

Strategic Solution Gate 1 Priority Actions: Remediation Action Plan

26th July 2021



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1 Remediation Action Plan

1.1 Introduction

This document follows on from the Remediation Action Plan (RAP) submission provided to RAPID on 31st March 2021 pursuant to the accelerated Gate 1 final decision.

As agreed in the April 2021 Checkpoint meeting with RAPID, following a discussion on how to demonstrate progress, Southern Water (SW) has been providing a monthly update to RAPID with Red/Amber/Green status of Priority Action topic areas, with a verbal update and discussion of areas of interest. Topic specific meetings have been held with RAPID, and other regulators, in line with the Priority Actions to discuss and review key areas in detail.

Following feedback from RAPID that the RAP document provided by SW on 31st March was more detailed than expected, we have since met with RAPID who confirmed that to close out on the Priority Actions a summary report would be suitable, given the increased level of engagement to date.

For ease of reference, we have included the Priority Action at the front of each section. Further information is available regarding each Priority Action upon request.

1.2 Priority Actions

An action tracker was created following the submission of the RAP on 31st March 2021, to ensure the Priority Action commitments made to RAPID were progressed as per the timeframes indicated in the RAP. A weekly review by the programme delivery team with the owners of each activity has been carried out and there have been monthly updates on the progress of these actions to the Programme Steering Group and Executive Programme Board, including various members of the SW Executive.

The final submission was signed off by the Water for Life Hampshire (WfLH) Programme Sponsor, Simon Parker, Director of Asset Strategy, and Martin Roughead, Director of Regulation.

This document provides a high level summary of the progress and collaboration that Southern has carried out with its Stakeholders and regulators to meet the Gate 1 Final Determination Priority Actions.

1.3 Actions for Gate 2 and Recommendations

We have mapped all of the “Actions to be addressed in Gate 2 submission” and the “Recommendations” set out in the Appendices to the Final Determinations against the accelerated Gate 2 submission template in order to ensure that the individual Actions are specifically addressed within the Gate 2 submission.

We will indicate in our Gate 2 submission which section of the submission contains the response to each Action or Recommendation, for ease of reference.

1.4 Summary

This submission demonstrates that the Priority Actions raised in the accelerated Gate 1 Final Decision have been completed in line with the updates provided to RAPID and other stakeholders since the Gate 1 Final Decision was published. We therefore consider that the delivery penalty should not be applied.

Section	Completion status
Site Selection	SW consider this response to meet the Priority Action , except for site selection for Option D1, which has been discontinued, as explained in section 2.4.
WRMP	SW consider this response to meet the Priority Action and SW is awaiting formal written agreement from EA and Defra on the proposal we submitted to them in relation to updating WRMP19 in respect of any different SRO to the Base Case, should this be required.
Timetable	SW acknowledge that we are unable to provide a recovery plan to meet 2027 as requested in the Priority Action, but otherwise consider that this response meets the Priority Action.
Costs	SW consider this response to meet the Priority Action.
Havant Thicket	SW consider this response to meet the Priority Action.

2 Priority Actions – Site Selection

2.1 Priority Action applies to Desalination

The Gate 1 final decision in relation to desalination set out the following Priority Action No. 1:

Confirm whether or not the alternative site locations that have been considered in Annex 8 should be included as additional options for the desalination solution.

Undertake urgent site selection in advance of gate two (including the development of a dedicated desalination facility on the site of the industrial customer (Option D.1)) to enable site specific assessments to progress as part of gate two investigations.

SW consider this response to meet the Priority Action, except for site selection for Option D1, which has been discontinued, as explained in section 2.4. SW has confirmed that they will not include desalination at an alternative location as, having completed the site location exercise, it has not identified any site configurations that are preferred to the Base Case location.

2.2 Site Selection Overview and Modifications since Gate 1

Following Gate 1, the site selection methodology outlined in Annex 9.1 for desalination and Annex 9.2 for Water Recycling was reviewed and developed to ensure that it delivered a robust, planning led, optioneering process as outlined in the Remediation Action Plan (RAP), March 2021. This allowed SW to take account of new and emerging circumstances that have evolved as a result of ongoing engineering and feasibility assessments, further environmental studies and engagement with stakeholders.

The site selection process has evolved since Gate 1 and has been applied to desalination, water recycling and water transfer solutions to ensure the identification of configurations for each solution that have the potential to be consented and to identify a preferred location which should therefore be considered within the options appraisal process which includes a planning evaluation and a multi-criteria decision analysis (MCDA).

The primary refinements made to the proposed methodology after Gate 1 have comprised:

- Refinement to Stage 0 to further develop and justify the proposed areas of search that form the basis for the subsequent stages of the process.
- Inclusion of an initial Stage 1b for the desalination solution to ensure that robust geographical configurations are developed comprising each key infrastructure component.
- Inclusion of Stage 3b for the desalination solution to rationalise the number of potential parcels being taken forwards into Stages 4 and 5.
- A modified approach for Stage 4 comprising the development of a series of planning evaluation criteria, having regard to the policy with the draft National Policy Statement (dNPS) for Water Resources Infrastructure (November, 2018), the National Planning Policy Framework (NPPF) (February, 2019), South Inshore and Offshore Marine Plan (July, 2018), the Marine Policy Statement (March, 2011), Environmental Impact Assessment Regulations 2017, the Water Framework Directive 2000/60/EC and the Conservation of Habitats and Species Regulations 2017. The criteria were then applied to determine the consenting risks associated with alternative geographical locations for the infrastructure components (terrestrial parcels, marine intakes, marine outfalls, pumping stations and connecting pipelines). The output of Stage 4 recommended a configuration for each option (parcel, pipeline, etc) that could be subject to the Stage 5 planning evaluation. Stage 4 also included back

checking of previously discounted or 'held' parcels at Stage 3b. This was to verify previous decisions and confirm that options were appropriately tested for their consentability.

- A modified approach for Stage 5 comprising the planning evaluation of the recommended configurations identified during Stage 4 to determine the consenting risks associated with each configuration and the mitigation potentially required to ensure a consentable preferred solution can be delivered.

The primary changes made to the methodology have also been discussed with the regulators (Environment Agency (EA), Natural England (NE), RAPID and Marine Management Organisation (MMO)). The subsequent sections outline the engagement that has happened with stakeholders regarding the site selection process which has covered all options (desalination, water recycling and water transfer), followed by a summary of the site selection results for the desalination options. A full account of the site selection process for desalination, as well as the results for other technologies, will be provided within the Options Appraisal Annex of the Gate 2 submission.

