18. CWTP RESOURCE CONSENT FOR WASTEWATER EFFLUENT DISCHARGE

Officer responsible	**Author**
City Water and Waste Manager	John Moore, Senior Engineering Officer, DDI 941-8961

The purpose of this report is to confirm the direction indicated at the recent seminar of 13 September 2002, concerning a resource consent for the CWTP wastewater effluent discharge, ie that the Council will now pursue an ocean outfall.

A separate report will be submitted to the Council in November recommending more details on the process for progressing an application for an ocean pipeline consent, and recommending how the Council should proceed with the appeals it has lodged against the five consents granted by Environment Canterbury in April and June 2002.

BACKGROUND

The background leading up to the 13 September 2002 Seminar, attended by twenty Councillors and the Mayor, was published in the Press newspaper and is appended (refer Attachment 1) to this report for readers information.

Investigations commenced in 1996 for the preparation of a suite of 5 consents for a range of activities and discharges related to the wastewater discharge, to replace the existing consent for discharge of wastewater to the estuary, which was to expire in October 2001.

After extensive research and consultation, the Council subsequently resolved in August 2000 to seek a discharge consent for an estuary outfall for 15 years, as it considered at that time, that this option provided the greatest flexibility both in terms of environmental needs and technological advances, and did not preclude an ocean outfall after 15 years. The short-term consent also necessitated the continued assessment of management practices, as this consent would be for a limited time span.

The wastewater discharge consent handed down late last year by the four Environment Canterbury Commissioners for the discharge to the estuary was for five years only, and conditional that provision for UV be provided within 2 years, along with a strongly implied message given by the Commissioners that the Council should pursue an ocean outfall at the earliest opportunity. This decision was prompted by the Commissioners perception that the estuary was in a highly degraded state and it was not a sustainable option in ecological terms to continue effluent discharge to the estuary environment.

The Environment Canterbury decision and other conditions attached to it made the option of pursuing the estuary option untenable to the Council in that format. For example, a well designed UV plant would be very difficult to construct within two years and could well be redundant for any ocean outfall. At the very least a UV plant would be constructed in a different location for an ocean outfall to that for an estuary outfall.

For these reasons the Council submitted broad ranging appeals to the decisions in May and July 2002 to allow time to further consider the options via the negotiation and/or appeal route.

EXPERT REVIEWS

Having done this, a series of expert reviews were completed with respect to the estuary outfall on ecology and public health by eminent scientists, who are experts in their fields of marine ecology, and public health. Further information was also sought regarding alternative technology, costs, and legal issues regarding the discharge consent. These reviews were undertaken during August, and culminated in a seminar on 13 September 2002 for all Councillors and other interested parties, where this information was presented. The information presented at the seminar of 13 September 2002 which was attended by twenty Councillors and the Mayor, is tabled.

ECOLOGY AND PUBLIC HEALTH

In brief, the estuary ecology review panel found the estuary to be in a stable condition, if somewhat degraded. Their conclusion was that there was not extreme urgency for the discharge to leave the estuary, although this should nevertheless be pursued in an orderly way. The benefits of removing the discharge from the estuary included a 50% reduction or better in sea lettuce, along with the associated smells during warm weather, and reduction of anoxic conditions where rotting sea lettuce accumulates. Ammonia levels within the wastewater were also identified as likely to cause chronic health for juvenile fish.

The public health review identified a conflict in the use of the estuary between wastewater discharge and recreational use, particularly as this is a relatively small enclosed body of water providing relatively low dilution, and there is only one estuary. In addition there is no other aquatic recreational area apart from the ocean readily available to the residents of Christchurch. The review panel also advised of the recent release of Microbiological Water Quality Guidelines for assessing health risks associated with recreational contact with water. Applying these new assessment criteria to the estuary and Sumner beaches, resulted in a poor grading while wastewater discharge to the estuary continued, even if UV sterilisation were to be provided. The assessment identified opportunities to improve the grading of water within the estuary to potentially ''good' by removing the outfall from the sewage treatment plant, away from the estuary, combined with reducing sewer overflow events, which operate periodically during storm events. It is to be noted here that reducing such overflows is already included as part of the Council's planned long-term enhancements to the sewer reticulation system. Heathcote overflow remediation will be completed by the end of 2005 and Avon overflow remediation by the end of 2010.

