TECHNICAL NOTE

TITLE: Pitt St Rezoning, Taree – Technical note on water and sewerage issues
PROJECT: 176364
DOC #: 234043 v1
STATUS: 95% Draft

Background

This document summarises strategic water and sewerage capacity issues relating to the rezoning of land at Pitt St, Taree.

Objectives

The objectives of this document are to:

- Identify current water and sewerage strategy
- Identify any potential shortfalls in asset capacity due to the Pitt St rezoning
- Identify potential options for resolving the shortfalls in capacity.

References

1. Ellis Karm & Associates (2003) *Taree Sewerage Scheme – Sewerage Servicing Strategy*.
2. MidCoast Water (2004) *Manning District Water Supply Scheme Strategy Report.*
3. Resource Design & Management (2000) *Taree Water Supply Augmentation – Network Analysis*.

Additional References Unpublished

1. MCW# 276644 Assessment of Cundletown, Brimbin & Pitt St sewage issues.

Site description

The rezoning proposal consists of the following major land parcels and a number of smaller land parcels which contain mainly existing single residential homes and some unit developments:

- MCW ID. 1 Lot 15 DP703272 – disused dairy farmers plant
- MCW ID. 11725 Lot 2 DP555702 – low lying & undeveloped lands
- MCW ID. 11475 Lot 1 DP804829 – 'Big Oyster' site

Current Strategy

Water Supply Strategy

The lands in the rezoning proposal are served directly by a number of existing 100mm local water mains. Generally these mains are considered inadequate for future servicing of the development and will require upgrades.

The Taree water supply reticulation is supplied by three main reservoirs – Kolodong, Irkanda and Lantana. As some of the reservoirs supply water at a higher pressure than is desirable to minimize mains breaks, the supply from Irkanda and Lantana passes through pressure reducing valves.

Kolodong Reservoir water is supplied along a 200mm/300mm water main along Muldoon St and Cowper St to the site. Lantana Reservoir water is supplied along a 600mm/525mm water main along Manning River Drive, then a 300mm water main along Bushland Drive, where the pressure is reduced for transmission into the northern Taree reticulation. Water then travels through a 250mm pipe along Bushland Drive and Gipps St to reach the site. Irkanda Reservoir water is supplied along a 375mm main, where the pressure is reduced at Black's Lane, outside of Cundletown. The water then travels along a 225mm/200mm diameter main via Cundletown along Manning River Drive.

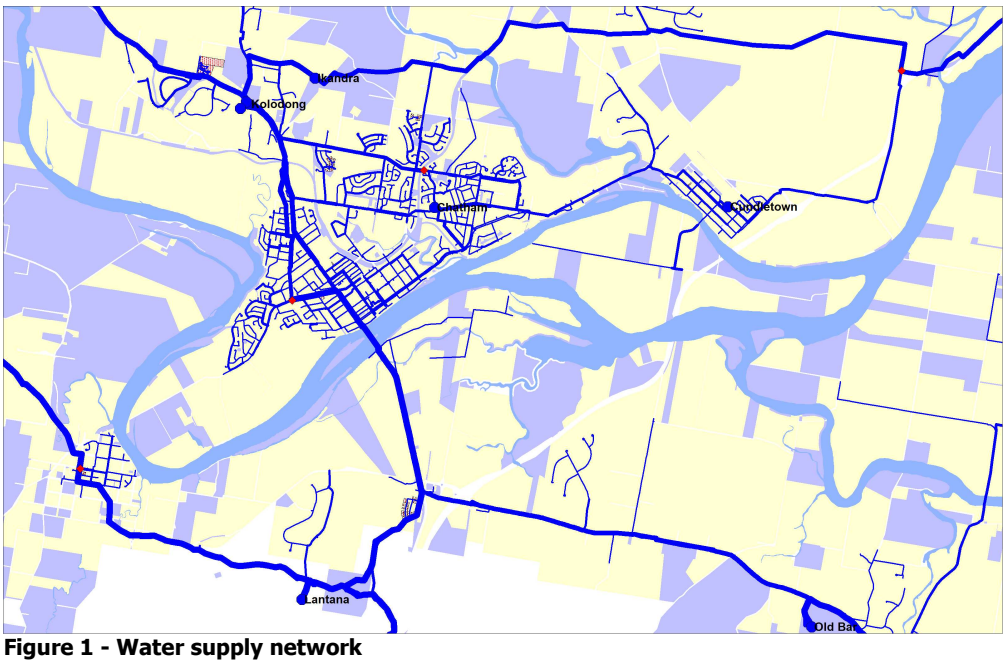

Figure 1 - Water supply network

Current strategic water supply issues

The MidCoast Water (2004) report considered major headworks such as Bootawa Dam and Water Treatment Plant (WTP), future borefield and WTP at Nabiac, and made projections for growth for 50 years and more.

