



REMOTE SERVICE LEVEL GUIDELINES

FOR ESSENTIAL SERVICES IN REMOTE SETTLEMENTS IN WESTERN AUSTRALIA



Department of Housing

March 2014

Acknowledgements

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1.0 Introduction

These Remote Service Level Guidelines (the Guidelines) outline the recommended minimum service levels for essential services (power, water and waste water) for remote settlements in Western Australia (WA). The Guidelines aim to ensure the safe, reliable and efficient delivery of water, waste water and power services to remote settlements in a manner that is both equitable and fit for purpose.

The Guidelines may in some cases differ from the service levels usually applicable in larger towns and cities, however, any differences are limited to areas of service reliability, service delivery levels and customer service. The Guidelines do not compromise issues of health and safety and reinforce the requirement that all service providers must meet mandatory obligations relating to infrastructure construction and installation, water quality, sanitation, electrical safety, occupational health and safety and environmental protection.

A tiered approach to service level standards is proposed in order to promote a pragmatic and efficient approach to service delivery that recognises the unique challenges of servicing small remote settlements while ensuring the health, safety and basic reliability of services to remote residents.

1.1 Application of the Guidelines

These Guidelines apply to remote settlements that have populations of less than 1000 people. This includes both Aboriginal and non-Aboriginal communities and towns.

Current service level standards in these remote settlements are highly variable and depend on service delivery and funding arrangements that have developed historically and often outside of normal State Government planning and regulatory processes. These Guidelines indicate the WA Government's desire to ensure consistent and equitable minimum service standards through future investment in priority remote settlements. Nothing in these Guidelines should be taken as an intention or obligation to immediately or universally apply those minimum standards.

The Guidelines do not seek to constrain infrastructure design or technical solutions but provide a guide to the most appropriate level of service in most situations. In many cases the Guidelines refer to the need for detailed in situ measures of service demand and specific consideration of special needs customers in order to ensure appropriate infrastructure planning.

Remote settlements in WA are diverse in nature and present different challenges for service providers, levels of risk for residents and economies of scale for funding agencies. There are three key factors impacting on the application of service levels in remote areas and these have been used to categorise remote settlements as outlined in Table 1 below. These factors are:

- 1. Supply:** Stand-alone (independent, self-contained, off-grid) systems are not interconnected with other supply systems and do not have access to additional redundancy or capacity that is available through more complex grid supply networks. As a result stand-alone systems are often simple systems, which are dependent on isolated water sources, power generation and water treatment systems. This reduces the ability to restore services following supply interruptions, increases capital investment requirements to allow for additional redundancy and reduces the overall system security.
- 2. Location:** The location of settlements in remote areas has a significant effect on the provision of essential services and subsequent costs. Many settlements are difficult to access and some can be isolated for significant periods of time due to seasonal closure of roads and/or airstrips. The level of accessibility is taken into account through the use of the Accessibility/Remoteness Index of Australia (ARIA), which provides a geographical classification to identify settlements that are located in remote and very remote areas.
- 3. Size:** The small number of people that reside in many remote locations means that there is often limited technical knowledge or resources at the local level to support the delivery of services. Often the appropriate skills or equipment have to be brought to the location, which significantly increases the cost of providing services. A small population size also increases the per capita cost of service provision. The size of the settlement is defined by both population and the number of service connections. The number of service connections is considered a more stable measure of size as population statistics in remote areas can vary widely due to high levels of mobility and unreliable data. The use of the number of service connections is also consistent with industry standards for infrastructure planning.

In consideration of the above factors, three categories of settlements are proposed in Table 1 below. This classification aligns with the Western Australian Planning Commission's Statement of Planning Policy 3.2 – Aboriginal Settlements, which defines an Aboriginal settlement as, among other things, having "no less than 5 domestic dwellings".

