

# Water Security Program Guidelines

## South East Queensland

November 2019

This publication has been compiled by the Water Supply business group of the Natural Resources division, Department of Natural Resources, Mines and Energy.

© State of Queensland, 2019

The Queensland Government supports and encourages the dissemination and exchange of its information. The copyright in this publication is licensed under a Creative Commons Attribution 4.0 International (CC BY 4.0) licence.

Under this licence you are free, without having to seek our permission, to use this publication in accordance with the licence terms.



You must keep intact the copyright notice and attribute the State of Queensland as the source of the publication.

Note: Some content in this publication may have different licence terms as indicated.

For more information on this licence, visit <https://creativecommons.org/licenses/by/4.0/>.

The information contained herein is subject to change without notice. The Queensland Government shall not be liable for technical or other errors or omissions contained herein. The reader/user accepts all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from using this information.

**Interpreter statement:**

The Queensland Government is committed to providing accessible services to Queenslanders from all culturally and linguistically diverse backgrounds. If you have difficulty in understanding this document, you can contact us within Australia on 13QGOV (13 74 68) and we will arrange an interpreter to effectively communicate the report to you.



## Table of contents

|  |            |
|--|------------|
| <b>Table of contents</b> .....                       | <b>iii</b> |
| <b>Definitions</b> .....                             | <b>4</b>   |
| <b>Introduction</b> .....                            | <b>6</b>   |
| <b>Planning Context</b> .....                        | <b>6</b>   |
| <b>Content of water security program</b> .....       | <b>8</b>   |
| <b>LOS objectives</b> .....                          | <b>8</b>   |
| Water balance assessments .....                      | 9          |
| Projected regional average urban demand (PRAUD)..... | 9          |
| Bulk water drought supply.....                       | 11         |
| <b>Future infrastructure planning</b> .....          | <b>12</b>  |
| <b>Infrastructure management and operation</b> ..... | <b>13</b>  |
| <b>Demand Management</b> .....                       | <b>13</b>  |
| <b>Water Security Annual Report (WSAR)</b> .....     | <b>14</b>  |
| <b>Administration</b> .....                          | <b>15</b>  |
| Format.....  | 15         |
| Preparing and finalising the WSP .....               | 15         |
| Review .....   | 16         |

## Table of figures

|  |    |
|--|----|
| Figure 1: Process for finalising the WSP ..... | 16 |
|--|----|

## Definitions

*Act – Water Act 2000*

**Bulk water supply system (BWSS)** – also referred to as the SEQ Water Grid – is the infrastructure Seqwater uses to supply water to bulk water customers (including the SEQ service providers and contracted supplies to neighbouring communities). Currently made up of 12 major storages (Water Grid Storages), plus the main connecting pipelines (including the Northern Pipeline Interconnector, Southern Regional Water Pipeline, Eastern Pipeline Interconnector), the Western Corridor Recycled Water Scheme, and the Gold Coast Desalination Plant.

**Bulk water supply authority** – in South East Queensland, the bulk water supply authority is Seqwater. Seqwater uses the BWSS to store, treat and transport water, typically to SEQ Service Providers and to neighbouring communities.

**Drought response level** – the trigger for taking action in response to drought e.g. commencing voluntary demand reduction measures, water restrictions, or increasing manufactured water production. This level is set by Seqwater in the WSP.

**Drought contingency infrastructure** – infrastructure that is constructed in response to drought to ensure that essential water supplies can be maintained during an unlikely extreme drought. (Note: A decision could be taken to supply more than EMSV when drought contingency infrastructure is built.)

**Essential minimum supply volume (EMSV)** – the volume of water essential for drinking and basic hygiene, and essential services (e.g. hospitals and power generation), in critical circumstances (modelled to occur not more than once in every 10,000 years on average).

**LGA** - Local Government Area.

**Level of Service (LOS) objectives** – describe the desired level of performance of the bulk water supply. Refer to section 4 for more detail.

**Medium level water restrictions (MLWR)** – the first level of mandatory water restrictions imposed in response to drought with the trigger set by Seqwater. MLWR are defined in the LOS objectives and must be triggered between the drought response level and the safe minimum storage level; these levels are also defined by Seqwater.

