Portsmouth Water

WRMP19 Problem Characterisation

03 November 2017

Appendix H

Table 2 Assessment of the strategic needs for WRMP purposes ("How big is the problem?"]

Strategic WRMP risks	No significant concerns Score = 0	Moderately significant concerns Score = 1	Very significant concerns Score =2	Don't know	Justification
S. Level of concern that customer service could be significantly affected by current or future **supply side** risks, without investment		1			In WRMP14 it was identified that PRT do not have a deficit for the 25 year planning period up to 2039/40 with few significant changes since 2014. Since WRMP14 there has been a slight gain in DO from farlington wash water recovery scheme. In a recent DO re-assessment for WRMP19 it there found to be a 20 Ml/d reduction on the last plan. This does not cause a deficit for supply to Portsmouth Water customers however does effect the capacity for bulk supply exports that can be offered to Southern Water requiring further resource development.
D. Level of concern that customer service could be significantly affected by current or future **demand side** risks, without investment			2		The demand modelling in WRMP14 suggests that despite increasing population, declining PCC as a result of metering and efficiencies provides a relatively flat demand. For WRMP19 a reassessment has shown demand to be broadly flat over the planning period. This factor is significant however due to requests from Southern Water for bulk supplies of up to 60 Ml/d in 2028/29 requiring options development. It should be noted however that these options are not driven by, and do not effect, the PRT customer base.
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)		1			No options were put forward for WRMP14. For WRMP19 options will need to be put forward for providing bulk supplies to neighbouring companies. The assessment remains moderate as the options required are not perceived to be contentious. Havant Thicket is widely accepted as regional solution. Furthermore, Havant Thicket is put forward as part of a portfolio of options in what might be considered a 'Twin Track' approach whereby it is supported by demand reduction options including leakage reduction and water efficiency in addition to the Company's continued commitment to achieve 5,000 meter optants per year out to 2029/30.

Table 3 Assessment of supply side complexity for WRMP purposes

Supply side complexity factors	No significant concerns Score = 0	Moderately significant concerns Score = 1	Very significant concerns Score =2	Don't know	Justification
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			There have been no large recent supply failures. PRT have experienced very few droughts therefore there uncertainty over more severe droughts and the benefits of operational interventions. These are being explored in greater detail for WRMP19
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			The results of the WRMP19 'Vulnerability Assessment' to climate change impacts have shown the company to be at a 'Medium' level of risk, although climate change does not drive and future investment options alone and does not frive the investment portfolio.
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**?		1			PRT has recently renewed all of its licences and does not expect any significant reductions as a result of sustainability Havant Thicket amongst other options will be included in the PRT WRMP19 plan as part of a regional solution for supporting bulk supplies to Southern. Given that there is uncertainty over Southerns abstraction on the River Itchen as part of an ongoing enquiry which partially drives the need for bulk supplies, 'Moderately Significant' has been selected. That said however, it is anticipated that regardless of the outcome of the enquiry, Southern Water will still require a bulk supply from PRT.
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**.	0				No concerns have been revealed from the drought scenario testing to suggest the 'DO' metric would fail to reflect resilience and does not influence the choice of investment options

Table 4 Assessment of demand side complexity for WRMP purposes

Demand side complexity factors	No significant concerns Score = 0	Moderately significant concerns Score = 1	Very significant concerns Score =2	Don't know	Justification
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		PRT will require investment options in order to support future bulk supplies to Southern Water
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?		1			Population is inherently uncertain, PRT is in the South East associated higher growth then most of the UK. Brexit adds much uncertainty to Population and Property forecasts These factors to not alter the choice of investment options selected and the final plan has shown to be resilient to most future growth scenarios
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			There is a lack of data company data as to how consumption varies under different drought scenarios given different supply and demand measures therefore analysis is largely based on assumptions

Table 5 Assessment of the investment programme complexity for WRMP purposes

Investment programme complexity factors	No significant concerns Score = 0	Moderately significant concerns Score = 1	Very significant concerns Score =2	Don't know	Justification
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?		1			No untested technologies are included in the PRT in the near term. Effluent Reuse may be considered towards the end of the planning period to support bulk supplies to South East Water however.
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			Construction lead time and scheme promotability are not considered to be a driver of the investment portfolio. In the near term, demand (including bulk supplies) is sufficed by low AISC 'quick win' options whilst larger resource development (Havant Thicket) is required to support future bulk supplies to Southern Water. The timing for delivery of Havant Thicket is arguably less critical than most reservoir schemes as Portsmouth Water already owns the land. Furthermore as Havant Thicket intercepts spring flows before running out sea, it is deemed to have a 'low' environmental impact as is discussed in the SEA/HRA .
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.	0				The portfolio of options that PRTis proposing are not considered to be contentious.
Is the investment programme sensitive to assumptions about the utilisation of new resources, mainly because of large differences in variable opex between investment options?	0				PRT does not believe that the plan is sensitive to assumption of utilisation as the selection of options has not been driven by 'High' opex solutions.

Table 6 Using the results of the problem characterisation

Portsmouth Water

Strategic Needs Score **4**

Complexity Factors Score **9**

		Strategic Needs Score ("How big is the problem")			
		0-1 (None)	2-3 (Small)	4-5 (Medium)	6 (Large)
Complexity Factors Score ("How difficult is it to solve")	Low (<7)				
	Medium(7-11)			**Portsmouth Water**	
	High (11+)				