Unity Developments Limited

Ashbourne Retirement Village Water Management Plan

WATER MANAGEMENT PLAN

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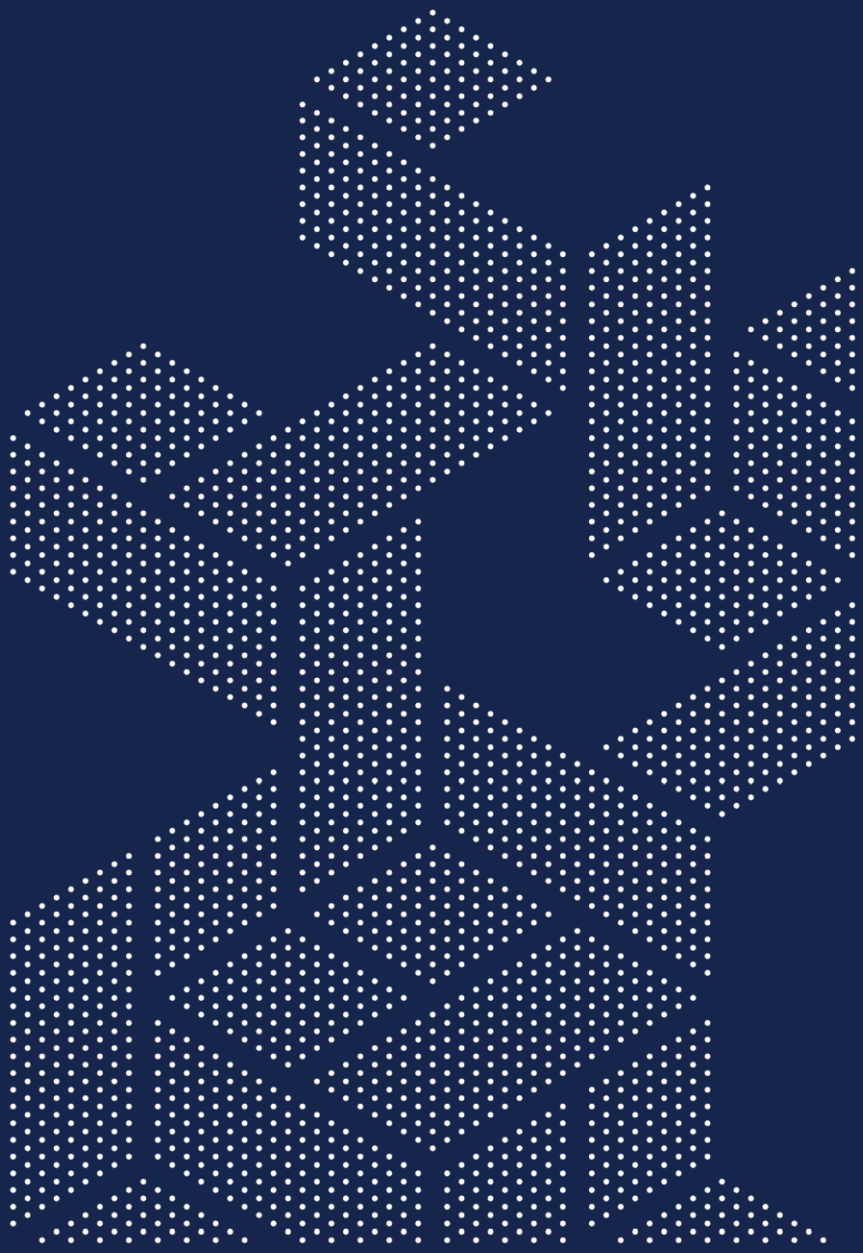

Revision History

REV	DATE	ISSUE	ORIGINATOR	CHECKER	APPROVER
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1 INTRODUCTION

1.1 Background

Unity Developments Limited (Unity) is planning to take water from a new Production Bore (bore number 72_12812: the Production Bore) to supply potable water to the 220 villas within the proposed Ashbourne Retirement Village on Station Road, Matamata (Figure 1). Water from the on-site Production Bore will also be used for firefighting and irrigation.

Unity has prepared this Water Management Plan (WMP) to inform the procedures for supplying water for the Retirement Village. This WMP satisfies the requirements outlined in the Waikato Regional Plan Section 8.1.2.2 in support of the consent application to take water from the Production Bore located near Station Road, Matamata.

