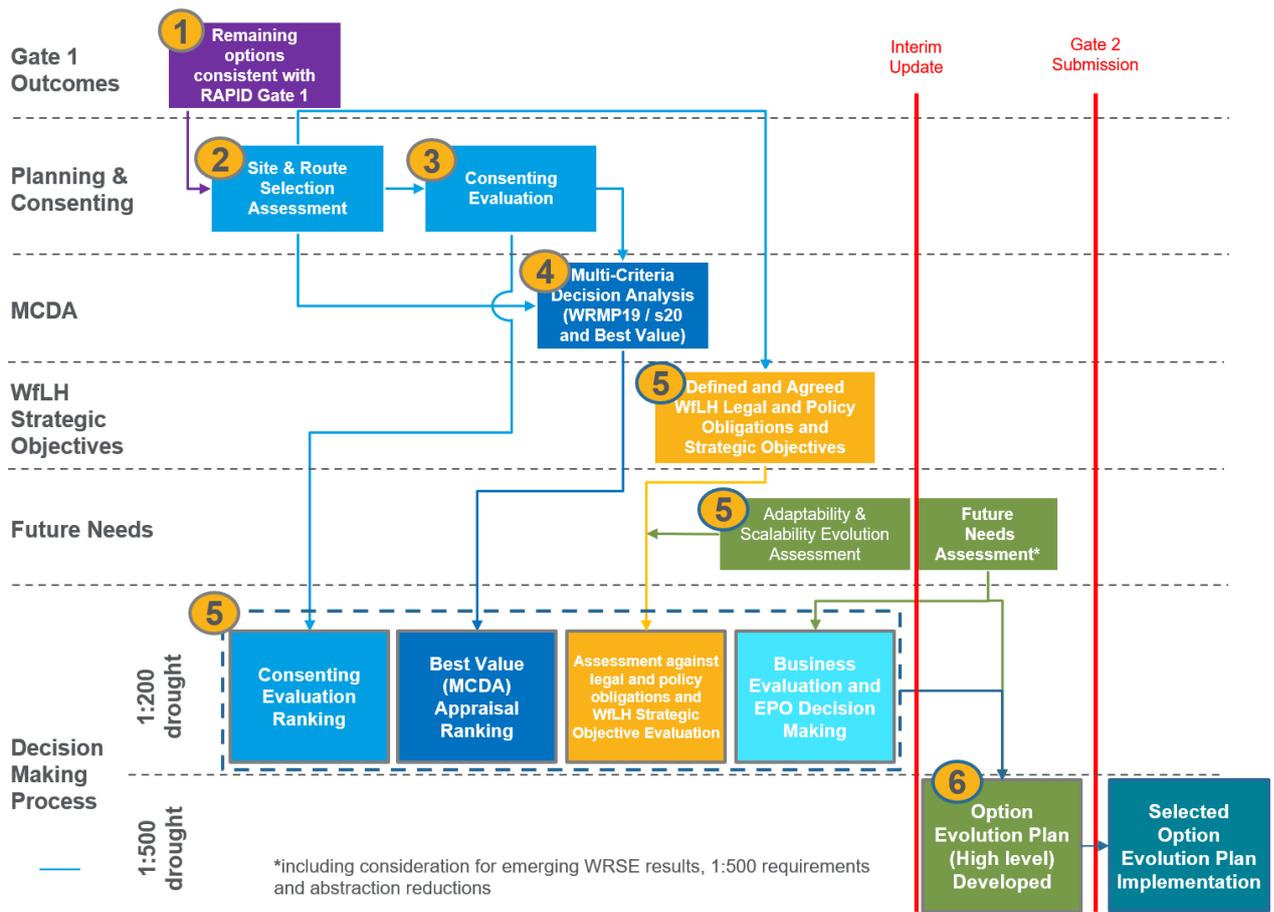


Figure 1 – Overview of the Options Appraisal Process

5 Summary of Options Appraisal results so far

Our OAP ranks the Options against each other, taking into account all factors described above.

The process to date has produced a consistent pattern of rankings, with the likelihood of gaining planning consent, the MCDA and the evaluation of Options against the agreed SW Legal and Policy Obligations and Strategic Objectives, all producing consistent results.

The Options based around enhancing the daily offtake that can be abstracted from the HTR consistently rank the highest, scoring best on both cost and environmental impact.

The Options based around transporting recycled water to a new environmental buffer (a lake or a wetland) to at Otterbourne WSW are consistently middle ranking.

Detailed work was carried out to determine that, at this time, Fawley was the most suitable of the possible locations for a desalination plant. The desalination Options are consistently the lowest ranking, scoring the lowest on both cost and environmental impact. Work carried out since Gate 1 has indicated that the desalination Options are considered to be unlikely to be consentable at the locations considered, at this time. As a result, we propose to discontinue work on the desalination Options (A.1 and A.2) at Fawley.

External assurance of the relevant documents has been carried out and made available to the Directors of both SW and (where relevant) PW in advance of this IU. Full details of assurance will be provided at Gate 2. In addition, a review of the bespoke IU documents has been carried out by our external assurer.

The Option Appraisal work completed to date has indicated that the EPO as of 27 September 2021 is currently Option B.4. Work carried out from now on (detailed in the IU Gate 2 Activity Plan) will mature this process to confirm a Selected Option and a Back-Up Option at Gate 2.

We have worked closely with PW on the development of the D.2 and B.4 Options and will continue to do so ahead of Gate 2.

6 Customer and Stakeholder engagement

Engagement with regulators, including RAPID, Ofwat, EA and Natural England (NE) and Drinking Water Inspectorate (DWI) has taken place continuously via a range of forums and at various levels within the organisations to help shape our approach to the OAP and the identification of the EPO. We have incorporated feedback received into the initial OAP and continued to engage with draft results as the OAP met key milestones leading up to the IU.

In general, we have received support for ceasing work on the desalination Option at this time, in the light of better performing alternatives.

We have also carried out customer research and have followed Consumer Council for Water (CCW) best practice. We have engaged with stakeholders (including local planning authorities, politicians and environmental groups) and customers using a range of approaches. This is described in the Customer and Stakeholder plan provided as part of the Interim Update.

