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Level 8, 99 Albert St, Auckland

7/04/2022

20 MELIA PLACE,
STANMORE BAY

STORMWATER
MANAGEMENT PLAN



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PO Box 5204 Wellesley St, Auckland 1141

Development of 20 Melia Place, Stanmore Bay | Stormwater Management Plan

Dear Andy ,

Thank you for the opportunity for Civix Limited to provide an Stormwater Management Plan for the Development of 20 Melia Place, Stanmore Bay .

The report and drawings contained in this document show infrastructure details for the Development of 20 Melia Place, Stanmore Bay .

Please do not hesitate to contact us if you have any questions on this report,

Written By:

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Additional Resources:

- Tuflow Modelling Results
- Civix Stormwater Servicing Plans and Details
- GeoStudio - Geotechnical Report
- Soil and Rock Consultants – Remedial Action Plan
- Civix – Topographic Survey
- Stormfilter Operation and Maintenance Plan
- Stormlite Tank Operation and Maintenance Plan

1. Executive Summary

Civix have been engaged to undertake civil design for the 20 Melia Place, Stanmore Bay development. The proposed development includes twenty-seven 2-Storey dwellings, thirty-two 3-Storey Units, and a multi-use community centre. Access for the development is provided via a jointly owned access lot.

The stormwater management strategy for the site has developed to meet the requirements of the Auckland Council's Healthy Waters approved Regionwide Stormwater Network Discharge Consent (NDC), and the requirements of the Auckland Unitary Plan, specifically the provisions set out in the following sections:

- Section E1 – Water quality and integrated management,
- Section E8 – Stormwater discharge and diversion
- Section E9 – High contaminant generating carparks and high use roads
- Section E10 – Stormwater management area – Flow 1 and Flow 2
- Section E36 – Natural hazards and flooding

Under section E8 of the Auckland Unitary Plan, this development is considered a Large Brownfield Development and Council's assessment criteria includes whether the relevant network discharge consent has been considered (clause E.8.7.2.1.b) as part of the stormwater management strategy.

In accordance with Schedule 4 of the NDC, the development is classified as a large-scale brownfield's development (greater than 20 lots). The stormwater management strategy for the site is summarised in Table 1. This report will demonstrate that the following outcomes will be achieved:

- No new/additional habitable floor affected by flooding in 1% AEP event will be created and no increase in frequency of existing flooding of buildings will be created
- No significant increase in risk to the operation and structural integrity of other infrastructure if a 1% AEP event will occur
- No increase in inundation that affects a building on a property in 10% AEP
- No loss in overland flow path capacity will occur, as there are no overland flow paths entering the site – flows are generated within the site.
- All major capital works projects consider, and where appropriate implement, a green infrastructure option in accordance with the Healthy Waters Green Infrastructure Policy. An assessment against that policy is included, all infrastructure proposed is 'green infrastructure' pursuant to that policy.
- No significant erosion at a (public stormwater) outfall, which is the result of the operation of that outfall, will arise. Secondary outlets will have flow rates carefully controlled to protect ecological outcomes.
- Appropriate erosion protection/mitigation will be provided for any new outfall in accordance with the Stormwater Code of Practice.
- No stormwater is directed to a different receiving environment.

This report also outlines the management approach/key elements of the catchment and provides an assessment which includes such details as corresponds with the scale and significance of the effects of the proposal, of how an Integrated Stormwater Management Approach has been adopted in the design and associated stormwater management in accordance with the policies in the AUP sections E1.3, B7 and B8. This assessment shows how the SMP seeks to:

- Minimise the stormwater related effects of the development;
- Retain/restore the natural hydrology as far as practicable;
- Minimise the generation and discharge of contaminants (including gross Stormwater pollutants) and stormwater flows at the source;
- Minimise temperature related effects;
- Enhance freshwater systems including streams and riparian margins;
- Minimise the location of engineered structures in streams;
- Protect the values of Significant Ecological Areas as identified in the Auckland Unitary Plan.

