



REPORT ON THE COMMUNITIES EXPECTATIONS OF THE MERIMBULA STP UPGRADE 2020

“Alone, we can do so little; together, we can do so much” – Helen Keller.

Written by ***Sustainable Water Actions for Merimbula and Pambula Incorporated***

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1. Executive Summary

Sustainable Water Actions for Merimbula and Pambula (SWAMP) represent approximately 2000 community members and local businesses including the fishing, oyster and abalone industries, accommodation establishments and long standing tourists.

We present this report on behalf of these community members for alternative options to the proposed outfall as part of the Merimbula Sewage Treatment Upgrade (STP). Wastewater once seen as a product to dispose of is now seen as a valuable resource. Sustainable alternatives offer a circular economy approach of reuse and recycle rather than a linear approach of use and discard.

“Many utilities are now considering the benefits of unlocking the circular economy to better manage resources, make and reuse products and regenerate natural system” [an extract from ‘Transitioning the water industry with the circular economy’, (Institute of Sustainable Futures2020)]

SWAMP has found that the information regarding building a Deep Ocean Outfall in Merimbula Bay researched prior to 2013, has been superseded by the advent of new technologies and innovative reuse and reprocessing strategies as used by other Councils. These Councils have found alternative solutions to dumping wastewater into the marine environment that meet community expectations, minimize financial costs, reduce the demand on town water and comply with government environmental regulatory requirements. The following examples of Councils and Water Utilities who are demonstrating the above objectives:

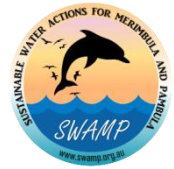
- Logan Council Loganholme Wastewater;
- East Gippsland Water;
- Sunshine Council and the Maleny STP upgrade;
- North Shoalhaven Reclaimed Water Scheme; and
- Parkes Shire Council, to name a few.

Of Note: although all of these Councils reside in quite different topographies, they have developed affordable sustainable strategies that include reuse allowing them to reduce their carbon footprint and save the rate payers money.

The current upgrade for Merimbula STP will provide an opportunity for such alternatives. This report aims to open discussion amongst policy makers, the community and local government on the flow-down benefits of reuse and recycling wastewater where costs are seen in terms of local employment rather than the push to minimise costs which inherently result in less than preferred outcomes for the environment and society.

With the effects of climate change being felt more and more each year, there are two issues that greatly concern our community as they would negatively impact local businesses e.g. farmers both on land and sea and tourism, as well as our marine environment. These are:

- **wasting a valuable resource;** particularly after the drought and the severe bushfires that have devastated communities within our valley in the last few years; and
- **harming the environment of Merimbula Bay and connected lakes** especially the protected and threatened species, the recently built artificial reef and local shellfish industries.



More investigation is needed now in 2020 in the aftermath of our horrendous bushfires and the drought which preceded it. Investigations on recycling, innovative, contemporary technologies and renewable energy sources like wind, methane and solar to help offset costs need to be considered.

The context

To ensure all parties are aware of the mandate the Bega Valley Shire Council received from the Environmental Protection Authority regarding the Merimbula STP upgrade, an extract from the Variation of Licence 1741 is provided as follows:

'BVSC fully investigate the range of beneficial reuse options available for the treated effluent, and, consider all reasonable and feasible disposal options available for that proportion of the treated effluent from the Merimbula STP that cannot be beneficially reused.'

SWAMP note that there have been multiple variations to the above licence issued September 2008, mainly for extensions to the timeframe.

Negative effects of building the Deep Ocean Outfall

SWAMP are concerned there are particular objectives within the *Waste Avoidance and Resource Recovery Act* which may not be adhered to if a Deep Ocean Outfall were to proceed. These are:

- **Using resources efficiently to reduce environmental harm**

In 2020, discharging over 500ML of unused wastewater per year into the ocean is not the most efficient use of this resource.

The '2018 Elgin and Associates Merimbula Sewage Treatment Plant Upgrade and Deep Ocean Outfall Concept design and Environmental Assessment Report' lists **34 threatened species** that have been reported or modelled to occur within a **5km** radius of the area of investigation. The now modified alignment of the Merimbula Deep Ocean Outfall to the 'North Short' option will be sited less than **1km** from our artificial fishing reef that was built by the Department of Primary Industries 2018/19.