A maximum annual abstraction of up to 92,308 m^3 at a maximum daily abstraction rate of 336 m^3 is proposed. This proposed abstraction is primarily to supply the Retirement Village with potable water and secondarily provide supply for irrigation. Unity has retained Wallbridge Gilbert Aztec (WGA) to prepare the WMP.

1.2 Content of this Report

This report covers all information required in a WMP by the Waikato Regional Plan (2012), as cross referenced in Table 1. The first section of this report discusses background information regarding the Ashbourne Retirement Village and a description of the water supply system.

Section 2 of this report discusses the core components of the WMP. The core components are broken down into four sub-sections, discussing the water requirements of the Ashbourne Retirement Village property, how water will be used efficiently, a drought management plan, and the review process. Table 1 presents the requirements of Method 8.1.2.2 and where these requirements are addressed within the WMP.

Table 1: Cross-Reference Information Required by Method 8.1.2.2 of the Waikato Regional Plan (2012)

#	INDEX OF INFORMATION REQUIRED BY METHOD 8.1.2.2 OF THE WAIKATO REGIONAL PLAN 2012	SECTION OF THIS DOCUMENT
1	A description of the water supply system including system operation, distribution extent, levels of service, water use measurement, maintenance and asset management procedures.	1.3 1.4
2	A comprehensive assessment of existing demand and future demand for water with regard to an assessment of reasonable population growth within the planning horizon to meet the following: a. Reasonable domestic needs. b. Public health needs in accordance with requirements under any act of parliament or regulation. c. Reasonable community needs (e.g. for public amenities). d. Reasonable commercial, rural supply and industrial needs. e. An assessment as to how each of the assessments required by clauses a) to d) above is predicted to vary over time.	2.1

#	INDEX OF INFORMATION REQUIRED BY METHOD 8.1.2.2 OF THE WAIKATO REGIONAL PLAN 2012	SECTION OF THIS DOCUMENT
	f. A justification for each of the assessments required by clauses a) to e) above including reference to any relevant planning instruments promulgated under the Resource Management act 1991 that provide for future growth or relevant documents promulgated under the Local Government Act 2002 such as long-term plans, growth strategies or spatial plans.	
3	Any existing or proposed water pricing procedures and any linkages with wastewater pricing or management.	3.1
4	How water reticulation networks are planned and managed to minimise their water losses as far as practicable.	3.1
5	A description of patterns of water use practices and/or behaviour in all sectors of use (and distribution) with the objective of maximising water use efficiency and reducing water use, as far as practicable.	3.1
6	Water saving targets for the full range of demand conditions including demand saving targets for council owned facilities, domestic demand targets and demand saving targets for commercial and industrial customers.	3.1
7	Key performance indicators for each of the water saving targets.	3.1, 4.1
8	Any external auditing and benchmarking procedures that have been adopted.	3.1, 4.1
9	A drought management plan that includes: a. Steps to be taken to reduce consumption during water shortage conditions, including those uses that will be restricted at the same time as priority SW-B users (in accordance with Policy 18 and Standard 3.3.4.27) and steps to be taken to implement those restrictions. b. Targets for the water savings expected to be achieved via the restriction of activities identified in a) above, which shall align as closely as possible to the restrictions for SW-B users provided for in Standard 3.3.4.27. c. Public and commercial user education programmes. d. Steps taken to reduce consumption when demand is approaching the maximum take volume specified under the relevant resource consent. e. Enforcement procedures.	3.2
10	Actions, performance measures and a timeline for implementing actions. The actions and performance measures identified will depend on the circumstances of each applicant.	4.1
11	Any consultation undertaken with key stakeholders and outcomes of such consultation.	4.1
12	Details of an appropriate water conservation and demand management plan review process.	4.1
13	Identification of any anticipated increases in water demand over the term of the consent and ability to stage water take volumes to more closely reflect demand requirements over time.	2.1
14	Ability to reduce the amount of water used by existing industrial and agricultural users, as a result of improvements in the efficiency of the use of water, in order to meet any increase in water demand over the term of the consent.	Not Applicable

