



Asset Management Plan for Sewerage 2022/2023

This document forms part of Council's Resourcing Strategy.
It is updated annually to support Council's Operational Plan.

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1. Executive Summary

Council is responsible for the sewerage system in Grenfell including 33km of reticulation mains and one sewage treatment plant. The mains (pipes and manholes) make up the bulk of the replacement cost of the system (almost \$9M), although the existing treatment plant (valued at around \$3.5M) is soon to be replaced with a modern plant that can treat effluent to far higher standards (estimated cost around \$9M) to enable more effective reuse of our water resources.

A description of the sewerage system is included in **Appendix 1**.

If Council is to deliver sustainable best value from these assets, it is critical that the new sewage treatment plant design is optimised (considering capital and operating costs, ease of operation) and likewise that renewal of mains is optimised (relining pipes where there are recurring problems to reduce maintenance costs and impacts of sewage overflows on the environment and community).

This AMP has been prepared to satisfy the requirements of the NSW Government’s *Best Practice Management of Water and Sewerage Framework*, outlined below.

1.1 Context and Purpose of this AMP

Council has adopted a systematic approach to prioritising its limited resources across all its activities via the *Integrated Planning and Reporting (IPR) Framework*, established under the NSW Local Government Act.

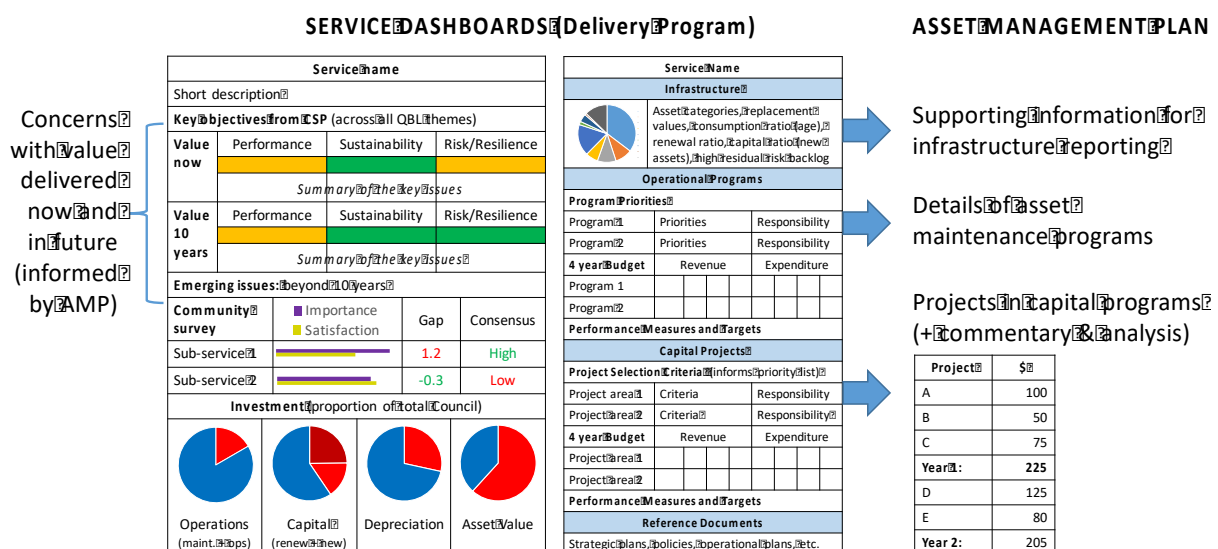
Service Dashboards (part of Council’s Delivery Program) present a ‘big picture summary’ highlighting issues of concern with the value Council can provide now and in future with its available resources.

The second page of the Dashboards summarises the infrastructure supporting the service and then identifies the main program areas Council undertakes to provide this value to the community, including budgets (aligned with the Long Term Financial Plan) and performance measures for each (i.e. the adopted Performance Targets as well as measures of other activities).

This AMP then provides the detail behind each of the programs, which are classified as either:

- ‘operational’ (ongoing activities like cleaning, maintenance and repairs, mowing grass) or
- ‘capital’ (one-off activities to build new, upgraded or renewed assets).

This more detailed analysis in the AMP informs the ‘big picture summary’ of key concerns on page 1 of the Dashboards as well as supporting information relating to infrastructure asset reporting.



In summary, the primary purpose of this AMP is to support Council’s decision-making about its activities relating to sewerage assets by clarifying the current situation and documenting its future programs (actions in the Delivery Program and Operational Plan) in a simple manner.

Council’s overall objective is to deliver *sustainable best value* (as set out in the Policy of that name).

1.2 Best Practice Management of Water Supply and Sewerage Framework

The *NSW Best Practice Management for Water Supply and Sewerage (BPM) Framework* is the key driver for reform of planning and management and for continuing performance improvement for local water utilities. It is also a pre-requisite for access to some grant funding programs.

The peak planning documents are the 30-year *Integrated Water Cycle Management (IWCM) Strategy* and *Strategic Business Plans (SBP) for Water Supply and Sewerage*. These are produced on an 8-year cycle 4 years apart, with the latest document taking precedence.

Given that the IWCM Strategy is supposed to consider all urban water issues (water supply, sewerage and stormwater) and Council is only responsible for sewerage and stormwater there is a need to coordinate with other entities regarding preparation of the IWCM Strategy.