**Minimum operating level (MOL)** – often also referred to as the dead storage level, is prescribed for a water storage in the appropriate water plan and resource operations licence under the Act. The infrastructure owner must not release or supply water from that storage below MOL, unless authorised due to exceptional circumstances.

**Neighbouring communities** – communities from LGAs outside of the SEQ region (as defined in section 341 of the Act) that have an arrangement with Seqwater for the supply of water.

**Non-residential water use** – potable water use other than in the home. It includes water used by businesses, industry and power stations. Non-residential water use also includes system losses.

**Off-grid communities** – communities that are not directly connected to the BWSS. Some have a separate supply source and some are supplied from a Water Grid Storage but have a separate water treatment plant which is not connected to the Water Grid. The specific communities are detailed in Seqwater's Water Security Program.

**Projected Regional Average Urban Demand (PRAUD)** – the demand for residential and non-residential water use, estimated for the SEQ region for each year over the next 30 years. PRAUD is defined in section 79 of the Regulation.

**Regional Stochastic Model (RSM)** – the model of the SEQ bulk water supply system used to determine the statistics and other details of operation of system regarding for example security of supply, achievement of LOS objectives and drawdown times.

**Regulation** – Water Regulation 2016.

**Residential water use** –potable water used for domestic purposes both inside and outside the home, like showering or watering a garden. Residential water use is usually expressed on a litres per person basis. It is calculated by dividing estimates of the volume of residential water used by the number of people with reticulated water supplies.

**Safe minimum storage level (SMSL)** –the trigger for taking more severe action in response to drought e.g. restrictions more severe than MLWR. This level is determined by Seqwater and is referred to in the WSP as the drought contingency level.

**Seqwater** – the statutory authority, owned by the State, charged with providing bulk water supplies in South East Queensland. It owns and operates the BWSS.

**South East Queensland region** –

Section 341 of the Act states the SEQ region comprises:

- (a) the local government areas of:
  - Brisbane City Council
  - Gold Coast City Council
  - Ipswich City Council
  - Lockyer Valley Regional Council
  - Logan City Council
  - Moreton Bay Regional Council
  - Noosa Shire Council
  - Redland City Council
  - Scenic Rim Regional Council
  - Somerset Regional Council
  - Sunshine Coast Regional Council; and
- (b) any local government area, or part of a local government area, adjacent to the above local government areas and designated by gazette notice, and
- (c) Queensland waters adjacent to any of the local government areas mentioned above.

**System losses** – ‘unaccounted-for’ water volumes that might have been used for firefighting, flushing systems, theft, or due to other unmetered water use such as leakage losses.

**Water balance** –the relationship between supply and demand at any point in time. Supply upgrades or demand reductions need to occur prior to the projected demand exceeding the available supply while meeting the LOS objectives.

**Water demand forecasts** – estimates of how much water the community is likely to use over a given period in the future.

**Water Grid Storages** – the 12 South East Queensland major dam storages (Wivenhoe, Somerset, North Pine, Hinze, Baroon Pocket, Leslie Harrison, Ewen Maddock, Cooloolabin, Sideling Creek, Lake Macdonald, Little Nerang and Wappa Dams) which contribute to the BWSS.

**Water Security Annual Report (WSAR)** – the annual report that Seqwater must publish detailing the assessment of the PRAUD in accordance with the Regulation and provide an overview of the water supply security risk to the region.

**Water Security Program (WSP)** – the program that Seqwater must develop, publish, implement and report against, to facilitate the achievement of the LOS objectives in accordance with the Act.

**Water Security Program for South East Queensland, Guidelines for development (WSP Guidelines)** - guidelines for preparing the WSP published by the Department of Natural Resources Mines and Energy under the Act.

**South East Queensland Service Providers (SEQ SPs)** –the government-owned entities that sell water directly to the community in South East Queensland (i.e. Queensland Urban Utilities, Unitywater, Logan City Council, Redland City Council, and City of Gold Coast). These providers are Seqwater bulk water customers.

