

Feasible options included in AMP5 options list

Feasible Options - All Areas

156 options

Area	WRZ	Securitized option name	Description	Option type
Central	SW	CA1 2MI/d MDO Aquifer Storage and Recovery	The option will take potable mains water and inject it into the aquifer within the Lower Greensands formation during the winter and abstract it over the MDO period. The abstracted water is then treated and then sent into supply via a WSR.	Aquifer Storage and Recovery
Central	SW	CA1 4MI/d PDO Aquifer Storage and Recovery	The option will take potable mains water and inject it into the aquifer within the Lower Greensands formation during the winter and abstract it over the PDO period. The abstracted water is then treated and then sent into supply via a WSR.	Aquifer Storage and Recovery
Central	SW	CA1 8MI/d Annual average Aquifer Storage and Recovery	The option will take potable mains water and inject it into the aquifer within the Lower Greensands formation during the winter and abstract it over both the MDO (2 MI/d) and PDO (4 MI/d) periods. The abstracted water is then treated and then sent into supply via a WSR.	Aquifer Storage and Recovery
Central	SW	CA1 4MI/d MDO Aquifer Storage and Recovery	The option will take potable mains water and inject it into the aquifer within the Lower Greensands formation during the winter and abstract it over the MDO period at 4 MI/d. The abstracted water is then treated and then sent into supply via a WSR.	Aquifer Storage and Recovery
Central	SW	CA1 8MI/d PDO Aquifer Storage and Recovery	The option will take potable mains water and inject it into the aquifer within the Lower Greensands formation during the winter and abstract it over the PDO period at 8 MI/d. The abstracted water is then treated and then sent into supply via a WSR.	Aquifer Storage and Recovery
Central	SB	N20 Asset enhancement schemes	Increase pump capacity and WSR connectivity so that the groundwater source works can pump to its Middle or High WSR (output to the Low WSR is currently constrained by the header tanks). Current demand constraint is approximately 2.3 MI/d (PDO). If the scheme is introduced, the constraint becomes pump capacity; approximately 3.9MI/d for both MDO and PDO under severe drought conditions.	Asset enhancement schemes
Central	SB	SBC-a Conventional & catchment management	Option to address nitrate risk by 2016/17, using both conventional treatment and catchment management together to ensure successful reduction of nitrates in limited time frame	Catchment management
Central	SB	SBC-b Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Central	SB	SBC-c Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Central	SB	SBC-d Conventional & catchment management	Option to address nitrate risk by 2016/17, using both conventional treatment and catchment management together to ensure successful reduction of nitrates in limited time frame	Catchment management
Central	SB	SBC-e Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Central	SB	SBC-f Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Central	SN	N1 Irrigation licences management	This option investigates the possibility of purchasing existing summer spray irrigation licences on the Western Rother and replacing these with small farm storage reservoirs for the existing license holders. These reservoirs would be filled over the winter using a winter abstraction licence and then discharged over the summer months when the water is required. This would reduce the abstraction stress on the river during low flow periods and hence allow greater abstraction during peak periods when abstraction is constrained by the MRF in the river.	Catchment management
Central	SN	SNC-a Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Central	SN	SNC-b Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Central	SW	SWC-a Conventional & catchment management	Option to address nitrate risk by 2016/17, using both conventional treatment and catchment management together to ensure successful reduction of nitrates in limited time frame	Catchment management
Central	SW	SWC-b Conventional & catchment management	Option to address nitrate risk by 2016/17, using both conventional treatment and catchment management together to ensure successful reduction of nitrates in limited time frame	Catchment management
Central	SW	SWC-c Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management

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Area	WRZ	Securitized option name	Description	Option type
Central	SB	CD1 10MI/d Coastal desalination	Potentially feasible sites for coastal desalination have been identified by examining the coast within, and just outside of, the Sussex Coastal water resource zones. This option proposes installation of a seawater desalination plant which would be capable of producing 10 MI/d. It is envisaged that it would be located within the site of an existing power station and it would be connected into supply via the trunk main close to the site.	Desalination
Central	SB	CD1 20MI/d Coastal desalination	Desalination plant in capable of producing a DO of 20MI/d. [See CD1 10MI/d]	Desalination