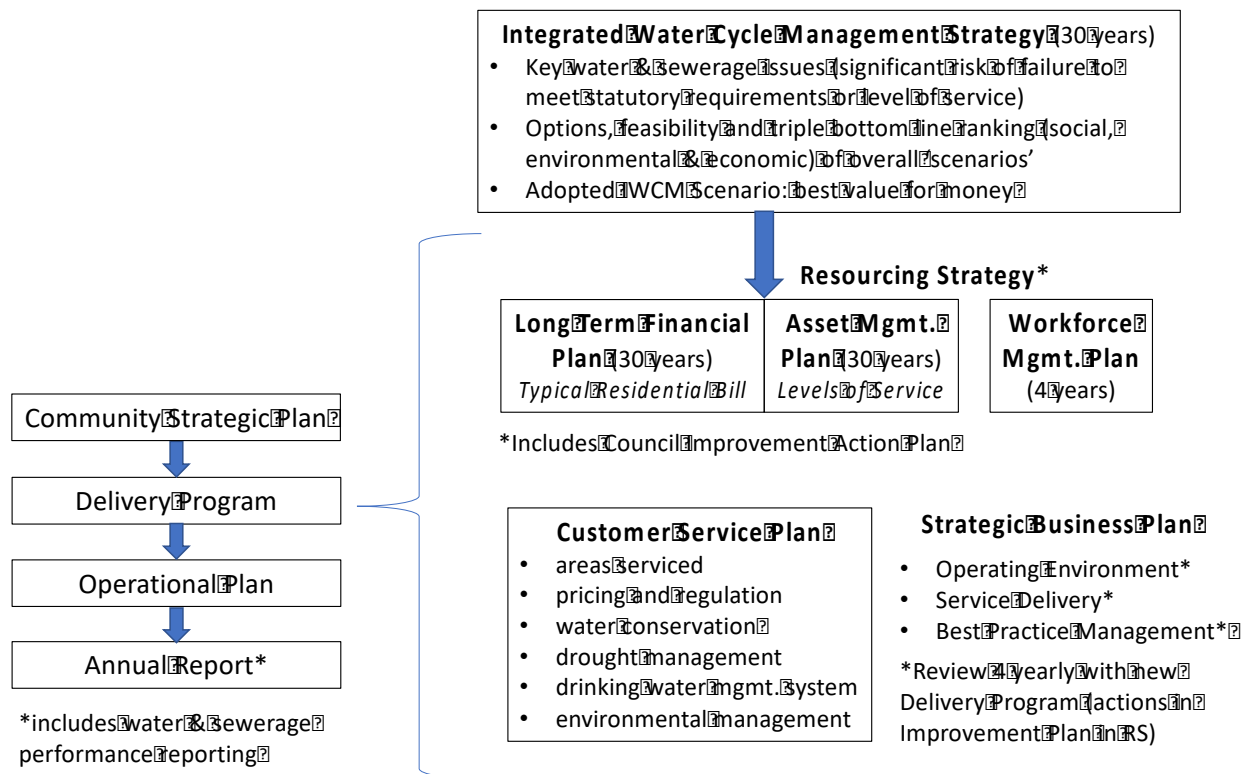
Central Tablelands Water County Council (an entity part owned by Weddin, Blaney and Cabonne Shire Councils) supplies water to Grenfell, Quandialla and Bimbi. Cowra Shire Council supplies water to Greenthorpe and Bumbaldry.

ACTION 4.2 in the Improvement Plan in the Resourcing Strategy is:

Liaise with Central Tablelands Water (and potentially Cowra Shire Council) about the preparation of an Integrated Water Cycle Management Strategy.

Both the IWCM Strategy and SBP must include a 30-year Financial Plan or Long Term Financial Plan (FP) and 30-year Total Asset Management Plan (AMP),¹ which must be updated annually.²

Council has adopted a new approach to compliance with the BPM Framework in the context of the *Integrated Planning and Reporting Framework* (section 1.1). The key difference is that the FP and AMP are distinct, stand-alone documents in the Resourcing Strategy, as shown below:



¹ As per *Checklists for the IWCM Strategy and SBP*, NSW Office of Water (July 2014).

² As per Appendix H 'Streamlining of the NSW best-practice management framework' in *2015-16 NSW Water Supply and Sewerage Performance Monitoring Report* (May 2017), NSW Office of Water.

This approach is intended to simplify the documentation, ensuring strategies driving activities in Council's sewerage business (in the Delivery Program) are clear and up-to-date. It also integrates whole-of-council issues like workforce management and community engagement.

Another key reason for this approach is that Council has recognised the need to focus on 'key issues' covered by the IWCM Strategy in the 8 years between formal revisions. Current issues and proposed solutions, which inform actions in Council's Operational Plan, are summarised in **Appendix 2**.

The key concept to note is the framework above is that the *Typical Residential Bill* in the FP is what generates revenues to fund *activities* in the AMP to deliver *Levels of Service* (LoS) adopted by Council. **Appendix 3** includes Council's adopted Performance Targets, or 'LoS' for sewerage.

A key part of the BPM Framework is performance reporting. Council's latest results from the *NSW Water and Sewerage Performance Monitoring Report* is in **Appendix 4**. This shows that Council is currently 78% compliant. Issues identified include:

- Strategic Business Plan in place, but over 4 years old
- Lack of appropriate non-residential charges for sewerage
- Lack of appropriate trade waste fees and charges.

ACTION 4.1 in the Improvement Plan in the Resourcing Strategy is:

Review Strategic Business Plan, Asset Management Plan and Financial Plan for Sewerage Business in light of Grenfell Sewage Treatment Plant being grant funded (explore potential to ramp up funding for mains relining, rehabilitating manholes and investigate sewer to villages)

ACTION 4.3 in the Improvement Plan in the Resourcing Strategy is:

Develop Trade Waste Policy, establish agreements (best practice management requirement)

A table summarising key elements of an IWCM Strategy and SBP, and requirements under the BPM Framework, are included in **Appendix 5**. This includes details of how Council's simplified documentation satisfies these requirements.

