11.2. Merimbula Effluent Options Study

This report outlines the process undertaken to investigate and recommend a preferred effluent management strategy for Merimbula STP, with particular focus on improving the main problem of effluent disposal.

Group Manager Infrastructure, Waste & Water

BACKGROUND

Sewage effluent is a product available to provide further benefits. The existing effluent reuse schemes for Merimbula Sewage Treatment Plant (STP), the Pambula Merimbula Golf Course and Oaklands Farm, will enable a significant proportion of effluent to be reused from year to year from the STP. Future expansion of effluent reuse opportunities are also possible, particularly with climate change, new treatment technologies and a desire to reduce the impact on the natural environment. Notwithstanding, an effluent disposal option is required of all STPs by NSW EPA, as reuse is not always available due to weather conditions or peak holiday loads exceeds irrigation and storage capacity of the reuse sites.

All large sewerage schemes require an appropriate effluent disposal system to deal with the volume of effluent unable to be reused. The Reclaimed Water Management Scheme (REMS) in the Shoalhaven for example, which links STP's and effluent produced via a pipe and storage network for use on farms and open space areas, has an ocean outfall for effluent disposal. In 2011/12, 75% of effluent produced by the REMS scheme was disposed via this outfall due to above average rainfall limiting reuse potential for the year. As a proportion of all effluent produced in the Shoalhaven, 9% was reused in 2011/12 due to the above average rainfall and 91% was disposed to the environment.

Unfortunately Merimbula STP does not have an appropriate effluent disposal system. The beach face ocean outfall no longer meets NSW environmental objectives and community expectations and the disposal of effluent to the dunal exfiltration ponds is limited by groundwater level impacts and long term sustainability issues. An alternative, more acceptable and sustainable disposal system is needed for effluent disposal from Merimbula STP.

The Merimbula Sewage Treatment Plant (STP) produces approximately 700 megalitres (ML) of effluent per year to an advanced secondary standard. Each year approximately 75-85% is disposed via the dunal exfiltration ponds situated in the back-dunes of Merimbula Bay or the ocean outfall situated opposite the STP on the beach, with the remaining 15-25% used to irrigate the golf course of the Pambula-Merimbula Golf Club (PMGC) - the lower percentage during wet years and the higher percentage during dry years.

In 2008 the Bega Valley Sewerage Program (2004-2008) constructed a pump-station and pipeline to Oaklands property on the Pambula River flats to provide effluent to a new agricultural irrigation reuse scheme approved in July 2006 under Part 5 of the *Environmental Planning and Assessment Act 1979*. The effluent storage on the Oaklands property was completed later by Council in 2012/13. The scheme commenced limited irrigation operations in February 2013.

The PMGC and Oaklands reuse schemes have the potential to increase existing 2013 STP effluent reuse to approximately 25-50% per year, once the Oaklands scheme is fully established across the full 40 hectare irrigable area and providing the landholder continues to manage effluent reuse appropriately from year to year. Future 2030 reuse potential of the PMGC and Oaklands reuse schemes is estimated to be around 33% per average rainfall year, allowing for future population growth and an associated increase in effluent produced. This would leave approximately 67%, or around 600 ML per year, for disposal in an average rainfall year.

The Bega Valley Sewerage Program (BVSP) also included the broader scope of developing an effluent management scheme for Merimbula STP inclusive of an improved effluent disposal system. The BVSP used an Options Evaluation Matrix to assess and compare scheme alternatives and select a preliminary preferred effluent management scheme.

The preliminary preferred effluent management scheme selected by the BVSP was a shallow dunal exfiltration system for effluent disposal and the new effluent reuse scheme at Oaklands. Also part of the preferred scheme was the addition of chlorine dosing at the STP and retaining the existing PMGC reuse scheme.

The ocean outfall options considered by the BVSP and not preferred, were extending the outfall 500 metres offshore or retaining the existing beach face outfall.

The preliminary preferred effluent management scheme of the BVSP was discussed with government agencies and key local stakeholder groups at workshops in September 2004. The broader local community were also informed of the preliminary preferred scheme through the distribution of newsletters, local media advertising and two community information sessions in September 2004.

The preferred effluent management scheme, inclusive of shallow dunal exfiltration disposal, was formally adopted by Council on 26 October 2004. Further investigations were undertaken thereafter on the preferred scheme as part of the EIA process.

