

Draft Water Resources Management Plan 2024 Annex 3: Problem Characterisation

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from
**Southern
Water** 

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Glossary

AMP	Asset Management Programme
ASR	Aquifer Storage and Recovery
CSMG	Common Standards Monitoring Guidance
DO	Deployable Output
DWI	Drinking Water Inspectorate
EA	Environment Agency
HAZ	Hampshire Andover
HKZ	Hampshire Kingsclere
HRZ	Hampshire Rural
HSE	Hampshire Southampton East
HSW	Hampshire Southampton West
HWZ	Hampshire Winchester
IOW	Isle of Wight
KME	Kent Medway East
KMW	Kent Medway West
KTZ	Kent Thanet
PCC	Per Capita Consumption
PWC	Portsmouth Water
SBZ	Sussex Brighton
SES	SES Water
SEW	South East Water
SHZ	Sussex Hastings
SNZ	Sussex North
SRO	Strategic Regional Option
SWZ	Sussex Worthing
TWUL	Thames Water
WINEP	Water Industry National Environment Programme

1. Introduction

This annex summarises our problem characterisation assessment for WRMP24. Our assessment was carried out at an area level with a separate set of tables for our Western, Central and Eastern areas to reflect the underlying characteristics and risks to each area.

A summary of the main results is given in Section 2. Detailed assessments for each area are included in sections 3-5.

2. Summary of main results

Table 1: Summary of scores against each factor for each area.

Area	Complexity Factors Score				
	Strategic Needs Score	Supply	Demand	Investment	Overall
Western	5	6	3	7	16
Central	5	6	3	6	15
Eastern	4	4	3	3	10
Company	4.67	5.33	3	5.33	13.67

Table 2: Overall results for each area and the company.

		Strategic Needs Score ('How big is the problem?')			
		0-1	2-3	4-5	6
		(None)	(Small)	(Medium)	(Large)
Complexity Factors Score ('How difficult is it to solve?')	Low (<7)				
	Medium (7-11)			Eastern area	
	High (11+)			Central area Western area Company	

3. Western area

Table 3: Assessment of the 'strategic needs' for WRMP purposes (How big is the problem).

Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
	(Score = 0)	(Score = 1)	(Score = 2)			
S. Level of concern that customer service could be significantly affected by current or future supply side risks, without investment			2		We have large baseline supply-demand balance deficits due to recent sustainability reductions requiring our SRO solution. We face uncertain but potentially large future sustainability reductions (Itchen, Test, No Deterioration). There is some climate change uncertainty, especially for surface water sources (Test, Itchen). There are water quality (Nitrate) risks to several sources even with planned catchment management schemes. The magnitude and timing of benefits from planned Catchment Management schemes is uncertain.	2
D. Level of concern that customer service could be significantly affected by current or future demand side risks, without investment			2		We have ambitious leakage and PCC reduction targets with an associated delivery risk. Our previous growth forecasts carry a degree of uncertainty and may be overly optimistic. Uncertainty analysis builds in headroom (so may reduce risks). Ongoing uncertainty regarding long term changes in public behaviour and demand profiles following COVID-19 pandemic.	2
I. Level of concern over the acceptability of the cost of the likely investment programme , and/or that the likely investment programme contains contentious options (including environmental/planning risks)			2		WRMP19 Preferred plan contains several complex and high-risk supply-side options (e.g., SRO scheme Desalination, Water Recycling, Havant Thicket Reservoir and new bulk supplies). Coupled to this there are large costs associated with these items and associated large cost uncertainties. The development of near-term options and investments is constrained by the Section 20 agreement timeline.	2
					Total	6