We have engaged with over more than 240 informed customers through deliberative approaches and more than over 1,950 in quantitative surveys. This built on the insight from Gate 1 with more than 250 informed customers, 2,300 households and 350 businesses through joint work with Water Resources South East (WRSE) and the thousands of interviews from WRMP19 (more than 5,000) and PR19 (more than 42,000).

The most comprehensive engagement activity was the non-statutory consultation (as detailed in the IU Customer and Stakeholder Engagement document) carried out early in 2021 in advance of a formal planning application. It covered elements of the desalination Base Case and introduced the back-up alternatives in advance of a planning application for the Base Case.

When comparing the Options of desalination, water recycling and transfers, desalination was consistently rated by the different customer groups as the least Preferred Option. It is well understood to be an effective solution, although the potential environmental impacts and cost implications means customer support is lower.

7 Development of the higher-ranking Options

At Gate 2 we will present a Selected Option Evolution Plan that shows how the Selected Option can evolve, adapting to increasing needs of both our and PW's customers that will arise from the WRSE Regional Plan and WRMP24.

We consider that it is prudent to select a Back-Up Option, in addition to a Selected Option. For an Option to act as a viable back-up, there must be sufficient differentiation in routes and infrastructure to mitigate against consenting or delivery issues that could affect the Selected Option.

8 Information provided in the Interim Update

The names of documents forming the Interim Update, as well as an overview of the content of each, is detailed in Table 2.

Table 2 - Interim Update documents

Document Name	Document Content
Strategic Solution Interim Update - Submission Summary	<ul style="list-style-type: none"> Interim Update including documentation to summarise: the outcomes of our Options appraisal; our proposal to cease development of the desalination Options; and progression of the highest-ranking other Options
CDR i Desalination	<ul style="list-style-type: none"> Technical summary underpinning the feasibility and viability of desalination-based Options. This is the conceptual design report using the RAPID template as if we had been presenting a full Gate 2 submission. We are not intending to present this again at Gate 2.
Annex 1 Desalination	<ul style="list-style-type: none"> Detailed technical analysis of the factors influencing the feasibility and viability of the desalination-based Options. Detailed description of the approach and methods utilised to conduct the analysis. Detailed description of the desalination process and technical engineering components required to construct and operate a desalination-based Option. This is the technical supporting document to support CDR i as if we had been presenting a full Gate 2 submission. We are not intending to present this again at Gate 2.
Strategic Solution Interim Update - Options Appraisal Process	<ul style="list-style-type: none"> Setting out the Options Appraisal work undertaken since Gate 1 in respect of the desalination Options and the other Options
Strategic Solution Interim Update - Efficiency of Expenditure	<ul style="list-style-type: none"> An update on expenditure incurred to date and proposals on how to treat expenditure incurred up to Gate 2 (including early start Gate 3 activities)
Strategic Solution Interim Update - Regulator and other statutory bodies engagement Plan	<ul style="list-style-type: none"> Intentions for liaising with relevant bodies and our Solution partner up to Gate 2 in respect of the work to be covered in our Gate 2 submission and the requirements of our engagement beyond Gate 2
Strategic Solution Interim Update – Activity plan to Gate 2	<ul style="list-style-type: none"> Includes activities covered between the 27 September to the Gate 2 submission on the 6 December and should be read in conjunction with the Gate 1 submission: Gate 2 activity plan. Planned activities for testing, in the context of the move to a 1-in-500-year drought standard required for WRMP24, the outcome of the Options appraisal work undertaken since Gate 1. Planned activities to progress the Selected Option as the potential new base case.
Strategic Solution Interim Update - Customer and Stakeholder Engagement	<ul style="list-style-type: none"> A summary of work that has been carried out to date showing customer and stakeholder preferences for the SROs in the OAP.

Appendix 1 - Submission Navigation and Glossary

Navigating Southern Water’s Interim Update

The SW Interim Update includes the detailed feasibility and concept design report for desalination in the RAPID Accelerated Gate 2 Submission Template and multiple technical annexes that substantiate the information included and provide evidence of our technical development, Options appraisal work and stakeholder engagement on the Options as detailed in the Submission Summary.

There are eight documents forming the Interim Update. The Interim Update submission summary (this document), the Conceptual Design and Detailed Feasibility document (CDR i Desalination), and five supporting annexes.

The supporting documents include detailed technical information on pausing work on the Desalination solution and progressing with the other Options. These documents set out the planned activities for testing, in the context of the move to a 1-in-500-year drought standard required for WRMP24, and the outcome of the Options appraisal work we have undertaken since Gate 1. A structure of this Interim Update submission is illustrated in Figure 2.

