Appendix 5.1.1(a) Hunter Water Letter of Support

Bellbird Water

Appendix 5.1.2 (a) Bellbird North Water Balance Summary Report

<Report description>

BELLBIRD WATER, WATER BALANCE SUMMARY

BELLBIRD WATER

WATER BALANCE SUMMARY

PREPARED BY KINESIS FOR FLOW SYSTEMS

24 JUNE 2015

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Note: This report is provided subject to some important assumptions and qualifications:

The results presented in this report are modelled estimates using mathematical calculations. The data, information and scenarios presented in this report have not been separately confirmed or verified. Accordingly, the results should be considered to be preliminary in nature and subject to such confirmation and verification.

Energy, water and greenhouse consumption estimates are based on local climate and utility data available to the consultant at the time of the report. These consumption demands are, where necessary, quantified in terms of primary energy and water consumptions using manufacturer's data and scientific principles.

Generic precinct-level cost estimates provided in this report are indicative only based on Kinesis's project experience and available data from published economic assessments. These have not been informed by specific building design or construction plans and should not be used for design and construct cost estimates.

The Kinesis software tool and results generated by it are not intended to be used as the sole or primary basis for making investment or financial decisions (including carbon credit trading decisions). Accordingly, the results set out in this report should not be relied on as the sole or primary source of information applicable to such decisions.

CONTENTS

EXECUTIVE SUMMARY

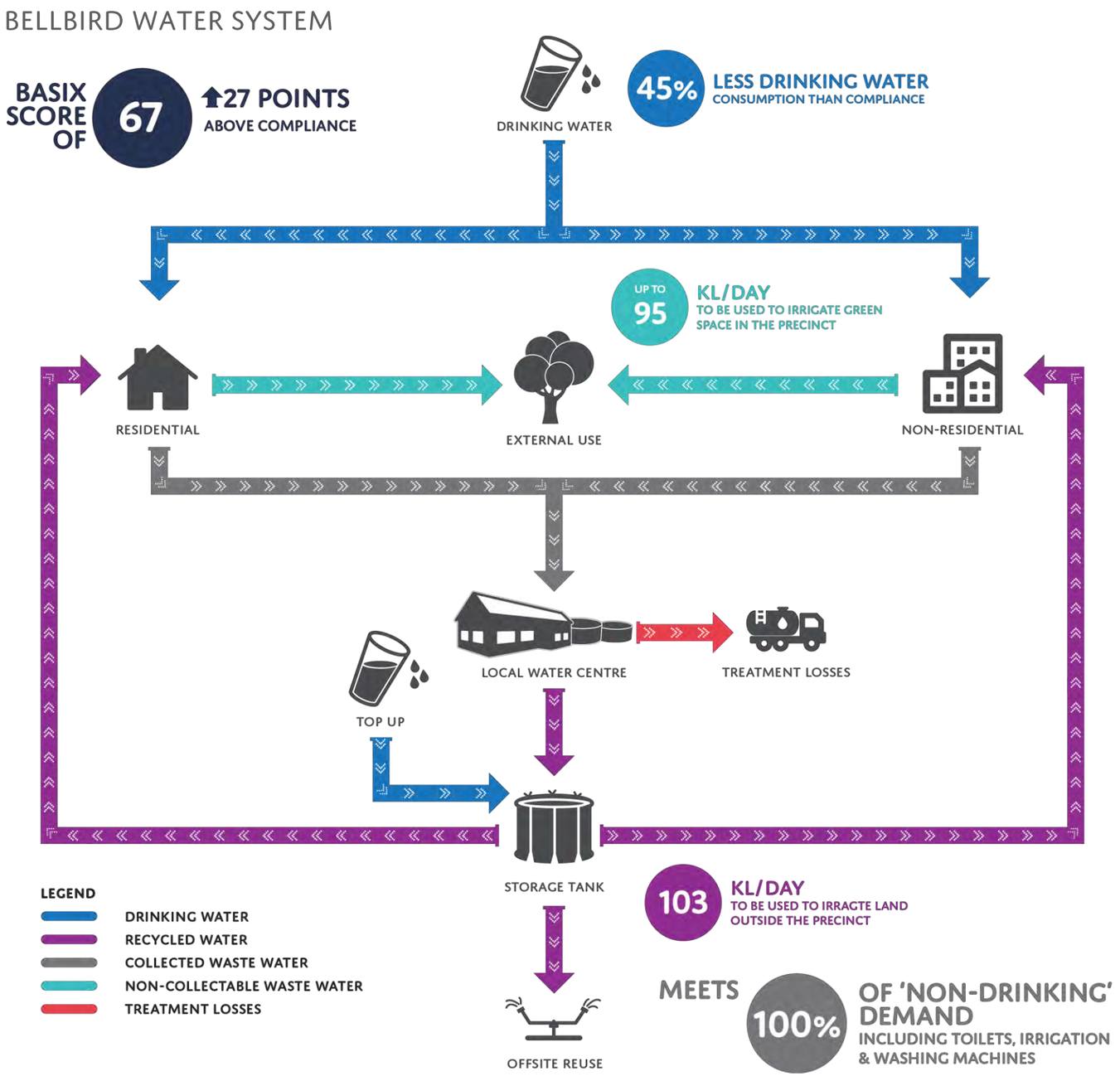
Bellbird North is a proposed residential development near Cessnock in the local government area of the City of Cessnock. Ultimately it will comprise **1,597** houses on **130 ha** and include a town centre with approximately **6,200 m^2** of shopping centre, **3.1 ha** of public plazas and **34.2 ha** of public reserves.

Bellbird Water will provide a recycled water scheme that incorporates a combined membrane bioreactor and ultrafiltration system with a **2.4 ML** storage tank. The system will take inflows from all grey and black waste water from both the residential apartments and non-residential buildings and provide recycled water for:

- Residential use in
  - Toilets
  - Washing Machines (cold only)
  - Irrigation
- Non-residential use in
  - Toilets
  - Washing machines (cold only)
  - Irrigation
  - Washdown, and
  - Water features.

These end-uses will be supplied by **100% recycled water**, with no potable top-up required. Available recycled water will be used to irrigate the reserves within the precinct when available or supplied to off-site customers.

With the recycled water scheme proposed in this report, dwellings in the precinct are expected to achieve, on average, an estimated **BASIX Water score of 67**. Furthermore, to achieve BASIX Water targets without the recycled water scheme, dwellings at Bellbird North would be required to install individual rainwater tanks connected to both toilet flushing and irrigation.



1. PROJECT DETAILS

This report documents the water balance analysis of the Bellbird North development in order to inform the delivery of a recycled water scheme.

The Bellbird North development is a proposed residential development near Cessnock in the local government area of the City of Cessnock. Ultimately it will comprise 1,597 houses on 130 ha and include approximately 6,200 m^2 of shopping centre and 3.1 ha of public plazas. Analysis in this report outlines the results and performance outcomes for Bellbird North. This analysis is undertaken based on figures provided by Flow Systems (see Figure 1 and Table 1) using Kinesis's CCAP Precinct modelling tool. CCAP Precinct is a land use and planning tool that models key environmental, economic, social and infrastructure implications and requirements for precinct-scale development projects.

The report is structured as follows:

- Summary of Outcomes and Benefits
- Water Demands
- Source Water Production
- Recycled Water System Performance
- Project Staging

Land Use	Area
Total Development Area	**130 ha**
Public Space	
Road area	24 ha
Reserves	34.2 ha
Public Plazas	3.1 ha
Total public space	**61.3 ha**
Non-Residential Land Use	
Shopping Centre	6,200 m^2
Total non-residential	**6,200 m^2**
Residential Dwellings	
Houses	1,597
Total dwellings	1,597

Table 1: Dwelling yield and floor space for the Bellbird North Precinct.

