RISK & VALUE 3 - OPTIONS SCORECARD

Site	Isle of Sheppey
Driver	Resilience
Additional detail	0

Criteria Key	
1	Not acceptable
2	Unlikely to meet criteria
3	Likely to meet criteria
4	Will meet criteria

KEY: Capital carbon impact		KEY: Operational carbon impact	
1	High: BAU solution involving large amounts of in situ civil construction resources (concrete and steel) and/or materials with high carbon intensity. Little or no opportunity for savings	1	Large increase: more than 20% increase in power or chemicals use
2	Medium: Solution involves 'building smarter' - by employing lean design, compact footprint and/or low carbon materials/products. Opportunities for more efficient construction (e.g offsite manufacture or no/low dig approaches)	2	Small increase: less than 20% increase in power or chemicals use
3	Low: Build less - e.g. maximise asset reuse and reduced scale of build, and/or green infrastructure (nature-based) solution adopted instead of conventional grey infrastructure	3	No change
4	None: Build nothing - construction of new infrastructure avoided (e.g. by reducing demand or wider catchment solution) - capital carbon emissions expected to be zero or near zero	4	Decrease

Commercial Consideration Key	
1	High cost
2	Medium-high cost
3	Medium cost
4	Low cost

Risk Reduction Key	
Low	Low Risk Reduction
Medium	Medium Risk Reduction
High	High Risk Reduction

Options		Criteria					Scores	Carbon impact			Commercial Consideration		Final Score				
		Business needs	Business needs	Maintenance and Operability	Potential achievability	Potential affordability											
Option No.	Description	How well does it: Meet the need?	How well does it: Minimise Environmental and Third Party Impact risks (e.g. full planning application, risk of EIA & land purchase)?	How well does it: Meet maintenance and operational goals?	Can the solution: Be delivered well and ontime?	How well does the option: Fit within the budget?	Total Score (on criteria)	Embodied carbon (Construction phase)	Operational carbon (Change from existing)	Whole life carbon score	CAPEX	OPEX	Overall Score (TOTEX)	Overall Score out of 64 (TOTEX + WLCarbon + Natural Capital + Social Capital)	Level of Risk Reduction (High, Medium, Low)	Progress Option to Short-list?	Rationale - brief description of main reason for decision to progress or to exclude
1	Replace 850m of 18" CI main through Iwade	4	2	4	3	3	16	1	4	5	2	4	22	31.0	High	Yes	This will replace a single point of failure delivering water to the island that has no reinforcement or alternative supply
Comments	[redacted]							high carbon usage from constructon - open cut dig in carriageway	Reduction in current frequent burst and leak repair	Comments	high construction cost	cost outweigh the operational cost of repetition of repairing mains	Comments	Comments	Comments	Comments	
2	Replace 300m 18" CI main North of Iwade	2	2	2	3	3	12	1	4	5	3	4	19	24.0	Medium	No	Existing dual main already there so deemed not required
Comments	Scores low here due to the fact there is a second main running alongside, and the cost benefit would not be deemed a good result							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
3	Replace 1200m 600mm DI between Iwade and the Swale	3	2	2	3	2	12	1	3	4	3	4	19	23.0	Medium	No	Existing dual main already there so deemed not required
Comments	Scores low here due to the fact there is a second main running alongside, and the cost benefit would not be deemed a good result							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
4	Replace 2200m of 600mm DI between the Swale and Wallend	3	2	4	2	1	12	1	4	5	1	4	17	22.0	High	Yes	[redacted]
Comments	This is for high level, summary comments to explain the scores. It is only blue so that you can tell the rows apart.							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
5	Additional WSR at Southdown	4	2	2	2	1	11	1	2	3	1	2	14	17.0	Medium	No	High cost plus the daily normal operation would mean that the turnover of the reservoir could
Comments	Having addional storage on the Island itself would create perfect resillience in supply during a large event, but, due to the every day demand, this would actually create a turnover issue in the reservoir thus creating a potential WQ issue. The cost of this solution would be [redacted]							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
6	New res at Wallend, at site of redundant WSW	4	2	2	2	1	11	1	2	3	1	2	14	17.0	Medium	No	High cost plus the daily normal operation would mean that the turnover of the reservoir could
Comments	Having addional storage on the Island itself would create perfect resillience in supply during a large event, but, due to the every day demand, this would actually create a turnover issue in the reservoir thus creating a potential WQ issue. The cost of this solution would be £10m+							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
7	Bring Wallend WSW back online	4	2	1	2	1	10	1	2	3	1	2	13	16.0	High	No	Cost and complexity
Comments	[redacted] Though this is an option on the Island itself the TOTEX cost of this scheme would be very high							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
8	New main round Iwade	4	2	3	3	2	14	1	4	5	1	3	18	23.0	High	No	cost and complexity compared to option one
Comments	Same benefit as number 1 except this would take longer, cost more, and more stakeholder enagement as it would involve going through private land							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
9	Deans Hill to Iwade	4	2	1	2	2	11	1	2	3	1	2	14	17.0	Medium	No	too much mains capacity in relation to dmena / flow rate
Comments	This is to create a new main, though, similar to the reservoir schemes, the demand would not be sufficient resulting in low velocities and potential future WQ issues and or a large amount of operational time in maintaining the velocity every 2 weeks, using operational time and waste of water carrying out flushing programme							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
10	Keycol WSW to be brought back into service	3	4	4	2	2	15	2	2	4	1	2	18	22.0	Medium	Yes	existing SW site and current abstraction licence in place
Comments	Keycol WSW is currently out of service. There would be a lot of civils and process work to get this back up and running, but would provide a potential extra 6MLD (licenced) into the area as resilience. A study has already been carried out with costing, so early design and investigation carried out. This scheme has a wider resilience benfit to the Medway area other than just the Isle of Sheppey							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
11	Wallend WBS additional Booster	4	4	4	4	4	20	3	4	7	4	3	27	34.0	High	Yes	Very easy cost effective solution that provides standby pump
Comments	[redacted] SW are unable to get water up to Kingsborough WSR.							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	
12	New WBS at Grovehurst Road - Cromers Wood to Sheppey Transfer	3	3	3	3	3	15	2	3	5	3	3	21	26.0	High	Yes	Good solution to bring in alternative supply from another supply zone
Comments	This will utilise an existng cross connection to another FMZ but would require a water booster statoin to boost the required amoutn of flow to the Island if there were any issues upstream / Deans Hill out of service. It would require minimal excavation and above ground asset.							Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	

