

Onsite Wastewater Management Plan

2024-2029



Acknowledgement of Country

Nillumbik Shire Council respectfully acknowledges the Wurundjeri Woi-wurrung people as the Traditional Owners of the Country on which Nillumbik is located, and we value the significance of the Wurundjeri people's history as essential to the unique character of the Shire. We pay tribute to all First Nations People living in Nillumbik, give respect to Elders past, present and future, and extend that respect to all First Nations People.

We respect the enduring strength of the Wurundjeri Woi-wurrung and acknowledge the ongoing impacts of past trauma and injustices from European invasion, massacres and genocide committed against First Nations People. We acknowledge that sovereignty was never ceded.

Wurundjeri Woi-wurrung people hold a deep and ongoing connection to this place. We value the distinctive place of our First Nations People in both Nillumbik and Australia's identity; from their cultural heritage and care of the land and waterways, to their ongoing contributions in many fields including academia, agriculture, art, economics, law, sport and politics.

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Executive Summary

Under section 29 of the *State Environment Protection Policy (Waters)*, councils that manage onsite wastewater management systems (OWMS) within their municipalities are required to develop a *Onsite Wastewater Management Plan (OWMP)* in consultation with the local water authority and community.

The purpose of the Nillumbik OWMP is to:

- Identify current responsibilities, practices, procedures and obligations for domestic and commercial wastewater management within the Shire of Nillumbik;
- Identify and prioritise the main environmental and public health risks posed by wastewater within the Shire;
- Improve and enhance the public health and environment protection measures undertaken by Council to address the identified wastewater threats within the Shire; and
- Assist with long term planning and development of un-sewered areas in the Shire.

This OWMP will provide an informed and targeted direction, through the Action Plan, for Council and its wastewater partner agencies to action the strategies that address the wastewater issues facing the Shire over the next five years. This Plan will be implemented in conjunction with other key strategic Plans of Council including the Council Plan 2021-2025, and the Integrated Water Management Strategy 2013.

The Council Plan 2021-2025 identifies four themes: Community and Connection, Place and Space, Sustainable and Resilient, and Responsible and Accountable. The review and update of the Domestic Wastewater Management Plan 2021-2023 falls under the theme of Council being responsible and accountable, with the objective to facilitate the best possible outcomes for our community, by demonstrating strong leadership and working actively to achieve the community's objectives. Strategies to achieve this include good governance, risk management and services and programs.

The action plan of this OWMP will seek to enhance community safety, public health and amenity, and the environment, through improved planning and community engagement and by prioritising fair and transparent approaches to managing compliance and enforcement. This will be achieved through a collaborative approach with Council's internal and external wastewater management partners.

Specifically, the OWMP provides Council with a:

- Planning tool to enable long term strategies to be developed for wastewater management;
- Framework to facilitate decision-making and policy about individual OWMS installations, including enforcement and compliance options.

As part of the development process for this Plan, data was reviewed on Nillumbik's existing domestic wastewater profile in addition to current National, State and Local government policies, standards and legislation. Work previously undertaken in the development of Nillumbik's Domestic Wastewater Management Plan 2021-2023 has also provided a development platform for this OWMP.



Analysis of the data currently available to Council indicates that:

- There are approximately 4,600 existing onsite OWMS in the Shire, however Council does not have records for approximately 17per cent of these systems.
- Historically, Nillumbik has a significant proportion of older OWMS that were legally permitted (under previous lower standards) to discharge their wastewater off-site.
- Almost 1,000 properties contain OWMS with permits to discharge effluent close to the ground surface (15cm from the ground surface) or to surface waters such as dams.
- Less than 20per cent of OWMS receive regular maintenance as required by their permit conditions.

The Onsite Wastewater Management Plan which has been divided across 5 key areas:

1. Information and Data Collation
2. Education and Awareness
3. Sewer connection and Community Sewerage Program (CSP)
4. Regulation and Enforcement
5. Collaboration and Review.

In order to implement these recommendations a range of resources must be committed. Structured co-ordination of Council's existing environmental strategies and combined internal capacity toward implementation of the objectives is necessary to maximise the Shire's wastewater management and catchment protection position.

The actions of the Plan have been set across a 5-year timescale. This is to allow enough time for the scope and objectives of the Action Plan to be properly resourced and implemented.

Introduction



Domestic wastewater pollutants are derived from everyday household chemicals, sewage and greywater that discharge into OWMS, the reticulated sewerage system or the environment. When different OWMS overflow during heavy rain or as a result of damage, failure or overuse, wastewater can leak out of systems into the local environment and waterways. The source of this pollution is almost entirely due to failing or older OWMS within the Shire.

The environmental impacts associated with domestic wastewater are due to the many pollutants it contains, including:

- human faeces and waste products;
- particles of food, dirt, lint;
- oils and greases; and
- chemicals derived from detergents and other cleaning products.

These pollutants can build up in the soil, damaging its structure, altering soil acidity/alkalinity balances and harming plant growth.

Wastewater pollution can also present human health risks, cause odours and attract vermin and insects. Microbial contaminants such as bacteria, viruses and algal blooms pose significant public health risks. The excess nutrients present in domestic wastewater can harm aquatic life and cause waterway conditions to become toxic.

There are approximately 4,600 OWMS in use in the Shire, with a significant proportion of these not performing satisfactorily. This results in threats to human health and environmental pollution of land and local waterways. System failure is often due to poor maintenance and management practices by property owners and occupiers. In many cases, these systems do not comply with the current wastewater standards, having been approved under the lower treatment and discharge requirements of now superseded standards; with many systems (historically) approved for offsite discharge.

Figure 1: Greywater discharge to street culvert in Howell Road, Plenty



Figure 2: Blackwater leakage and pooling at Kent Hughes Road, Eltham



Figure 3: Wastewater overflow at a property in North Warrandyte



1.1 Overview of wastewater treatment systems in Nillumbik

Onsite wastewater treatment plant refers to a treatment plant for the bacterial, biological, chemical or physical treatment of sewage generated onsite. For example, a septic tank system, a wet or dry composting toilet, aerobic treatment and sand filter (EPA, publication 1974). Across Nillumbik the two most common methods of wastewater treatment are primary treatment septic tank systems and secondary treatment, often via an aerated wastewater treatment system (AWTS) or sandfilters.

Primary treatment (often called septic tanks)

The modern primary treatment system is usually a concrete or plastic in-ground tank that has two internal chambers separated by a baffle. The tank holds and treats wastewater from the kitchen, bathrooms, laundry and toilets.

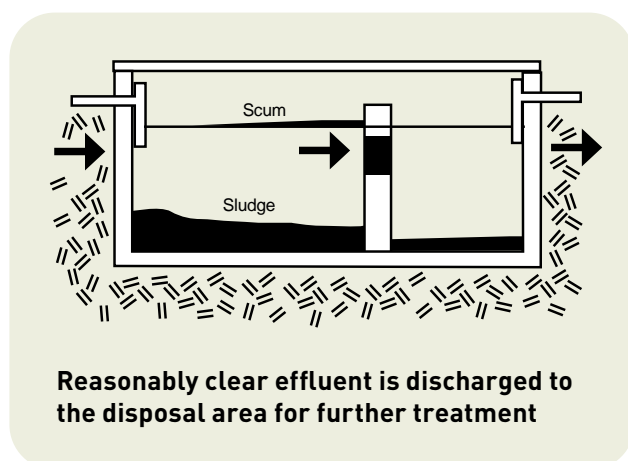


Figure 4: Cross-section of a properly functioning septic tank

The tank houses a living ecosystem of bacteria that decompose the organic material, treating the solids and wastewater before it is drained into the natural environment by means of an effluent disposal system, most commonly via absorption trenches.

Absorption trenching incorporates perforated PVC piping to transport wastewater, allowing it to pass through stone aggregate before being absorbed into the existing earth surrounding the trench.

Trenching is one type of land application system available and is the type of land application predominantly utilised for primary treatment systems.

The main maintenance requirement specific to primary treatment systems is the removal of the build up of solids every 3-8 years. This occurs via a pump-out of the accumulated sludge performed by specialist contractors and is commonly referred to as “de-sludging”. If these solids are not removed, they can carry over to the disposal area, causing odour problems and the trenching to fail.

Typically primary treatment systems have no moving parts and generally require no power.

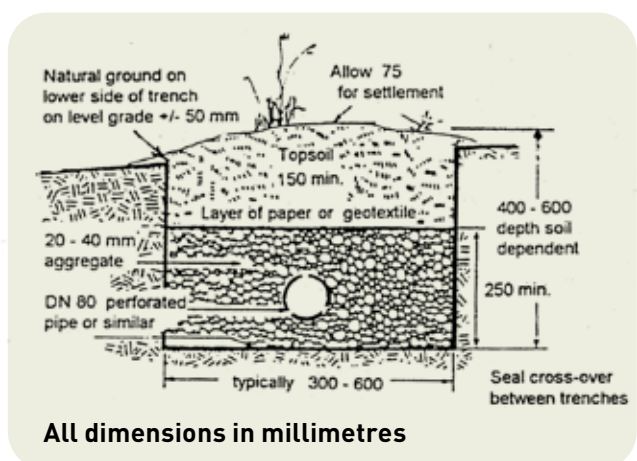


Figure 5: Cross-section of a typical absorption trench

Secondary treatment

Secondary treatment systems pass wastewater from a primary treatment tank into a second treatment process. This can include aeration (often by electrically powered blowers) or via polishing filters.

The current most common secondary treatment method of aerated treatment systems (AWTS) also uses clarification and disinfecting chambers with sludge return to the primary treatment tank. Aerated treatment systems require regular maintenance by a suitable service technician, as well as a reliable power supply. The tank requires pumping out approximately every five years. See Figure 5 below.

AWTS are designed to discharge their (secondary) treated wastewater to land via sub-surface drip irrigation. Sub-surface drip irrigation can only receive secondary treated wastewater in order to function properly.

Other types of systems found within Nillumbik include:

- Older 'Split' systems;
- Septic into Sand Filter systems;
- Composting Toilets; and
- Worm Farm systems

