ISLAND PLAN REVIEW

REPRESENTATIONS TO
STRATEGIC ISSUES AND OPTIONS PAPER

OCTOBER 2019

EXECUTIVE SUMMARY

Jersey Water welcome the opportunity to engage with the Island Plan Review process. Having high quality and sufficient water supplies is essential for the economic prosperity, health and wellbeing of the island community. Issues of water management, from both a supply and demand perspective are therefore highly topical with significant challenges and the Company has an ongoing strategy to ensure that the future needs of the Island are met.

The Island Plan Review will be a critical process to support the realisation of Jersey Water's plans to ensure the resilience of the Island's water supply infrastructure and as such it is important to ensure that its own objectives are synchronised with the planning policy framework.

This submission introduces the water resource issues which the Island needs to deal with, and identifies the matters for incorporation into the 2021-30 Island Plan Review:

A WATER STRATEGY should be included as an explicit element of the emerging Island Plan work. Water supply infrastructure should be acknowledged as being strategically important, and as having land-use implications. A Water Strategy should have as much significance as (for example) Minerals, Energy or Transport Strategies, which are all incorporated into the Island Plan. The Water Strategy should give consideration to how the future needs of the Island are to be met.

On the SUPPLY SIDE, Jersey Water has identified a need to increase capacity by 42% by 2045 to address water resource shortages. The potential for La Gigoulande Quarry to be a raw water storage facility to ensure long-term supply resilience should be directly addressed within the Plan. The site offers a unique and one-time opportunity to help address the forecast water supply deficit. The benefits of repurposing the site from landfill to water supply include many wider environment, community and societal benefits both now and into the future.

DEMAND-SIDE initiatives must be acknowledged as an integral part of the overall water management package. The Island Plan should require (with a specific policy, such as the current NR2) the incorporation of water conservation and management in new domestic and commercial development. The importance of such work would be an integral element of the Water Strategy, and should be elevated in the decision-making process, to be a requirement of the planning application phase of any regulatory assessment.

GREEN ZONE and COASTAL NATIONAL PARK policies (or their future equivalents) must continue to incorporate an acknowledgement that water supply infrastructure may need maintenance and renewal over the plan period. As these facilities are located in the Green Zone or Coastal National Park, the relevant policy framework must identify the strategic importance of these facilities and provide clear and positive support for the principle of on-going management / improvement works, subject to detailed considerations, such as established Environmental Impact Assessment requirements.

BACKGROUND

1. Jersey Water have commissioned MS Planning to prepare submissions to the emerging 2021–30 Jersey Island Plan. The submissions take account of the contents of the full technical consultation document "Strategic Issues and Options".

2. Long-term planning for water resources is important due to the timetables required to develop the measures necessary to maintain reliable supplies to customers when demand for water is growing on the island.

3. By way of background, Jersey Water have been developing an "Integrated Water Resources and Drought Management Plan" using the latest UK DEFRA and water industry recognised and standardised methodologies. The work to date has highlighted a forecast growing water supply deficit over the period to 2045, this deficit becomes highly significant if events such as the 1990-1992 severe drought were to reoccur.

4. Jersey Water are therefore undertaking a broad piece of work to address the predicted water supply deficit and resilience issues. This Jersey Water plan is based upon a 25 year planning horizon from which the water resource needs will be iteratively reviewed on a 5-yearly adaptive management basis. The current phase option appraisal work will be completed by Quarter 1 in 2020. The Plan considers both supply management options, and demand management options. These options include both long and short-term measures, and it is important that this work (which is critical to the health and well-being of the community) is integrated with the emerging Island Plan in order that long term solutions to address the water resource deficit are not precluded by decisions taken in this phase of the Island Plan.

5. The Water Resources Plan is critical to the long-term supply of water to Jersey, and the ability of Jersey Water to meet the needs and expectations of the Island population in relation to continuity and reliability of the water supply. The key findings of the study have been reported in the media and summary reports have been shared with stakeholders in the Government of Jersey.