It was soon recognised by the BVSP that there were a number of issues associated with a shallow dunal exfiltration system that would take considerable time to resolve, particularly in relation to Aboriginal archaeological heritage. A proposal to reduce the length of a dunal exfiltration system from 400 metres to 100 metres (to minimise construction impact) and retain the existing ocean outfall for peak wet weather discharges, was presented and endorsed at a Council workshop in April 2006. However in June 2006 the NSW Environment Protection Authority (EPA) indicated that for a dunal exfiltration system to be approved,

regardless of length, significant environmental investigations and justifications would be required in relation to impacts on Aboriginal cultural heritage, local groundwater and Merimbula Lake.

In May 2007 the Project Leadership Group of the BVSP resolved to exclude the dunal exfiltration trench disposal system from the BVSP due to the difficulties encountered. The scope of the program was changed and only Oaklands transfer pump and pipeline and the STP upgrades proceeded with.

In May 2008 the EPA issued a Pollution Reduction Program (U1 PRP6) in Council's Environment Protection Licence for the Merimbula Sewerage System (EPL1741) in response to the BVSP excluding an improved effluent disposal system for Merimbula STP from the program. PRP6 required Council to fully consider all reasonable and feasible disposal options, as well as the range of beneficial reuse options, and undertake a sound and adequate assessment of the options and the impacts on environmental values, sustainability, Aboriginal cultural heritage and other issues. PRP6 also required Council to consult with stakeholders to nominate a preferred strategy for the disposal and beneficial use of effluent.

In early 2009 Council called for tenders for the Merimbula Effluent Options Investigation (MEOI) project to satisfy the requirements of PRP6. In July 2009 AECOM Pty Ltd were awarded the tender from 11 tenders received. AECOM and Council have worked on the project since 2009.

In March 2011 a stakeholder Focus Group was established by Council resolution. The role of the Focus Group was to consult, guide, review and discuss the available project information and to recommend a preferred effluent management strategy to Council. Representatives of the Focus Group included persons from the Merimbula Lake Shellfish Quality Assurance Program, Pambula Lake Shellfish Quality Assurance Program, NSW Environment Protection Authority, NSW Office of Water, Southern Rivers Catchment Management Authority, Bega Valley Shire Council (Councillors and staff) and community (2 representatives). The Focus Group has met four (4) times at workshops facilitated by AECOM.

Four (4) independent investigative studies have been undertaken as part of the project:

- *Pilot Water Quality Model Final Report Merimbula Effluent Outfall* (AECOM 2010)
- *Merimbula Bay Algal Bloom Study*, Elgin Associates (2013)
- *Disposal of Effluent form Merimbula Sewage Treatment Plant by Dunal Exfiltration – Investigation and Assessment of Impacts on Groundwater Levels and Water Quality of Merimbula Lake and Bay*, Ian Grey Groundwater Consulting (2013)
- *Ecological Assessment of the Potential Impacts on Merimbula Lake from Shallow Dunal Exfiltration of Effluent*, AECOM and Elgin Associates (2013)

These studies have advanced knowledge around many of the issues relevant to the project.

At the first Focus Group workshop in May 2011 a long-list of effluent disposal and reuse options was presented, discussed and shortlisted by the group using available information.

The shortlisted options were developed further by AECOM into disposal system options, reuse scheme options and treatment plant upgrade options as outlined below.

The three (3) short-listed effluent disposal system options were:

- Deep water ocean outfall with a submerged diffuser outlet at approximately 40 metres depth located approximately five (5) kilometres off-shore, beyond the limits of Merimbula Bay. This depth and distance off-shore was based on the AECOM 2010 study findings and contrasts starkly with the original 500 metre distance considered by the BVSP.
- Shallow dunal exfiltration trench of approximately 400 metres in length in the highest and widest part of the dune system east of the airport terminal. This length and location was based on the IGGC 2013 study findings and is similar to the original BVSP planned length and location.
- Deep alluvial aquifer injection wells into a deep confined alluvial sequence beneath the dune system. Information on the viability of this disposal system option was based on a report by Parsons Brinckerhoff 2004. This report suggested potential was likely to be limited to average dry-weather flows only and recommended further investigations involving drilling, long-term pump tests and modelling to determine capacity, issues and the number of wells needed to cater for peak discharge volumes.