2.3 Engagement with Stakeholders

During the development of the site selection methodology and the completion of the site selection process to Stage 4, a series of meetings have been held with key stakeholders to: explain the modified process and how this integrates with wider environmental and engineering assessments; seek comment on the evaluation criteria that were to be used for both the site selection process and the subsequent Stage 5 planning evaluation; and to present the results of the site selection process. This engagement included:

- A meeting in April 2021 with Southern Water, the EA and NE to present the results of Stages 0 to 3b of the process and to present the updated site selection process.
- A joint regulatory workshop was held in June 2021 which was attended by RAPID, NE, Portsmouth Water, EA, Ofwat, DWI, Defra, and the MMO where the updated site selection criteria were presented.
- A joint regulatory meeting in July, including attendance by Ofwat, EA, NE and Defra, to update on the outcomes of the Stage 4 planning evaluation for site and route selection.

Feedback provided during these meetings included; ensuring that the criteria used in the evaluation reflected both terrestrial and marine requirements, ensuring that relevant recent Habitats Regulations Assessment case law was considered and clarifying the evidence base that would be used to inform the planning evaluation.

Progress briefings were held with Local Planning Authorities in June and July 2021 and will continue up to Gate 2. This has included the New Forest National Park Authority, South Downs National Park Authority, New Forest District Council, Winchester City Council, Eastleigh Borough Council, Portsmouth City Council and Hampshire County Council. During these meetings, the broad options appraisal process and the evaluation criteria were presented and provided confidence that relevant matters were being addressed in the site selection and options appraisal processes.

The above engagement has enabled SW to conclude site and route selection and progress into the final stages of the options appraisal process.

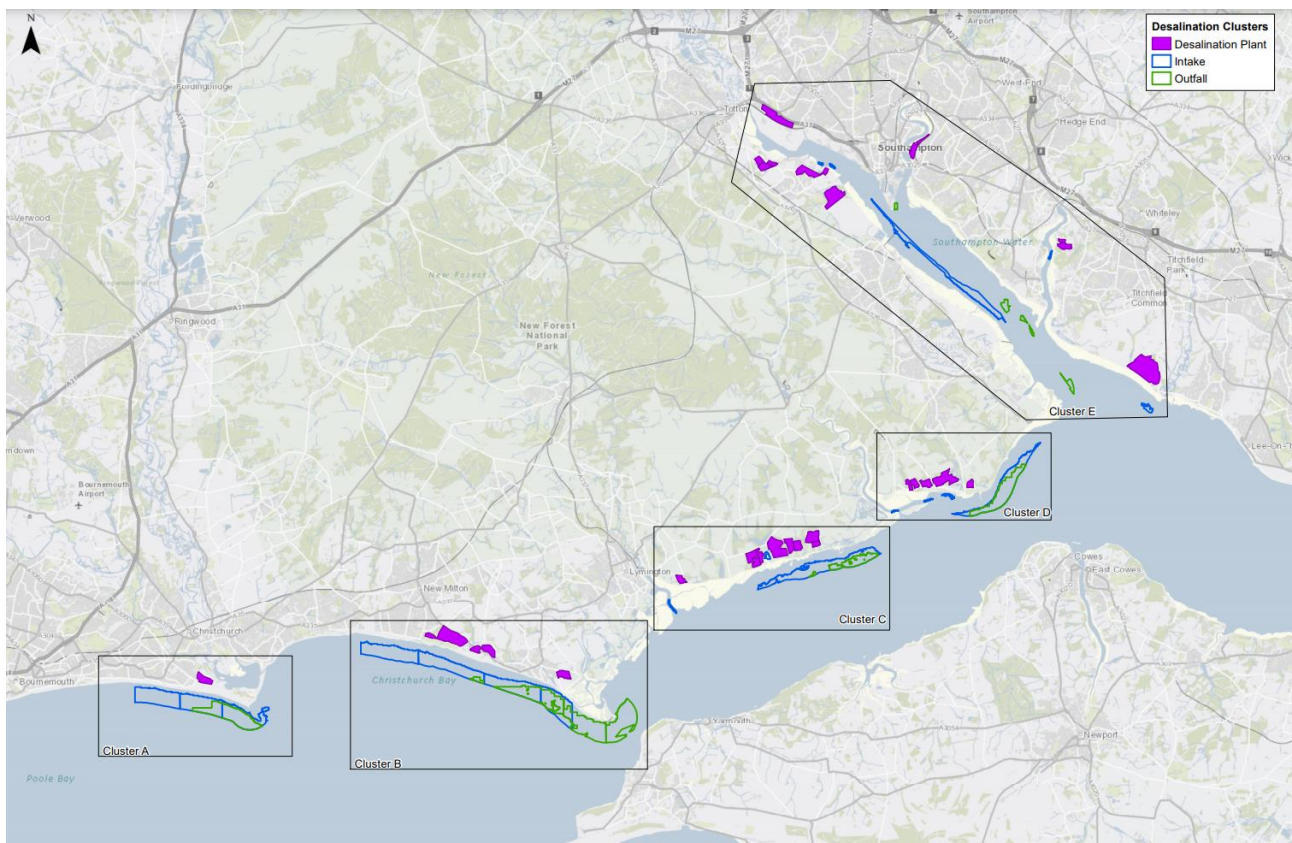
2.4 Stage 4 Outcome - Desalination

This section presents a succinct summary of the site selection outcomes for desalination following the Stage 4 evaluation work. Full details of the Stage 4 outcomes will be presented as part of the Gate 2 submission.

Following the completion of Stages 1 to 3 of the site selection process, the base case at Ashlett Creek and a range of alternative terrestrial and marine parcels were identified within five clusters A, B, C, D and E to be

taken forwards to Stage 4 of the process. At the end of Stage 3, a total of 16 terrestrial parcels, 15 marine intake parcels and 11 marine outfall parcels were identified as the best performing within their respective clusters. Stage 3b of the process further reviewed the short-listed parcels and progressed those that were considered more consentable in terms of plant and pipeline configurations.

Stage 4 of the process included a back checking process to ensure that all relevant information and judgments were up to date, and to identify where there were any information gaps which would affect Stage 4. To ensure that planning considerations were a key factor in the short-listing of sites, it also included a review of the terrestrial and marine parcels associated with clusters A, B, C, D and E to determine if they were potentially more consentable alternatives to the base case at Ashlett Creek. The image below shows the clusters considered.



