

E1. Water quality and integrated management

E1.1. Introduction

The National Policy Statement for Freshwater Management, the New Zealand Coastal Policy Statement and this Plan seek to improve the integrated management of freshwater and the use and development of land. Chapter F Coastal of this Plan also addresses coastal water quality issues.

The quality and health of Auckland's freshwater resources is highly variable. This is due to different land use activities in catchments and past approaches to land development, use and management. Freshwater quality and ecosystem health is affected by point source and diffuse discharges from rural and urban activities.

The focus of these provisions is to avoid adverse effects as far as practicable, particularly in greenfield developments where there are greater opportunities to do so. Where it is not practicable to avoid adverse effects the provisions seek to minimise them and to reduce existing adverse effects when the opportunity is provided by redevelopment.

Some land use activities and discharges have the potential to cause greater effects on freshwater systems than others and need to be specifically managed. These include agrichemical use, landfills, contaminated land, earthworks, onsite wastewater management, wastewater networks and stormwater networks.

Land use activities, associated discharges and water takes have the potential to contaminate sources of drinking-water. The Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulation 2007 requires the Council to consider the potential effects of an activity on a registered drinking-water supply.

A key concern to Mana Whenua is the effects on the mauri of water caused by pollution of a stream, river, catchment or harbour. Stormwater and wastewater networks and wastewater treatment plants are essential prerequisites in assisting in ensuring the integrated management of land and water quality.

The Plan provides for managing the adverse effects of activities on freshwater and coastal waters. This is by reference to the National Policy Statement for Freshwater Management national bottom lines and surface water quality interim guidelines (until freshwater objectives and limits are set for each Freshwater Management Unit as required under the National Policy Statement for Freshwater Management and a plan change is completed).

The interim freshwater quality guideline will be replaced by more comprehensive water quality and quantity objectives and limits to be developed with communities in accordance with the National Policy Statement for Freshwater Management and subsequently given effect to through changes to the Plan.

E1.2. Objectives [rp]

- (1) Freshwater and sediment quality is maintained where it is excellent or good and progressively improved over time in degraded areas.
- (2) The mauri of freshwater is maintained or progressively improved over time to enable traditional and cultural use of this resource by Mana Whenua.
- (3) Stormwater and wastewater networks are managed to protect public health and safety and to prevent or minimise adverse effects of contaminants on freshwater and coastal water quality.

E1.3. Policies [rp/dp]

Freshwater quality and ecosystem health interim guidelines

- (1) Manage discharges, until such time as objectives and limits are established in accordance with Policy E1.3(7), having regard to:
 - (a) the National Policy Statement for Freshwater Management National Bottom Lines;
 - (b) the Macroinvertebrate Community Index as a guideline for freshwater ecosystem health associated with different land uses within catchments in accordance with Policy E1.3(2); or
 - (c) other indicators of water quality and ecosystem health.
- (2) Manage discharges, subdivision, use, and development that affect freshwater systems to:
 - (a) maintain or enhance water quality, flows, stream channels and their margins and other freshwater values, where the current condition is above National Policy Statement for Freshwater Management National Bottom Lines and the relevant Macroinvertebrate Community Index guideline in Table E1.3.1 below; or
 - (b) enhance water quality, flows, stream channels and their margins and other freshwater values where the current condition is below national bottom lines or the relevant Macroinvertebrate Community Index guideline in Table E1.3.1 below.

Table E1.3.1 Macroinvertebrate Community Index guideline for Auckland rivers and streams

Land use	Macroinvertebrate Community Index guideline
Native forest	123
Exotic forest	111
Rural areas	94
Urban areas	68

Note 1

When assessing the existing Macroinvertebrate Community Index in a stream against the Macroinvertebrate Community Index guideline in Table E1.3.1 above, standard protocols for semi-quantitative sample collection should be used as described in Protocols for sampling macroinvertebrates in wadeable streams, New Zealand Macroinvertebrate Working Group Report No. 1, Stark, J.D. et al., Prepared for the Ministry for the Environment 2001.

Note 2

Where an activity crosses more than one land use or a river or stream traverses the border between two land use types at the location of the activity or the point of discharge, the lower Macroinvertebrate Community Index value shall be used.

Note 3

Refer to the planning maps for the Macroinvertebrate Community Index Control to identify the land use types for the area.