Table 4: Assessment of the 'supply side' complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
S(a)	Are there concerns about near term supply system performance , either because of recent Level of Service failures or because of poor understanding of system reliability/resilience under different or more severe droughts than those contained in the historic record? Is this exacerbated by uncertainties about the benefits of operational interventions contained in the Drought Plan ?		1			Following WRMP19 we have a clearer understanding and experience of drought impacts and permit frequency than previously and our planning now considers severe stochastic droughts. We must consider Level of Service risks of the need for more frequent drought permits and orders in the near term. Overall process losses need better characterisation, but these are a small component of supply demand balance. The benefits of interventions in our drought plan are clear and well understood given our position and recent experience.	1
S(b)	Are there concerns about future supply system performance , primarily due to uncertain impacts of climate change on vulnerable supply systems, including associated source deterioration (water quality, catchments etc.), or poor understanding?			2		We need to further consider the wide uncertainty of climate change impacts on flows in the Test and Itchen and associated impacts to DO, especially for the River Itchen. Nitrate and raw water quality in groundwater requires mitigation and ongoing catchment management. The long-term effectiveness of catchment management is uncertain and has a long lag time. Nitrate impacts and schemes (and effectiveness of catchment management)	2
S(c)	Are there concerns about the potential for 'stepped' changes in supply (e.g., sustainability reductions, bulk imports etc.) in the near or medium term that are currently very uncertain ?			2		Our western area has a large water resource WINEP programme of investigation during AMP7 with significant risk of further Sustainability Reductions, particularly for the River Itchen Catchment. Future Application of CSMG standards would have significant supply impacts for both the River Test and River Itchen. We have and continue to develop new bulk supplies which will have a positive impact on supply but there are uncertainties with some proposed transfers from environmental destination challenges and 'No Deterioration' risks under the Water Framework Directive. The Thames to Southern Transfer scheme is also being considered as part of the SRO process.	2
S(d)	Are there concerns that the 'DO' metric might fail to reflect resilience aspects that influence the choice of investment options (e.g., duration of failure), or are			2		We need to do further work with PWC to understand the full conjunctive use benefits and any limitations for the various Havant Thicket and Water Recycling options. We also need to carry out further modelling to understand the resilience benefits (and limitations) of our proposed	2

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
	there conjunctive dependencies between new options (i.e., the amount of benefit from one option depends on the construction of another option). These can both be considered as non-linear problems .					Hampshire Grid, at present this seems to be providing a conjunctive benefit, especially to HSE. There are resilience concerns for our HAZ and HKZ zones where there are single points of failure associated with strategic sources in either zone. The WRMP investment programme has been made more complex by the SRO process and links between major strategic alternatives e.g., Fawley desalination, Itchen Water Recycling and bulk supplies from the TWUL.	
						Total	7

Table 5: Assessment of the 'demand side' complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
D(a)	Are there concerns about changes in current or near-term demand , e.g., in terms of demand profile, total demand, or changes in economics/demographics or customer characteristics?			2		It is uncertain if we will see a long term 'bounce back' effect on the efficiency gains we have seen from our Universal Metering Programme. We have ambitious leakage and Water Efficiency targets with associated delivery risks. Future plans are likely to require us to consider potential supplies to other sectors in drought (as part of the regional resilience plan) which may place further pressure on a region already in deficit. Currently there are no major agriculture/power demands on our supplies. There remains uncertainty about near-term and possibly long-term changes in behaviours as a consequence of the COVID-19 pandemic	2
D(b)	Does uncertainty associated with forecasts of demographic / economic / behavioural changes over the planning period cause concerns over the level of investment that may be required?			2		To achieve our PCC targets will need significant behavioural change from our customers. There is uncertainty regarding the long-term impacts of behaviour changes experienced during the COVID pandemic and lock downs and whether a shift to greater home working will lead to a change in household demand patterns.	2

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
D(c)	Are there concerns that a simple 'dry year/normal year' assessment of demand is not adequate , e.g., because of high sensitivity of demand to drought (so demand under severe events needs to be understood), or because demand versus drought timing is critical.		1			Experience from 2018 has shown risks from freeze-thaw events (peak demand during winter) or other disruptive outage events during periods of low water availability. Such events are captured in our profiling of distribution input but are not presently defined as a planning scenario (i.e., peak demand vs period of minimum availability). Short periods of high demand, e.g., during heat waves place stress upon the network even if the resource position is healthy.	1
						Total	5