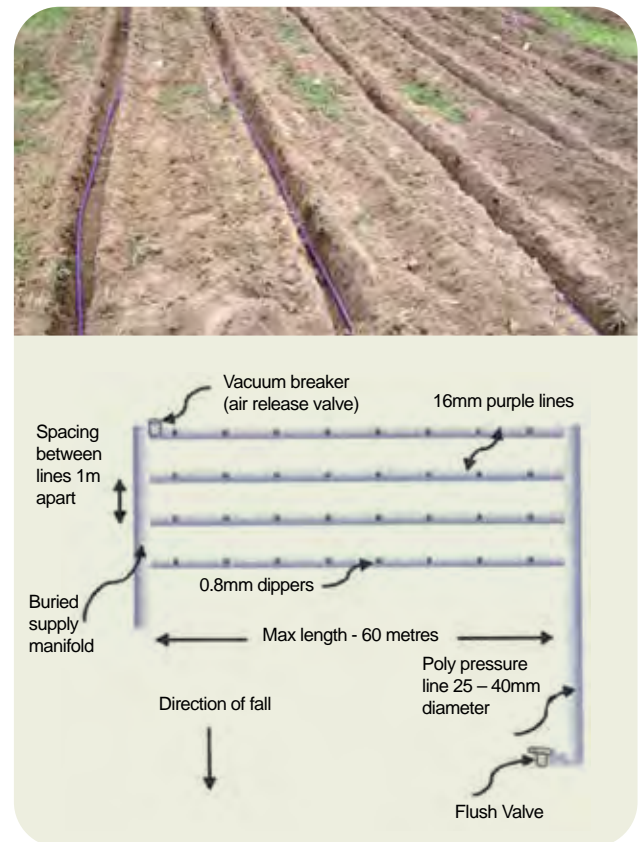


Figure 7: Images showing typical sub-surface irrigation layout

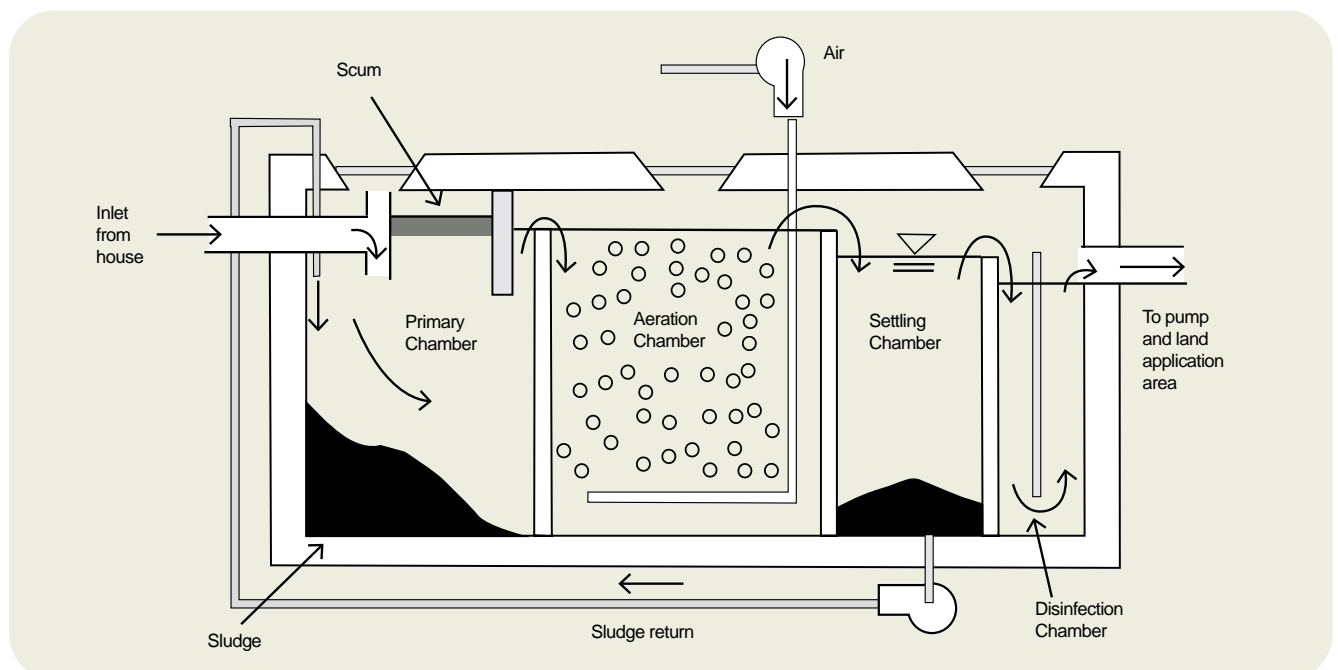


Figure 6: Typical schematic of an aerated wastewater treatment system

1.2 Overview of reticulated sewerage in Nillumbik

Over the last decade from 2013 there has been considerable activity relating to the provision of reticulated sewer services in Nillumbik. This has included the provision of reticulated sewer to:

- approximately 180 properties in Eltham/Research (2013/2014)
- nearly 1,000 properties across North Warrandyte (2015/2016)
- 300 properties in Eltham South, completed in November 2022

1.3 Unsewered townships

Reticulated sewerage has been provided to Greensborough, the majority of Eltham, Eltham North, Diamond Creek, North Warrandyte and parts of Plenty, Research, Wattle Glen and Hurstbridge.

The remainder of the Shire is unsewered and those properties not located within the Yarra Valley Water CSP will continue to rely on OWMS to treat and contain all wastewater within the property boundary for many years to come.

This means that properties with primary treatment systems will be required to ensure there is sufficient available space to accommodate a reserve area (as per the Code of Practice) in the event that the system fails. In order to prevent failure, owners and occupiers will need to ensure adequate monitoring and maintenance to provide proper operation of systems.

The following table shows the number of properties in areas that are not on the CSP and are not expected to be connected to a reticulated mains sewer network, due to the distance from the existing network and the allotments being large enough to adequately manage and contain all wastewater on site with sufficient area for reserve if required.

Township	No. of properties with WTS system
Arthurs Creek	191
Bend of Islands	116
Christmas Hills	160
Cottles Bridge	236
Kangaroo Ground	450
Kinglake / Kinglake West	1
Nutfield	60
Smiths Gully	140
Strathewen	75
Watsons Creek	27
Yan Yean	10
TOTAL	1,294

Table 1.: Property data for developed allotments that will remain on OWMS.

1.4 Policy and Legislative framework

There is a comprehensive and complicated policy and legislative framework around domestic onsite wastewater management which includes several State Acts and subordinate legislation, along with guidelines, Codes, Australian Standards and local policies.

In July 2021 the *Environment Protection Act 1970* was superseded by the *Environment Protection Act 2017*, which establishes a new framework for environmental protection and is underpinned by the general environmental duty (GED) and duties for waste, contaminated land and incident notification and management. Much of the content of SEPP (Waters) has been replaced by the Act, its Regulations and the Environmental Reference Standard (ERS), or through new guidance published by the EPA. A limited number of clauses in the SEPP (Waters) will remain in force under the *Environmental Protection Transitional Regulations 2021*. This has allowed time for the Department of Energy, Environment and Climate Action [DEECA (formerly known as the Department of Environment, Land, Water and Planning)] and the EPA to consult with duty holders to identify the most suitable replacement instrument to address these clauses.

However where content is not directly replaced under the new legislative framework, or the EPA has not yet published new guidance, the information in those clauses of SEPP (Waters) may continue to provide a useful source of information to aid duty holders and regulatory decision-makers.

Victorian State Legislation

Environment Protection Act 2017

Water Act 1989

Planning and Environment Act 1987

Public Health and Wellbeing Act 2008

Local Government Act 1989 and 2020

Building Act 1993.

Subordinate legislation, Policy, Codes, Strategies and Guides

Environmental Protection Transitional Regulations 2021 – retain limited State Environment Protection Policy (Waters) clauses

Environment Protection Regulations 2021

EPA Publication 1974: Regulating onsite wastewater management systems (local government toolkit)

EPA Publication 1976: Guidance for owners and occupiers of land with an OWMS equal to or greater than 5,000 litres on any day (including septic tank systems)

EPA Code of Practice - Onsite Wastewater Management (891.4) July 2016

Onsite Wastewater management plans risk assessment guide: final report (DELWP, 2022)

Victorian Land Capability Assessment Framework (January 2014)

VCAT Decisions & Precedents

National Standards

Australian/New Zealand Standards and JAS-ANZ Certification

Nillumbik Shire Council Strategic Plans and Policies

Nillumbik Planning Scheme

Council Plan 2021-2025

Shire of Nillumbik Health and Wellbeing Plan 2021-2025

Nillumbik Climate Action Plan 2022-2032

Nillumbik Integrated Water Management Strategy 2013

1.5 Roles and Responsibilities

Environment Protection Authority

The Environment Protection Authority (EPA) is responsible for the protection of the Victorian environment by developing policies and guidelines, encouraging best practice environmental management and maintaining a complaints register. The EPA also performs a regulatory and enforcement role to protect the quality of the environment.

The EPA's responsibilities in relation to the management of domestic wastewater disposal are as follows:

- Developing policies and legislation in relation to domestic wastewater disposal.
- Developing and reviewing the *Code of Practice – Onsite Wastewater Management* and other relevant publications.
- Approving the type of domestic wastewater treatment systems that can be installed in Victoria via the Australian Standards Certificate of Conformance process.
- Providing advice to local Councils where required.
- Approval of systems discharging more than 5,000 litres on any day.

Nillumbik Shire Council

Under the *Environment Protection Act 2017*, Environment Protection Regulations 2021 and through the *EPA Code of Practice – Onsite Wastewater Management*, Council (in particular, Environmental Health, Planning and Building Services) is responsible for:

- Providing educational information and advice regarding onsite wastewater management to the community;
- Ensuring new residential subdivisions in unsewered areas are provided with reticulated sewerage - or that the allotments are capable of treating and containing all domestic wastewater on site;
- Issuing permits to install or alter onsite wastewater management and issuing a certificate to use the OWMS;
- Refusing to issue a permit if the system does not hold a current Certificate of Conformance or if the site is unsuitable and/or the area available for the treatment and disposal of effluent is not sufficient;
- Ensuring that OWMS are operating correctly and that property owners comply with conditions on OWMS permits and certificates; and
- Submitting an annual report to the EPA on OWMS activity.

Landowners and occupiers

A landowner's wastewater responsibilities consist of the following:

- Connecting to the mains sewerage system where it is available (in a declared sewer area) and the existing WTS does not meet EPA standards at the time the sewer (connection point) became available;
- In unsewered areas, obtaining a permit to install or alter an OWMS before a building permit is issued and any OWMS installation or alteration works commence; and
- Obtaining a certificate to use the system once installation has been completed and approved.

With regard to the ongoing maintenance of an OWMS, it is the land occupier's responsibility to ensure that:

- The maintenance requirements of the OWMS are implemented, including de-sludging (every 3-8 years, depending on the system loading), and any specified monitoring conditions under the permit (including annual sampling);
- If the system type is a secondary treatment plant – it undergoes maintenance checks every 3 months by an accredited maintenance provider;
- The effluent disposal area remains clear from development, impermeable surfaces and unsuitable vegetation; and
- Copies of all maintenance, based on the type of system in use, is provided to Council in accordance with permit conditions.

OWMS Installers (Plumbers) and Maintenance Providers

OWMS Installers are responsible for:

- Ensuring that any plumbing work is either undertaken by a licensed plumber, or under the direct supervision of a licensed plumber;
- Only installing an OWMS approved for installation in Victoria (with a current JAS-ANZ Certificate of Conformance); and
- Ensuring that all of the plumbing work complies with the Plumbing Regulations 2018, the Plumbing Code of Australia (Volume 3 of the National Construction Code) and any referenced Australian Standards relevant to the plumbing work undertaken; and issuing a compliance certificate for any plumbing work valued at \$750 or more.

Compliance certificates must be issued by licensed plumbers for specific plumbing work carried out in Victoria. A compliance certificate signed by a licensed plumber is a certification that their work complies with the prescribed plumbing standards.

A licensed plumber is not able to issue a certificate for plumbing work that has been carried out by someone else, except in limited circumstances.

OWMS Maintenance Providers are responsible for:

- Ensuring that they are an accredited maintenance service provider;
- Ensuring that any maintenance plumbing work requiring a compliance certificate is either undertaken by a licensed plumber, or under the direct supervision of a licensed plumber; and
- Ensuring that any wastewater pumped out of an OWMS as part of a maintenance service is only disposed of at a licensed facility.

Standards Australia and JAS-ANZ

Standards Australia develops internationally aligned Australian standards (AS) and participates in standards-related activities that deliver benefit nationally. Standards Australia and Standards New Zealand also work together to develop joint standards (AS/NZS).

Although Standards Australia develops and publishes different national standards it is not responsible for enforcing, regulating or certifying compliance with those standards. The responsibility for system assessment and the evaluation of minimum performance requirements for OWMS sits exclusively with the accreditation authority JAS-ANZ (Joint Accreditation System of Australia and New Zealand) and is carried out by the accredited certification body; Global Certification Pty Ltd (GC) under the GC Domestic Wastewater Treatment Units (Septic Tanks) certification scheme. OWMS that pass the certification scheme are provided with a Certificate of Conformance. Only systems with a valid Certificate of Conformance can be installed in Victoria.

JAS-ANZ utilises the published joint Australian/New Zealand Standards for onsite domestic wastewater as the basis for the majority of the performance criteria applied to its certification scheme (for OWMS). For example, the current certification scheme for secondary treatment systems requires the different manufactured systems to have completed and passed a comprehensive testing program by 2020 based upon the requirements of AS/NZS 1546.3:2017 *On-site domestic wastewater treatment units: Part 3: Aerated wastewater treatment systems* to receive a Certificate of Conformance post-2020.

Yarra Valley Water

Yarra Valley Water (YVW) is the local water authority for supplying and maintaining reticulated water and sewerage services to the Shire of Nillumbik (and across its catchment). YVW works in partnership with local councils in planning and implementing appropriate infrastructure developments; determining which properties are unable to contain wastewater within their boundaries and to recommend priorities for the provision of sewerage services. It is the key primary authority in setting the scope and direction of the extension of mains sewerage infrastructure across the Shire through the continuing rollout of the Community Sewerage Program (CSP).