Central	SB	CD1 30MI/d Coastal desalination	Desalination plant capable of producing a DO of 30MI/d. [See CD1 10MI/d]	Desalination
Central	SB	CD1 40MI/d Coastal desalination	Desalination plant capable of producing a DO of 40MI/d. [See CD1 10MI/d]	Desalination
Central	SW	CD3 10MI/d Tidal river desalination	The river was surveyed for sites from the estuary mouth at Littlehampton up to Arundel. This option proposes installation of a desalination plant adjacent to an existing WWTW which would treat the estuarine water from the River Arun in order to produce 10 MI/d.	Desalination
Central	SN	N10 Well field reconfiguration	Initial analysis has shown that the potential MDO impact from a wellfield re-configuration could be significant, in the order of 4MI/d. However, this would require that boreholes are spaced at least 300m apart and be better designed to take an even load, which will require the drilling of a number of test/investigation boreholes and up to 6 production boreholes, with associated pumps, headworks and pipelines. It would also require a new licence application to replace the existing licence, and, because of potential impact on an SAC, an EIA and Appropriate Assessment.	Groundwater abstractions
Central	SB	Leakage reduction in SB	Range of leakage reduction activity. From SELL analysis	Leakage Management
Central	SB	Phase 1 Mains renewal in Sussex Brighton	Leakage driven mains renewal scheme	Leakage Management
Central	SB	Phase 2 Mains renewal in Sussex Brighton	Leakage driven mains renewal scheme	Leakage Management
Central	SN	Leakage reduction in SN	Range of leakage reduction activity. From SELL analysis	Leakage Management
Central	SN	Mains renewal in Sussex North	Leakage driven mains renewal scheme	Leakage Management
Central	SW	Leakage reduction in SW	Range of leakage reduction activity. From SELL analysis	Leakage Management
Central	SW	Mains renewal in Sussex Worthing	Leakage driven mains renewal scheme	Leakage Management
Central	SN	N5 New reservoir	The option involves the construction of an earth embankment reservoir with a proposed storage capacity of up to 4,600 MI. The option will allow treated water to enter the distribution network. The reservoir will be filled with water pumped from the eastern branch of the river Adur. The abstraction of raw water from the river to the reservoir would have a maximum flow of 30MI/d.	Reservoirs
Central	SN	N6a-20 New surface storage reservoir	Surface Storage Reservoir that would be filled from combined Rother / Arun abstraction 20 MI/d. As the reservoir would be in the South Downs National Park the earliest start date is assumed to be after 3 AMP periods to allow for potential issues with investigations / planning permissions, etc.	Reservoirs
Central	SW	C3 New reservoir on coast	The option would involve the construction of an earth embankment reservoir and associated treatment works that would allow up to 10 MI/d of treated water to enter the distribution mains and supply the Sussex Coastal block. The reservoir would be filled with water pumped from the river Arun, which could only realistically be pumped during low tides and may be constrained to periods of relatively low flow during the winter because of turbidity constraints during higher flows. Because of this, the treatment works has been sized at a relatively low capacity (10MI/d). Approximate reservoir storage would be around 3,500 MI.	Reservoirs
Central	SB	N8b Winter transfer stage 2	Improvements to the turbidity/sludge handling process are required in order to ensure that treated water is available from the surface water source. If full licensed capacity can be used at all times, then this would provide a total excess capacity of around 12-15MI/d. However, the transfer capacity is limited to 7MI/d by pressure issues in the V6 main. For flows beyond 7MI/d, upgrades would be needed to the infrastructure between Tenants Hill and the Brighton Block in order to bypass the pressure issues at the V6 main. This increased transfer could be achieved in two stages (Stages 3 and 4).	Transfers (inter-zonal)
Central	SB	N8c Winter transfer stage 3	Install a 450mm main between constrained sites in the Brighton WRZ, and allow 7MI/d (demand) to be pumped via a different route. This would reduce the pressure in the V6 main and allow an additional 4 MI/d through V6 (giving a total maximum output of 11 MI/d). This would require an onward pumping station to boost water across the South Downs.	Transfers (inter-zonal)
Central	SB	N8cT-2 SW-SB transfer	The scheme requirements are as per N8c, but this option is not dependent on the construction of N8a and N8b; it is a stand-alone transfer option to link SW and SB WRZs. In the investment model, this is the SW to SB component of the bi-directional option T-SWO-1. However, this SW-SB transfer is effectively the same as the transfer component of the N8c scheme.	Transfers (inter-zonal)

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Central	SB	N8d Winter transfer stage 4	This scheme should allow up to 20MI/d to flow between Tenants Hill and Brighton (i.e. a further 9MI/d increase in flow).	Transfers (inter-zonal)