Table 6: Assessment of 'investment programme' complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
I(a)	Are there concerns that capex uncertainty (particularly in relation to new or untested technologies) could compromise the company's ability to select a 'best value' portfolio over the planning period?			2		Solutions to meet supply deficits in this area are likely to require desalination, ASR and Water Reuse. These are highly uncertain, new and untested technologies for Southern Water.	2
I(b)	Does the nature of feasible options mean that construction lead time or scheme promotability are a major driver of the choice of investment portfolio?			2		Our Section 20 agreement with the EA fixes delivery timelines and constrains the solutions required to solve our supply deficit. Our investment decisions must also meet the requirements of the Ofwat gated process.	2
I(c)	Are there concerns that trade-offs between costs and non-monetised 'best value' considerations (social, environment) are so complex that they require quantified analysis (beyond SEA) to justify final investment decisions.		1			SEA outcomes were used to rule out options in WRMP19. We expect there to be more focus in upcoming regional plans on natural capital and the use of non-monetised metrics	1

Annex 3: Problem Characterisation

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
I(d)	Is the investment programme sensitive to assumptions about the utilisation of new resources, mainly because of large differences in variable OPEX between investment options?			2		Likely investments include desalination, water recycling and ASR. These are expensive and new to Southern water with highly variable OPEX costs. We need to do further work to understand the best way to utilise the joint Havant Thicket reservoir scheme with PWC.	2
						Total	7
						Grand Total (Complexity)	19
						Grand Total (Strategic Need)	6

		Strategic Needs Score (‘How big is the problem?’)			
		0-1	2-3	4-5	6
		(None)	(Small)	(Medium)	(Large)
Complexity Factors Score (‘How difficult is it to solve?’)	Low (<7)				
	Medium (7-11)				
	High (11+)				Western Area

4. Central area

Table 7: Assessment of the 'strategic needs' for WRMP purposes (How big is the problem).

Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
	(Score = 0)	(Score = 1)	(Score = 2)			
S. Level of concern that customer service could be significantly affected by current or future supply side risks, without investment			2		We have existing baseline deficits caused by lack of resource including delays to AMP6 scheme delivery creating early deficits in the planning period. There are large raw water quality risks to groundwater. There is a high risk of future uncertain sustainability reductions to groundwater sources. There is some Climate Change uncertainty, although smaller than the Western area. Water Quality (Nitrate) risks to several sources even with Catchment Management. The benefit and timing of catchment management options is uncertain.	2
D. Level of concern that customer service could be significantly affected by current or future demand side risks, without investment			2		We have ambitious leakage and PCC reduction targets with an associated delivery risk. Our previous growth forecasts carry a degree of uncertainty and may be overly optimistic. Uncertainty analysis builds in headroom (so may reduce risks). Ongoing uncertainty regarding long term changes in public behaviour and demand profiles following COVID-19 pandemic.	2
I. Level of concern over the acceptability of the cost of the likely investment programme , and/or that the likely investment programme contains contentious options (including environmental/planning risks)			2		WRMP19 Preferred plan contains several complex and high-risk supply-side options (Desalination and Water Recycling). Coupled to this, there are large costs associated with these items and associated large cost uncertainties. Some WRMP19 schemes are on hold due to environmental concerns or other delivery risks (ASR, Pulborough) and strategic alternatives are under consideration. Goal to be Carbon Neutral by 2030.	2
					Total	6

