

# Gate 1 Submission: Annex 21

## Submission Navigation and Glossary

28 September 2020

## Contents

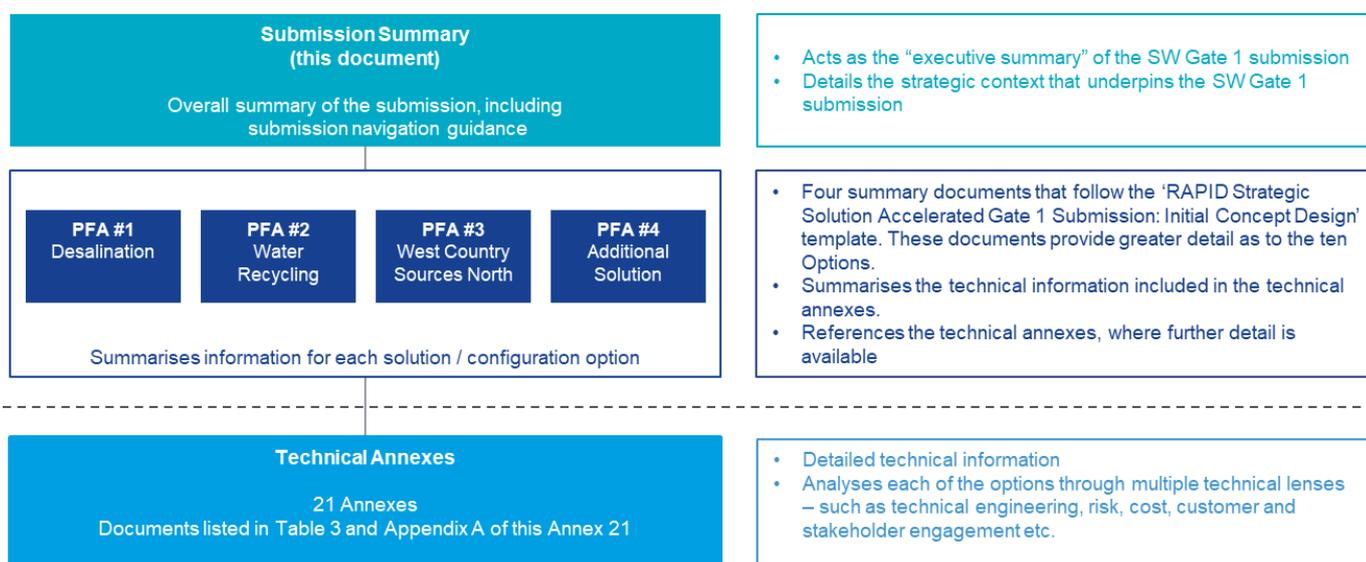
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# 1 Navigating Southern Water’s Gate 1 Submission

The Southern Water (SW) Gate 1 submission consists of multiple documents including four PFAs in the RAPID Accelerated Gate 1 Submission Template and multiple technical annexes that detail the investigation completed in preparing the SW Gate 1 submission to determine the feasibility and viability of the Solutions detailed in the Submission Summary.

There are twenty-six documents forming the submission. Whilst there are twenty-six primary documents, many of these documents have sub-annexes and/or appendices. The documents are structured in three a three-level hierarchy. The purpose of each tier is illustrated in Figure 1.



**Figure 1** - Gate 1 submission document structure

There are four PFA documents, reflective of the four Solution types considered, as detailed in Figure 1. These documents summarise the technical information included in the assured technical annexes. The PFAs are limited to addressing the requirements set out in the ‘RAPID Strategic Solution Accelerated Gate 1 Submission: Initial Concept Design’, with references to relevant locations across the technical annexes as required to provide further information.