The conclusion from both review panels, was that wastewater discharge should not continue to the estuary, as the preferred option. If the Council accepts these conclusions, an ocean outfall option needs to be pursued in an orderly way, as soon as reasonably practical to provide an outfall in a timely manner on terms acceptable to the Council.

LEGAL OPINION

The Legal opinion has been given as brief bullet points, and the significant items are listed below.

- The Environment Court will prefer an ocean outfall.
- There seems to be a good argument that there is no need for UV treatment for a temporary discharge to the estuary.
- It is uncertain whether an ocean outfall will require UV treatment.
- It is uncertain whether five years is sufficient time to get an ocean outfall in place.
- There is reasonable prospect of settling the appeal by getting agreement on the need or not for UV treatment and some more flexibility in the time allowed for a temporary consent.

COSTS

The cost implication of pursuing an ocean outfall was summarised at the 13 September seminar in the following table.

	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	Total
Approved 2002/03 Plan											
Consenting & investigations	0.3	0.3	0.2								0.8
Pond modifications	1.6										1.6
Estuary Outfall	0.7										0.7
Green Edge				7.1	7.3						14.4
UV Plant		8.0	8.0								16.0
Totals (1)	**2.6**	**8.3**	**8.2**	**7.1**	**7.3**						**33.5**
		◄ Stage 1 – 5 year estuary consent ►					**◄ Stage 2 – Ocean Pipeline ►**				
Possible 2003/04 Plan											
Consenting & investigations	0.4	0.4	0.4	0.4	0.4	0.2	0.2				2.4
Pond modifications (ie stage 1 works)	2.0	2.2									4.2
Ocean Pipeline (ie stage 2 works)								22.0	23.0		45.0
UV Plant (possible)										6.4	6.4
Green Edge (optional)				7.1	7.3						14.4
Totals (2)	**2.4**	**2.6**	**0.4**	**7.5**	**7.7**	**0.2**	**0.2**	**22.0**	**23.0**	**6.4**	**72.4**
Differences (1) – (2)	**(0.2)**	**(5.7)**	**(7.8)**	**0.4**	**0.4**	**0.2**	**0.2**	**22.0**	**23.0**	**6.4**	**38.9**

Note: (1) The ocean pipeline scenario in the above table (ie Stage 1 five-year short term consent, then Stage 2 thirty-five-year ocean pipeline consent) includes a cost increase of $38.9M. However this could finally be reduced by up to $20.8M (if permitted by the consenting process) by the avoidance of the UV plant ($6.4M) and by considering the Green Edge ($14.4M) as another separate standalone project.

(2) All the above costs are estimates and for budgeting purposes only. Timing of these commitments is subject to confirmation.

The Director of Finance Reports

Although an ocean outfall has the potential to increase the capital costs to the Council by up to $39 million this is spread over nine years and shifts some of the capital expense away from the next three years when the Councils budget is under pressure to 2009/10 and later. The following table shows the impact on currently forecast rate increases over the next 10 years:

	¾	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12
Currently forecast rate increases	3.89%	3.84%	4.37%	4.41%	5.54%	2.17%	2.46%	2.99%	2.66%
Amended rate increases	3.59%	3.37%	3.97%	4.53%	5.65%	2.24%	3.48%	4.77%	3.62%
Percentage change	-0.30%	-0.48%	-0.40%	0.12%	0.11%	0.07%	1.02%	1.77%	0.96%

These forecasts have been based on the assumption that the Council will borrow for these capital works which is our normal approach to additional major capital expenditure. Other innovative methods of financing major infrastructural expenditure will be worth exploring once more certainty exists on what form it is to take. In the meantime these are reasonable forecasts to use.

Comments have been made about the use of capital repaid from Orion being applied to this project. Apart from $75 million which is invested in the Capital endowment fund all other capital returned from trading enterprises has been applied to the reduction of Council debt and this has left the Council with a very low level of debt at the current time. This low level of debt has however already been factored into Council's forecasts. The additional debt needed for this project is small compared to the debt and asset levels of the Council.