- (3) Require freshwater systems to be enhanced unless existing intensive land use and development has irreversibly modified them such that it practicably precludes enhancement.

National Policy Statement on Freshwater Management

The National Policy Statement on Freshwater Management requires that Policies E1.3(4) to (7) below are included in the Plan.

- (4) When considering any application for a discharge, the Council must have regard to the following matters:
- (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of freshwater including on any ecosystem associated with freshwater; and
 - (b) the extent to which it is feasible and dependable that any more than a minor adverse effect on freshwater, and on any ecosystem associated with freshwater, resulting from the discharge would be avoided.

- (5) When considering any application for a discharge the Council must have regard to the following matters:
- (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and
 - (b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided.
- (6) Policies E1.3(4) and (5) apply to the following discharges (including a diffuse discharge by any person or animal):
- (a) new discharge; or
 - (b) a change or increase in any discharge of any contaminant into freshwater, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering freshwater.

Note 1

Policies E1.3(4) – (6) are policy A4 of the National Policy Statement for Freshwater Management which are required by the National Policy Statement for Freshwater Management to be incorporated in regional plan provisions under section 55 of the Resource Management Act 1991 without using the process in schedule 1. They apply until full effect has been given to the National Policy Statement for Freshwater Management. Policy E1.3(4) does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011. Policy E1.3(5) does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 takes effect.

- (7) Develop Freshwater Management Unit specific objectives and limits for freshwater with Mana Whenua, through community engagement, scientific research and mātauranga Māori, to replace the Macroinvertebrate Community Index interim guideline and to give full effect to the National Policy Statement for Freshwater Management.

Note 1

Policy E1.3(7) above does not preclude the use of the Macroinvertebrate Community Index as a Freshwater Management Unit-specific objective/limit in future.

Stormwater management

- (8) Avoid as far as practicable, or otherwise minimise or mitigate, adverse effects of stormwater runoff from greenfield development on freshwater systems, freshwater and coastal water by:
- (a) taking an integrated stormwater management approach (refer to Policy E1.3.10);
 - (b) minimising the generation and discharge of contaminants, particularly from high contaminant generating car parks and high use roads and into sensitive receiving environments;
 - (c) minimising or mitigating changes in hydrology, including loss of infiltration, to:
 - (i) minimise erosion and associated effects on stream health and values;
 - (ii) maintain stream baseflows; and
 - (iii) support groundwater recharge;
 - (d) where practicable, minimising or mitigating the effects on freshwater systems arising from changes in water temperature caused by stormwater discharges; and
 - (e) providing for the management of gross stormwater pollutants, such as litter, in areas where the generation of these may be an issue.
- (9) Minimise or mitigate new adverse effects of stormwater runoff, and where practicable progressively reduce existing adverse effects of stormwater runoff, on freshwater systems, freshwater and coastal waters during intensification and redevelopment of existing urban areas by all of the following:
- (a) requiring measures to reduce contaminants, particularly from high contaminant-generating car parks and high-use roads;
 - (b) requiring measures to reduce the discharge of gross stormwater pollutants;
 - (c) requiring measures to be adopted to reduce the peak flow rate and the volume of stormwater flows:
 - (i) within sites identified in the Stormwater Management Area – Flow 1 and Flow 2 Control (as shown on the planning maps);
 - (ii) where development exceeds the maximum impervious area for the relevant zone; or
 - (iii) from areas of impervious surface where discharges may give rise to flooding or adversely affect rivers and streams;

- (d) taking an integrated stormwater management approach for large-scale and comprehensive redevelopment and intensification (refer to Policy E1.3.10 below) and encourage the restoration of freshwater systems where practicable; and
 - (e) ensuring intensification is supported by appropriate stormwater infrastructure, including natural assets that are utilised for stormwater conveyance and overland flow paths.
- (10) In taking an integrated stormwater management approach have regard to all of the following:
- (a) the nature and scale of the development and practical and cost considerations, recognising:
 - (i) greenfield and comprehensive brownfield development generally offer greater opportunity than intensification and small-scale redevelopment of existing areas;
 - (ii) intensive land uses such as high-intensity residential, business, industrial and roads generally have greater constraints; and
 - (iii) site operational and use requirements may preclude the use of an integrated stormwater management approach.
 - (b) the location, design, capacity, intensity and integration of sites/development and infrastructure, including roads and reserves, to protect significant site features and hydrology and minimise adverse effects on receiving environments;
 - (c) the nature and sensitivity of receiving environments to the adverse effects of development, including fragmentation and loss of connectivity of rivers and streams, hydrological effects and contaminant discharges and how these can be minimised and mitigated, including opportunities to enhance degraded environments;
 - (d) reducing stormwater flows and contaminants at source prior to the consideration of mitigation measures and the optimisation of on-site and larger communal devices where these are required; and
 - (e) the use and enhancement of natural hydrological features and green infrastructure for stormwater management where practicable.
- (11) Avoid as far as practicable, or otherwise minimise or mitigate adverse effects of stormwater diversions and discharges, having particular regard to:
- (a) the nature, quality, volume and peak flow of the stormwater runoff;