A summary of the stormwater approach is set out below. Table 1 Stormwater Management Summary

Requirement	Design response
Water Quality	<p>Treatment of the JOAL and parking area is proposed via StormFilters prior to discharge into the proposed new public stormwater lines. These devices will be designed and constructed in accordance with the relevant Code of Practice and will achieve the requirements of GDO1.</p> <p>StormFilters are recognised by Auckland Council as a Best Management Practice for removing sedimentation, oil and grease, metals, organics and nutrients.</p> <p>Non-contaminant generating/inert roofing material will be used to eliminate heavy metal contamination as roof runoff is proposed to be reused for non-potable purposes within the house.</p>
SMAF1 - Retention (5 mm) and detention (95th percentile)	<p>Tanks are proposed to meet the SMAF1 retention and detention requirements within the lots. Aquacomb tanks are proposed in the outdoor area of each dwelling. Reuse is proposed into the dwellings to meet the retention requirement for roof runoff and private outdoor areas. The proposed retention and detention controls are compliant with the minimum requirements of the NDC. The JOAL is proposed to be traditional concrete and asphalt. It should be noted that retention is not proposed for JOAL due to clay soils not facilitating retention through groundwater recharge. The full 95th percentile detention is proposed for the JOAL area prior to discharge into the stormwater network. Although no retention is proposed, the proposed solution for them is to include the retention volume as detention, which meets the NDC objectives and is the BPO.</p>
Primary Drainage	<p>The site slopes south toward the existing outlet located within the south-eastern section of the site. Primary drainage is proposed to connect to the existing public network running through the site and will discharge at the existing outlet.</p>
Stream hydrology	<p>Stormwater is proposed to discharge to the stream in the south-eastern corner of the site via an existing outlet. SMAF retention and detention have been proposed to protect and enhance Auckland's rivers, streams and aquatic biodiversity in urban areas.</p>
Flooding	<p>The design ensures that there is sufficient capacity within the pipe network downstream of the connection point to cater for the stormwater runoff associated with the development in a 10% AEP event including incorporating flows from contributing catchments at maximum probable development.</p>
Buildings 1% AEP	<p>No buildings are within the 1% AEP, see sections 6.2.4.</p>
Assets - General	<p>New assets that are intended to become part of the Public Stormwater Network will be designed and constructed to be durable and perform the required level of service for the life of the asset, subject to reasonable asset maintenance.</p>
Flood Hazard Management	<p>As shown in Auckland Council Geomaps, there is a small amount of flooding shown on site. A TuFlow model has been run to assess and mitigate the flood hazards on site.</p>

2. Existing Site Description

The existing property of 20 Melia Place is located in Stanmore Bay at the base of the Whangaparoa peninsula in Auckland's North Shore. The site is roughly rectangular in shape with a site area of 1.83Ha. The existing infrastructure within the site is proposed to be removed, this includes the existing building, field, and carpark area. Surrounding assets include the Hibiscus coast RSA Club, Shadon Reserve, and the Weiti River.

The legal description is LOT 2 DP 563936, and the site is located within a Residential Single House Zone.

The proposed development consists of twenty-seven 2-Storey dwellings, thirty-two 3-Storey Units, and a multi-use community centre. Of these 26 units will have internal garages, there will also be 34 parking pads, 13 allocated parking spaces and 24 visitor parking spaces. All lots are shared access from Melia Place and Vipond Road. The development is proposed to be subdivided into freehold residential lots and a COAL that includes the multi-purpose community space.

2.1. Topography

The site generally falls from the north-west towards the south east. Topographic survey has been undertaken to inform the design on the site and has been included in this report.

2.2. Geotechnical

A geotechnical assessment has been undertaken for the site by GeoStudio. The geotechnical investigation found the following:

- The site is underlain by the East Coast Bays Formation (ECBF) and consists of stiff to very stiff silts and clays.
- Groundwater was not encountered at any borehole location on site.

The geotechnical report has been included in Appendix 6 of the Assessment of Environmental Effects report submitted as part of the Resource Consent application for this site.

2.3. Existing Drainage Features and Stormwater Infrastructure

Council Geomaps indicates the site is currently served by the existing 525mm concrete stormwater pipes that travel through the centre of the development site. No neighbouring properties have private stormwater traversing the site.