Central	SN	N8a Winter transfer stage 1	This option looks at replacing a short stretch of main in order to relieve pressure issues and allow a further 2 to 5 MI/d to be transferred. It is suggested that this flow is used to supply the area normally supplied by Weir Wood Reservoir. This allows Weir Wood Reservoir to enter a 'non consumptive mode' during the winter and spring, which ensures that it can be filled even during severe drought events.	Transfers (inter-zonal)
Central	SB	SB-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Central	SB	SB-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Central	SB	SB-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Central	SB	SB-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Central	SN	SN-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Central	SN	SN-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Central	SN	SN-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Central	SN	SN-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Central	SW	SW-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Central	SW	SW-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Central	SW	SW-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Central	SW	SW-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Central	SN	NR2a 20MI/d Coastal WWTW water reuse	This option involves the transfer of up to 20MI/d of RO treated effluent from a WWTW that is currently being discharged to sea at Littlehampton, to the River Rother upstream of the abstraction point in order to maintain flows over the weir during drought conditions. 20MI/d represents the upper end of the reliable flow that could be expected from the WWTW.	Water reuse
Central	SN	NR2a 10MI/d Coastal WWTW water reuse	This option involves the transfer of up to 10MI/d of RO treated effluent from a WWTW that is currently being discharged to sea at Littlehampton, to the River Rother upstream of the abstraction point in order to maintain flows over the weir during drought conditions.	Water reuse
Central	SN	NR2a 5MI/d Coastal WWTW water reuse	This option involves the transfer of up to 5MI/d of RO treated effluent from a WWTW that is currently being discharged to sea at Littlehampton, to the River Rother upstream of the abstraction point in order to maintain flows over the weir during drought conditions.	Water reuse
Eastern	KM	MT10 Asset enhancement schemes	Installation of a short spur main improves flows between to Water Service Reservoirs, and thus removes a constraint on the system, which otherwise means that the sum of the source DO's is not able to be distributed, and thus acts to reduce the DO available to the WRZ	Asset enhancement schemes
Eastern	KM	KMC-a Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Eastern	KM	KMC-b Conventional & catchment management	Option to address nitrate risk by 2016/17, using both conventional treatment and catchment management together to ensure successful reduction of nitrates in limited time frame	Catchment management
Eastern	KT	KTC-a Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management

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Eastern	KM	MD1 10MI/d Desalination	Locating a desalination plant on the Isle of Sheppey has a clear advantage: it would meet local demand while significantly reducing the need for transfers. The exact site would require further investigation during a feasibility appraisal. In addition to the reverse osmosis desalination plant and pipeline infrastructure, this option would also require intake facilities from coast to the site and a long-sea outfall (due to the lack of local WWTW).	Desalination
Eastern	KM	MD2 10MI/d Desalination	This option proposes installation of a desalination plant in the Upper Medway estuary. Within the initial appraisal, a site was identified adjacent to an existing WWTW, treating estuarine water from the Medway to produce 10 MI/d and using the WWTW's outfall to discharge brine.	Desalination
Eastern	KM	MD2 20MI/d Desalination	This option proposes installation of a desalination plant in the Upper Medway estuary. Within the initial appraisal, a site was identified adjacent to an existing WWTW, treating estuarine water from the Medway to produce 20 MI/d and using the WWTW's outfall to discharge brine.	Desalination
Eastern	KT	TD2 10MI/d Desalination	The Stour Estuary is largely made up of protected areas and is therefore unsuitable for a desalination plant. However, areas of land adjacent to one of the WWTWs in the vicinity WWTWs show some potential. The desalination plant would produce 10MI/d and combine discharge with the WWTW's existing outfall.	Desalination
Eastern	KT	TD2 20MI/d Desalination	The Stour Estuary is largely made up of protected areas and is therefore unsuitable for a desalination plant. However, areas of land adjacent to one of the WWTWs in the vicinity WWTWs show some potential. The desalination plant would produce 20MI/d and combine discharge with the WWTW's existing outfall.	Desalination
