

E10. Stormwater management area – Flow 1 and Flow 2

E10.1. Background

The provisions in this section apply to sites identified in the Stormwater management area control – Flow 1 and Flow 2 as shown on the planning maps. The control seeks to protect and enhance Auckland's rivers, streams and aquatic biodiversity in urban areas.

Auckland has numerous small and narrow urban rivers and streams. Despite their small size, these rivers and streams are home to much of our freshwater aquatic biodiversity and have amenity values. These values are threatened by the effects of ongoing urban development.

The creation of impervious surfaces in a catchment undergoing development increases the flow rate and volume of stormwater runoff. This change in hydrology, unless managed, can have a significant adverse effect on streams within the catchment, including accelerating river and stream erosion and bank instability, particularly in steeper upper catchment areas, and creating hydrological conditions that do not support healthy aquatic ecosystems. In developed urban catchments with large areas of impervious surface, increased runoff is one of the primary causes of degraded river and stream health, and also causes loss of land (including the undermining buildings) and amenity values.

However, in areas that are yet to be developed, or where development is at low levels, development can be enabled while also protecting and enhancing in-stream biodiversity and other river and stream values by reducing and managing stormwater runoff, and other measures such as enhancing riparian margins. Redevelopment also offers an opportunity to reduce existing adverse effects and enhance river and stream values.

The Stormwater management area control – Flow 1 and Flow 2 identifies rivers and streams (and their contributing catchments) that are particularly susceptible to the effects of development or have relatively high values.

Stormwater management area control – Flow 1 are those catchments which discharge to sensitive or high value streams that have relatively low levels of existing impervious area.

Stormwater management area control – Flow 2 areas typically discharge to streams with moderate to high values and sensitivity to stormwater, but generally with higher levels of existing impervious area within the catchment.

In Stormwater management area control – Flow 1 and Stormwater management area control – Flow 2, future development and redevelopment is still enabled, but it is subject to standards to reduce stormwater runoff to protect Auckland's aquatic biodiversity and other values from further decline and enhance them where possible.

The objectives and policies in [E1 Water quality and integrated management](#) and [E2 Water quantity, allocation and use](#) are also applicable to the provisions in this section.

E10.2. Objective [rp]

- (1) High value rivers, streams and aquatic biodiversity in identified urbanised catchments are protected from further adverse effects of stormwater runoff associated with urban development and where possible enhanced.

E10.3. Policies [rp]

- (1) Manage stormwater runoff from impervious areas in Stormwater management area – Flow 1 and Flow 2 areas to minimise the adverse effects of stormwater runoff on rivers and streams to retain, and where possible enhance, stream naturalness, biodiversity, bank stability and other values.
- (2) Require stormwater hydrology mitigation in Stormwater management area control – Flow 1 and Flow 2 areas where there are:
 - (a) new impervious areas;
 - (b) redeveloped impervious areas; or
 - (c) entire sites where the area of development or redevelopment comprises more than 50 per cent of the site area.
- (3) Recognise that there may be limitations to the hydrology mitigation that can practicably be achieved in some circumstances, particularly in association with redevelopment, including:
 - (a) space limitations;
 - (b) requirements to provide for other utility services; and
 - (c) the function of roads as overland flow paths conveying stormwater runoff from surrounding land uses which the road controlling authority has limited ability to control.

E10.4. Activity table

Table E10.4.1 Activity table specifies the land use and development activity status to manage stormwater runoff from new impervious areas and redevelopment of existing impervious areas within Stormwater management area control – Flow 1 (SMAF 1) or Stormwater management area control - Flow 2 (SMAF 2) areas pursuant to section 9(2) of the Resource Management Act 1991.

The Stormwater water management control – Flow 1 and Stormwater management area control – Flow 2 areas are identified on the planning maps.