Table 1 – Categorisation of Settlements

Category	Description
Self-Managed Remote Settlement	Less than 5 houses/service connections (Indicative population estimate of less than 30 people) Settlements that are not permanently occupied
Small Remote Settlement	5-39 houses/service connections (Indicative population estimate of 30 to 199 people)
Large Remote Settlement	Between 40 to 200 houses/service connections (Indicative population estimate of 200 to 999 people)

The Guidelines specifically apply to small and large remote settlements as defined above. While self-managed settlements are not specifically targeted, service levels in these locations should aspire to meet the minimum requirements set out in these Guidelines for small remote settlements.

It is proposed that the Guidelines will apply to settlements classified as remote or very remote by the ABS. In defining service levels for water, waste water and power, it is assumed that large remote settlements will have access to service operators either living within or near the location. This enables a faster response to service disruptions, outages and emergency situations. Response times will vary in extremely remote or isolated locations and in these cases additional redundancy may be required to be designed into the system.

Aboriginal Town Based Reserves

These Guidelines do not apply to Aboriginal reserves located close to larger towns and mainstream on-grid utility services. The service standards in these reserves should be the same as in the adjacent town. However, where town based reserves are not included in town schemes or have unregulated services, then the Guidelines should be applied in the short term to quantify minimum service level requirements.

2.0 Remote Service Level Guidelines – Water Supply

The Guidelines apply to three key elements of water supply in remote settlements:

1. Drinking water quality
2. Water quantity and security
3. Water pressure, flow and continuity.

2.1 Drinking Water Quality

The Department of Health regulates health standards for drinking water supplies across WA and water quality must comply with their requirements. The Australian Drinking Water Guidelines 2011 (ADWG 2011) provide a framework for the management of drinking water supplies that seeks to assure safety at point of use. As such, the ADWG 2011 forms the basis for water quality standards for all remote settlements including monitoring and reporting arrangements.

Microbiological sampling of drinking water supplies should ideally be conducted weekly. However, this frequency is not practical or viable for very remote settlements and monthly water sampling has been accepted as a reasonable compromise by the Department of Health for remote Aboriginal communities serviced under the Remote Area Essential Services Program (RAESP).

The ADWG 2011 also recognise that it may not be economically feasible or practical to apply all of its recommendations to “small water supplies” (defined as those serving fewer than 1000 people). A preventative and risk management approach is therefore recommended in order to provide reasonable assurance of the safety of small water supplies. It is recommended that this include the development of Water Safety Plans and Water Source Protection Plans, which apply the ADWG 2011 framework and include measures such as regular sanitary inspections and testing of chlorine residuals to protect and monitor water supplies.

Table 2 – Drinking Water Quality

Drinking Water Quality	Guideline
Microbiological Water Quality - Health parameters	All parameters to meet ADWG 2011 health guidelines or as agreed by the Department of Health
Physical and Chemical Water Quality - Health parameters	All parameters to meet ADWG 2011 health guidelines or as agreed by the Department of Health
Physical and Chemical Water Quality - Aesthetic parameters	Aspirational target to comply with ADWG 2011 aesthetic guidelines or as agreed by the Department of Health

In cases where water quality fails to meet the above Guidelines, service providers must undertake urgent corrective action, including the notification of key stakeholders, in accordance with the requirements of the Department of Health. The type of remediation action and the urgency will vary depending on the potential health impacts of the water contaminant present and the level of contamination. Appropriate measures may include one or more of the following:

- Issuing of a boil water notice
- Provision of alternative drinking water supplies
- Remediation of the water supply system
- Community evacuation.

2.2 Water Quantity and Security

Planning for water infrastructure must ensure adequate redundancy and security to meet the operational response times for interruptions to water supplies and minimise any risk to public health.



Water usage patterns in remote settlements are highly variable and these locations will have a combination of high and low water users, which will impact on average water demand.

The table below should be used as a guide for sizing and design in consideration of future growth planning. However, the immediate demand and delivery capacity must be evaluated with actual readings or site surveys to inform future water security planning and infrastructure design.

In assessing water requirements every attempt should be made to identify large water users and calculate per connection demand accordingly. Large water users are likely to include commercial, municipal and industrial facilities and need to be accounted for on an individual basis.

