Dear Ms Coughanowr

The Save Ralphs Bay Inc group would like to take the opportunity to make a formal submission to the Derwent Estuary Program "Water Quality Improvement Plan for Heavy Metals", currently out for public comment.

Our group has reviewed the document, and other relevant Derwent Estuary Program publications and believe that the Water Quality Improvement Plan is extremely timely, given the current environmental debate about the proposed canal estate development in the Ralphs Bay Conservation Area. We believe the document provides scientifically rigorous evidence that the sediments within the Derwent estuary are the most serious environmental issue in the Derwent estuary catchment, and that disturbance, dredging, and/or removal of contaminated sediments would lead to significant environmental harm.

We believe that the Derwent Estuary Program, as the peak scientific and management body for the river, should make a considered, independent recommendation about the suitability of this kind of development to the public. Given that the Derwent Estuary Program has coordinated and reviewed a most significant body of scientific research, a case for or against canal type developments should address the following evidence presented in the Water Quality Improvement Plan, and supported evidence in the State of the Derwent reports, and the 2001 Derwent Estuary Environmental Management Plan:

- There is a significant load of heavy metals bound to sediments in the estuary, a result of past industrial practices and a heavily urbanised environment. The vast majority of the estuary is significantly contaminated with respect to heavy metals, and the contamination is persistant

- Heavy metal concentrations measured in the Derwent are amongst the highest in Australia.

- Disturbance of these sediments is a significant concern, as the test work described in the report indicates that metal release can and does occur when sediments are mixed, resuspended, and disturbed in laboratory tests. The effects of long-term, continued resuspension and disturbance of sediments are unknown, but believed to be significant.

- Sediments are mobile and can be transported around the estuary, thus potentially redistributing contaminated material exposed through physical disturbance.

- Current sources of metals to the estuary are significant, primarily through groundwater losses at Zinifex Hobart Smelter site, and despite improved management practices, these sources will continue to cause environmental impact in the long term.

- The prospects for remediation or mitigation of historical contamination of Derwent sediments are poor, and there are little or no viable options suitable for the vast area of impacted sediments.

- Bioaccumulation of heavy metals is a most pressing issue for the ecology of the estuary, and for its obvious human-health impacts. The consumption of shellfish from anywhere in the estuary is banned, and shellfish in Ralphs Bay have some of the highest levels of heavy metals recorded in the estuary. Sediments are thought to be important in the bioaccumulation issue.

- Dredging guidelines for the Derwent estuary are listed as one of the priority management actions to address sediment contamination.

Dredging of sediments is required for the creation of the canal systems, and it is therefore predicted that significant sediment disturbance would result from the process of excavating canals and creating landmasses with the excavated materials. Exposure of metal laden sediments to oxygen in the atmosphere is potentially a significant issue, especially if sulphide rich zones are disturbed.

We ask the Derwent Estuary Program to provide an unbiased, scientific assessment of the following issues that are of concern to the general public:

1. What environmental risks are likely to be associated with the disturbance, dredging, relocation or removal of contaminated sediments from a tidal embayment such as Ralphs Bay ?

2. What environmental risks are likely to be associated with ongoing maintenance of artificial waterways created by a canal estate in a contaminated estuary?

3. What particular threats would be posed to the Spotted Handfish, saltmarsh vegetation, resident or migratory birds, by the building of a canal estate in Ralphs Bay ?

4. What is the likelihood of heavy metal pollution, emanating from a sediment plume leaving Ralphs Bay, impacting on water quality elsewhere in the estuary, and particularly aquaculture operations in the D'Entrecastreax Channel and Frederick Henry Bay ?

5. How frequently would dredging be needed to maintain canal estates and how would this activity affect the water quality in the canal estate and surrounding area ?

6. When will Derwent-specific dredging guidelines and protocols for avoiding disturbing contaminated sediments be developed, and who will administer and enforce the guidelines ?

7. Are there any public health implications involved in disturbing Ralphs Bay sediments, given the current levels of heavy metals detected in the tissues

of Derwent and Ralphs Bay shellfish and finfish, such as flathead (a common catch of recreational fishers) ?

8. What is "Monitored Natural Recovery", and how important is this approach to managing contaminated sediments in the Derwent estuary and Ralphs Bay ?

9. How will the recommendations made in the WQIP be resourced?

In addition to the specific issues of heavy metal contamination made in the WQIP and above, we would also like the Derwent Estuary Program to provide an informed assessment of other water quality impacts of canal estates, which are linked to heavy metals:

10. How will the natural values of areas such as Ralphs Bay be impacted by the building of a canal estate?

11. Has the issue of acid soluble sulphides generated by canal estates been considered as a potential impact on the coastal environment and Ralphs Bay in the longer term?

12. Can an informed assessment of the issue of nutrient enrichment in canal estates, and associated water quality issues (i.e. eutrophication, low dissolved oxygen, potential for algal blooms, potential for acid release from sulphides generated by eutrophication and associated metal release, reduced light penetration, decreased biological diversity etc) be made?

The report furthers the understanding of the environmental management of a most serious and persistent problem. We look forward to the Derwent Estuary Program providing the general community with an informed, scientifically robust appraisal of the above issues and concerns. Please do not hesitate to contact us if you wish to discuss any aspect of our submission.