Environmental harm can be argued in that there may be no or little evidence that an ocean outfall may impact a species, however it could also be argued that it is better to avoid or minimise actions when the impacts are unknown. This is called the precautionary principle which is a key component of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Of Note: We were advised anecdotally by a commercial fisherman, that large schools of trevally regularly netted in Merimbula Bay supported an export industry. However once Council commenced the beach outfall in the early 1970's the fish disappeared.

- **Reusing and recycling of waste to minimise consumption of natural resources**

We are concerned that to justify the cost of building the proposed deep ocean outfall, recycling now and in the future will be curtailed, as once the infrastructure is complete, the added costs involved in further wastewater reuse would be seen as a waste of ratepayer's money.

Funds allocated for the outfall from State or Federal Government may be insufficient. If history is any guide these costs could double and the maintenance cost would need to be established. These 'unknown' costs may prove to be detrimental to our ratepayer base which is small at approximately 12,000 sewer ratepayers of whom a substantial number live in the low socio-economic areas of Bega, Eden and the villages. The alternative of reusing wastewater which could be sold as a



resource, would also create maintenance work and other work in the community. It should be viewed in terms of creating local jobs that would enhance the local economy.

- **Community and industry responsibility**

SWAMP has discussed the outfall with a broad range of stakeholders within our community who feel strongly about the lack of transparency and consultation throughout the entire process of the Merimbula STP upgrade. A robust consultation process did not occur given the lack of general representation in the Merimbula Effluent Options Investigation Focus Group (2010). In this group the community members consisted of two representatives from the Shellfish industry and two members from the general community. We contacted several farmers regarding the wastewater and found that none were aware of the proposed upgrade nor were they aware of the potential opportunity for irrigation from this resource.

- **Reducing waste to harmless levels of discharge and making progressive improvements**

The Bega Valley Shire Council may be in breach of the *Protection of the Environment Operation Act 1997* as we believe the above two objectives will not be achievable if a deep ocean outfall is built.

The Bega Valley Shire Council may also be non-compliant with the EPA Notice of Variation 1741 that stipulates, '*fully investigate the range of beneficial reuse available for treated effluent*'. AECOM have supplied costs for a variety of disposal systems however there is no reference to reuse water which is not potable but safe for public irrigation, food crops, dairy farms and general garden use.

Benefits of reusing wastewater

The Bega Valley Shire Council has a total holding capacity at the Merimbula holding ponds of 37ML. To cater for the 500ML excess effluent and as a contingency plan, SWAMP found multiple community businesses that would be agreeable to having large storage dams built on their properties which would offset the Merimbula STP excess wastewater. The dams would provide these businesses with year round consistent access to water. This would ensure planning could take place for sustainable growth for their businesses. It would also help the community as a whole become drought resilient and possibly assist with fire-fighting, particularly in light of the predictions for the southern east coast for decreased spring and winter rainfall and increased summer and autumn rainfall.

Constructing a system for 100% reuse or reprocessing, recycling and energy recovery will assist in minimising the consumption of town water and energy now and in the future.

The flow-on benefits of wastewater irrigation to farmers is reported in the Shoalhaven REMS scheme where a multitude of approximately 11 benefits that have an effect on many in the farming community have been documented. The '*Review of current usage and value to the regional dairy industry and community of the Northern Shoalhaven Reclaimed Water Management Scheme (REMS)*' and has been provided at **Attachment H**.

SWAMP has had numerous discussions with the Clean Ocean Foundation (COF) who are working to establish a National Outfall Upgrade System for all coastal outfalls. This class of water can be safely used on public land, gardens, food production, beef and dairy and related fodder. We have been advised by COF that the Merimbula STP would provide an excellent pilot study as part of its upgrade, in the roll out of the National Outfall Upgrade System. Involvement in this would pay for the water treatment to A+ grade.



AECOM mention the effect treatment could have on the pipeline with the following statement. *'Improved treatment may reduce capital costs of construction and must meet relevant water quality objectives'*. With these water quality objectives in mind, we can treat any water destined for discharge to a high level giving us the opportunity to keep the beach face outfall saving \$25M+ (2013 cost).

SWAMP is asking that 'adequate disinfection for the intended use' be the main focus of the upgrade, thereby mitigating the need to waste over \$25M on the pipeline. This will then provide a much needed water supply in times of drought taking pressure off our fresh water supply.