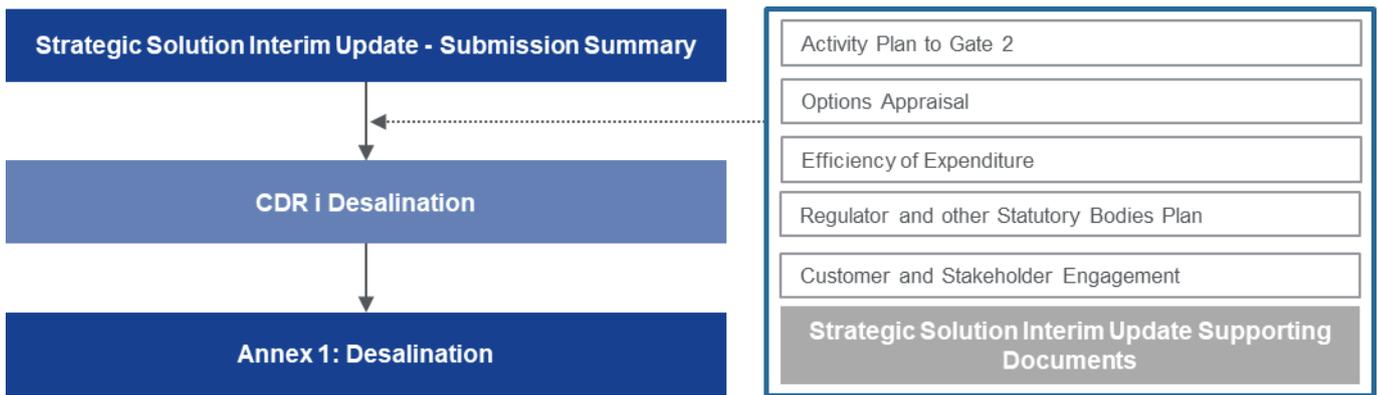


Figure 2 - Interim Update submission structure

Interim Update Submission Glossary

Term or acronym	Definition
1-in-200-year	A severe drought - the return period of a significant drought and is the design drought year in WRMP19
1-in-500-year	An extreme drought - WRMP19 models 1-in-500-year events as sensitivities but does not proposed infrastructure solutions to meet this drought
AA	Appropriate Assessment
AACE	Association for the Advancement of Cost Engineering
ABE	All Best Endeavours
ABMA	American Boiler Manufacturers Association
ABP	Association of British Ports
ACWG	All Company Working Group
ADO	Average Deployable Output
ADSL	Asymmetric Digital Subscriber Line
AEoI	Adverse Effect on Integrity (HRA terminology)
AI	Aggressiveness Index
AIC	Average Incremental Cost
ALC	Agricultural Land Classification
ALM	Access, Lifting and Maintenance review
ALP	Asset Lifecycle Process
ALS	ALS Laboratories (UK) Limited
AMC	Alarm Monitoring Centre
AMP	Asset Management Plan
AMP7	Asset Management Plan 7 - the UK water industry's seventh AMP, detailing the programme of capital works to be completed between 1st April 2020 and 31st March 2025
AMR	Automatic Meter Reading - A type of water meter that can be read remotely using drive-by technology
AOC	Assimilable Organic Carbon
AOD	Above Ordinance Datum
AONB	Area of Outstanding Natural Beauty - an area of countryside in England, Wales or Northern Ireland which has been designated for conservation under the Countryside and Rights of Way Act 2000 to protect, conserve and enhance its natural beauty
AOP	Advanced Oxidation Process
APC	Additional Project Costs
Appointee	Company that has been appointed by Ofwat to manage water services across a particular geographical area or region
Appraisal	Any form of assessment that follows a structured process, either standard industry practice or developed by SW, to evaluate certain criteria or characteristics
AQMA	Air Quality Management Area
ASR	Aquifer Storage Recharge

Term or acronym	Definition
Associated Development	Under the Planning Act 2008, development associated with the principal development, which supports the construction or operation of the principal development or to address its impacts
ASTR	Aquifer Storage Transfer and Recovery
Back-Up Option	Gate 2 will confirm a Selected Option for SW. The Back-Up Option is a secondary option which will be progressed on an alternative path and activated in the event that the Selected Option becomes undeliverable.
Back-Up Option Evolution Plan	A plan to be submitted by SW at Gate 2 of the Gated Process, detailing how the Back-Up Option is expected to evolve to meet the increasing future needs of water customers in SW's region as set out in the Future Needs Assessment
Base Case	The preferred strategy in WRMP19 including Option A.1 (75MI/d desalinated water from Fawley to Testwood WSW)
BAU	Business As Usual
BB	Building Blocks
BCM	Buildability Construction Management
BEIS	Department for Business, Energy & Industrial Strategy
Best Value for Customers	Design, delivery and operation of an asset that protects the water supply to SW customers with as little negative impact as possible on them and their local environment, whilst meeting national, regional and SW corporate objectives
BGS	British Geological Survey is a world-leading geological survey. It focuses on public-good science for government, and research to understand earth and environmental processes
BI	Business Intelligence
BIM	Building Information Modelling
BNG	Biodiversity Net Gain
BOD	Biological Oxygen Demand
BOTEX	Baseline Total Expenditure
BP	Bio-polymers
BPT	Break Pressure Tank
BS	British Standards
BWRO	Brackish Water Reverse Osmosis
CA	Cellulose Acetate
CAG	Customer Action Group
CAP	Competitively Appointed Provider
CAPEX	Capital Expenditure
Catchment	The area of region where all water flows to a single point, e.g. for a wastewater catchment, all wastewater flows to a single WTW for treatment. Note, refer to WWC for wastewater catchment.
CAW	Carbon Accounting Workbook
CBA	Cost Benefit Appraisal
CBS	Cost Breakdown Structure
CCMA	Coastal Change Management Area
CCPP	Calcium Carbonate Precipitation Potential

Term or acronym	Definition
CCS	CCS Candy estimating platform used by Cost Estimating Team
CCW	Consumer Council for Water
CDE	Common Data Environment
CDM	Construction Design and Management CDM Regulations
CDOC	Chromophoric Dissolved Organic Carbon
CDR	Conceptual Design Report
CEA	Cumulative Effects Assessment
CEB	Chemically Enhanced Backwash
CEC	Constituents of Emerging Concern Contaminants of Emerging Compounds
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CEMP	Construction Environmental Management Plan - document that details the measures and actions to be taken to minimise environmental impacts during construction
CFA	Continuous Flight Auger
CFD	Computational Fluid Dynamics
CIP	Cleaning In Place - an enhanced chemical cleaning cycle intended to remove the most strongly adhered fouling agents from an asset, in this context from MF, UF or RO membranes. CIP is a non-routine activity, typically occurring at intervals of a month or longer.
CIT	Cost Intelligence Team
Cluster (as used in MCDA in Options Appraisal)	A group of criteria with a common theme e.g. environment, society
Cluster (as used in Site and Route selection in Options Appraisal)	Geographical groupings of terrestrial, marine intake and marine outfall parcels which are configured together
CNI	Critical National infrastructure (Including water supply)
COD	Chemical Oxygen Demand
COMAH	Control of Major Accident Hazard Regulations 1999
Component	The key engineering items that contribute to each option e.g. pipeline, water recycling plant
Configuration	The structure of each Option (e.g. technology choice, route to deliver water)
Consenting Evaluation	Assessment of each option as part of the OAP against a range of planning, consenting, land and environmental criteria informed by relevant policy and legislative requirements in order to understand the likely consenting risks with each option
Constrained List	The options list from which the Long List Options were selected
CORMIX	CORMIX modelling software
COVID19	Coronavirus Disease
CP	Control Point
CPIH	Consumer Prices Index Including Owner Occupiers' Housing Costs (UK)
CRoW	Countryside and Rights of Way