- (b) the sensitivity of freshwater systems and coastal waters, including the Hauraki Gulf Marine Park;
 - (c) the potential for the diversion and discharge to create or exacerbate flood risks;
 - (d) options to manage stormwater on-site or the use of communal stormwater management measures;
 - (e) practical limitations in respect of the measures that can be applied; and
 - (f) the current state of receiving environments.
- (12) Manage contaminants in stormwater runoff from high contaminant generating car parks and high use roads to minimise new adverse effects and progressively reduce existing adverse effects on water and sediment quality in freshwater systems, freshwater and coastal waters.
- (13) Require stormwater quality or flow management to be achieved on-site unless there is a downstream communal device or facility designed to cater for the site's stormwater runoff.
- (14) Adopt the best practicable option to minimise the adverse effects of stormwater discharges from stormwater network and infrastructure including road, and rail having regard to all of the following:
- (a) the best practicable option criteria as set out in section 2 of the Resource Management Act 1991;
 - (b) the reasonable timeframes over which adverse effects can be avoided as far as practicable, or otherwise minimised or mitigated;
 - (c) the scale and significance of the adverse effects;
 - (d) infrastructure investment priorities and the consequences of delaying infrastructural improvements in other areas;
 - (e) the ability to prevent or minimise existing adverse effects having regard to the effectiveness and timeframes of other feasible methods, including land use controls;
 - (f) opportunities to integrate with other major infrastructure projects or works;
 - (g) the need to maintain and optimise existing stormwater networks and provide for planned land use and development; and
 - (h) operational requirements and space limitations.

Ground soakage

- (15) Utilise stormwater discharge to ground soakage in areas underlain by shallow or highly permeable aquifers provided that:
- (a) ground soakage is available;
 - (b) any risk to people and property from land instability or flooding is avoided;
 - (c) stormwater quality treatment is implemented to minimise effects on the capacity and water quality of the underlying aquifer system; and
 - (d) discharge to ground soakage is the most effective and sustainable option.
- (16) Require land use development and drainage systems within areas underlain by peat soils to provide for stormwater discharge to ground soakage that maintains underlying water levels and the geotechnical stability of the peat soils.

Wastewater

- (17) Avoid the discharge of wastewater to the coastal marine area and to freshwater, unless:
- (a) alternative methods, sites and routes for the discharge have been considered and are not the best practicable option;
 - (b) Mana Whenua have been consulted in accordance with tikanga Māori and due weight has been given to section 6, section 7 and section 8 of the Resource Management Act 1991;
 - (c) the affected community has been consulted regarding the suitability of the treatment and disposal system to address any environmental effects;
 - (d) the extent to which adverse effects have been avoided, remedied or mitigated on areas of:
 - (i) high recreational use, or that are used for fishing or shellfish gathering;
 - (ii) areas of maintenance dredging;
 - (iii) commercial or residential waterfront development;
 - (iv) high ecological value; and
 - (v) marine farms.

Wastewater treatment plants

- (18) Avoid the discharge of wastewater from wastewater treatment plants and associated structures to freshwater, unless:

- (a) alternative methods, sites and routes for the discharge have been considered and are not the best practicable option;
- (b) Mana Whenua have been consulted in accordance with tikanga Māori and due consideration has been given to section 6, section 7 and section 8 of the Resource Management Act 1991;
- (c) the affected community has been consulted regarding the suitability of the treatment and disposal system to address any environmental effects; and
- (d) the extent to which adverse effects have been avoided where practicable, or otherwise remedied or mitigated in areas of:
 - (i) high recreational use, or areas that are used for fishing or shellfish gathering;
 - (ii) commercial or residential development; and
 - (iii) significant ecological value.