## Introduction

1. The bulk water supply authority (Seqwater) is required to have a South East Queensland (SEQ) Water Security Program (WSP) under section 350 of the *Water Act 2000* (the Act). These guidelines have been made in accordance with section 353(2) of the Act. This section enables the relevant government department to make guidelines (SEQ WSP Guidelines) to provide information and guidance on the content of the WSP but do not limit what may be included.
2. The legislated purpose of the WSP is to facilitate achievement of desired Level of Service objectives (LOS objectives) for water security for the SEQ region or each part of the SEQ region. The WSP establishes a 30-year adaptive strategic plan to meet the water security and drought needs of the SEQ community.
3. The LOS objectives are prescribed in the Water Regulation 2016 (the Regulation) sections 78-81 and available on the [Queensland Legislation website](#).
4. The Department of Natural Resources, Mines and Energy (DNRME) has prepared these guidelines with a view to ensuring the SEQ WSP:
  - complies with section 353 of the Act
  - meets the LOS objectives
  - has been developed with an appropriate interpretation of the individual LOS objectives.
5. These guidelines provide a greater level of detail to facilitate the development of a robust WSP that meets the intended purpose.

## Planning Context

6. This section describes a WSP, consultation requirements, linkages to other legislative requirements, and the appropriate interpretation of relevant sections of the Act and Regulation
7. Seqwater is required to have and prepare, in consultation with SEQ Service Providers (SEQ SPs), a WSP including plans and strategies to facilitate the achievement of the LOS objectives for urban water supplies. The WSP demonstrates how the LOS objectives are able to be met at any time going forwards and subsequently that the Bulk Water Supply System (BWSS) is operated and augmented in a practical, timely and best value (to the community) way to achieve the objectives and appropriate regional water security.
8. The intent of the LOS objectives is to ensure ‘the delivery of sustainable and secure water supply and demand management for the SEQ region’ (section 340 of the Act), thus ensuring adequate water supplies to support the prosperity of residents and businesses. Seqwater manages the supply of bulk treated water while the SEQ SPs manage the supply of treated water to residences and businesses in their supply areas.
9. If urban and rural demands are supplied from the same regulated source, the relevant Water Plan established under the Act addresses water sharing between the different uses of entitlements.
10. The WSP may consider the use of alternative water sources (e.g. stormwater, rainwater, desalination, and recycled water) for potable and non-potable purposes.
11. The WSP covering the BWSS and off-grid communities should aim to meet the following paraphrased LOS objectives:

- the projected demands, developed in consultation with the SEQ SPs, are able to be met for each year over the next 30 years
  - medium level restrictions imposed on the community will on average not exceed the frequency, severity and duration targets set through the LOS objectives
  - the three key storages in the BWSS (Wivenhoe, Hinze and North Pine) have a very low probability of reaching Minimum Operating Levels (MOLs)
  - an essential minimum supply volume (EMSV) can be provided if it is needed and that such an occurrence is a very low probability event.
12. Some key considerations and interpretations for LOS objectives and the preparation of the WSP are summarised below:
- **Desired** – LOS objectives are legislated as desired LOS objectives. This means the aim should always be to meet LOS, but decisions for expenditure should always have regard to the value-for-money (see below) of meeting such objectives. Sometimes it may be appropriate to adjust the LOS provided to a community, sub-region or supply zone where they are impractical or, comparatively with the remainder of the region or other areas of Queensland, too costly to achieve and the disruption to the community is likely to be minimal.
  - **Application of LOS** – Compliance with LOS means that the objectives are or can be met with planned upgrades and future operational strategies at any point in time over the 30-year planning horizon when assessed using the Regional Stochastic Model (RSM). The aim should be to ensure continuity of supply to all areas. Compliance with regional objectives applying to BWSS means that projected demands and restricted supplies\* are able to be delivered at sub-regionally (by LGA or SEQ SP area if preferred) as well as regionally when using the RSM.
  - **EMSV** – is the absolute minimum supply that must be maintained in SEQ in any drought scenario. The figure prescribed in legislation is the minimum volume that must be available in an unlikely (very low probability) extreme drought. A volume higher than prescribed may be provided if a clear rationale articulated and there is support from the SEQ SPs.
  - **Off-grid communities** – The LOS objectives apply to off-grid communities with the exception of the MOL objective which is specific to Wivenhoe, Hinze and Baroon Pocket dams and the BWSS. Compliance with the LOS objectives for off-grid communities means interpretation and achievement of the desired overall LOS statistical outcomes in a way that is appropriate to the situation, and does not mean that the timing of restrictions applying to off-grid communities will be exactly the same as the BWSS.
  - **Neighbouring communities** – These communities are not part of SEQ and the LOS objectives do not apply to them. There is risk in planning just for the security of supply in SEQ without considering neighbouring communities. Therefore, there should be appropriate allowance in the projected demand calculations or sensitivity testing to understand the impact of additional demand from these communities.
  - **'Value-for-money'** – requires consideration of matters beyond price and compliance (refer to [Queensland Government advice](#)). This consideration should include whole-of-life costs, fitness for purpose, social impacts, and customer and community support. Planning and operations will be adaptive to the circumstances and will include consideration of options to meet LOS objectives. Operational strategies, including optimisation of bulk water transfers and smaller works to defer major works, must be considered as part of the solution in addition

