

Description	Further breakdown	Gate 2 (£k)	Early Gate 3 (£k)	G2 % of Total Expenditure	Early G3 % of Total Expenditure	Description of Activity	G2/G3 allocation approach
Programme & Project Management	-	93	0	1.8%	0.0%	Project Management to lead and manage the projects.	Freeze date
	-	263	181	5.0%	15.3%	The PMO provides both strategic and tactical oversight of all workstreams and deliverables, whether internal or external. The PMO provides project controls, including tracking delivery of outputs, progress to schedules, costs tracking, resource oversight, monitors the interfaces between the workstreams and with the wider business, provides project management services to projects, as required.	Specific outputs
	-	266	128	5.1%	10.9%	Southern Water senior delivery management of both projects and programme	Proportioning with specific outputs for project-specific delivery
	-	105	0	2.0%	0.0%	External Assurance undertaken by [REDACTED] and with support on data analysis from the SW team, data provided to SW Board prior to Board Assurance statement.	Specific outputs
Feasibility Assessment and Concept Design	See below	796	609	15.2%	51.8%	Specialist Process engineering team using catchment sampling data (sea water) to develop the process design. Multi discipline Engineering team developing the MECH, elect, civil, structural aspects of the concept design.	See below
	Process Design	235	457			The majority of the work at the start of and during Gate two was outlining the process, which develops at a rate relative to the data captured. The output of works is a mass flow calculation and process flow. The related costs are a single output of resource time.	Freeze date
	Mechanical Design	305	0			Mechanical sizing based on flow specific to option and sizing of desalination plant process units.	Specific outputs
	Civil Design	171	63			General plan / sections produced from outline mechanical sizing.	Specific outputs with freeze date for some components
	Electrical	30	45			Basic electrical designs produced against outline Mechanical design.	Specific outputs with freeze date for some components
	ICA	31	44			Basic Instrument, Control and Automation design produced against overall design.	Specific outputs with freeze date for some components
	Design management	25	0			Coordination and oversight of how the design workstream is delivering to plan.	Specific outputs
Option benefits development and appraisal	-	86	0	1.6%	0.0%	Constructability review undertaken by SW Delivery Partner to take the pipeline corridors to the next level of design development.	Specific outputs
	-	81	0	1.5%	0.0%	Cost estimation and embedded carbon calculation	Specific outputs
	-	197	0	3.8%	0.0%	Option Appraisal Framework consistent with Green book and consenting requirements	Specific outputs
	-	216	4	4.1%	0.4%	Hydraulic modelling - analysis and software licences	Freeze date
Environmental Assessment	-	142	21	2.7%	1.8%	Includes site selection, habitat phase 1 assessment. Land referencing and negotiating access.	Specific outputs
	See below	1,059	0	20.2%	0.0%	Environmental, Ecological, Terrestrial and Marine Surveys	n/a
	Environmental, Ecological, Terrestrial and Marine Surveys	321	0			This includes both hydrodynamic modelling and dispersion plume modelling, topographical surveys, bathymetric surveys, and ground truthing.	n/a
	Aquatic, Terrestrial, and Marine ecology surveys	163	0				n/a
	Boat work	92	0			SW commissioned a commercial diving company to go into the Solent to collect water samples.	n/a
	Preparation for Environmental Impact Assessment with associated surveys	86	0			This included traffic counts, AQ, noise, landscape and visual.	n/a
	Other cost categories	397	0			This includes Land and Marine surveys, and the pipeline corridors.	n/a
	-	141	13	2.7%	1.1%	Work undertaken by [REDACTED]	Specific outputs
Data Collection, Sampling, and Pilot Trials						Data collection for desalination to understand water quality which informed concept design. Cannot meaningfully break down as it was a single contract.	