#	INDEX OF INFORMATION REQUIRED BY METHOD 8.1.2.2 OF THE WAIKATO REGIONAL PLAN 2012	SECTION OF THIS DOCUMENT
15	Identification of any single industrial, commercial or agricultural use of water that uses more than 15 cubic metres of water per day (not being water used for human drinking purposes or human sanitation purposes).	2.2
16	Identification of future domestic or municipal supply take needs over and above authorised domestic or municipal supply takes required to meet growth and development that is provided for in planning instruments promulgated under the Resource Management Act 1991 or relevant documents promulgated under the Local Government Act 2002, such as long-term plans, growth strategies or spatial plans (or similar). The projected future needs shall be identified in terms of: a. Location of take b. Volume of take (including any seasonal variations) c. The date at which the water is likely to be required	2.1

1.3 Site Location

Ashbourne Retirement Village is located on the western edge of the Matamata township on a gently sloping area. The site topography is gently undulating at an elevation between 66 m RL and 71 m RL. The western edge of the site drops more steeply down to 59 m RL, to meet the northward flowing Waitoa River. The Waitoa River flows into the Piako River approximately 45 km northwest of the development site.

1.4 Description of the Water Supply System (8.1.2.2.1)

A description of the water supply system including system operation, distribution extent, levels of service, water use measurement, maintenance and asset management procedures.

Water will be sourced from groundwater by the Production Bore (the on-site bore numbered 72_12812). The performance of the Production Bore has been assessed by WGA indicating a maximum abstraction of 336 m^3/day can be achieved. The existing bore will provide water during construction and through the phases of occupation.

For the potable water supply, groundwater will be pumped from the Production Bore to 16 tanks, each with a capacity of 30,000 L and treatment facility before being reticulated throughout the site for potable supply. Site reticulation is to be via a PE 250 mm PN 12.5 arterial watermain and supporting rider mains to ensure suitable potable water supply, pressure, and circulation throughout the development (Figure 1).

Fire hydrants will be integrated with the irrigation network (Figure 1). In the event of a fire, the water supply will be drawn from a permanent reservoir volume stored in 3 of the 16 storage tanks.

Figure 1: Ashbourne Retirement Village.

2 WATER MANAGEMENT PLAN

2.1 Domestic Water Requirements (8.1.2.2.2, 13, 16)

2. A comprehensive assessment of existing demand and future demand for water with regard to an assessment of reasonable population growth within the planning horizon to meet the following:

a. **Reasonable domestic needs.**

b. **Public health needs in accordance with requirements under any act of parliament or regulation.**

c. **Reasonable community needs (e.g. For public amenities).**

d. **Reasonable commercial, rural supply and industrial needs.**

e. **An assessment as to how each of the assessments required by clauses a) to d) above is predicted to vary over time.**

f. **A justification for each of the assessments required by clauses a) to e) above including reference to any relevant planning instruments promulgated under the Resource Management Act 1991 that provide for future growth or relevant documents promulgated under the Local Government Act 2002 such as Long Term Plans, growth strategies or spatial plans.**

The proposed retirement village will consist of 220 stand-alone villas, an Aged Care Facility with 72 occupants, and a central facility area with office spaces, a large kitchen area, swimming pool, as well as recreation and social activity areas.

Unity will provide three waters infrastructure to its residents through on-site systems with a combined maximum annual abstraction of up to 92,308 m^3 at a maximum daily abstraction rate of 336 m^3 to be able to supply water to the retirement village for domestic and irrigation purposes. The domestic needs of the village are estimated at approximately 66,540 m^3 per year based on an average reasonable use of 260 litres per person per day. Table 2 below outlines the domestic water requirements for potable supply to the villas, central facility area, and aged care facility.

In terms of water for firefighting, fire hydrants in watermain supply line and three 30,000 L storage tanks will be used. In addition, there are areas of lawn planned and landscaping which will require irrigation during summer as described in Section 2.2.

Water use for commercial use, rural supply and industrial needs are not needed at the site.

Table 2: Domestic Water Requirements for Ashbourne Retirement Village Development

SITE	WATER REQUIREMENTS (m^3/DAY)
Villas (220, based on two occupants in each)	114.4
Social and Recreation Facilities	22.5
Aged Care (72 occupants)	45.4
Total	182.3

Notes:

1. Data sourced from Maven Stoffel Bakkes
2. Additional water may be used for lawn and planting irrigation up to the daily maximum of 336 m^3

13. Identification of any anticipated increases in water demand over the term of the consent and ability to stage water take volumes to more closely reflect demand requirements over time.