The eight (8) short-listed effluent reuse scheme options were:

- Existing PMGC and Oaklands Agricultural Irrigation
- Scheme 1. PMGC Expansion and Oaklands Agricultural Irrigation
- Scheme 2a. Pambula Open Space, PMGC and Oaklands Agricultural Irrigation
- Scheme 2b. South Pambula Agricultural, PMGC and Oaklands Agricultural Irrigation
- Scheme 2c. Lochiel Agricultural, PMGC and Oaklands Agricultural Irrigation
- Scheme 3a. Millingandi Agricultural, PMGC and Oaklands Agricultural Irrigation
- Scheme 3b. Wolumla Agricultural, PMGC and Oaklands Agricultural Irrigation
- Scheme 4. Yellow Pinch Dam Indirect Potable Reuse, PMGC and Oaklands Agricultural Irrigation

The Sewage Treatment Plant Upgrade options were:

- Phosphorous reduction
- Improved chlorine disinfection
- Ultraviolet light (UV) disinfection
- Nitrogen reduction via a constructed wetland
- Nitrogen reduction via biologically active filters and de-nitrifying filters with methanol dosing

Sixteen (16) Fact Sheets were developed by AECOM and Council to summarise relevant project information for existing and future scheme options including descriptions, infrastructure requirements, potential effluent reuse volumes and disposal volumes, capital,

operating and net present value costs, greenhouse gas emissions and key opportunities and constraints.

The Fact Sheets, specialist reports and other information enabled AECOM and the Focus Group to develop a multi-criteria analysis (MCA) process to compare the disposal system, reuse scheme and treatment plant upgrade options. This was done in a series of Focus Group workshops in March, April and May 2013.

The non-cost criteria used for the MCA process included public health, receiving water quality and aquatic ecology, aboriginal heritage, regional economy, aesthetic and recreational amenity, construction impact, operation and maintenance, reliability and greenhouse gas emissions. Each of the criteria was weighted and then scored by the Focus Group for the disposal system options in combination with each of the reuse scheme options. Costs were then included for consideration with the non-cost criteria and treatment plant upgrades.

The outcome of the MCA process was recommendations from the Focus Group on a preferred effluent management strategy for Council's consideration. The Focus Group recommendations were:

	Focus Group Recommendations	Estimated 30-year net present value (NPV) cost	Estimated up-front capital cost
1.	As a minimum, upgrade the sewage treatment plant to reduce phosphorus concentrations and improve disinfection.	$4.6M	$2.1M
2i.	A *Deep Water Ocean Outfall* is the favoured effluent disposal option offering the greatest relative environmental and public health benefits. Council should pursue this disposal option and ways to fund a possible capital funding shortfall exceeding $10.0M over and above that allowed in Council's current long-term financial plan for Merimbula/Pambula STP upgrades and effluent disposal (i.e. $11.5M over 4 years). Council should defer the expansion of effluent reuse beyond the existing schemes until an outfall is built using all available funds.	$23.3M[1]	$23.0M[1]
2ii.	The Focus Group also considers there is an opportunity to reduce the length of an ocean outfall, providing that the point of discharge occurs outside the limits of Merimbula Bay and still be subject to the influence of predominant ocean currents. A shorter length outfall may also require the provision	$19.1M[1]	$18.8M[1]

	of an increased level of treatment (eg. nitrogen reduction) which would be an additional cost to that shown right.		
3i	If funding for a *Deep Water Ocean Outfall* is insufficient, Council should consider an effluent management strategy involving a *Shallow Dunal Exfiltration* system for disposal, additional treatment plant upgrades including nitrogen reduction and the expansion of effluent irrigation on the Pambula Merimbula Golf Club.	$14.3M[1] (Dune: $4.53 N red.: $5.91 PMGC:$3.88)	$11.0M[1] (Dune: $3.61 N red.: $3.76 PMGC:$3.66)
3ii.	*Pambula urban open space* areas should also be considered as a part of the strategy, if and when funding is available for effluent reuse expansion.	$0.62M[1]	$0.56M[1]
3iii.	*Millingandi agricultural reuse* areas should also be considered as a part of the strategy if and when funding is available for effluent reuse expansion to increase the volume of reuse and thereby decrease the volume to effluent disposal to a *Shallow Dunal Exfiltration* system. (Note: even though Wolumla was considered to offer higher relative benefits the NPV cost was considered to be excessive).	$4.3M[1]	$3.7.M[1]
4	No further consideration of strategies which incorporate Scheme 4 *YPD Indirect Potable Reuse* due to the excessive NPV cost and greenhouse gas emissions / costs.	-	-
5	No further consideration of strategies which incorporate Schemes 2b and 2c for the lesser relative benefits and higher NPV costs	-	-

1. Cost assumes minimum upgrades at the sewage treatment plant to reduce phosphorus concentrations and improve disinfection have been implemented prior.