A review was undertaken of the Habitats Regulations Assessment (HRA) risks associated with each of the marine intake/outfall locations as this is a key factor in the viability and consentability of any desalination option. On the basis of this review, it was determined that the marine components of clusters A, C, D and E were all very high risk owing to potential impacts on designated sites and therefore would not represent more consentable alternatives than the base case from this perspective.

The eastern part of cluster B nearer to Hurst Castle was also identified as having a very high HRA consenting risk but the western part of that parcel near to Barton on Sea was deemed to have a lower, albeit still high, HRA consenting risk. On this basis, a review of the terrestrial parcels that could connect to the marine intake/outfall in this location was undertaken. Whilst all of the terrestrial parcels would be outside of the New Forest National Park the following consenting risks were identified:

1. The extensive lengths of pipeline that would be required to connect to Testwood (and which would lie within the New Forest National Park).
2. The proximity of the pipelines and their direct impact (intersection with) on a number of European Sites and nationally designated sites (Sites of Special Scientific Interest)

3. The geological SSSI designation (Milford Cliffs) along the coastline (in relation to the marine intake/outfall)

It was therefore confirmed that due to these factors, this cluster is not a viable alternative for a desalination solution from a consenting perspective.

A review was also completed of terrestrial parcel D55 (within Cluster E) and its associated marine intake/outfall into the southern part of Southampton Water. Parcel D55 was identified as possible alternative desalination location at Stage 3b. The review sought to identify whether there was a potential consentable alternative site outside of the New Forest National Park to the base case. This review determined that this option would require completely new infrastructure within the Solent and Dorset Coast SPA and there would be potential consenting risks associated with impacts on mudflat and saltmarsh areas associated with the saline plume. The terrestrial parcel was also identified as having very high consenting risks owing to the designation of the site as a 'Core' area in the Solent Waders and Brent Geese Strategy¹. This strategy identifies functional habitat linked to the Solent and Southampton Water SPA and Ramsar. It was therefore not considered a consentable alternative to the base case. On the basis of the site selection, no alternative, viable and consentable parcels were identified within clusters A, B, C, D and E.

In addition, a review was undertaken of the discounted draft WRMP 19 site at the Former Fawley Power Station to reconfirm that this was not a viable alternative to the base case site within the New Forest National Park. This concluded that:

- The terrestrial parcel, whilst not within the National Park, was still immediately adjacent to it and would likely incur significant landscape and visual impacts on the setting of the National Park. It was therefore deemed to have marginally lower, but still significant, consenting risk than the base case when assessed against key tests in the dNPS and the NPPF – National Park policy.
- Development proposals for Fawley Waterside are significantly more advanced than when this option was removed from the WRMP19 (outline consent now granted). The size of the plant is likely to consume most of the masterplan area allocated for business and industrial space and would be very challenging to reconfigure to allow the new masterplan and the desalination plant to operate concurrently on that site. This incompatibility was deemed a very significant feasibility constraint and acquisition risk.

Taking the above factors together, it was reaffirmed that the former Power Station site is not a viable alternative to the base case.

Table 1 provides a summary of the results of the site selection process for the Ashlett Creek Site. For details of the components considered in the site selection process refer to Figure 1 below. .

¹ Whitfield, D (2020) Solent Waders and Brent Goose Strategy Hampshire and Isle of Wight Wildlife Trust. Curdridge.

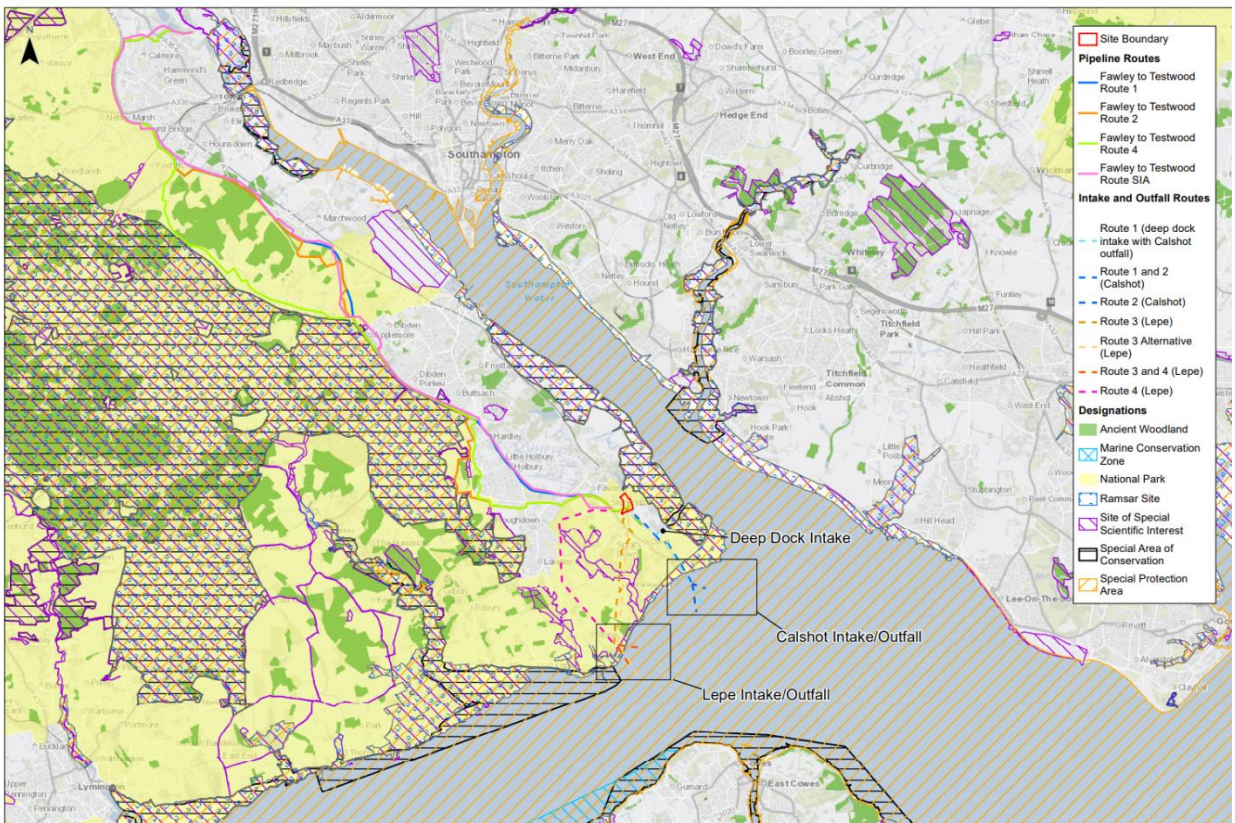


Figure 1 – Components of Site Selection

Table 1: Summary of Site Selection and Pipelines Consent Risk Evaluation for Ashlett Creek