2.4. Receiving environment

The public stormwater line running through the site discharges into an open watercourse at the south-eastern boundary of the site. The open watercourse travels east and ultimately discharges to the coast at the eastern end of Stanmore Bay approximately 3km from the subject site.

2.5. Flooding and Flow Paths

Auckland Council Geomaps shows overland flow paths generated within the site. The maximum catchment area of the flow path as it exits the site is approximately 3.2Ha. A floodplain which has been identified due to the existing bowling green in place on site. A Tuflow model has been created to assess and mitigate any flooding on site and its effects on inhabitants. TuFlow model results are appended to this report.

2.6. Coastal Inundation

The site is not at risk of coastal inundation.

2.7. Biodiversity

An ecological assessment has been prepared by Laura Drummond of Biosearches (“the Biosearches report”). The Biosearches report confirms that ... The existing open channel in the south-eastern corner of the site was assessed in the Biosearches report as having low-moderate freshwater ecological value [page 16]. The Biosearches report also identifies that no stream works are proposed within the watercourse present on site, and no riparian vegetation is to be removed.

The Biosearches report identifies that a potential adverse effect is potential discharge of excess fine sediment as a result of the removal of vegetation in close proximity to the riparian yard and proximate earthworks, and recommends that an Erosion and Sediment Control Management Plan be prepared in accordance with GD05 [page 18]. An Erosion and Sediment Control Management Plan (“ESCMP”) has been prepared as part of the earthworks consent submitted to Auckland Council, and a copy of the ESCMP is provided with the Infrastructure Report Section 3 and in drawings 1180-1193.

2.8. Cultural and Heritage Sites

No sites of significance have been identified on the Auckland Unitary Plan maps within the site boundary. An investigation has not been deemed applicable for this site.

2.9. Contaminated Land

A Site Management Plan/Remedial Action Plan has been carried out by Soil and Rock Consultants. The report is appended to this SMP.

3. Development Summary and Planning Context

A review of the relevant stormwater guidelines and policies were carried out to determine the appropriate stormwater and flooding requirements to adopt in the Stormwater Management Plan for this development. The relevant requirements are summarised in Table 2. Integrated Stormwater Management Approach has been adopted in the design and associated stormwater management in accordance with the policies in the AUP Sections E1.3, B7 and B8 as set out in Annexure 1.

Table 2 Regulatory and design requirements

Requirement	Design response
SMAF hydrology mitigation	<ul style="list-style-type: none"> •SMAF1 hydrology mitigation is proposed for the site. This includes: •Retention of the first 5mm of runoff, and •Detention with a drain down period of 24 hours of the difference between the pre and post development runoff volumes from the 95th percentile, 24 hour rainfall event.
High Contaminant Generating Areas	<ul style="list-style-type: none"> •More than 30 uncovered parking spaces are proposed. •Treatment is proposed as part of the stormwater management for the site regardless, to align with Mana Whenua value as well as comply with the treatment requirements for discharging to a stream, per schedule 4 of the NDC for large brownfields developments.
Natural Hazards	<ul style="list-style-type: none"> •The site is outside of the range of Coastal Inundation. •Flooding is predicted within the downstream open watercourse as shown on Auckland Council Geomaps. •100yr mitigation is proposed via underground tanks to ensure flows from the site are no greater than existing in the 100yr rainfall event.
Auckland Unitary Plan Precinct	N/A

Existing Catchment Management Plan	N/A
Auckland Council Regionwide Network Discharge Consent	More than 20 lots are proposed as part of development, which classifies the development as a large brownfield's development under Schedule 4 of the Regionwide NDC. The design requirements outlined above are in accordance with the Regionwide NDC.

4. Mana Whenua Values

Mana whenua values are intrinsic to the design, construction and management of stormwater devices in the Auckland region. A review been completed to ensure the stormwater design for the site aligns with Mana whenua values.

Stream degradation has been mitigated using a number of methods. SMAF1 hydrology mitigation is proposed for the site which has the impact of reducing flows to the stream in rainfall events, lowering the potential for scour and erosion. 10yr and 100yr stormwater mitigation is proposed to ensure no increase in flows from the site in more significant rainfall events.