Melbourne Water Corporation

Melbourne Water (MW) is the regional drainage authority for Metropolitan Melbourne and is also the Waterway Manager for natural waterways within Metropolitan Melbourne of which Nillumbik is a part. Melbourne Water is responsible for:

- Major trunk services for stormwater, sewer and reticulated water;
- Monitoring and maintaining the ongoing viability and health of major waterways and major catchments; and
- Providing information on floods and their control.

Department of Environment, Land, Water and Planning

The Department of Environment, Energy and Climate Action (DEECA, formerly known as DELWP) is responsible for the management of Victoria's natural resources (water, land, etc.).

DEECA was also responsible for the management of the Country Towns Water Supply and Sewerage Program (CTWSSP). This State Government program was initiated in 2004 to:

- Introduce sewerage solutions to rural and regional towns that have critical public health and environment problems.
- Introduce new water supplies or upgrade existing water supplies.
- Identify sewerage needs to prevent future risks to public health and the environment.

The CTWSSP saw the State Government invest \$42 million over a number of projects across the State. Nillumbik Shire Council was unable to apply for funding through this program to improve domestic wastewater management in rural areas and townships, as the municipality did not meet the rural or regional criteria. Council has previously advocated to the state government for an expansion of the program, however was unsuccessful in getting the funding criteria expanded.

Nillumbik Profile



The Shire of Nillumbik is an interface Shire located approximately 25 kilometres to the north-east of Melbourne's central activities area and extends to the Kinglake Ranges. It has the following characteristics:

- An area of approximately 430 square kilometres, 80 per cent of which is non-urban.
- The non-urban land uses within the Shire are predominantly rural residential, hobby farms and conservation bush blocks, but also include various agricultural activities such as grazing, piggeries, poultry farms and vineyards. A significant area of land is covered by native forest.
- The Shire is generally bounded by the Yarra and Plenty Rivers and the Kinglake Ranges.
- The municipality includes the urban areas of Diamond Creek, Eltham, Eltham North, Plenty, Research, Wattle Glen and parts of Greensborough.
- Low density residential development generally exists around Eltham, Eltham North, Plenty, Yarrambat, North Warrandyte and Research.
- A number of smaller townships and communities are dispersed throughout the municipality and include Hurstbridge, Panton Hill, St Andrews, Arthur's Creek, Christmas Hills, Cottles Bridge, Doreen, Kangaroo Ground, Nutfield, Smiths Gully, Strathewen and Watsons Creek.

Council has a strong environmental focus and a keen desire to maintain and enhance the natural values of the Shire that attract both residents and visitors alike. The Council actively promotes responsible environmental management practices, both within the Council and to its residents. The Shire is one of Melbourne's Green Wedges and has a reputation for its protection and preservation of the natural environment.

2.1 Receiving Waterways and Catchments

Nillumbik is a critically important water catchment area for greater Melbourne. There are five significant waterways in Nillumbik:

1. The Yarra River;
2. Plenty River;
3. Diamond Creek;
4. Watsons Creek; and
5. Arthurs Creek.

The Yarra River forms the southern boundary of Nillumbik, snaking alongside the Bend of Islands, Kangaroo Ground and North Warrandyte. The Diamond Creek runs through the centre of Nillumbik, taking in the townships of Diamond Creek and Hurstbridge. The Plenty River forms part of the western boundary of Nillumbik. The headwaters of the Plenty River provide the water supply to the Yan Yean Reservoir.

These waterways provide stock and domestic water, form important habitat links and are a recreation resource for current and future generations. (Source: Nillumbik Biodiversity Strategy 2012). Arthurs Creek, Running Creek and the Upper Diamond Creek all form the headwaters of Diamond Creek. Running Creek meets Arthurs Creek at the township of Arthurs Creek and the Upper Diamond Creek joins Arthurs Creek at Hurstbridge.

There are four main water catchment areas within Nillumbik:

- Diamond Creek
- Plenty River
- Watson's Creek
- Yarra River Main Stream.

Nillumbik has 3 Special Water Supply Catchment Areas (SWSCA), the Running Creek, Yan Yean and Sugarloaf Reservoirs, as identified under the Catchment and Land Protection Act 1994 (CaLP Act). These catchments supply water for human consumption and general domestic use and other purposes. Due to the sensitivity of the SWSCAs, land use and development including installation of onsite wastewater management systems needs to be appropriate in order to protect water quality and continue to provide safe drinking water.

Using these catchments is a way of simplifying the assessment of the values and threats posed by domestic wastewater and failing systems. This allows management actions to be prioritised to the catchment areas of highest priority.

Main Water Catchments

Figure 8 shows the location of the above four main catchments within the Nillumbik Shire boundaries; including the rivers and tributaries within them.

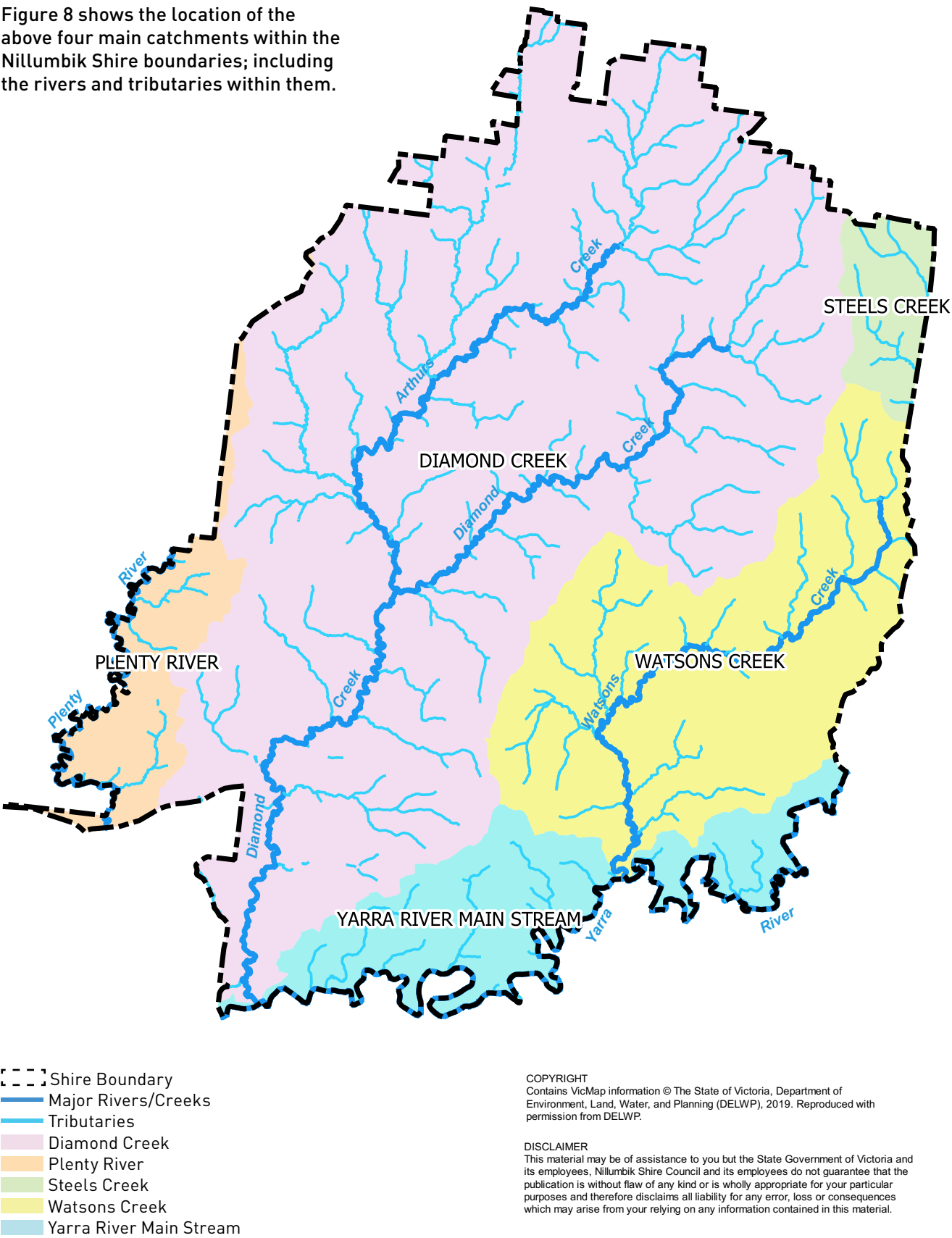


Figure 8: Main Water Catchments within Nillumbik

2.2 Yarra Valley Water Community Sewerage Program

As a result of many properties in Melbourne being built before sewerage infrastructure was available, more than 14,000 homes in the northern and eastern suburbs of Melbourne are using a range of different OWMS to manage their domestic wastewater, many of which do not meet current acceptable standards.

These substandard systems present a potential risk to public health, local waterways and the environment. As such, an identified proportion have been placed on the Yarra Valley Water Community Sewerage Program to be provided with a sustainable sewerage service at a cost of more than \$400 million (until 2032).

Council will continue to work with Yarra Valley Water in the development of the Nillumbik Community Sewerage Program (CSP). The priority and timing of the development of effective wastewater services in areas within Nillumbik are determined based on the following factors:

- Level of risk to the environment and/or human health posed by failing OWMS systems;
- Level of interest from residents to connect to a reticulated sewerage system;
- Number of residents/properties likely to be affected by the provision of a reticulated sewer service;
- Degree of difficulty in the design and construction of reticulated sewerage systems;
- Costs involved in the different possible wastewater solutions; and
- Priority in relation to other townships/areas serviced by YVW.

As a result, larger rural properties beyond the inner “township” zone of the townships throughout the Shire where the above criteria are not met, will not be included in the CSP and are likely to require OWMS management permanently.

Nillumbik is in direct competition with other municipalities also serviced by Yarra Valley Water with regards to the CSP. The priority for towns or areas to be provided with a reticulated sewerage supply is determined through the risk prioritisation schedule developed by YVW. **The next YVW prioritisation process will occur in 2026.**

The number of properties currently on the CSP and the cost to YVW for the implementation of the program often results in significant delays for the provision of reticulated sewerage. It is therefore important that Council continues to work in partnership with YVW and its prioritisation timeframes. Nillumbik Shire Council was successful in the 2021 prioritisation process resulting in seven of Nillumbik’s CSP areas recognised as higher priority and now within the top 10 priority areas for YVW. Council’s work to collect data in relation to the risks for human health and the environment has facilitated the inclusion of more properties and bringing some areas expected sewer connections forward from 2032 to 2026/27.

Table 1 Compares the previous Nillumbik CSP scheduled dates for the provision of reticulated sewerage between the 2016 and 2021 Prioritisations initiated by YVW.

2016 Prioritisation results			
CSP Area	Township/Area	Number of lots	Project dates
BA012	Eltham (North) / Research	180	complete
BA004A/B/C/D	North Warrandyte	975	complete
BA005	Eltham (South)	~300	complete
CSA007	Hurstbridge / Wattle Glen / Diamond Creek	~75	2031/32
CSA042	St Andrews	~117	2031/32
CSA041	Panton Hill	~119	2031/32
CSA040	Yarrambat	36	2030/31
Total remaining for connection		347	2030/32
2021 Prioritisation results			
CSA012B	Research	5	2027
CSA004E	North Warrandyte	7	2033
CSA052	Eltham	21	2028
CSA073	Hurstbridge	51	2030
CSA007	Diamond Creek	30	2028
CSA079	Wattle Glen	51	2028
CSA042	St Andrews	126	2029
CSA041	Panton Hill	110	2028
CSA040	Yarrambat	52	2026*
CSA050	Plenty	53	2029
CSA078	Yarra Glen/Christmas Hills	5	2042
Total remaining for connection		511	

Table 1: CSP timetable showing all the included Nillumbik Townships (data supplied by YVW is subject to change dependant on design and funding requirements) *The timing of the Yarrambat Sewerage Project may be influenced by Stage 2 of the Yan Yean Road Upgrade Project.

Figure 9 (below) shows the extent of Yarra Valley Water's existing Sewer Catchment Area (i.e. areas serviced with sewer) and areas that are on the Community Sewerage Program (CSP) that have not yet been provided with a service. The 'township' areas listed on the CSP are limited to properties within a centralised area of the township. It does not include larger, more rural properties on the outskirts and surrounds.

This map demonstrates that following completion of the Nillumbik CSP, onsite domestic wastewater management will still require significant input and management on a permanent basis.