Table 8: Assessment of the ‘supply side’ complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
S(a)	Are there concerns about near term supply system performance , either because of recent Level of Service failures or because of poor understanding of system reliability/resilience under different or more severe droughts than those contained in the historic record? Is this exacerbated by uncertainties about the benefits of operational interventions contained in the Drought Plan?		1			Due to the ongoing outage at Weir Wood reservoir and delays to our WRMP19 schemes (ASR, Pulborough groundwater) we have implemented a new temporary supply agreement with SES to ensure resilience for our SNZ WRZ. We are presently reviewing the potential level of service impacts, if any.	1
S(b)	Are there concerns about future supply system performance , primarily due to uncertain impacts of climate change on vulnerable supply systems, including associated source deterioration (water quality, catchments etc.), or poor understanding?		1			Risks from climate change include sea level rise leading to increased risk of saline intrusion. Nitrate and raw water quality in the Chalk blocks requires mitigation and ongoing catchment management. The long-term effectiveness of catchment management is uncertain and has a long lag time.	1
S(c)	Are there concerns about the potential for ‘stepped’ changes in supply (e.g., sustainability reductions, bulk imports etc.) in the near or medium term that are currently very uncertain?			2		There are significant risks for future sustainability Reductions in all water resource zones and dominantly in SWZ. There are also risks around the long-term sustainability of SNZ groundwater, which is currently under detailed investigation.	2
S(d)	Are there concerns that the ‘DO’ metric might fail to reflect resilience aspects that influence the choice of investment options (e.g., duration of failure), or are there conjunctive dependencies between new options (i.e., the amount of benefit from one option depends on the construction of another option). These can both be considered as non-linear problems .			2		We have few storage sources and options in this area and only limited opportunity for transfers. Consequently, these only provide a small resilience benefit	2

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
						Total	6

Table 9: Assessment of the 'demand side' complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
D(a)	Are there concerns about changes in current or near-term demand , e.g., in terms of demand profile, total demand, or changes in economics/demographics or customer characteristics?			2		It is uncertain if we will see a long term 'bounce back' effect on the efficiency gains we have seen from our Universal Metering Programme. We have ambitious leakage and Water Efficiency targets with associated delivery risks. Future plans are likely to require us to consider potential supplies to other sectors in drought (as part of a regional resilience plan) which may place further pressure on a region already in deficit. Currently there are no major agriculture/power demands on our supplies. There remains uncertainty about near-term and possibly long-term changes in behaviours as a consequence of the COVID-19 pandemic.	2
D(b)	Does uncertainty associated with forecasts of demographic / economic / behavioural changes over the planning period cause concerns over the level of investment that may be required?			2		To achieve our PCC targets will need significant behavioural change from our customers. There is uncertainty regarding the long-term impacts of behaviour changes experienced during the COVID pandemic and lock downs and whether a shift to greater home working will lead to a change in household demand patterns.	2
D(c)	Are there concerns that a simple 'dry year/normal year' assessment of demand is not adequate , e.g., because of high sensitivity of demand to drought (so demand under severe events needs to be understood), or because demand versus drought timing is critical.		1			Experience from 2018 has shown the risks from freeze-thaw events (peak demand during winter) or other disruptive outage events during periods of low water availability. Such events are captured in our profiling of distribution input but are not presently defined as a planning scenario (i.e., peak demand vs period of minimum availability). Short periods of high demand, e.g., during heat waves, place stress upon the network even if the resource position is healthy.	1
						Total	5

Table 10: Assessment of the ‘investment programme’ complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
I(a)	Are there concerns that capex uncertainty (particularly in relation to new or untested technologies) could compromise the company's ability to select a 'best value' portfolio over the planning period?			2		Solutions to meet supply deficits in this area are likely to require desalination and Water Reuse. These are highly uncertain, new and untested technologies for Southern Water.	2
I(b)	Does the nature of feasible options mean that construction lead time or scheme promotability are a major driver of the choice of investment portfolio?			2		Some AMP6 schemes are on hold or paused whilst further environmental investigations take place, and we are investigating level of service impacts associated with these schemes. Much of the area is covered by National Park with associated planning-related constraints	2
I(c)	Are there concerns that trade-offs between costs and non-monetised 'best value' considerations (social, environment) are so complex that they require quantified analysis (beyond SEA) to justify final investment decisions.		1			SEA outcomes were used to rule out options in WRMP19. We expect there to be more focus in upcoming regional plans on natural capital and the use of non-monetised metrics through the regional best value planning approach,	1
I(d)	Is the investment programme sensitive to assumptions about the utilisation of new resources, mainly because of large differences in variable OPEX between investment options?			2		Likely investments include desalination, water recycling and ASR. These are expensive and new to Southern water with highly variable OPEX costs	2
						Total	7
						Grand Total (Complexity)	18
						Grand Total (Strategic Need)	6