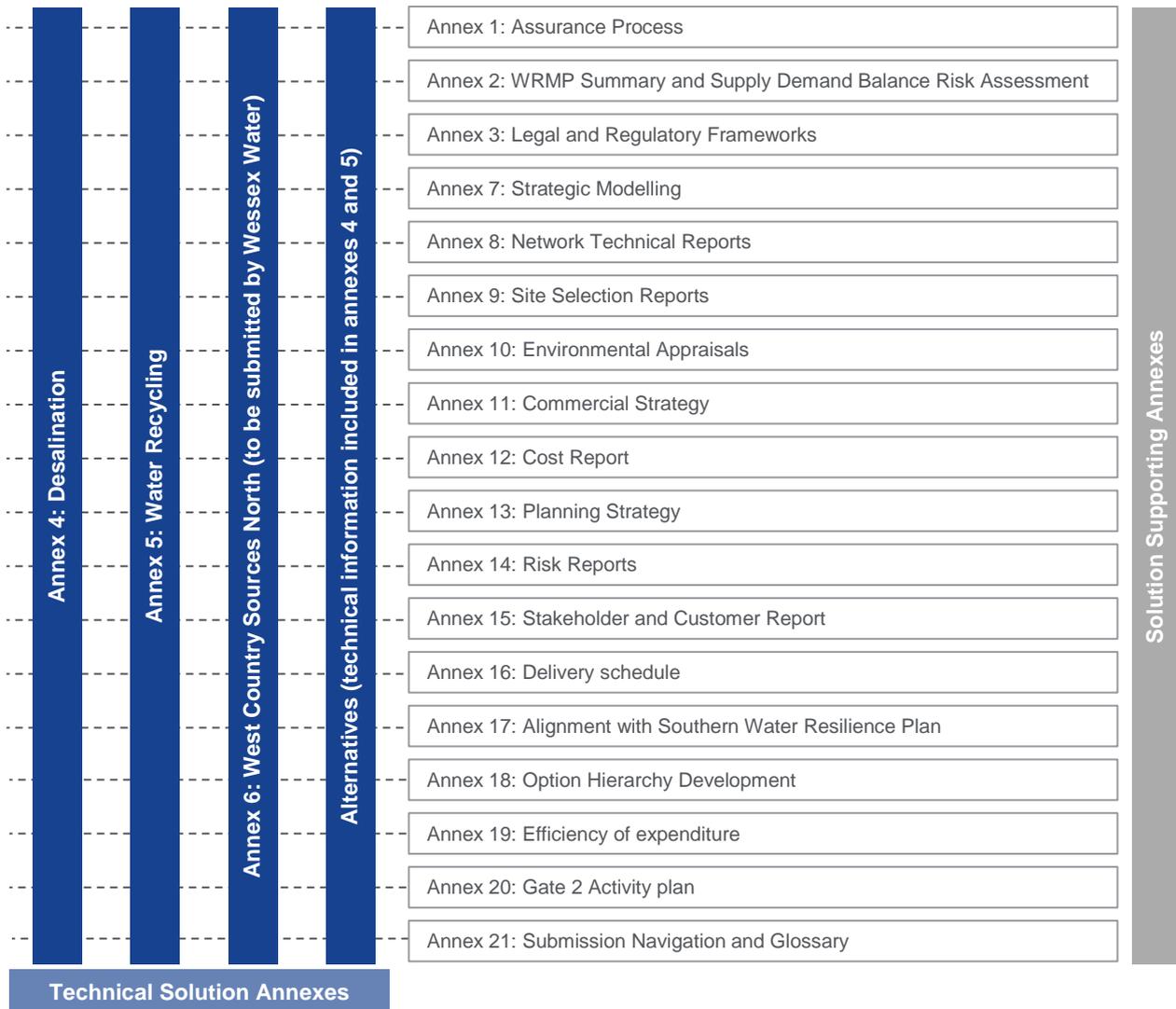
The technical annexes cover multiple considerations and act as the technical basis for the feasibility and viability assessment articulated in the SW Gate 1 submission.

The technical annexes are broken down into two categories:

- **Solution Technical Annexes** – Solely focused on the technical Solutions and processes that underpin and inform the Gate 1 submission PFAs. These documents align with the PFAs and detail all technical investigation associated with each Solution that has been undertaken to date; and
- **Solution Supporting Annexes** - documents that supplement and support the Solution Technical Annexes with wider programme considerations for all Options.

Of the twenty-one, three are Solution technical annexes and all remaining technical annexes are Solution supporting annexes, as illustrated in Figure 2 – Solution Technical Annexes and Solution Supporting Annexes matrix

. It should be noted that underlying technical feasibility and viability information that supports PFA 3 will be submitted by Wessex on behalf of all three associated companies.



**Figure 2 – Solution Technical Annexes and Solution Supporting Annexes matrix**

The names documents forming the SW Gate 1 submission as well as an overview of the content of each is detailed in Table 1.

