

To: Cornelia Wiebels
Warrumbungle Shire Council

From: Clara Laydon
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Subject: Coolah STP – Alternative Site Review

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1 Introduction

Warrumbungle Shire Council (WSC) is in the process of reviewing upgrades at the Coolah Sewage Treatment Plant (STP). Coolah STP is currently located on the eastern side of the township on Botheroo Street, Lot 1 DP604765. As shown in Figure 1-1. The land directly north (Lot 7023 DP1060900) and south (Lot 2 DP134186) is currently used for effluent irrigation.



Figure 1-1: Coolah STP Location (Spatial Services, 2018)

The Current STP location is flood prone land, however the STP treatment units are located above the 1:100 flood plain. The site is also approximately 200m to the nearest residence which is inside the generally acceptable odour buffer, however odour complaints have not been an issue for this site.

2 Alternative Site

As a result WSC requested a high level review of an alternative STP site. In consultation with WSC a site on terraced land to the south west of the township was identified. The address is 91 Neilrex Road (LOT1 DP1042784) as shown in Figure 1-2.



Figure 1-2: Alternate site, outlined in red (Spatial Services, 2018)

The land is approximately 500m from the nearest residence and is not affected by flood waters.

The lot parcel is not considered to be suitable for effluent irrigation, due to terrain and topography, however there is adjacent land that appears to be more suitable for effluent irrigation. As a result further assessment would need to be carried out to confirm the adjacent site suitability and actual irrigable land area.

3 Alternate Site Costs

Acquisition of alternative site would be required, initial foot print estimates indicate that the parcel has sufficient space for construction of a new STP complete with some pondage and sludge lagoons.

In addition to acquisition there would be integration costs to connect the new site to existing sewer system. At this high level review it is proposed that all sewage continue to be delivered to the existing STP, with a large pump-station and associated pipework installed to pump to the alternative site. In addition pipework would also be required to connect back to the current discharge location, it is assumed that this would be a gravity system. Consideration of establishing additional effluent irrigation or acquisition of neighbouring land has not been considered.

As a high level estimate the following costs have been considered:

- Site acquisition
- Planning (including approvals, survey, REF)
- Sludge pumping station
- New rising main from STP to new STP

- Effluent gravity main to existing STP and river (outfall not included)
- Site costs (including clearing, fencing, power and roads)

The cost associated with each of these requirements is presented in Table 2-1.

With these individual costs in mind, Warrumbungle Shire Council should allow for a total of \$1.5 Million (M) to \$2.0M for a new site. It is noted that this are high level estimates and further investigations would be required to refine the costs.

Table 2-1: Costs associated with acquisition and development of alternate site

Requirement	Description	Cost
Site acquisition	7ha at \$20,000/ha	~\$150K
Planning	Approvals, survey, REF	~\$250K (allowance)
Sewer Pump Station	~10 L/s, PWWF ~20 L/s	\$100K
New rising main from STP to new STP	1.4km DN110 PVC	\$200K
Effluent gravity main to existing STP and river (outfall not included)	1.8k DN150 PVC	~\$250K
Site costs	Clearing, fencing, power and roads	~\$250K
TOTAL (with 30% contingency)		\$1.6 M

Furthermore, additional annual costs are associated with running the Sewer Pump Station. This is outlined in Table 2-2. Warrumbungle Shire Council should allow for an annual cost of \$3,500 for the SPS.

Table 2-2: Annual cost associated with SPS

Requirement	Description	Annual cost
Sewer Pump Station	30m static lift from existing STP to new site (518m - 488m)	At TH of 40m, 65% eff and \$0.25/kWh
	ADWF 200kL/d, ~84ML/yr	\$3,500

4 Recommendations

In reviewing the costs associated with a new site (CAPEX \$1.5 to \$2M) WSC should review the cost against the value of gaining an additional 300m of odour buffer (~\$6,000/m) and also having the general site location being above the flood plain.

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