Conclusion

Based on the 'Precautionary Principle', Climate Change forecasts, new and emerging technologies and multiple examples of innovative strategies employed by other councils throughout Australia; SWAMP feel that we have provided compelling evidence to show beyond a doubt that proceeding with the Deep Ocean Outfall is not in the best interests of our marine environment, fishing and shellfish industries, farming industries or tourist related industries.

Recommendation

The report makes one recommendation that is as follows:

That the Environmental Protection Authority halt the progress of the Merimbula STP Deep Ocean Outfall project and advise Bega Valley Shire Council to undertake further investigation into alternative wastewater reuse options for land purposes only, that are based on a socially, financially and environmentally sustainable mix of contemporary strategies.



2. Detailed Report

Preamble

The Sustainable Water Actions for Merimbula and Pambula (SWAMP) represent approximately 2000 community members and local businesses including the fishing, oyster and abalone industries, accommodation establishments and long standing tourists.

We present this report on behalf of these community members for alternative options to the proposed outfall as part of the Merimbula Sewage Treatment Upgrade (STP). Wastewater once seen as a product to dispose of is now seen as a valuable resource. Sustainable alternatives offer a circular economy approach of reuse and recycle rather than a linear approach of use and discard. *“Many utilities are now considering the benefits of unlocking the circular economy to better manage resources, make and reuse products and regenerate natural system”* [an extract from ‘Transitioning the water industry with the circular economy’, (Institute of Sustainable Futures 2020)]

Our community has expressed their concerns with the Bega Valley Shire Council (BVSC) as there are many examples in other Shires of sustainable and environmentally effective options for managing wastewater.

The current upgrade for Merimbula STP will provide an opportunity for such alternatives. This report aims to open discussion amongst policy makers, the community and local government on the flow down benefits of reuse and recycling wastewater where costs are seen in terms of local employment rather than the push to minimise costs which inherently result in less than preferred outcomes for the environment and society.

With the effects of climate change being felt more and more each year there are two issues that greatly concern our community as they would negatively impact businesses and tourism in our area. These are:

- **wasting a valuable resource**; particularly after the drought and the severe bushfires that have devastated communities within our valley in the last few years. Dumping the wastewater into the marine environment, instead of supplying a sustainable source of water for applicable businesses like our local farmers and the Pambula Merimbula Golf Course does not take responsibility for managing our precious resource. Also, providing these businesses with a sustainable resource would allow them to grow resulting in ongoing jobs for our community; and
- **harming the environment of Merimbula Bay and connected lakes** especially the protected and threatened species, the recently built artificial reef and local shellfish industries. These environments are fragile ecosystems that are already being impacted by warming ocean temperatures and acidification of the seawater. To dump a valuable resource into that environment could have long lasting effects on these ecosystems. It would also impact on our tourism industry that relies heavily on fishing and clean beaches.

We would like to explore alternate options with you for the proposed upgrade to the Merimbula STP, last estimated at \$35+M. Given the recent drought and horrendous bushfires we feel the discharge of wastewater into our marine environment to be irresponsible and detrimental to our environment. Sustainable alternatives are a far better option including where wastewater is treated to an **almost** potable level thereby creating more opportunities for reuse. There are several Councils that are willing to provide advice on how they have managed sustainable alternatives and there are



multiple options already documented and costed in reports provided to Bega Valley Shire Council (BVSC) by AECOM in 2013.

SWAMP are advocating for a circular economy approach of extending the life of our wastewater rather than the linear proposal of discharging over 70% into the marine environment.

This report aims to open discussion amongst policy makers, the community and local government in the flow down benefits of reuse and recycling to the community, where costs are seen in terms of ongoing local employment rather than the push to minimise costs which inherently result in less than preferred outcomes for the environment and society.

2.1 Objective

The objectives of this report are:

- to inform stakeholders so that they recognise there are viable alternatives to the Deep Ocean Outfall; and
- to gain support from the Bega Valley Shire Council and the Environmental Protection Authority to postpone the Deep Ocean Outfall and revisit alternative options.