Example Media Reports

NEWS FOCUS

Has the time come to flood another valley?

Jersey Water is considering a range of options – including building a new reservoir – to help safeguard future supplies. Just the mention of flooding a valley has brought back memories of the Queen's Valley protests. But is building a new reservoir a realistic option? Report by Chris Rayner

SAVE VALLEY

The need for new water resources

Are there plans for another Queen's Valley?

Where has all the water gone?

Energy for Richard

Lifestyle change needed to stop Island drying up?

By Ed Taylor

Jersey Water warn new reservoir may be required

ISLANDERS may have to change their lifestyles and become used to the desalination plant running 24/7 during drought years, Jersey Water's chief executive has warned.

Heller Smith also said that a new reservoir might have to be built – one of a number of options which could potentially lead to a hike in Islander's bills.

He added that efforts made by his company to encourage Islanders and businesses to be conservative with their usage would simply not go far enough to address an eight million litre deficit expected to hit the Island by 2045.

Last week, the company announced that the Island was currently using millions more litres of water from its reservoirs each day than it was able to replace and that the desalination plant – which turns sea water into drinking water – was likely to be brought into action this week.

It follows an 18-month period of below-average rainfall in which the cumulative to-

(Cont on page 2)

New reservoir may be required

(Cont from page 1)

tal was 25% below what was expected by Jersey Met – a deficit of around 350mm of rain.

And Mr Smith added that due to the Island's reliance on rain for water, it was very vulnerable to drought.

'From the beginning of this year we have had 25% less rain than average and that is just a sign of things to come.

'We are predicting that over the next 25 years there will be an 8% reduction [the equivalent of 8 million litres per day during drought years] in the amount of water that we will have to use and everyone will need to get to grips with water efficiency.'

On 24 July, air temperatures rose to 36°C – equalling the highest figure ever recorded in Jersey.

Months earlier, the hottest February figure ever recorded was reached, when the mercury got as high as 16.9°C.

Figures provided by Jersey Met show that this year's summer was the equal sixth hottest on record.

Four of the Island's top five hottest summers recorded have occurred in the past 17 years.

Now, Mr Smith, who has been with Jersey Water since 2002, added that measures to address the expected deficit could be costly.

'With regards to reducing demand, while we will do what we can to reduce usage, this will simply not be enough,' he said.

'We will have to put in further reserves – whether that is further desalination, bringing more catchment online or creating more water storage.

'If we are looking at either desalination or a new water-storage facility, that may be millions of pounds – the scale of water-resource projects is large and it is a significant long-term investment.'

A water-resource management plan is currently being developed by the company. It is being designed to show the best way forward to ensure that the Island has sufficient water resources for years to come.

Mr Smith said it was likely that the desalination plant – which is currently run relatively infrequently – could be turned on permanently during drought years.

'The modelling shows that during normal years – we want it to be a standby plant – it is likely that we will need to run it much more frequently than we do at the moment,' he said.

'And during drought years it is likely that we will need to run it all the time, which will have an impact on our costs and possibly even our customer's bills – if we start having to run it for long periods of time.

'Without pre-judging the 2020 water-resource management plan, the solution is to both add desalination and storage, but it will be about managing costs and risks effectively.'

6. Having followed the inception work associated with the emerging Island Plan, Jersey Water are reassured by the desire of the project team to develop this important document alongside partner bodies, so that it presents a robust framework, to be aligned with other important operational and policy initiatives.

7. In Jersey the "plan-led" system, reinforced by the obligations on a decision-maker in Law, mean that it is essential that the policy framework, in this instance the Island Plan, makes adequate recognition for the need for additional water resource infrastructure. There is a current supply deficit evidenced by Jersey Water's study, this deficit is forecast to increase over time. There is a clear and present need for further supply infrastructure to reduce the deficit and reduce the risk of future water shortages on the island. The plan-led system requires this need to be considered on a long-term basis and managed in land-use terms.