Table 3 – Water Quantity and Security

Item	Guideline
Annual Average Daily Demand (AADD)	4,000 L/connection (assumed residency rate of 5 at each residential connection and consumption of 800 L/person/day)
Peak Day Demand	$1.5 \times \text{AADD} = 6,000 \text{ L/connection}$
Peak Hour Demand	$3.0 \times \text{Peak Day} / 24 \text{ hours (pop. 100-500)}$ $2.5 \times \text{Peak Day} / 24 \text{ hours (pop. > 500)}$
Storage (total)	2 days – AADD
Elevated storage	6 hours – Peak Day
Water supply redundancy (Groundwater scenario)	AADD must be able to be met without the primary bore in service

The water demand has been presented on a per connection basis, which reflects the industry standard for planning for water infrastructure. The AADD reflects a relatively high per capita water usage (800 L/person/day), which is impacted by variables such as the adequacy of housing maintenance, demand management strategies and the condition of the network system and associated leakage.

The recommended value for water demand per person per day is very high compared to metropolitan consumption patterns (typically 300 L/person/day). However, the remote demand measure has been adjusted to account for the above variables and to provide an average for all users including residential, commercial and municipal connections. Where known commercial/industrial high water users are present, the demand from these settlements should be identified and incorporated into the overall water demand requirements. If typically high water users are separately metered and accounted for in water use planning then the recommended AADD for residential properties may be significantly reduced in some circumstances.

It is recommended that infrastructure planning in settlements with high water usage include strategies to reduce water demand and to promote more moderate consumption patterns.

2.3 Water Pressure, Flow and Continuity

The following table provides recommended levels for water pressure, flow and continuity in remote settlements. These are based on relevant Australian standards and the operational requirements of household appliances such as showers, toilets, hot water systems and washing machines.

Table 4 – Water Pressure, Flow and Continuity

Item	Small Remote	Large Remote
Pressure	Minimum residual pressure = 5 m, operating pressure of 9 m head at the shut off valve or meter of the dwelling	Minimum residual pressure = 5 m, operating pressure of 13 m head at the shut off valve or meter of the dwelling ¹
Flow	Minimum flow of 10 L/minute	Minimum flow of 10 L/minute
Emergency notification	24 hour phone assistance. Notifications of an outage can originate from remote monitoring dial out alarms	24 hour phone assistance. Notifications of an outage can originate from remote monitoring dial out alarms
Continuity – emergency supply	An emergency supply of drinking water will be made available within 6 hours of confirmation of water outage ²	An emergency supply of drinking water will be made available within 3 hours of confirmation of water outage
Continuity – emergency breakdowns	Attendance on site for emergency breakdowns will occur within 24 hours from notification	Attendance on site for emergency breakdowns will occur within 12 hours from notification
Continuity – resolution of outage	Outages will not extend beyond a 48 hour period from time of notification	Outages will not extend beyond a 24 hour period from time of notification

3.0 Remote Service Level Guidelines - Wastewater Services

Wastewater management in Western Australia is regulated by the Department of Health (Wastewater Management Branch) under the *Health Act 1911* and the associated *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*.

The *Environmental Protection Act 1986* (EP Act) is the overarching environmental legislation that deals with the protection of the environment and related offences. The EP Act and the *Environmental Protection Regulations 1987* (EP Regulations) are administered and enforced by the Department of Environment Regulation (DER).

Under the EP Act and the EP Regulations, works approvals and licenses are required to construct and operate wastewater treatment facilities that trigger the following production design capacities:

¹ Many settlements have existing 12 m elevated tank stands and therefore the 13 m head may be difficult to achieve in the short term. It is envisaged that upgrades to an appropriately sized tank stand to achieve the required minimum static pressure will occur progressively when asset replacement is required.

² An emergency drinking water supply may include bottled water.