BELLBIRD NORTH MASTER PLAN

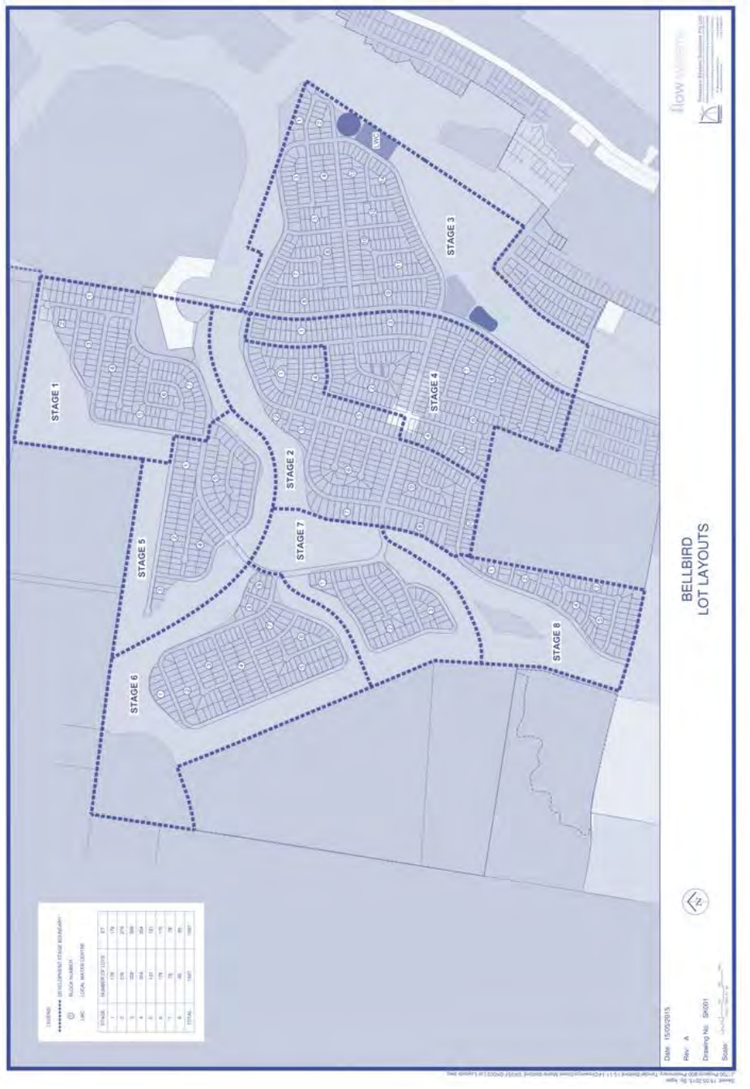


Figure 1: Bellbird North Master Plan

2. WATER DEMANDS

2.1 RESIDENTIAL WATER DEMANDS

Residential water demands were calculated based on the specific residential building types proposed for the Bellbird North development. The details of the dwelling type configuration are outlined in Tables 2 and 3. Monthly total and daily average residential water demands by end use are outlined in Figures 3 and 4. Month to month variation is evident due to changes to irrigation water demands based on rainfall and evaporation profiles. Monthly internal total demands vary slightly due to differences in the number of days per month.

HOUSEHOLD DAILY WATER BALANCE

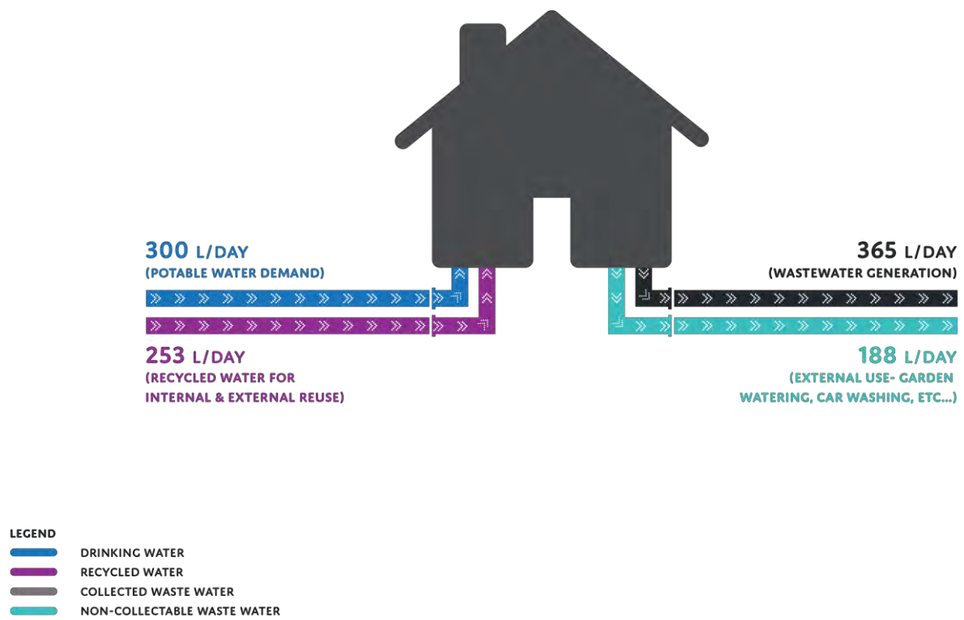


Figure 2: Schematic showing a household's expected daily drinking and recycled water consumption, sewage production and non-collectable water use.

NOTE: Wastewater is discussed further in Section 3 - Source Water Production.

RESIDENTIAL DWELLING SPECIFICATIONS

Dwelling type	Number	Lot Area	Bedrooms	Occupancy	Irrigated Area	EP
Houses						
5-bedroom	1,276	550 – 900 m2	5	4.04	140 – 208 m2	5,149
4-bedroom	321	350 – 550 m2	4	3.44	30 – 100 m2	1,103
TOTAL	**1,597**	**-**	**-**	**-**		**6,252**
AVE. DWELLING		**607 m2**	**4.8**	**3.9**		

Table 2: Residential dwelling specifications used in the analysis

RESIDENTIAL END USE SPECIFICATIONS AND AVERAGE DEMANDS

Water End Use	Technology	Per Person Demand L/day			Development Demand kL/day		
		DW	RW	Total	DW	RW	Total
Shower	3+ Star WELS	28.5	-	28.5	177.9	-	177.9
Kitchen Sink	5 Star WELS	7.0	-	7.0	44.0	-	44.0
Bathroom Basin	5 Star WELS	1.4	-	1.4	8.7	-	8.7
Dishwasher	4 Star WELS	2.1	-	2.1	13.1	-	13.1
Laundry trough	-	5.0	-	5.0	31.3	-	31.3
Bath	-	8.7	-	8.7	54.4	-	54.4
Leaks	-	10	-	10	62.5	-	62.5
Pools/Spa	-	10.5	-	10.5	65.6	-	65.6
Toilet	4 star WELS	-	17.5	17.5	-	109.6	109.6
Washing Machine	4.5 star WELS	3.5	19.6	23.1	21.6	122.5	144.1
Car Washing	-	-	0.57	0.57	-	3.6	3.6
Garden Irrigation		-	26.8	26.8	-	167.5	167.5
TOTAL	**-**	**66.1**	**64.5**	**130.6**	**479**	**403**	**882**
AVE. DWELLING		**300**	**252**	**552**			

Table 3: Residential dwelling end use specifications and average per person daily demands used in the analysis (DW = Drinking water demand, RW = Recycled water demand)