	See description	589	0	11.2%	0.0%	For a large number of samples, SW has had to use a SW-based laboratory, as there are no UK laboratories with the required accreditation. For full details of the sampling activity, please see Concept Design Report section 2.1.1.1 in the Interim Update submitted 27 September 2021. Sampling points includes 20 coordinates across five different clusters. The sampling programme ran from Jan-Oct 2020. The cost is for the iterative development of testing techniques and parameters, testing and data development.	n/a
Procurement Strategy	-	211	81	4.0%	6.9%	Southern Water resources to provide procurement and commercial management of External Supply Chain required for Gate 2.	Specific outputs
	-	276	40	5.2%	3.4%	Value for money analysis, Commercial model development, Late Tender model development, Market Engagement, Development of Implementation Plan, Development SOC, and Development of Procurement Plan.	Specific outputs
Planning Strategy	-	159	25	3.0%	2.1%	Specialist planning resource to advise on the consenting on the DCO process	Specific outputs
	-	0	0	0.0%	0.0%	Airborne ground facing LIDAR survey confirming topography and sensitive receptors	n/a
	-	56	6	1.1%	0.5%	commission on Natural Capital & Biodiversity gain	Specific outputs
Stakeholder Engagement	-	142	3	2.7%	0.3%	Formally conducted research into stakeholder and customer views and preferences	Specific outputs
	-	87	0	1.7%	0.0%	Non-statutory consultation	n/a
Legal	-	167	30	3.2%	2.5%	Legal advice – regulatory	Specific outputs
	-	36	30	0.7%	2.5%	Legal advice – consenting	Specific outputs
	-	86	6	1.6%	0.5%	Legal advice - procurement, strategy and Secondment	Specific outputs
Other	-	0	0	0.0%	0.0%		n/a
Total	-	5,324	1,207				
Gate Allowance	-	5,610	13,090				
Gate under/overspend	-	-286	-11,883				

Description	Further breakdown	Gate 2 (£k)	Early Gate 3 (£k)	G2 % of Total Expenditure	Early G3 % of Total Expenditure	Description of Activity	G2/G3 allocation approach
Programme & Project Management	-	92	0	1.9%	0.0%	Project Management to lead and manage the projects.	Specific outputs
	-	263	181	5.5%	5.9%	The PMO provides both strategic and tactical oversight of all workstreams and deliverables, whether internal or external. The PMO provides project controls, including tracking delivery of outputs, progress to schedules, costs tracking, resource oversight, monitors the interfaces between the workstreams and with the wider business, provides project management services to projects, as required.	Specific outputs
	-	266	128	5.6%	4.2%	Southern Water senior delivery management of both projects and programme	Proportioning with specific outputs for project-specific delivery
	-	105	0	2.2%	0.0%	External Assurance undertaken by [REDACTED] and with support on data analysis from the SW team, data provided to SW Board prior to Board Assurance statement.	Specific outputs
Feasibility Assessment and Concept Design	See below	607	479	12.7%	15.7%	Specialist Process engineering team using catchment sampling data (sea water) to develop the process design. Multi discipline Engineering team developing the MECH, elect, civil, structural aspects of the concept design.	See below
	Process Design	240	230			The majority of the work at the start of and during Gate two was outlining the process, which develops at a relative projector to the data captured.	Freeze date
	Mechanical Design	138	50			Mechanical sizing based on flow specific to option and sizing of recycling plant process units.	Freeze date
	Civil Design	101	87			General plan/ sections produced from outline mechanical sizing.	Freeze date
	Electrical	26	21			Basic electrical designs produced against outline Mechanical design.	Freeze date
	ICA	25	22			Basic Instrument, Control and Automation design produced against overall design.	Freeze date
	Design management	77	69			Coordination and oversight of how the design workstream is delivering to plan and aligns to the broader programme.	Freeze date
Option benefits development and appraisal	-	81	0	1.7%	0.0%	Cost estimation and embedded carbon calculation	Specific outputs
	-	197	0	4.1%	0.0%	Option Appraisal Framework consistent with Green book and consenting requirements	Specific outputs