Term or acronym	Definition
CSMG	Common Standards Monitoring Guidance
CSMR	Chloride-to-Sulphate Mass Ratio
Ct	The product of the concentration of a disinfectant and the contact time with the water being disinfected
CT	Contact Tank
CV	Curriculum vitae
D&B	Design and Build
DAF	Dissolved Air Flotation
DAPI	4',6-diamidino-2-phenylindole
DBFOM	Design, Build, Finance, Operate & Maintain
DBP	Disinfection By-products
DC	Data Centre
DCO	Development Consent Order - a DCO is a statutory instrument (law) that grants consent for a Nationally Significant Infrastructure Project under the terms of the Planning Act 2008. A DCO can combine consent to develop, operate and maintain a project, alongside a range of other approvals that would normally have to be obtained separately, such as listed building consent, deemed marine licence and certain environmental consents. A DCO can also contain powers for the compulsory acquisition and temporary possession of land.
Defra	Department for Environment Food & Rural Affairs - Defra is the government department responsible for environmental protection, food production and standards, agriculture, fisheries and rural communities.
DfT	Department for Transport
DI	Distribution Input
DIC	Differential Interference Contrast
Dissolved Air Flotation (DAF)	A water treatment process that clarifies wastewaters by the removal of suspended matter such as oil or solids.
DMA	District Metered Area
DMF	Dual-Media Filter
DMWG	Decision-Making Working Group
DN	Nominal Diameter
DNO	Distribution Network Operator
dNPS	draft National Policy Statement
dNPSWRI	draft National Policy Statement for Water Resources Infrastructure
DO	Dissolved Oxygen
DO	Deployable Output
DOC	Dissolved Organic Carbon
DOM	Dissolved Organic Matter
DP	Drought Plan
DPC	Direct Procurement for Customers
DPR	Direct Potable Reuse
DQM	Data Quality Management

Term or acronym	Definition
Drought Order	Powers granted by the Secretary of State during drought to modify abstraction / discharge arrangements on a temporary basis
Drought Permit	An authorisation granted by the Environment Agency under drought conditions, which allows for abstraction / impoundment outside the schedule of existing licences on a temporary basis
DS	Dry Solids
DTM	Digital Terrain Model
DWF	Dry Weather Flow
DWI	Drinking Water Inspectorate
DWIRMAS	Drinking Water Inspectorates Risk Management Accreditation Scheme
DYAA	Dry year annual average - represents a period of low rainfall and unrestricted demand
DYCP	The period(s) during the year when water resource zone supply demand balances are at their lowest
DYMDO	Dry year minimum deployable output - this is the autumn period in a dry year when groundwater levels and river flows are at their lowest and sources are constrained to their minimum deployable outputs
E&C	Engineering & Construction
EA	Environment Agency
EAM	Enterprise Asset management
EBCT	Empty Bed Contact Time
EBL	Environmental Buffer Lake
EBU Emerging Back-Up Option	Approaching Gate 2 there will be an emerging Back-Up Option for SW. The Back-Up Option is a secondary option which will be progressed on an alternative path and activated in the event that the Selected Option becomes undeliverable
ECI	Early Contractor Involvement
EDC	Endocrine Disrupting Compound
EEM	Excitation Emission Matrix
EFM	Enhanced Flux Maintenance - also called chemically enhanced backwashing. EFM is specific to membrane filtration systems whereby chemicals are dosed into washwater to enhance the cleaning performance.
EfW	Energy from Waste
EHV	Extra High Voltage
EIA	Environmental Impact Assessment - the aim of EIA is to protect the environment by ensuring that a relevant authority (local planning authority or Secretary of State) when deciding whether to grant a planning permission or DCO for a project which is likely to have significant effects on the environment does so in the full knowledge of the likely significant effects and takes this into account in the decision making process. EIA also enhances public engagement in the process as consultation on EIA is mandatory.
EICA	Electrical, Instrumentation, Control and Automation
EMS	European Marine Site
ENCA	Enhancing a Natural Capital Approach
ENG	Environmental net gain
EP	Engagement Plan (with Regulators and other statutory bodies)
EPC	Engineering, Procurement and Construction
EPH	Extractable Petroleum Hydrocarbons

Term or acronym	Definition
EPO Emerging Preferred Option	At the Interim Update an Emerging Preferred Option has been identified through the OAP, this will become the Preferred Option at Gate 2
EPO Emerging Preferred Option	At the Interim Update an Emerging Preferred Option has been identified through the Options Appraisal process, this will become the Selected Option at Gate 2
EPP	Evidence Plan Process
ERD	Energy Recovery Devices
ERP	Enterprise Resource Planning
ES	Environmental Statement required as part of a planning application that is EIA development.
ESB	Engineered Storage Buffers
ESEV	Environmental, Social, Economic, Valuations
ESW	Essex and Suffolk Water
ETS	Engineering Technical Services
EU	European Union
EUECJ	European Union Court of Justice of the EU communities (translated)
EVH	Extra High Voltage
EVL	Environment Values Look-up
FA	Immunofluorescence assay
Fawley Site	The site described in WRMP19
FCERM	Flood and Coastal Erosion Risk Management
FD or Final Determination	Final Determination - set of documents published by Ofwat in December 2019 that specify the obligations during AMP7
FE	Final Effluent
FFT	Full Flow to Treatment (process capacity)
FOG	Fats, Oils & Greases
FRT	Failure Response Time
FTE	Full Time Equivalent
FTS	Find-a-Tender service
Future Needs Assessment	The further work to be carried out by SW prior to Gate 2 of the Gated Process to test the suitability of each of the Options to meet long term water supply requirements and therefore sustainability of supply. This work will test the outcome to date of our OAP, which has been undertaken in the context of a 1-in-200 year drought standard and WRMP19, by considering the suitability of each of the Options in the context of the transition to regional water resources planning, the requirements of WRMP24, a 1-in-500 year drought standard and the need to consider environmental destination.
FWL	Fawley Waterside Limited
Gated Process	The formal staged process, run by Ofwat, for specific water companies to investigate solutions and for regulators to review progress and determine how, and if, the solutions will progress.
GBNNS	Great British Non-Native Species Secretariat
GFS	Glass Fused to Steel
GHGs	Green House Gases
GIS	Geographic Information System - computer software system for capturing, storing, checking, and displaying data related to positions on the Earth's surface.