A key part of the SBP is the *Customer Service Plan for Sewerage*. This is included in **Appendix 6**. While the BPM Framework requires that this only needs to be updated as part of the SBP once every 8 years, Council has recognised the need to review this with each Operational Plan (along with the rest of the AMP) and completely revise it every 4 years along with the Delivery Program.

2. Operational Programs (Maintenance)

Operational programs in the *Service Dashboard for Sewerage and Stormwater* (the Delivery Program) have two key elements:³

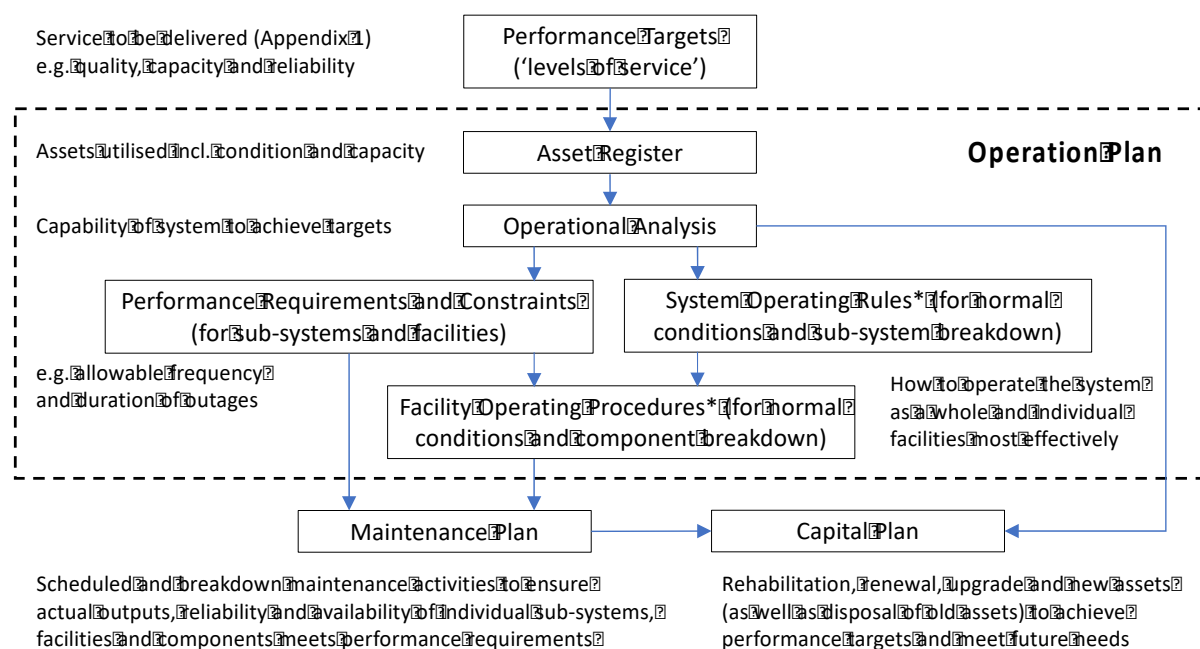
- *Operation* – operating the sewerage system (treatment) to ensure that Council’s adopted performance targets (Appendix 1) are achieved at the minimum long-term cost, and that the impact of any breakdowns or outages is minimised
- *Maintenance* – maintaining individual sub-systems, facilities and components to ensure the actual outputs, reliability and availability (as specified in the Operations Plan) are achieved in the most cost-effective manner

These discussed in the following sections, which echo the Best Practice Management Guidelines.

A summary of current and projected operational costs associated with sewerage is in section 7.

2.1 Operation Plan

The figure below shows the key elements of the Operation Plan and how this relates to other elements of this Asset Management Plan.



*includes due diligence requirements under NSW Protection of the Environment Operations Act, 1997

2.1.1 Asset Register

The foundation of the Operations Plan is the Asset Register. This records attributes of all infrastructure assets in the sewerage system, including the current condition and capacity.

Council has recognised the need to improve its asset register (and keep it up-to-date in future) in order to better understand current performance constraints in the network and also to improve both scheduled and breakdown maintenance programs (section 2.2).

A key step in this is adding utilities including the sewerage system to Council’s mapping system.

Council also needs to undertake CCTV inspection of mains and inspection of manholes to identify and prioritise sections for renewal / relining (section 3.2).

³ The *Code of Accounting Practice* prescribes infrastructure reporting requirements (Special Schedule 7) in the opposite way: ‘operations’ are part of ‘maintenance’, though many operations aren’t actually maintenance.

ACTION 7.7 in the Improvement Plan in the Resourcing Strategy is:

Add utilities to Council's mapping layer, undertake CCTV inspections of mains and inspection of manholes to identify and prioritise sections for renewal / relining

2.1.2 Operational Analysis + Performance Requirements and Constraints

An Operational Analysis is in effect a complete investigation of the adequacy of Council's sewerage system to meet present and future needs. It determines whether the system is capable of economically meeting Council's performance targets.

In addition to 'fine tuning' operations, the Operational Analysis provides essential inputs to the maintenance (section 2.2) and capital works plans (section 3) by determining performance requirements and constraints (outputs, reliability and availability) for the individual sub-systems and facilities making up the sewerage system.

Where the existing system is inadequate, or where assets are found to be approaching capacity or reaching the end of their economic life, the output will include a capital works program.

The two key capability and performance issues with the current system are:

- the capability of the sewage treatment plant which is meeting current licence conditions, but produces effluent to lower quality than more modern plants (better effluent quality is highly desirable given it is reused) – its renewal is being planned at present (section 3.1) and
- the condition of the older parts of the reticulation, which is a problem both due to the number of pipe blockages (chokes), but also due to the volume of infiltration to the system: wet weather flows at the sewage treatment plant are 8-10 times dry weather flows (which means that the plant has to treat far more sewage – this costs extra and also reduces the effectiveness of the treatment system, although the quality of effluent is still within guidelines – often due to the effects of dilution as well as treatment) – increasing investment in relining pipes as well as rehabilitation of manholes is discussed in section 3.2.