The design aligns with the principles of Taiao and Mauri Tu by utilising stormfilters for treatment of stormwater prior to discharge from high contaminant generating surfaces. Taiao and Mauri Tu are based around the protection, restoration and/or enhancement of the natural environment and environmental health which is reflected through the use of stormwater treatment, retention and detention devices on site. Refer to section 6 of this report for details on the stormwater management devices proposed for the site.

Manuhiri Kaitiaki Charitable Trust has provided a Kaitiaki Report dated July 2021 on behalf of Ngāti Manuhiri. In summary, that report identified the following environmental risks:

Te Taiao indicators	LOW RISK: - Unlikely to create adverse impact - Not identified as culturally significant site/ location - Conditions may apply - Easily mitigated	MEDIUM RISK: - Potential adverse impact - Known cultural associations for locality but not specific to site location - Requires conditions/actions to mitigate impacts	HIGH RISK: - Likely adverse impacts - Identified/ assessed as a culturally significant site/ location - Requires further investigation e.g., CIA/CVA report, expert assessment - Detailed mitigation plan required
Mauri (life-force)	☑		
Wairua (spiritual connectedness)	☑		
Oranga (wellbeing)	☑		
Whenua (land)		☑	
Wai (water) <ul style="list-style-type: none"> • Wai ora • Wai Māori • Wai mate 		☑	
Hau (air)		☑	
Tiaki taiao (biodiversity)		☑	
Taonga tuku iho (artefacts)		☑	
Wāhi Tapu (sacred site)		☑	

Key concerns raised were as follows:

- Concerns around increased stormwater runoff;
- Concerns around the potential for soil contamination caused by stormwater discharge.

Recommendations relevant to stormwater included the following measures:

- Mitigation measures such as grass filter strips, grass swales or rain gardens;
- the stormwater management requirements should reflect Ngati Manuhiri’s values such as avoiding mixing contaminated water with freshwater
- Stormwater should be treated to a high quality standard before release;
- Implementation of retention and detention devices;
- Implementation of rainwater harvesting tanks; and
- Implementation of a sediment and erosion control plan.

Ngaati Whanaunga have prepared a Cultural Impact Assessment, and their conclusions are that once operational, the development will have negligible effects on cultural values, provided stormwater and wastewater are appropriately managed. Their recommendations relevant to this SMP are:

- To manage stormwater in accordance with best practice management techniques; and
- Provide assurance that the current zoning (Single House Zone) has the supporting infrastructure (including wastewater) to accommodate the number of dwellings proposed.

Ngaati Whanaunga have also recommended that revegetation be undertaken using species that provide for the spatial and temporal requirements of native keystone dispersers (kereru) and pollinators (tui) throughout the year, and select species based on their cultural values.

The stormwater design for the site aligns with mana whenua concerns around the responsibility to ensure that the mauri or life force of water which may be damaged, destroyed, or modified pollution of a stream, river, estuary, catchment or harbour.

5. Proposed Development

5.1. Location and Area

Refer to Section 2 of this report for details of the site.

5.2. Purpose of the Development

The proposal is for a 59 multi-storey unit development. A scheme plan of the proposed development has been appended to this SMP.

5.3. Site layout and urban form

Freehold subdivision is proposed to allow the individual sale of the units. A site plan showing the proposed site layout has been appended to this SMP

5.4. Earthworks

A number of retaining walls are proposed throughout the site to provide level building platforms and to meet access grade requirements. A cut fill plan has been included in drawings 1100 – 1104 of the Infrastructure Report for the site. It should be noted that following development, the contours will facilitate sheet flow towards the south-east, as per pre-development.

6. Stormwater management

A review of the relevant stormwater guidelines and policies was carried out to determine the appropriate stormwater and flooding requirements to adopt as part of this SMP. The relevant documents are as follows:

The general provisions set out in the Auckland Unitary Plan – Operative in Part:

- Section E1 – Water quality and integrated management,
- Section E8 – Stormwater discharge and diversion
- Section E9 – High contaminant generating carparks and high use roads
- Section E10 – Stormwater management area – Flow 1 and Flow 2
- Section E36 – Natural hazards and flooding

Under section E8 of the Auckland Unitary Plan, this development is considered a discretionary activity. Per Auckland Council's regionwide network discharge consent, the development is classified as a large brownfields development.