ISSUES

Legal

Pollution Reduction Program PRP6 *Investigation of beneficial reuse and disposal of treated effluent from the Merimbula Sewage Treatment Plant* is a condition of Licence 1741 for Merimbula Sewage Treatment Plant established under Section 58(5) *Protection of the Environmental Operations Act, 1997*. It arose because an improved effluent disposal system for Merimbula STP was excluded from the Bega Valley Sewerage Program in July 2007.

The Merimbula Effluent Options Investigation project has satisfied many aspects of PRP6. However PRP6 also includes a requirement to develop a capital works plan, obtain approvals and commence design and construction in accordance with approvals. These licence requirements have yet to be met.

All environmental planning instruments (EPI) will require consideration to determine if there are any that prohibit development of the adopted effluent management strategy. If no EPI prohibit development then the development will be assessed in terms of meeting State Significant Development (SSD) provisions under the *State Environmental Planning Policy (State and Regional Development), 2011*.

If SSD provisions are met then the development will be assessed under Part 4 of the *Environment Planning and Assessment Act, 1979* (*EP&A Act*) and *Environment Planning and Assessment Regulation 2000* in accordance with requirements issued by the Director General of the NSW Department of Planning and Infrastructure. An Environmental Impact Statement (EIS) will be required and will be determined by the Minister or delegate.

If no SSD provisions are met then Council as a public authority may be able to meet "development without consent" provisions under the *State Environmental Planning Policy (Infrastructure), 2007* and the development assessed under Part 5 of the *EP&A Act* and *Environment Planning and Assessment Regulation 2000.* An EIS will be required because the development impact of an effluent disposal system will be deemed significant.

All approvals for construction will be identified during the EIS process and will need to be obtained prior to construction.

Environmental

A deep water ocean outfall was the favoured effluent disposal option of the Focus Group, offering the greatest relative environmental benefit through improving receiving water quality and ecology and having the least construction impacts and operational greenhouse gas emissions. The deep water ocean outfall was also considered to provide the greatest preservation of Aboriginal cultural heritage, aesthetics and recreational amenity.

AECOM (2010) undertook water quality modelling to provide an indication of the effects of effluent discharge on marine water quality from an ocean outfall at three discharge distances (1350, 2975 and 5225 metres) and depths (-20, -30 and -40 metres) offshore, as shown in Figure 1.