There is no further development planned by Unity. The domestic water requirements indicated under 8.1.2.2.2 assume that the retirement community is at maximum capacity.

The domestic water requirements described above assumes a fully occupied site following development. However, development of the site is planned over a 10-year period where water use will initially be lower. The occupancy will increase with the development stages over the 10 years prior to full occupancy.

16. Identification of future domestic or municipal supply take needs over and above authorised domestic or municipal supply takes required to meet growth and development that is provided for in planning instruments promulgated under the Resource Management Act 1991 or relevant documents promulgated under the Local Government Act 2002, such as Long Term Plans, growth strategies or spatial plans (or similar).

There is no further development planned by Unity. Therefore, the domestic water requirements above assume that the retirement village is at maximum capacity.

2.2 Irrigation Water Requirements (8.1.2.2.15)

15. Identification of any single industrial, commercial or agricultural use of water that uses more than 15 cubic metres of water per day (not being water used for human drinking purposes or human sanitation purposes).

Unity is seeking to use water abstracted from the production bore to irrigate up to 10.73 ha of lawn and landscape plantings. Water for irrigation will be secondary to the primary use of potable water supply to the Retirement Village. Irrigation of the full area at any one time will be limited by the bore capacity and potable supply requirements. Therefore, any irrigation water use will be in addition to the maximum of 182.3 m^3/day for potable supply up to the maximum daily abstraction rate of 336 m^3.

Irrigation will occur over a 168-day summer period and will not exceed an annual volume of 56,333 m^3.

3 WATER EFFICIENCY

3.1 Water Efficiency (8.1.2.2.3, 4, 5, 6)

3. Any existing or proposed water pricing procedures and any linkages with wastewater pricing or management.

4. How water reticulation networks are planned and managed to minimise their water losses as far as practicable.

5. A description of patterns of water use practices and/or behaviour in all sectors of use (and distribution) with the objective of maximising water use efficiency and reducing water use, as far as practicable.

The abstraction rates Unity has applied are based on efficient and reasonable water use for potable water and irrigation of lawn and landscaped areas for the retirement village community gardens. Water use for the village will be monitored using a water meter at the bore to help ensure efficient use, confirm that consented volumes are not exceeded, and identify unintended water losses. Excess water use pricing is not being considered at this time for the site.

Efficient irrigation practices will be implemented to ensure that water is used appropriately. For example, irrigation will not occur when there has been adequate preceding rainfall. Irrigation will also occur during mornings to minimise immediate evaporative losses. The use of efficient irrigation equipment such as drip irrigation will also be used where appropriate.

Water conservation devices are to be installed in all buildings of the property. This will further increase the water efficiency of the retirement community.

Examples of water conservation devices include:

- Restricted flush or dual flush (6/3 L) toilet cisterns
- Manual or sensor low flush urinals
- Bathroom aerated tap faucets
- Shower roses 9 L/minute
- Low water use clothes washing machines

6. Water saving targets for the full range of demand conditions including demand saving targets for council owned facilities, domestic demand targets and demand saving targets for commercial and industrial customers.

No water saving targets are planned for the site.

3.2 Drought Management Plan (8.1.2.2.9).

A drought management plan that includes:

a. **Steps to be taken to reduce consumption during water shortage conditions, including those uses that will be restricted at the same time as priority SW-B users (in accordance with Policy 18 and Standard 3.3.4.27) and steps to be taken to implement those restrictions.**

b. **Targets for the water savings expected to be achieved via the restriction of activities identified in a) above, which shall align as closely as possible to the restrictions for SW-B users provided for in Standard 3.3.4.27.**

c. **Public and commercial user education programmes.**

d. **Steps taken to reduce consumption when demand is approaching the maximum take volume specified under the relevant resource consent.**

e. **Enforcement procedures**

If water shortage conditions were to occur or if water consumption is approaching the maximum consented volume, the irrigation of lawns will be reduced in order to relieve pressure on the aquifer. Additionally, water users will be asked by Unity to reduce their water use during this period.

Water usage at the Retirement Village will follow the best practice advice provided by Smart Water[1] which is a partnership between Hamilton City Council, Waipa District Council, and Waitomo District Council.