Another reason for the high wet weather flows is illegal connections (of stormwater to the sewerage system) and other issues with services such as low gully traps that let in surface water. Council is undertaking a program of smoke testing and other actions to address this.

2.1.3 System Operating Rules + Facility Operating Procedures

System Operating Rules set out the most effective way the sewerage system as a whole is to be operated under normal conditions and in the event of a breakdown. The aim is to achieve Council's performance targets at the minimum long-term cost.

Facility Operating Procedures subsequently set out the way individual facilities (particularly the sewage treatment plant) are to be operated in the context of the system operating rules, again under normal conditions and in the event of a component breakdown.

Council has undertaken limited development of such documentation in the past, however the importance of such documentation is acknowledged as a fundamental risk management strategy, particularly given issues with attracting and retaining appropriately qualified and experienced staff.

Facility operating procedures and appropriate staff training will be specified as an essential deliverable under the contract for the new treatment plant.

2.1.4 Due Diligence, Licensing and Reporting under PoEO Act

The NSW Protection of the Environment Operations Act 1997 (POEO) provides substantial liability in the event of environmental harm (section 119). Due Diligence should be incorporated in the Operation Plan since it is one of the few defences available to both individuals and corporations under the Act.

Due Diligence implies that efforts should be made to anticipate hazards which may harm the environment and take all feasible steps to prevent, control and mitigate the potential of their occurrence.

The sewage treatment plant is required to have Environmental Protection Licences (EPL) which is administered by the NSW Environmental Protection Authority (EPA) under the Protection of the Environment Operations Act 1997. An EPL allows a business to operate as long as it adheres to certain conditions which are stipulated in each licence. The EPL number for the plant is 1732.

Section 153A of the Protection of the Environment Operations Act 1997 requires a licence holder to prepare a Pollution Incident Response Management Plans (PIRMP) for this site, which Council has done. This is available on Council's website, although it is due for review. A new plan will be prepared as part of the construction of the new plant.

It is also a legislative requirement that water quality and volumetric monitoring data is published for these sites. Water quality data is available on Council's website (although the latest results need to be added) and volumetric data is reported regularly in Council business papers.

2.1.5 Trade Waste

Trade waste (food solids as well as grease and oils) can cause blockages in the sewerage reticulation (pipes) and create problems with treatment processes.

Managing trade waste increases the costs of the sewerage system for all users, and so trade waste charges are an appropriate way to address this. They are also a requirement of the *Best Practice Framework* (section 1.2).

While Council has introduced trade waste charges and most businesses producing trade waste (take aways, restaurants, etc.) have grease traps installed to minimise the amount discharged to the sewer, there is currently no Trade Waste Policy or agreements in place. These are also a requirement of the *Best Practice Framework*, and it is important that Council address this.

ACTION 4.3 in the Improvement Plan in the Resourcing Strategy is:

Develop Trade Waste Policy, establish agreements (best practice management requirement)

2.2 Maintenance Plan

The purpose of the Maintenance Plan is to ensure that the actual outputs, reliability and availability of the individual sub-systems, facilities and components as specified in the Operation Plan are achieved in the most cost-effective manner.

Maintenance is generally planned on either a scheduled or breakdown basis, discussed below.

2.2.1 Scheduled Maintenance

Scheduled (also known as proactive, planned or preventative) maintenance helps avoid unexpected failures. It is used for critical items where a breakdown would be costly and would cause significant interruptions to the sewerage service e.g. mechanical and electrical equipment at the sewage treatment plant (pumps and motors in particular) must run reliably at all times as there is limited capacity to hold flows before there is an overflow to the environment.

Scheduled maintenance is either fixed-time or condition-based.

Fixed-time maintenance is undertaken at pre-determined intervals in accordance with technical manuals, specifications or manufacturer recommendations (e.g. a car serviced every 10,000km).

Condition-based maintenance is informed by condition inspections and assessments, with maintenance tasks being initiated once the condition of a component reaches a pre-defined trigger point (e.g. topping up oil in a car when the level gets below a certain level on the gauge).

Condition-based maintenance may be as simple as painting something before it begins to rust, or as complex as replacing bearings in a motor when a vibration analysis indicates substantial

deterioration. It also helps to generate data about depreciation rates, which informs prediction of service life of components and the optimum time for refurbishment or replacement.

Currently, there are only one pump required to operate the sewage treatment plant, and a standby is available. The pumps are maintained as required, so current practices are adequate.

Provision of maintenance schedules will be an important deliverable for the contract for building the new sewage treatment plant, which is far more sophisticated in terms of mechanical and electrical equipment.

2.2.2 Breakdown Maintenance

Breakdown (also known as reactive, unplanned or corrective) maintenance should be reserved for less critical components, for situations where scheduled maintenance is not possible or where remedial action can be taken quickly with minimal disruption to services.

Council has a backup pump for the sewage treatment plant, as well as a backup generator in the event of a power outage. Spares are generally available for other items, so breakdowns are well covered.

In addition to breakdown maintenance at the sewage treatment plant, the other key area is in clearing of chokes in sewerage pipes. It is notable that according to performance monitoring data from NSW Government in 2014/15 (the latest available data), Weddin Shire Council had the second highest incidence of sewer chokes (blockages) in NSW per 100km of main.⁴

The total blockages (around 209 per 100km) was about double that reported in the 2013 Strategic Business Plan (30-40 in total or about 95-120 per 100km of mains).