**Table 1 – SW Gate 1 Submission documents**

Document number	Document Name	Document Content
-	Submission Summary	<ul style="list-style-type: none"> <li>Acts as the “executive summary” of the SW Gate 1 submission and details the strategic context that underpins the SW Gate 1 submission</li> </ul>
PFA 1	Desalination PFA	<ul style="list-style-type: none"> <li>Technical summary of the desalination-based Options, considering technical factors that influence feasibility and viability.</li> </ul>
PFA 2	Water Recycling PFA	<ul style="list-style-type: none"> <li>Technical summary of the water recycling-based Options, considering technical factors that influence feasibility and viability.</li> </ul>

Document number		Document Name	Document Content
PFA 3		West Country Sources North PFA	<ul style="list-style-type: none"> <li>Technical summary of the West Country transfer Option, considering technical factors that influence feasibility and viability.</li> </ul>
PFA 4		Alternatives PFA	<ul style="list-style-type: none"> <li>Technical summary of the alternative Solution (Option D.2), considering technical factors that influence option feasibility and viability.</li> </ul>
Annex 1		Assurance Process	<ul style="list-style-type: none"> <li>Details the assurance process utilised across the submission.</li> <li>SW Board statements approving the assurance process and detailing the assurance process results.</li> </ul>
Annex 2		WRMP and Supply Demand Balance Risk Assessment	<ul style="list-style-type: none"> <li>Details the strategic context that underpins the need from the perspective of the WRMP19 through to the Gate 1 submission.</li> <li>Detail of the supply-demand modelling approach applied and the results to determine the required capacity of the Solutions to meet customer demand.</li> </ul>
Annex 3		Legal and Regulatory Frameworks	<ul style="list-style-type: none"> <li>Detail of the legal and regulatory context and framework for the SW Gate 1 submission.</li> </ul>
Annex 4		Desalination: Technical Report	<ul style="list-style-type: none"> <li>Detailed technical analysis of the factors influencing the feasibility and viability of the desalination-based Options.</li> <li>Detailed description of the approach and methods utilised to conduct the analysis.</li> <li>Detailed description of the desalination process and technical engineering components required to construct and operate a desalination-based Option.</li> </ul>
Annex 5		Water Recycling: Technical Report	<ul style="list-style-type: none"> <li>Detailed technical analysis of the factors influencing the feasibility and viability of the water recycling-based Options.</li> <li>Detailed description of the approach and methods utilised to conduct analysis.</li> <li>Detailed description of the water recycling process and technical engineering components required to construct and operate a water recycling-based Option.</li> </ul>
Annex 6		This is to be provided by Wessex on behalf of all three associated companies.	
Annex 7		Strategic Modelling	<ul style="list-style-type: none"> <li>Detailed description of the approach applied to analyse the hydraulic and customer demand.</li> <li>Detailed results of the hydraulic and customer demand modelling for each of the Options considered.</li> </ul>
Sub-Annex 8.1		Network Technical Report: Desalination	<ul style="list-style-type: none"> <li>Detailed results of the analysis of various pipeline routes to support each of the Options considered.</li> <li>Detailed results of the hydraulic modelling, customer demand and constructability analysis related to each of the Options considered – Separate documents for each of the Solutions.</li> </ul>
Sub-Annex 8.2		Network Technical Report: Water Recycling	
Sub-Annex 8.4		Network Technical Report: Additional Options	
Annex 9	Sub-Annex 9.1	Site Selection Report: Desalination	<ul style="list-style-type: none"> <li>Detailed description of the site selection approach utilised to date.</li> <li>Results of the site selection analysis completed to date for each of the Options considered.</li> </ul>
	Sub-Annex 9.2	Site Selection Report: Water Recycling	
Annex 10	Sub-Annex 10.1	Environmental Appraisal: Desalination	<ul style="list-style-type: none"> <li>Detailed description of the approach taken in the environmental appraisals undertaken to date.</li> <li>Results of the initial concept level environmental appraisal for each of the Options considered in the Gate 1 submission – Separate documents for each of the Solutions.</li> </ul>
	Sub-Annex 10.2	Environmental Appraisal: Water Recycling	
	Sub-Annex 10.4	Environmental Appraisal: Additional Options	