1. *Category 54 Sewage facility: premises with a production design capacity of 100 cubic metres or more per day –*
 - (a) *On which sewage is treated (excluding septic tanks); or*
 - (b) *From which treated sewage is discharged onto land or into waters.*
2. *Category 85 Sewage facility: premises with a production design capacity of more than 20 but less than 100 cubic metres per day–*
 - (c) *On which sewage is treated (excluding septic tanks); or*
 - (d) *From which treated sewage is discharged onto land or into waters.*

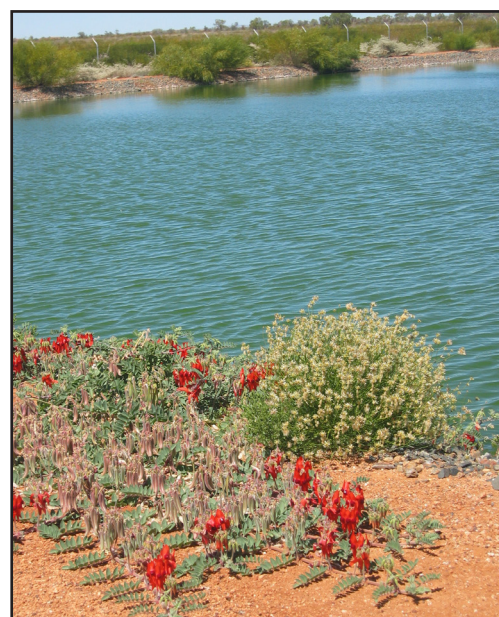
The management of waste water and waste water systems in remote settlements must comply with all applicable health and environmental laws and regulations. These Guidelines operate within that regulatory framework and apply to two key elements of waste water services in remote settlements:

1. System capacity
2. Service Level.

3.1 Wastewater System Capacity

The sewerage systems in remote settlements are vital for the maintenance of good public health, sanitation and environmental protection. Systems must be designed and managed in accordance with all statutory requirements and the specific needs and circumstances of individual settlements. The type of waste water system in remote settlements will depend on a number of factors including community size, water usage patterns, climate, environmental factors and infrastructure maintenance regimes. Waste water systems in these locations may include:

- Septic tanks and leach drains
- Centralised sewerage systems, both common and full effluent disposal systems
- Effluent transportation (pumps) and distribution (pipes)
- Stabilisation ponds
- Constructed wetlands
- Other approved discharge arrangements.



In determining waste water system capacity, it is necessary to estimate expected waste water flows, which are impacted by a number of variables including water usage patterns, demand management strategies, adequacy of infrastructure and housing maintenance. The assumed flows provided in the table below are consistent with the Northern Territory's Indigenous Community Engineering Guidelines (ICEG). These measures must be confirmed on site with analysis of water usage trends, waste water monitoring and anecdotal evidence prior to design or upgrade of systems.

Table 5 below should be used as a guide for sizing and design of waste water systems taking into account future growth planning. The immediate demand and delivery capacity must be evaluated with actual readings or site surveys.

Table 5 – Residential Waste Water Loading

Item	Guideline
Assumed Flow to Sewer	300 L/person/day
Average Dry Weather Flow (ADWF)	300 L/person/day = 1,500 L/connection
Peak Wet Weather Flow (PWWF) ³	(ADWF x dilution factor x diurnal peak factor)+ pumped inflows
Dilution factor by region	Kimberly = 3, Pilbara = 2, Goldfields = 1.5
Diurnal peak factor per connection	$(1.74 + (330 / EP^{0.55}))^{0.5}$

³ Calculations for the PWWF and associated factors are drawn from the NT Power and Water Corporation - Water Services Connection Code – Technical Requirements.

3.2 Waste Water Service Levels

The management of waste water systems is required to meet regulatory requirements, protect public health and to respond adequately to any potential impacts on surrounding water sources and the environment. The service levels seek to ensure that adequate processes are in place to manage these risks and to ensure effective responses to system breakdowns and overflows.

The management of waste water systems requires evaluation of the environmental receptors through a Drinking Water Source Protection Plan or similar. This will enable the identification of sensitive receivers and protected areas.