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Annex 3: Problem Characterisation

		Strategic Needs Score ('How big is the problem?')			
		0-1	2-3	4-5	6
		(None)	(Small)	(Medium)	(Large)
Complexity Factors Score (‘How difficult is it to solve?’)	Low (<7)				
	Medium (7-11)				
	High (11+)			Central area Western area	

5. Eastern area

Table 11: Assessment of the 'strategic needs' for WRMP purposes (How big is the problem).

Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
	(Score = 0)	(Score = 1)	(Score = 2)			
S. Level of concern that customer service could be significantly affected by current or future supply side risks, without investment			2		<p>Due to the ongoing outage at Weir Wood reservoir and delays to our WRMP19 schemes (ASR, Pulborough groundwater) we have implemented a new temporary supply agreement with SES to ensure resilience for our SNZ WRZ. We are presently reviewing the potential level of service impacts, if any.</p> <p>We are currently forecasting marginal baseline supply-demand deficits for some Eastern area WRZs (especially KTZ).</p> <p>There is a high risk of future sustainability reductions under the current WINEP and future Environmental Destination.</p> <p>Some Climate Change uncertainty, although smaller impacts than Western area.</p> <p>Water Quality (Nitrate) risks to several sources, especially in KTZ even with Catchment Management. The benefit and timing of Catchment Management options remains uncertain.</p>	2
D. Level of concern that customer service could be significantly affected by current or future demand side risks, without investment			2		<p>We have ambitious leakage and PCC reduction targets with an associated delivery risk.</p> <p>Our previous growth forecasts carry a degree of uncertainty and may be overly optimistic.</p> <p>Uncertainty analysis builds in headroom (so may reduce risks).</p> <p>Ongoing uncertainty regarding long term changes in public behaviour and demand profiles following COVID-19 pandemic.</p>	2
I. Level of concern over the acceptability of the cost of the likely investment programme , and/or that the likely investment programme contains contentious options (including environmental/planning risks)			2		<p>WRMP19 Preferred plan contains several complex and high-risk supply-side options (Desalination, Water Recycling). Coupled to this there are large costs associated with these items and associated large cost uncertainties.</p> <p>Some WRMP19 schemes are on hold due to environmental concerns or other delivery risks (ASR,</p>	2

Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
	(Score = 0)	(Score = 1)	(Score = 2)			
					Pulborough) and strategic alternatives are under consideration. Goal to be Carbon Neutral by 2030	
					Total	6

Table 12: Assessment of the 'supply side' complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
S(a)	Are there concerns about near term supply system performance , either because of recent Level of Service failures or because of poor understanding of system reliability/resilience under different or more severe droughts than those contained in the historic record? Is this exacerbated by uncertainties about the benefits of operational interventions contained in the Drought Plan ?		1			Outage - Level of Service Failures EA scrutiny on outage approach and levels Level of service for Drought Permits historically a problem Change in Medway Licence Severe droughts already considered Process losses need better characterisation (but small) Drought plan benefits clear	1
S(b)	Are there concerns about future supply system performance , primarily due to uncertain impacts of climate change on vulnerable supply systems, including associated source deterioration (water quality, catchments etc.), or poor understanding?		1			DWI enforcement on water quality? Nitrate impacts and schemes (and effectiveness of catchment management) Climate change on River Medway Complexity of RMS (3 reservoirs)	1
S(c)	Are there concerns about the potential for 'stepped' changes in supply (e.g., sustainability reductions, bulk imports etc.) in the near or medium term that are currently very uncertain ?			2		Risk of Sustainability Reductions (AMP6 Investigations). New Bulk Supply from SEW (2MI/d).	2