TOTAL RESIDENTIAL WATER DEMANDS

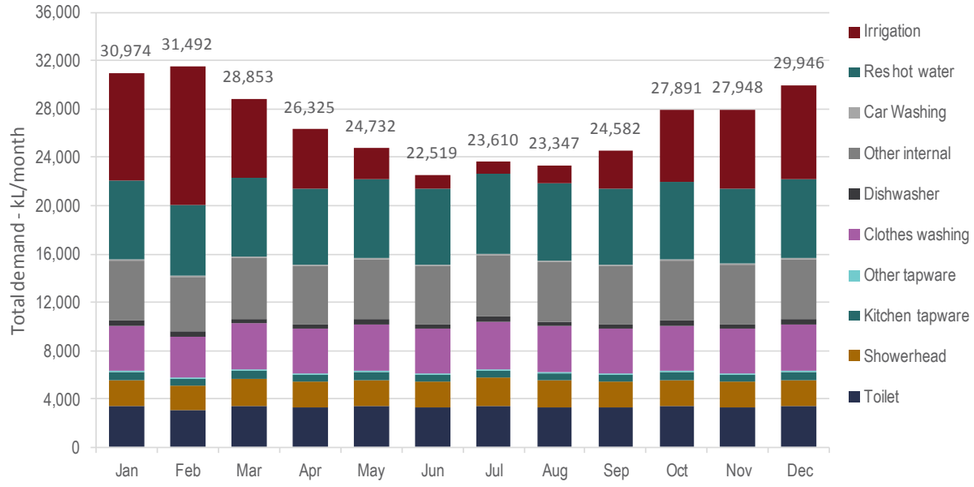


Figure 3: Total residential total water demands by end use, by month

AVERAGE DAILY RESIDENTIAL WATER DEMANDS

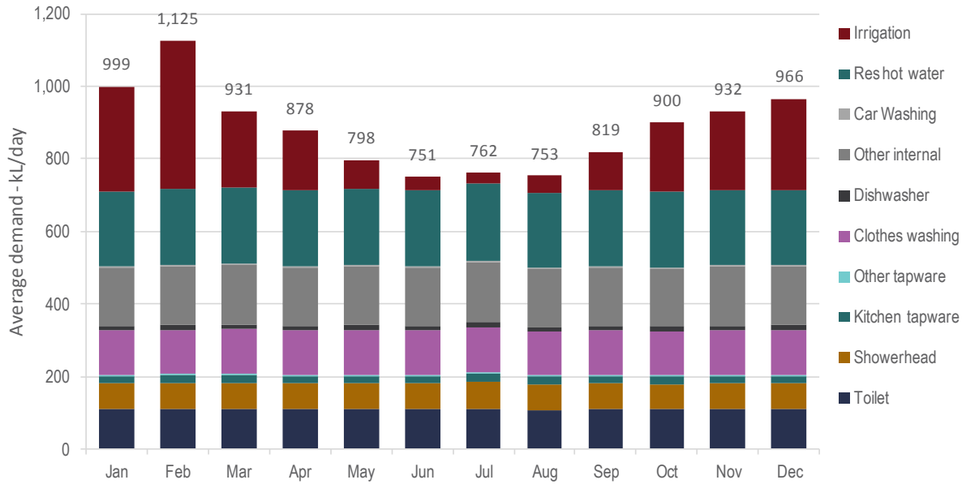


Figure 4: Average daily residential water demands by end use, by month

TEMPERATURE, RAINFALL AND EVAPORATION AT BELLBIRD NORTH

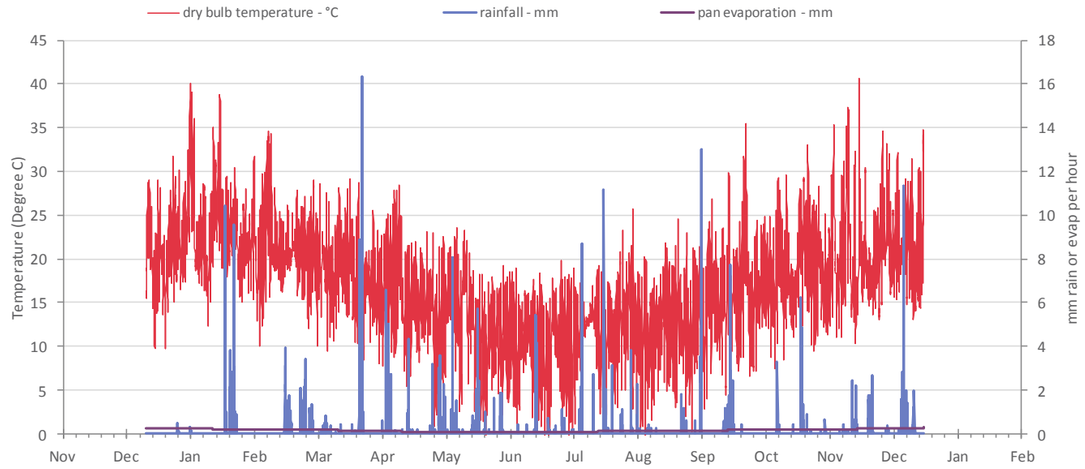


Figure 5: Dry bulb temperature, historic average rainfall and pan evaporation for local climate zone.

2.2 NON-RESIDENTIAL WATER DEMANDS

Non-Residential water demand was calculated based on the specific retail, community and open space proposed for the Bellbird North development.

Details of the building type configuration are outlined in Table 4. Median Practice is assumed to be current average practice and is derived from various sources, including Sydney Water Best Practice Guidelines for water conservation in commercial office buildings and shopping centres (see Appendix).

Monthly total and daily average non-residential water demands by end use are outlined in Figures 6 and 7. Monthly internal total demands vary due to differences in the number of days per month. Month to month variation is only evident in changes to irrigation water demand based on rainfall and evaporation profiles.

As the public reserves will only be irrigated when there is recycled water available they are considered to have no water demand. Instead, Table 4 shows the maximum demand for this end-use, which is considered to be an irrigation rate of 1.5 mm/day. Similarly this demand is absent from Figures 6 and 7. More details are available in Section 4.

NON-RESIDENTIAL SPECIFICATIONS - TOTAL

Demand Hierarchy	Water End Use	Area	Per m2 demand L/day			Development Demand kL/day		
			DW	RW	Total	DW	RW	Total
1	Shopping Centre	6,200 m^2	3.2	1.8	5.0	19.6	11.4	31.1
2	Public Plazas	31,000 m^2	0.0	0.1	0.1	0.0	2.7	2.7
3	Reserve	342,000 m^2	0.0	< 1.5	< 1.5	0.0	< 513	< 513
				TOTAL		**19.6**	**14.1**	**33.7**

Table 4: Non-Residential specifications and average annual demands used in the analysis
DW = Drinking water demand, RW = Recycled water demand

TOTAL NON-RESIDENTIAL WATER DEMANDS

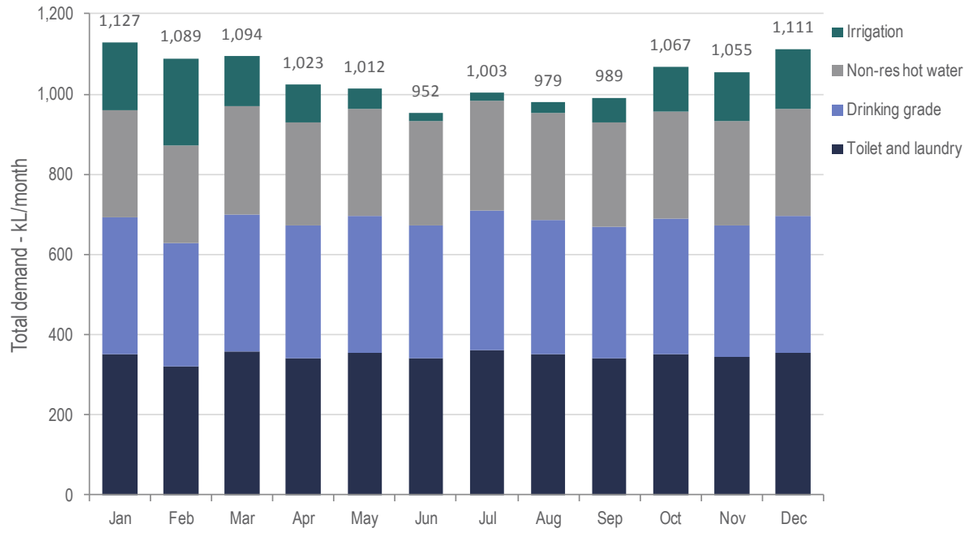


Figure 6: Non-Residential total water demands by end use, by month

AVERAGE DAILY NON-RESIDENTIAL WATER DEMANDS

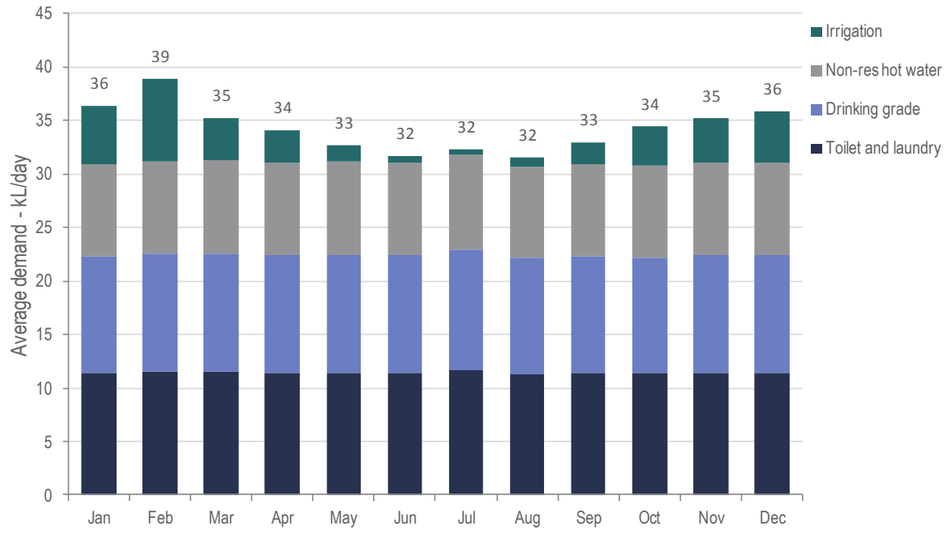


Figure 7: Average daily Non-Residential water demands by end use, by month

2.3 TOTAL AND PEAK WATER DEMANDS

Total water consumption, drinking water demand and recycled water demands are outlined in Tables 5 to 7, showing both total and peak demands for each use.

Total water demands are outlined in Figures 8 to 10 (monthly totals) and Figures 11 to 13 (daily average), summarising the results of the residential and non-residential demands for both drinking and recycled water demands.

As with the individual residential and non-residential demands, month to month variation is predominantly due to changes in irrigation demands. The irrigation demand analysis takes into account hourly rainfall data and cumulative period since the last rain event and irrigation, to predict the time and water use of the next irrigation event. Predictions are also calibrated against real irrigation data for better alignment and accuracy (See Key Data Sources in Appendix).

Peak water demand (kilolitres per hour) for each month is provided in Figure 14. Peak demands for drinking and recycled water are also shown separately in Figures 15 and 16. The peak demand was determined based on the hourly maximum demand for each month, calculated based on the following variables:

- Hourly internal water demands based on a standard hourly internal water demand profile for each end use and building type.
- Hourly irrigation demands based on the irrigation area and local hourly rainfall and evaporation rates.

Due to the fact that internal water demand is relatively consistent over time, in all cases, outdoor irrigation demand is the key contributor towards peak water demands. It should also be noted that peak demands for drinking water and recycled water (Figures 15 and 16) do not necessarily add up to the total peak demand (Figure 14) as the individual peak demands may occur at different times.