This needs to be investigated further in terms of the accuracy of reporting, but highlights a potential need for further investment in relining (section 3.2) as this level of breakdowns is of concern.

2.3 Performance Reporting

Council reports extensively on the operational performance of its sewerage scheme in annual returns to NSW Office of Water. A summary of the latest performance report is provided in Appendix 4. Notable measures include:

- Number of chokes (blockages) per km of main
- Percentage of treated effluent that was compliant with licence conditions
- Operating cost per property
- Administration and management cost
- Economic real rate of return

Council also reports on the 'backlog' and 'maintenance' figures for its infrastructure as discussed in section 4.1.

⁴ https://www.industry.nsw.gov.au/_data/assets/pdf_file/0020/147440/2015-16-nsw-water-supply-and-sewerage-performance-monitoring-report.pdf (page 52)

3. Capital Works Programs (Renew/Upgrade/New Assets + Disposals)

The *Service Dashboard for Sewerage and Stormwater* summarises Council's main capital works programs relating to the sewerage service. There are really only two main ones being:

- sewage treatment
- sewerage mains

This AMP provides the detail behind these capital programs including a discussion of the current infrastructure, issues of concern, considerations for future budgets and performance measures.

It is important to recognise that the level of detail in this framework will improve over time.

ACTION 9.5 in the Improvement Plan in the Resourcing Strategy is:

Annual review of capital works programs including priority projects, budgets, funding to achieve performance targets for renewal, priorities for upgraded/new assets, longer term outlook (include in up-to-date Asset Management Plan).

3.1 Grenfell Sewage Treatment Plant

The existing sewage treatment plant was constructed in 1940. It includes primary, secondary and tertiary treatment of sewage and is able to meet current licence conditions, apart from occasional non-compliance due to the volume of wet-weather flows (note: quality is not an issue).

While Council's current plans (in the 2013 Strategic Business Plan) had proposed to fund the renewal of the plant in 2029 for \$5.7M (in 2013 dollars) by cash reserves and a \$2M loan, a grant from Investment NSW for \$8.8M (98% funding on current estimates for the plant) means that this project is able to be brought forward.

The new plant will have better effluent quality, which is important given the level of reuse, and will also have increased capacity. Detailed planning is currently being undertaken, with tenders for construction expected to be sought in 2019/20.

It is important that Council now review its financial plan (in the 2013 Strategic Business Plan) to take account of the grant and the increased operating expenses that will come with the new plant (this is ACTION 4.1 in the Improvement Plan). Of particular note is the opportunity to increase funding for some of the other priorities identified below.

There are no major works required to keep the old plant operational until the new one is built.

A key issue with the existing plant, which will remain an issue with the new one, is the level of infiltration in the system (highlighted in section 2.1.2). This needs to be addressed via increased investment in pipe relining (section 3.2) and addressing problems with services by identifying illegal connections of stormwater to the sewerage system (via smoke testing) and other problems such as low gully traps that drain surface water..

3.2 Grenfell Sewerage Reticulation

All of Grenfell's sewerage system is gravity pipes, i.e. there are no pump stations with rising mains.

The majority (27.5 of the 33km) of sewerage reticulation (pipes and manholes) was built in 1942. A further 2.5km was built in 1969.

Further extensions in 1998 and 2004 of around 3km service Henry Lawson Estate.

The older pipe is vitreous clay, which is generally regarded to have a service life of 90 years. This means the useful life of these pipes will expire in around 2032 (although the actual useful service life of individual pipes will be shorter or longer than this average).

The actual performance of the network confirms this estimate, with the incidence of sewer chokes (blockages due to tree root intrusion, broken or dropped pipes) rising and Weddin Shire Council reporting the second highest number of sewer blockages in the state (refer section 2.2.2).

Council has recognised the issue and begun investing in relining of these pipes some years ago, with around 5km of pipes being relined since 2009. Council's 2018/19 budget includes \$200,000 for this work although \$100,000 of this is carried over as it was not spent last year.

The current financial plan (in the 2013 Strategic Business Plan) allocates \$100,000 p.a. (in 2013 dollars) to relining, but this may not be sufficient given the extent of problems and the fact that Council has not spent this full amount in recent years.

Relining works are procured under a joint contract arranged by CENTROC, which means the rates obtained are quite competitive. Depending on the extent of problems, the need for additional work (e.g. service junctions) and size of the pipe \$200,000 will cover relining of 1-1.5km of pipe.

Council also needs to invest in rehabilitation of manholes (access chambers) as many of these are in poor condition. These are another source of infiltration in wet weather. It is in Council's interest to seek to reduce the additional inflow as this water must then pass through the treatment plant (adding to operational expenses like power).

Given the high number of chokes, the opportunity presented by the sewage treatment plant being funded by a grant and the growing need for relining of the old parts of the reticulation network, Council has recognised the need to review funding allocation to relining. This is part of ACTION 4.1 in the Improvement Plan in the Resourcing Strategy (referenced in section 1.2).

Based on the asset register, basically all 12 and 15" pipes have been CCTV inspected although not all 9" pipes have been and very few 6" pipes that haven't then been relined. CCTV inspections need to be prioritised based on pipe size as well as history of problems, proximity to waterways, etc.

There is also provision in the financial plan in the 2013 Strategic Business Plan for \$10,000 every 2 years for sewer main extensions. This should be reviewed.

3.3 Grenfell Effluent Reuse

Currently, there is an effluent reuse system in operation that is used to irrigate several parks and Henry Lawson Oval. The system is old and both pipes and pumps need replacing within the next 5 years.

Improving the quality of this effluent is one of the drivers of replacing the sewage treatment plant (section 3.1). The new plant will include construction of a new effluent reuse system.

