

Appendix C1 – Assessment of environmental effects

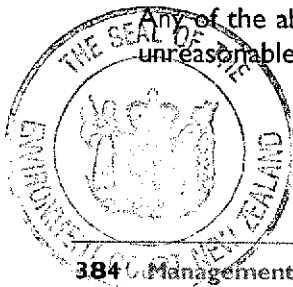
(a) Matters to be included:

An assessment should include the following information, as applicable:

- (i) A description of the site and its vicinity, including a description of the existing environment, both natural and physical (including land uses, roading and services);
- (ii) A detailed description of the proposed activity, and, where it is likely that the activity may result in significant adverse environmental effects, a description of any other possible locations or methods for undertaking the activity, and an explanation of the reasons for selecting the proposed location, scale and type of activity;
- (iii) A review of the appropriate resource management policy framework within which the proposal is assessed, including other resource consents required and relevant District Plan objectives and policies;
- (iv) An assessment of the actual or potential effects on the environment of the proposed activity, including beneficial effects, adverse effects and cumulative effects (refer to the following tables for the range of potential effects that should be considered);
- (v) Where the activity involves the use of any hazardous substances and installations, an assessment of any risks to the environment (particularly the health and safety of the community) which are likely to arise from such use;
- (vi) Where the activity includes the discharge of any contaminant (subject to the requirements of any regional plan), a description of the nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects, and any possible alternative methods of discharge, including discharge into any other receiving environment;
- (vii) A description of the mitigation measures (including monitoring, safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce any adverse environmental effects, including an explanation as to why the use of possible alternative mitigation measures is not proposed (refer to the following tables for the range of potential mitigation measures that should be considered);
- (viii) An identification of those persons interested or affected by the proposal, the consultation undertaken, and any response to the views of those consulted;
- (ix) Where the scale or significance of the activity's effects are such that monitoring is required, a description of how the effects are to be monitored and by whom.

Where the scale or nature of the proposed activity's effects are likely to be significant, the assessment of effects may, as part of limiting the scope of effects, include the results of a scoping evaluation, in which the actual or potential significant effects are identified, thereby removing the need to address all possible effects. If an assessment has included a scoping exercise, the Council may require further information of the scoping exercise, particularly in terms of clarifying the range of effects that were first identified, and the reasons why certain effects were eliminated from further assessment.

Any of the above requirements may be waived if it is deemed that it would be inappropriate or unreasonable to include such matters.



(b) Matters to be considered:

Any person preparing an assessment of environmental effects should consider the following matters where relevant:

- (i) Any physical effect on the locality, including any landscape and visual effects, and any effect on physical processes;
- (ii) Any effect on ecosystems, including effects on animals or plants and any physical disturbance of habitats in the vicinity, and on public health and safety;
- (iii) Any effect on natural and physical resources which may have aesthetic, recreational, scientific, historical, spiritual, cultural, or other special value for present and future generations;
- (iv) Any effect on those in the neighbourhood and the wider community, including any socio-economic and cultural effects where such effects relate directly to an effect on the natural and physical resources (including amenity values);
- (v) Any effect on the efficiency of infrastructure, including transportation, communications, and public services;
- (vi) The effect of any discharge into the environment, including any emission of noise;
- (vii) Any risk to the neighbourhood, the wider community or the environment through increased potential effects from natural occurrences or the use of hazardous substances or hazardous installations.

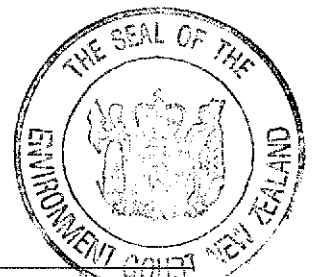


Table CI.1 – Schedule of potential environmental effects

Natural environment – Physical resources and processes; elements of the environment exposed to potential effects

Water:

- Surface area and quantity of water bodies (lakes, wetlands, rivers, sea), and groundwater systems (including aquifers)
- Quality (including chemical composition) and temperature of water bodies or groundwater
- Catchment boundaries and characteristics (e.g. runoff and flow rates, flooding patterns, recharge of aquifers)
- Coastal processes (e.g. tidal movement, littoral systems, currents)
- Snow and ice
- Deposition and sedimentation rates and characteristics (including particulate suspension)

Earth:

- Slope stability and susceptibility to erosion
- Outstanding landscapes or significant natural features
- Soil resources (quantity, versatility, characteristics)
- Erosion rates
- Compaction and settling
- Seismic characteristics (e.g. ground shaking, liquefaction, fault rupture features)
- Landforms
- Unique physical features

Atmosphere:

- Background radiation
- Air quality (gaseous and particulate composition)
- Climate (macro-and microclimate)
- Temperatures
- Air moisture
- Wind patterns

Measures to avoid, remedy or mitigate adverse effects:

- Riparian margin protection, protective vegetation in riparian margins, banish stock
- Fencing, covenants, and other protection measures
- Restoration of natural vegetation cover, prohibit certain noxious activities
- Erosion and sediment control measures, planting, ban vehicle access
- Stormwater control and drainage; stock management and fencing; rehabilitation of disrupted areas
- Prohibiting building on certain parts of a site
- Compaction of fill or soil, or other engineering works
- Modification of location, height, bulk, and design of proposed buildings, accessways, roads, etc.
- Restorative works to return soil conditions to a similar condition as prior to works
- Creation of lakes and wetlands using former quarry/excavation sites
- Air quality control mechanisms (e.g. filters, air scourers)
- Shelter planting

Note: This table is intended to provide a guide or checklist as to the types of environmental effects that may occur as a result of a proposed activity. It is not exhaustive, and should therefore be used for indicative purposes only. For any particular proposed activity, only some of the listed effects may be relevant, and an assessment of environmental effects should focus on the potentially significant effects. The mitigation measures listed above may not be at all appropriate for all circumstances. Some measures may be used to mitigate a number of different effects (for example, planting could be used for screening, site restoration, noise buffer and amenity purposes).

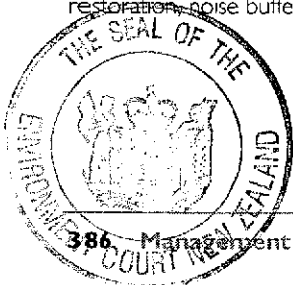


Table C1.2 – Schedule of potential environmental effects

Natural environment – Ecological resources and systems; elements of the environment exposed to potential effects

Flora:

- Native Trees and shrubs
- Other native flora (e.g. ferns, tussock)
- Wild exotic trees, shrubs, grasses and other flora
- Cultivated flora (e.g., plantation forests, orchards, crops, grasses)
- Microflora (e.g., lichen)
- Aquatic plants, including marine plants

Fauna:

- Birds
- Land animals
- Fish and shellfish
- Benthic organisms (i.e. organisms found at the bottom of an ocean or lake)
- Insects
- Microfauna (e.g., protozoa)

Ecological relationships:

- Barriers between habitats (e.g. isolation of unsustainable pockets of native forest or birdlife)
- Wildlife corridors
- Salination of water or soils
- Eutrophication
- Disease - insect vectors
- Areas of wetlands
- Areas of wilderness
- Scrub or weed infestation or encroachment
- Noxious animal encroachment
- Biodiversity
- Intrinsic values of natural environment

Measures to avoid, remedy or mitigate adverse effects:

- Riparian margin protection, protective vegetation in riparian margins
- Restoration of natural vegetation cover; new or additional planting to compensate for removal of vegetation, restorative works to return vegetation conditions
- Removal of noxious plants or animals
- Planting to connect habitats or groups of bush
- Prohibition of stock or vehicle access, fencing, erection of barriers
- Modification of location, height, bulk, and design of proposed buildings, accessways, roads, etc.
- Landscape treatment
- Creation of lakes and wetlands using former quarry/excavation sites
- Covenants or registration of interest on titles

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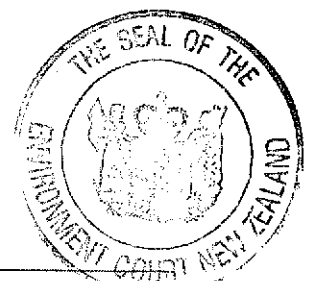


Table C1.3 – Schedule of potential environmental effects

Human environment – Community health, safety and functioning; elements of the environment exposed to potential effects

Community health and safety:

- Quiet environment
- Fresh air free from odour
- Traffic and pedestrian safety
- Public safety
- Accessibility to public services

Community patterns:

- Active recreation (e.g. hunting, fishing, boating and aquatic sports, tramping, organised sports)
- Passive recreation (e.g. picnicking)
- Property values and land tenure
- Settlement patterns and community cohesiveness

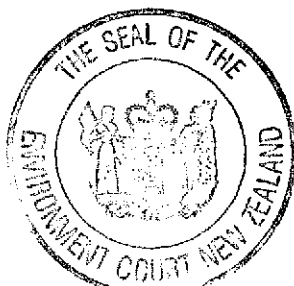
Infrastructure:

- Traffic flow efficiency and functions, parking needs
- Public transportation needs
- Water supply
- Waste and sewage disposal and treatment
- Stormwater disposal
- Energy supply (electricity, gas, other)
- Communications
- Development potential and restraints
- Capacity and amount of use of services and systems

Measures to avoid, remedy or mitigate adverse effects:

- Protection of important areas from any development, buffer areas
- Use of noise control measures on vehicles, sprinkling systems for yards
- Separation distances; noise control measures; limitation of hours of operation, number of people, numbers and types of vehicles; arrangement of activities on site; imposition of noise, vibration and blasting limits
- Building design measures (e.g. location of windows/doors, building materials)
- Prohibition of certain practices (e.g. fires)
- Management plan or risk management plan; safety measures; isolation/separation of some activities
- Limitation of intensity (number of people, scale of activity, number of vehicles, types of vehicles); control location, number and design of vehicle crossings; provision of on-site carparking spaces; screening and landscaping of parking area; limiting delivery times; provision of appropriate signs specifying access and egress from sites; provision of cycle lanes and car-free areas; speed control areas (humps visual cues)
- Treatment of contaminated water before entering the stormwater system
- Installation of energy efficient features into new buildings, equipment and devices
- Retrofitting of existing buildings

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Attachment 12 - Transitional Canterbury Regional Plan

The Transitional Canterbury Regional Plan is derived from the provisions of previous bylaws and authorisations from the previous authorities that now constitute the Canterbury Regional Council. The rules of relevance to this application are summarised below:

North Canterbury Catchment Bylaw:

The North Canterbury Catchment Bylaw requires that resource consent be obtained for:

- The erection of crossings over a watercourse under the control of the Board
- The widening, deepening, alteration or diversion of the course of a watercourse under the control of the Board
- The removal of shingle from a watercourse under the control of the Board
- The planting of trees within the bed of a watercourse, or within 7.3 m of the bed of a watercourse under the control of the Board.
- The erection of any structure (including banks and dams) within the bed of a watercourse, or within 7.3 m of the bed of a watercourse under the control of the Board.
- The construction of a watercourse connected to a constructed watercourse under the control of the Board.

Any activity that is stated to require the approval of the Board, is deemed to be a discretionary activity.

Canterbury Regional Council Bylaw No. 2 Underground Water 1990:

The Canterbury Regional Council Bylaw No. 2 Underground Water 1990 requires consents for:

- The making or alteration, or causing any alteration or making of a bore. Every person intending to carry out work such as boring, drilling, pile driving, dredging or digging to a depth below ground level exceeding 8 metres is required to give 14 working days notice of such intent to Environment Canterbury
- The placement or discharge on, onto or into the ground any matter or thing that affects or is liable to affect detrimentally the quality of underground water either directly or indirectly; or allowing to remain in the ground any matter or thing which affects or is liable to affect detrimentally the quality of groundwater either directly or indirectly.

Every person having control of a bore is required to take such steps that are necessary to ensure that no pollution of any sort can enter the underground water system because of the existence of that bore.

Any activity that is stated to require the approval of the Board, is deemed to be a discretionary activity.

Clean Air Act 1972:

The schedules of the Clean Air Act still apply. The only activity associated with the landfill that would require consent is the operation of the landfill gas flares or engines, if the heat release exceeds 5MW, which would be the case for the proposed landfill at Kate Valley.

General Authorisations:

There are a number of general authorisations that authorise a range of activities. In summary these are for:



Abstraction of Surface Water and Ground Water

- The abstraction of surface water provided that the volume of water abstracted shall not exceed 10 m³ per day, per property, at a rate not exceeding 5 litres per second.
- The abstraction of water from any groundwater resource provided that the volume abstracted shall not exceed 100 m³ per day, per property, from any bore at a rate not exceeding 10 litres per second and the abstraction bore shall be further than 100 m from any bore on a neighbouring property or from any surface water resource, and the abstraction is required to occur on a property greater than 20 ha in area.

Proposed abstractions that do not meet the conditions of the general authorisation are discretionary activities.

Discharge and Diversion of Natural Water

- The diversion and discharge of natural water associated with minor realignments of and minor improvements to watercourses within its region are permitted. The term '*minor realignments of, and minor improvements to*' is defined as the diversion of natural water from within a surface flowing river, stream or drain, and the return of the flow to the original course of the waterbody provided that the points of diversion and return are required to be within one property.

Proposed discharges and diversions that do not meet the conditions of the general authorisation are discretionary activities.

Discharge of Sewage Tank Effluent

- The discharge of domestic sewage from a sewage tank into the ground is a permitted activity, provided that the discharge does not exceed 2,000 litres per day from any one installation. Where a property exceeds 200 ha in size, the total discharge from all installations shall not exceed 10,000 litres per day.

The discharge of any sewage effluent that does not meet the conditions of the general authorisation is a discretionary activity.

Discharge of Stormwater

- The discharge of roof stormwater from buildings and structures either into the ground or directly into groundwater is permitted provided it is via a sealed system that excludes all other stormwater.
- The discharge of stormwater from roading into the ground, outside of the Christchurch City Council urban area, is a permitted activity.

These authorisations are subject to the condition that any discharge shall not cause erosion to the banks or bed of the receiving waterbody. Proposed discharges that do not meet the conditions of the general authorisation are discretionary activities.

Damming of Rivers or Streams

- The damming of intermittently flowing rivers and streams that flow only after rainfall, or during periods of wet weather, with a dam that does not exceed 3 m in height, is permitted subject to a range of conditions.

The damming of water other than specified in this general authorisation is a discretionary activity.