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
S(d)	Are there concerns that the 'DO' metric might fail to reflect resilience aspects that influence the choice of investment options (e.g., duration of failure), or are there conjunctive dependencies between new options (i.e., the amount of benefit from one option depends on the construction of another option). These can both be considered as <i>non-linear problems</i> .			2		Reconsider conjunctive benefits of Bewl-Darwell. Significance of KME to KTZ Transfer.	2
						Total	6

Table 13: Assessment of the 'demand side' complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
D(a)	Are there concerns about changes in current or near-term demand, e.g., in terms of demand profile, total demand, or changes in economics/demographics or customer characteristics?			2			2
D(b)	Does uncertainty associated with forecasts of demographic / economic / behavioural changes over the planning period cause concerns over the level of investment that may be required?			2		To achieve our PCC targets will need significant behavioural change from our customers. There is uncertainty regarding the long-term impacts of behaviour changes experienced during the COVID pandemic and lock downs and whether a shift to greater home working will lead to a change in household demand patterns.	2
D(c)			1				1

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
	Are there concerns that a simple 'dry year/normal year' assessment of demand is not adequate , e.g., because of high sensitivity of demand to drought (so demand under severe events needs to be understood), or because demand versus drought timing is critical.					Experience from 2018 has shown risks from freeze-thaw events (peak demand during winter) or other disruptive outage events during periods of low water availability. Such events are captured in our profiling of distribution input but are not presently defined as a planning scenario (i.e., peak demand vs period of minimum availability). Short periods of high demand, e.g., during heat waves place stress upon the network even if the resource position is healthy.	
						Total	5

Table 14: Assessment of the 'investment programme' complexity for WRMP purposes.

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
I(a)	Are there concerns that capex uncertainty (particularly in relation to new or untested technologies) could compromise the company's ability to select a 'best value' portfolio over the planning period?			2		Solutions to meet supply deficits in this area are likely to require desalination and Water Reuse. These are highly uncertain, new and untested technologies for Southern Water.	2
I(b)	Does the nature of feasible options mean that construction lead time or scheme promotability are a major driver of the choice of investment portfolio?		1			There are potential complications around some strategic schemes (e.g., Aylesford recycling) including access, acceptability and environmental impacts to the River Medway.	1
I(c)	Are there concerns that trade-offs between costs and non-monetised 'best value' considerations (social, environment) are so complex that they require quantified analysis (beyond SEA) to justify final investment decisions.		1			SEA outcomes were used to rule out options in WRMP19. We expect there to be more focus in upcoming regional plans on natural capital and the use of non-monetised metrics through the regional best value planning approach,	1

S	Strategic WRMP risks	No significant concerns	Moderately significant concerns	Very significant concerns	Don't know	Comments / Notes	Score
		(Score = 0)	(Score = 1)	(Score = 2)			
I(d)	Is the investment programme sensitive to assumptions about the utilisation of new resources, mainly because of large differences in variable OPEX between investment options?		1			Likely investments include desalination, water recycling and ASR. These are expensive and new to Southern water with highly variable OPEX costs	1
						Total	5
						Grand Total (Complexity)	16
						Grand Total (Strategic Need)	6

		Strategic Needs Score ('How big is the problem?')			
		0-1	2-3	4-5	6
		(None)	(Small)	(Medium)	(Large)
Complexity Factors Score ('How difficult is it to solve?')	Low (<7)				
	Medium (7-11)			Eastern Area	
	High (11+)			Central Area	Western Area
			Western Area		