The following table is provided as a guide for service providers to ensure an adequate level of service for the residents of remote settlements and an appropriate response to public health or environmental threats.

Table 6 – Remote Service Level Guidelines for Wastewater

Item	Small Remote	Large Remote
Septic tank waste disposal	Fenced septic tank waste management facility for disposal of septic tank waste	Fenced septic tank waste management facility (this could be incorporated into the stabilisation pond or similar compound to allow for disposal of septic tank waste)
Overflow frequency – within protected areas ⁴	No overflows	No overflows
Emergency notification	24 hour phone assistance (notifications of an outage can originate from remote monitoring dial out alarms)	24 hour phone assistance (notifications of an outage can originate from remote monitoring dial out alarms)
Overflow response time – within protected areas	Attendance on site for emergency breakdowns will occur within 24 hours from notification	Attendance on site for emergency breakdowns will occur within 12 hours from notification
Overflow response time - resolution overflow	Overflows will be resolved within 48 hours from time of notification	Overflows will be resolved within 24 hours from time of notification
Overflow frequency – outside protected areas	No dry weather overflows	No dry weather overflows
Overflow response time – outside of protected areas	Response and remediation as required within 1 week	Response and remediation as required within 1 week
Overflow frequency from controlled discharge point – outside protected areas	Controlled discharge is acceptable when away from populated and protected areas	Controlled discharge is acceptable when away from populated and protected areas
Overflow response time from controlled discharge point – outside protected areas	Monitoring of discharge frequency and volume is required, however no remediation is needed	Monitoring of discharge frequency and volume is required, however no remediation is needed

Where septic tanks are utilised as part of a dwelling's wastewater disposal system, it is the responsibility of the property owner or their agent to ensure regular maintenance is carried out. Septic tanks are not part of the broader community waste water system and are outside the ambit of these Guidelines.

4.0 Remote Service Level Guidelines - Power Supply

A safe and reliable power supply is critical for the well-being of community residents and underpins all other essential services and community facilities that rely on power. Inadequate electricity infrastructure can pose immediate safety hazards and impact on general environmental health and community amenity. The technical standards for power supply are governed by requirements for electrical safety and there can be no compromise on statutory electrical safety requirements in WA, including the Australian Standard AS/NZS 3000-2007: Electrical Installations (the Australian/New Zealand Wiring Rules) and the Western Australian Electrical Requirements (WAER).

⁴ Protected areas include areas that are within customer property boundaries, public space or environmentally sensitive area.

The service level standards for power supplies are governed by issues of public health, safety and continuity of supply. These Guidelines cover four key areas of power supply:

1. Power supply quality
2. Power quantity and security
3. Continuity of power supply
4. Noise levels.

4.1 Power Supply Quality

The quality of the power supply relates to voltage and frequency standards and variations, which can impact on electrical devices connected to the power source. An adequately designed power supply will provide power of sufficient quality to ensure compatibility with the devices that may be connected to it.

The values provided in Table 7 below are consistent with AS 60038 - 2012 Standard voltages.

Table 7 – Power Supply Quality

Item	Guideline
High Voltage (HV) nominal	11 kV, 22 kV
Low Voltage (LV) nominal	230 V, 400 V
LV variation range at point of connection	Steady state within +10%/-6%
Nominal frequency	50 Hz (+/-10%)
Steady State frequency variation range	within 2.5%

4.2 Power Quantity and Security

The Guidelines for power quantity and security relate to the adequacy of the power generation and supply networks to cater for community power demands and to provide adequate redundancy to ensure the continuity of power supplies in normal circumstances. These Guidelines take into account the power required for the effective operation of key essential services such as water and sewer pumps and the needs of special use customers such as the health clinic, schools and retail outlets. The appropriate service level for power supply for each settlement therefore needs to consider the power dependent services specific to that location and the associated risks of power disruptions.