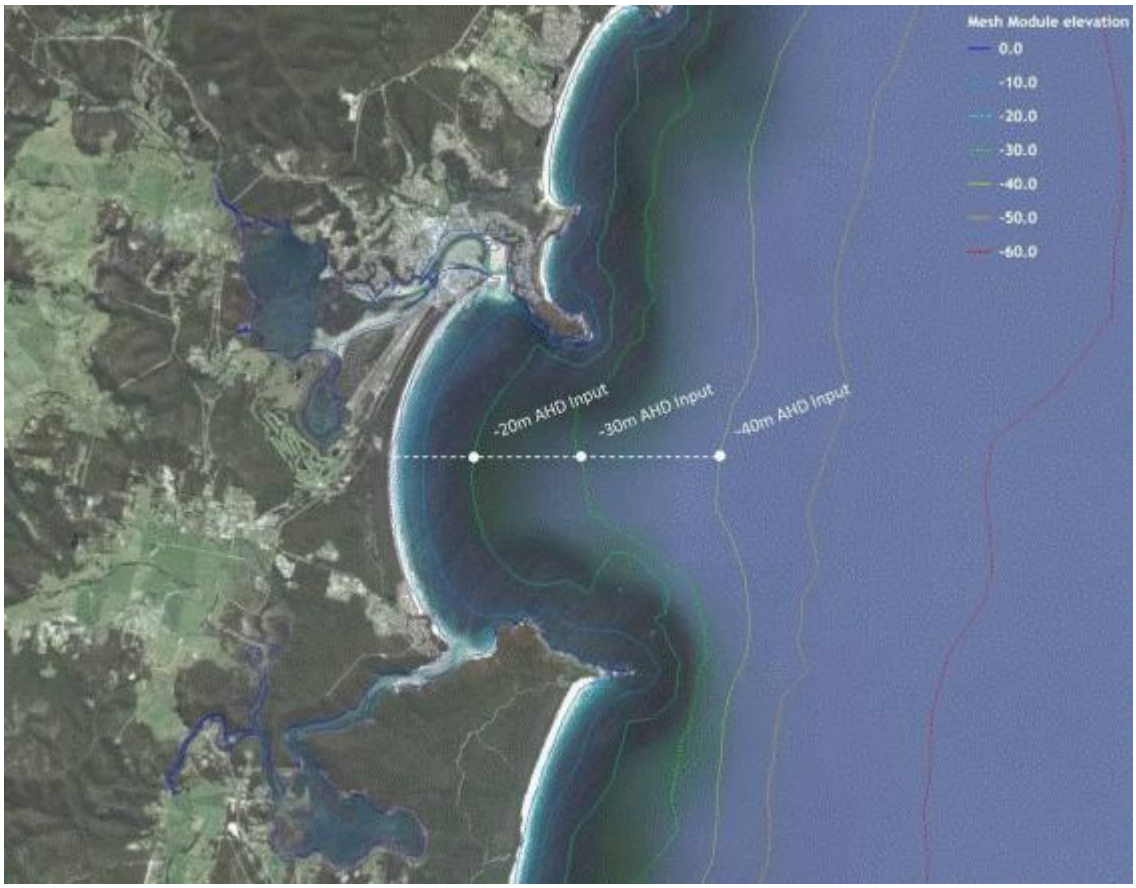

Figure 1. Three ocean outfall depths modelled by AECOM (2010)

The AECOM study adopted the *Australian and New Zealand Environment and Conservation Council (ANZECC) Guidelines for Fresh and Marine Waters, 2000* marine water quality trigger values for south-east Australia and a target mixing zone radius of less than 100 metres. That is, the AECOM study considered impact in terms of whether the ANZECC guideline values for marine waters were exceeded beyond a mixing zone of approximately 100 metres.

The constituents modelled were total suspended solids, total nitrogen, ammonia, nitrate, total phosphorous, phosphate and faecal coliforms, using conservative 90th percentile data values for the quality of effluent discharged. A total of fifteen (15) water quality scenarios were run in the model for a month of hydrodynamics (currents and tides) with a conservative continuous discharge release of effluent.

The investigation showed that for an outfall at a depth of -40 metres the *ANZECC* guideline values for marine waters would not be exceeded beyond a mixing zone of 100 metres for all water quality constituents, except phosphate. Phosphate is a constituent that can be relatively easily reduced at the STP and an additional modelling run using a reduced value of 2.5 mg/L (original 13.0 mg/L) showed that the radius of exceedence would also be well below 100 metres. Importantly, at -40 metre discharge depth there would be no accumulation of effluent constituents within Merimbula Bay or adjacent estuaries because the effluent discharged would be subject to dispersal by open ocean currents, in addition to the dilution

achieved within a 100 metre radius. As such the potential for algae aggregations in Merimbula Bay to utilise the nutrients in effluent discharged would be very low.

On this basis a depth of around -40 metres was considered the preferable depth for an ocean outfall discharge.

The alternative shallow dunal exfiltration diposal system option, whilst feasible, was considered by the Focus Group to have a number of risks associated with construction and ongoing operations and was not favoured on environmental or sustainability grounds.

Groundwater modelling (IGGC 2013) suggested that the majority of effluent disposed in a system in the dunes east of the airport terminal would flow in groundwater towards the ocean (approximately 81%) and the remainder would flow westward with the natural groundwater flow towards Merimbula Lake. The amount of nitrogen decay and phosphorous adsorption within the dune system would be limited by the relative absence of clay and organic material in the predominantly sand landform.

The proportion of effluent flowing to the ocean in groundwater would enter the ocean through the benthic environment close to the shoreline. This would provide an ongoing source of nutrients to the near coastal Merimbula Bay environment and a potential food source for the aggregations of algae in the bay.