TOTAL WATER DEMAND PROFILE

FACTOR	RESIDENTIAL	NON-RESIDENTIAL	TOTAL
Average Daily Demand - kL/d	883	34	917
Peak day - kL/d	1,772	55	1,828
Peak hour – kL/hr	161	5	166

Table 5: Demand profile for the Bellbird North development

DRINKING WATER DEMAND PROFILE

FACTOR	RESIDENTIAL	NON-RESIDENTIAL	TOTAL
Average Daily Demand - kL/d	479	20	499
Peak day - kL/d	691	28	719
Peak hour – kL/hr	72	3	75

Table 6: Demand profile for the Bellbird North development

RECYCLED WATER DEMAND PROFILE

FACTOR	RESIDENTIAL	NON-RESIDENTIAL	TOTAL
Average Daily Demand - kL/d	403	15	418
Peak day - kL/d	1,178	31	1,209
Peak hour – kL/hr	101	3	103

Table 7: Demand profile for the Bellbird North development

TOTAL WATER DEMAND

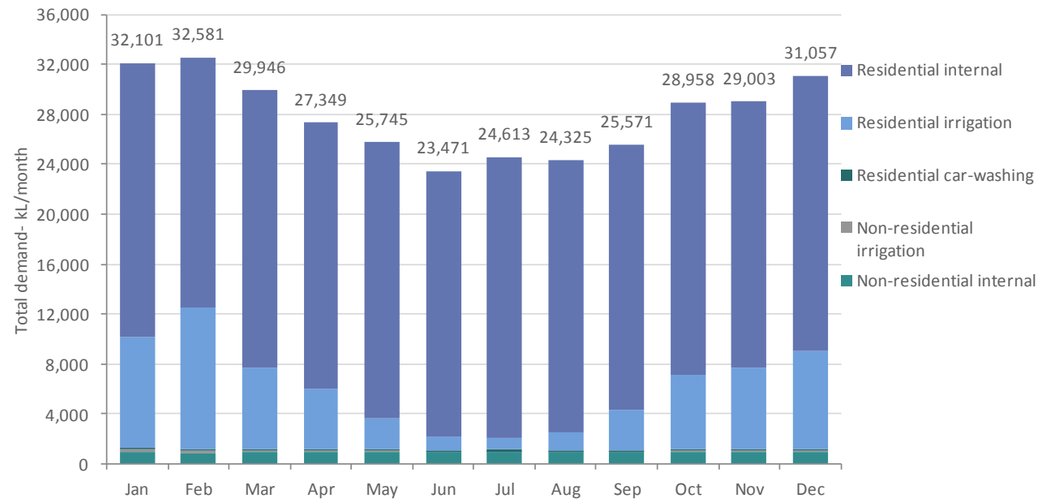


Figure 8: Total water demand by month

TOTAL DRINKING WATER DEMAND

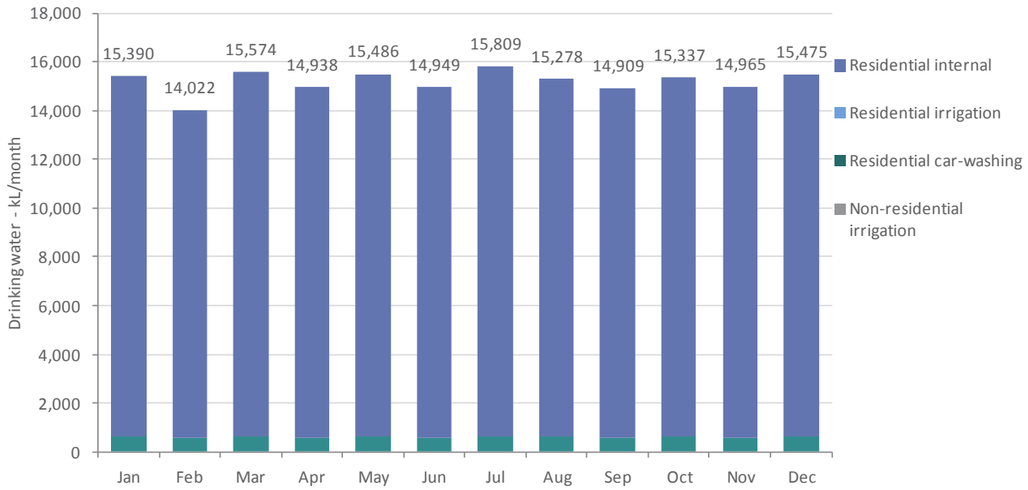


Figure 9: Total drinking water demand by month

TOTAL RECYCLED WATER DEMAND

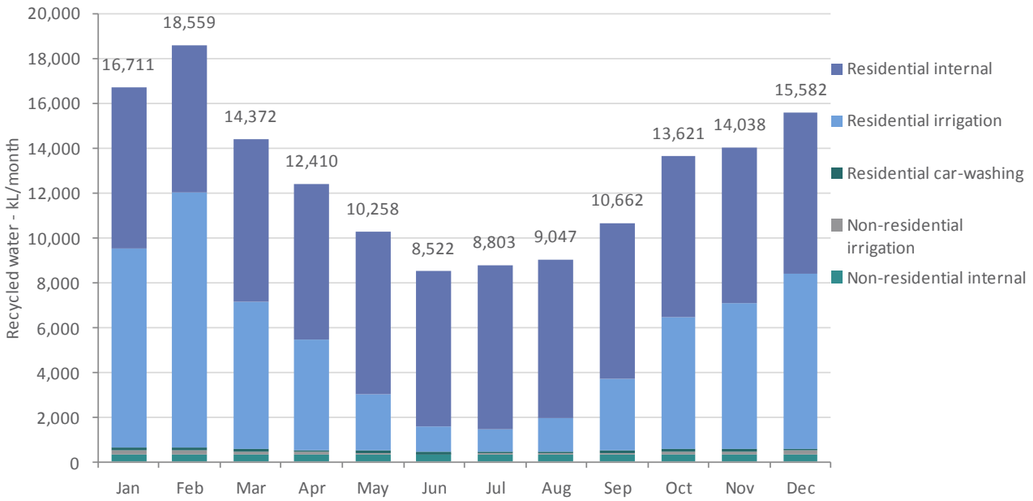


Figure 10: Total recycled water demands by month

DAILY AVERAGE WATER DEMAND

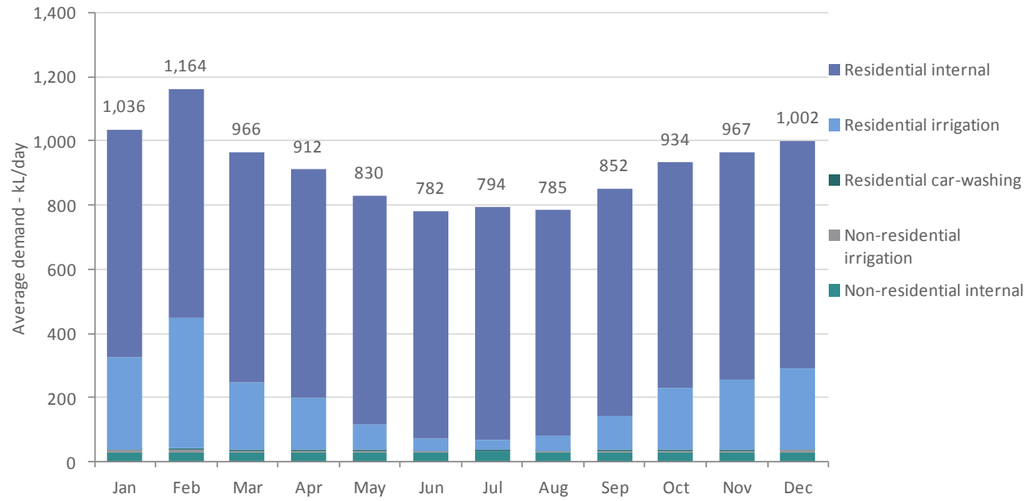


Figure 11: Daily average total water demands by month

DAILY AVERAGE DRINKING WATER DEMAND

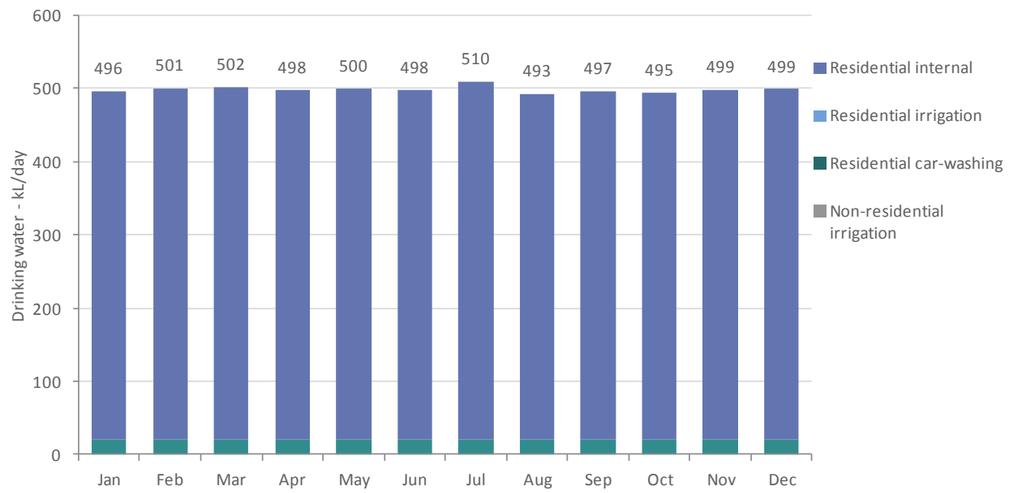


Figure 12: Daily average drinking water demand by month

DAILY AVERAGE RECYCLED WATER DEMANDS

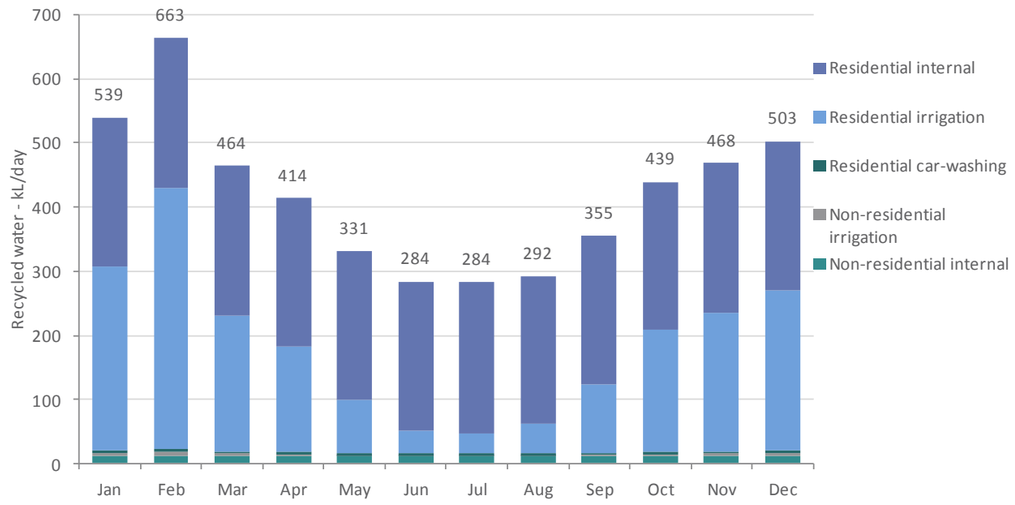


Figure 13: Daily average recycled water demand by month

PEAK RECYCLED WATER DEMANDS

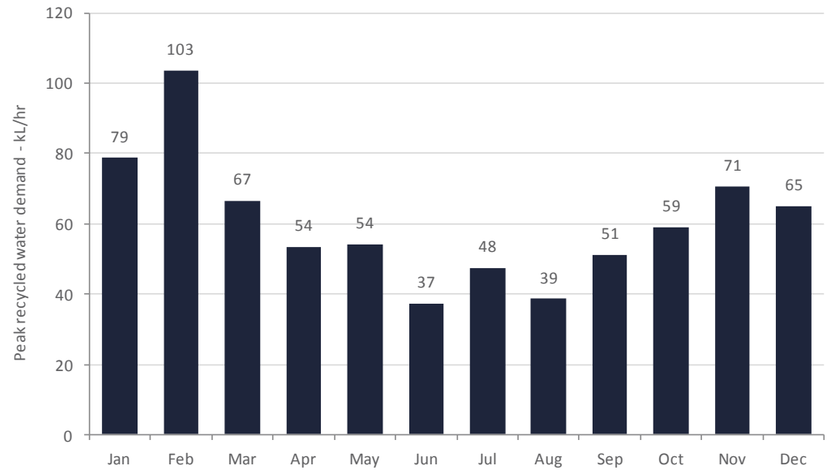


Figure 15: Peak recycled water demands by month

PEAK TOTAL WATER DEMANDS

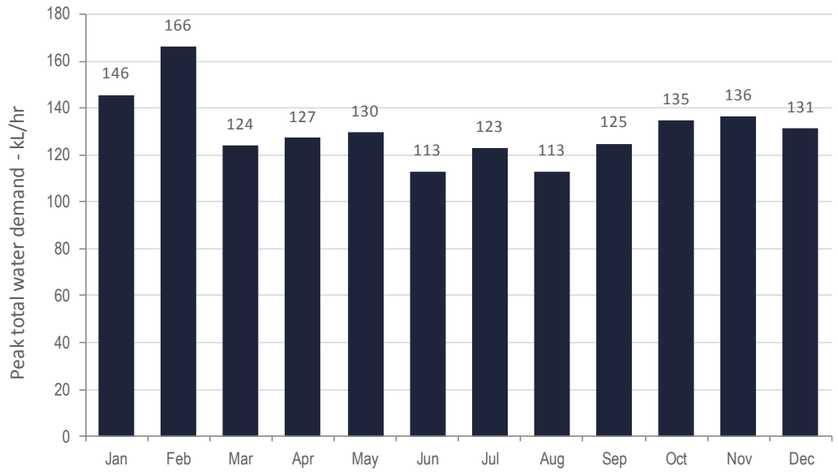


Figure 14: Peak total water demand by month

PEAK DRINKING WATER DEMANDS

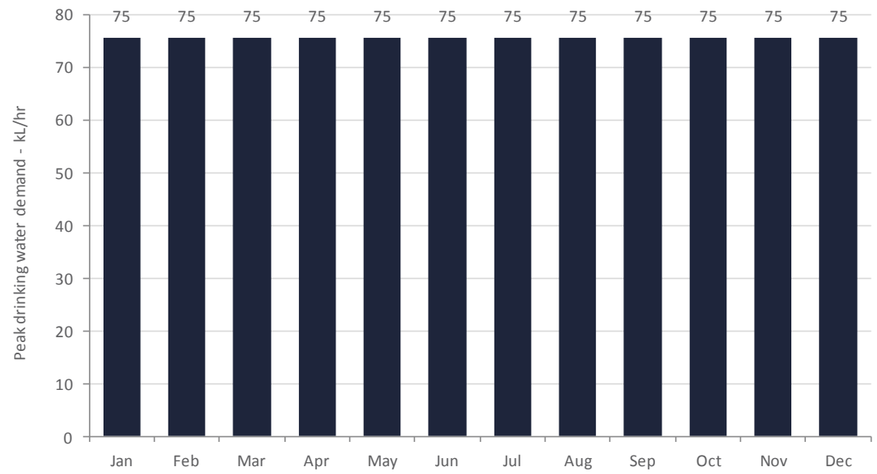


Figure 16: Peak drinking water demand by month

NOTE: Peak demands for drinking water and recycled water (Figures 15 and 16) do not necessarily add up to the total peak demand (Figure 14) as the individual peak demands may occur at different times.

3. SOURCE WATER PRODUCTION

3.1 SOURCE WATER PRODUCTION

Source water for the recycled water scheme is primarily sourced from sewage production. Residential and non-residential sewage production is calculated based on the specific building types proposed for the Bellbird North development (as shown previously in Tables 3 and 4).

Table 9 outlines the average daily and peak sewer production for the residential and non-residential components of the development. Source water production from the residential and non-residential buildings is broken down further in Tables 8 and 10.

RESIDENTIAL SEWAGE PRODUCTION