Option	Terrestrial Parcel (Ashlett Creek)	Marine Intake/Outfall – Lepe and Calshot Options	Pipelines – Four Considered (1,2, 4 and SIA)	Consenting Risk
Base Case Configuration A1/A2	The terrestrial parcel is within the New Forest National Park – It therefore has very significant consenting risk when assessed against key tests in the dNPS and the NPPF – National Park policy.	Significant HRA risks have been identified in relation to the marine intake/outfall structures. Two geographical options were considered – Lepe and Calshot. It was considered that whilst both have consenting risks from a HRA perspective they are potentially lower for the Calshot options and there is potential to re-use some existing infrastructure associated with the Fawley Power Station that would further reduce impacts to the marine environment.	Pipelines 1 and 2 have a lower impact on the National Park than Pipelines 4 and SIA, however there are significant constructability constraints. Pipeline SIA (generated using a consent risk mapping tool) has potential significant ancient woodland impact. Pipeline 4 presents fewer engineering challenges but passes close to ancient woodland and is likely to require mitigation. Pipeline 3 was discounted owing to significant engineering feasibility issues associated with the routing along a live freight railway.	Further environmental information especially in relation to HRA risks is required to establish consenting viability. Significant risk would remain until this survey information is completed. There is no certainty that mitigation of National Park or HRA impacts could be provided.

Conclusion

Based on the Stage 4 site selection process and the consideration of marine and terrestrial risks, it was determined that there was no consentable and viable alternative to the base case. The base case remains the preferred desalination option, however, significant consenting risks remain that will be assessed as part of the Option Appraisal process. Ashlett Creek and Pipeline Routes 1 and 2 will therefore progress into the Stage 5 planning evaluation as the desalination configuration with the lowest level of consenting risk when judged against planning evaluation criteria.

Option D1

Option D1 includes a dedicated 40MI/d desalination supply to the Industrial Facility with the remainder of the supply provided from a new water recycling plant using treated effluent from Budds Farm. The existing 40MI/d supply to the Industrial Facility, part of which is provided from South West Water's Knapps Mill abstraction point, will be redirected to Southern Water.

This Option has not progressed through stage 4 of the site selection due to significant risks around the future availability of the Knapps Mill supply and around the commercial viability of this option. Southern Water considers that these risks make Option D1 too unreliable for it to be a genuine alternative to the Base Case, particularly when considered in the context of the duty to supply through the Water for Life-Hampshire Programme. Southern Water will confirm this position in the Gate 2 submission, and it will be discussed with RAPID before Gate 2. As a result, no site has been identified for this option.

3 Priority Actions – WRMP

3.1 Priority Action applies to both Desalination and Water Recycling

The Gate 1 final decision in relation to desalination set out the following Priority Action No. 2:

Consider whether your WRMP19 needs amending and if so how. Explain the reasoning for this in light of potential changes to your best case plan, delivery times and costs for the solution.

This section sets out SW's proposed approach to any necessary update to WRMP19 in light of the preferred solution selected for progression through Gate 2, to satisfy the requirement of Priority Action No. 2 in the Gate 1 final decision. This section is a summary of a paper submitted to Defra and the Environment Agency (EA) on the 11th June 2021, as key stakeholders in the statutory WRMP process. SW continues to engage with the EA and Defra in relation to the process for updating WRMP19.

SW consider this response to meet the Priority Action and SW is awaiting formal written agreement from EA and Defra on the proposal we have submitted to them in relation to updating WRMP19 in respect of any different SRO to the Base Case, should this be required.

3.2 Material Change

SW will be required to prepare and publish a revised WRMP (in accordance with the procedure set out in section 37B of the Water Industry Act 1991 ("WIA")) following conclusion of its annual review, where the review indicates a "material change of circumstances". This will require a consultation exercise in accordance with the procedure set out in section 37B and section 37C of the WIA 1991. In particular, SW is required to publish the proposed revisions to its WRMP in a way "*calculated to bring it to the attention of persons likely to be affected by it.*" These statutory duties are enforceable by the Secretary of State ("SoS") pursuant to section 18 of the WIA 1991.

SW has reviewed WRMP19 and the associated consultation documentation, and it is considered that any change from the Base Case (75Ml/d desalination at the Fawley site) would represent a "material change of circumstances" for the purposes of section 37A(6)(a) of the WIA. This is because the majority of options currently under consideration were not included in the consultations in relation to WRMP19 or in WRMP19 itself (either as the preferred solution or as strategic alternatives), and/or were not included at the sites or in the configurations which are now under consideration.

3.3 SW annual review of WRMP19

WRMP19 was published in December 2019. SW ordinarily carries out its annual review of WRMP19 in June each year, but under section 37A(5) it has until December to carry out the review.

As of July 2021, whilst SW have undertaken further assessment and appraisal, it does not yet have the modelling results from the regional planning process (which are due in August 2021) and has not completed its options appraisal process to determine the preferred solution to be progressed through Gate 2. On this basis, SW are not currently in a position to know with confidence whether a specific alternative solution should be included in WRMP19 in place of the Base Case. SW therefore proposes to undertake a two stage process in relation to the 2021 annual review:

- Complete the review for WRMP19 in all respects save for in relation to the water resource options for the Hampshire region in June 2021, and describe the options that are being considered as an alternative to desalination (the draft review was submitted to Defra and EA on 30 June 2021) ; and
- further review and update WRMP19 in respect only of the water resource option for the Hampshire region in October 2021, following completion of the options appraisal process and engagement on the outcome with relevant regulators including Defra, the EA, Ofwat and RAPID.

This will enable SW to submit a statement with its conclusions of the full WRMP annual review (including any revised preferred solution) to the Secretary of State (“SoS”) after Gate 2, currently planned to be in November 2021.

3.4 Gate 2 submission and decisions

By the time of the Gate 2 submission in September 2021, SW will have completed the further assessment and options appraisal work and will have a clear view on the solution which it considers is the most appropriate to progress on the accelerated gate timeline.

SW has been undertaking ongoing engagement with RAPID and regulatory stakeholders in and has shared details of the process and the results from each stage as they have become available. Therefore, these stakeholders are expected to have an understanding of the solution considered most appropriate to progress on the accelerated gate timeline prior to the Gate 2 submission as the data becomes available. However, it is important to note that at this stage, SW will not yet have Ofwat's draft or final Gate 2 determination.