Eastern	SH	HD4 5MI/d Desalination	the option would be considered in a site in the land to the south of Rye adjacent to an industrial area. The industrial area has no environmental designations and the presence of the cement works indicates that power supplies may be available. This area will be considered for a desalination plant in the feasibility appraisal although the cost of connecting to the service reservoirs near Hastings might make this option economically unfavourable.	Desalination
Eastern	KM	M21 Licence trading scheme	Taking over of an existing licence in the KM WRZ. The existing licence is large but it is assumed that this would be reduced in order to allow for some environmental gains. May be available from start of AMP6. Current licence is not being utilised.	Groundwater abstractions
Eastern	KM	Leakage reduction in KM	Range of leakage reduction activity. From SELL analysis	Leakage Management
Eastern	KM	Phase 1 Mains renewal in Kent Medway	Leakage driven mains renewal scheme	Leakage Management
Eastern	KM	Phase 2 Mains renewal in Kent Medway	Leakage driven mains renewal scheme	Leakage Management
Eastern	KT	Leakage reduction in KT	Range of leakage reduction activity. From SELL analysis	Leakage Management
Eastern	SH	Leakage reduction in SH	Range of leakage reduction activity. From SELL analysis	Leakage Management
Eastern	KM	M10 River Medway licence Variation	Within the existing licence there are two key levers which constrain how these elements of the scheme operate. The first is the MRF, which controls when abstraction must cease and when releases should start. The second is the release factor, which states that 20% more water should be released from Bewl Water than is required for re-abstraction at Springfield. A combination of different options is currently under review, and have been discussed with the EA prior to submission of an application to vary the licence.	Licence variation
Eastern	KM	M9 groundwater source licence Variation	The abstraction licence amendment proposes to alter the existing licence which forms part of the Sittingbourne group licence. This will remove the annual licence constraint and hence allow abstraction at the daily rate over the whole year.	Licence variation
Eastern	KM	M5a3000 Reservoir raising	The scheme involves the raising of Bewl Water, by 3m to increase storage and yield. The major works for raising Bewl to a higher water level will include: raising the dam crest and building a new wave wall, raising overflow and valve chamber shafts and ancillary works around the perimeter of the reservoir.	Reservoirs
Eastern	SH	H1 Reservoir enlargement	This option involves raising the embankment of Darwell Reservoir. The proposal is to raise the embankment by up to 10m to provide increased storage, and therefore increase supplies.	Reservoirs
Eastern	SH	H8 New surface water abstractions	This option would require the construction of an abstraction on the River Brede close to the existing abstraction, from where the water would be pumped through a new transfer main to Powdermill reservoir.	Surface water abstractions
Eastern	KM	TT3 Reverse existing KM-KT main	To allow transfer of water from Kent Thanet to Kent Medway WRZ by reversing flow in the existing main. This option involves conditioning of the main to remove the scale build up which would otherwise reduce the water quality of a reversed flow.	Transfers (inter-zonal)

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Eastern	KT	TT1 Duplicate existing KM-KT transfer	The Kent Medway to Kent Thanet transfer scheme option proposes an increase to the existing transfer capacity by 11 MI/d from the groundwater sources in KM to the service reservoir in KT (from the current potential of 22.5 MI/d to 33.5 MI/d). This would be achieved by duplicating the existing transfer main via a new pumping station at Selling. In addition to the pipework and pumping infrastructure, this option would also require the construction of additional treatment at the sources.	Transfers (inter-zonal)
Eastern	KT	TT1a utilise full capacity of existing KM-KT transfer	The existing KM-KT transfer main has a capacity of approx 22 MI/d. However, the operational transfer is limited to the output from the nearby source. This option enables flows from an alternative source to be directed, via an existing main, towards the water supply works that feed into the transfer main.	Transfers (inter-zonal)
Eastern	KM	KM-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Eastern	KM	KM-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Eastern	KM	KM-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Eastern	KM	KM-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Eastern	KT	KT-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Eastern	KT	KT-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Eastern	KT	KT-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Eastern	KT	KT-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Eastern	SH	SH-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Eastern	SH	SH-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Eastern	SH	SH-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Eastern	SH	SH-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Eastern	KM	MR3 10MI/d Water reuse	This option involves the transfer of 10 MI/d of treated effluent from WWTW to the River Medway upstream of the abstraction point. This would be used to supplement flows within the Medway during low flow periods, thus reducing the releases from Bewl Water and conserving storage. The scheme would be require additional treatment at the WWTW, as well as a new pipeline and a discharge structure to the River Medway.	Water reuse