Term or acronym	Definition
GRC	Government Risk Control
Grid	Bulk transfer distribution infrastructure
Ground water	Water held underground in the soil or in voids in rock
GSP	Grid Supply Point
GW / Gateway	Gate/stage of the RAPID Gated Process
GWDTE	Groundwater Dependent Terrestrial Eco-systems
H&S	Health and Safety
HA	Hampshire Andover WRZ
HAA	Haloacetic Acids
HAZOP	Hazard and Operability Review
HGVs	Heavy Goods Vehicles
HIC	Hazard Identification Checklist
HK	Hampshire Kingsclere WRZ
HLPS	High-Lift Pumping Station
HLR	Hydraulic Loading Rate
HMI	Human Machine Interface
HMWLP	Hampshire Minerals and Waste Local Plan
HoF	Hands off Flows - EA specifies a level of flow in a river below which any abstractor may take no water at all
HR	Hampshire Rural WRZ
HRA	Habitats Regulation Assessment - assessment to consider potential effects on designated European sites
HS	Humic Substances
HSE	Hampshire Southampton East
HSW	Hampshire Southampton West
HT	Havant Thicket
HTR	Havant Thicket Reservoir
HTWSR	Havant Thicket Winter Storage Reservoir
HV	High Voltage
HW	Hampshire Winchester WRZ
IAP	Initial Assessment of Plans - set of documents published by Ofwat in January 2019 which first set out the proposed strategic resource process and Gated Process
IAQM	Institute of Air Quality Management
IEMA	Institute of Environmental Management and Assessment
IEX	Ion Exchange
IIoT	Industrial Internet of Things
ILR	Inverse Larson Ratio
IMS	Immunomagnetic separation

Term or acronym	Definition
Infra	Works outside of the boundary on existing or proposed Southern Water sites
INNS	Invasive Non Native Species
Inshore Fisheries and Conservation Authorities (IFCA)	Committees or joint committees of the local authorities that fall within an IFC district. They are tasked with the sustainable management of inshore sea fisheries resources in their local area. They are made up of representatives from the constituent local authorities along with people from across the different sectors that use or are knowledgeable about the inshore marine area, such as commercial and recreational fishermen, environmental groups and marine researchers, who offer their time voluntarily.
Interim Update (IU)	Submission to RAPID on 27 September 2021 focusing on SW's decision to no longer progress the desalination options as part of the Gated Process.
IoT	Internet of Things
IOW	Isle of Wight
IP CCTV	Internet Protocol Closed-Circuit Television
IPR	Indirect Potable Reuse
IROPI	Imperative Reasons of Overriding Public Interest
IT	Information Technology
IT/OT	Information Technology / Operational Technology
ITA	Independent Technical Advisor
ITT	Invitation to Tender
IX	Ion Exchange
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
LCDR	Low Complexity Delivery Route
LC-OCD	Liquid Chromatography Organic Carbon Detection
LED	Light Emitting Diode
Legal and Policy Obligations	The legal obligations and government (including other public bodies) policy obligations relevant to the OAP and SW's selection of the SRO at the next stage of the Gated Process
LIDAR	Light Detection and Ranging
LMW	Low molecular weight
LNR	Local Nature Reserve
Local Harbour Authorities	Independent body that is responsible for running a harbour. Most harbours are administered by statutory harbour authorities that are governed in accordance with local legislation.
LOD	Limit of Detection
Long List	The ten Options, including the Base Case and the alternatives.
LPA	Local Planning Authorities - the local government body that is empowered by law to exercise planning functions for a particular area either of a district, borough unitary or county council.
LPCB	Loss Prevention Certification Board
LSE	Likely Significant Effect
LSI	Langelier Saturation Index
LSO	Long Sea Outfall

Term or acronym	Definition
LVIA	Landscape and Visual Assessment
LWS	Local Wildlife Site
M	Million
M&E	Mechanical and Electrical
MAGIC	Multi Agency Geographic Information for the Countryside
Management Information System (MIS)	An information system used for decision-making, and for the coordination, control, analysis, and visualization of information in an organization.
MAR	Managed Aquifer Recharge
Marine Strategy Framework Directive (MSFD)	Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy. A European Directive aimed at achieving or maintaining Good Environmental Status in European seas.
MarLIN	Marine Life Information Network
MBR	Membrane Bio-Reactors
MCC	Motor Control Centre
MCDA	Multi Criteria Decision Analysis
MCZ	Marine Conservation Zone
MCZA	Marine Conservation Zone Assessment
MDL	Minimum Detection Limit
MDO	Minimum Deployable Output - Deployable output for the period when groundwater levels are at their lowest
MEAT	Most Economically Advantageous Tender
Mechanical, Electrical, Instrumentation, Control and Automation (MEICA)	Discipline related to mechanical and electrical engineering
MED	Multi-effect Distillation
MF	Microfiltration
MF-UF	Microfiltration/Ultrafiltration
MGD	Million Gallons per Day
MGJv	Southern Water Delivery Partner
MHCLG	Ministry of Housing, Communities and Local Government - This has recently been changed to Department of Levelling Up, Housing and Communities.
MI/d	Megalitres (million litres) per day
MML	Mott MacDonald Limited
MMO	Marine Management Organisation - licence, regulate and plan marine activities in the seas around England so that they're carried out in a sustainable way. MMO is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs.
MOD	Ministry of Defence - the British government department responsible for implementing the defence policy set by Her Majesty's Government
MRF	Minimum Retained Flow

