



**Works on
Waterways Notes No. 4**

Sand and Gravel Extractions

Sand and gravel extraction from a waterway may be considered acceptable if there is a benefit to the waterway and surrounding environment. For example, extraction would be permitted in cases where a build up of sand and gravel has occurred in a section of waterway, causing stream deviation or erosion.

4.1 Extractive Industry

An extractive industry is defined as; removal or extraction of stone from land if the main purpose of that removal is for:

- a. The sale or commercial use of the stone; or
- b. Use in construction, building, road or manufacturing works.

Stone includes gravel, sand, building stone and clay.

Approval is required from the CMA where the extractive works will interfere with the bed or banks of a waterway, or within the floodplain inundation zone where the CMA has floodplain management functions.

Approvals are also required from Department of Primary Industries (DPI) under the *Extractive Industries Development Act 1995*, except where the depth of extraction is less than two (2) metres below the natural surface and total area of extraction is less than 2000 m².

Approval from DPI is not necessary where stone is extracted from the floodplain for use on the property of origin, and is not for sale or any other commercial use. However, where this occurs and the area is greater than 2000 m² approval will be required under the *Catchment and Land Protection Act 1994* from DPI.

Generally, extractive works within waterways will only be permitted if they are a component of a regional waterway management strategy, or it can be demonstrated to the CMA that there are clear net gains to the environment or stability of the waterway.

The criterion for assessment of applications for these works is described in **Section 4.3**.

4.2 Potential Waterway Impacts

Potential issues associated with sand and gravel extraction within waterways include:

- Acceleration of erosion and sedimentation;
- Deepening the bed may trigger headward erosion or bank erosion;
- Altered flow regime during and after the works;
- Loss of habitat and breeding areas for in-stream biota;
- Loss of vegetation on stream banks and in stream large woody debris;
- Potential for the stream to change course;
- Potential to alter floodplain flows;
- Potential for contaminants from machinery to reduce water quality;
- Instream sediment mobilisation.

In view of the above impacts, the in-stream removal of sand and gravel is generally discouraged throughout Victoria by general CMA policy.

4.3 Assessment Criteria

Factors to consider with these types of applications are described below. Reference should also be made to a copy of the applicant's Work Plan and Rehabilitation Plan submitted to DPI, where appropriate.

Initial consideration is given to whether the works are consistent with Regional Strategies.

Location and Extent

The location and extent of any approved extraction within a waterway will be determined on a case by case basis, having regard to geomorphological processes, and any identified environmental benefits.

Methodology

- The preferred approach is for the extractions to move upstream and occur above the low flow water level.
- Rehabilitation should be undertaken concurrently with the works. Where buffer zones are required these should be established before the extraction commences.
- The finished slopes must be stable. Maximum slopes at the upstream and downstream of the site to be 1(v):10(h), with side slopes of 1(v):3(h).
- Effective measures are to be specified to minimise turbid water leaving the site from access tracks and work areas. Such measures and guidelines are set out in the *Environment Protection Authority Publication 275, Construction Techniques For Sediment Pollution Control* (1991).
- No machinery with defective hydraulics that would discharge fluid is permitted in the stream environment.

Site Rehabilitation

The works site is to be rehabilitated. For minor extraction works the rehabilitation plan is covered by the standard permit conditions. For large scale works where DPI issue a permit, the following information is required:

- Revegetation plan using native indigenous plants;
- Pool / riffle sequence restored;
- Provision for fish passage;
- Large woody debris replaced;
- Access tracks are scarified and topsoiled;
- Maintenance program is defined for a period of two (2) years to monitor site and ensure vegetation becomes established, and weed invasion is suppressed.

Approval for any extraction will be dependant on there being a clearly established environmental net gain.

4.4 References

The following publications by DPI provide a comprehensive background for Extractive Industries:

- Guidelines for Extractive Industries, June 1998
- G2: Guidelines to Planning Reforms Associated with the Extractive Industries Development Act 1995
- G3: Guidelines About Works Plan Information for Extractive Industries Over an Area of 5 Hectares or More, or Greater than 2 metres in Depth
- G4: Guidelines About Works Plan Information for Extractive Industries Over an Area Not Exceeding 5 Hectares and Not Exceeding 2 metres in Depth