



DIRECTOR SHIRE SERVICES REPORT

8th February 2005

DSS2 SEWERS GREENHILL AND ALDAVILLA
FILE: S8-9 AMB

SUMMARY:

Reporting on the viability and cost of sewerage services to Greenhill and Aldavilla.



Parts of Greenhill and Aldavilla have failing septic systems. Shown at [\(Appendix A\)](#) is a map of the area detailing the problem properties. To 'fix' the septic systems there are several options but not all of them are viable. Table 1 is a summary of the options.

Table 1: Solution viability overview

Option	Viability concerns
Replace septic	Cost (\$4,000-\$7,000) to owner, land of insufficient size, soil type absorption properties unsuitable
Replace with AWTS (Aerated Wastewater Treatment System)	Cost (\$5,000-\$9,000) to owner, insufficient land area to comply with AWTS requirements for rotational effluent, proximity to creek lines prohibits
Replace with pump out	Least capital cost (\$2,500-\$4,000) to owner but continuing operational costs (\$130-\$160 per month borne by owner), possibility of group price negotiation with a pump out contractor
Traditional Sewering of the properties	Significant capital cost, uncertain grants possibility, not viable in Aldavilla, Greenhill possible but high ongoing O&M cost due to number of small to medium-sized pump stations
'Sewering' via grinder pump, collection well and pump out	Lower capital cost (approx \$11,000 per ET, Wagga City Council recovers \$2,000 from property owner), ongoing cost of electricity (approx \$20pa per property) and potentially charge 'normal' sewerage rate, uncertain grants possibility

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Consultants Cardno MBK completed a report in August 2001 that assessed the various sewage reticulation technologies for the problematic septic served areas of Aldavilla and Greenhill. The report resolved that the more applicable solution for the area was grinder pumps on the basis of environmental and socio-economic evaluations.

In October 2001, Council considered the results of the Cardno report and Council workshopped the Greenhill/Aldavilla sewerage concerns. For Greenhill/Aldavilla sewerage it was resolved to pursue grants opportunities and further investigate sewerage all properties of less than half a hectare.

There is a potential that sewerage the Greenhill and the Sherwood Road, Aldavilla areas could be eligible for grant assistance under the Country Towns Water and Sewerage Programme. However, the grants application process has now changed and the process of waiting for a grant may not be worthwhile. Before being eligible, all investigation work must be completed (on a Triple Bottom Line basis), the project must have community support and be proven feasible. Subsidy available is 50% for small towns and 20% for large towns (our size category is still being debated). All projects are then subject to a Priority system, which ranks the projects that receive funding in any one year. Priority is assessed on three aspects (public health, environmental, water supply security) and the groups having input to the prioritising are Dept of Environment and Conservation (former EPA), NSW Health, Dept of Energy Utilities and Sustainability (DEUS) and Dept of Local Government.

Any grant that was gained for either or both projects would reduce the capital costs. NSW Health has already indicated they would support this project's high ranking through the Country Towns ranking system.

Current subdivision applications near Sherwood Road, Aldavilla, and at Greenhill, have raised the priority of dealing with the failing septic systems, in order to assist the DA determination process. Investigation work being completed this budget year by Macleay Water now has an impact on the viability of these subdivision applications.

Council resolved at its January Council meeting that where conventional sewerage systems were inappropriate that Low Pressure Grinder Pump (LPGP) sewage systems be approved (DSS5 18/1/05 Ordinary Council meeting [\(Appendix B\)](#)). Cost estimates for sewerage both areas were sought from the EGL Pty Ltd (company involved with Jerseyville investigations). The cost are presented in the following parts of the report.

OPTIONS:

Greenhill

In Armidale Road, Greenhill, the small residential allotments vary in size from 600-750 square metres. These allotments are of insufficient size to be able to accommodate an on-site sewage management system that would satisfy the provisions of AS/NZS 1547:2000, On-site Domestic Wastewater Management. All of these properties have some form of overflow arrangement that discharges wastewaters from the septic systems to the ground surface on vacant land to the rear. On-site disposal of wastewater (septic or AWTs) is not a satisfactory option on these properties due to lack of area and poor soil absorbency characteristics.

The vacant land now has applications for residential construction, having been subdivided into small acreage rural residential sized blocks some years ago. To deal with the sewage overflow at these properties, the only viable alternatives are pump-out septic tanks or a sewerage service.

There are issues associated with pump-out systems, that renders them a less desirable alternative. These include the high ongoing cost to the individual residents (cost of contractor to pump out, see Table 1) and the need for Council to closely monitor each system to ensure that they are being pumped out regularly (wastes not being disposed of inappropriately).

The 2001 Cardno MBK report assessed the available solutions for the sewerage of Greenhill and resolved that grinder pumps were the most applicable. The properties were broken into two small projects of Old Ferry Rd (9 lots) and River Street/Armidale Road (33 lots).

Costs estimates were provided by EGL Pty Ltd and are summarised below.

- River St/Armidale Rd, 35 lots, \$303,650 + GST (\$8,680/ET)
- Old Ferry Rd, 9 lots, \$110,000 +GST (\$12,222/ET)

An assessment of the sewer main capacity back to the North Street Sewage Treatment Works indicated that sufficient capacity was currently available.