SW expects to receive a draft decision in relation to its Gate 2 submission from Ofwat in November 2021 and a final decision in January 2022. SW would ordinarily expect to wait until the Gate 2 final decision before progressing with any update to WRMP19, were it not for the various constraints applying, including the very challenging timescale for delivery and the ‘All Best Endeavours’ obligation under the s.20 agreement. By the time of the Gate 2 draft decision in November 2021 RAPID will have undertaken a detailed annual review of the Gate 2 documentation, formed a view on the Base Case or any alternative solution proposed and be in a position to make any representations regarding it. This timing aligns with the proposal for SW to submit its statement of conclusions of the full WRMP annual review (including any revised preferred solution) to the Secretary of State (“SoS”) in November 2021.

Clearly, if RAPID takes a different view of the preferred solution in its draft Gate 2 decision in November 2021, it will be very difficult for SW to prepare a revised update to its WRMP19 in time for the anniversary of its publication in December 2021. Engagement to be undertaken with RAPID and regulators in the period prior to and immediately after the Gate 2 submission will therefore be crucial to ensuring that there is sufficient confidence for SW to progress the second part of the annual review in October 2021.

3.5 Consultation

SW expects the scope of the consultation on WRMP19 to be limited to the material changes since WRMP19 was published in December 2019. This is on the basis that other aspects of the WRMP have been consulted on already prior to final publication of WRMP19. The primary focus of the consultation will therefore be on any preferred solution which is to be substituted for the current preferred solution in terms of the delivery of new water resources to meet the projected deficit in the late 2020s and any associated mitigation measures, though it may also include other elements, for example in relation to any relevant non-SRO options.

In order to mitigate against the risk of challenge (and attendant delay to the process), notwithstanding the limited scope of the consultation on the revised WRMP19, SW proposes to consult on the draft revised WRMP19 for a period of 12 weeks, in line with the precedent mentioned in the WRPG. Based on the draft

revised WRMP19 being published for consultation in early February 2022, the consultation would run until late 25th April 2022.

It is also important to recognise that there are two other public consultations / engagement scheduled to take place in 2022 namely:

- consultation on the draft WRSE Regional Plan, expected to take place from January 2022. This consultation will include details of the preferred solution selected for progression through Gate 2, as well as proposals proceeding on the standard gated timeline, and which will form part of WRMP24; and
- non-statutory engagement / consultation on the preferred solution selected for progression through Gate 2, proposed to take place from April 2022.

3.6 Outline timeframe for WRMP amendment

If SW begins preparing a revised draft WRMP19 based on the preferred solution to be progressed through Gate 2 in October 2021, SW considers a reasonable best case scenario for updating WRMP19 could be:-

- SW to undertake initial preparatory work for updating and reconsulting on WRMP19 from Gate 2 submission (from September 2021)², including consulting with relevant stakeholders as required under the WIA 1991;
- SW to submit its statement of conclusions of the full WRMP annual review (including any revised preferred solution) to the Secretary of State (“SoS”) in November 2021;
- SW to provide the draft revised WRMP19 to the SoS as soon as possible after its statement of conclusions of the full WRMP annual review in November or December 2021;
- following submission of the draft revised WRMP19 to the SoS, the SoS could grant SW permission to publish the revised WRMP19 for consultation in January or February 2022;
- once SW publishes the draft revised WRMP19 for public consultation in February 2022, the 26 week statutory period³ would commence for SW to consult on the draft revised WRMP19 and make any necessary revisions;
- SW proposes to consult for a 12 week period from early February 2022 – to late April 2022;
- at the end of the consultation period (in this example, April 2022), SW would expect to need to allow at least 2 or 3 months for:
 - the SoS to send representations to SW, and for SW to have sufficient time to consider and comment on them and, if appropriate, to reflect them in a final revised WRMP19 [6 weeks?]; and
 - the SoS in consultation with the EA, to decide whether the final revised WRMP19 can be published;
- based on a 3 month timeframe, the earliest date a decision can reasonably be expected is late 25th July 2022. This timeline might be capable of being reduced if the EA is already in agreement that the revision should be made and is familiar with the solution which is the subject of the amendment, based on engagement with SW and other regulators prior to Gate 2; and
- in the event that the SoS granted permission for SW to publish its revised WRMP19, SW would have 30 days to publish its final revised WRMP19, resulting in a publication date in late August 2022.

The revised schedule for the SRO delivery assumes that the process of updating WRMP19 is not expected to impact on the timeline for delivery.

² This work could begin in July but would be on the basis of unassured and not fully approved decisions.

³ The maximum statutory consultation period is 26 weeks. A water undertaker has discretion to decide the appropriate length of time on which to consult on its draft WRMP (as long as the time period does not exceed the 26 weeks). On the basis that SW would be consulting on revisions to its final published WRMP19 rather than consulting on a new WRMP in its entirety, it may be possible for SW to carry out a shorter consultation. This will very much depend on the extent and complexity of the proposed changes to WRMP19.

3.7 Costs for the Solution

Activities to be carried out for Gate 2 have been mapped to the Gate 2 template and Ofwat PR19 FD and agreed with RAPID. Associated cost forecasts have also been provided to RAPID at intervals, though assessment of costs incurred will be carried out by RAPID as part of the Gate 2 process.

If the preferred option changes through the Option Appraisal process, this information will be shared with RAPID and other stakeholders as soon as is practicable in advance of Gate 2. Costs are being calculated and considered for each solution as part of a wider best value assessment in the Option Appraisal process.

If a change to the WRMP19 is required, it will be because of a move from the Base Case, rather than because of changes to solution costs or delivery times. Both costs of the solutions and delivery dates are being updated and will be shared with RAPID as soon as practicable ahead of Gate 2. Any additional costs associated with the updating of the WRMP19 (relating to the SRO) will be estimated and shared with RAPID and Ofwat.

These costs are expected to include (if necessary):

- WRMP update costs in respect of the SRO
- WRMP updated consultation in respect of the SRO
- SRO scheduling mitigation (assumptions made regarding operating in parallel see above)

4 Priority Actions – Timetable

4.1 Priority Action applies to both Desalination and Water Recycling

The Gate 1 final decision in relation to desalination set out the following Priority Action No. 3 (detailed as Priority Action No. 2 in relation to water recycling):

Provide information about why the timeline for delivery has slipped beyond 2027. Provide a plan for recovering the programme slip, including a revised plan with mitigation measures to deliver alternative water resource by end 2027. This should include:

- i. the measures that are needed to meet the 2027 timescales*
- ii. more detail of pre-construction activities and critical path activities (such as DWI engagement on membranes approvals and site location confirmation) and decision points*
- iii. a clear statement to confirm any missing information and the potential impact this could have on the programme*
- iv. consideration of solution delay impacts with reference to having an operational solution by the end of 2027*
- v. details of regulator engagement and review points*
- vi. clarification of the date of tender award. Different dates have been shown in different areas of the submission.*

SW acknowledge that we are unable to provide a recovery plan to meet 2027 as requested in the Priority Action, but otherwise consider that this response meets the Priority Action.