If the Council chose to use part of the Capital Endowment Fund to fund the project then it would result in less interest earnings to apply to economic development projects and civic and community projects. A significant amount of the interest from the fund has been committed to particular projects over the next few years and further analysis would be needed to ensure that these commitments are not prejudiced. None of the commitments extend as far out as 2009/10

CONCLUSIONS

Investigations to date have concluded that an ocean outfall pipeline of no less than 2km long would be the most appropriate outfall. It is not clear at this stage whether a UV disinfection plant would be required for this option. The public health review panel indicated this would not be evident until the oxidation pond re-configuration was complete in two years time. It is expected that the reconfiguration of the ponds will significantly reduce the number of any remaining pathogens within the wastewater, thereby limiting the need for further UV treatment. Proceeding with an ocean outfall will not necessarily preclude other forms of treatments in the future, such as recovery of nutrients, metals, and water.

If an ocean outfall option is pursued by the Council now, work needs to commence directly, to prepare an Assessment of Environmental Effects (AEE) starting with further ocean modelling, undertaking an ecological baseline study for the ocean, consulting with parties who have an interest in an ocean outfall and establishment of a public education and information programme. In conjunction with this, the conditions of the five consents that have been granted need to be negotiated to achieve a suitable outcome for the Council, bearing in mind the ocean outfall option.

Although there is budget provision for some of this work within the existing annual plan, there is now a significant shortfall for an ocean outfall and associated consenting work. The table above gives an overview of the approved budget for the work had the discharge consent been favourable to the Council, along with a proposed budget for an Ocean Outfall. This budget will require further work and formal submission to the Council for approval as part of the report to be presented in November. However, for the proposed immediate works it can be seen in the above table there is provision in this financial year for the works required to be implemented immediately, to be commissioned.

SUMMARY AND PROPOSED WAY FORWARD

This report backgrounds the granting by Environment Canterbury of a short term five year consent to continue discharging treated wastewater effluent into the estuary, and the need to proceed forthwith with another application for a long term (possibly 35 years) ocean pipeline discharge consent.

The proposed way forward is as follows:

- A more detailed report to the November 2002 Sustainable Transport and Utilities Committee meeting and to Council.

- Negotiate, and/or appeal the conditions later this year, or early next year with stakeholders, for the five year consent for the estuary discharge, and for the four other consents for related activities and discharges which have been granted by Environment Canterbury

- Prepare an Assessment of Environmental Effects, and apply for consent to start construction of an ocean pipeline to discharge wastewater for a period of 35 years during the 2004/2005 financial year.

Staff Recommendation:

1. That the Council confirms that it will proceed with the option of consenting and construction of an ocean outfall pipeline for the Christchurch Wastewater Treatment Plant water discharge.

2. That legal appeals to the short term five year consent to discharge to the estuary be pursued so acceptable conditions can be obtained to allow continued discharge to the estuary until such time as an ocean outfall is constructed and operating.

3. That the Council proceed to prepare an Assessment of Environmental Effects as part of an application to the Environment Court to seek a discharge consent for wastewater to the ocean via a pipeline no less than 2km into the ocean. This includes commencing work immediately on an ecological base line study for an ocean outfall, and undertaking further ocean modelling.

4. That a report be presented to the November 2002 Sustainable Transport and Utilities Committee meeting detailing project timetable, costing, budget provisions and process to achieve an ocean outfall consent on terms suitable to the Council.

Chairman's Recommendation:

1. That recommendations 1-4 above be adopted.

2. That the November report include discussion and options to continue the original strategy for long term investment and improving estuary and waste water quality (irrespective of the dilution advantages inherent in a direct to ocean outfall) including:

   (a) Improving the quality of river water via better by performance of constructed sewer overflows

   (b) Examining options to reduce sea lettuce growth especially the McCormacks Bay 'sea-lettuce trap' and seeding problems.

   (c) Using natural systems to reduce nutrients in the waste water by application to land as part of a continued estuary green edge project over time.

   (d) Research into and trialing new technology for waste water recycling