The table below should be used as a guide for sizing and design as part of the long term planning of power infrastructure. The immediate demand and delivery capacity must be evaluated with actual power readings or site surveys. Residential properties will vary significantly in terms of their size and amenities with subsequent impacts on power load demands. Further refinement of After Diversity Maximum Demand (ADMD) values may therefore be required when determining the actual impact of planned new residential developments.

Non-residential power demand will also vary significantly between types of commercial, government and industrial users. Table 8 provides an estimated ADMD, however this needs to be determined on a case by case basis in each location.

Table 8 – Power Quantity and Security

Item	Guideline
After Diversity Maximum Demand (ADMD)	4 kVA/connection for residential (single phase)
6 kVA/connection for commercial (single/three phase)	230 V, 400 V
Maximum Demand	15 kVA/connection
Feeder Redundancy	Dual or designated feeder to essential services ⁵
Generation Redundancy	N - 1 generation redundancy based on the sum of ADMD

A cost benefit analysis should be undertaken for provision of power security to isolated services such as water bores, to determine if feeder redundancy can be offset through the use of onsite power generation (e.g. solar or diesel).

⁵ Essential services include key water and wastewater infrastructure.

4.3 Continuity of Power Supply

The residents of remote settlements are by definition isolated from alternative power sources and therefore a continuous supply of power is critical for day to day living. The Guidelines in Table 9 seek to provide a pragmatic approach to service disruptions, which recognise the critical importance of power, the limited power redundancy usually available and the realities of servicing small remote settlements that may not have technical personnel on site.

Table 9 – Power Supply Continuity and Service Responses

Item	Small Remote	Large Remote
Power Disruption Continuity and Emergency Power Supplies	No emergency supply will be provided. Special needs customers are to arrange for emergency backup if required ⁶	No emergency supply will be provided. Special needs customers are to arrange for emergency backup if required
Power Disruption Continuity and Emergency Response	Attendance on site for emergency breakdowns will occur within 24 hours from notification	Attendance on site for emergency breakdowns will occur within 12 hours from notification
Power Disruption Continuity – Resolution of outage	Outages will not extend beyond a 48 hour period from time of notification	Outages will not extend beyond a 24 hour period from time of notification
Emergency Notification	24 hour phone assistance. Notifications of an outage can originate from remote monitoring dial out alarms	24 hour phone assistance. Notifications of an outage can originate from remote monitoring dial out alarms
Outages	No more than 3 outages requiring emergency response attendance within a rolling 12 months	No more than 3 outages requiring emergency response attendance within a rolling 12 months
Planned interruption duration maximum	< 6 hrs	< 6 hrs

Continuity of power supplies is also dependent upon adequate fuel storage facilities and reliable access to remote settlements for refuelling. The fuel storage capacity should be sufficient to accommodate power requirements for extended periods of time when access to the settlement may be restricted. Planning for fuel storage capacity, re-fuelling cycle times and the volume of fuel to be delivered should ensure adequate power security and seek to achieve appropriate economies of scale.

4.4 Noise Levels

The service level standards for noise are governed by Australian Standard, AS 1055.1-1997, Acoustics – Description and Measurement of Environmental Noise and the WA Environmental Protection (Noise) Regulations 1997. Specific noise buffer requirements are also contained in the Western Australian Planning Commission's Aboriginal Settlements Guideline No 1: Layout Plans.

Due to the existing location of many power stations, compliance with the noise levels set out in the relevant regulations and recommended exclusion zones may not be practical in the short term. However, planning for future power stations should be in accordance with the above requirements. In cases where existing power stations are within or near residential or other sensitive areas, innovative design practices and installations are encouraged to buffer noise in the short term.



⁶ Special needs customer includes hospitals/health clinics, police stations, schools and other civil services.