3.4 Sewerage Services for Villages

All villages are on septic tanks – which have a number of issues associated with failure of the onsite system, egress of effluent off site and maintenance of the systems.

The 2013 Strategic Business Plan for Sewerage Services included provision to provide sewerage services to Quandialla (population 320) and Greenethorpe (population 220) in 2030-31 at a cost of \$200,000 each – although this is considered insufficient to cover these projects. Carabagal (population 214) also needs to be considered.

The delay in commencing these projects was noted as being primarily due to the need to prioritise funding to other issues such as the treatment plant, but there may be an opportunity to bring this forward (which should be considered in the context of action 4.1 above), particularly if there are grants available to help fund such works – which there are at the moment. It may be that Council simply scopes up the work so it is 'shovel ready' for a grant at this stage.

4. Risk Management

As discussed in section 4.3 of the Resourcing Strategy, risk is one of Council’s primary considerations when it is formulating its activities in the Delivery Program so as to deliver ‘sustainable best value’.

The table below summarises key risks and treatment plans Council has in place to manage these.

Risk	Treatment Method
Release of raw sewage to the environment	Pollution incident response management plan developed for Grenfell sewage treatment plant. Chokes cleared, pipes relined to reduce blockages in future.
Exposure of users of parks and reserves to pathogens from effluent reuse scheme	Effluent quality testing, soil testing on parks and fields
Lack of qualified and experienced Treatment Plant Operators	Training program in place, backup available within the organisation and in neighbouring councils

In terms of identifying ‘critical assets’ (assets having the potential to significantly impact on the organisation’s objectives), the key ones are the sewage treatment plant and larger trunk mains carrying the bulk of flows in the town.

The scheduled maintenance program that is proposed to be developed for the new plant (section 2.2.1) will be informed by asset criticality so vital pumps, motors, etc. will be given more focus commensurate with the higher risk. Current maintenance is considered adequate.

CCTV inspections have been undertaken on larger size pipes as a priority to identify the need for relining works here first (all 12 and 15” pipes, although not all 9” pipes have yet been inspected – this has been recognised as a priority).

4.1 Reporting on Infrastructure Renewal Backlog and ‘Required’ Maintenance

As discussed in section 4.4 of the Resourcing Strategy, Council has adopted a risk-based approach to reporting on infrastructure maintenance and renewal backlog in Special Schedule 7 of Council’s Annual Financial Statements (these are also key Fit for the Future measures).

It is important to note that this does not mean that Council is therefore providing ‘sustainable best value’, only that it is adequately managing risks associated with the network. Decisions about the activities that will deliver sustainable best value are made in the context of sections 2 and 3, where Council prioritises its resources to particular program areas.

The following assets are identified as having a higher level of risk that requires renewal to resolve. Note that only those requiring ‘immediate action’ will be reported as backlog (the other issues will help inform decisions about funding in section 3).

Asset at Risk	What Can Happen?	Risk Rating	Unfunded Risk (<i>Renewal</i>) Treatment	Cost to Treat (\$)	Residual Risk Rating
None identified					

The following maintenance programs have been identified as being under-funded to the extent that there may, potentially, be maintenance defects with a higher level of risk identified but insufficient funds to address the issue:

Asset at Risk	What Can Happen?	Risk Rating	Unfunded Risk (Maintenance) Treatment	Cost to Treat (\$)	Residual Risk Rating
None identified					

A risk-based review of renewal and maintenance of assets on this basis will be undertaken as at 30 June each year. Where there were insufficient funds to manage risks to an acceptable level – where there were risks assessed as requiring immediate action (rather than programming for action in future) under Council’s *Risk Management Policy and Framework* – the funding shortfall will be reported in Special Schedule 7 in relation to the ‘cost to bring to satisfactory’ (infrastructure renewal backlog) or ‘required’ (over and above ‘actual’) maintenance as applicable.

ACTION 9.4 in the Improvement Plan in the Resourcing Strategy is:

Annual review of risks associated with maintenance and renewal activities to inform ‘required maintenance’ and ‘bring to satisfactory’ reporting in Special Schedule 7; other risks (e.g. need for upgraded / new assets) also identified; AMP updated if required.

In addition to those requirements, Council will also consider higher-risk issues associated with the need to upgrade or construct new assets (note that these are specifically excluded from the ‘backlog’ reporting). The following have been identified at this time:

Asset at Risk	What Can Happen?	Risk Rating	Unfunded Upgrade or New Asset Treatment	Cost to Treat (\$)	Residual Risk Rating
None identified					

5. Asset Register and Accounting

As discussed in section 4.1 of the Resourcing Strategy, if Council's operating revenues are sufficient to cover the expenses associated with its 'day to day' operating activities (discussed in section 2 of this AMP) and its depreciation expenses then it is very likely to be financially sustainable.

This is because depreciation is a measure of the annualised cost of owning an asset, calculated by dividing its replacement cost by its service life.

Council will be able to afford to renew its *existing* assets over the long term if it is projecting ongoing operating surpluses (i.e. operating expenses, including depreciation, exceed revenues), even if it needs to borrow money to cover a shortfall in cash at some stage over the long term.

Council will also be able to afford any *new or upgraded* assets if, when the depreciation of these assets is added to operating expenses currently projected in the Long Term Financial Plan (LTFP), Council still has an ongoing surplus.

All of this highlights the importance of an accurate *asset register*, which not only identifies all Council assets, but their value and current condition. This information is equally important to effectively plan and deliver operational and capital programs.

It also highlights the importance of accurate *estimates for depreciation*, and for aligning information in the LTFP and AMPs (e.g. if pipes will only last 70 years but Council is depreciating them over 90 years in the LTFP, there will be a shortfall in funds).