CURRENT ISLAND PLAN

8. The current Island Plan acknowledges that a core aim of the overall strategic policy framework is to make better use of existing infrastructure, and to require that the principles of "reduce, manage, invest" are incorporated into areas directly affecting natural resources, including the water resources.

9. Paragraph 2.108 of the current Island Plan acknowledges that:
"there may emerge, during the remainder of the plan period, strategic development proposals of island-wide significance related to the generation of [amongst other things] public water supplies. This may include the expansion of Val de la Mare reservoir; the extension, replacement or renewal of Le Rosiere desalination plants…."

10. Paragraph 2.109 of the adopted Island Plan goes on to acknowledges that any such developments will need to be considered within the context of a full and thorough environmental impact assessment.

11. The current Island Plan then contains Policy NR9 "Utilities Infrastructure Facilities" This framework is ingrained into both the Coastal National Park and current Green Zone policies, being NR6 and NE7 respectively.

Policy NR 9

Utilities infrastructure facilities

Proposals for the development of new or additional utility infrastructure facilities or for the extension and/or alteration of existing utility infrastructure facilities will be permitted provided that the proposal is required to meet a proven need and is:

1. within the Built-up Area; or
2. within the grounds of an existing utility infrastructure facility.

Development that seeks to extend, alter or intensify the use of existing utility infrastructure facilities in the Green Zone or the Coastal National Park will need to demonstrate that; the need for development is proven; alternatives to meeting the need have been properly identified and considered; and that the environmental implications are properly identified, avoided and/or mitigated as far as possible.

The alternative development of utility infrastructure facilities will only be permitted where it can be demonstrated that they are no longer required for utility infrastructure purposes.

12. Within the Coastal National Park, Policy NE6 acknowledges that "Strategic" development may occur (para 2.108 referenced above) and repeats the provisions of NR9, to includes 'in principle' support for Utilities Infrastructure Facilities: "Where it is demonstrated to satisfy a proven Island need, relative to the proper assessment of alternative options….. but only where its environmental implications are properly identified, avoided and/or mitigated as far as possible….."

13. Similarly, within the Green Zone, Policy NE7 also identifies that there may be a need during the plan period for strategic development proposals of an Island-wide significance. In accordance with the Plan's sequential approach to development, consideration of less environmentally sensitive locations will need to have been properly considered and a thorough Environmental Impact Assessment delivered.

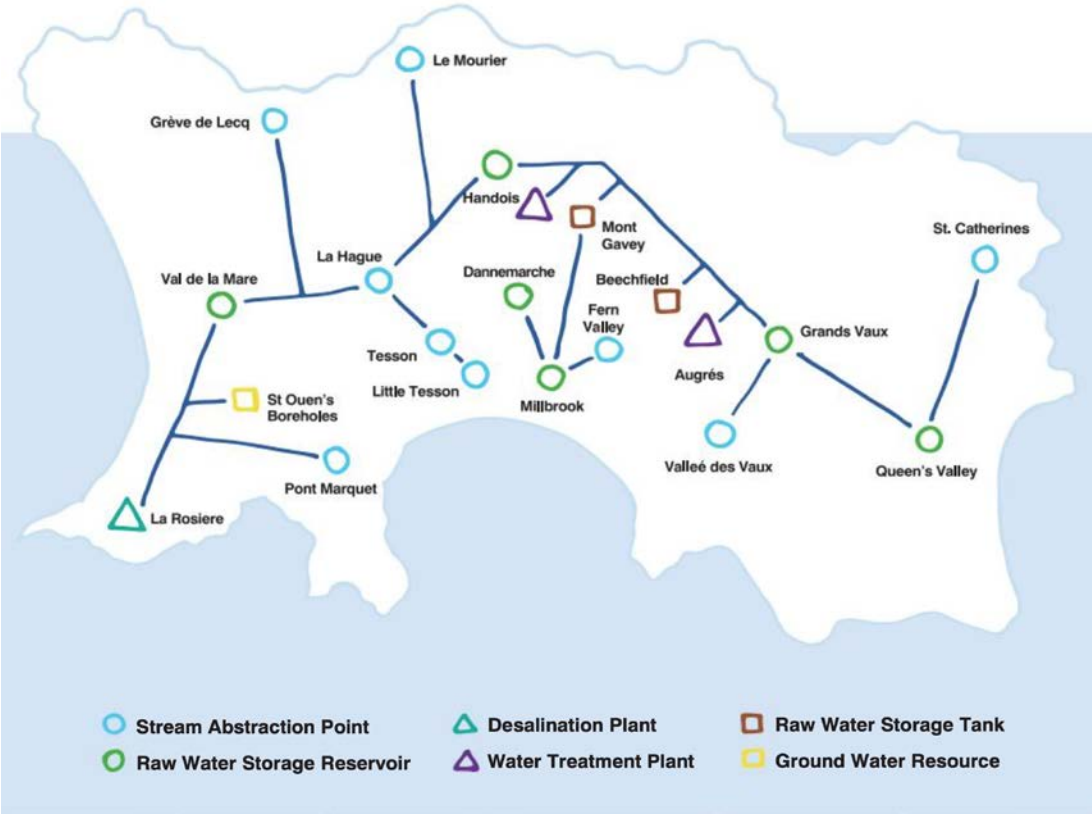
14. Aside from the strategic policy position, the Island Plan also contains more detailed policies, related to the demand-side management. Policy NR2, for example, envisages a requirement for developments to demonstrate that adequate water supply is made available, and that all practicable water conservation and management measures have been incorporated. This policy has been applied with a relatively 'light-touch'.