Wastewater network overflow discharges

- (19) Ensure wastewater networks are designed and operated to minimise wet weather overflows by:
 - (a) requiring wastewater networks to be designed and constructed in accordance with recognised industry standards, including being sized to cater for the maximum probable development level of the area to be serviced;
 - (b) requiring the management of connections to the wastewater network;
 - (c) requiring wastewater networks to be managed in accordance with a network operations plan including an overflow mitigation plan with clear requirements and timeframes; and
 - (d) designing and locating overflow points to minimise nuisance, damage, public health risk and adverse ecological effects.
- (20) Require land use and development in areas serviced by a combined sewer network to:
 - (a) avoid increasing stormwater flows to the combined sewer network, unless any increase is minor and there is no practicable alternative;
 - (b) where practicable, reduce stormwater flows from existing impervious areas to the combined sewer network at the time of urban intensification, redevelopment or subdivision; and

- (c) discharge stormwater from new impervious areas and existing impervious areas to a separated stormwater system, or a suitable alternative, where one of those options is available.

(21) Progressively minimise the adverse effects of wet weather overflows from wastewater networks by:

- (a) adopting the best practicable option to reduce wet weather overflows to an average of no more than two events per discharge location per year in areas serviced by a separated wastewater network with priority for:
 - (i) receiving environments that are used for public and contact recreation activities;
 - (ii) receiving environments that are sensitive to the adverse effects of wastewater overflows;
 - (iii) areas significant to Mana Whenua; or
 - (iv) adopting the best practicable option to reduce wet weather overflows from the combined sewer network.
- (b) requiring the development and implementation of a network operations plan; as part of any network discharge consent; and
- (c) adopting wastewater overflow response procedures.

(22) Minimise the adverse effects of dry weather overflows by:

- (a) ensuring wastewater networks and combined sewer networks are operated and maintained to minimise the likelihood of dry weather overflows occurring; and
- (b) adopting wastewater overflow response procedures to minimise adverse effects and risks to public health and safety and the environment.

On-site and small scale wastewater treatment and disposal

(23) Enable on-site domestic-type wastewater treatment and disposal where:

- (a) there is no wastewater network available, or it is not practicable to connect into one of the network, or any existing network does not have capacity and it is not practicable to upgrade it; and
- (b) the on-site wastewater treatment results in a discharge that is of a quality and volume that avoids significant adverse effects on groundwater, surface and coastal water quality, public health and amenity.

(24) Require proposals for on-site wastewater treatment and disposal to land or water to demonstrate all of the following:

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- (a) there is no practicable alternative land based disposal option;
 - (b) significant adverse effects on public and environmental health, water quality and amenity values are avoided and other adverse effects are remedied or mitigated;
 - (c) an assessment of the site conditions has been undertaken and the proposed system and its design are appropriate for these conditions;
 - (d) the design of the on-site wastewater system and the proposed volume of discharge will minimise the level of contaminants to the greatest extent practicable;
 - (e) that adverse effects on Mana Whenua values will be avoided; and
 - (f) that operations, management and response procedures are in place to ensure the on-going performance of the system and where systems service more than one site, responsibilities for these functions are clearly identified.
- (25) Only allow the discharge of treated wastewater to water where all the following are addressed:
- (a) there is no practicable alternative land-based disposal option;
 - (b) the effects on Mana Whenua values; and
 - (c) the discharge quality is of a standard appropriate for discharge to a waterbody and does not affect all of the following:
 - (i) the use of that waterbody for other purposes;
 - (ii) public health and amenity; and
 - (iii) ecosystem health and functioning.

Other discharges

- (26) Prevent or minimise the adverse effects from construction, maintenance, investigation and other activities on the quality of freshwater and coastal water by:
- (a) adopting best management practices and establishing minimum standards for the discharges; or
 - (b) where Policy E1.3(26)(a) is not practicable, have regard to the following:
 - (i) the nature, volume and concentration of the contaminants in the discharge;
 - (ii) the sensitivity of the receiving environment to the contaminants in the discharge;

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- (iii) other practicable options for the discharge, including reuse or discharge to the trade sewer; and
- (iv) practicable measures to reduce contaminant concentrations prior to discharge or otherwise mitigate adverse effects.