to future infrastructure options. Major new works should generally only be considered when shorter term failure to meet LOS objectives is likely or the region (or part of the region) is in preparation for drought.

13. There is already clear compliance with the LOS objectives across SEQ for projected demands and the medium level water restrictions (MLWR) outlined in the WSP. For compliance with the LOS objectives for further restricted supplies (below the MLWR trigger and the Safe Minimum Storage Level (SMSL)) that are less likely to occur, it will not always be necessary to have supply solutions in place now. At these levels, more detailed planning is necessary to refine drought strategies including contingency planning but the WSP should show that a supply solution can be delivered in time, including appropriate early actions (e.g. concept planning, land purchases).
14. The regulatory requirements for the more severe action required below the SMSL relate to minimum operating levels (MOL) and essential minimum supply volume (EMSV). Seqwater is responsible for establishing how such objectives are to be met including actions such as restrictions more severe than MLWR and drought contingency infrastructure.

## **Content of water security program**

15. Under section 353 of the Act, a WSP must include information about strategies or measures for:
  - (a) operating the designated water security entity's assets for providing water services in the region or part of the region to which the water security program relates; and
  - (b) addressing future infrastructure needs, including building new infrastructure or augmenting existing infrastructure; and
  - (c) managing the infrastructure relevant to the designated water security entity's operations; and
  - (d) managing demand for water; and
  - (e) responding to drought conditions; and
  - (f) any other matter prescribed under a regulation.
16. A WSP need not be limited to these matters and may comprise one or more documents (see 'Format' section under 'Administration' for more detail).
17. Section 82 of the Regulation prescribes other matters in (f) above to be included in a WSP:
  - (a) the process the bulk water supply authority will use to work out the Projected Regional Average Urban Demand (PRAUD) including, for example, the authority's key assumptions and methodology
  - (b) deciding the level in the bulk water supply system that is the trigger for taking action in response to drought  
*Example of action in response to drought: reducing the supply of water from the bulk water supply system*
  - (c) deciding the level in the bulk water supply system that is the trigger for taking more severe action in response to drought, to minimise the risk of reaching the minimum operating levels.

## **LOS objectives**

18. Section 82 of the Regulation outlines as a minimum the triggers and measures needed for compliance with the LOS objectives relating to the PRAUD for the SEQ region and bulk water drought supply, including MOL and EMSV. The general content that should be provided in relation

to the LOS objectives is described under the next section titled 'Water balance assessments' with specific content outlined in the following sections titled 'Projected regional average urban demand' and 'Bulk water drought supply'.

## **Water balance assessments**

19. To show that the BWSS is able to supply enough water to meet LOS objectives, Seqwater will need to:
  - (a) undertake assessments which demonstrate that supply meets demand at least regionally and sub-regionally and for off-grid communities at the local level during normal times and at all levels of restrictions imposed during drought response. A high level summary of the water balance assessments should be included in the WSP. The water balance applies to the supply of water to meet:
    - the PRAUD under sections 79 and 82 (a) of the Regulation
    - the MLWR or medium restrictions under section 80 of the Regulation
    - the restrictions applied when the water grid water storage levels are below the SMSL.
  - (b) maintain, update and, from time-to-time, peer review the RSM for the BWSS and locally relevant models for off-grid communities to enable water supply and demand balance assessments
  - (c) ensure that water balance modelling for the BWSS and off-grid communities appropriately reflects current or projected supply, demand and water transfer information at the regional, sub-regional and supply zone level (bulk water supply points to the SEQ SPs)
  - (d) undertake water balance assessments for the BWSS and off-grid communities when the WSP is updated (generally at least every five years)
  - (e) allow for appropriate consideration in water balance assessments of current and potential future supply arrangements for neighbouring communities that have or are likely to negotiate a commercial arrangement for urban water from Seqwater. Sensitivity testing should be undertaken when assessing future supplies to neighbouring communities to understand SEQ security of supply implications and the cost of bringing forwards investments.