Eastern	KM	MR3 15MI/d Water reuse	This option involves the transfer of 15 MI/d of treated effluent from WWTW to the River Medway upstream of the abstraction point. This would be used to supplement flows within the Medway during low flow periods, thus reducing the releases from Bewl Water and conserving storage. The scheme would be require additional treatment at the WWTW, as well as a new pipeline and a discharge structure to the River Medway.	Water reuse
Eastern	KM	MR3 20MI/d Water reuse	This option involves the transfer of over 20 MI/d of treated effluent from WWTW to the River Medway upstream of the abstraction point. This would be used to supplement flows within the Medway during low flow periods, thus reducing the releases from Bewl Water and conserving storage. The scheme would be require additional treatment at the WWTW, as well as a new pipeline and a discharge structure to the River Medway.	Water reuse

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Eastern	KM	MR3 5MI/d Water reuse	This option involves the transfer of 5 MI/d of treated effluent from WWTW to the River Medway upstream of the abstraction point. This would be used to supplement flows within the Medway during low flow periods, thus reducing the releases from Bewl Water and conserving storage. The scheme would be require additional treatment at the WWTW, as well as a new pipeline and a discharge structure to the River Medway.	Water reuse
Eastern	KT	T5 10MI/d Water reuse	This scheme involves tertiary treatment and discharge to the River Stour of 11MI/d of wastewater to support a 10MI/d abstraction and treatment at a new WSW, and 2 days of covered raw water storage.	Water reuse
Eastern	KT	T5 20MI/d Water reuse	This scheme involves tertiary treatment and discharge to the River Stour of 18MI/d of wastewater to support a 20MI/d abstraction (reducing to 16.2MI/d when the MRF is reached) and treatment at a new WSW with 2 days of covered raw water storage. This option also includes additional distribution pipelines to enable water to reach a WSR, that could enable the scheme to reverse flow in the existing KM-KT transfer main.	Water reuse
Eastern	SH	HR1a Water reuse	This option proposes the transfer of 20 MI/d of treated effluent, currently being discharged to sea at Pebsham Gap, in order to augment storage in Darwell reservoir.	Water reuse
Eastern	SH	HR1b Water reuse	This option proposes the transfer of 10 MI/d of treated effluent, currently being discharged to sea at Pebsham Gap, in order to augment storage in Powdermill reservoir.	Water reuse
Western	HK	HKL1 Asset enhancement schemes and new pipeline	The scheme is located within the Hampshire Kingsclere resource group. The scheme will increase the yield of one of the sources within the existing licence by removing the present constraint imposed by mains leaving the site. This option will involve the construction of a dedicated pipe from the water supply works to the WSR.	Asset enhancement schemes
Western	HS	T-HSO-3 10MI/d Bulk supply from PWCo	A 10MI/d bulk supply to Southern Water's water supply reservoir from Portsmouth Water's works on the River Itchen within that company's existing licence. The additional water is available from the existing supply surplus in Portsmouth Water.	Bulk supplies
Western	HS	T-HSO-3a 10MI/d Bulk supply (with 30MI/d infrastructure) from PWCo	A 10MI/d bulk supply to Southern Water's water supply reservoir from Portsmouth Water's works on the River Itchen within that company's existing licence, but with infrastructure sized to accommodate larger flows (i.e. up to 30 MI/d) to provide future flexibility. It is therefore, mutually exclusive with T-HSO-3). The additional water is available from the existing supply surplus in Portsmouth Water	Bulk supplies
Western	HS	T-HSO-3d increase bulk supply from PWCo to HS by 5MI/d (contingent on PWCo-SN bulk supply reduction)	this additional bulk supply option is dependent on the existing Portsmouth Water to Sussex North WRZ bulk supply being reduced by 5MI/d to free up this water for us in the Hampshire South WRZ instead.	Bulk supplies
Western	HA	HAC-a Conventional & catchment management	Option to address nitrate risk by 2016/17, using both conventional treatment and catchment management together to ensure successful reduction of nitrates in limited time frame	Catchment management
Western	HS	HSC-a Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Western	HS	HSC-b Catchment management	Option to address nitrate risk by 2024/25, using catchment management. Assume that work starts in 2015 to allow sufficient time to test that catchment management approach works, otherwise conventional nitrate treatment required	Catchment management