EMERGING POSITION

15. In relation to the need for (and application of) these policies, much of the relevant commentary within the "Water Resources" text of the adopted Island Plan (from paragraph 9.5) remains relevant today.

16. Jersey's water resources are nearly all derived from rainfall, which is captured and stored as raw water (untreated) in six storage reservoirs. These have a capacity of 2,686 million litres, which is about 120 days of useable supply. To help protect against water shortages, Jersey Water also have a desalination plant, capable of producing 10.8 million litres per day (approximately half of the island's daily demand) of non-potable water which supplements the catchment for Val de la Mare Reservoir.

Jersey Water Supply Schematic



17. The Water Resources and Drought Management Plan identifies that drought resilience is a core issue. Under dry-year conditions, demand is expected to rise by 17% from 20,456 cubic metres per day in 2018 to 23,877 cubic metres per day in 2045. This is based on a forecast population growth which assumes inward migration of 700 people per year.

18. Over the same period, 2018 to 2045 , the volume that can be reliably supplied from the raw water system (including the operation of the desalination plant) is likely to reduce by 9% from 19,209 cubic metres per day, to 17,569 cubic meters per day due to the potential impact of climate change on rainfall patterns and other environmental factors.

19. On the basis of a 'do nothing' scenario, in a repeat of (for example) the 1990-1992 drought conditions and assuming the continuous running of the existing desalination plant, the 2018 supply

deficit would have been 2,273 cubic metres per day, with the deficit rising to 8,155 cubic metres per day by 2045.

20. Back at the time of the production of the current Island Plan the issue of population growth was as relevant as it is today. The predicted growth in population enabled Jersey Water to plan their future infrastructure, and this remains the case. The one factor which will also need to be taken into account is that the current Island Plan under-estimated the population growth, and so it should be acknowledged that the water supply requirements for the Island have come under additional pressure.

21. In order to manage their service provision, Jersey Water - as part of their Water Resources Management Plan – have a number of short term and long term, supply-side and demand-side interventions that can be made.

22. In relation to those demand management options Jersey Water are working through a series of leakage reduction projects, whilst bearing in mind that the Island already benefits from a level of leakage well below the UK industry norms. During 2018 Jersey Water invested £3.9 million in its capital expenditure programme which included replacing 2 kilometres of mains, extending the network by 2.5 kilometres, connecting 340 homes to mains water, undertaking a number of water quality initiatives and completing the commissioning phase of the desalination plant. Leakage management delivered a reduction of 19% in leakage for the year.