It is proposed that the sewerage of this portion of Greenhill follow the same process as the Jerseyville sewerage project. The next steps would be to meet with the landowners to discuss the opportunity to sewer the properties and complete detailed designs. As part of the detailed design process, each residence would be visited, to ensure that the locations for the pump chambers and control boxes are not going to interfere with anything on site and to keep the resident informed. Tenders for installation of the system would be called following the completion of the design stage.

Aldavilla

In Sherwood Road, Aldavilla, there are twenty-six (26) small residential allotments that have an average size of approximately 750 square metres. These allotments are of insufficient size to be able to accommodate an on-site sewage management system that would satisfy the provisions of Australian Standard 1547:2000, On-site Domestic Wastewater Management. Currently all of these properties have some form of overflow arrangement that discharges wastewaters from the septic systems to the ground surface on the vacant land at the rear. This wastewater then enters the creek on the vacant land, which ultimately flows into the Macleay River. On-site disposal of wastewater (septic or AWTs) is not a satisfactory option on these properties, due to the limited block size, the unsuitable soil absorbency properties (poor permeability due to medium to heavy clays) and the proximity to the creek lines.

Other portions of Aldavilla such as Hillview Drive east (66 lots) and Warne Drive (28 lots) are larger rural residential blocks (approx 2 ha). These blocks are more suitable for renewed septic systems or AWTs. Although having poor soil permeability characteristics, the size of these blocks enables sufficient disposal areas.

The viable alternatives for the owners of the Sherwood Road properties (refer to Table 1 for the full list including nonviable options) are as follows.

- a septic pump-out system; either with individual pump outs or one collective pump out tank
- connect to the sewer; traditional or hybrid grinder technology

To overcome the pump out cost concerns, it is suggested that each property deliver waste to a communal collection tank and a 'group' pump out cost be negotiated with a contractor. This would mean capital cost for the pump out system within the property, for pipework to the collection tank and the collection tank itself. Although this option has merit, at present it is at concept stage only and a more detailed feasibility assessment is required. The feasibility would be able to provide some cost estimates per property that could then be discussed with the property owners.

Unfortunately sewerage these properties by the conventional means is so costly it becomes an unviable proposition. The main reason for this cost is the distance to be pumped to the nearest part of the existing sewerage scheme (Greenhill).

There are current problems with the operation of the correctional centre's rising main to this part of the sewage network and until these are resolved additional load on this part of the system would be foolish. Macleay Water cannot currently determine if a sewage

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reticulation system back to the correctional centre's pump station is possible. It is probable that, with the more recent increase in the correctional centre's population, spare capacity no longer exists.

The options being investigated at present are listed below. The most viable option at present is the 'grinder pumps and collection tank' option (last one) due to the other option's significant capital cost or 'unknowns'. Further investigation is required to be able to fully cost and rank these options.

- reticulation system back to the correctional centre's sewage pump station (ultimately to West Kempsey STW).
- reticulation system back to a package sewage treatment plant located on a flood free property, with possible effluent reuse for agricultural purposes.
- a grinder pump sewerage system back to either of the following:
 - the Mid North Coast Correctional Centre pump station
 - a collection tank to be pumped out, or
 - the furthest extent of the existing sewerage gravity network for West Kempsey, in Armidale Road near Booroongen Djugun.

The capital cost of a package plant and reticulation tends to make this option unviable on the grounds of cost. The cost of such a scheme would be approximately \$20,000 per property.

The full cost for the grinder pump solutions is not known. The estimates and logistics for the link back to the correctional centre pump station, a collection well with pump out or a separate main back to Armidale Road are still being developed. The cost estimate from EGL Pty Ltd was \$279,200 + GST for 33 connections being \$8,460/ET. Further investigation is being carried out to assess the Sherwood Road options.

REPORT IMPLICATIONS:

▪ *Environmental*

Failing septics present an unpleasant situation and a considerable environmental concern. These properties have septic surfacing on the ground across the backyards and into the properties behind and adjacent. The stench and health hazards are occurring in their own and neighbouring properties and children are playing in these backyards and in the paddock of the properties behind. The proximity of the Sherwood Road properties to the creek line behind and the slope behind the Greenhill properties means these failing septics are finding their way into the local creeks and the Macleay River.

Sewering these properties would overcome this problem

- *Social*

Sewering these properties by whatever option is the only way to properly address the health risks to these owners and the more general community. The improvement to the amenity of these properties would be significant.

- *Economic (Financial)*

The full financial impacts for the Sherwood Road properties are currently unknown as further investigation is required.

There is a possibility that these projects may be successful in attracting grant funding for the capital work and these aspects are being furthered.

Operational and maintenance costs would be recovered through the sewerage rates.

There is a budget of \$1.2M for the 2005/6 financial year to project manage and construct sewerage for Aldavilla and Greenhill. The further investigation into the feasibility of these projects could be completed by Macleay Water's Assets section.

- *Policy or Statutory*

There are no impacts at this time

- *Director's Review*

A firm decision needs to be made to progress this issue and Council is urged to support the recommendation.

RECOMMENDATION:

1. That LPGP technology be accepted as the sewerage solution for the portions of Greenhill shown in [\(Appendix A\)](#) and that the project be furthered in the same manner as the Jerseyville sewerage project, with construction funding for the 2005/6 financial year.
2. That a further report, on the feasibility assessment of sewerage Sherwood Road, Aldavilla, (as shown in [\(Appendix A\)](#)) by grinder pump technology, be prepared.

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