2.2 Issues to address are:

- a) **Environmental Protection Authority Notice of Variation of Licence 1741**
- b) **Waste Avoidance and Resource Recovery Act 2001**
- c) **WWPF Wet Weather Peak Flow and the forecast southeast region climate change**
- d) **Costs and Benefits**
- e) **Superior treatment to almost potable level**

2.3 Details in support of each issue are:

a) Environmental Protection Authority Notice of Variation of Licence 1741 (Attachment A [extract])

SWAMP would like to respectfully draw the attention of the members of this meeting to Notice 1741 issued by the EPA, as the contents of this Notice may have mistakenly been misrepresented in both the media and on BVSC'S website. SWAMP is concerned that over time, this misrepresentation may have biased some members of the Bega Valley Shire's community and current Council's understanding, causing them to think that the Merimbula STP deep ocean outfall is the only option as it was directed by the EPA. An extract from the licence is as follows:

'BVSC fully investigate the range of beneficial reuse options available for the treated effluent, and, consider all reasonable and feasible disposal options available for that proportion of the treated effluent from the Merimbula STP that cannot be beneficially reused' (Page 1, Background - Paragraph D).

SWAMP note that there have been multiple variation to the licence since it was issued in September 2008.

b) Waste Avoidance and Resource Recovery Act 2001 (Attachment B [extract]).

This Act promotes waste avoidance and resource recovery to achieve a continual reduction in waste generation. The Act provides for the development of a state-wide Waste Strategy and introduces a scheme to promote extended producer responsibility for the life-cycle of a product. In particular the objectives (Page 2) state:

- (i) *To encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development.***

Our Response

The proposed outfall discharging over 500ML per year of unused wastewater into the marine environment is not the most efficient use of the wastewater resource. Environmental harm can be argued in that where there may be no or little evidence that an ocean outfall may impact a species, - however it can also be argued that it is better to avoid or minimise actions when the impacts are unknown (see tier 1- *Protection of the Environment Operations Act 1997* (POEO Act)).

We feel a discharge to non-threatened species land habitat like pasture, crop or other agricultural activity is a better outcome than discharging into an environment where the ultimate impacts are unknown. This is the precautionary principle outlined in the POEO Act.

A major concern for our community is the impact on the quality of the water for threatened and protected species in Merimbula Bay and connected Merimbula and Pambula Lakes.

Of note: We were advised anecdotally by a commercial fisherman, that large schools of trevally regularly netted in Merimbula Bay supported an export industry. However once Council commenced the beach outfall in the early 1970's the fish disappeared.

Regarding this concern, SWAMP would like to draw attention to the *2018 Elgin and Associates Merimbula Sewage Treatment Plant Upgrade and Deep Ocean Outfall Concept Design and Environmental Assessment Report* see **(Attachment C [extract page 34] and [page 151])**.

These two pages extracted below list the possible impacts to threatened and protected species in Merimbula Bay and our Artificial Fishing Reef.

A1 Threatened and Protected Marine Species

A list of threatened species, populations, ecological communities, and critical habitat that have been reported or modelled to occur within **5km** radius of the area of investigation was obtained from our searches of the NSW Environment, Energy and Heritage; NSW Department of Primary Industries; and Environmental Protection and Biodiversity Conservation Act 1999.

The modified alignment of the Merimbula Deep Ocean Outfall to the 'North Short' option will be sited less than **1km** from the artificial fishing reef as stated in the *BVSC Minutes 30 October 2019 11.3 (Attachment D [extract sewer pipe location])*.

Based on a qualitative likelihood of occurrence assessment, a total of 34 species including five cetaceans (whales and dolphins), two seals, four fish, three syngnathids, and 20 birds were found to have moderate to high likelihood of occurrence within the project area. These include:

- Five Environmental Protection and Biodiversity Conservation Act (EPBC Act) listed threatened cetaceans (whales and dolphins): Humpback whale, Southern right whale, Orca, Common dolphin, and Bottlenose dolphin.
- Two EPBC listed seals also listed as threatened in the NSW Biodiversity Conservation Act (BC Act): New Zealand fur seal and Australian fur seal.

- Four fish species listed as threatened under the Fisheries Management Act (FM Act) and or EPBC Act: Black cod, Southern Blue fin tuna, Grey nurse shark and Great white shark.
- Three syngnathids listed as protected under the FM Act: pot-bellied seahorse, whites seahorse and weedy sea dragon.
- Twenty marine birds that includes eight EPBC Act listed species and 14 listed as protected under the BC Act, with 2 birds listed under both Acts.

The Artificial Fishing Reef that enhances the regions recreational fishing opportunities could also be under threat if the deep ocean outfall was to go ahead due to its close proximity to the proposed outfall. The reef was funded by the Department of Primary Industries in 2018-19 at approximately \$1 - 3M (including annual maintenance to date). Of further concern is that the Reef has not been recognised at any point in this process.