Table E10.4.1 Activity table [rp]

Activity		Activity status
Development of new or redevelopment of existing impervious areas		
(A1)	Development of new or redevelopment of existing impervious areas within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that are not directed to a stream or are discharged below RL 1.7m (RL in terms of NZVD2016).	P
Development of new or redevelopment of existing impervious areas other than for a road, motorway or state highway		
(A2)	Development of new or redevelopment of existing impervious areas up to 50m ² within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that complies with Standard E10.6.1	P
(A3)	Development of new or redevelopment of existing impervious areas greater than 50m ² within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 complying with Standard E10.6.1 and Standard E10.6.4.1	RD
(A4)	Development of new or redevelopment of existing impervious areas greater than 50m ² within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that do not comply with Standard E10.6.1 or Standard E10.6.4.1	D
Development of new or redevelopment of existing impervious areas for a road, motorway or state highway operated by a road controlling authority or rail corridor		
(A5)	Development of new or redevelopment of existing impervious areas up to 1,000m ² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that complies with Standard E10.6.2.1	P
(A6)	Development of new or redevelopment of impervious areas greater than 1,000m ² and up to 5,000m ² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that complies with Standard E10.6.1 and Standard E10.6.3.1	C
(A7)	Development of new or redevelopment of existing impervious areas greater than 5,000m ² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that complies with Standard E10.6.1 and Standard E10.6.4.2	RD
(A8)	Development of new or redevelopment of existing impervious areas up to 1,000m ² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that does not comply with	D

	Standard E10.6.2.	
(A9)	Development of new or redevelopment of impervious areas greater than 1,000m ² and up to 5,000m ² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that does not comply with Standard E10.6.1 and Standard E10.6.3.1	D
(A10)	Development of new or redevelopment of existing impervious areas greater than 5,000m ² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that does not comply with Standard E10.6.1 and Standard E10.6.4.2	D

E10.5. Notification

- (1) An application for resource consent for a controlled activity listed in Table E10.4.1 Activity table above will be considered without public or limited notification or the need to obtain written approval from affected parties unless the Council decides that special circumstances exist under section 95A(9) of the Resource Management Act 1991.
- (2) Any application for resource consent for an activity listed in Table E10.4.1 Activity table and which is not listed in E10.5(1) above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991.
- (3) When deciding who is an affected person in relation to any activity for the purposes of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule [C1.13\(4\)](#).

E10.6. Standards

E10.6.1 General standards

All activities listed in Table E10.4.1 Activity table, other than (A1): Development of new or redevelopment of existing impervious areas within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 that are not directed to a stream or are discharged below RL 1.7m (RL in terms of NZVD2016), must meet the following standards, unless otherwise specified.

- (1) Hydrology mitigation must be provided and must meet one of the following:
 - (a) must be provided on the same site (or in the case of a road, motorway or state highway within the road reserve or land under the control of the road controlling authority) as the new or redeveloped impervious area; or
 - (b) where the hydrology mitigation requirement is provided by an authorised off-site stormwater management device or system, all of the following must be met:

- (i) the system must be designed, constructed and operated to receive and manage stormwater from the impervious area of the site; and
 - (ii) a copy of authorisation (such as a discharge consent or subdivision consent notice on title) must be provided to the Council, along with confirmation from the operator of the device or system that hydrology mitigation requirements will be achieved for the additional stormwater from the site.
- (2) Any stormwater management device or system must be built in accordance with design specifications by a suitably qualified service provider and must be fully operational prior to use of the impervious area.
- (3) 'As built' plans for any stormwater management device or system must be provided to Council within three months of practical completion of the works.
- (4) Any stormwater management device or system must be operated and maintained in accordance with best practice for the device or system.

E10.6.2 Permitted activity standards

All activities listed as a permitted activity in Table E10.4.1 Activity table must comply with the following specified permitted activity standards.

E10.6.2.1 Development of new or redevelopment of existing impervious areas up to 1,000m² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2

- (1) This activity does not need to comply with the general standards listed in E10.6.1 above.
- (2) The new or redeveloped impervious area must be no more than 1,000m² excluding footpaths, cycleways and ancillary areas where stormwater runoff is dispersed over vegetated or grassed areas.

E10.6.3 Controlled activity standards

All activities listed as controlled activities in Table E10.4.1 Activity table must comply with the following controlled activity standard.