Term or acronym	Definition
MSF	Multi-Stage Flash
NC	Natural Capital
NCA	National Character Area
NCA	Natural Capital Assessment
NCSC	National Cyber Security Centre - NCSC.GOV.UK
ND	Nominal Diameter
NDMA	N-nitrosodimethylamine
NE	Natural England
NEC	New Engineering Contract
NFNP	New Forest National Park
NIS	Network and Information Systems Regulations 2018: Security standard
NNR	National Nature Reserve
NOM	Natural Organic Matter
Non Infra	Works carried out on existing or proposed Southern Water sites
NPPF	National Planning Policy Framework - sets out the Government's economic, environmental and social planning policies for England. The policies set out in the framework apply to the preparation of local and neighbourhood plans and to decisions on planning applications under the TCPA regime. The policies set out in the framework apply to the preparation of local and neighbourhood plans and to decisions on planning applications under the TCPA regime.
NPS	National Policy Statement - produced by government under the Planning Act 2008. They comprise the government's objectives for the development of nationally significant infrastructure in a particular infrastructure sector (energy, transport, water, waste water and waste). There are currently 12 designated NPS, setting out government policy on different types of national infrastructure development. Applications for DCOs are decided in accordance with any relevant NPS(s). The Water Resources Infrastructure NPS is currently in draft form and must include an explanation of how the policy takes account of government policy relating to the mitigation of, and adaptation to, climate change and design. They comprise the government's objectives for the development of nationally significant infrastructure in a particular infrastructure sector (energy, transport, water, waste water and waste). There are currently 11 designated NPS, setting out government policy on different types of national infrastructure development. Applications for DCOs are decided in accordance with NPSs.
NPV	Net Present Value
NSI	Net Social Impact
NSIP	Nationally Significant Infrastructure Project
NTU	Nephelometric Turbidity Units
NWEBS	National Water Environment Benefit Survey
O&M	Operation and Maintenance
OAM	Operational Asset Management Programme (EAM and GIS)
OAP	Options Appraisal Process
OB	Optimism Bias
OBC	Outline Business Case (DPC related)
OBR	Office for Budget Responsibility

Term or acronym	Definition
ODI	Outcome Delivery Incentive
ODPM	Office of Deputy Prime Minister
OEP	Option Evolution Plans
OFTO	Offshore Transmission Owner
Ofwat	Water Services Regulation Authority - The economic regulator of the water sector in England and Wales
OGP	Oxford Global Projects
OH	Overhead
OJEU	Official Journal of the European Union
OPC	Open Platform Communications
OPEX	Operational Expenditure
OPH	Contractor Overhead & Profit.
Option	Single proposed method considered as part of Gate 2 submission. The Options include A.1, A.2, B.2-B.5, D.1 and D.2. Please note, some options were removed prior to Interim Update. For consistency with the terminology used in PR19 Final Determinations and the RAPID Strategic Solution Accelerated Gate 1 Submission: Initial Concept Design template. These alternatives are described as Options, however, because SW is using all best endeavours to deliver the Base Case, these are seen as alternatives, rather than 'options' as such.
Option A.1	75 MI/d Deployable Output (DO) desalination at Fawley direct to Testwood WSW;
Option A.2	61 MI/d DO desalination at Fawley direct to Testwood WSW
Option B.1	61 MI/d Recycled water sent to Lower Itchen, abstraction and transferred for treatment at Otterbourne Water Supply Works (WSW)
Option B.2	61 MI/d DO recycled water (indirect) sent to Environmental Buffer Lake (EBL) and treated at Otterbourne WSW (Water Recycling Plant (WRP) supplied by Budds Farm Wastewater Treatment Works (WTW));
Option B.3	61 MI/d DO recycled water (direct) sent to Otterbourne WSW
Option B.4	75 MI/d DO transfer between HTR and Otterbourne WSW (augmented with a 15 MI/d WRP to supplement HTR)
Option B.5	75 MI/d DO of recycled water (indirect) sent to EBL and treated at Otterbourne WSW (WRP supplied by Budds Farm and Peel Common WTW);
Option D.1	A combination of 40 MI/d Desalinated water to a large coastal industrial facility with existing South West Water (SWW) supply diverted to SW 30 MI/d In addition a 40 MI/d DO recycled water (indirect) sent to EBL and treated at Otterbourne WSW (WRP supplied by Budds Farm WTW);
Option D.2	61 MI/d DO transfer between HTR and Otterbourne WSW
Option hierarchy	The 'best value for customers' hierarchy of Options requested in the RAPID Strategic Solution Accelerated Gate 1 Submission: Initial Concept Design template
ORAT	Operational Readiness and Training
ORVal	Outdoor Recreation Valuation Tool
OSEC	On-site Electrolytic Chlorination
OT	Operational Technology
OTT	Operational Technology Transformation programme

Term or acronym	Definition
Outline Option Evolution Plan	A plan to be developed by SW for each Option for the purposes of the remainder of the OAP, outlining how the Option would be expected to evolve to meet the increasing future needs of water customers in SW's region as set out in the Future Needs Assessment
P&IDS	Piping and Instrumentation Diagram
PA	Polyamide
Parcel	Identification of potentially suitable sites for the Options
PB	Preferred Bidder (procurement)
PCC	Per Capita Consumption - Amount of water typically used by one person per day
PCV	Prescribed Concentration or Value
PD	Permitted Development - the Town and Country Planning (General Permitted Development) (England) Order 2015 (the GPDO 2015) automatically grants water undertakers planning permission for certain types of development, in accordance with the provisions of the GDPO 2015
PDO	Peak Deployable Output - Deployable output for the period in which there is the highest demand
PDT	Pressure Decay Test
PEA	Preliminary Ecological Appraisal
PEI	Preliminary Environmental Information
PEIR	Preliminary Environmental Information Report
PFA	Preliminary Feasibility Assessment
PFAS	Per- and PolyFluorAlkyl Substances
PFD	Process Flow Diagram - a diagram commonly used in chemical and process engineering to indicate the general flow of plant processes and equipment.
PFI	Private Finance Initiative
PHE	Public Health England
PID	Probability Impact Diagram
PIM	Programme Insight Manager (Southern Water Risk Management System)
PIN	Prior Information Notice (procurement)
Planning Inspectorate (PINS)	The Planning Inspectorate for England and Wales is an executive agency of the Ministry of Housing, Communities and Local Government of the United Kingdom Government with responsibility to make decisions and provide recommendations and advice on a range of land use planning-related issues across England and Wales.
PLC	Programmable Logic Controller
PMO	Project Management Office
POC	Particulate Organic Carbon
PoC	Proof of Concept
PPCP	Pharmaceuticals and Personal Care Products
PPP	Public Private Partnership
PQQ	Pre-Qualification Questionnaire (procurement)
PR19	2019 Price Review
PRA	Preferred Route Announcement (in DCO process)