Once works (in the AMP) are actually carried out, it is vital that the asset register is updated (e.g. to record that a new asset was built). The costs of the work also need to be captured (this will help refine estimates for replacement cost of similar assets). There is also an opportunity to review the actual service life of the asset that was renewed or replaced (to help refine depreciation estimates).

The functionality of Council's corporate finance system is a barrier to improvements here.

ACTION 7.1 in the Improvement Plan in the Resourcing Strategy is:

Capture asset renewals, disposals and additions from capital works program; review assumptions (valuation/service life) in this context and any other available information (inspections, floods, etc.)

ACTION 7.2 in the Improvement Plan in the Resourcing Strategy is:

Implement works order system to capture capital works (details of assets created/disposed, costs) – after GL restructure (action 1.3)

The NSW Office of Water publishes the *NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets* (which is updated annually). Council also participates in CENTROC programs for joint valuation of sewerage infrastructure. Further, the main capital costs that inform valuations is pipe relining, and this is well understood (being a contract rate).

The table below summarises current condition data and proposed collection of future data. Note that the next full revaluation of 'other structures' and 'depreciable land improvements' (which covers the majority of assets in this AMP) is due in 2021.

Asset Category	Current Condition Data (method and date, report ref.)	Confidence level in data	Next Proposed Data Collection (method and date, report ref.)
Sewerage treatment	Australis Asset Advisory, 2017	Medium	2022 (by external valuer, for revaluation)
Sewerage Reticulation	In-house, age based, 2017	Medium	2022 (in house, for revaluation)

6. Asset Hierarchy

An asset hierarchy is an important input to prioritisation of resources for maintenance, renewal and upgrades / new assets in some asset classes (e.g. roads) but is less useful in relation to sewerage assets. Effectively, the criticality of sewerage reticulation is a function of the number of properties served and proximity to sensitive areas (e.g. water bodies) if there is an overflow.

7. Financial Plan

As discussed in section 3 (ACTION 4.1), the current financial plan in the 2013 Strategic Business Plan needs review in the context of the grant for the replacement of the Grenfell Sewage Treatment Plant and potential need to fund other actions such as mains relining, manhole rehabilitation and provision of sewerage to the villages. Other assumptions in the plan such as operational costs for the new plant and the allowance for sewer main extensions should also be reviewed.

Figures in the table below summarise the program budgets for operations (section 2) and capital works (section 3) relevant to sewerage assets. This is taken from the *Service Dashboard for Sewerage and Stormwater* which reflects Council's current budget.

OPERATIONAL PROGRAMS								
Program Area	Revenue				Expenditure (excl. Depreciation)			
	2018/19	2019/20	2020/21	2021/22	2018/19	2019/20	2020/21	2021/22
Sewerage Rates & Charges	41,375							
Sewerage Admin/Mgmt.					52,808			
Sewerage Mains					6,000			
Sewerage Treatment					06,000			
Sewerage Rates, Staff Costs					1,730			
TOTAL SEWERAGE	41,375				26,538			
CAPITAL PROGRAMS								
Project Area	Revenue				Expenditure			
	2018/19	2019/20	2020/21	2021/22	2018/19	2019/20	2020/21	2021/22
Grenfell Sewerage Treat. Plant	509,000				520,000			
Sewerage Pipes					250,000			
Better Practice Policies					10,000			
TOTAL SEWERAGE	509,000	0	0	0	780,000	0	0	0

Once the financial plan for sewerage services is reviewed (as per action 4.1), this should be included in this document.

8. Standards, Specifications and Reference Documents

Various documents relating to the NSW Best Practice Management of Water and Sewerage Framework is available at:

<https://www.industry.nsw.gov.au/water/water-utilities/best-practice-mgmt>

Pollution Incident Response Management Plan and Effluent Quality Data for Weddin STP:

<http://www.weddin.nsw.gov.au/environmental-services/sewage-treatment-plant>

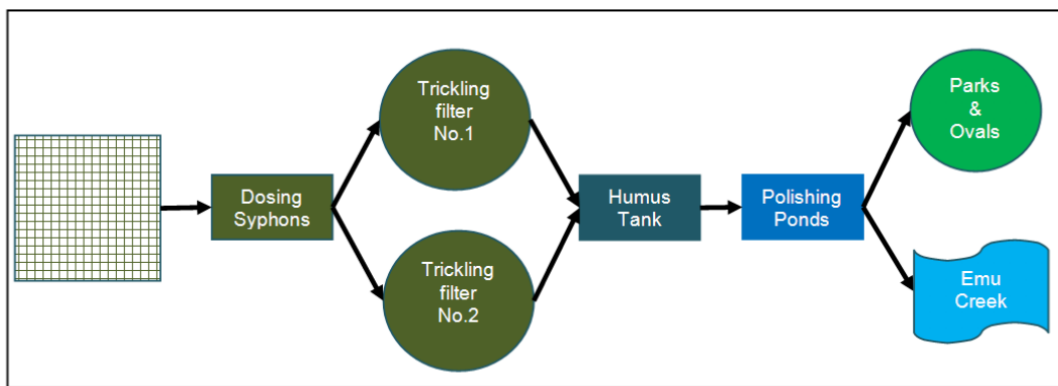
Appendix 1 – Description of Existing Sewerage System

Sewage in Grenfell is collected via 33 km of gravity sewer reticulation and transferred (without pumps) to the Grenfell Sewage Treatment Plant (STP), which was constructed in 1940. Storm overflows from the reticulation system discharge into Emu Creek.

The Grenfell STP has a capacity of 2500 EP and provides primary, secondary and tertiary treatment. Based on Council’s annual returns, the Grenfell STP is currently meeting discharge quality requirements. Treated effluent is discharged to Emu Creek and the remainder is reused for the irrigation of several parks and recreational areas.