4.2 i. the measures that are needed to meet the 2027 timescales

A revised 'All Best Endeavours' programme to provide the earliest possible delivery date has been developed for each SRO and will be shared at Gate 2 with an advance meeting(s) to discuss with RAPID in detail. We continue to explore all options to bring the delivery date forwards and this is described in section 4.3 below. Mitigation plans for any deficit that could be present after 2027, in the event of a 1-200-year drought, are being worked through and developed as per section 4.5 below.

We cannot, at this time, recover the date of the SRO schedule to deliver an operable solution by 2027 but continue to minimise any overrun from this date. Therefore, a plan to recover the programme slip beyond 2027 is not currently possible.

The updated schedules, post Peer Reviews, will be shared with RAPID (and other stakeholders) ahead of the Gate 2 submission.

This in turn has a knock-on impact on the Recommendation for the Board to insert phrasing to support an operable delivery by 2027 into their Board Statement for Gate 2. This was discussed with RAPID on 30th June 2021 in the Checkpoint meeting.

4.2.1 Peer Review

As part of the internal second line of assurance, SW have implemented our Peer Review process, known as Star Chambers, across the scheduling area to promote challenge and experience from several industries. By using Subject Matter Experts from technical teams, consenting and regulatory teams from SW and across



the supply chain, each aspect of the schedule has been scrutinised to support a granular schedule, optimised for 'All Best Endeavours' and reflecting risk to delivery.

The full details of the output of these sessions will be seen in the Gate 2 submission and the schedules for each SRO, with contingency activities to cover the deficit between 2027 and the forecasted delivery dates for each SRO.

4.2.2 Project Speed

SW wrote to Defra in December 2020 to discuss their views on adding the Water for Life SRO to "Project Speed" to support the s20 timescales. This has been flagged on several occasions without a formal conclusion (namely 5th March, 19th March, 14th April and 28th May). SW has suggested that not only the preferred SRO but also the whole West Hampshire programme would benefit from inclusion in Project Speed.

As part of our focus on 'All Best Endeavours' for the s20 agreement, any activity which has the potential to minimise delays to the delivery schedule or a positive benefit of fast-tracking elements of the delivery schedule will continue to remain a priority for Southern Water.

As Project Speed remains a potentially viable way to support the optimised delivery of the preferred SRO, Southern will be approaching Defra (and RAPID) again following the accelerated Gate 2 submission, whichever is the preferred option at Gate 2.

4.3 ii. More detail of pre-construction activities and critical path activities

The SRO schedule is a live document which undergoes regular iterations to improve the detailing of sequencing (timings), durations and definition (granularity), in line with improved knowledge, understanding, stakeholder feedback and outputs of milestones etc. This includes review of the 'critical' path and activities close to the critical path. Following completion of the external assurance and approval of the 'updated' schedule versions these will be provided as part of the Gate 2 submission, together with a plan to Gate 3 and beyond. The updated 'assured' SRO schedules will be shared with RAPID (and other stakeholders) ahead of Gate 2 submission.

In the period between Gate 1 and Gate 2, the following activities have been undertaken to develop, scrutinise and validate the detail in each schedule.

- Informal market engagement with 21 suppliers, including technology companies, construction contractors, financial investors, and strategic investors to test market appetite for the SROs and specific elements of the contractual and commercial models.
- Undertook non-statutory consultation on the Base Case, the feedback of which has helped to inform the schedule and plans.
- Third-party collaboration meetings to identify / confirm interface milestones, including working group sessions with Portsmouth Water.
- Deep dive workshops comprising of the project team and Subject Matter Experts (SMEs) to further define and understand the scope and sequence of activities. Areas covered were engineering and process; DPC; environmental; DCO, stakeholder engagement; and SRO-specific activities.
- Positively engaged with supply chain specialists to review potential construction methods and durations for key elements of construction scope to further improve the depth and quality of underpinning information for the activity durations identified. (As the project develops, the construction and commissioning will be further refined and validated by further peer review and interventions. Granularity shall evolve through the gated process as the predeterminants to

construction are documented to satisfy project management and schedule assurance consistent with good industry practice.)

- Review of schedules with Southern Water functional leads and Project Managers to validate the logic and indicative durations of activities.
- Challenge sessions on sections of the schedule with SMEs and Peer Reviews on the overall schedules.

Southern Water is in the process of detailed planning of the CAP procurement (Base Case) and developing a formal market engagement plan and timeline. We will be engaging with existing supply chain partners to challenge and develop construction and commissioning activities, durations and sequencing. Formal market engagement will be used to independently verify and build on this information.

In line with good industry practice, Southern Water will continue to develop the underpinning detail, sequence and durations (granularity) including the interrogation and validation of the critical path and activities close to critical path of the schedules and individual activities beyond Gate 2 for the selected solution.

4.4 iii. Clear statement to confirm any missing information and the potential impact this could have on the programme

As previously indicated in the 31st March update, SW considered that the work for Gate 1 was complete. Other topics were identified in the Gate 1 final decision, and these have been discussed and confirmed with the relevant regulators (predominantly Environment Agency and Natural England) in the window between Gate 1 and Gate 2. Not all are complete as they are required post 26th July 2021, but all are on track for completion in line with the Gate 2 submission.

4.5 iv. Consideration of solution delays impacts

4.5.1 Alternative Interim measures

Southern Water have undertaken a series of risk mitigation workshops between the Gate 1 and 2 submissions. These sessions reviewed a range of potential alternative interim solutions as a contingency to the Base Case not being operational by 2027. The brief for these workshops was to review all existing options as originally detailed in WRMP19, and concurrently explore new opportunities for alternative interim measures, a combination of which could be capable of delivering a 75 Mld deficit in a 1:200 drought scenario in the event of an SRO delivery delay past 2027.

40 options from the risk mitigation workshops were collated for further consideration by Southern Water, having been categorised in line (where possible) with WRMP19 classifications:

- Network Infrastructure (3x Options)
- Bulk Supply (3x Options)
- New Sources (18x Options)
- Catchment Management (5x Options)
- Demand Reduction (3x Options)
- Optimisation of Existing Assets (8x Options)

Southern Water have subsequently appointed external consultants to undertake a feasibility study of the above options. Key requirements within their brief include:

- Ability to provide a deployable 75Mld into the western grid no later than 31st March 2027.
- To be operational over multiple drought seasons under the 1-in-200-yr scenario.
- Align with WRMP24/WRSE24 planning activity and AMP7/8 delivery cycles.