Term or acronym	Definition
Preferred Strategy	Final strategy for the Western Area as described in WRMP19 (formerly referred to as Strategy A in draft WRMP19) and is what is required to be delivered by the Section 20 agreement
PRISM	Southern Water Cost Management System
Programme	All activities included within the scope of WFLH
Project	Specific activities required to deliver one of the options / solutions / schemes
PRoW	Public Rights of Way - public right of way is a right by which the public can pass along linear routes over land at all times. Although the land may be owned by a private individual, the public have a legal right across that land along a specific route.
PS	Pumping Station - facilities including pumps and equipment for pumping fluids from one place to another.
PSTN	Public Switched Telephone Network
PW	Portsmouth Water
PWWS	Passive Wedge Wire Screens
QCRA	Quantitative Cost Risk Analysis
QSRA	Quantitative Schedule Risk Analysis
R&V	Risk and Value (Southern Water collaborative review meeting and technical checkpoint)
RAG	Red Amber Green
RAMS	Risk Assessment Method Statements
RAP	Remediation Action Plan (provided to RAPID on 31st March and 26th July 2021)
RAPID	Regulatory Alliance for Progressing Infrastructure Development - formed to help accelerate the development of new water infrastructure and design future regulatory frameworks. Made up of the 3 water regulators: Ofwat, Environment Agency and Drinking Water Inspectorate. It was established with the intention of providing a seamless regulatory interface, working with the industry to promote the development of national water resources infrastructure that is in the best interests of water users and the environment.
RBMP	River Basins Management Plan
RBMP2	River Basin Management Plans 2
RCC	Regional Control Centre
RCV	Regulatory Capital Value
Regional Plan / Regional Planning (WRSE related)	Water Resource South East's Regional Plan
Reject Water	Waste product from the Reverse Osmosis process
RFI	Request for Information
RGF	Rapid Gravity Filters
RIGS or RIGGS	Regionally Important Geological Sites (RIGS) or Regionally Important Geological and Geomorphological Sites (RIGGS). Locally designated sites of local, national and regional importance for geodiversity (geology and geomorphology).
RO	Reverse Osmosis - the process used for removing salt from either sea or brackish water.
Routes	A number of alternative routes have been identified for the pipeline component for the sub-option and configurations.
RPI	Retail Price Index

Term or acronym	Definition
RPS	Royal Pharmaceutical Society
RTU	Remote Terminal Unit / Remote telemetry Unit
RTW4	WRc water quality model
RWPS	Raw Water pumping station
S&I	Studies and Investigations
s20	Section 20 - the agreement signed by Southern Water and the Environment Agency during the abstraction licence Inquiry in March 2018 under Section 20 of the Water Resources Act 1991.
SAC	Special Area of Conservation - land designated under Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora. Important high-quality conservation sites that will make a significant contribution to conserving the habitats and species identified in Annexes I and II, respectively, of the Habitats Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds).
SACO	Supplementary Advice on Conservation Objectives
SANG	Suitable Alternative Natural Greenspace - an area that is aimed at protecting a Special Protection Area. Surrounding these SPAs are buffer zones in which development is constrained to prevent damage to the SPA itself. These buffer zones are called the SANGs and development is limited in these areas.
SAR	Sodium Adsorption Ratio
SCADA	Supervisory Control and Data Acquisition
Scheme	Something to be delivered which is outside of the solutions and Gate 1 but is a requirement of the WRMP19 or Section 20 agreement or other SW commitments.
SD	Software Defined
SDB	Supply Demand Balance
SDI	Silt Density Index
SDNPA	South Downs National Park Authority
SEA	Strategic Environmental Assessment - study of the impacts of a proposed plan, programme, policy or legislative action on the environment and sustainability under the Environmental Assessment of Plans and Programmes Regulations 2004
SEC	Size exclusion chromatography
Section 35 direction s.35	A direction by the relevant Secretary of State to confirm that a project is to be regarded as a 'Nationally Significant Infrastructure Project' (NSIP) where that project falls below the thresholds for automatically qualifying as a NSIP.
Selected Option	How Option B4 will be referred to following the Gate 2 submission
Selected Option Evolution Plan	A plan to be submitted by SW at Gate 2 of the Gated Process, detailing how the Selected Option is expected to evolve to meet the increasing future needs of water customers in SW's region as set out in the Future Needs Assessment.
SEMD	Security & Emergency Measures Direction
SIA	Stantec Insight Analytics - the 'SIA' routes are the ones produced by SIAs tool
SINC or SNCI	Site of Importance for Nature Conservation (SINC) or Site of Nature Conservation (SNCI) Sites that have substantive local nature conservation value.
SLD	Single Line Diagram
SLM	Southampton Link Main
SLP	Southampton to London

Term or acronym	Definition
SLT	Senior Leadership Team
SM	Scheduled Monument
SMART targets	Indirect costs calculated from Southern Water's percentage uplifts
SMEs	Subject Matter Experts
SOC	Strategic Outline Case (DPC)
Solution	The overarching method for provision of water i.e. desalination, water recycling, transfer or Additional Solution
SOM	Site Operating Manual
SOP	Standard Operating Procedure
SoS	Secretary of State - cabinet minister in charge of a government department. In this instance, the Secretary of State for Environment, Food and Rural Affairs (DEFRA).
SPA	Special Protection Area - areas classified in accordance with European Council Directive 2009/147/EC on the conservation of wild birds, known as the Birds Directive. SPAs protect rare and vulnerable birds (as listed on Annex I of the Birds Directive), and regularly occurring migratory species.
SQ	Selection Questionnaire
SRO	Strategic Resource Option, one of the solutions due to be submitted to RAPID via the gated process.
SRWRS	Strategic Regional Water Resource Solution
SSEN	Scottish and Southern Electricity Networks
SSO	Short Sea Outfall
SSP	Strategic Solutions Partner
SSSI	Site of Special Scientific Interest - formal conservation designation describing an area that's of particular interest to science due to the rare species of fauna or flora it contains - or important geological or physiological features that may lie in its boundaries.
STPR	Social Time Preference Rate
Strategic Objectives / Strategic Objective	The three strategic objectives set by SW for the SRO and therefore the three objectives relevant to the OAP and SW's selection of the SRO at the next stage of the Gated Process.
Strategy A	Strategy A in the draft WRMP19, which was superseded by the Preferred Strategy in the final WRMP19.
SUDS	Sustainable Urban Drainage Systems
Supply-demand balance	The difference between total water available for use (as supply) and forecast distribution input (as water demand) at any given point in time over the Water Resource Management Plan's planning period / horizon
SVOC	Semi-Volatile Organic Carbon
SW	Southern Water
SWRO	Sea Water Reverse Osmosis
SWW	South West Water
T100	Target 100 Initiative
TAB	Technical Application Bulletin
TBM	Tunnel Boring Machine
TCPA	Town and Country Planning Act 1990
TDS	Total Dissolved Solids