E10.6.3.1 Development of new or redevelopment of impervious areas greater than 1,000m² and up to 5,000m² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2

- (1) Stormwater runoff must be managed to achieve one of the following:
 - (a) where the new or redeveloped impervious areas comprise no more than 50 per cent of the total site area, stormwater runoff from the new

or redeveloped impervious area must be managed to achieve the hydrology mitigation requirements specified in Table E10.6.3.1.1 Hydrology mitigation requirements; or

- (b) where the new and redeveloped impervious area comprises more than 50 per cent of the total site area, stormwater runoff from the total site area must be managed to achieve the hydrology mitigation requirements specified in Table E10.6.3.1.1 Hydrology mitigation requirements.
- (2) Any stormwater management device or system must be built generally in accordance with design specifications by a suitably qualified service provider and must be fully operational prior to use of the impervious area.
- (3) 'As built' plans for any stormwater management device or system must be provided to the Council within three months of practical completion of the works.
- (4) Any stormwater management device or system must be operated and maintained in accordance with best practice for the device or system.

Table E10.6.3.1.1 Hydrology mitigation requirements

Stormwater management area control	Hydrology mitigation requirements
(1) Except as provided for in (2) below the following applies:	
Stormwater management area – Flow 1	(a) provide retention (volume reduction) of at least 5mm runoff depth for the impervious area for which hydrology mitigation is required; and (b) provide detention (temporary storage) and a drain down period of 24 hours for the difference between the pre-development and post-development runoff volumes from the 95th percentile, 24 hour rainfall event minus the 5 mm retention volume or any greater retention volume that is achieved, over the impervious area for which hydrology mitigation is required.
Stormwater management area – Flow 2	(a) provide retention (volume reduction) of at least 5mm runoff depth for the impervious area for which hydrology mitigation is required; and (b) provide detention (temporary storage) and a drain down period of 24 hours for the difference between the pre-development and post-development runoff volumes from the 90th percentile, 24 hour rainfall event minus the 5 mm retention volume or any greater retention volume that is achieved over the impervious area for which hydrology mitigation is required.

(2) Where:

- (a) a suitably qualified person has confirmed that soil infiltration rates are less than 2mm/hr or there is no area on the site of sufficient size to accommodate all required infiltration that is free of geotechnical limitations (including slope, setback from infrastructure, building structures or boundaries and water table depth); and
- (b) rainwater reuse is not available because:
 - (i) the quality of the stormwater runoff is not suitable for on-site reuse (i.e. for non-potable water supply, garden/crop irrigation or toilet flushing); or
 - (ii) there are no activities occurring on the site that can re-use the full 5mm retention volume of water.
- (c) the retention volume can be taken up by detention as follows:
 - (i) provide detention (temporary storage) and a drain down period of 24 hours for the difference between the pre-development and post-development runoff volumes from the 95th percentile (SMAF 1) / 90th percentile (SMAF 2), 24 hour rainfall event minus any retention volume that is achieved, over the impervious area for which hydrology mitigation is required.

E10.6.4 Restricted discretionary activity standards

Activities listed as a restricted discretionary activity in Table E10.4.1 Activity table must comply with the following restricted discretionary standards.

E10.6.4.1 Development of new or redevelopment of existing impervious areas greater than 50m² within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2

- (1) Stormwater runoff must be managed to achieve one of the following:
 - (a) where the new or redeveloped impervious area comprises no more than 50 per cent of the total site area, stormwater runoff from the new or redeveloped impervious area must be managed to achieve the hydrology mitigation requirements specified in Table E10.6.3.1.1 Hydrology mitigation requirements; or
 - (b) where the new and redeveloped impervious area comprises more than 50 per cent of the total site area, stormwater from the total site area must be managed to achieve the hydrology mitigation requirements specified in Table E10.6.3.1.1 Hydrology mitigation requirements.
- (2) Except as provided in standard E10.6.4.1(3) below, hydrology mitigation required must be provided on the same site as the new and redeveloped impervious area.
- (3) Where the hydrology mitigation requirement is provided by an authorised off-site stormwater management device or system, the following must be met:

- (a) the system must be designed, constructed and operated to receive and manage stormwater from the impervious area of the site; and
 - (b) a copy of authorisation (such as a discharge consent or subdivision consent notice on title) must be provided to Council, along with confirmation from the operator of the device or system that hydrology mitigation requirements will be achieved for the additional stormwater from the site.
- (4) Any stormwater management device or system must be built generally in accordance with design specifications by a suitably qualified service provider and is fully operational prior to use of the impervious area;
- (5) 'As built' plans for any stormwater management device or system must be provided to the Council within three months of practical completion of the works; and
- (6) Any stormwater management device or system must be operated and maintained in accordance with best practice for the device or system.