- Consider a ROM estimate of cost within the analysis of each option, with it being noted that the solution may consist of multiple options from within all of the above classifications.

The feasibility of the potential options/schemes will be submitted to Southern Water in three phases by the appointed consultants:

- Phase 1 Output - High-Level DO/Cost/Timescale/Certainty analysis across all options.
- Phase 2 Increasing level of detail within investigations to those demonstrating a priority.
- Phase 3 Final options chosen and developed to a level of detail sufficient for further development.

Phase 1 of the feasibility is to be delivered mid-August 2021. A review of the deliverables by Southern Water will be undertaken so as to reduce the number of options using a prioritisation approach, where this can be evidenced in the Phase 1 outputs.

This output is built into the SW Option Appraisal process to support the decision on the final SRO to continue past Gate 2. The cost of the mitigation forms part of the MCDA Affordability section to ensure the “best option” continues.

Southern Water intends to review the Phase 1 outputs and decisions with RAPID, alongside or within existing engagement meetings from the beginning of September 2021, in combination with outputs of the Option Appraisal process.

4.6 v. Details of regulator engagement and review points

In addition to the regular checkpoint meetings with RAPID, for both the accelerated gate SROs and the dedicated Havant Thicket group (jointly with Portsmouth), SW have created two stakeholder groups during Gate 2 with their regulators and key stakeholders to improve engagement and relationships which has produced increased levels of mutual understanding across all attendees.

- Practitioners Group – a wide range of attendees from a working practical level are able to discuss technical detail in an open forum to understand mutual requirements, any conflicting issues and agree a way forwards at speed
- Senior Stakeholders Group – whereby senior directors from the regulators and SW can discuss key topics in an open forum which has already led to the agreement on WRMP update and consultation (see section 3).

Technical consultation with specific regulators (such as the DWI for Drinking Water Safety Plans and membrane technology) have been detailed in SWs Engagement plans and continue for each SRO in order to meet milestones in the delivery schedules. Feedback from Regulators is built into future iterations of required documentation and future topics for technical discussion to continue prioritisation of key areas of interest in line with the delivery schedules.

The Procurement and Commercial team are working closely with each of the SRO Project Managers to identify activities within the schedule, which can be optimised and investigate ways that the DPC Control Point requirements can be aligned with an optimal procurement route. Southern Water continues to investigate opportunities that may be available by alternative procurement routes and supporting contract models.

Southern Water continue to explore options to de-risk the delivery schedule with procurement and commercial activities to ensure that procurement does not become the critical path activity. These options include procurement of long-lead materials and plant, e.g., potentially procuring the tunnel boring machine. Southern Water is also looking for opportunities to bring forward environmental and geotechnical surveys, ahead of tendering and contract award.



Southern Water will continue to engage with regulators on the requirements of the RAPID Gate 3 and DPC requirements to ensure that all Procurement activities can be optimised. Following recent conversations with RAPID and Ofwat with the offer of flexibility from both to interact on future dates and redesign timings to optimise delivery, SW will be putting a proposal to Ofwat on DPC gate timings ahead of the Gate 2 submission.

4.7 vi. Clarification of the date of tender award.

As confirmed in the December 2020 response to the draft decision (and reconfirmed in the 31st March RAP update), the tender award date for the Base Case (Option A.1.) based on the programme submitted at Gate 1 is September 2024.

5 Priority Actions – Cost

5.1 Priority Action applies to both Desalination and Water Recycling

This section sets out SW's breakdown of costs as discussed with RAPID and Ofwat. SW consider this response to meet the Priority Action.

The Gate 1 final decision in relation to desalination set out the following Priority Action No. 4:

Provide more information on cost including identification of activities which should have been undertaken by gate one but have not been completed.

5.2 Gate 1 costs

SW confirmed in the RAP on the 31st March 2021 that it considered, through external assurance as part of the Gate 1 submission, that all activities which should have been undertaken by Gate 1 were completed and included in the costs provided at that time (as per the PR19 Final Determination document "Strategic regional water resource solutions appendix" and RAPID accelerated Gate 1 template).

5.3 Breakdown and mapping of activities to Gate 2 template

As per the RAP actions, a full breakdown of activities, mapped to the RAPID Gate 2 template, was presented, discussed and agreed on 7th May 2021 with the RAPID team where it was confirmed that the mapping activity was completed.

5.4 Gate 3 activities

As per the RAP actions, SW has previously shared with RAPID a list of proposed Gate 2 activities, including some activities that are being undertaken now but are more consistent with the expectations of Gate 3. As agreed, this activity is being carried out within the Gate 2 window in order to support the earliest possible delivery of the final preferred option.

The activities have been mapped to the accelerated Gate 2 template and the definitions in the Ofwat PR19 final determination. These activities were agreed with RAPID in a meeting on 7 May 2021, where RAPID confirmed that the forecast amounts of expenditure would be reviewed for decision after the Gate 2 submission.

Some of the costs currently allocated to Gate 2 will be transferred into the Gate 3 costed activity as part of the review, detailed in section 5.5 below which will be completed prior to Gate 2 submission.

5.5 Current Forecasts

The current forecast of costs for Gate 2, including the accelerated Gate 3 activities is summarised in Table 2 below (all in 2017/2018 prices).

It is important to note the forecasts included in the table below are as of the end of July, and as such are subject to change. These costs currently include some expenditure which is being incurred to deliver the overall Water for Life Hampshire programme, and on deliverables that are not in the SRO process. At Gate 2

SW will provide a further breakdown in costs where expenditure incurred in delivery of non-SRO activity is excluded. A full and transparent description of how this allocation has been done will also be provided.

A completed version will be included in the cost efficiency annex submitted at Gate 2.

Table 2: Current Forecast

SW Activity No	Forecast G2 Total at Jul 21 (£k)	Gate 2 Allowance (£k)	Variance (£k)	Early G3 activities at Jul 21 (£k)
Water Recycling	2,349	5,370	-3,021	2,846
Havant Thicket	1,376	1,128	248	574
Desalination	8,244	5,610	2,634	491
Totals	11,970	12,108	-138	3,911

6 Priority Actions – Joint Working Havant Thicket

6.1 Priority Action applies only to Alternative SRO Havant Thicket

The following text details our progress against the responses that we provided to the Havant Thicket Raw Water Transfer Priority Actions in March 2021. SW consider this response to meet the Priority Action.