Community Sewerage Program

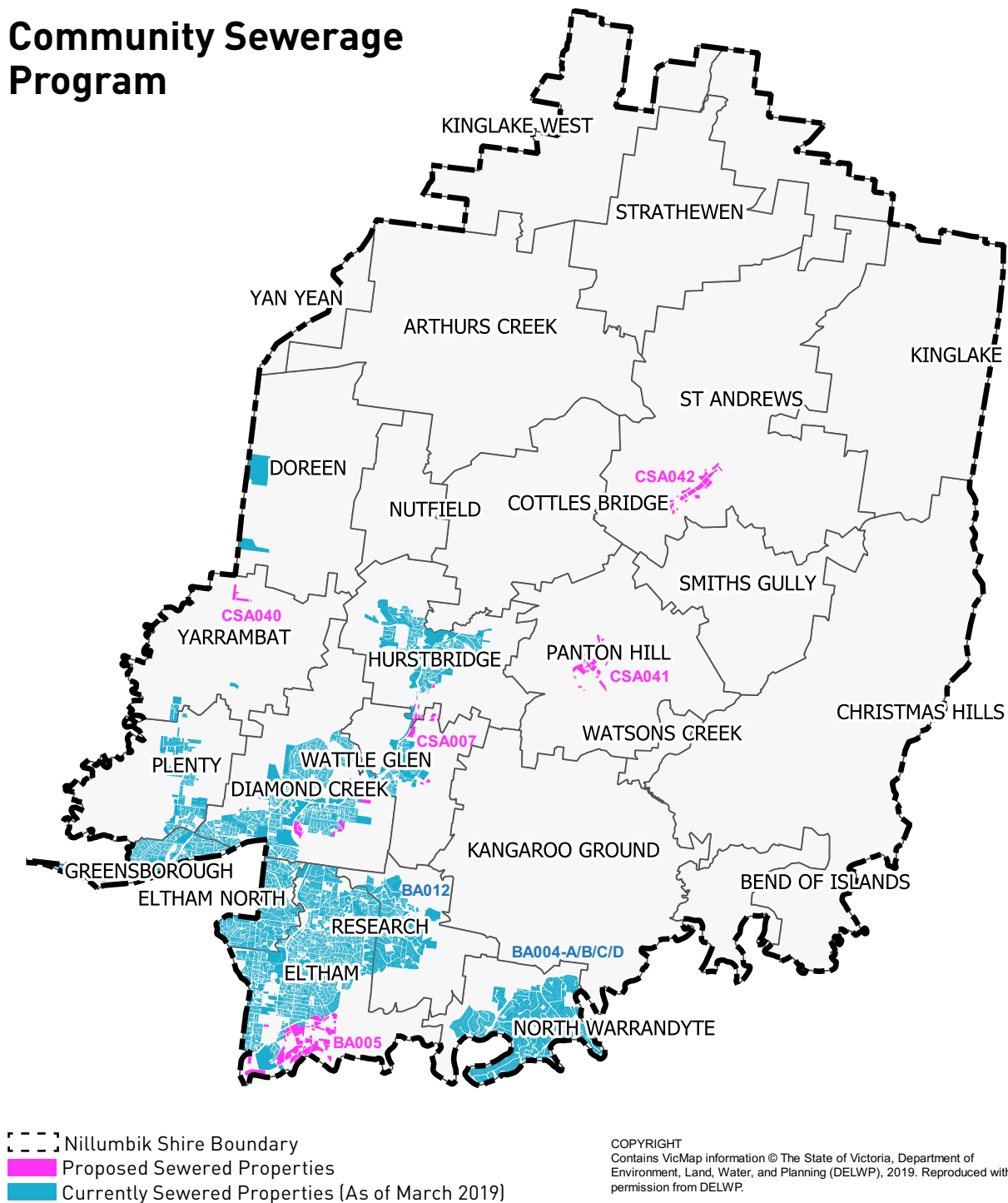


Figure 9: Sewered/Unsewered and CSP areas (see Appendix 2 for detailed maps of individual CSP Areas)

Risk assessment



3.1 Onsite Wastewater risks

A primary objective of the OWMP is to identify and implement strategies aimed at minimising the impact of existing or potential risks to human health and the environment.

All wastewater generation and/or discharge is seen to be a risk with potential harm to human health or damage to the environment. Wastewater risks that need to be considered, their cause and key impacts are described in Table 3

These risks have been identified by incorporating information from:

- literature reviews;
- a review of complaints;
- discussions with Council staff;
- field inspections;
- YVW regarding the extent of sewerage provision across the Nillumbik catchments

Risk	Cause	Key Impacts
Failed systems with off-site discharge	<ul style="list-style-type: none"> • Damaged effluent disposal drains/ trenches • Increased loading from extensions to dwellings • Design criteria not complied with • Faulty installation • New works and activities impacting on disposal area • Age of the system • Septic tank full • Poor maintenance 	<ul style="list-style-type: none"> • Nutrients • Pathogens • Odour • Visual amenity • Oxygen depleting material • Local land degradation • Pollution of water courses • Pooling of effluent causing mosquito breeding
Treated off-site effluent discharge	<ul style="list-style-type: none"> • Permitted system 	<ul style="list-style-type: none"> • Pollution of water courses • Local visual amenity • Demand on Council drainage infrastructure
Treated onsite effluent discharge	<ul style="list-style-type: none"> • Permitted system 	<ul style="list-style-type: none"> • Local visual amenity • Pollution of groundwater
Untreated off-site sullage (grey water) discharge	<ul style="list-style-type: none"> • Poorly maintained system with sand filter not functioning • Sand filter bypassed to stormwater • Septic tank full • Permitted system 	<ul style="list-style-type: none"> • Nutrients • Pathogens • Odour • Visual amenity • Oxygen depleting material • Local land degradation • Pollution of water courses • Demand on Council drainage infrastructure
Ineffective regulation	<ul style="list-style-type: none"> • Failure to comply with permit conditions • Ineffective database • Non-connection to sewer • Unclear regulatory responsibilities 	<ul style="list-style-type: none"> • Liability • Increased incidence of preventable pollution and environmental degradation • Increased risk to public health
Re-use of waste water	<ul style="list-style-type: none"> • Allowed re-use • Low water supply • Poor management by individual residents 	<ul style="list-style-type: none"> • Pathogens • Odours

Table 3: Wastewater threats

3.2 Risk Management Approach

An OWMP risk assessment methodology has been developed for councils to assess the risk of OWMS at a sub catchment and catchment level, published by DELWP, 2022.

The guide outlines the following objectives to be considered when assessing risks associated with OWMS:

- Onsite wastewater systems and their effluent are appropriately located and managed through a consistent risk assessment process
- Human health and environmental risks are minimised, particularly for potable water supply and environmentally sensitive areas.

The methodology of the guide is in alignment with ISO 31000 Risk Management and includes risk identification risk analysis and risk evaluation and treatment.

Using the guide Council will develop a risk management plan to inform ongoing monitoring of OWMS throughout the Shire, particularly in areas where reticulated sewer is not a viable option for wastewater management.

The risk management plan will be developed by using the following the risk assessment structure:

Initiation: defining the scope and context to the risk management plan

- Determine sub catchments and catchment areas for assessment, identify endpoints

Risk Identification: data collection

- Collect data and allocate data to risk band levels for each risk factor

Calculate consequence

- Determine consequence through calculation of contaminant loads from risk factor data

Likelihood assessment

- Determine likelihood for each risk pathway. Calculate likelihood from risk factor band level data

Risk analysis

- Calculate risk rating for each sub catchment risk type and pathway

Cumulative risk

- Calculate risk rating for specific endpoints and review results

After the risk treatment plan is developed (within the life of this 2024-2029 plan), options of more complexity such as delivering a program of monitoring inspections and liaison with property owners will have delivery plans developed to manage the detailed nature of implementation.

Regular monitoring and review of the risk treatment plans, including tracking implementation of the delivery plans, will be undertaken. This will include the stakeholder engagement and reporting of implementation progress as required as part of the ongoing development of Council's OWMP.



Management focus areas



The focus area for Council's management of onsite wastewater is informed by several main factors, including Council's statutory duty and key stakeholder strategic priorities (YVW, MW, EPA & DEECA). Council's capacity to undertake wastewater management programs, along with the community's feedback and the risks posed by ineffective and non-compliant OWMS together determine the plan's objectives.

4.1 Focus Areas

The OWMP 5 focus areas:

1. Information and Data Collation
2. Education and Awareness
3. Sewer connection and CSP prioritisation
4. Regulation and Enforcement
5. Collaboration and Review

A summary description of the 5 focus areas and their objectives follow.

4.1.1 Information and Data Collation

Information and data collation is a critical primary phase of the Action Plan that must be completed before effective risk-based interventions can be undertaken. The quality and extent of the information Council holds for individual wastewater treatment systems (OWMS) directly influences the quality and extent to which subsequent actions can be conducted.

Improved accuracy of data collected by Council assists Yarra Valley Water with prioritisation calculations, as more accurate data tends to lead to a more favourable prioritisation ranking of any Community Sewerage Program area. Data around the precise location of each OWMS greatly helps with the design of the reticulated sewerage network.

Information and data collation objectives:

- Collation and auditing of all current and historic OWMS information into a single information management system to identify information gaps, provide status reports, improve risk assessment data and accuracy of information on OWMS currently operating within the Shire.

4.1.2 Education and Awareness

Conducting targeted education and awareness programs will contribute toward the objectives of the Action Plan and provide a solid foundation for increasing community and industry awareness levels around wastewater responsibilities and requirements and subsequent compliance and monitoring activities.

Education and awareness objectives:

- Implementation of wastewater education and information strategies for OWMS owners in Nillumbik to achieve increased awareness of their responsibilities and improved OWMS maintenance management practices.

4.1.3 Sewer Connection and CSP Prioritisation

Connection of properties to reticulated sewer effectively eliminates the existing and potential environmental and human health risks that could originate from properties due to their wastewater. It is the most effective solution available from an environmental and public health perspective; particularly for Nillumbik.

To this end, educating owners of properties in declared (sewer) areas about the requirement to connect and facilitating the connection occurring is a key objective Council can undertake to significantly improve the environmental and public health outcomes for the Shire.

YVW effectively re-prioritises its complete listing of the CSP townships (and therefore the included properties within them) every five years. The last CSP re-prioritisation occurred in 2021. It is important to note that much of the data collation, risk and land capability assessment activity that determines the final re-prioritisation of the CSP list occurs in the years leading up to each re-prioritisation year. Nillumbik's success in having CSP areas move up the prioritisation schedule highlights the imperative for Council to be proactively engaging with YVW in the CSP advocacy actions.

Sewer connection and community Sewerage Program objectives:

- Advocacy into Yarra Valley Water's Community Sewerage Program.
- Encourage property owners to connect to sewer (in declared areas).

4.1.4 Regulation and Enforcement

Council has several statutory responsibilities relating to wastewater control under a number of different Victorian Acts, including the:

- *Environment Protection Act 2017; the*
- *Building Act 1993; and the*
- *Planning & Environment Act 1987*

These responsibilities include activities such as:

- Ensuring that approved planning permits contain the necessary wastewater conditions for unsewered and sewerer developments.
- Ensuring that OWMS Permits contain all the necessary wastewater conditions for the land-based constraints of the installation site and the type of system being installed.
- Approval of new OWMS installations and alterations of existing systems.
- Monitoring the maintenance reporting requirements for different systems.
- Building Act "Consent to Use" requirements.
- Addressing wastewater non-compliances and complaints.

There will always be a requirement for Council to undertake regulation or enforcement activities in relation to different wastewater issues and non-compliances that pose an immediate risk/threat to the environment or human health. This is an integral part of Council's statutory responsibility. However, Council's enforcement policy is generally based on the premise that enforcement is the last tool employed when education and mutual co-operation on a compliance issue has not been successful. The exception to this, is when a wastewater non-compliance poses an unacceptable immediate threat to human health and safety and it is necessary to employ an enforcement measure from the onset to address it.