23. Further, a range of commercial and domestic water efficiency options are also being considered and actively promoted, this will include the manner in which planning regulations and Building Bye-Laws impact on demand management (aligning with Policy NR2 of the current Island Plan). Jersey Water will need this policy support as a mechanism to ensure that all new developments are required to incorporate water efficient designs and devices.

24. Educational programmes, within schools and with the general population also assist with demand-reduction, and are seen (for example) in the growth of grey-water recycling and rainwater harvesting. However, it is safe to say that the demand management programs work to slow the rate

of growth, rather than to reduce the gross demand. Demand management interventions will therefore be insufficient, on their own, to address the water supply deficit.

Examples of demand-management initiatives

25. Alongside the demand-management options, there are a series of engineering options available on the supply-side. These are more significant projects, relating to existing and potential infrastructure. They may include, for example, new reservoirs, works to existing reservoirs, or further desalination. In relation to Island Plan issues, the existing infrastructure is almost exclusively within the Green Zone or the Coastal National Park. It is acknowledged that these areas are not where the spatial strategy seeks to focus new developments, but they are the areas where the infrastructure or opportunity exists and so they may be the appropriate location to expand / develop future water resources.

26. Additional desalination would have to be in a coastal location, either as a further extension project at La Rosiere, or alternatively in the east of the Island. Such infrastructure would have to be accompanied by additional pumping stations, pipelines and other infrastructure. Any coastal location is environmentally sensitive, although previously-developed sites may be available to mitigate any potential harm. Desalination is expensive to construct, operate and maintain; if relied on for baseload water supply (rather than as a standby resource) it could have a significant impact

on water bills. The energy requirements of current desalination technology reduce the attractiveness of the solution from an environmental and carbon neutrality perspective.

27. Increasing the capacity of Val de la Mare Reservoir would involve significant engineering works. Broadly speaking, there are two options to achieve this; either by increasing the height of the dam by 9 metres to gain the additional storage, or by constructing a new dam downstream of the existing. Both options are technically complex and expensive. Additionally, due to the location of the reservoir within Green Zone, the Coastal National Park and upstream of an important SSI site these options are also likely to be challenging from a planning and environmental perspective, albeit likely less so than constructing a new reservoir in a greenfield location elsewhere on the island.

28. An obvious solution for consideration is the use of existing quarries for water storage and La Gigoulande Quarry in St Peter's Valley is an ideal candidate. The capacity of La Gigoulande is estimated to be slightly less than Val de la Mare reservoir (approximately 30% of existing reservoir capacity). Across a broad range of criteria the use of La Gigoulande for water storage stands out as optimal amongst a range of options. In terms of engineering complexity and cost, the site could be re-purposed as water storage with relatively minor modifications. The site is well-located close to the existing pipe network and is within a high yielding and reliable water catchment.

29. The use of La Gigoulande quarry for water storage offers a number of significant water supply, environmental and community benefits. It would remove the prospect of heavy vehicle movements up and down St Peter's Valley transporting inert waste to the site with the ensuing traffic and emission impacts. It mitigates water pollution risk by creating further resilience in the water network and protects water resources, reducing the frequency with which the desalination plant would need to be run – this avoids the need to pass those additional costs on to the consumer in terms of higher bills. There are currently other options and potential sites for inert waste disposal on the island, but no similar option offering this range of benefits is available for water supply purposes. Filling the quarry with inert waste provides a temporary solution for solid waste management; filling the quarry with water provides a permanent water resource for the island for centuries to come.

30. This is a unique, once in a lifetime, opportunity to secure a key piece of infrastructure for the benefit of the island that if ignored will not, in the absence of other new quarries, ever present itself again.