The RAPID Gate 1 final decision for alternative solution, Havant Thicket Raw Water Transfer, set out the following Priority Action:

Southern Water and Portsmouth Water to confirm the following jointly, by the end of representation period (31 December 2020) (action confirmed as completed by RAPID).

- i. The solution will be progressed as a collaboration between the two companies*
- ii. Funding allowed for gate two activities is £1.128 million. It will be shared equally between the solution sponsors unless sponsors agree and notify RAPID of the cost sharing proportions before the end of the representation period.*
- iii. The activities to gate two will include investigation of alternative mitigation options for the s20 commitments, for example (but not restricted to) an alternative use of the pipeline in advance of the reservoir completion.*
- iv. Option B4 (61M/d Recycled water sent to Otterbourne WSW via Havant Thicket Reservoir) will be closely aligned and considered in combination with this this solution.*

A timetable of regular review points with regulators showing how the project will be progressed between gates one and two should be provided by 31 March 2021.

The summary update is grouped under the subject areas as originally presented in the RAP.

6.2 Collaborative Solution Development

The solution is being progressed as a collaboration between Portsmouth Water (PW) and Southern Water (SW). This has included:

- The formation of a joint solution Working Group with balanced representation from PW and SW. The Working Group has been meeting since 10 February at a minimum frequency of weekly. These sessions are used for solution and technical updates, solution strategy development, planning regulatory engagement, establishing joint assurance requirements, and risk register development. Specific joint technical development and information sharing sessions have also been arranged.
- Company Executive level meetings between PW and SW organised twice monthly, providing Working Group oversight and developing the commercial terms for a Havant Thicket Alternatives Bulk Supply Agreement.
- Joint presentations at regulator meetings and workshops. These include monthly solution specific RAPID update meetings and other specific meetings, such as an 'early fill' workshop with Natural England (NE) and the Environment Agency (EA), to explore opportunities to accelerate the filling of Havant Thicket.
- Joint solution development including computational fluid dynamics (CFD) modelling, drinking water safety planning, identification of alternative high-lift pumping station locations, inlet valving arrangements etc.



6.3 Funding

As identified in the RAP, PW has agreed that SW shall receive the Gate 2 allocated funding of £1.128million. All costs incurred by PW and its supply chain are being reconciled via the agreed PW-SW commercial agreement.

6.4 Section 20 Mitigation Activities

In addition to the mitigation options detailed in section 4.1.3 above, alternative mitigation options for the s20 commitments have been developed as part of Gate 2 activities including:

1. Establishing a Havant Thicket early fill workshop with NE and EA to potentially support the early operation of the reservoir with a direct pipe. Habitat Risk Assessments are being undertaken on each option to verify feasibility and create a shortlist to take forward for more detailed analysis.
2. Exploring the opportunity afforded to commence the early operational utilisation of Havant Thicket (before it is filled), noting the ODI penalty which could be imposed on PW in the event that the reservoir is not full by June 2029 (raised with RAPID and Ofwat).
3. Progressing the alignment of the Havant Thicket Reservoir and Alternatives design delivery schedules to identify design and construction synergy opportunities which may allow the acceleration of some elements of the Havant Thicket Alternatives works (subject to consent).
4. Establishing if an opportunity exists for the alternative use of the direct pipe in advance of reservoir completion. It is not currently forecast to materialise as reservoir construction and commissioning is highly likely to be completed before, or very near, that of the direct pipe but we continue to review, optimise and align schedules to establish whether any viable opportunity exists.
5. Commencing liaison to establish and agree the principal Bulk Supply Agreement (BSA) terms between PW and SW, in advance of commencement of full commercial and legal negotiation.

6.5 Alignment of Options D.2 and B.4

The development of Options D.2 and B.4 are fully aligned and are being considered in combination as part of Havant Thicket Alternatives. Option D.2 comprises of a direct pipe connecting Havant Thicket with Otterbourne WSW, whilst Option B.4 augments this solution with a 15Ml/d water recycling plant⁴. Measures include:

1. Establishing design co-ordination meetings and delivery schedule alignment.
2. Integrating the regulatory reporting and Gate 2 deliverables for Options D.2 and B.4.
3. Procuring Computational Fluid Dynamics modelling to understand how Spring and Recycled waters will mix in Havant Thicket, and any necessary optimisation to the permanent works design of a recycled water inlet.
4. Developing a phased and adaptable solution implementation pathway from a 1-in-200-year drought resilient solution to a possible 1-in-500-year regionally resilient solution that could meet both PW and SW's future demands. This has been presented to RAPID and is subject to further refinement and confirmation of exact future demands.

⁴ the water recycling plant was sized at 61Ml/d during the Gate 1 submission and has been re-sized to 15Ml/d following additional water resource modelling, undertaken as part of Gate 2 activities, that has enhanced the accuracy of demand prediction from a 1-in-200-year drought. The original specification of 61 Mld has now been shown to be too large for a 1-in-200-year scenario and the costs have been adjusted downwards accordingly so the B4 option can be compared equally with other options as part of the Option Appraisal Process. outlined in item 6.4, above, the water recycling plant capacity is potentially scalable as part of a solution to meet both PW and SW future demands arising from a 1-in-500-year drought.

5. Establishing the basic 'future-proofing' optionality that exists between the phased solution implementation described above and supports option scalability.

6.6 Regulator Engagement

The joint PW-SW solution development team has established monthly Havant Thicket solution specific meetings with RAPID. Agenda topics include:

1. High-level updates of solution development.
2. High-level updates of Gate 2 regulatory submission status and development.
3. High-level forecast delivery schedule updates.
4. Solution specific risks identified and presentation of RAPID Quarterly Dashboard.
5. The potential scalability of the suite of Havant Thicket Alternatives to meet a WRMP24 future demand.
6. The potential for 'future-proofing' to ease transition between phases and the regulator appetite to support this additional investment.

Another solution specific meeting convened with the EA and NE was the 'early fill' workshop described in 6.1.2 and 6.1.4. Works are now on-going to undertake Habitat Risk Assessments and establish the viability of the options identified. Another workshop will be convened once this work is completed to report back and agree next steps.

Formal and informal engagement meetings have also been convened to explore and further the understanding and specific regulatory requirements associated with recycled water (Option B.4).

As agreed with RAPID, additional regulator specific meetings will only be arranged for Havant Thicket Alternatives on an extraordinary basis as they are already convened at a programme level.