Western	HS	River Test catchment mgmt options & river restoration pilot	Catchment management solutions can contribute to making our water environment more resilient to changing climatic conditions, and in delivering permanent environmental improvements in our rivers. Catchment management solutions have, to date, proved difficult to quantify in sufficiently robust and certain terms that can meet the requirements of a WRMP process that focuses on achieving a supply demand balance. However, Southern Water is committed to exploring with other stakeholders the potential for catchment management not only as part of the Western Area strategy needed to meet the challenges posed by the notified River Itchen sustainability reductions, and/or in response to any potential future sustainability reductions that may be considered, but also as part of more integrated management of the water environment. The Company believes that such solutions may well provide the best outcomes for both customers and the environment.	Catchment management

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Area	WRZ	Securitized option name	Description	Option type
Western	HS	River Itchen catchment mgmt options & river restoration pilot	Catchment management solutions can contribute to making our water environment more resilient to changing climatic conditions, and in delivering permanent environmental improvements in our rivers. Catchment management solutions have, to date, proved difficult to quantify in sufficiently robust and certain terms that can meet the requirements of a WRMP process that focuses on achieving a supply demand balance. However, Southern Water is committed to exploring with other stakeholders the potential for catchment management not only as part of the Western Area strategy needed to meet the challenges posed by the notified River Itchen sustainability reductions, and/or in response to any potential future sustainability reductions that may be considered, but also as part of more integrated management of the water environment. The Company believes that such solutions may well provide the best outcomes for both customers and the environment.	Catchment management
Western	HS	HTD2 10MI/d Coastal desalination	A potential site has been identified with an extensive frontage to the River Test, which is not environmentally designated. The potential site is located predominantly within an area designated in the Local Plan as an area for industrial or business use. It must be noted that the site is adjacent to areas with significant nature conservation value. In order to obtain consent it will have to be demonstrated that the construction and/or operation of the plant will not adversely affect the surrounding international and national designations.	Desalination
Western	HS	HTD2 20MI/d Coastal desalination	A potential site has been identified with an extensive frontage to the River Test, which is not environmentally designated. The potential site is located predominantly within an area designated in the Local Plan as an area for industrial or business use. It must be noted that the site is adjacent to areas with significant nature conservation value. In order to obtain consent it will have to be demonstrated that the construction and/or operation of the plant will not adversely affect the surrounding international and national designations.	Desalination
Western	HS	HTD4 10MI/d Desalination	This option proposes a 10 MI/d desalination plant on a site in the vicinity of the Fawley Power Station. The plant could provide the 10 MI/d reserve supply to the Fawley site, or be connected to potable supply, reducing the demand on the large WSW in Southampton.	Desalination
Western	HS	HTD4 25MI/d Desalination	This option proposes a 25 MI/d desalination plant on a site in the vicinity of the Fawley Power Station. The plant could provide the 10 MI/d reserve supply to the Fawley site, or be connected to potable supply, reducing the demand on the large WSW in Southampton.	Desalination
Western	HS	HTD4 45MI/d Desalination	This option proposes a 45 MI/d desalination plant on a site in the vicinity of the Fawley Power Station. The plant could provide the 10 MI/d reserve supply to the Fawley site, or be connected to potable supply, reducing the demand on the large WSW in Southampton. This option would require the proposed pipeline to be in place to enable transfer of large volumes of water around the WRZ.	Desalination
Western	HS	HTD4 60MI/d Desalination	This option proposes a 60 MI/d desalination plant on a site in the vicinity of the Fawley Power Station. The plant could provide the 10 MI/d reserve supply to the Fawley site, or be connected to potable supply, reducing the demand on the large WSW in Southampton. This option would require the proposed pipeline to be in place to enable transfer of large volumes of water around the WRZ.	Desalination
Western	IOW	IWD1 10MI/d Coastal desalination	A 10 MI/d desalination plant located at the WWTW on the south east side of the island. Option includes a transfer main to the WSR near Newport in order to distribute flows above local demand.	Desalination