Document number	Document Name	Document Content
Annex 11	Commercial Strategy	<ul style="list-style-type: none"> <li>Detailed description of the assessment of multiple procurement routes available to SW</li> <li>Initial overview of the indicative procurement strategy and planning considerations.</li> </ul>
Annex 12	Cost Report	<ul style="list-style-type: none"> <li>Detailed cost estimate for each of the Options considered within the Gate 1 submission.</li> <li>Quantitative assessment of optimism bias, and associated impact on the cost estimate of all Options.</li> <li>Description of the approach and methodology applied to complete the cost estimates.</li> <li>This document does not include Option C, which will be provided by Wessex.</li> </ul>
Annex 13	Planning Strategy	<ul style="list-style-type: none"> <li>Assessment of the risks, benefits and opportunities of planning and consenting routes available to SW to deliver each of the Options.</li> <li>Identification of a preferred planning and consenting route for each Option.</li> <li>Defined approach and plan to deliver the require planning and consenting activities.</li> </ul>
Annex 14.0	Risk Report Guidance	<ul style="list-style-type: none"> <li>Detailed approach and method to assessing risks, assumptions, issues and opportunities across each Option.</li> </ul>
Sub-Annex 14.1	Risk Report: Desalination	<ul style="list-style-type: none"> <li>Detailed risk, assumption and opportunity matrices for all Options except Option C (14.3 not used).</li> <li>Risk, assumption, issues and opportunity registers detailing impacts, mitigations and scoring to understand the severity of each item.</li> </ul>
Sub-Annex 14.2	Risk Report: Water Recycling	
Sub-Annex 14.4	Risk Report: Additional Solution	
Annex 15	Stakeholder and Customer Report	<ul style="list-style-type: none"> <li>Detailed description of the customer and stakeholder engagement approach utilised.</li> <li>Initial appraisal of customer and stakeholder views related to the Solutions/Options.</li> <li>Detailed plan for customer and stakeholder engagement activities post Gate 1.</li> </ul>
Annex 16	Delivery Schedule	<ul style="list-style-type: none"> <li>Detailed delivery schedule for each of the Options, post Gate 1 through to commissioning and operation.</li> </ul>
Annex 17	Alignment with Southern Water Resilience Plan	<ul style="list-style-type: none"> <li>Detailed key resilience criteria.</li> <li>Detailed explanation of how the Options will provide greater resilience for SW, customers and other stakeholders.</li> </ul>
Annex 18	Option Hierarchy Development	<ul style="list-style-type: none"> <li>Detailed description of the approach utilised to determine the hierarchy representing best value for customers.</li> <li>Hierarchy of Options from a 'best value for customers' perspective, based upon the information available at Gate 1.</li> </ul>
Annex 19	Efficiency of expenditure	<ul style="list-style-type: none"> <li>Detailed breakdown of the costs incurred in the preparation of the SW Gate 1 submission and the forecasted expenditure through following stages of the gated process.</li> <li>Approach and methods utilised by SW to deliver efficient spend of funding through the RAPID gated process.</li> </ul>
Annex 20	Gate 2 Activity plan	<ul style="list-style-type: none"> <li>Detailed plan of activities to be completed between Gate 1 and Gate 2 (Gate 2 activities) to refine current information available in determining the feasibility and viability of the Options.</li> </ul>

Document number	Document Name	Document Content
Annex 21	Submission Navigation and Glossary	<ul style="list-style-type: none"><li>• Description of the SW Gate 1 submission structure.</li><li>• Glossary of terms, definitions and acronyms utilised across the submission.</li><li>• The glossary is applicable to all submission documents.</li></ul>

## 2 Glossary

Appendix A contains the glossary for all documents forming the SW Gate 1 submission.

### 3 Appendix A: SW Gate 1 Submission Glossary

Term, abbreviation 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
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
Additional Solution	Option D.2
ADO	Average Deployable Output
ADSL	Asymmetric Digital Subscriber Line
AEoI	Adverse Effect on Integrity (HRA terminology)
AI	Aggressiveness Index
ALM	Access, Lifting and Maintenance review
ALP	Asset Lifecycle Process
ALS	ALS Laboratories (UK) Limited
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 Ordnance 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
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
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

Term, abbreviation or acronym	Definition
Base Case	The preferred strategy in WRMP19 including Option A.1 (75Ml/d desalinated water from Fawley to Testwood WSW)
BAU	Business As Usual
BB	Building Blocks
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 and at the lowest cost that can balance these aims effectively
BIM	Building Information Modelling
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
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
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
CBA	Cost Benefit Appraisal
CCPP	Calcium Carbonate Precipitation Potential
CDE	Common Data Environment
CDOC	Chromophoric Dissolved Organic Carbon
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 Auguring
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