(ii) To ensure that resource management options are considered against a hierarchy of the following order:

- **Avoidance of unnecessary resource consumption,**
- **Resource recovery (including reuse, reprocessing, recycling and energy recovery),**
- **Disposal.**

Our Response

In 2020, the proposed 2013 deep ocean outfall disposal option has been superseded with new and emerging technologies leading the way on reuse, reprocessing, recycling and energy recovery. This conclusion is based on the many Council examples and information now available on the subject, see:

- *Logan Council's Loganholme Wastewater Treatment Plant* that turns waste into energy, an Australian first (**Attachment E**);
- *East Gippsland Water Report* (**Attachment F**);
- *The Maleny STP Upgrade and Community Wetlands Construction* (**Attachment G**); and
- *North Shoalhaven Reclaimed Water Scheme* (**Attachment H**), to name a few.

These Councils all either reuse one hundred percent of their recycled sewage water or use a mix of current technologies and innovative solutions eg. purpose built farms; dams; wetlands and/or forest areas to filter water prior to entering the marine environment or river (if necessary), to ensure their wastewater is not wasted.

Of Note: although all of these Councils reside in quite different topographies, they have developed affordable sustainable strategies that include reuse allowing them to reduce their carbon footprint and save the rate payers money.

(iii) To provide for the continual reduction in waste generation.

(iv) To minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste.

Our Response

Continual reduction of waste production and the reuse and recycling of wastewater will not be achieved with an ocean outfall pumping out limitless volumes of wastewater over the years; and to justify its cost will impact and curtail recycling now and into the future. SWAMP is concerned that



once the infrastructure has been completed, the added costs involved in further wastewater reuse strategies would be seen as an unnecessary cost for rate payers.

Aiming for 100% reuse or reprocessing, recycling and energy recovery is achievable and will assist in minimising the consumption of natural resources i.e. town water thereby assisting to safeguard our community from the impacts of drought.

- (v) To ensure that industry shares with the community the responsibility for reducing and dealing with waste.**

Our Response

We believe that it is critical for communities to be informed and take part in surveys, meetings, public forums for discussion and are given a genuine chance to share information and responsibility for dealing with the waste. SWAMP is concerned that the sharing of information and responsibility for decision making with the proposed deep ocean outfall was not compliant with robust community consultation as provided by the 'National Guidelines For Water Recycling' (**Attachment I [extract 06 Consulting the Public]**).

The **2013 AECOM Memorandum** informs that the Merimbula Effluent Options Investigation Focus Group 2010 had four community members consisting of two representatives from the Shellfish industry and two representatives from the general community (**Attachment J [extract page 1]**) instead of those recommended in the national guidelines:

- landowners;
- industry;
- special interest groups;
- wholesalers;
- retailer; and
- the community in general.

SWAMP contacted several farmers regarding the wastewater and found that none were aware of the proposed upgrade nor were they aware of the potential opportunity for irrigation from this resource.

- (vi) To ensure the efficient funding of waste and resource management planning, programs and service delivery.**
- (vii) To assist in the achievement of the objectives of the Protection of the Environment Operations Act 1997 (POEO).**

In particular:

- (ii) the reduction to harmless levels of the discharge of substances likely to cause harm to the environment; and**
- (iv) the making of progressive environmental improvements, including the reduction of pollution at source.**

Our response

We believe the above two objectives will not be achievable if a deep ocean outfall is built; therefore Council may be in breach of the intent of the Protection of the Environment Operations Act.



c) WWPF Wet Weather Peak Flow and the forecast southeast region climate change

Currently the Merimbula STP has one holding pond of 17ML and one Wet Weather pond of 20ML at 50% holding capacity due to a build-up of silt. To cater for the annual 500ML of excess effluent and as a contingency management strategy, SWAMP has found that different community entities would be agreeable to having large storage dams built on their properties which would offset the Merimbula STP excess wastewater.

According to the 2013 AECOM memorandum 200ML is considered to be a 'large storage dam'. We have had discussions with a Wolumla dairy farmer who has a 300ML dam and is willing to finance another 300ML dam which he hopes to fill with treated wastewater. Another farmer in the Lochiel area is willing to finance his own access directly from the Merimbula STP for his dairy farm. The Pambula Merimbula Golf Course (PMGC) which is adjacent to the Merimbula STP has the available Crown land for such storage and has already submitted a plan to Council for the development of a 200 – 250ML dam (**Attachment K**). If this application were to be approved the uptake of recycled water by the PMGC would increase to 40-50% of the overall STP production. All of these benefits will be at risk if the Deep Ocean Outfall goes ahead. This is no difference to the BASIX requirements of every residential development application and what is being put forward for consideration above.