Western	IOW	IWD1 12.5MI/d Coastal desalination	A 12.5 MI/d desalination plant located at the WWTW on the south east side of the island. Option includes a transfer main to the WSR near Newport in order to distribute flows above local demand.	Desalination
Western	IOW	IWD1 15MI/d Coastal desalination	A 15 MI/d desalination plant located at the WWTW on the south east side of the island. Option includes a transfer main to the WSR near Newport in order to distribute flows above local demand.	Desalination
Western	IOW	IWD1 17.5MI/d Coastal desalination	A 17.5 MI/d desalination plant located at the WWTW on the south east side of the island. Option includes a transfer main to the WSR near Newport in order to distribute flows above local demand.	Desalination
Western	IOW	IWD1 20MI/d Coastal desalination	A 20 MI/d desalination plant located at the WWTW on the south east side of the island. Option includes a transfer main to the WSR near Newport in order to distribute flows above local demand.	Desalination
Western	IOW	IWD1 22.5MI/d Coastal desalination	A 22.5 MI/d desalination plant located at the WWTW on the south east side of the island. Option includes a transfer main to the WSR near Newport in order to distribute flows above local demand.	Desalination
Western	IOW	IWD1 3MI/d Coastal desalination	A 3 MI/d desalination plant located at the WWTW on the south east side of the island to supply local demand via existing mains connection.	Desalination
Western	IOW	IWD1 5MI/d Coastal desalination	A 5 MI/d desalination plant located at the WWTW on the south east side of the island to supply local demand via existing mains connection.	Desalination
Western	IOW	IWD1 8.5MI/d Coastal desalination	8.5 MI/d desalination plant located at the WWTW on the south east side of the island to supply local demand via existing mains connection.	Desalination

Feasible Options - All Areas

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Area	WRZ	Securitized option name	Description	Option type
Western	HS	JO3a - MDO Groundwater scheme for river augmentation	Pro-active operation of the groundwater scheme for river augmentation to mitigate the MRF conditions and other licence restrictions that comprise the Sustainability Reductions to be introduced on the Lower Itchen sources. This scheme relocates the existing outfall to the upper Itchen in order to bypass native crayfish populations in the Candover Stream. Works also comprise upgrades of the existing borehole pumps to variable speed pumps and the provision of ICA capability so that the scheme can be operated remotely. Currently, the borehole sources are owned and operated by the Environment Agency, but this scheme would see transfer of ownership to Southern Water. The scheme would provide benefit at MDO only.	Groundwater abstractions for river augmentation
Western	HS	JO3a - PDO Groundwater scheme for river augmentation	Pro-active operation of the groundwater scheme for river augmentation to mitigate the MRF conditions and other licence restrictions that comprise the Sustainability Reductions to be introduced on the Lower Itchen sources. This scheme relocates the existing outfall to the upper Itchen in order to bypass native crayfish populations in the Candover Stream. Works also comprise upgrades of the existing borehole pumps to variable speed pumps and the provision of ICA capability so that the scheme can be operated remotely. Currently, the borehole sources are owned and operated by the Environment Agency, but this scheme would see transfer of ownership to Southern Water. The scheme would provide benefit at PDO only.	Groundwater abstractions for river augmentation
Western	IOW	IWL6 Groundwater rehabilitation	The groundwater source under consideration has been disused since 1989. The source is located west of the River Medina on the Isle of Wight. This option would involve bringing this source back online. The source would provide a small yield and would require treatment prior to bringing it into supply due to high iron levels.	Groundwater abstractions
Western	HA	Leakage reduction in HA	Range of leakage reduction activity. From SELL analysis	Leakage Management
Western	HK	Leakage reduction in HK	Range of leakage reduction activity. From SELL analysis	Leakage Management
Western	HS	Leakage reduction in HS	Range of leakage reduction activity. From SELL analysis	Leakage Management
Western	HS	Phase 1 Mains renewal in Hampshire South	Leakage driven mains renewal scheme	Leakage Management
Western	HS	Phase 2 Mains renewal in Hampshire South	Leakage driven mains renewal scheme	Leakage Management
Western	IOW	Leakage reduction on IW	Range of leakage reduction activity. From SELL analysis	Leakage Management
Western	IOW	Mains renewal on Isle of Wight	Leakage driven mains renewal scheme	Leakage Management
Western	HA	HAT1 HS-HA transfer	This option involves the construction of a pipeline between a water service reservoirs (WSRs) in Hampshire South and Hampshire Andover WRZs. The scheme includes a short spur off the main pipeline to feed a water tower.	Transfers (inter-zonal)