ISLAND PLAN 2021-30

31. Jersey Water, as an important island utility company, aligns itself with the Community Vision as set out in the Strategic Issues and Options Consultation document, of "*an island loved for its beautiful coast and countryside, rich heritage, diverse wildlife and clean air, land and water. An island where a sense of community really matters – a safe place to grow up and enjoy life. An island that offers everyone the opportunity to contribute to, and share in, the success of a strong, sustainable economy*."

32. Jersey Water acknowledges and understands that the Island Plan will need to balance significant challenges, dealing with competing tensions, as it seeks to deliver sustainable development. A core element of this will be the need to ensure that all resources, including water, should be managed and used responsibly

33. The Strategic Issues and Options paper as published by the Island Plan team rightly acknowledges that "population, migration and housing" is a significant issue which will inform the development of the new island plan and will play a big part in shaping our island. The paper rightly acknowledges that the overall level of population, and the policies which might influence that, will have a significant implication for the development and use of land in the island.

34. It is not simply the need to deliver housing which the Island Plan will have to manage, but also the associated infrastructure which will accompany any growth. The infrastructure will include social, community and economic elements, and will also rely on external agencies and utility companies to deliver the infrastructure which supports the future development pattern.

35. Alongside factors which may be influenced by planning policy and political controls, there will also be factors where the island population itself has little influence. The Strategic Issues and Options paper correctly identifies that "*the long term implications for water supply, waste water treatment,*

biodiversity and landscapes, and the risk of overheating from rising temperature will also need to be considered to ensure that the Island Plan helps shape places with greater resilience to the impacts of climate change. Increased resilience will reduce future costs for both businesses and for households."

36. It is therefore strongly advocated that the Island Plan includes a "Water Strategy" which takes these complex issues and, alongside the work of Jersey Water, translates them into land-use issues which can be woven-in to the Island Plan and balanced with other infrastructure issues to provide a robust and forward looking strategic position which protects both the quantity and quality of water.

37. The lack of a Water Strategy in the emerging Island Plan work already has implications for long-term planning as other infrastructure needs appear to have been prioritised, meaning issues in relation to water do not seem to have been appropriately balanced.

38. As referenced earlier, a key variable in any long-term plan will be future population levels. Jersey Water wish to emphasise that whatever emerges in relation to the overall levels of growth and population, and its spatial distribution, their approach to water resources management can ensure that the future needs of the Island can be properly met. However, the demand for water is highly sensitive to population numbers, and ensuring continuity of supply will have increasingly complex land-use issues relative to any predicted growth in population levels.

Impact of population growth scenario on total demand forecast (m^3/day)
Dry Year Annual Average