However, a reticulation strategy by Resource Design & Management (2000) considered most trunk reticulation adequate under the current arrangements, apart from a recommended upgrade along Wingham Rd for the Taree CBD. This reticulation strategy did not assess growth in demand in the CBD or Pitt St precincts.

Sewerage Strategy

The rezoning proposal is partly served by a number of existing 150mm diameter gravity sewers which fall to existing Sewerage Pump Stations (SPS's) TA04 and TA24. However a significant portion of the site is not serviceable by these existing gravity sewers.

Sewage from SPS TA04 is pumped along a 250mm diameter 1028 metre long rising main discharging into a 300mm diameter concrete gravity main in the catchment of SPS TA06. The 300mm gravity main connects to a 600mm diameter gravity main, then a 750mm gravity main connecting to SPS TA06, the main pump station for Taree. From SPS TA06, the sewage is pumped via a 450mm diameter 1155 metre long rising main to Dawson River STP.

Sewage from SPS TA24 is pumped along a 100mm diameter 46 metre long rising main discharging to a 375mm diameter UPVC gravity sewer in the catchment of SPS TA11. The main bifurcates into two 300mm diameter gravity mains to reach SPS TA11. SPS TA11 pumps sewage along a 250mm diameter rising main 630 metres long into a 375mm diameter AC gravity main in the catchment of SPS TA06. This gravity main bifurcates into a 375mm UPVC and a 375mm AC gravity main, both of which connect into the 750mm diameter trunk sewer connecting to SPS TA06.

Comment [BG1]: Check on paper plans

Figure 2 - Existing sewerage layout

Current strategic sewerage issues

Ellis Karm (2003) mention the following issues in relation to the sewage transfer system:

- It was considered that SPS TA04 would have little or no additional growth or pumped flows added to this system. SPS TA04 was substantially renewed in 2006, with no increase in capacity from 103 L/s. A reduction in infiltration and inflow to the catchment of 6 L/s was assumed.
- SPS TA24 is a small pump station (design flow 7 L/s), and was not considered for additional growth or pumped flow added to its system.
- The main 750mm diameter gravity sewer draining to TA06 was considered to be operating at peak capacity due to the contributory flows from SPS's TA04, TA05 and TA11 (*Note:* TA01 can be controlled with off-line storage at the former Taree STP site). No increase in pumped flows from TA04 or TA11 were factored into the strategy, and no upgrade in the gravity mains to TA06 were considered necessary under the chosen augmentation option.
- The strategy generally recommended that an infiltration and inflow reduction program was required to reduce stormwater ingress into Taree's sewerage system. A pilot program is currently underway.

Comment [BG2]: Check against Flewie's design file for TA04.

- The Dawson STP has a nominal design capacity of 30,000 EP, and is currently loaded to approximately 22,000 EP. Demand was predicted to rise to 25,000 EP by 2036.
- The development of the Taree Wingham Effluent Management Scheme was expected to offset any need for an increase in effluent management capacity.

Discussion of options and items for consideration

Sewerage

What is the future local reticulation strategy to service the site(s)

Use of low infiltration sewer systems to reduce wet weather impacts (vacuum or 'smart' sewers)

Graywater systems or sewer mining proposals, future ownership of onsite systems (private under community title or owned & operated by MCW)

Connection and transfer of sewerage from site to STP, infrastructure upgrades required

Water supply

Demand profile to be identified including demands for fire fighting

Will local storage and local boosting be utilised?

Routes for truck supplies and source reservoir to be identified

Alternative water sources

Recycled water (from sewer mining)

Roofwater harvesting

Stormwater harvesting

Issues to be addressed – the following issues will need to be addressed in the detail design phase:

- Water supply to site at PID including fire flows
- Security of supply, dual feeds
- System for local servicing of ADWF & PWWF
- Transfer to STP
- Integrated Water Cycle Management