Water End Use	Per Person Sewage Production L/day	Development Sewage Production kL/day
Shower	28.5	177.9
Kitchen Sink	7.0	44.0
Bathroom Basin	1.4	8.7
Dishwasher	2.1	13.1
Laundry trough	5.0	31.3
Bath	8.7	54.4
Leaks	0.0	0.0
Pool/Spa	0.0	0.0
Toilet	17.5	109.6
Washing Machine	23.1	144.1
Car Washing	0.0	0.0
TOTAL	93.3	582.9
AVE. DWELLING	365.0 L/dwelling/day	-

Table 8: Residential dwelling end use specifications and per person daily demands used in the analysis

PRODUCTION PROFILE

FACTOR	RESIDENTIAL	NON-RESIDENTIAL	TOTAL
Average Daily Production - kL/d	583	29	612
Peak day - kL/d	841	42	883
Peak hour – kL/h	88	4	93

Table 9: Source water production profile for the Bellbird North development

NON-RESIDENTIAL SEWAGE PRODUCTION

Building Type	Per m2 Sewage Production L/day	Development Sewage Production kL/day
Retail	4.7	28.9
	TOTAL	8.8

Table 10: Non-Residential specifications and average annual demands used in the analysis

4. RECYCLED WATER SYSTEM PERFORMANCE

4.1 RECYCLED WATER SYSTEM CONFIGURATION

The recycled water system for Bellbird North was configured as follows:

- Connection to all dwellings for toilet and washing machine (cold tap)
- Connection to all non-residential buildings for irrigation and toilet flushing
- Connection to all open space for irrigation with on-site reserves available when recycled water production exceeds demand
- Storage tank is sized at 2.4 ML
- Accepted inflow volume is calculated as the sum of end-use demand and missing storage volume, analysed on an hourly basis.
- A 2% volume loss is also considered for the UF treatment process.

4.2 WATER BALANCE

The average daily performance of the recycled water system at full build out of Bellbird North is in Figure 17. Key water results are shown in Table 11 and Figure 18 with secondary recycled water demand shown along with the recycled water available for irrigation of on-site reserves and for off-site reuse.

Water Source	ML per year	kL/Day
Total Precinct Water Demand	335	917
Sewage Production	223	612
Recycled Water Demand (primary)	152	417
Recycled Water Demand Met	152	417
Water Import for Recycled Water Use	0	0
Drinking Water Demand	182	499
Recycled Water Demand (secondary)	71	194
- Recycled Water Available for Reserve Irrigation	34	92
- Recycled Water Available for Off-Site Reuse	37	103

Table 11: Estimated development average water balance with recycled water system at full build out

Water Import for Recycled Water Use

The model shows that, at full build out, no mains water top-up (water import) will be required as daily sewage production will be greater than the daily recycled water demand.