Figure from 2013 Strategic Business Plan (reticulation is shown on the left):

Figure 5 – Components of Grenfell Sewerage Scheme



A map of the reticulation network is shown on the following page.



Appendix 2 – Key IWCM Issues Related to Sewerage

Under the *Best Practice Management (BPM) of Water Supply and Sewerage Framework*, a ‘key issue’ is one where Council is unable to meet its performance targets or to meet statutory requirements and/or to increase capacity to address the needs of new development.

While the BPM Framework only requires those key issues that have not been dealt with in the Integrated Water Cycle Management Strategy to be identified, the table below includes all such issues so that it is clear those issues that Council is addressing, too.

Key Issue	Details	Current Status
Condition and capability of Grenfell Sewage Treatment Plant	<p>Infrastructure is reaching the end of its useful life.</p> <p>While performance meets current licence requirements, more modern treatment processes are available to improve effluent quality, which is important as it is reused on parks and sporting grounds.</p>	<p>New STP in planning phase</p> <p>Tenders for construction are expected to be advertised by 2019/20</p>
Condition of sewerage reticulation (pipes and manholes)	<p>Most of the network was built in 1942 and is likely to be reaching the end of its useful life in the next 15 years.</p> <p>Council is reporting that it is dealing with a significant number of sewer chokes (blockages), which highlights that the pipes are in poor condition.</p> <p>Wet weather inflows to the sewage treatment plant are very high (8-10 times dry weather flow), which impacts treatment efficiency and increases costs.</p> <p>A relining program is in place, but it is perhaps not sufficient to keep pace with deterioration.</p> <p>Little investment is currently being made to address manholes in poor condition.</p>	<p>Issue identified and actions in place to investigate further, including considering the option of ramping up relining work.</p> <p>Issue of investing more in problem manholes also being investigated.</p>
Infiltration from other sources	<p>Another contributor to high wet weather inflows to sewage treatment plant.</p>	<p>Smoke testing budgeted, although it needs to continue.</p>
Sewerage services for villages	<p>The villages of Quandialla, Greenethorpe and Carabagal are all serviced by septic tanks.</p> <p>Problems include failure of onsite systems, egress of effluent off site and maintenance of the systems.</p>	<p>There is a need to undertake further investigation of design issues and costs of these works to enable them to be considered in financial plans.</p> <p>Ideally, Council would have the designs ‘shovel ready’ for a grant.</p>

As noted in section 1, Council needs to coordinate with Central Tablelands Water and Cowra Shire Council regarding the broader IWCM Strategy.

Appendix 3 – Adopted Levels of Service (Performance Targets)

The levels of service below were adopted in Council’s 2013 Strategic Business Plan (page ix).

As discussed in section 3.2, Council is currently finding a significantly higher number of chokes (main blockages and collapses, ‘category 3 system failures’ below).

These performance targets need to be reviewed in the context of actions in this AMP.

DESCRIPTION	UNIT	LEVEL OF SERVICE	
		Current	Future
SERVICE AVAILABILITY			
Extent of area serviced	% Service area	All Grenfell urban area and Grenfell Club	As per existing, Quandialla and Greenethorpe
SYSTEM FAILURES (OVERFLOWS TO THE ENVIRONMENT)			
Category One			
Failure due to rainfall and deficient capacity [@]	No./Year	1 every 3 years	0
Category Two			
Failure due to pump or other breakdown including power failure	No./100 km/Year	N/A	N/A
Category Three			
Failure due to main blockages and collapses [@]	No./Year	30 – 40	30 – 40
CUSTOMER FEEDBACK/ COMPLAINTS[@]			
Complaints received			
	No./ 1000 connections/Year		
Service complaints		< 52	< 12
Odour Complaints			
- Treatment works (outside designated buffer zone)		< 1	0
- Pumping Stations		N/A	N/A
- Reticulation system		< 1	0
Billing and account complaints		2	0
Response Times for Feedback/ Complaints			
% calls answered by an operator within 30 seconds ^{@*}	%	100	100
General complaints and inquiries:			
- Written Complaints*	Working Days	5	4
- Personal/ oral complaints*	Working Days	1	1
ENVIRONMENT[@]			
Recycle/ reuse of wastewater (dry weather conditions)	% total volume of sewage treated	17%	20
Effluent discharge compliance with licence limits	% of samples/year	100% (2 of 2)	100% (2 of 2)
Net greenhouse gas emissions [@]	Tonnes CO2 equivalent/ year	58	< 60

@ - NWI Performance Indicators

* - Times apply for 95% of incidents

Appendix 4 – Latest Performance Monitoring Report

To be included.

Appendix 5 – Compliance with Best Practice Framework

A table to be included summarising key elements of an IWCW Strategy and SBP, and requirements under the BPM Framework as well as how Council’s simplified documentation satisfies these requirements.

Appendix 6 – Customer Service Plan for Sewerage Service

Under the *Best Practice Management Framework*, the Customer Service Plan is to be included in the Strategic Business Plan for Sewerage, which means the 'current' Customer Service Plan is the one dating from 2013. As identified in this AMP, there are a number of issues needing review including:

- Council's ability to meet its adopted levels of service relating to the number of blockages / chokes (sections 2.2.2, 3.2)
- Council's approach to trade waste (refer section 2.1.5)
- Pricing for non-residential customers to comply with best practice framework (as discussed in the 2013 Strategic Business Plan)
- Actions with regards to availability of the service, i.e. sewerage for villages (section 3.4)

The status of these issues will be considered when this AMP is updated next year. Consideration will be given to adopting a new Customer Service Plan at that time.