E10.6.4.2 Development of new or redevelopment of existing impervious areas greater than 5,000m² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2

- (1) Stormwater runoff from the new impervious areas and any existing impervious areas discharging to the same drainage network point must be managed to achieve the hydrology mitigation requirements specified in Table E10.6.3.1.1 Hydrology mitigation requirements.

E10.7. Assessment – controlled activities

E10.7.1 Matters of control

The Council will reserve its control to all of the following matters when assessing a controlled activity resource consent application:

- (1) for development of new or redevelopment of impervious areas greater than 1,000m² and up to 5,000m² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater Management Area Control – Flow 1 or Stormwater management area control – Flow 2:
- (a) the management of stormwater flow on site to achieve the stormwater hydrology mitigation requirements;
 - (b) the application of hydrology mitigation to existing road impervious areas discharging to the same drainage network points, having regard to all of the following:

- (i) site and operational constraints;
 - (ii) requirements to provide for other utility services;
 - (iii) the function of roads as overland flow paths conveying stormwater runoff from surrounding land uses which the road controlling authority has limited ability to control;
 - (iv) safety and operational constraints; and
 - (v) topographical limitations and geotechnical and structural requirements.
- (c) the availability of any authorised stormwater management device or system in the catchment designed and sized to accommodate stormwater run-off from new and redeveloped impervious area, road, motorway or state highway to achieve the stormwater hydrology mitigation requirements;
- (d) the suitability of the stormwater management device or system for the site including its ability to achieve the hydrology mitigation requirements in the long-term and the operations and maintenance requirements that are proposed;
- (e) operations and maintenance requirements;
- (f) monitoring and reporting, including monitoring and reporting on a network wide basis; and
- (g) the duration of the consent and the timing and nature of reviews of consent conditions.

E10.7.2 Assessment criteria

The Council will consider the relevant assessment criteria below for controlled activities:

- (1) for development of new or redevelopment of impervious areas greater than 1,000m² and up to 5,000m² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater Management Area Control – Flow 1 or Stormwater management area control – Flow 2
- (a) policy E10.3(1), (2) and (3); and
 - (b) policy [E1.3\(1\), \(2\), \(3\), \(4\), \(5\), \(8\) and \(9\)](#) in [E1 Water quality and integrated management](#).

E10.8. Assessment – restricted discretionary activities

E10.8.1 Matters of discretion

The Council will restrict its discretion to the following matters when assessing a restricted discretionary resource consent application:

- (1) for development of new or redevelopment of existing impervious areas greater than 50m² within Stormwater Management Area Control – Flow 1 or Stormwater Management Area Control – Flow 2 and development of new or redevelopment of existing impervious areas greater than 5,000m² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2.
- (a) the potential adverse effects including cumulative effects of increased stormwater flows on freshwater systems including effects on stream channels and stream health, natural character, biodiversity, erosion and stability and community and Mana Whenua values;
- (b) the best practicable options for reducing existing adverse effects;
- (c) the processes proposed for the management of stormwater flow onsite or the availability of an authorised stormwater management device or system in the catchment designed and sized to accommodate the stormwater runoff from the new and redeveloped impervious area, road, motorway or state highway and achieve appropriate hydrology mitigation; and
- (d) the practicality and limitations of applying stormwater flow management to the site or the existing road, motorway or state highway network, taking into account site and operational constraints, the requirements for other utilities or infrastructure and the function of roads as overland flow paths conveying stormwater runoff from surrounding land uses.

E10.8.2 Assessment criteria

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

- (1) for development of new or redevelopment of existing impervious areas greater than 50m² within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2 and development of new or redevelopment of existing impervious areas greater than 5,000m² for a road, motorway or state highway operated by a road controlling authority or rail corridor within Stormwater management area control – Flow 1 or Stormwater management area control – Flow 2:
- (a) policy E10.3(1), (2) and (3); and
- (b) policy [E1.3\(1\), \(2\), \(3\), \(4\), \(5\), \(8\) and \(9\)](#) in [E1 Water quality and integrated management](#).

E10.9. Special information requirements

There are no special information requirements in this section.