	-	216	4	4.5%	0.1%	Hydraulic modelling - analysis and software licences	Freeze date
Environmental Assessment	-	118	34	2.5%	1.1%	Includes site selection, habitat phase 1 assessment. Land referencing and negotiating access.	Specific outputs
	-	35	0	0.7%	0.0%	Environmental, Ecological, Terrestrial and Marine Surveys	Specific outputs
	-	141	13	3.0%	0.4%	Work undertaken by [REDACTED]	Specific outputs
Data Collection, Sampling, and Pilot Trials	See below	0	609	0.0%	20.0%	The ceramic membrane design is relevant for a number of SRO alternative options (recycled water and raw water transfer) as the technology will be able to treat water from a variety of sources including recycled water. Running a pilot plant now will inform design and operations in the future should the alternative options go ahead	See below
	PWNT membrane	0	292				n/a
	Nanostone membrane	0	317				n/a
	See below	791	770	16.6%	25.3%	Design Consultancy undertaken by Internationally recognised specialist in water recycling design. Input includes engineering, construction best practice, analysis of the sampling data. Being undertaken in Gate 2 period to enable SW to collect sufficient data to support DWI approval of water recycling in the UK.	See below
	Planning, scoping, and initiation	96	93				Freeze date
	Specialised laboratory testing	158	153			Specialised laboratory testing in the USA. As the determinants required for testing are fairly unique and there are not the necessary accredited methods in the UK, SW's consultant arranged for the testing in the early phases of Gate 2.	Freeze date
	Project management, regulatory support and data collection and processing	55	53				Freeze date
	Process design support	199	195				Freeze date
	Design management	199	195			Providing preliminary drawings, creating technical reports and developing CDR.	Freeze date
	Design management	84	81			Coordination and oversight of how the design workstream is delivering to plan.	Freeze date
	See below	723	606	15.2%	19.9%	Proving the concept and application of the process design. Collecting data to evidence the process efficacy of the water design. Being undertaken in Gate 2 period to enable SW to collect sufficient data to support DWI approval of water recycling in the UK.	See below
	Hiring the Pilot trial equipment and facilities	57	187			The pilot plant [REDACTED] technology and UV AOP process is currently hired on a monthly basis. This includes hire of the site requirements such as offices/ laboratory etc.	Freeze date
	Trialling the design concept, operating and maintaining it	215	55				Freeze date

	Sampling, Sampling Prep and Analysis	193	212			There is daily sampling carried out on the pilot plant which informs SW's consultants and design team, these are sent to SW's framework laboratories. Approximately every quarter, a larger sampling event occurs where a team goes out into the catchment to collect a wide array of samples, so SW can baseline this against the pilot data to look to profile against plant performance.	Freeze date
	University of Brighton Sample Prep and Testing	246	144			Using academic experts to quality assure the pilot suppliers performance testing, prepare exotic samples for transportation to ██████ USA, bench scale pilot plant.	Freeze date
	Pilot Consumables/ Sundries	12	8			Pilot plant chemical, office supplies, cleaning, etc.	Freeze date
Procurement Strategy	-	211	81	4.4%	2.7%	Southern Water resources to provide procurement and commercial management of External Supply Chain required for Gate 2.	Specific outputs
	-	276	40	5.8%	1.3%	Value for money analysis, Commercial model development, Late Tender model development, Market Engagement, Development of Implementation Plan. Development SOC, Development of and Procurement Plan.	Specific outputs
Planning Strategy	-	159	25	3.3%	0.8%	Specialist planning resource to advise on the consenting on the DCO process	Specific outputs
	-	0	0	0.0%	0.0%	Airborne ground facing LIDAR survey confirming topography and sensitive receptors	n/a
	-	56	6	1.2%	0.2%	██████ commission on Natural Capital & Biodiversity gain	Specific outputs
Stakeholder Engagement	-	142	3	3.0%	0.1%	Formally conducted research into stakeholder and customer views and preferences	Specific outputs
Legal	-	167	30	3.5%	1.0%	Legal advice – regulatory	Specific outputs