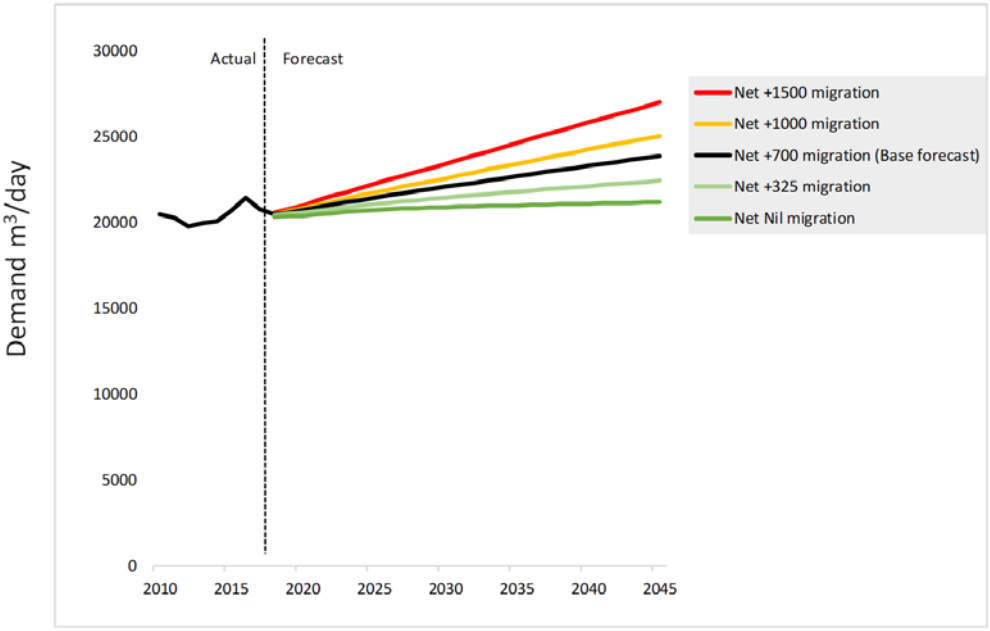


Chart reproduced from Jersey Water's *Water Resources and Drought Management Plan - Phase 1*
Ricardo Energy & Environment, Waterforte Ltd & SWECO 2018

39. It is also highly relevant that for several years there has been a States of Jersey "Solid Waste Strategy" (May 2005) which involves continuing production at La Gigoulande and when extraction is exhausted to use this for land-fill for inert waste and for secondary aggregate production when La Collette II has been filled – to be followed by restoration for a suitable end use.

40. Of prime importance as part of the emerging Island Plan process is the need to up-date the Waste Strategy, and to challenge its conclusions by reference to how the envisaged approach to waste disposal has changed over time, and the need to balance the benefits which might be realised by using La Gigoulande for raw water storage. The absence of a Water Strategy makes it difficult to scan-across a consistent framework of infrastructure policy documents and make robust land-use decisions. To put it another way, the long-term options for waste are identified because there is a Waste Strategy – as there isn't a Water Strategy, the long-term needs in relation to water supply, and its relationship with other land use issues, are not identified.

41. Section 4.4 of the full technical consultation document considers "Planning for Minerals and Waste" and immediate establishes a relationship between sites where there have been extraction

operations and the future disposal of inert waste. This needs to be challenged, and the high-level work which the technical consultation document identifies is underway in relation to future minerals supply and waste disposal must be complimented by a Water Strategy to enable the benefits of raw water storage to also be understood and appraised against possible future inert waste disposal options – all of which are likely to have environmental implications.

42. The concept of using former quarry sites for raw water storage is long-established. The use of former quarries is common in Guernsey where the three former quarries, at St Andrews, Juas and Grosse Houge are able to provide continuity of supply of 360 days. The scale of this capacity can be understood when compared to the situation in Jersey where the combined capacity of all the existing reservoirs provides continuity of supply for just 120 days.

43. Whilst there is planning permission in place for inert waste filling for part of La Gigoulande Quarry (P/2012/0121) this does not prevent the consideration of other uses which could be equally compatible with a post-2021 Island Plan having assessed the site in the context of other infrastructure needs, including a Water Strategy.

44. Alongside the consideration of La Gigoulande Quarry in the context of a Water Strategy, Jersey Water are seeking the continuation of the acknowledgement within the current wording of NE6 and NE7 that other supply-side infrastructure may also need investment in the plan period. Those facilities (desalination, treatment, and reservoirs) are almost entirely in areas where there are general presumptions against development, such as the current Green Zone and Coastal National Park. The Island Plan must acknowledge that there should be a positive presumption in favour of the maintenance, management and development of key-infrastructure and reflect this within the terms of a clear and positive framework, subject to the usual environmental impact assessment protocols.

45. As has been set out in the earlier sections of this submission, Jersey Water are working hard on the demand-side of the management equation, and this should form part of a Water Strategy. The framework provided by the policies within the Island Plan is extremely valuable in relation to both raising awareness and providing a regulatory control. The current Policy NR2 is a useful reference point, however, in reality this has (by reference to current practice) not been applied with much

rigour. The issue is perhaps that this topic overlaps both planning policy as relevant to the first-phase of regulatory controls in a planning application, but is also covered in the second phase building control application by reference to the Building Byelaws. The development of a Water Strategy would assist in elevating this issue and ensuring it is dealt with at the appropriate phase of the regulatory process.