A good example of wet weather storage is East Gippsland Water who have 3-4 years of storage capacity and thereby can keep this resource out of the marine environment. SWAMP believe that more storage dams are vital in keeping this resource out of our marine environment thereby providing a valuable resource in times of drought and fire-fighting. Building large storage dams for the recycled sewage water will enable farmers and/or the PMGC or other interested businesses year round consistent access to water. This would be highly advantageous to their ongoing sustainability and growth, when the predictions for the South East coast of Australia are for decreased spring and winter rainfall and increased summer and autumn rainfall. '*Overview of South East and Tablelands Region climate change snapshot*' (**Attachment L [extract P 2.]**) produced by NSW Office of Environment & Heritage.

d) Costs and Benefits

The 2013 BVSC Council Meeting Minutes July 2013 (**Attachment M [extract page 10 and 11]**) state under the Recommendations:

- a) That Council pursue ways over the 12 months to meet capital funding shortfall for a Deep Ocean Outfall effluent system with State and Federal Government; and
- b) That should subsidy not be forthcoming then Council also consider other reuse options as per the Effluent Options Study Focus Groups recommendations.

As these two recommendations were 'Resolved' at the meeting and seven years have passed, SWAMP would suggest that Recommendation 4 has not been followed. Therefore SWAMP would like to know what Council's intention is for moving forward with this recommendation in 2020/21.

The 2013 BVSC Council Meeting Minutes June 2013 (**Attachment N [extract under Financial]**) state that the estimated cost for the outfall as of 2013, was estimated at \$25.1M, \$2.1M of this for upgrades and \$23M for the construction of the deep ocean outfall. Another \$7.7 had been allowed for additional reuse for 2019-2022. No doubt these estimates will increase when tenders are called.

Funds allocated for the outfall from State or Federal Government may be insufficient. If history is any guide these costs could double and the maintenance cost would need to be established. These 'unknown' costs may prove to be detrimental to our ratepayer base which is small at approximately 12,000 sewer ratepayers of whom a substantial number live in the low socio-economic areas of Bega, Eden and the villages. The alternative of reusing wastewater would create maintenance work and can be viewed in terms of local jobs and thereby enhance the local economy.

According to the above figures, 90% of the upgrade is for the construction of the pipeline. This is wasteful and the antithesis of the introductory 'Forward' in the *Environmental Guidelines 'Use of Effluent by Irrigation'* (**Attachment O**) which states, "The NSW Government is committed to encouraging and optimising the safe reuse of water."

SWAMP is asking for adequate disinfection for the intended use be the main focus of the upgrade, thereby mitigating the need to waste greater than \$25M+ on the pipeline. This will then provide a much needed water supply in times of drought taking pressure off our fresh water supply.

AECOM mention the effect treatment could have on the pipeline with the following statement. 'Improved treatment may reduce capital costs of construction and must meet relevant water quality objectives'. (**Attachment J, Page 12**)

Further along in this report it states, 'That Council adopt an effluent management strategy for Merimbula STP:

- '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.'

Beneficial strategies, some existing, are as follows:

- We believe the investigation for more reuse schemes similar to those mentioned in AECOM's *Merimbula Effluent Option Investigation Report* detailing 16 Fact Sheets (**Attachment P**) would beneficially reuse the effluent and therefore mitigate the need for a deep ocean outfall.
- We appreciate the need for a contingency plan of discharge and therefore stress the need to either lift treatment to an **almost** potable level where council can discharge at the current

beach-face outfall should the need to discharge present itself and/ or utilise one or more of the reuse options. In particular:

- PMGC combined with Oaklands, and the farmer at Lochiel; or
- Wolumla reuse scheme incorporating farmer/s that will to build large dams; or
- a combination of other reuse, reprocessing, recycling and energy recovery schemes.

This measure would then be acceptable to all stakeholders who currently may oppose the reuse due to high nutrient levels.