The recent introduction of the new Environment Protection Act 2017 and Environment Protection Regulations 2021, have established the ability for Council to enforce maintenance of OWMS to both owners and or occupiers (ie rental tenants), via infringements, Notices and, if required, prosecution. Council's regulation and enforcement is guided by the EPA Publication 1974: Regulating onsite wastewater management systems: local government toolkit. The toolkit clearly provides the legislative requirements of owners and operators of OWMS under the GED and Council's investigative and enforcement processes to follow

Regulation and Enforcement Objectives:

- To ensure all unsewered site developments are capable of adequately treating and containing all effluent on site prior to planning approval
- To investigate and enforce where required, correct operation and maintenance of OWMS

4.1.5 Collaboration and Review

To maximise the impact of the different actions and projects identified in the OWMP Action Plan, there must be integration and co-ordination of Council's internal resources. Internal collaboration is a key component to achieving the successful implementation of the OWMP.

Likewise, external collaboration and consultation is also a critical factor, specifically required under SEPP (Waters), in the development of the OWMP and its subsequent implementation. Strengthening relationships with key external partners and stakeholder agencies such as YVW, the EPA, MAV and EHPA is a fundamental element in improving the level of collaboration, consultation, information and resource sharing between agencies.

Council has developed a comprehensive Community Engagement Program that is applied to the majority of Council projects. Community engagement and collaboration is recognised by Council as a foundational component to any project that involves or affects the community. It is an approach that Council supports and advocates.

Collaboration and Review objectives:

- Regular review of plan as per legislative requirements.
- Advocate for and contribute to reform of the wastewater legislative framework.

The above 9 objectives have been developed into a series of separate strategies and fall under the **5 focus areas** in the **OWMP Action Plan**. These are detailed below under section 4.2.


4.2 Action Plan


Nillumbik Shire Council actively promotes responsible environmental management practices. By preparing and adopting the Onsite Wastewater Management Plan (OWMP), Nillumbik demonstrates its commitment to improve the management of domestic wastewater within the Shire.

The successful implementation of the OWMP Action Plan can largely be contained within the existing Environmental Health budget and allocation of resources, along with some cross organisation development of solutions; such as improved use of technology to achieve greater compliance. External funding will also be sought, including grants from Melbourne Water and the State and Federal governments.

The following is Council's Onsite Wastewater Management Action Plan for the 2023 to 2028 period.

Onsite Wastewater Management Action Plan

 Focus area: information and data collection	
Objectives	Strategies
All wastewater information is readily accessible in a single database and enables identification of areas of critical concern and confirmed number of unsewered properties	<ol style="list-style-type: none">1. Digitise all records for wastewater systems onto a single database - historic hardcopy information verified and uploaded to Council database2. Undertake data cleansing of existing information in database, to remove duplicates and removal of sewer connected properties3. Conduct onsite inspections of properties without records to confirm onsite wastewater management method
Maintain accurate database of properties sewered by Yarra Valley Water	<ol style="list-style-type: none">1. Regularly update and upload property connection data obtained from YVW to GIS and database systems
Develop Risk prioritisation plan	<ol style="list-style-type: none">1. Utilise the onsite wastewater plans risk assessment guidance developed by DELWP 2022, to develop a risk based approach to ensure appropriate systems are installed throughout Nillumbik and identifying areas of high environmental or health risk2. Conduct regular water sampling of waterways to assist with evidence based risk assessment.

 Focus area: Education and Awareness	
Objectives	Strategies
Improve education and awareness of wastewater management responsibilities	<ol style="list-style-type: none">1. Increase distribution of Council education publications to new wastewater system owners, new residents/owners and real estate agents2. Ensure wastewater management information on Council's website is relevant and easy to understand

Onsite Wastewater Management Action Plan



Focus area: Sewer Connection and Community Sewerage Program

Objectives	Strategies
Advocacy into Yarra Valley Water's Community Sewerage Program	<ol style="list-style-type: none"> 1. Quarterly collaboration meetings between YVW and Council to implement CSP 2. Assist YVW with relevant information and data for design proposals throughout Nillumbik CSP areas 3. Assist YVW with community engagement during design consultation and implementation of CSP infrastructure
Encourage property owners to connect to sewer (in declared areas)	<ol style="list-style-type: none"> 1. In conjunction with YVW provide communications to properties that have sewer available but have no connection record 2. Ensure retention of any secondary treatment systems at a declared property is based on evidence of compliance with EPA requirements (EPA Publication: 891.4) 3. Ensure declared properties that cannot show evidence of compliance are connected to sewer



Focus area: Regulation and Enforcement

Objectives	Strategies
All unsewered site developments are capable of adequately treating and containing all effluent on site prior to Planning approval	<ol style="list-style-type: none"> 1. Maintain up to date and relevant wastewater specifications and standard conditions for planning permits 2. EHOs undertake specialist training in wastewater management
Ensure all OWMS are operated and maintained in a way that minimises risks to human health and the environment	<ol style="list-style-type: none"> 1. Enforce the Environment Protection Regulations 2021, utilising the <i>Regulating Onsite Wastewater Systems: Local Government Toolkit</i> (publication 1974, May 2021)



Focus area: Collaboration and Review

Objectives	Strategies
Regular review of plan as per legislation requirements	<ol style="list-style-type: none"> 1. Conduct annual internal review and assessment of the progress of the action plan 2. Conduct three yearly audit and report on the progress of the plan and publish report to Council's website 3. Review and update the plan every five years 4. Conduct community engagement every five years as part of review and update of the plan
Advocate for and contribute to reform of the wastewater legislative framework	<ol style="list-style-type: none"> 1. Advocate for improvements to legislative framework 2. Provide input into proposed legislation and standards pertaining to onsite wastewater management or reticulated sewer

Funding and Budget Allocation

The Domestic Wastewater Management Plan will require the allocation of budget and resources throughout the full five year implementation.

The majority of actions will be absorbed into the existing Environmental Health budget, the current Domestic Wastewater Officer role being key to achieving some priority actions including the collection and collation of data associated with all existing OWMS throughout the Shire.

Where there are specific projects, funding in the form of grants may be applied for from the State Government and other peak associations. Additional funding may also be sought in the respective budgets for each year of the plan.



Appendices



Appendix 1: Community engagement

Nillumbik Shire Council has a comprehensive Community Engagement Program structure in place that is applied to the majority of Council projects.

During the implementation of the 2019-2023 Domestic wastewater management plan (DWMP), Yarra Valley Water commenced the CSP prioritisation program. During part of the data collection for the prioritisation it became evident that a significant focus of the 2023-2028 OWMP would be on reticulated sewer provision. The resulting community engagement consisted of a survey of the Community Sewerage Program areas of Nillumbik.

Onsite wastewater management survey

The primary tool used to capture residents' feedback and inform the priorities of the next plan was a 'Domestic Wastewater Survey'. All residents within the Community Sewerage Program (CSP) areas of Nillumbik were invited to participate in the survey via mail or an online version of the survey available on the Participate Nillumbik website.

The CSP comprise the townships of St Andrews, Panton Hill, sections of Plenty, Wattle Glen and Yarrambat and outer areas of Eltham, Diamond Creek and Hurstbridge. A total of 342 surveys were distributed via mail, with 62 respondents; a total response rate of 18 per cent.

The survey consisted of eleven questions. Grouped into two parts, the first to find out about existing onsite wastewater management systems, including what type of systems and the issues associated with them. The second part consisted of questions about whether people would be interested in opportunities to improve wastewater management, including options to connect to a piped sewer system and Council services.

Conclusions

The results of the survey show that within the community sewerage program areas there is an interest in connecting to sewer, wastewater reuse, and opportunities for education or information about wastewater systems.

The interest in connection and wastewater reuse will be provided to the local water authority, Yarra Valley Water to assist with any design decisions for potential future sewer provision, particularly in township areas away from existing sewer networks.

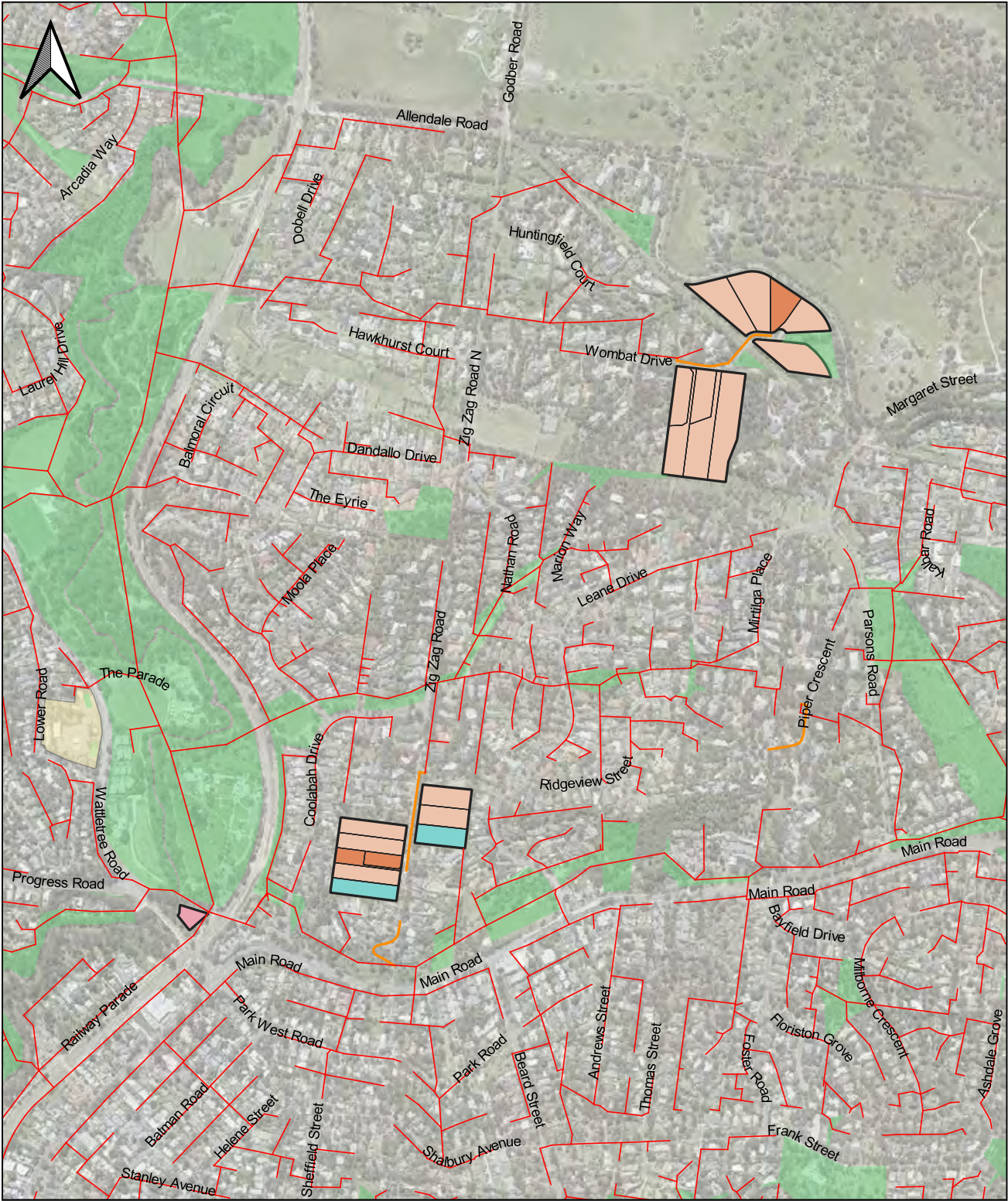
The interest in additional information and updates can be addressed by Council by increasing educational opportunities for residents who own or operate an onsite wastewater system, and will be added to the action plan of the 2023-2028 Onsite Wastewater Management Plan.