Western	HK	HKT1 HA-HK transfer	This scheme is dependent upon scheme HAT1. The scheme involves the construction of a pipeline to transfer from the pipeline to a water service reservoir. In addition, the scheme includes a further pipeline to allow distribution on to the Hampshire Kingsclere WRZ.	Transfers (inter-zonal)
Western	IOW	IWL7 Utilise full capacity of existing cross-Solent main	Two new cross-Solent mains have been constructed the Hampshire coast and the IOW to replace the two slightly smaller mains that have reached the end of their design life. This option incorporates the additional assets required to utilise the full capacity of these mains. This includes replacement pumps, a new main to the WSR near Newport on the island, with associated additional storage.	Transfers (inter-zonal)
Western	IOW	IWT3 Triplicate cross-Solent main	A third cross-Solent main could be installed to permit further bulk transfer of water resources from the mainland to the Isle of Wight. Although it is possible that the transfer may be from the Isle of Wight to the mainland (should a large scale desalination plant be selected on the IoW for example) it is most likely that the transfer will be from the mainland to the IoW.	Transfers (inter-zonal)
Western	HA	HA-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Western	HA	HA-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Western	HA	HA-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Western	HA	HA-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Western	HK	HK-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency

Feasible Options - All Areas

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Area	WRZ	Securitised option name	Description	Option type
Western	HK	HK-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Western	HK	HK-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Western	HK	HK-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Western	HS	HS-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Western	HS	HS-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Western	HS	HS-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Western	HS	HS-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Western	IW	IW-WE-A Water Efficiency home audits	This option assumes that SWS will offer free audits to a section of its customers and will involve retrofitting 1 ecoBETA, 2 tap inserts and 1 low-flow showerhead.	Water Efficiency
Western	IW	IW-WE-B Water Efficiency school audits	Audits will be offered to schools where the following devices can be fitted: ecoBETA retrofit, tap aerators, urinals It is assumed that each audit will take 1.5 days	Water Efficiency
Western	IW	IW-WE-C Water Efficiency SME audits	Audits will be offered to SMEs where the following devices can be fitted: ecoBETA retrofits, tap aerators. It is assumed that audit will take half a day.	Water Efficiency
Western	IW	IW-WE-D Water Efficiency large business audits	This option covers water audits for large businesses. Assumed that there will be the opportunity for retrofitting a mix of devices: ecoBETA, tap inserts, urinals and low-flow showerheads. It is assumed that each audit will take place over 3 days.	Water Efficiency
Western	HS	HR9c Non-potable water reuse at industrial site	Water reuse to supply Southern Water's contracted back up supply. The scheme could provide up to the dry weather flow of the WWTW and would require the construction of tertiary treatment (including RO) and a new pumping station and pipeline to transfer flow.	Water reuse
Western	IOW	IWR1 2.5Ml/d Water reuse	This option proposes the transfer of treated effluent from the WWTW on the south east side of the island (currently discharged to sea), to support flows in the Eastern River Yar upstream of the abstraction. Treated water in excess of the local demand will be transferred through a new transfer pipeline to the WSR near Newport, for supply to much of the island.	Water reuse
Western	IOW	IWR1 5Ml/d Water reuse	This option proposes the transfer of treated effluent from the WWTW on the south east side of the island (currently discharged to sea), to support flows in the Eastern River Yar upstream of the abstraction. Treated water in excess of the local demand will be transferred through a new transfer pipeline to the WSR near Newport, for supply to much of the island.	Water reuse
Western	HS	HSL3+HST2 Conjunctive use	The previous version of the scheme was based utilisation of the existing abstraction licence. Although the outcome of the Lower Test NEP report concluded that the environmental risks from abstraction were acceptable, the EA does not accept these findings and has proposed a series of modifications to the licence. These changes, combined with the pipeline mean the option is now considered as a conjunctive use scheme with the Lower Itchen sources.	Water treatment works
Western	HS	HSL3+HST2 Conjunctive use	This option transfers up to 45 Ml/d of the additional water produced following completion of the HSL3 option, to the north eastern areas of the WRZ. The option involves a 21.5km pipeline and a new high-lift pumping station. The option is dependant on additional treatment capacity being provided as part of option HSL3.	Water treatment works