6.1. Principles of stormwater management

The following principles will guide the management of stormwater for the site.

- Water Quality
- Treatment of all impervious areas by a water quality device that removes contaminants and is approved by Auckland Council.
- SMAF1 Provisions
- Retention (volume reduction) for the first 5mm of runoff for all impervious areas;
- Detention (temporary storage) with a drain down period of 24 hours for the difference between the pre-development (grassed state) and post development runoff volumes from the 95th percentile, 24 hour rainfall event minus the retention volume for all impervious areas.
- Ensure that there is sufficient capacity within the pipe network downstream of the connection point to cater for the additional stormwater runoff associated with the development in a 10% AEP event; or
- Demonstrate that flows in excess of the pipe capacity in a 10% AEP event within the pipe network downstream of the connection point will not increase flooding of any other property; or
- Demonstrate through an assessment that flows in excess of the pipe capacity in the 10% AEP event within the pipe network downstream of the connection point will not increase adverse effects on any other property.

6.2. Proposed stormwater management

The proposed stormwater management strategy for the site is described in the following sections.

6.3. Water quality

Contaminants of concern for carparks are generally high levels of total suspended solids (TSS) and dissolved metals such as zinc and copper.

Under the Auckland Unitary Plan, car parking areas exceeding 30 spaces is considered a 'high contaminant generating activity' and requires runoff to be treated for contaminants of concern.

The JOAL area is proposed to be constructed of asphalt and concrete. While the number of traffic movements do not class the area as a high contaminant generating activity, treatment of all new impervious surfaces is required under Schedule 4 of the NDC and Clause E.6.3.1 of the Auckland Unitary Plan. Section E3.6.1.1. of the AUP requires that (1) The activity must not, after reasonable mixing, result in any of the following effects in receiving waters: (a) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials; (b) any conspicuous change in the colour or visual clarity; (c) any emission of objectionable odour; (d) the rendering of fresh water unsuitable for consumption by farm animals; and (e) any significant adverse effects on aquatic life.

To meet E3.6.1.1, StormFilters are proposed to treat the impervious JOAL areas prior to runoff entering the SMAF detention tanks.

StormFilter products are recognised as a versatile BMP for removing the following pollutants: sediment, oil and grease metals, organics and nutrients. The site is located in a residential area, therefore section E3.6.1.1(d) relating to farm animals is not relevant. Refer to the Ecology Report by Bioreserches for assessment of aquatic life in the downstream environment. The configuration of the StormFilters relative to the proposed drainage on site is discussed in Section 6.3.

Under Schedule 4 of the NDC, gross pollutant traps are required for runoff from communal waste storage areas. A LittaTrap will be placed in the catchpit capturing runoff from the waste storage areas.

It should be noted that a Waste Management Plan has been formulated for the site, which outlines rubbish collection frequency and a maintenance schedule for the bin storage area. The bin storage area will be maintained and kept clean as per the maintenance schedule.

For roof areas, no water quality treatment is provided as they are not contaminant generating surfaces, and runoff will be re-used within the dwellings.

6.4. Stream hydrology

To protect stream hydrology, the following SMAF1 hydrology mitigation is proposed for the site:

- Reuse of the equivalent of 5mm of roof runoff into the proposed dwellings for non-potable use (laundry and flushing purposes):
- This will include private stormwater tanks on each individual lot for capturing roof runoff and feeding these back into the dwellings for non-potable reuse.
- Detention (temporary storage) with a drain down period of 24 hours for the difference between the pre-development (grassed state) and post development runoff volumes from the 95th percentile, 24 hour rainfall event minus the retention volume for all impervious areas:
- This will include communal stormwater tanks located within the proposed JOAL for the capture and slow release of runoff from the hardstand area on the JOAL and vehicle crossing.
- It should be noted that the JOAL is the only form of traditional hardstand pavement proposed on site. For the JOAL, the full retention and detention volume will be accommodated within the tank to protect stream hydrology.
- Retention is not proposed for the JOAL area because of the clay soils on site not facilitating retention.

Post development areas and the proposed hydrology mitigation has been summarised in table 3.