Appendix 2: Community Sewerage Program areas

CSA007 Diamond Creek



CSA052 Eltham



CSA052 Eltham

- Investigation Area (CSA)
- Other CSA
- Parks, Reserves, Sports Fields
- Schools
- Proposed Sewer
- Existing Sewer

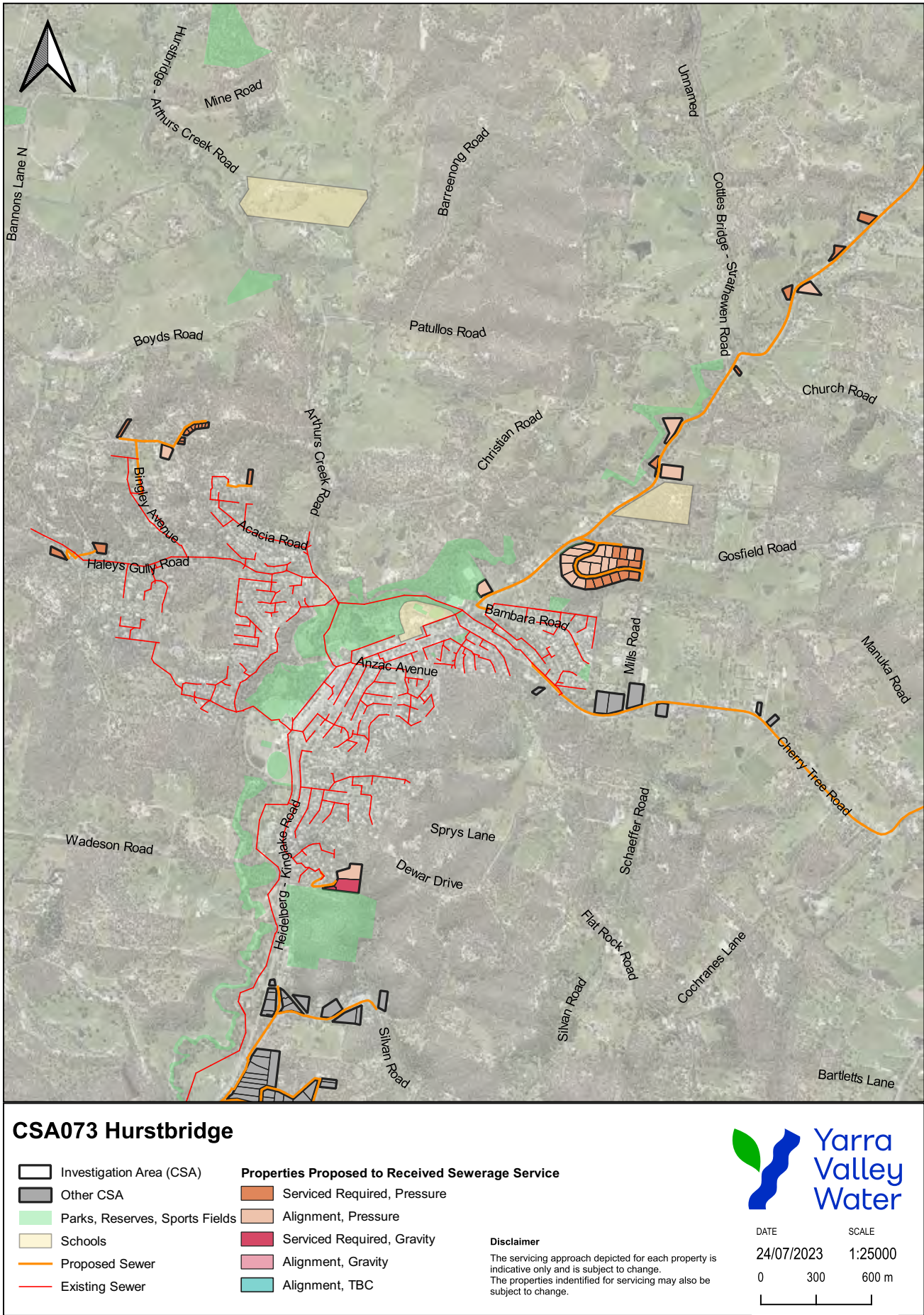
- Properties Proposed to Received Sewerage Service**
- Serviced Required, Pressure
 - Alignment, Pressure
 - Serviced Required, Gravity
 - Alignment, Gravity
 - Alignment, TBC

Disclaimer
The servicing approach depicted for each property is indicative only and is subject to change.
The properties indentified for servicing may also be subject to change.