Option No.	CAPEX (£k)	OPEX (£k / annum)	Whole Life Cost (based on CAPEX, OPEX)	Embodied Carbon (tCO2e)	Operational Carbon (tCO2e)	Embodied Carbon (£k)	Operational Carbon (£k / annum)	Natural and Social Capital Value (Present value benefits £k) From N&SC calculation tool	Whole Life Cost and Benefit (based on CAPEX, OPEX, Carbon, N&SC)	Baseline Risk Value (£k)	Residual Risk Value (£k)	Risk Reduction benefit (£k)	Lowest Cost Option (Option with lowest WLC)	Best Value Option (Option with lowest Whole Life Cost and Benefit)
1			£ -			0	0		£ -			£ -		
2			£ -			0	0		£ -			£ -		
3			£ -			0	0		£ -			£ -		
4			£ -			0	0		£ -			£ -		
5			£ -			0	0		£ -			£ -		
6			£ -			0	0		£ -			£ -		
7			£ -			0	0		£ -			£ -		
8			£ -			0	0		£ -			£ -		
9			£ -			0	0		£ -			£ -		
10			£ -			0	0		£ -			£ -		
11			£ -			0	0		£ -			£ -		
12			£ -			0	0		£ -			£ -		

FINAL DECISION RATIONALE

ADDITIONAL NOTES

VALIDATION	
Data Validated	
Date of Validation	
Validator	