## **Projected regional average urban demand (PRAUD)**

20. To show achievement of the LOS objective for the PRAUD under sections 79 and 82 (a) of the Regulation, the WSP must:
  - (a) work out the projected demand in collaboration with the SEQ service providers
  - (b) publish the projection and include information on the process used to determine projected demand
  - (c) show how the BWSS meets the projected demand
  - (d) assess the currency of the projected demand annually.
21. For compliance with the Regulation (section 79) in calculating the PRAUD, Seqwater should:
  - (a) include the methodology/procedure for working out the PRAUD in the WSP and outline any key assumptions
  - (b) demonstrate that the BWSS is able to 'supply enough water to meet the PRAUD' for SEQ and parts of SEQ. (Estimates of the population serviced and bulk water volumetric requirements over time should be published)

- (c) calculate the PRAUD expressed in litres per person per day, for the combined residential and non-residential water use estimated for the SEQ region for each year over the next 30 years. If Seqwater chooses to use different units, timeframes or separate projected demand by type when publishing in the WSP, this should be in addition to the required format

*Note: the WSP and annual reporting should present PRAUD as one figure incorporating residential and non-residential water use and system losses with power station demand. However, it is also useful to separate these demands by type and area (e.g. sub-regions/SEQ SPs as appropriate) to improve transparency and put downward pressure on average per person consumption.*

- (d) work out the demand in collaboration with SEQ service providers
- (e) publicly publish the demand projection in the way stated in the WSP
- (f) assess annually whether the PRAUD is still current
- (g) publicly publish the outcome of the assessment in the way stated in the WSP (currently through the Water Security Annual Report (WSAR)).

22. Given that under section 353 of the Act, a WSP must include information about strategies or measures for operating assets for providing water services in the region or part of the region to which the water security program relates, it is appropriate that the procedure for working out the PRAUD in the WSP should:

- (a) provide information on demand projections and consumption for the BWSS and for off-grid communities. For the BWSS, information should detail demand projections and consumption at the regional and sub-regional level
- (b) explain key assumptions that underpin the projections for the BWSS and off-grid communities. Explain how the assumptions were determined, particularly population forecasts and business growth
- (c) give a broad outline of the considerations made when determining the demand projections, including the proportion of demand attributed to non-residential use
- (d) outline how Seqwater collaborated with SEQ SPs to work out the BWSS and off-grid community demand projections. Demand projections should aim to be reflective of existing material developed by SEQ SPs (e.g. planning schemes, development projections and negotiated supply arrangements)
- (e) outline the annual assessment process that will be undertaken to determine whether the PRAUD demand is still current. This could be a simple assessment with the projected demand compared with actual demands and could be done graphically
- (f) present water balance assessments each year over the next 30 years as a minimum. This does not prevent longer planning horizons from being used if necessary for longer term planning considerations
- (g) present the water balance assessments incorporating PRAUD (L/p/d) and total water demand (ML/a) (e.g. undertaken at the regional, sub-regional (or LGA or SEQ SP area if preferred), supply zones, and off-grid communities) – noting that such information must be developed and maintained in an up-to-date RSM or in off-grid community water balance models.

23. Desirably, for the annual assessment the WSAR should:

- (a) present the outcomes of the projected demand assessment
- (b) provide an overview of consumption from the previous year (including by area, e.g. LGA)
- (c) use a consistent reporting format each year and focus on clarity of information

- (d) use exception reporting for off-grid communities (e.g. where demand exceeds supply, a demand or supply upgrade trigger is reached, or to report high-growth rates).

