

MANAGING SEWAGE DISCHARGES TO INLAND WATERS

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Sewage discharges and land management practices – including excessive fertilizer use, land clearance and over-irrigation – have contributed to the serious damage of our water catchments and aquatic ecosystems.

Two species of native fish are known to be extinct and 31 of the remaining 44 are endangered, vulnerable or restricted. There is an extensive loss of river bank vegetation, significant river bed and bank erosion, high sediment loads and increased salinity.

Statewide levels of nutrients, particularly nitrogen and phosphorus, are increasing. Repeated severe outbreaks of blue-green algae highlight the fragility of Victorian waterways and the urgent need for corrective action.

EPA has published *Managing Sewage Discharges to Inland Waters* to help the water industry implement environmentally sustainable management practices for sewage discharges.

The document sets out policy principles and an action plan for ecologically sustainable sewage management.

EPA has also published *Preliminary Nutrient Guidelines for Victorian Inland Streams* to assist in the determination of the minimum standards for effluent quality.

Victorian waters suffer from both point and diffuse source pollution. Point source pollution is primarily caused by inadequate sewage

treatment. Over-fertilization, land clearances and over-irrigation are the primary causes of diffuse source pollution. The problems are increased by reduced flows which are caused by the removal of water from our streams.

Affordable technologies are available to improve treatment levels of sewage. There are already 13 tertiary standard treatment plants operating in Victoria and the six towns which still discharge raw sewage into coastal waters are required to upgrade to secondary standard of treatment by the end of 1997.

Manufacturing industries in Victoria are responding positively to the need to adopt waste minimisation and cleaner production practices, to reduce their environmental impacts.

While many agricultural water users are heeding the message of nutrient impacts – through better fertilizer and irrigation practices which also result in a significant cost saving – others have been less responsive.

The publication sets out EPA's views on sewage management and issues the Victorian water industry needs to address when developing wastewater management plans.

Where total effluent reuse is neither practicable nor environmentally sustainable, water authorities need to submit nutrient minimisation plans to EPA, by December 31 1995.

ACTION PLAN FOR ECOLOGICALLY SUSTAINABLE SEWAGE MANAGEMENT

1. Provision of sewerage systems

New developments should not be allowed without sewerage provision, if on-site containment of wastewater is not viable.

2. Effective reticulation systems

Sewerage systems need to be regularly checked for leaks and overflows.

Contingency plans for effective responses to emergencies must be prepared. Water authorities should have an asset management plan which ensures maintenance and up-gradings, and a system capacity which allows for population growth.

3. Trade and domestic inputs

Industrial discharges must be controlled by trade waste agreements which require industry to adopt waste minimisation at source and appropriately pre-treat unavoidable wastes. Water authorities have a duty to inform the public about water conservation, waste reduction and banned materials.

4. Connection to sewer

- All domestic premises must be connected if sewerage is available.
- Industrial process wastewaters which cannot be recycled or reused must have appropriate pre-treatment.
- Wastes which are too hazardous for disposal to sewer must be taken to licensed waste treatment plants.
- No process wastewater may be discharged to waterways if reticulated sewerage is available.
- Industrial premises are required to minimise contamination of storm-water run-off from the premises.
- Subject to approval, once-through cooling water may be returned to waterways.

5. Sewage treatment and disposal

Sewage treatment should aim to:

- protect public health
- minimise environmental impacts
- maximise reuse opportunities
- utilise modern, economically viable, technology.

6. Effluent disinfection/sludge management

Options for disinfecting sewage effluents are listed. The use of chlorine is to be avoided where there is a practical alternative. No new municipal plants should use chlorine for disinfection.

Water authorities reliant on detention ponds for disinfection must have contingency measures to deal with algal blooms – especially blue-green algae – within the pond.

7. Operator training

To maintain optimum system and plant performance, sufficient resources need to be provided for inspection, testing, repair, upgrading and operating the system. Water authority staff or contractors need to be appropriately trained and qualified to perform the allocated work.

8. Wastewater management plans

Wastewater management plans should be prepared within the broader framework of an environmental management system.

FURTHER DETAILS

Copies of *Managing Sewage Discharges to Inland Waters* (No. 473) are available from EPA's Customer Service and Information Centre (Ground floor, 477 Collins Street, Melbourne; (03) 9628 5622).

It should be read in conjunction with EPA's publication *Preliminary Nutrient Guidelines for Victorian Inland Streams* (No. 478) and EPA's Information Bulletin *Sewage Discharges to Victorian Coastal Waters*.