The benefits of utilising one or more of the above sewage reuse strategies using contemporary technologies would be many. To name a few:

- Other councils have found that farmers and other interested parties are willing to pay for treated recycled water which can assist in mitigating costs.
- **Class A** is suitable for irrigation agricultural food production ie foods consumed raw; and Firefighting and fire protection systems.
- Recycled water (**Attachment H**) suitable for use on dairy and beef farms have multiple benefits that include:
 - Increased productivity due to dairy and beef farmers being able to increase their herd size, increased fodder production and for dairy farmers total litres per cow per day;
 - Having access to recycled water gives farmers the confidence to increase and expand their business and also contributes substantially to the viability of this expansion by improving pasture and crop yields;
 - Increases employment opportunities in the region both on farms and service provider businesses;
 - Provides continual flow on economic stimulus to local equipment and farm supply, and service provider businesses;
 - Dryland can be converted to irrigation which will increase productive capacity of pasture and cropping land;
 - Provides drinking water for livestock;
 - Can be used for washing of plant, yards and machinery;
 - Reduces the demand on the town water supply;
 - Pasture and ground cover is more likely to be preserved on farms that irrigate during drought or dry weather so reducing erosion, environmental dust and down-stream silt accumulation;
 - Greater control of pasture and crop growth on irrigated properties allows for more efficient use of nutrients and less environmental losses of those nutrients that are applied as either farm generated effluent or chemical fertilisers; and
 - Purpose built dams on farms would further reduce environmental excess water discharge when storage capacity is exceeded during periods of wet weather. This also allows for additional irrigation infrastructure to be installed facilitating irrigation of additional areas of held land.
- Recycling effluent would substantially reduce that discharged into the waterways of Merimbula Bay and connected Merimbula and Pambula Lakes thereby protecting those ecosystems and the industries that rely on the quality of the water such as the shellfish industry and tourism.



More investigation is needed now in 2020 in the aftermath of our horrendous bushfires and the drought which preceded. Investigations on recycling, innovative, contemporary technologies and renewable energy sources like wind, methane and solar to help offset costs.

SWAMP would like to draw your attention to the table of options below and their costings taken from the 2013 AECOM Memorandum. We have noted that these options do not include treating the wastewater to an **almost** potable level. SWAMP feel that failure to include this is the AECOM investigation may be non-compliant with the EPA Notice of Variation 1741 that stipulates '*fully investigate the range of beneficial reuse available for treated effluent*'.

Worth noting is that as the Grade level drops so does the cost. The level of treatment required for potable reuse (reported in the table below) is **much greater** than the lower Grade A water as there are 2 – 4 fewer process steps (or “barriers”) required for Grade A process and less equipment used. Therefore, *SWAMP would like almost potable water to be investigated and costed as well as water fit for purpose for the options discussed on page 15 under Beneficial Benefits as part of the Environmental Impact Statement.*

Effluent Disposal System	Approx est. Capital \$ cost	Approx est Annual O&M \$ cost	Approx est Annual O&M \$ cost over 30 years	Approx est 30 year NPV \$ cost	Approx est Annual CO2-e cost @\$25/tonne)\$
DOO	23.0M	26,000	0.3M	23.3M	700
Golf Course Expansion	5.8M	181,000	2.7M	8.5M	6,000
Wolumla Agricultural irrigation	15.2M	384,000	5.3M	20.5M	17,000
Indirect Potable reuse and advanced water treatment plant	26.1	1,854,000	27.5M	53.6M	121,500
Grade A reuse water					
Water suitable for the PMGC, Oaklands, Pamboola wetlands and dairy farmers					
Treatment Plant upgrade	2.1M	165,000	2.5M	4.6M	5,700

e) Superior treatment to an almost potable level

The Clean Ocean Foundation (COF) 'Coastal Outfall System Upgrades in Australia' – Final Report, Section 5.3 page 12 and 13, (**Attachment Q extract**) is endorsed by the Federal Government.

SWAMP agree with the following recommendations listed in this report and make comment as follows:

- 1. To set a target for better performance and reduced waste such that all coastal outfalls around Australia be upgraded to meet the Tertiary Class A+ standard of recycled water by 2030.**

Our Response

This class of recycled water can be safely used on public lands eg parks, gardens for food production and for beef and dairy cattle and related fodder, which would enable our community to access a multitude of benefits as previously discussed.

- 2. There is a need for adoption of National Standards for Reporting of wastewater treatment plants (WTP) data including transparency criteria implemented as a prerequisite for WTP upgrade funding. An Initial "Pilot" program could be implemented on selected WTP upgrades.**

Our Response

We have had numerous discussions with Clean Ocean Foundation and have been advised that the Merimbula STP would provide an excellent pilot study (as part of its upgrade) in the roll out of the COF national program.