Term or acronym	Definition
The Office of Gas and Electricity Markets (OFGEM)	Regulator for the electricity and downstream natural gas markets in Great Britain
Third-Party Pass-Through Costs	Costs undertaken by others outside of Southern Water
THM	Trihalomethanes
TKN	Total Kjeldahl nitrogen
TN	Total Nitrogen
TOC	Total Organic Carbon
TOTEX	Total Expenditure (Combination of CAPEX and OPEX)
TPH	Total Petroleum Hydrocarbons
Triad	The three half hour settlement periods of highest demand on the GB electricity demand system, between Nov and Feb each year.
TRS	Tender Revenue Stream
TS2T	Thames to Southern Transfer
TSS	Total Suspended Solids
TTRO	Temporary Traffic Regulation Order
TUB	Drought restriction imposed by water companies on customers. Restrictions include not using water supply for leisure pursuits such as watering a 'garden' using a hosepipe, filling a pool such as watering a 'garden' using a hosepipe, filling a pool
TWAO	Transport and Works Act Orders - an order made under the Transport and Works Act 1992 is the usual way of authorising a new railway or tramway scheme in England or Wales. TWA orders may also relate to the construction or operation of inland waterways and certain types of works (e.g. bridges, piers, barrages and tunnels) that interfere with rights of navigation in waters up to the limits of the territorial sea.
UCR	Utilities Contract Regulations
UF	Ultrafiltration - a pressure-driven barrier to suspended solids, bacteria, some viruses, endotoxins and other pathogens to produce water with very high purity and low silt density. Ultrafiltration is a variety of membrane filtration in which hydrostatic pressure forces a liquid against a semi permeable membrane.
UK	United Kingdom
UKAS	UK Accreditation Service
UKWIR	UK Water Industry Research
Uncertainty	Allowance for specific unit costs to fluctuate, not covered in the Risk Register or Optimism Bias
Unconstrained List	List of potential options to be considered for initial screening. Preceding step to the Long List
UPC	User Programmable Controls
UPS	Uninterruptable Power Supply
UPT	Under Pressure Tapping
USEPA	United States Environment Protection Agency
UV	Ultraviolet
UVAOP	Ultraviolet with Advanced Oxidation Process

Term or acronym	Definition
UVT	UV transmittance
UXO	Unexploded Ordinance
VfM	Value for Money
VOC	Volatile organic compound
VOWD	Value of Work Done
VPN	Virtual Private Network
WAA	Water Authorities Association
WAAC	Weight Average Cost of Capital
WAACS	Work and Asset Control System (WAG project)
WACC	Weighted Average Cost of Capital
WAFU	Water available for Use - combined total of deployable output; future changes to deployable output from sustainability changes, climate change etc.; transfers and any future inputs from a third parties; short term losses of supply and outage; and operational use or loss of water
WAG	Way Ahead Group
WALLRUS	Hydraulics Research Computer Software system
WAN	Wide Area Network
WAP	Wireless Application Protocol
WaSC	Water and Sewerage Company
WASSP	Hydraulic Research Computer Software
WBS	Water Booster Station
WBS Work Breakdown Structure	Work Breakdown Structure
WCSN	West Country Sources (North)
WE&RF	Water Environment and Reuse Foundation
WERF	Water Industry Research Foundation
Western Area	Supply area comprising the Hampshire Andover, Hampshire Kingsclere, Hampshire Winchester, Hampshire Rural, Hampshire Southampton East, Hampshire Southampton West and Isle of Wight Water Resource Zones
WFD	Water Framework Directive - a framework for the protection of inland surface waters, estuaries, coastal waters and groundwater.
WFDA	Water Framework Directive Assessment
WfLH	Water for Life Hampshire
WFMC	Workflow Management Coalition
WHO	World Health Organisation
WIA	Water Industry Act
WINEP	Water Industry National Environment Programme
WIPS	Work Improvement Scheme
WIS	Water in Supply or Water Information System

Term or acronym	Definition
WLANS	Wireless Local Area Networks
WLC	Whole Life Cost
WLL	Wireless Local Loop
WoC	Water Only Company
WOM	Works Operation and Maintenance Manuals
WORM	Write Once, Read Many
WPC	Water Production Centre
WPS	Water (or Wastewater) Pumping Station
WQM	Water Quality Monitoring System
WQO	Water Quality Objective
WQRA	Water Quality Risk Assessment
WQSD	Water Quality Shutdown
WRA	Waste Regulation Authority
WRC	Water Research Centre
WRc	Found in Level 3 Desalination section 2.2.3
WRc	Found in Annex 1 section 2.2.3
WRIS	Water Resource Information System
WRMP	Water Resource Management Plan
WRMP, WRMP19, WRMP24	Water Resource Management Plan - statutory plan setting out how water companies will supply healthy, reliable drinking water to homes and businesses for at least the next 25 years. These plans are published at least every five years. The plan published in 2019 is WRMP19 and the next update will be WRMP24 which is intended to be published in 2023.
WRP	Water Recycling Plant - a site whereby wastewater effluent is purified into water that can be reused as a raw water for providing drinking water.
WRPG	Water Resources Planning Guideline/Guidance?
WRSE	Water Resources South East, the regional body relevant for Southern Water's area of operation Zone
WRZ	Water Resource Zone
WSA	Water Services Association
WSI	Written Scheme of Investigation (in relation to EIA / HRA)
WSP	Water Safety Plan
WSP301	WSP Risk Assessment & Monitoring Methodology
WSPS	Water Supply Pumping Station
WSR	Water Service Reservoir
WST	Weather Station
WSW	Water Supply Works - A site whereby raw water is taken from the environment, treated and discharged into the distribution network supplying homes, businesses and industry.
WTW (Also expanded as Wastewater)	Waste Treatment Works - A site whereby wastewater and sewerage is treated and discharged back into the environment.

Term or acronym	Definition
Treatment Works)	
WWC	Waste Water Catchment
WWSS	Waste Water Scheduling System