ANNUAL AVERAGE DAILY FLOWS IN KL/DAY

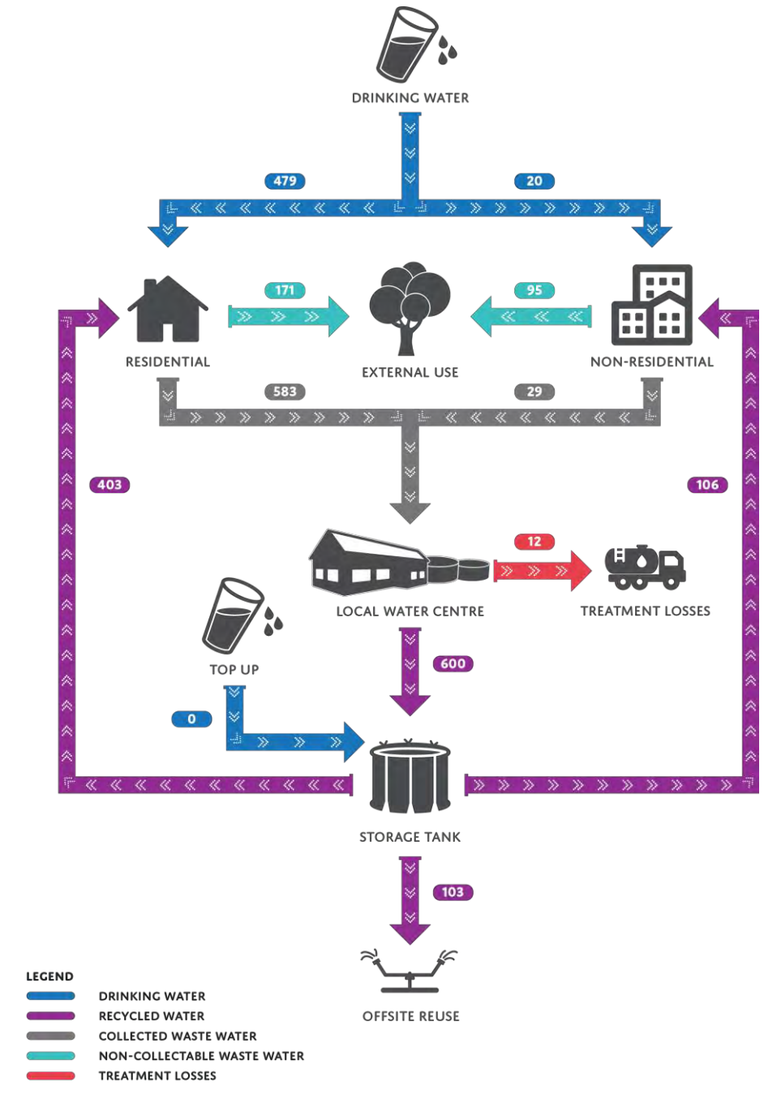


Figure 17: Schematic of the recycled water system showing annual average daily flows in kL/day. Includes both primary and secondary recycled water uses in the non-residential sector.

Note - The sum of monthly recycled water use and new lot establishment irrigation does not always equal the total sewage production, due to the hourly analysis run by CCAP Precinct and the storage tank actively accepting and supplying water in order to minimize top-up and off-site use, e.g. sewage production excessive of the recycled water demand is kept in the recycled water storage tank, for periods where sewage production cannot meet the recycled water demand.

RECYCLED WATER SYSTEM PERFORMANCE AT FULL BUILD OUT

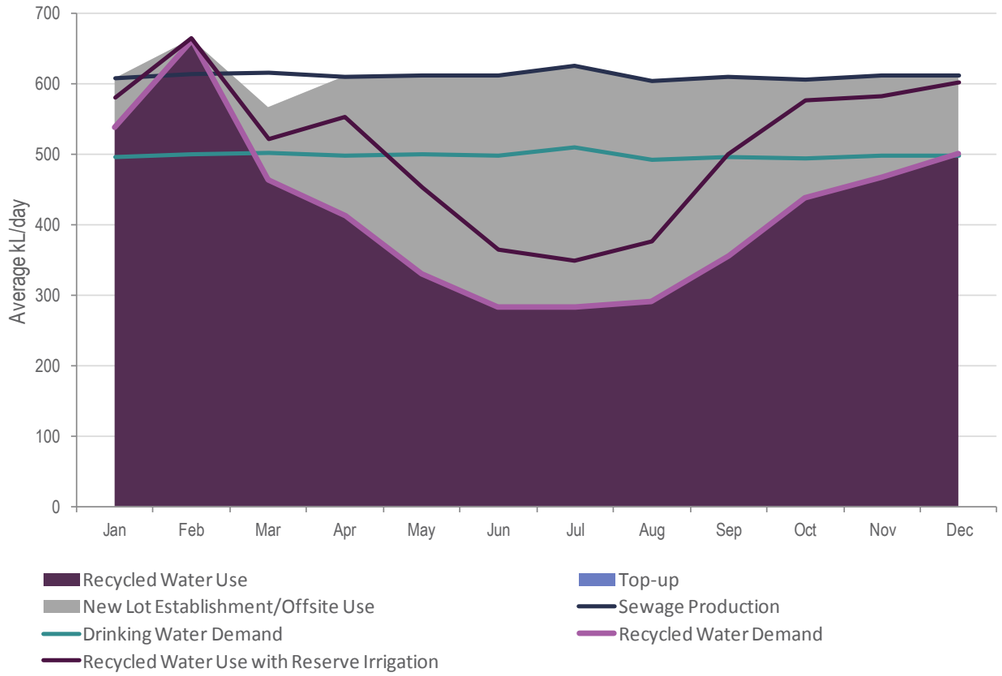


Figure 18: Recycled water system performance showing monthly recycled water use, demand, off-site use and water available for reserve irrigation.

Additional Recycled Water Uses

Recycled water is available to irrigate public reserves across the Bellbird North precinct. Figure 18 includes the recycled water use when this end-use is considered. During the summer months recycled water production is too low to service the precinct's recycled water demands as well as irrigate on-site reserves, while during the winter months on-site reserve irrigation is limited by the maximum irrigation rate of 2 mm/day. After the on-site reserves are irrigated with recycled water there is 37 ML/year of additional recycled water which will be distributed to off-site customers. Figure 19 shows the frequency of off-site distribution events (assuming that additional recycled water is first used to irrigation public reserves), demonstrating that for 40% of the year less than 20 kL is available for off-site use and for 80% of the year less than 220 kL is available.

Recycled Water System Stored Volume

Figure 20 outlines the hourly recycled water storage volume over the year. During summer months when irrigation demand is higher the system must draw on reserves stored in the 2.4 ML storage tanks, while throughout the remainder of the year recycled water production is sufficient to meet demand.

DISTRIBUTION OF OFF-SITE USE AT FULL BUILD

Figure 19: Frequency histogram and cumulative distribution of area required for off-site irrigation/volume of water available for off-site use. **Note**: We assume that recycled water is first used to irrigate on-site reserves before being distributed to off-site customers.

RECYCLED WATER STORED VOLUME

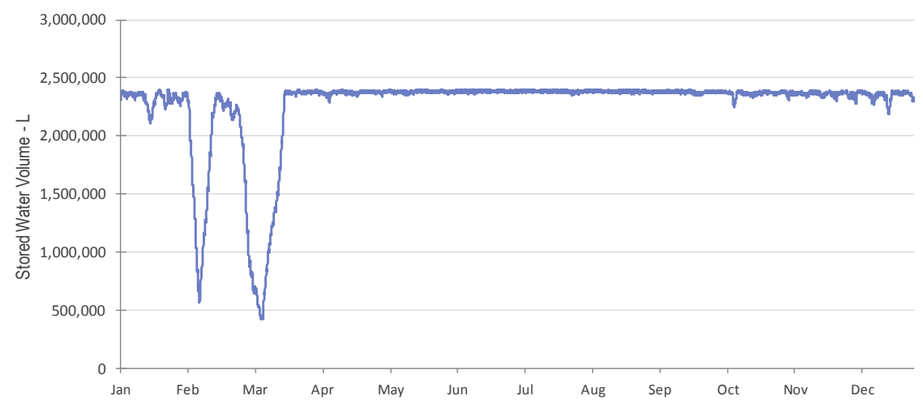


Figure 20: Hourly recycled water stored volume for the recycled water system

4.3 BASIX COMPLIANCE

With connection to the recycled water system, residential dwellings at Bellbird North are estimated to achieve an average **BASIX water score of approximately 67**.

Without connection to the recycled water system, dwellings at Bellbird North would be required to install rainwater tanks in all dwellings connected to both irrigation and toilet flushing. Rainwater tanks would need to be sized between 500 L to 2,500 L per dwelling (dependant on lot size and irrigation areas) to achieve a BASIX water score of approximately 40.