Wastewater is a valuable community resource as expounded by the Environmental Protection Authority that can be used towards making our area drought resilient, supporting farmers and other business ventures as found in the REMS scheme in the Shoalhaven area. The benefits of such filter down to the local community thereby providing employment and growth for the long term as shown in this extensive report.

2.4 Conclusion

SWAMP has found that the information regarding building a Deep Ocean Outfall in Merimbula Bay researched prior to 2013 has been superseded by the advent of new technologies and innovative reuse and reprocessing strategies as used by other Councils. Councils in other parts of Australia have found alternative solutions to dumping wastewater into the marine environment that meet community expectations, minimize financial costs, reduce the demand on town water and comply with government environmental regulatory requirements.

As 10 years have passed since the Deep Ocean Outfall was selected, the community is concerned that the following were not factored into the decision making process for selecting an appropriate reuse option. These concerns are as follows:

- There is the possibility that the 2008 Environmental Protection Authority Notice of Variation of Licence 1741 has been misrepresented to the Councillors and community;
- There are possible breaches of the Waste Avoidance and Resource Recovery Act 2001, the Protection of the Environment Operations Act; and the Environmental Protection Authority Notice of Variation 1741;
- If extensive scientific knowledge about the impact of the deep ocean outfall (DOO) on the species within Merimbula Bay and surrounds is lacking, building the DOO could have a major impact on threatened and protected species, the artificial reef in Merimbula Bay and connected Merimbula and Pambula Lakes. There is evidence of this occurring in the bay in the past, as SWAMP were advised anecdotally by a commercial fisherman, that large schools of trevally regularly netted in Merimbula Bay supported an export industry. However once Council commenced the beach outfall in the early 1970's the fish disappeared;
- SWAMP has been advised anecdotally that wastewater reuse schemes could not be implemented in the Bega Valley due to the topography. However we have found that there are multiple Councils that reside in quite different topographies, from the coast to the mountains, that have developed affordable sustainable strategies that include reuse allowing them to reduce their carbon footprint and save the rate payers money;
- There was a lack of community engagement, particularly farmers and local business in selecting the Deep Ocean Outfall proposal;
- It is possible to build large storage dams, as SWAMP has found farmers and businesses that are agreeable to build them on their land at their own cost or in part;
- If the deep ocean outfall is built, recycling of wastewater now and in the future will be curtailed due to it being an extra cost;
- There are flow on benefits from wastewater irrigation that have a positive impact across the community;
- The cost for an almost potable water option and the selling of wastewater was not included in the initial 2013 list of proposals;
- Council Minutes dated July 2013 recommendations were not followed;
- Four viable treatment, reuse or reprocessing options have been presented in the report that use technology and innovative strategies but have not been fully investigated.



2.5 Our Recommendations

We recommend that:

That the Environmental Protection Authority halt the progress of the Merimbula STP deep ocean outfall project and advise Bega Valley Shire Council to undertake further investigation into alternative wastewater reuse options for land purposes only, that are based on a socially, financially and environmentally sustainable mix of contemporary strategies.

Annette Young
Secretary
SWAMP

23 November 2020

Marianne Kambouridis
President
SWAMP

23 November 2020



3. Attachments

- Attachment A Environmental Protection Authority Notice of Variation of Licence 1741
- Attachment B Waste Avoidance Resource Recovery Act 2001
- Attachment C Merimbula Sewage Treatment Plant Upgrade and Deep Ocean Outfall Concept Design and Environmental Assessment Report
- Attachment D BVSC Council Meeting Minutes October 2019
- Attachment E Loganhome Treatment Plant
- Attachment F East Gippsland Water Report
- Attachment G The Maleny STP Upgrade and Community Wetlands Construction
- Attachment H North Shoalhaven Reclaimed Water Management Scheme (REMS)
- Attachment I National Guidelines for Water Recycling
- Attachment J AECOM Memorandum 2013
- Attachment K PMGC Dam Proposal 2019
- Attachment L Overview of South East and Tabelands Region Climate
- Attachment M BVSC Council Meeting Minutes July 2013
- Attachment N BVSC Council Meeting Minutes June 2013
- Attachment O Environmental Guidelines 'Use of effluent by irrigation'
- Attachment P AECOM Fact Sheets
- Attachment Q Coastal Outfall System Upgrades in Australia Report