Term, abbreviation or acronym	Definition
CNI	Critical National infrastructure (Including water supply)
COD	Chemical Oxygen Demand
Component	The key engineering times 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)
Constrained List	The options list from which the Long List Options were selected
COVID19	Coronavirus Disease
CP	Control Point
CSMG	Common Standards Monitoring Guidance
CT	Contact Tank
DAF	Dissolved Air Flotation
DAPI	4',6-diamidino-2-phenylindole
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.
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
DNO	Distribution Network Operator
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
Drought Order	Powers granted by the Secretary of State during drought to modify abstraction / discharge arrangements on a temporary basis

Term, abbreviation or acronym	Definition
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
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
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.
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
ENG	Environmental net gain
EPC	Engineering, Procurement and Construction
ESB	Engineered Storage Buffers
ESEV	Environmental, Social, Economic, Valuations
ESW	Essex and Suffolk Water
EU	European Union
FA	Immunofluorescence assay
Fawley Site	The site described in WRMP19
FD or Final Determination	Final Determination - set of documents published by Ofwat in December 2019 that specify the obligations during AMP7

Term, abbreviation or acronym	Definition
FE	Final Effluent
FFT	Full Flow to Treatment (process capacity)
FOG	Fats, Oils & Greases
FRT	Failure Response Time
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.
GIS	Geographic Information System - computer software system for capturing, storing, checking, and displaying data related to positions on the Earth's surface.
Groundwater	Water held underground in the soil or in voids in rock
GW/Gateway	Gate/stage of the RAPID Gated Process
H&S	Health and Safety
HAA	Haloacetic Acids
HAZOP	Hazard and Operability Review
HLR	Hydraulic Loading Rate
HMI	Human Machine Interface
HoF	Hands off Flows - EA specifies a level of flow in a river below which any abstractor may take no water at all
HRA	Habitats Regulation Assessment - assessment to consider potential effects on designated European sites
HRWZ	Hampshire Resource Water Zone
HS	Humic Substances
HSE	Hampshire Southampton East
HSW	Hampshire Southampton West
HT	Havant Thicket
HTR	Havant Thicket Reservoir
HTWSR	Havant Thicket Winter Storage Reservoir
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
IEX	Ion Exchange
IIoT	Industrial Internet of Things
ILR	Inverse Larson Ratio
IMS	Immunomagnetic separation
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

Term, abbreviation or acronym	Definition
	area, such as commercial and recreational fishermen, environmental groups and marine researchers, who offer their time voluntarily.
IoT	Internet of Things
IOW	Isle of Wight
IPR	Indirect Potable Reuse
IT	Information Technology
ITT	Invitation to Tender
IX	Ion Exchange
JNCC	Joint Nature Conservation Committee
LC-OCD	Liquid Chromatography Organic Carbon Detection
LMW	Low molecular weight
LNR	Local Nature Reserve
LOD	Limit of Detection
Long List	The ten Options, including the Base Case and the alternatives.
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.
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.
LSI	Langelier Saturation Index
LSO	Long Sea Outfall
LWS	Local Wildlife Site
M	Million
MAR	Managed Aquifer Recharge
MarLIN	Marine Life Information Network
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.
MBR	Membrane Bio-Reactors
MCC	Motor Control Centre
MCDA	Multi Criteria Decision Analysis
MCZ	Marine Conservation Zone
MDO	Minimum Deployable Output - Deployable output for the period when groundwater levels are at their lowest
Mechanical, Electrical, Instrumentation, Control and Automation (MEICA)	Discipline related to mechanical and electrical engineering

Term, abbreviation or acronym	Definition
MED	Multi-effect Distillation
MF	Microfiltration
MF-UF	Microfiltration/Ultrafiltration
MGD	Million Gallons per Day
Management Information System (MIS)	An information system used for decision-making, and for the coordination, control, analysis, and visualization of information in an organization.
MI/d	Megalitres 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
MSF	Multi-Stage Flash
NCA	National Character Area
NCSC	National Cyber Security Centre - NCSC.GOV.UK
ND	Nominal Diameter
NDMA	N-nitrosodimethylamine
NE	Natural England
NFNP	New Forest National Park
NIS	Network and Information Systems Regulations 2018: Security standard
NNR	National Nature Reserve
NOM	Natural Organic Matter
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.
NPS	National Policy Statement - produced by government under the Planning Act 2008. They give reasons for the policy set out in the statement 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, wastewater 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.
NSIP	Nationally Significant Infrastructure Project
O&M	Operation and Maintenance