	-	36	30	0.8%	1.0%	Legal advice – consenting	Specific outputs
	-	86	6	1.8%	0.2%	Legal advice - procurement, strategy and Secondment	Specific outputs
Other	-	0	0	0.0%	0.0%		n/a
Total	-	4,766	3,046				
Gate Allowance	-	5,370	12,530				

Description	Further breakdown	Gate 2 (£k)	Early Gate 3 (£k)	G2 % of Total Expenditure	Early G3 % of Total Expenditure	Description of Activity	G2/G3 allocation approach
Programme & Project Management	-	113	0	4.1%	0.0%	Project Management to lead and manage the projects.	Specific outputs
	-	263	181	9.6%	10.7%	The PMO provides both strategic and tactical oversight of all workstreams and deliverables, whether internal or external. The PMO provides project controls, including tracking delivery of outputs, progress to schedules, costs tracking, resource oversight, monitors the interfaces between the workstreams and with the wider business, provides project management services to projects, as required.	Specific outputs
	-	266	128	9.7%	7.6%	Southern Water senior delivery management of both projects and programme	Proportioning with specific outputs for project-specific delivery
	-	105	0	3.8%	0.0%	External Assurance undertaken by [REDACTED] and with support on data analysis from the SW team, data provided to SW Board prior to Board Assurance statement.	Specific outputs
Feasibility Assessment and Concept Design	-	109	422	4.0%	25.0%	Specialist Process engineering team using catchment sampling data (sea water) to develop the process design. Multi discipline Engineering team developing the MECH, elect, civil, structural aspects of the concept design.	Freeze date
Option benefits development and appraisal	-	81	0	3.0%	0.0%	Cost estimation and embedded carbon calculation	Specific outputs
	-	197	0	7.2%	0.0%	Option Appraisal Framework consistent with Green book and consenting requirements	Specific outputs
	-	216	4	7.9%	0.3%	Hydraulic modelling - analysis and software licences	Freeze date
Environmental Assessment	-	71	21	2.6%	1.2%	Includes site selection, habitat phase 1 assessment. Land referencing and negotiating access.	Specific outputs
	-	0	83	0.0%	4.9%	Environmental, Ecological, Terrestrial and Marine Surveys. Too late to feed into Gate 2 but required to maintain project progress.	Specific outputs
	-	141	13	5.2%	0.8%	Option Appraisal Framework consistent with Green book and consenting requirements	Specific outputs
	-	38	8	1.4%	0.4%	Portsmouth Water costs advising on environmental constraints, available pipe routes, location of inlet/ abstraction connections at Havant Thicket, informing the high lift pumping station site location, development of the joint risk and joint stakeholder engagement strategies and performing joint regulator engagement.	Specific outputs
Data Collection, Sampling, and Pilot Trials	See below	0	609	0.0%	36.0%	Value for money analysis, Commercial model development, Late Tender model development, Market Engagement, Development of Implementation Plan	See below
	PWNT membrane	0	292				n/a
	Nanostone membrane	0	317				n/a
Procurement Strategy	-	211	81	7.7%	4.8%	Southern Water resources to provide procurement and commercial management of External Supply Chain required for Gate 2.	Specific outputs
	-	276	40	10.1%	2.4%	Value for money analysis, Commercial model development, Late Tender model development, Market Engagement, Development of Implementation Plan. Development SOC, and Development of Procurement Plan.	Specific outputs
Planning Strategy	-	159	25	5.8%	1.5%	Specialist planning resource to advise on the consenting on the DCO process	Specific outputs
	-	0	0	0.0%	0.0%	Airborne ground facing LIDAR survey confirming topography and sensitive receptors	n/a
	-	56	6	2.0%	0.4%	[REDACTED] commission on Natural Capital & Biodiversity gain	Specific outputs
Stakeholder Engagement	-	142	3	5.2%	0.2%	Formally conducted research into stakeholder and customer views and preferences	Specific outputs
Legal	-	167	30	6.1%	1.8%	Legal advice - regulatory	Specific outputs
	-	36	30	1.3%	1.8%	Legal advice - consenting	Specific outputs
	-	86	6	3.1%	0.4%	Legal advice - procurement, strategy and Secondment	Specific outputs
Other	-	0	0	0.0%	0.0%		n/a
Total	-	2,730	1,690				
Gate Allowance	-	1,128	1,859				
Gate under/overspend	-	1,602	-169				