Table 3: Proposed mitigation

Location	Area (m ²)	Proposed Mitigation
Roof area on lots	4194	Aquacomb sized for retention via reuse into dwellings and detention for the 95th percentile storm event.
JOAL – Traditional hardstand area	4969	95th percentile detention provided. Retention cannot be provided for due to clay soils on site. Treatment via StormFilters proposed for JOAL runoff prior to discharge.
Landscaped Area	9094	Self-mitigating
Total Area (m ²)	18,257	

6.5. Flooding

Section E8.6.1(3) of the AUP requires that the diversion and discharge must not result in or increase the following: (a) flooding of other properties in rainfall events up to the 10 per cent annual exceedance probability (AEP); or (b) inundation of buildings on other properties in events up to the 1 per cent annual exceedance probability (AEP). This has been addressed via the use of raintanks to mitigate both the 10 and 1 percent AEP events.

The downstream stormwater network has been found to be undersized for the 10 percent AEP event. Detention tanks in the JOAL and in the residential lots are proposed to be utilised to mitigate flows from the 10 percent AEP to be no greater than existing flows.

As shown in Auckland Council Geomaps, flooding exists in the catchment that the site discharges to. This flooding is shown to currently inundate a number of buildings in the 1 percent AEP event. Detention tanks in the JOAL are proposed to be utilised to mitigate flows from the 1 percent AEP to be no greater than existing flows, so that inundation of downstream buildings is not increased as a result of this development.

Rainfall

Existing rainfall depths do not include allowances for climate change. Future rainfall depths allow for a projected average temperature increase of 2°C, per the Ministry for Environment's Guidance Manual for Local Government in New Zealand (2008).

Curve Numbers

A curve number of 98 was used for all impervious areas. A curve number of 74 was used for pervious areas.

Impervious Coverages

Existing impervious coverages were calculated specific to delineated catchments based on known impervious coverages in the catchment. This includes road kerbs, building footprints and North Shore City Council's GIS impervious surface data.

Future impervious coverages have been modelled at 60% of the catchment area.

Results

Flooding results are shown in the Tuflow Model in drawing 1340-1344

6.6. Overland flow path and floodplain management

There are no overland flow paths entering the site, flows are generated within the site.

6.6.1. Development staging

This development is proposed to be developed in three stages as follows:

Stage 1 will include the JOAL, including all accessways, community infrastructure, and 21 of the proposed 59 residential dwellings.

Stage 2 will include 22 of the 59 residential dwellings.

Stage 3 will include the balance of the residential dwellings, being 16 dwellings.

With respect to infrastructure, it is proposed that bulk infrastructure upgrades and requirements will be implemented during Stage 1. All public infrastructure will be constructed during stage 1, with stub connections to stage 2 and 3 lots which will be connected to when these stages are completed.

6.7. Hydraulic connectivity

Stormwater servicing for the site is proposed via new connections to the existing public stormwater line running through the site. New public lines extend along the new jointly owned access lots to service all proposed dwellings.

Roof runoff will enter the proposed new system via Aquacomb rain tanks. Runoff from the JOAL is collected via dish channels, which discharges to a private StormFilter and then to a private underground detention tank. The tank discharges runoff into the public line to the proposed connections to the existing line. A Gross Pollutant Trap (LittaTrap) is proposed within cesspits that collects runoff from communal bin storage areas.

6.8. Asset ownership

6.8.1. Private ownership

All stormwater tanks providing re-use into the dwellings will fall under private ownership, with the operation and maintenance responsibilities falling on the owners of the property.

The communal tanks providing detention for runoff from the JOAL and other traditional hardstand areas within the lots will also fall under private ownership. A Body Corporate Entity or Owner's Association will need to be established to ensure the proper operation and maintenance of the communal tanks.

The StormFilters proposed as part of the stormwater treatment for the JOAL also falls under private ownership and is to be maintained by a Body Corporate Entity or Owner's Association.

The catchpits collecting runoff from the communal bin storage areas have been fitted with LittaTraps, which are also maintained by a Body Corporate Entity or Owner's Association.

6.8.2. Public ownership

As the new stormwater network serves 59 lots, the main lines running through the site will be public, with private connections to serve each lot.