## **Bulk water drought supply**

24. Section 353 (1) (e) of the Act requires that the WSP must provide information about Seqwater's strategies for responding to drought conditions.
25. The WSP should outline Seqwater's strategies for responding to drought conditions including:
  - (a) a summary of any strategies, actions or measures that Seqwater has determined it may implement to respond to drought conditions
  - (b) drought triggers for when particular significant drought response actions will be undertaken, and broad detail on how they will be determined or revised. Trigger levels required include:
    - Drought Response Level, (taking action in response to drought)
    - MLWR (trigger must be between the drought response level and the SMSL)
    - SMSL (taking more severe action in response to drought to minimise the risk of storages reaching minimum operating levels)
    - other restriction levels
    - contingency infrastructure construction trigger
    - EMSV trigger.
  - (c) any additional bulk water supply infrastructure required and the high-level plans and/or processes to enable this infrastructure to be available when needed
  - (d) overview of potential costs and benefits involved with the implementation of each drought response action
  - (e) potential risks to the drought response strategy and associated mitigation measures
  - (f) the need for adaptive drought response to protect water supply security in the best way to manage the variety of drought scenarios that may occur
  - (g) the risk profile (i.e. probabilities) for each of the trigger levels upon which the drought response strategy is based
  - (h) appropriate analysis of climate change in SEQ and the possible ramifications for future droughts
  - (i) RSM modelling for the WSP showing achievement of the LOS objectives for:
    - MLWR under section 80 of the Regulation for the frequency, severity and duration of medium restrictions based on:
      - the chosen trigger levels and consistent operating assumptions
      - the assumed entry and exit triggers that allow for some separation between applications of restrictions to ensure that restrictions will not be re-entered again in the near future (e.g. restrictions are triggered when water grid storages are at 50 per cent but the restriction exit is higher, indicatively 60 per cent)
      - ability to supply off-grid communities (e.g. either modelling to show that enough water exists locally or enough water can be supplied from the SEQ Water Grid (by carting for example) when needed).
    - MOLs prescribed in section 81 of the Regulation

- EMSV prescribed in section 81 of the Regulation for the region. Large off-grid communities where carting from the grid is not feasible should also show achievement of the EMSV objective with a local model. Information to support the modelling should clarify:
  - how the amount of water supply available under EMSV conditions has been calculated and compared to demand. For the region make clear how many years the EMSV can be maintained for
  - the assumptions used in the determining the EMSV and its distribution to achieve an average of 100 L/p/d (residential and non-residential demand combined) exclusive of likely system losses across SEQ.
- (j) a high-level strategy that shows how EMSV will be provided across the region to a sub-regional level (e.g. the strategy should include calculations of the proportion of water required per area) in a timely way
- (k) justification if a higher volume than the EMSV is desired. EMSV is the minimum amount of water that must be supplied in an unlikely extreme drought to meet the regulation but a higher volume can be planned for. If a higher volume is chosen, analysis should be completed to demonstrate costs and benefits and the higher volume should be developed in consultation with SEQ SPs and the Government. A high level summary of the principles and analysis for a higher volume should be included in the WSP.

## Future infrastructure planning

26. Section 353(1)(b) of the Act states the WSP must include information about Seqwater's arrangements, strategies or measures for how future infrastructure needs will be addressed.
27. The WSP should outline:
- (a) the base case (existing infrastructure), planned base case (existing and infrastructure planned for next five years), and future case (existing, planned and future infrastructure); including a list of assumptions for each case indicating the types of infrastructure projects and their likely order of implementation. These cases are to be presented in a clear format to allow ease of comparison
  - (b) a high level prioritising of infrastructure and major upgrade projects to meet the water demand over the next 30 years, the LOS objectives, and any works required for statutory compliance (e.g. dam safety upgrades). It is noted that the prioritising should be adaptive to respond to changing demands, technology, and other drivers.
28. In addition to high level information in the WSP, supporting documents should provide detailed information on the bulk water supply assessments underpinning future water infrastructure planning. These assessments would need to include, but not limited to:
- (a) robust demand assessments regionally, sub-regionally and by supply zone incorporated into the RSM or other water balance models for off-grid communities
  - (b) identify water supply shortfalls and identify solutions to maintain supply when they may occur
  - (c) potential risks to water security associated with each bulk water supply infrastructure option (e.g. the dependence on rainfall during droughts)
  - (d) estimated costs associated with the planned bulk water supply infrastructure/works option(s)

- (e) scenario analysis, to ensure the best outcome under a range of conditions (e.g. climate change, economic, weather, operations)
- (f) measures taken to ensure that the preferred infrastructure/works can be constructed when required (e.g. preserving the site or resuming the land when required)
- (g) Seqwater's preparedness to implement the desired future infrastructure options.