Term, abbreviation or acronym	Definition
OAM	Operational Asset Management Programme (EAM and GIS)
OBC	Outline Business Case (DPC related)
The Office of Gas and Electricity Markets (OFGEM)	Regulator for the electricity and downstream natural gas markets in Great Britain
Ofwat	Water Services Regulation Authority - The economic regulator of the water sector in England and Wales
OJEU	Official Journal of the European Union
OPEX	Operational Expenditure
Option	Single proposed method considered as part of Gate 1 submission. The Options include A.1, A.2, B.1-B.5, D.1, D.2 and C. 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 Ml/d Desalinated water direct to Testwood Water Supply Works (WSW)
Option A.2	61 Ml/d Desalinated water direct to Testwood Water Supply Works (WSW)
Option B.1	61 Ml/d Recycled water sent to Lower Itchen, abstraction and transferred for treatment at Otterbourne Water Supply Works (WSW)
Option B.2	61 Ml/d Recycled water sent to Upper Itchen / Environmental Buffer - treated at Otterbourne WSW
Option B.3	61 Ml/d Recycled water sent direct to Otterbourne Water Supply Works (WSW)
Option B.4	61 Ml/d Recycled water sent to Otterbourne Water Supply Works (WSW)
Option B.5	75 Ml/d Recycled water sent to Environmental Buffer - treated at Otterbourne Water Supply Works (WSW)
Option C	16 Ml/d West Country Sources North water transfer
Option D.1	A combination of 40 Ml/d Desalinated water to a large coastal industrial facility with additional flows from recycled Water
Option D.2	Additional 61 Ml/d raw water direct transfer to Otterbourne Water Supply Works (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
OSEC	On-site Electrolytic Chlorination
OT	Operational Technology
OTT	Operational Technology Transformation programme
PA	Polyamide
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,

Term, abbreviation or acronym	Definition
	including underground development, development on operational land and development to comply with drought orders.
PDO	Peak Deployable Output - Deployable output for the period in which there is the highest demand
PDT	Pressure Decay Test
PEA	Preliminary Ecological Appraisal
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.
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
POC	Particulate Organic Carbon
PoC	Proof of Concept
PPCP	Pharmaceuticals and Personal Care Products
PQQ	Pre-Qualification Questionnaire (procurement)
PR19	2019 Price Review
PRA	Preferred Route Announcement (in DCO process)
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

Term, abbreviation or acronym	Definition
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
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.
RCC	Regional Control Centre
RFI	Request for Information
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.
RPS	Royal Pharmaceutical Society
RTU	Remote Terminal Unit / Remote telemetry Unit
RTW4	WRc water quality model
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

Term, abbreviation or acronym	Definition
SEA	Strategic Environmental Assessment - study of the impacts of a proposed project, plan, policy or legislative action on the environment and sustainability under the Environmental Assessment of Plans and Programmes Regulations 2004
SEC	Size exclusion chromatography
SINC or SNCI	Site of Importance for Nature Conservation (SINC) or Site of Nature Conservation (SNCI) Sites that have substantive local nature conservation value.
SM	Scheduled Monument
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.
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
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.
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
SW	Southern Water
SWRO	Sea Water Reverse Osmosis
T100	Target 100 Initiative
TBM	Tunnel Boring Machine
TCPA	Town and Country Planning Act 1990
TDS	Total Dissolved Solids
THM	Trihalomethanes
TKN	Total Kjeldahl nitrogen
TN	Total Nitrogen
TOC	Total Organic Carbon

Term, abbreviation or acronym	Definition
TOTEX	Total Expenditure (Combination of CAPEX and OPEX)
TSS	Total Suspended Solids
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.
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
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
UVT	UV transmittance
VOC	Volatile organic compound
VPN	Virtual Private Network
WAA	Water Authorities Association
WAACS	Work and Asset Control System (WAG project)
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
WCSN	West Country Sources (North)
WE&RF	Water Environment and Reuse Foundation

Term, abbreviation or acronym	Definition
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.
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
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
WRIS	Water Resource Information System
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.
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
WSP	Water Safety Plan

Term, abbreviation or acronym	Definition
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	Waste Treatment Works - A site whereby wastewater and sewerage is treated and discharged back into the environment.
WWC	Wastewater Catchment
WWSS	Wastewater Scheduling System