SUMMARY OF REMOTE LEVEL SERVICE GUIDELINES

WATER SUPPLY

Table 2 – Drinking Water Quality

Drinking Water Quality	Guideline
Microbiological Water Quality - Health parameters	All parameters to meet ADWG 2011 health guidelines or as agreed by the Department of Health
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Physical and Chemical Water Quality - Aesthetic parameters	Aspirational target to comply with ADWG 2011 aesthetic guidelines or as agreed by the Department of Health

Table 3 – Water Quantity and Security

Item	Guideline
Annual Average Daily Demand (AADD)	4,000 L/connection (assumed residency rate of 5 at each residential connection and consumption of 800 L/person/day)
Peak Day Demand	1.5 x AADD = 6,000 L/connection
Peak Hour Demand	3.0 x Peak Day / 24 hours (pop. 100-500) 2.5 x Peak Day / 24 hours (pop. > 500)
Storage (total)	2 days – AADD
Elevated storage	6 hours – Peak Day
Water supply redundancy (Groundwater scenario)	AADD must be able to be met without the primary bore in service

Table 4 – Water Pressure, Flow and Continuity

Item	Small Remote	Large Remote
Pressure	Minimum residual pressure = 5 m, operating pressure of 9 m head at the shut off valve or meter of the dwelling	Minimum residual pressure = 5 m, operating pressure of 13 m head at the shut off valve or meter of the dwelling ⁷
Flow	Minimum flow of 10 L/minute	Minimum flow of 10 L/minute
Emergency notification	24 hour phone assistance. Notifications of an outage can originate from remote monitoring dial out alarms	24 hour phone assistance. Notifications of an outage can originate from remote monitoring dial out alarms
Continuity – emergency supply	An emergency supply of drinking water will be made available within 6 hours of confirmation of water outage ⁸	An emergency supply of drinking water will be made available within 3 hours of confirmation of water outage
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Continuity – resolution of outage	Outages will not extend beyond a 48 hour period from time of notification	Outages will not extend beyond a 24 hour period from time of notification

⁷ Many settlements have existing 12 m elevated tank stands and therefore the 13 m head may be difficult to achieve in the short term. It is envisaged that upgrades to an appropriately sized tank stand to achieve the required minimum static pressure will occur when asset replacement is required.

⁸ An emergency drinking water supply may include bottled water.

WASTEWATER SERVICES

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⁹ Calculations for the PWWF and associated factors are drawn from the Power and Water Corporation - Water Services Connection Code – Technical Requirements.

¹⁰ Protected areas include areas that are within customer property boundaries, public space or environmentally sensitive area.

POWER SUPPLY

Table 7 – Power Supply Quality

Item	Guideline
High Voltage (HV) nominal	11 kV, 22 kV
Low Voltage (LV) nominal	230 V, 400 V
LV variation range at point of connection	Steady state within +10%/-6%
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After Diversity Maximum Demand (ADMD)	4 kVA/connection for residential (single phase)
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Maximum Demand	15 kVA/connection
Feeder Redundancy	Dual or designated feeder to essential services ¹¹
Generation Redundancy	N - 1 generation redundancy based on the sum of ADMD

Table 9 – Power Supply Continuity and Service Responses

Item	Small Remote	Large Remote
Power Disruption Continuity and Emergency Power Supplies	No emergency supply will be provided. Special needs customers are to arrange for emergency backup if required ¹²	No emergency supply will be provided. Special needs customers are to arrange for emergency backup if required
Power Disruption Continuity and Emergency Response	Attendance on site for emergency breakdowns will occur within 24 hours from notification	Attendance on site for emergency breakdowns will occur within 12 hours from notification
Power Disruption Continuity – resolution of outage	Outages will not extend beyond a 48 hour period from time of notification	Outages will not extend beyond a 24 hour period from time of notification
Emergency Notification	24 hour phone assistance. Notifications of an outage can originate from remote monitoring dial out alarms	24 hour phone assistance. Notifications of an outage can originate from remote monitoring dial out alarms
Outages	No more than 3 outages requiring emergency response attendance within a rolling 12 months	No more than 3 outages requiring emergency response attendance within a rolling 12 months
Planned interruption duration maximum	< 6 hrs	< 6 hrs

¹¹ Essential services include key water and wastewater infrastructure.

¹² Special needs customer includes hospitals/health clinics, police stations, schools and other civil services.