The proportion of effluent flowing to Merimbula Lake could potentially contribute an additional 6.7% of total nitrogen per year to the lake (AECOM 2013). This load of nitrogen would enter the system through the benthic environment along the eastern shoreline first and may result in increased growth of benthic microalgae and macroalgae such as filamentous brown alga (Elgin 2013), impacting negatively on ecosystem functioning in the area.

The significance of the above potential impacts would depend on the ability of the lake hydrodynamics to flush concentrations of nutrients entering the water column out to the ocean. Existing literature suggests that Merimbula Lake on the whole has very good tidal flushing. However, the backwater area known as Golf Course Lake has a reduced capacity for flushing and longer water residence times and is potentially a more vulnerable area to increased nutrient concentration discharges from groundwater.

Construction of an exfiltration trench within the central dune area would impact upon Dune Scrub vegetation dominated by Coast Banksia (*Banksia integrifolia*). Dune Scrub forms a buffer behind which the less salt and wind tolerant eucalypt forests can develop. Construction may also impact upon eucalypt forest dominated by Bangalay (*Eucalyptus botryoides*), depending on the exact location of the exfiltration trench and in particular, how far north it extends. This community is listed as the Endangered Ecological Community (EEC) Bangalay Sand Forest of the NSW Sydney Basin and South East Corner Bioregions, under the *Threatened Species Conservation Act 1995*.

Sustainability

A deep water ocean outfall would consume significantly less energy and have less operation and maintenance issues than a shallow dunal exfiltration system. A shallow dunal exfiltration system would also have greater capacity limitations for peak wet weather flows and long term population growth. The deep water ocean outfall was considered by the Focus Group to be a more sustainable option.

Asset

Infrastructure requirements for the effluent management strategy recommended by the Focus group include:

- Alum and caustic dosing for phosphorous reduction and pH correction
- Improved chlorine disinfection system
- Ultraviolet (UV) light disinfection system
- Pumps and pipeline for a deep water ocean outfall
- Multiport diffuser to provide mixing and dilution at the discharge point for a deep water ocean outfall

The construction of a deep water ocean outfall would involve a combination of trenching and horizontal directional drilling (HDD), commencing from a point east of the STP immediately behind the foredunes of the Pambula-Merimbula dunal system and exiting 1 km away at a depth of -20 m beyond the zone of wave influence, before adopting a dredge and lay construction methodology for up to a further 3.5 km offshore to a favoured depth of -40 m.

Social / Cultural

The potential for Aboriginal skeletal material and burial contexts to be present in the Merimbula Bay barrier landform is high. Aboriginal skeletal material has been found previously within the landform and is consistent with burial site locational patterning elsewhere along the south coast. The exact location of burial sites cannot be predicted and Aboriginal sites may exist within the areas identified as suitable for shallow dunal exfiltration.

The construction of a deep ocean outfall would commence from a point immediately behind the foredunes of the Pambula-Merimbula dunal system. The potential for impact on Aboriginal skeletal material and burial contexts would be significantly less due to the depth of the HDD alignment.

Economic

The Focus Group considered the deep ocean outfall to have greater relative benefits for the regional economy than a shallow dunal exfiltration system. This assessment was based primarily on the potential risks to Merimbula Lake aquaculture, fishing and lake based tourism from a shallow dunal exfiltration system. The potential for effluent contaminants in groundwater from a shallow dunal exfiltration system to impact negatively on the “Australian Oyster Coast” and “Bega Oysters” branding of pristine waters growing the finest and safest oysters in Australia, was highlighted by the Focus Group. The potential for effluent nutrients

in groundwater discharging to Merimbula Bay and stimulating algae growth was also a reason that shallow dunal exfiltration scored lower by the Focus Group in terms of benefit to the regional economy.

Strategic

A deep water ocean outfall for Merimbula STP is considered consistent with Council's vision statement of achieving the best balance between quality of life, sustainable development and conservation of the environment. It would deliver an asset outcome to overcome a long-term asset failing that has resulted in poor social, environmental and economic outcomes for the Merimbula-Pambula community.

Resolving effluent disposal from Merimbula STP is a key strategic direction of Council's Strategic Business Plan and 30-year capital works program for Sewerage Services.

Consultation

The BVSP (2004-2008) involved consultation with Council, stakeholders and the public on the preferred effluent management strategy of that program. The Merimbula Effluent Options Investigation (MEOI) project (2009-2013) involved the formation of a stakeholder Focus Groups to consult and guide the options investigations. All MEOI project reports, Fact sheets and MCA process results are available on Council's website for community access. An Environmental Impact Assessment process for the adopted strategy will involve community consultation.