APPENDIX

KEY DATA SOURCES

- ACADS-BSG Australian Climatic Data (Reference Meteorological Year, RMY) for hourly temperature, insulation and humidity.
- Bureau of Meteorology local rainfall and evaporation data (station 067021 – RICHMOND - UWS HAWKESBURY, 100 km from development, synthesized RMY), see Figure 5:
  - The weather station is selected to represent the climate zone (NatHERS zone 28) of the project.
  - The RMY (Representative Meteorological Year) is synthesized from a composite of 12 typical meteorological months that best represent the historic average of the specified location using post-1986 data in addition to the earlier weather data for each of the 69 climate zones in Australia. The total rainfall and evaporation for this climate zone is:
    - Annual rainfall (mm) – 728
    - Annual evaporation (mm) – 1,391

- Department of Resources, Energy and Tourism, 2010, Energy in Australia – 2010, ABARE, Canberra
- Kinesis 2014, Additional water end use breakdowns derived from first principle analysis of residential and non-residential building types.
- National Water Commission, 2011, National performance report 2009-2010: urban water utilities, National Water Commission, Canberra
- NSW Department of Planning, BASIX Residential Water Consumption Data (2010)
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Appendix 5.1.5(a) Risk Management and Compliance Framework

RISK MANAGEMENT AND COMPLIANCE FRAMEWORK

PURPOSE: Flow Systems is committed to managing its risks and ensuring compliance with all relevant laws and regulations in a proactive, on-going and positive manner. This document outlines Flow's Risk Management and Compliance Framework, which is reviewed every three years by Flow's Board, or otherwise as required.

APPLICABLE TO: Flow Systems Group and all employees

Risk Management

Flow recognises to the need to systematically manage and regularly review its risk profile at a strategic, operational, and project level. An integral part of this involves ensuring compliance with all relevant laws and regulations, including the Water Industry Competition Act (and regulations) and workplace health and safety laws.

Flow has developed a Risk Management and Compliance Framework that determines the process and identifies tools for realising its objectives. Not only does it wish to minimise its risks but also maximise its opportunities.

The framework's scope is Group-wide and is aligned with key strategic, operational and project plans. Governance and management roles and responsibilities for risk management are outlined below.

The framework is managed by the Business Manager and overseen by Executive Directors and the Audit & Risk Committee of the Flow Board. Content input comes from those members of the Senior Management team with accountability in specific areas. A risk register is being developed which will be reviewed and reported on once a year by members of the Senior Management team. This will be reviewed by either of Flow's Executive Directors and then recommended to the Flow Board's Audit and Risk Committee for approval. Content and recommendations will be used to inform the Group's audit programme and subsequent iterations of the Risk Register.

Legal Compliance

As part of the risk management process, Flow appreciates that one of its core risks is compliance with statutory and regulatory obligations (including compliance with all relevant licences and approvals). It is committed to not only identifying the legislation which it is obliged to comply with but also monitoring the levels of compliance in the Group. Legal compliance forms an integral part of the Group's Risk Management and Compliance Framework.

Definitions

Controls – are the existing processes, policy, devices, practices or other actions that act to minimize negative risks or enhance positive opportunities.

Impact (or **consequence**) – the outcome of an event which impacts an objective either positively or negatively. The impact may be certain or uncertain and may be expressed qualitatively or quantitatively.

Likelihood – the chance of something happening; whether defined, measured or determined objectively or subjectively, qualitatively or quantitatively, and described using general terms or mathematically.

Risk Assessment – the overall process of identifying, analysing, and evaluating risks. It may also be referred to as a 'risk analysis' or 'risk evaluation' or 'risk profile' and may involve a qualitative and/or quantitative assessment; see Appendix A.

Risk – a threat to the achievement of an objective. That objective can have different aspects (such as financial, health and safety, and reputational goals) and be of various types, e.g. strategic, operational, and project. A risk is often specified in terms of an event or circumstance and the impact or consequences that may flow from it. It is measured in terms of a combination of the impact or consequence of an event and its likelihood. Note that risk is characterised by uncertainty.

Risk Management – the culture, processes, coordinated activities, and structures that are directed towards realizing potential opportunities and/or managing adverse effects. The risk management process involves communicating, consulting, establishing context, identifying, analysing, evaluating, treating, monitoring and reviewing risks.

Risk Owner – the person or entity (e.g. Audit & Risk Committee) with the accountability and authority to manage a risk.

Risk Register – a documented record of each risk identified. It specifies: a description of the risk, its causes and its impacts; an outline of the existing internal and external controls; an assessment of the consequences of the risk should it occur and the likelihood of the consequence occurring, given the controls; a risk rating; and an overall priority for the risk. It should also identify future actions or an action plan.

Types of Risk

- **Strategic Risks** are external and internal forces that may have a significant impact on achieving key strategic objectives. The causes of these risks include such things as national and global economies and, most significantly, Government policy. Often, they cannot be predicted or monitored through a systematic operational procedure. The lack of advance warning and frequent immediate response required to manage strategic risks means they are often best identified and monitored by senior management as part of their strategic planning and review mechanisms.

- **Operational Risks** are inherent in the on-going activities that are performed in an organisation. These are the risks associated with the operation of our facilities, network infrastructure and utility platform, as well as such things as the day-to-day operational performance of staff, the risks inherent in the organisational structure, and the manner in which core operations are performed.

- **Project Risks** are risks associated with projects that are of a specific, sometimes short term nature and are frequently associated with the following: new projects, significant new acquisitions, change management, integration, major IT and capital development projects. Project sponsors are accountable for the achievement of project deliverables and outcomes. However, specific risks associated with project management are normally delegated to project managers for attention and action. Included among the benefits of efficiently managing project risks are the avoidance of unexpected time and cost overruns. In addition, when project risks are well managed, there are fewer integration problems with assimilating required changes back into general management functions.

Governance and Management

Specific roles and responsibilities for risk management are as follows:

Executive Director	• Governance responsibility for risk management and legal compliance • Review of Risk Management and Compliance Framework(& material changes) • Determination of the levels of acceptable risk and risk treatments • Monitoring of Risk Register and reporting to Audit & Risk Committee on management of risk issues
Senior Management Team	• Responsible for risk assessment, management, monitoring and reporting to the Executive Director for all risks relative to their areas of accountability (whether strategic, operational or project level) • Management of the process of identifying and monitoring risk
Business Manager	• Maintenance of Risk Register • Provision of regular training opportunities for all staff to promote a risk culture • Publication/dissemination of regular risk management and compliance information to keep staff informed of relevant issues • Specific responsibility for WH&S framework and Insurance framework as integral parts of Risk Management and Compliance Framework
Project Sponsors and Project Managers	• Assessment, management, monitoring and reporting of relative project risks to relevant Senior Management Team members
All Staff	• Cognisance of operational, project and strategic risks, together with the ability and responsibility – where appropriate – to identify and report increases in risks or new risks in a timely way. It is also expected that tasks will be performed in a careful and conscientious manner that reflects - but is not limited to - Flow Group polices and codes of practice

It is Flow Group's intention to establish an internal audit function. That function will be provide:

- advice to Senior Management in the development of best practice risk management systems
- oversight of professional independent advice on key risk and control issues
- regular audit reviews of business functions and Flow Group's risk management processes.

While Senior Management members are accountable for risk management in their particular areas, responsibility for good risk management rests with every staff member. This includes conducting themselves in a professional, careful and conscientious manner that contributes to the high ethics and culture within Flow.

Approach

Flows is committed to implementing a process by which strategic, operational and project risks are identified, communicated, monitored and regularly reported. To facilitate this, Flow Group's Risk Management and Compliance Framework proactively and systematically identifies, monitors, and manages risks – both positive and negative.

The risks identified will be determined and monitored by those with accountability in specific areas.

Objectives

Flow Group's risk management objectives are to:

- Identify and manage existing and new risks in a planned and coordinated manner with the minimum of disruption and cost
- Develop a "risk aware" culture that encourages all staff to identify risks and associated opportunities and to respond to them with cost effective actions;
- Be perceived by all stakeholders as a leader through adopting best risk management and legal compliance practice; and
- To use its Risk Management and Compliance Framework to promote its business

Risk Actions

The types of risks are categorised as strategic, operational or project type risks.

Flow has five main ways in which it can effectively manage risk, as follows.

1. Accept the risk and make a conscious decision to not take any action
2. Accept the risk but take some actions to lessen or minimize its likelihood or impact
3. Transfer the risk to another individual or organization, by, for example, outsourcing the activity
4. Finance (insure against) the risk
5. Eliminate the risk by ceasing to perform the activity causing it

Process

Flow will maintain a Risk Register that identifies and registers key strategic, operational, and project risks. This is reviewed and reported to the Audit & Risk Committee once a year.

Risk Category	Area of Business	Risk Description
Strategic Risks	• Stakeholder (Shareholders, Business Partners) • Regulator • Government • Economic Climate	
Project Risks	• Financial • Utility Operations – Network infrastructure • Marketing & PR • Utility Delivery	
Operational Risk	• Smart Water Network Build • Smart Water Network Operations • Utility Operation (Retail) • Corporate Platform • Business Continuity/DRP	

Education

Creating a risk aware culture in the Flow Group is a crucial part of implementing and sustaining a robust risk management and compliance programme. In addition to providing training and support for those with business line responsibilities in the areas of risk and compliance, opportunities will also be provided for all staff to engage in regular training opportunities about relevant risk and compliance issues. Further, tools and/or information that raise awareness about risk management and statutory compliance obligations will be made available.