The abstraction rates Unity has applied for are already based upon on efficient and reasonable water use for potable water and irrigation of lawns. However, during times of water shortages indicated by an Alert Level 3 being issued by Smart Water, a 10-20% reduction in water use will be targeted.

Water users in the development will be asked by Unity to reduce the amount of water they use. This will be achieved by sending out a notice to residents to lower their water use, alongside educational information in how they can save water. Furthermore, Unity will educate and encourage water users in the development to use less water in their day-to-day activities. For example, asking residents to take shorter showers and not wash their cars.

Water usage in the supply network during water shortage conditions will be monitored by Unity using the water meter to ensure that water usage is lowered by residents and that no leaks are present in the network. If water usage isn't reduced, Unity will investigate units that have not lowered their water use so that they can be informed and educated around the importance of reducing their water use during drought conditions.

In addition to the alert levels provided by Smart Water, Waikato Regional Council may issue water shortage direction as provided for under s329 of the Resource Management Act when a catchment or aquifer is considered to have a serious temporary shortage of water. Unity will follow any water shortage direction issued by WRC which could include rostering, rationing or cessation.

[1] Smart Water: https://www.smartwater.org.nz

4 REVIEW PROCESS

4.1 Review and Performance 8.1.2.2 (7,8,10,11,12,)

7. Key performance indicators for each of the water saving targets.

8. Any external auditing and benchmarking procedures that have been adopted.

10. Actions, performance measures and a timeline for implementing actions. The actions and performance measures identified will depend on the circumstances of each applicant.

11. Any consultation undertaken with key stakeholders and outcomes of such consultation.

12. Details of an appropriate water conservation and demand management plan review process.

The Unity management team will meet to discuss water usage and any requirement for a more detailed review on a biannual basis, during mid-winter and mid-summer. The review will also involve maintenance workers that maintain the water supply network. The review will discuss if the water usage of the development is as expected in terms of the estimated volumes required (Section 2.1 and 2.2) and if any actions need to be taken (as discussed in Section 3.2). The review will also involve a discussion around if any future upgrades are needed to improve the efficiency of the water supply network.

Follow up meetings and reviews will occur during times of water shortages and droughts if actions are required to reduce water usage. Conducting meetings during the middle of winter and middle of summer will allow for necessary actions and changes to be undertaken so that water is used as efficiently as possible. If the review meeting finds that action is required to reduce water usage, measures described in Section 3.2 will be implemented as soon as possible.

Furthermore, on a day-to-day basis, the water maintenance team and on site staff will notify the Retirement Village staff management if there are any issues with the water supply network so that these issues can be addressed as soon as possible.

One performance target is proposed that during times of water shortage, a 10-20% reduction in water use will be targeted. Unity is also planning to educate and encourage water users in the development to use less water in their day-to-day activities.

Given the relatively small size of the water supply scheme and size of the proposed take, no additional key performance indicators, external auditing, benchmarking actions, or performance measures are planned at this time.

No consultation with stakeholders is planned at this stage given the size and type of planned development. The Water Management Plan will be reviewed every five years. Where updates are made, Unity will notify Waikato Regional Council in accordance with consent conditions.

5 CONCLUSIONS

Unity proposes to take water for potable supply of a retirement village and irrigation of lawn area from a new 120 m deep bore (bore number 72_12812: the Production Bore) located on Station Road, Matamata.

Groundwater will be pumped from the Production Bore to 16 tanks and a treatment facility before being reticulated through the site via an arterial water main and supporting riser mains to provide potable water supply.

The combined annual volume of 92,308 m^3 being sought is based on the performance of the Production Bore (a maximum abstraction of 336 m^3/day can be achieved), potential irrigation requirements across a 168-day irrigation period, and the reasonable use domestic requirements of the village. Unity is seeking to abstract up to 56,333 m^3 for irrigation purposes on an annual basis at a maximum daily abstraction rate of 336 m^3/day.

Efficient water usage will be ensured throughout the property by the use of a water meter to monitor the amount of water used alongside the use of water conservation equipment and educating water users.

The abstraction rates Unity has applied for are based upon efficient and reasonable water use for potable water supply and irrigation of lawn and landscaped areas. However, during times of water shortages, a 10-20% reduction in water use will be targeted.

The Water Management Plan will be reviewed every five years and where updates have been made, Unity will notify Waikato Regional Council in line with consent conditions.

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