Such documents should be available on request for review.

## **Infrastructure management and operation**

29. Sections 353(1)(a) and (c) of the Act require that the WSP must include information about Seqwater's arrangements, strategies or measures for operating its assets, and managing the infrastructure relevant to providing water supply to the SEQ region.
30. It is expected that the WSP contain details on infrastructure management such as:
  - (a) the operational status, capacity and normal intended operation of critical assets
  - (b) principles for maintenance, readiness, and renewal or upgrade of critical assets
  - (c) operational strategies or measures in place for managing water supply security for the region, including for off-grid communities
  - (d) how Seqwater will ensure readiness of any manufactured water asset (i.e. how Seqwater will ensure that the manufactured water assets will be available when required)
  - (e) how operations are to be adaptive to the circumstances existing at the time including drought, floods, and asset outages for maintenance, renewal and upgrades.
31. The WSAR should provide a summary of any major operational changes or updates to the planned base case in the last twelve months.
32. Further operational detail can be made available through supporting documents, including:
  - (a) information updated on an annual basis outside of the WSP cycle
  - (b) back-up strategies for the potential operational failure of critical assets
  - (c) conditions under which export/import stops or flow reverses for the major bulk water pipelines between the sub-regions
  - (d) the implications of operational strategies on water supply security and the bringing forward or deferral of significant capital expenditure.

## **Demand Management**

33. Sections 353(1)(d) of the Act requires that the WSP must include information about Seqwater's arrangements, strategies or measures for managing demand for water.
34. The success of any planned demand management measures will be reliant upon the support of Seqwater's customers. For this reason, the WSP should note any agreed plans with the SEQ SPs.
35. The WSP should outline:
  - (a) process under which Seqwater and the SEQ SPs collaborate to manage the demand for bulk water
  - (b) the demand management measures that may be implemented (during and outside of drought)
  - (c) the assessment approach used to determine appropriate demand management measures

- (d) considerations that will be undertaken to determine when to implement a particular demand management measure
  - (e) the triggers for when such measures would be undertaken/implemented. Associated with each trigger should be the target or expected reduction in bulk water use
  - (f) potential drought response implications (i.e. how demand will be managed during non-drought circumstances to ensure that an appropriate restricted demand can be achieved should a drought situation arise). This may include an appropriate economic analysis of water restrictions in comparison to other drought response measures that may be implemented.
36. In addition demand management should be equally recognised in the WSP as one of the potential solutions for dealing with the pressures of an expanding population (e.g. alongside increasing supply or changed operations).
37. The success of any planned demand management measures will be reliant upon the support of Seqwater's customers. The SEQ SPs are required to include information outlining a strategy for demand management for water in the water netserv plans required under section 99BO of the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*. Where possible Seqwater and the SEQ SPs should work together to actively promote the efficient use of water and alignment should be sought between documents that mention demand management to ensure a consistent approach. The WSP should broadly outline how SEQ SPs will be engaged in the development and implementation of any proposed demand management strategy to facilitate the targeted reductions in bulk water use (e.g. water restriction schedule).

## **Water Security Annual Report (WSAR)**

38. As required under the Regulation, the projected demand must be assessed annually. The WSP should outline the process under which Seqwater will provide and publish this assessment (i.e. through the WSAR).
39. Each annual assessment must include information on the outcome of whether the PRAUD urban demand is still current. Details that should be included in the assessment include:
- (a) water use over the past year and comparison with previous years (ML/a and L/p/d) with consideration of including water use by area (e.g. sub-region, LGA, or SEQ SP area if preferred)
  - (b) any changes to the projected demand and a summary of the reason for the change (for example, population growth, rainfall, temperature or business growth). Note projected demand is total demand and is measured in L/p/d.
    - If other units are used the conversion to L/p/d should be explained.
    - If projected demands are separated out into residential and non-residential in the WSP, WSAR should also note if either has changed.
40. The WSAR should also provide an overview of the water supply security risk to the region including/detailing:
- (a) major changes to the bulk water supply system over the past year
  - (b) total volumes of water supplied to the region, sub-regions (or LGA or SEQ SP area if preferred), off-grid communities, and neighbouring communities

- (c) when manufactured water assets have operated and any changes to risks to readiness in the past year
- (d) assessment of the regional water balance
- (e) relevant drawdown scenarios including different risk thresholds.