A total of thirteen (13) submissions were received from the community in regards to the preliminary preferred effluent management scheme. The submissions raised a number of issues to be addressed within the Environment Impact Assessment (EIA).

Financial

A deep water ocean outfall would be the most capital expensive effluent disposal system to construct, costing approximately three (3) times more than a shallow dunal exfiltration system. Conversely a deep water ocean outfall would be approximately ten (10) times less expensive to operate than a shallow dunal exfiltration system and produce less greenhouse gas emissions and potential future CO2-e costs.

AECOM estimated the capital cost for the effluent management strategy recommended by the Focus Group at $25.1M. This amount includes $2.1 million for sewage treatment plant upgrades and $23.0 million for construction of the deep water ocean outfall infrastructure.

Council has provided an amount of $11.5 million in its LTFP for years 2016-18 for Merimbula STP upgrades and effluent disposal in Council's *Development Servicing Plan – Sewerage Services* (NSW Public Works, 2013). An additional amount of $7.7 million has been allowed for additional effluent reuse in years 2019-22.

$11.5 million is insufficient to fund a deep water ocean outfall disposal system. State and/or Federal Government subsidy would be required to realise the recommended effluent disposal strategy in the near term.

Lack of State and/or Federal Government subsidy would mean a less meritorious strategy involving shallow dunal exfiltration effluent disposal would be the potential fall-back option for Council to consider as per the Focus Group recommendations. This option whilst potentially affordable using existing Council budget allocations, has a number of environmental, Aboriginal heritage impact and sustainability risks associated with it as outlined in this report. These would need to be adequately resolved to obtain development approval. Council received further advice from the EPA in May 2013 of their ongoing concerns over this option and highlighted a range of justifications, investigations and planning required if it was to be pursued again, with no suggestion or otherwise that a shallow dunal exfiltration effluent disposal system would be approved following completion of this work.

Funding source		Amount
Sewer fund 75% ILOS and 25% growth	$	11.5 million
Grant funds (yet to be obtained)	$	13.6 million

Resources (including staff)

Environmental impact assessment, concept design, obtaining approvals and detailed design are the next project stages upon Council adoption of a preferred effluent management strategy. A Council client representative from Water and Sewerage Services will be required for this, with external project management assistance an option. Competitive tendering will be the most likely means to obtain the specialist engineering and scientific skills for delivery of these project stages. Estimated total cost for these project stages is around $500k.

Operational Plan

The provision of improved effluent management will enable Operational Plan objectives to be met.

CONCLUSION

The appropriate disposal of effluent from Merimbula STP has been a long recognised and unresolved problem for the shire. This report outlines processes undertaken by the Bega Valley Sewerage Program (2004-2008) and the Merimbula Effluent Options Investigation project (2009-2013) to investigate and address the problem.

The knowledge base of relevant environmental issues has vastly increased as a result of the detailed investigative planning work undertaken in recent times.

Stakeholder consideration of the available information enabled a multi criteria assessment of options to be undertaken at a series of workshops in 2013 and resulted in a number of recommendations being made for Council's consideration.

The main recommendation was that a deep water ocean outfall is the favoured effluent disposal option, offering the greatest relative environmental and public health benefits to the community. It was recommended that Council should pursue the development of a deep water ocean outfall, along with STP upgrades to further improve effluent quality, as a long term solution to the Merimbula STP effluent disposal problem.

Council does not have the means to fund the capital to construct the option recommended by the multi criteria assessment, being the ocean outfall. It is proposed the federal and state governments be lobbied to assist the project with subsidy funding.

ATTACHMENTS

Nil

RECOMMENDATION

1. That Council adopt an effluent management strategy for Merimbula STP:
   - Sewage treatment plant upgrades to improve effluent quality
   - Construction of a deep water ocean outfall for the disposal of effluent unable to be used beneficially by the existing reuse schemes at the PMGC and Oaklands.
2. That Council pursue ways over the next 12 months to fund a capital funding shortfall for a deep water ocean outfall effluent disposal system with State and Federal Governments, including lobbying of candidates' for the 2013 federal election.
3. That Should a commitment to subsidy funding by State and Federal Governments be not forthcoming, then Council proceed to constructing a dunal exfiltration system once relevant approvals are gained.