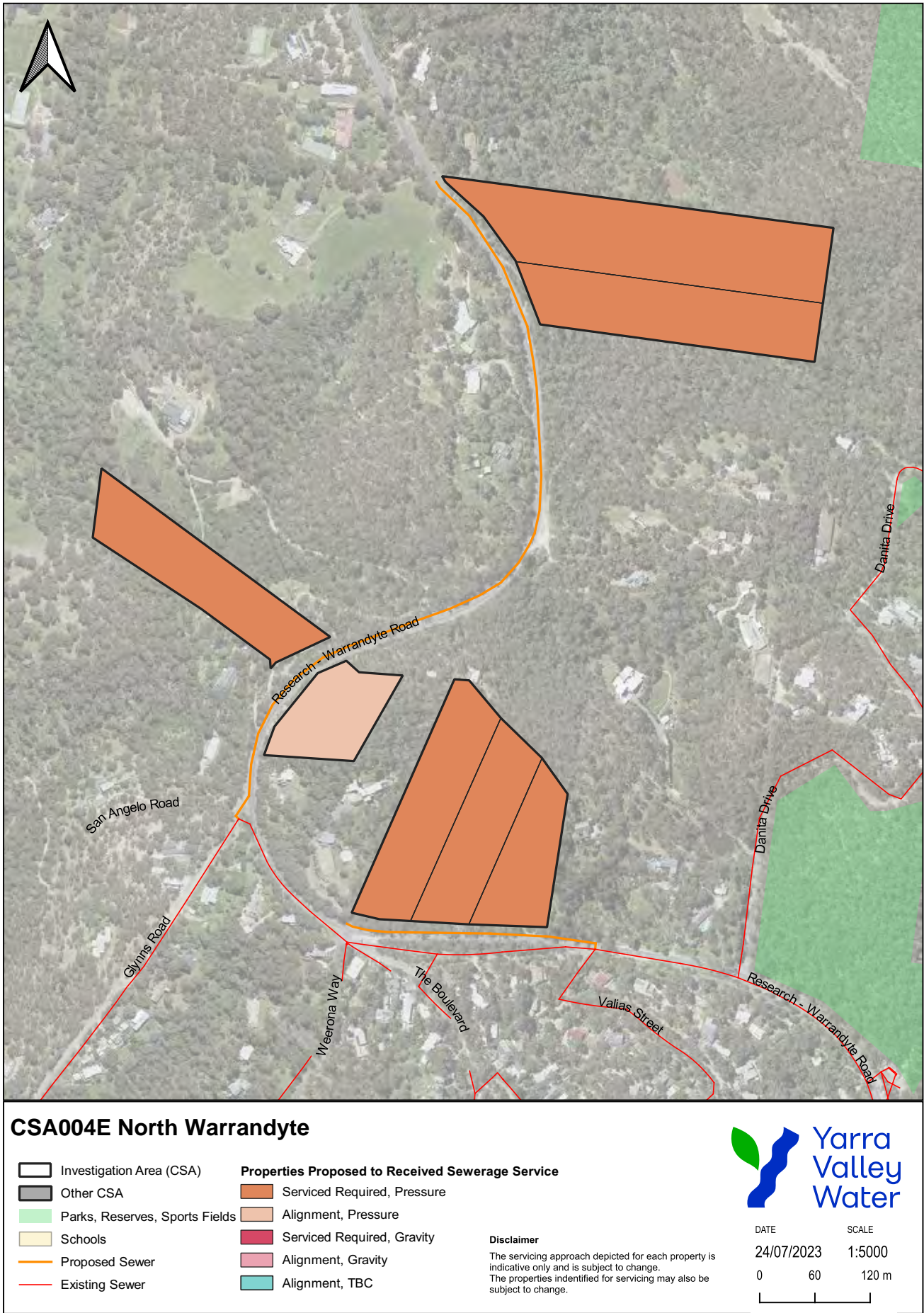


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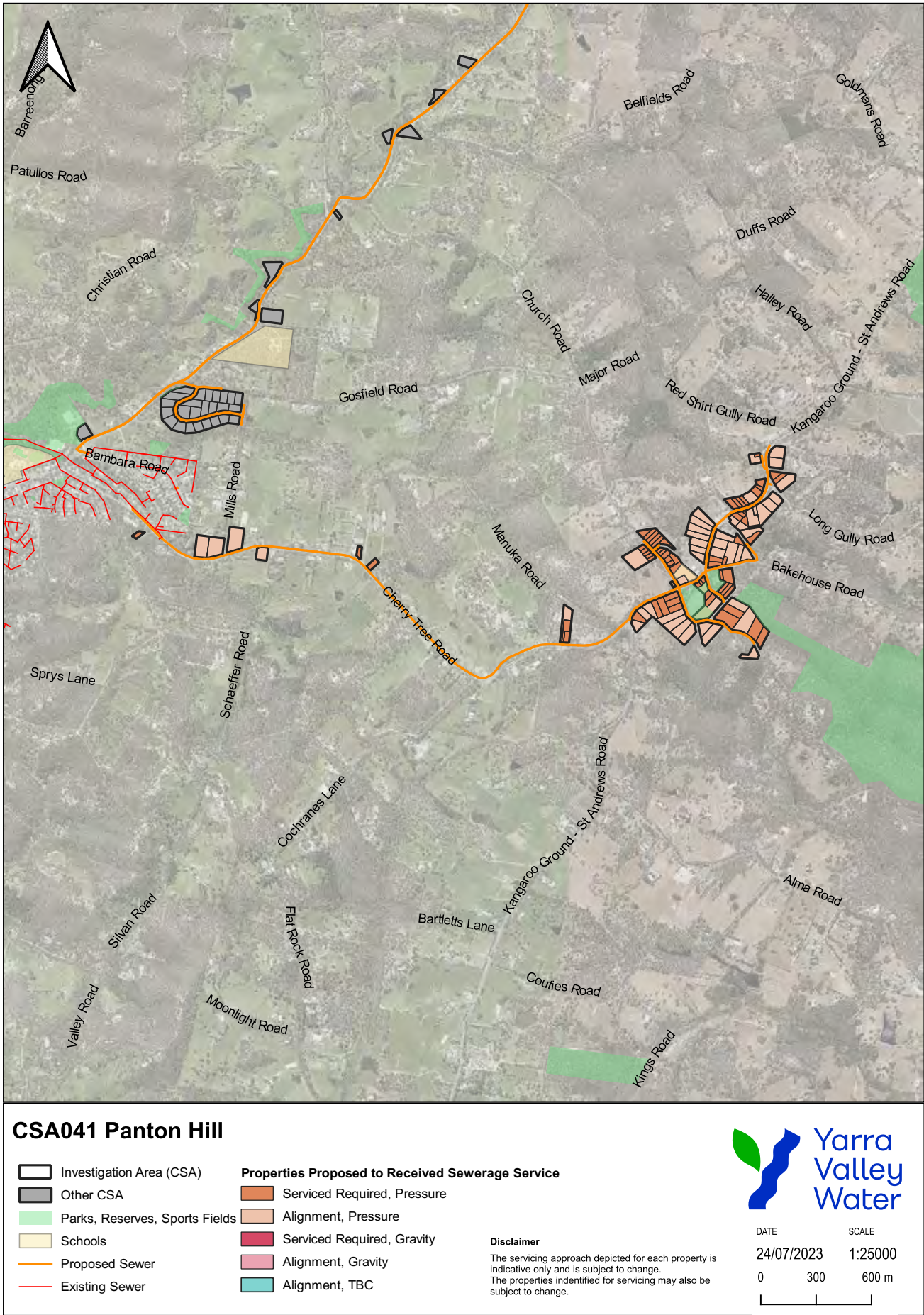
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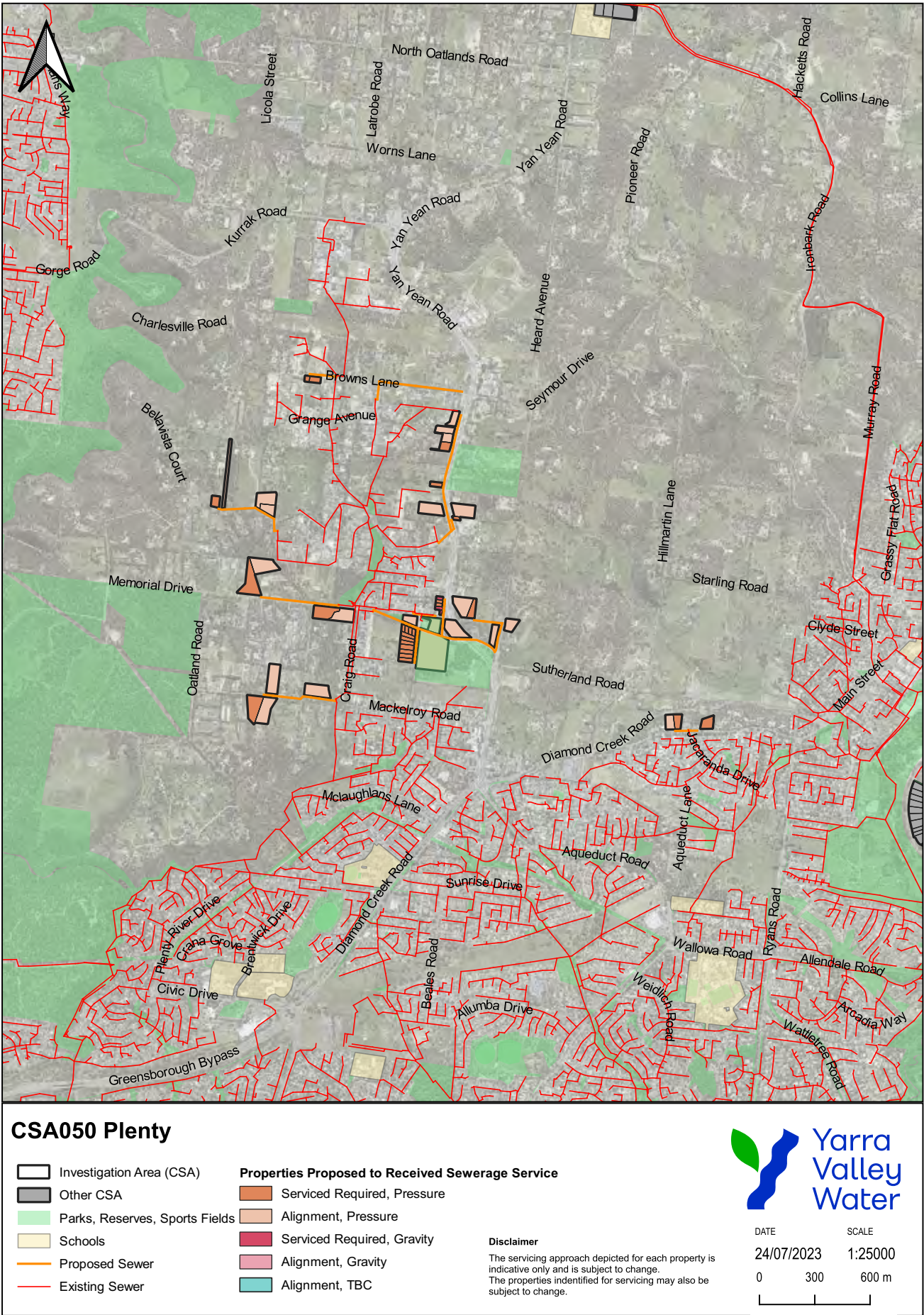
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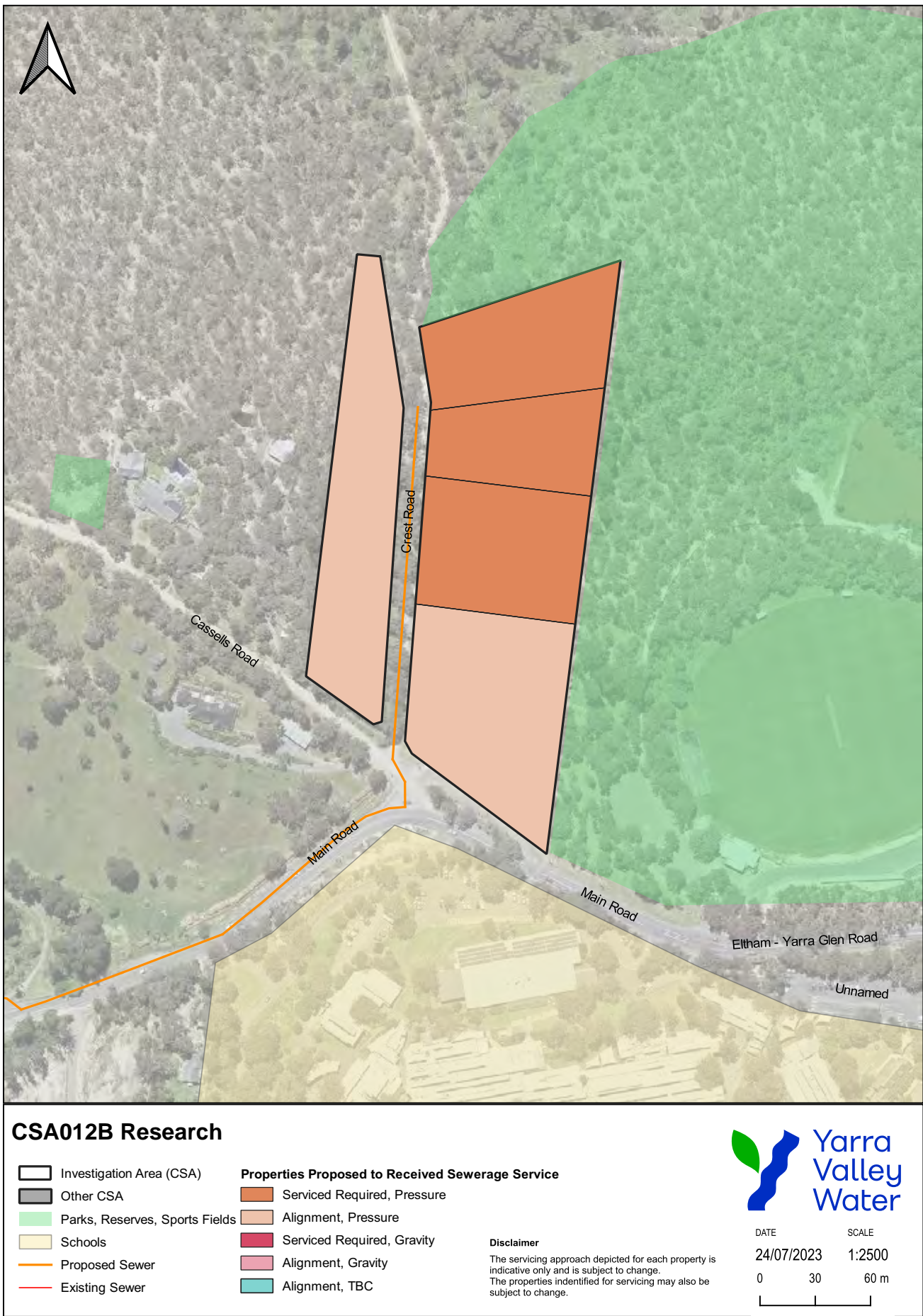
CSA041 Panton Hill



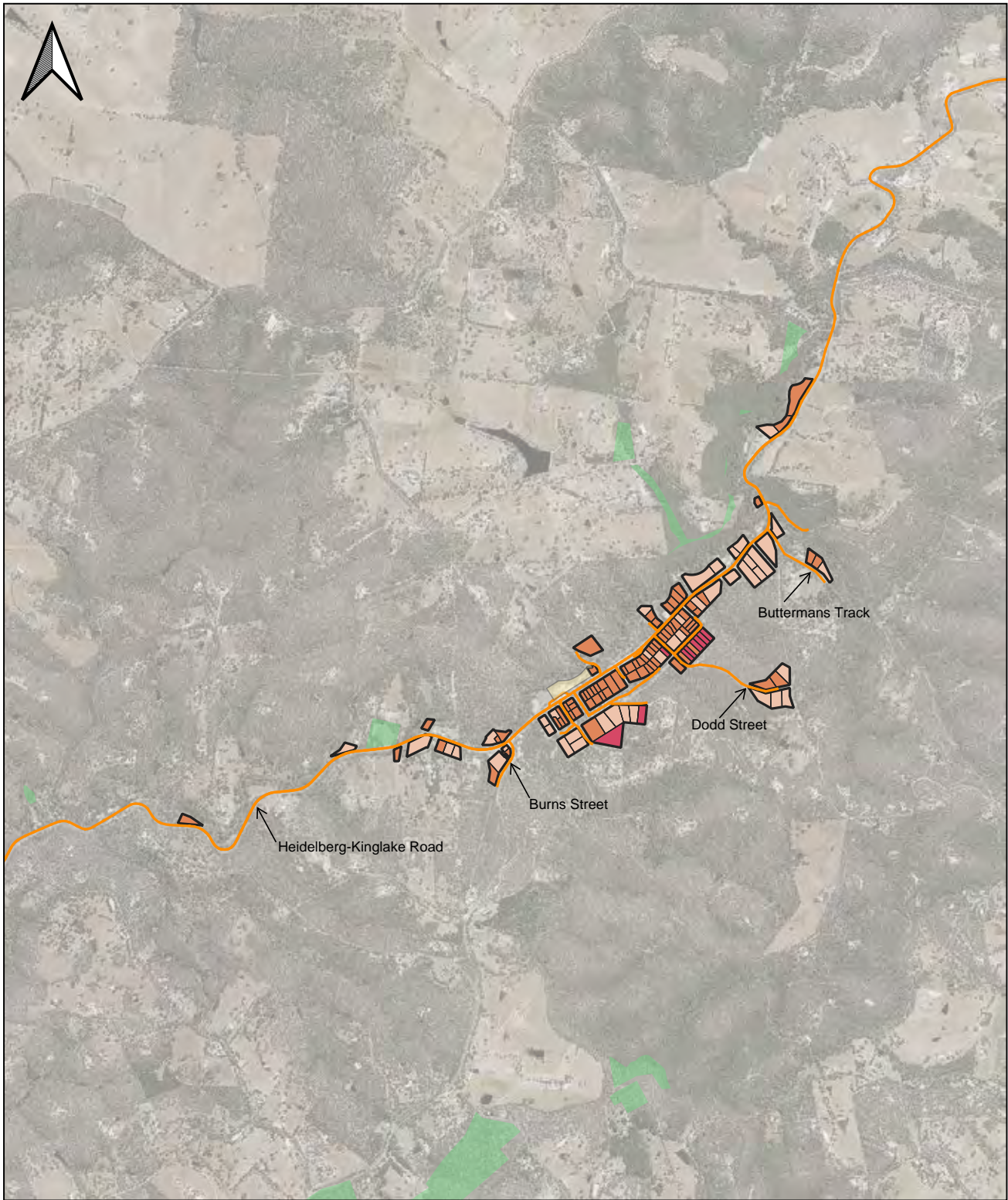
CSA050 Plenty



CSA012B Research



CSA042 St Andrews



CSA042 St Andrews

Investigation Area (CSA)	Properties Proposed to Received Sewerage Service
Other CSA	Served Required, Pressure
Parks, Reserves, Sports Fields	Alignment, Pressure
Schools	Served Required, Gravity
Proposed Sewer	Alignment, Gravity
Existing Sewer	Alignment, TBC