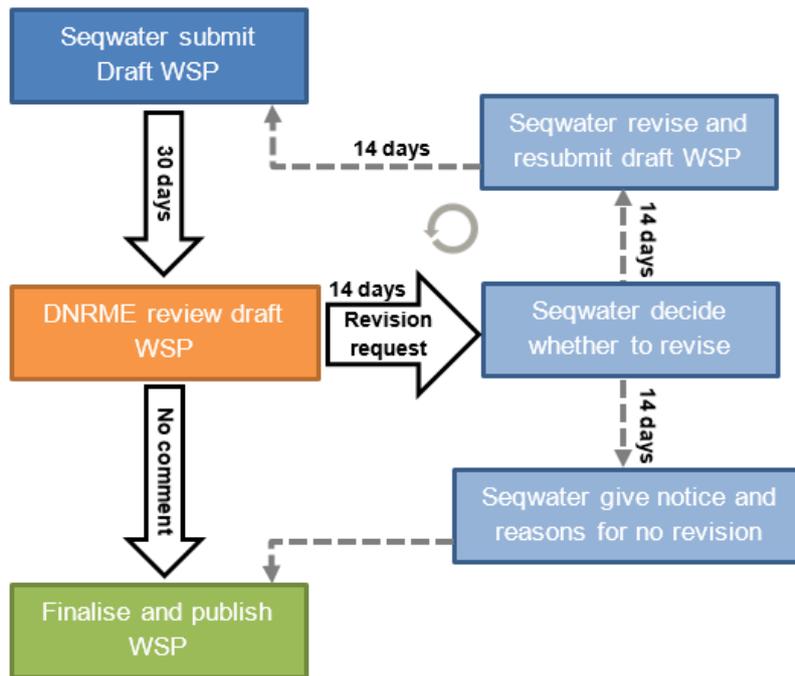
## **Administration**

### **Format**

- 41. This guideline outlines DNRME's expectations regarding the WSP. The specific format for the WSP is for Seqwater to decide, though the WSP must be published on Seqwater's website, address statutory obligations and address how Seqwater and the SEQ SPs will work together to address the SEQ supply and demand balance requirements to deliver value for money. The WSP may be a single document, or an overarching document with attachments and references to other documents.
- 42. Attachments and references need to be accessible for review by DNRME and should be clearly marked when intended for internal use by Seqwater (e.g. operational and detailed technical documents).

### **Preparing and finalising the WSP**

- 43. The process for preparing and consulting on the WSP is outlined in sections 354 – 355 of the Act. Given the potentially significant ramifications for SEQ if a severe drought occurs, it would be desirable that an overarching senior level steering committee is established for the preparation and reviewing of a WSP.
- 44. Seqwater is required to submit the draft WSP to the chief executive (the Director-General) of DNRME. Information about any consultation undertaken with Seqwater's customers in developing the draft WSP should also be provided to DNRME at this time if it is not included in the WSP. Where possible Seqwater should engage with DNRME early during the preparation of the draft WSP to minimise the need for multiple revisions during the review of the draft WSP.
- 45. The process for finalising the WSP is outlined in sections 356 – 358 and is broadly summarised by Figure 1. Note this reflects the minimum legal requirements for finalising the WSP. Given the content and impact of the WSP it will also require review by Cabinet, which could considerably extend the process of finalising and publishing the WSP.



**Figure 1: Process for finalising the WSP**

## Review

46. The WSP is required under section 359 of the Act to be reviewed at least every five years. A review must also be undertaken if there is a significant change to a matter that will, or is likely to, affect the achievement of the desired LOS objectives for SEQ.
47. Any document that is part of the WSP, including an attachment or appendix to the WSP, must be included in any review process. If any of Seqwater’s arrangements, strategies or measures for any of the matters specified in section 353(1) of the Act have a significant change, the relevant documents must be updated and provided to the chief executive of DNRME for review.