Communication & Consultation

The Business Manager will regularly communicate with and consult experts and provide reports, which will be reviewed by the Executive Director. If, as a result, the Executive Director determines a material change needs to be made to the Risk Management and Compliance Framework, then the same will be referred to the Audit & Risk Committee which may, if it deems appropriate, approve the material change.

A risk culture will be embedded through an induction training programme and on-going risk awareness initiatives.

Appendix A: Types of Risk

Sources of Risk
When identifying risks, all sources of potential risk should be considered. Some sources of risk are generic to all organisations. These include:

'People' Risks, including:

- Human Resource Management practices
- Recruitment
- Induction
- Training & Development
- WH&S (occupational health and safety)
- WH&S Management Systems
- Hazard Management
- Industrial Action
- Manual Handling
- Health
- Rehabilitation
- EEO (equal employment opportunities)
- Fraud, Corruption & Crime

Environmental Risks, including:

- Natural Hazards
- Technological Hazards
- Security
- Hazardous and Toxic Materials (e.g. chemicals, asbestos, gas etc)
- Public health
- Emergency/ Disaster Management
- Environment
- Waste and Refuse
- Radiation

Organisational Management Risks, including:

- Finance
- Insurance
- Workers Compensation
- Public Liability
- Legal Relationships
- Projects

- International Economics
- Market Competition
- Commercial/ Business/ Contractual/ Consultancy Activities and Interruptions
- Property and Physical Assets
- Fleet
- Information Technology/ Computer Systems
- Business Continuity Resumption

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Appendix 5.1.7(a) Retail Supply Management (TOC)

Retail Supply Management Plan

flow systems

Document Issue Record

Issue Date	Revision	Issue	Issued To	Prepared By	Approved By
19/12/14	1.0	First	Flow	Felicity Clarke	Stephen McKewen
30/1/15	2	General review	Flow	Felicity Clarke	Stephen McKewen

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Appendix 5.1.7(b) Customer Complaints Code

Customer Complaints

Purpose

Flow Systems Pty Ltd ("Flow") delivers services to Customers pursuant to its retail supplier's licence no. 13_001R.

The purpose of the Code of Practice is to describe the process that Flow will use to respond to complaints by Customers.

Applicable to

This Code applies to all complaints from Flow's existing and potential Customers (including enquiries and complaints initiated by tenants who are not technically Customers *per se*). This Code applies to complaints regarding any Flow activity.

For the purposes of this Code, references to "Customer" shall be deemed to be a reference to a tenant of a Customer where any complaint has been lodged by a tenant

Code of Practice

Flow recognises that Customers may need to contact us to make a complaint if a service, product, decision or action fails to meet their expectations or our standards. This Code covers:

- Complaints Handling
- Complaints Resolution
- Escalation
- Compliance and Continuous Improvement

Complaints Handling

Flow is committed to treating complaints promptly, fairly, equitably, confidentially and professionally at no cost to the Customer. Flow's aim is to manage complaints such that they can support the constant improvement of our Customer services.

If a Customer has a complaint regarding any aspect of our Services, the Customer should contact us and we will aim to resolve the issue as quickly as we can. Flow welcomes Customer (including tenant) and community feedback as it helps us to identify problems and improve our operations. You can contact us in the following ways:

- Telephone: Customer/Community Line 1300 803 803
- E-mail: contact@flowsystems.com.au

All complaints will be recorded, classified and tracked in Flow's Customer Relationship Management System (CRM). Customers will be provided a unique "ticket" number for each complaint which the Customer can retain and/or recall for future enquiries.. This will also enable Flow to track all complaints.

In addition, any documentation received will be retained in the CRM under the corresponding "ticket" number.

Customer complaints will be investigated by a Flow Customer Service Officer (CSO). After investigation, Customers will be advised of the resolution with all comments, actions and resolutions recorded in the Flow's CRM against the Customer's corresponding "ticket" number.

Complaints Resolution

Flow will receive, acknowledge, investigate, and respond to complaints promptly. Where a response and/or remedy can be provided immediately, we will provide the information to, or take the necessary action for, the complainant and close the complaint.

Our aim is to resolve a Customer's problem as quickly as we can. If it cannot be resolved immediately, we will respond to, or provide a status update within 2 working days.

More complex problems may need to be looked into further and Flow will attempt to resolve complaints within 20 days of initial contact. During this time we may contact the Customer for further information or the Customer can contact us for an update.

Where a complaint is of a serious or urgent nature, complaints will be resolved as soon as practical. Flow will ensure protection of confidential and personal information in receiving and resolving complaints through compliance with its Privacy Policy which is available on the Flow website.

Resources, Training & Continual Improvement

Flow will ensure that complaints are handled by appropriately trained Customer Services staff and that the complaints handling process is adequately resourced in order to meet its complaints response goals described above.

Flow has access to detailed reports on complaints and how they are resolved and Flow's senior management will use these reports to review and continually improve the complaints handling process, where necessary.

Escalation

If a complaint cannot be resolved by Flow's Customer Services team to the Customer's satisfaction, then the Customer can ask to refer the matter to a higher level of senior management within Flow.

If the Customer is still dissatisfied with the outcome, the Customer may choose to contact the Energy and Water Ombudsman NSW (EWON). Flow is a registered member of EWON. EWON provides an independent way of resolving complaints. The Ombudsman is able to make decisions without any interference, based on what is fair and reasonable in the circumstances of each case. This service is free to Customers.

EWON contact details are:

- Freecall: 1800 246 545
- Freefax: 1800 812 291
- Freepost: Reply paid K1343, Haymarket NSW 1239
- Email: omb@ewon.com.au
- Website: http://www.ewon.com.au/index.cfm/contact-us/

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5.1.7(c) Missed Payments and Debt Recovery Code

Missed Payments

Purpose

The purpose of this document is to outline the code of conduct relating to Customers that have missed payment.

Applicable to

This policy applies to all Customers.

Code of Conduct

In the event a Customer is experiencing difficulty paying a bill or is concerned about meeting a payment on time, Flow shall try to reach an agreement on the amounts to pay spread over a reasonable period of time.
Payment options and methods may include:

- a short extension of time
- a payment plan to pay the account in regular instalments over an agreed time-frame
- a budget plan where regular manageable amounts are debited from the Customer's nominated account, or:
- access to a Payment Assistance Scheme that operates through local welfare agencies.

Collection

Reminder Notice:

If a Customer fails to make payment on the due date, Flow will contact the Customer immediately thereafter, including sending a reminder notice.

Warning Notice:

At least 7 days prior to taking action for non-payment, Flow Systems will send a payment warning notice that:

a. specifies any assistance that is available to the Customer, including information about EWON and Flow's payment assistance policy; and
b. advises the Customer that the payment is overdue and must be paid for the Customer to avoid legal action or supply restriction; and
c. cautions that, if legal or restriction action is taken, the Customer may incur additional costs in relation to those actions.

In the case of a tenant

Our legal and billing relationship is with the owner of the property. We do not bill tenants for our services. Any arrangement that a tenant has with the landlord is a private matter between them.
In the event a landlord has missed an account payment, Flow may allow a short extension of time so the tenant can contact the property owner or managing agent.
Flow will not commence any recovery action during this agreed period.

In the case of a business

For business Customers, Flow may offer a short extension of time to allow settlement of the account based on reasonable commercial considerations.
In considering these options overdue accounts attract interest charges.

Actions for Non Payment

Restriction and Legal Action

As a last resort, Flow may restrict the supply of Services to a property and/or take legal action if:

a. more than 14 days have elapsed since the issue of the reminder notice to the Customer
b. more than 7 days have elapsed since the issue of the warning notice to the Customer
c. Flow or its agent have attempted to make contact with the Customer by telephone, email or in person, about the non-payment
d. the Customer has been notified of the proposed restriction or legal action and the associated costs, including the cost of removing the restriction device; and

e. the Customer has
    i. been offered a flexible payment plan and the Customer has refused or failed to respond; or
    ii. agreed to a flexible payment plan and has failed to comply with the arrangement.

Limits on restriction and legal action Flow will not commence legal action or take steps to restrict a Customer's service due to non-payment if:

a. the amount owed by the Customer is eligible for, and the Customer has lodged an application for, a government funded concession relating to amounts charged by Flow and the application remains outstanding; or
b. the Customer is a landlord, and:
    i. the amount is in dispute between the Customer and the tenant; or
    ii. the amount in dispute is subject to an unresolved complaint procedure in accordance with Flow's Customer Complaints Code.

Additional limits on restriction

Flow will not take steps to restrict a Customer's service due to non-payment if:

a. it is a Friday, public holiday, weekend, day before a public holiday, or after 3pm; or
b. the Customer is registered as medically dependant

If the supply to a Customer's property is restricted; Flow will continue to provide flow for basic health and hygiene purposes and endeavour to notify the occupants either by email or a phone call at the time.

Removal of restrictions

Flow will restore a restricted service within 24hours of becoming aware that the reason for the restriction has been resolved.
Before the service is restored, the Customer will be required to pay the overdue amount or make an agreed payment arrangement. Flow may impose a reasonable charge to cover Flow's costs for the removal of the restriction.
Flow will always prefer to help Customers (and Customer's tenants) in relation to any financial difficulties, so that Flow does not need to restrict any Service.

If you have a problem with a missed payment please get in touch with us asap at contact@flowsystems.com.au or 1300 803 803.