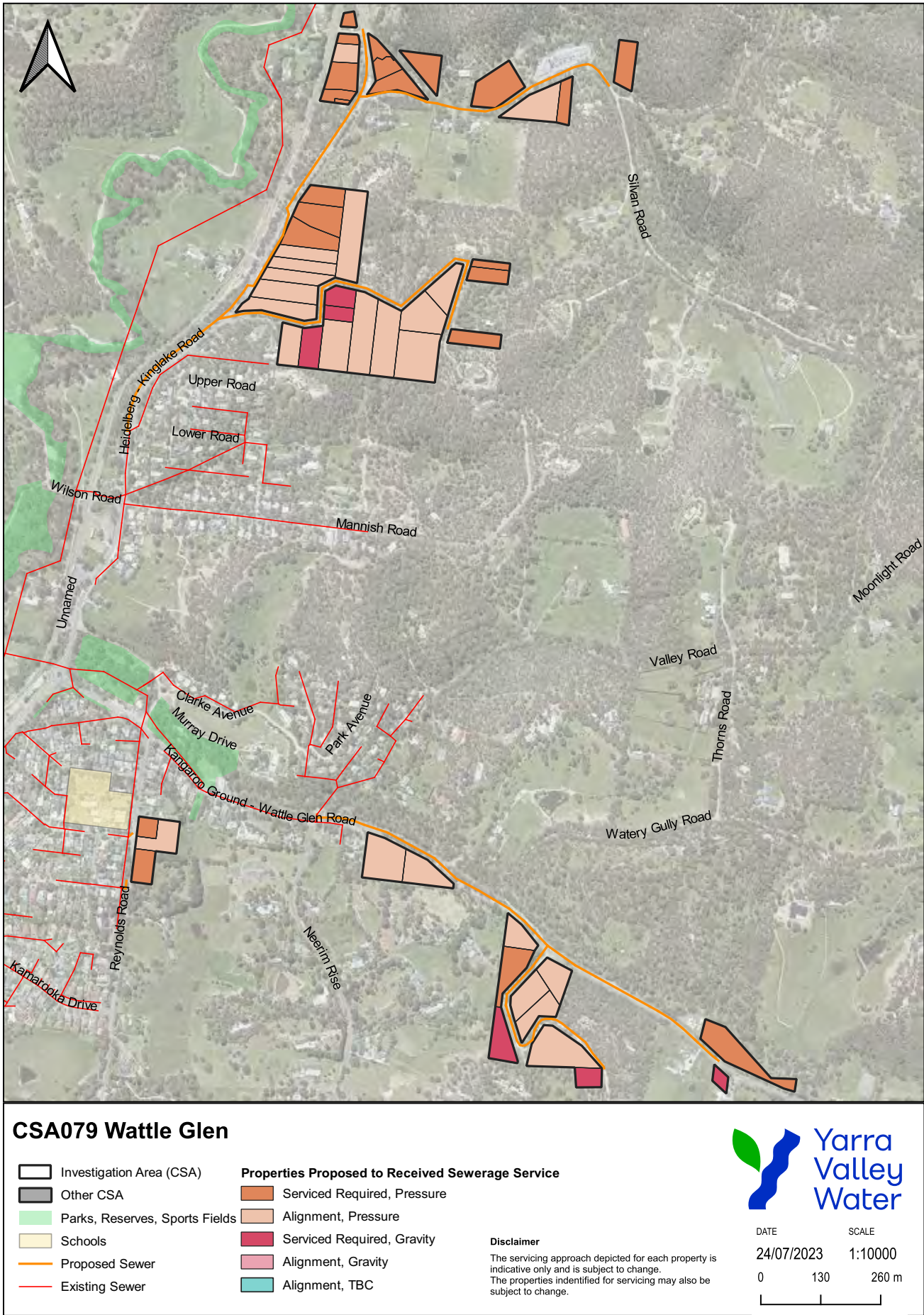
Disclaimer
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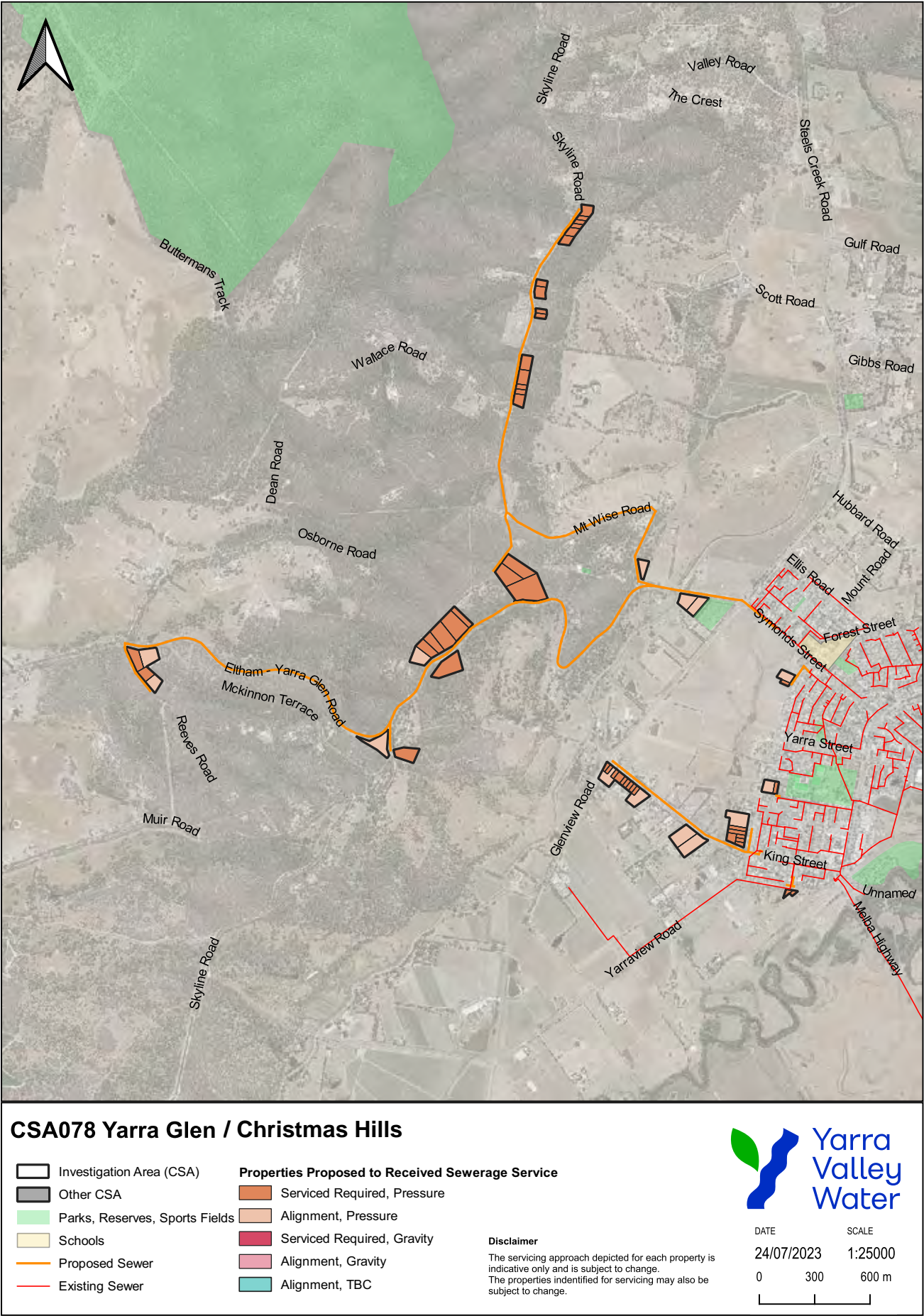
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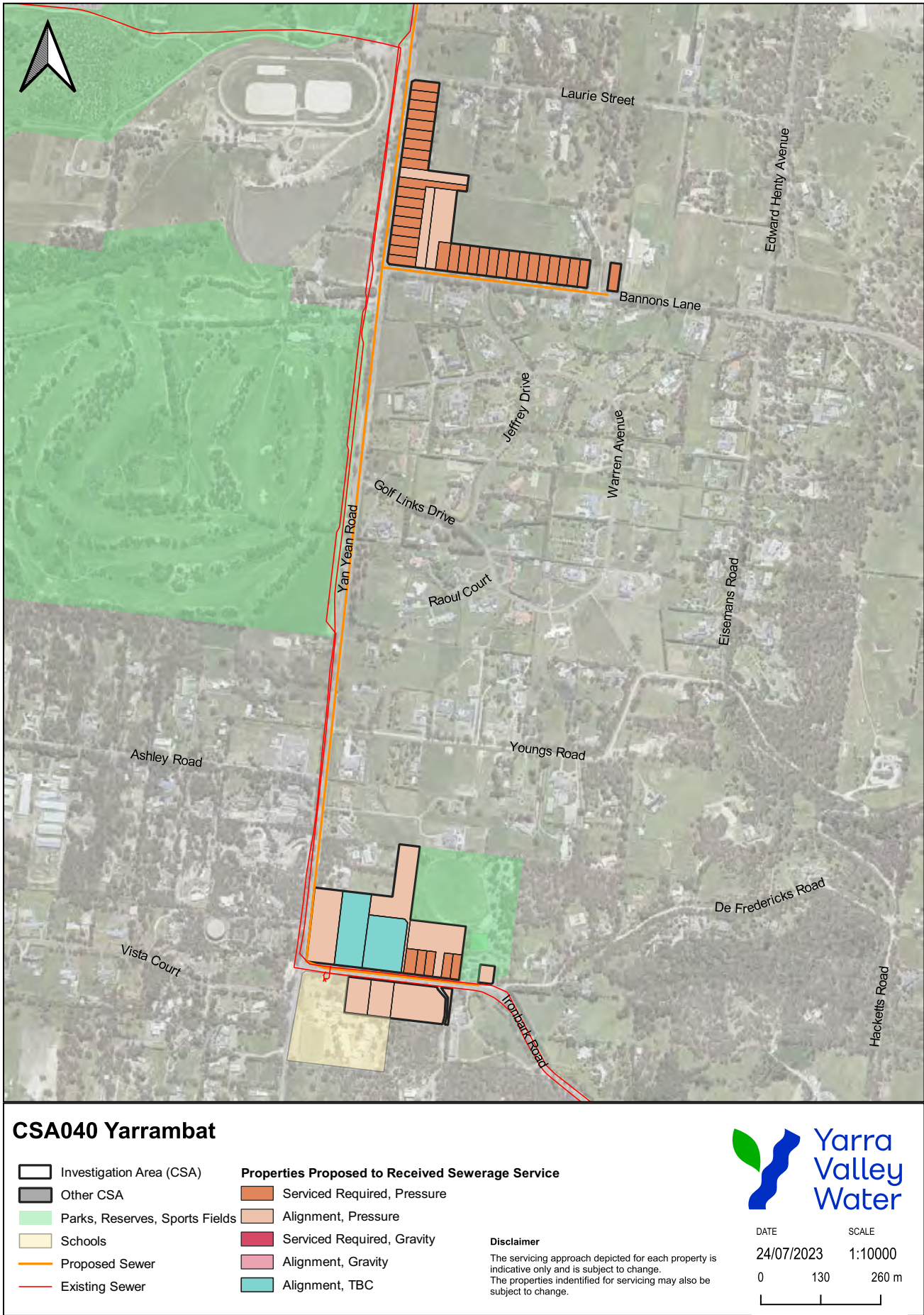
CSA079 Wattle Glen



CSA078 Yarra Glen/Christmas Hills



CSA040 Yarrambat



Glossary

AWTS: Aerated Wastewater Treatment System.

CSP: Community Sewerage Program.

COC: Certificate of Conformance (provided by Standards Australia).

Desludging: The removal of sludge and sediment from the wastewater treatment system.

DELWP: Department of Environment, Land, Water and Planning.

Domestic Wastewater: Wastewater arising from a domestic dwelling. Domestic wastewater can comprise of blackwater (toilet waste) or greywater (sullage waste from bathrooms, laundry and kitchen appliances), or a combination of both.

Effluent: Combined wastewater coming from (leaving) a domestic residence and/or coming from (leaving) a wastewater treatment system. It is a direction-based term used for wastewater exiting a household or treatment system.

EPA: Environment Protection Authority.

GIS: Geographic Information System.

Greywater: Domestic wastewater that does not contain toilet waste. Also known as sullage.

Joint Accreditation System of Australia and New Zealand (JAS-ANZ): Is an accreditation authority and framework, with the purpose to enhance national, trans-tasman and international trade via accreditation to achieve international recognition for the excellence of Australian and New Zealand goods and services. JAS-ANZ provides a certification mark for use on goods and services that meet their accreditation requirements.

Land Capability Assessment (LCA): A method used to assess the capability of land to manage onsite wastewater disposal, which recommends whether effluent can be adequately treated and retained onsite.

MAV: Municipal Association of Victoria.

MW: Melbourne Water.

OWMP: Onsite Wastewater Management Plan.

Primary Treatment System: A wastewater treatment system that treats the effluent to a primary standard.

Secondary Treatment System: A wastewater treatment system that treats the effluent to a secondary standard.

SEPP: State Environment Protection Policy (Waters).

Sewage: Any wastewater containing human excreta or domestic wastewater.

Sewerage: The infrastructure system (drains etc.) used to carry, treat and dispose of sewage.

YVW: Yarra Valley Water.

OWMS: Onsite Wastewater Management System, the generic term used to refer to all available types of onsite wastewater treatment and disposal systems across both primary and secondary treatment systems.



**If you need an interpreter, please call
TIS National on 131 450 and ask them to
call Nillumbik Shire Council on 9433 3111.**

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