6.9. Ongoing maintenance requirements

Ongoing maintenance of the stormwater management devices proposed on site will be required. This includes the two StormFilters and the stormwater detention tanks.

Draft operation and maintenance manuals are appended to this SMP. At the time of this SMP being written, the final stormwater management device configurations are yet to be finalised. Site specific operation and maintenance manuals will be provided at the Building Consent or Engineering Plan Approval stage once specific details have been finalised.

7. Conclusions

A stormwater management plan has been developed for the site at 20 Melia Place. The stormwater management plan has been formulated to be in line with the Auckland Unitary Plan – Operative in Part and the requirements set out in the Regionwide Network Discharge Consent for large brownfields developments.

The design criteria and how the development meets the design criteria is summarised below:

Requirement	Relevant regulatory / design to follow
Water Quality	<p>Treatment of the JOAL and parking areas is proposed via StormFilters prior to discharge into the proposed new public stormwater lines.</p> <p>StormFilters are recognised by Auckland Council as a Best Management Practice for removing sedimentation, oil and grease, metals, organics and nutrients.</p> <p>Non-contaminant generating/inert roofing material will be used to eliminate heavy metal contamination as roof runoff is proposed to be reused for non-potable purposes within the house.</p>
SMAF1 - Retention (5 mm) and detention (95 th percentile)	<p>Tanks are proposed to meet the SMAF1 retention and detention requirements. Aquacomb tanks are proposed for each dwelling. Reuse is proposed into the dwellings to meet the retention requirement for roof runoff.</p>
Primary Drainage	<p>The diversion and discharge must not result in or increase flooding of other properties in rainfall events up to the 10 per cent annual exceedance probability. 10yr mitigation is proposed through the use of detention tanks.</p>
Flood Hazard Management	<p>Auckland Council have undertaken Flood Hazard Mapping for the Stanmore Bay catchment. This has been used to assess the effects of development on the downstream catchment.</p> <p>The FHM identifies properties at risk of inundation/within an existing floodplain, therefore 100yr mitigation is proposed through the use of detention tanks.</p>

8. Limitations

- This assessment contains the professional opinion of Civix Limited Staff relating to this development. Civix Limited Staff used their professional judgement and acted in accordance with the standards of care and skill normally exercised by professional engineers providing similar services in similar circumstances. No other express or implied warranty is made as to the professional advice contained in this report.
- We have prepared this report in accordance with the brief provided and following our terms of engagement. The information contained in this report has been prepared by Civix Limited for the client and is exclusively for its client use and reliance. It is not possible to make an assessment of this report without understanding the terms of engagement under which it has been prepared, including the scope of the instructions and directions given to and the assumptions made by Civix Limited. The assessment will not address issues which would need to be considered for another party if that parties’ particular circumstances, requirements and experience were known and, further, may make assumptions about matters of which a third party is not aware. No responsibility or liability to any third party is accepted for any loss or damage arising out of the use of or reliance on this assessment by any third party.
- The assessment is also based on information that has been provided to Civix Limited from other sources or by other parties. The assessment has been prepared strictly on the basis that the information that has been

provided is accurate, completed, and adequate. To the extent that any information is inaccurate, incomplete or inadequate, Civix Limited takes no responsibility or liability whatsoever for any loss or damage that results from any design and assessment based on information that has been provided to Civix Limited.

ANNEXURE 1:

Integrated Stormwater Management Approach has been adopted in the design and associated stormwater management in accordance with the policies in the AUP 3 Sections E1.3, B7 and B8.

Chapter E1.3

AUP Section E1.3 (Policies)	Comment
(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.	No permanent or intermittent streams will be reclaimed. There are no wetlands on the site.
(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.	Stormwater discharges will be managed to maintain the quality and the flows of freshwater systems, which is limited to the intermittent stream in the south-eastern corner of the site. No riparian vegetation is proposed to be removed.
(3) Require freshwater systems to be enhanced unless existing intensive land use and development has irreversibly modified them such that it practicably precludes enhancement	Freshwater systems will be enhanced by managing the flows to them in accordance with the Bioreserches ecological impact assessment ("Bioreserches report").
(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.	No stormwater flows are proposed to be discharged to the freshwater system. Stormwater runoff is proposed to be treated by StormFilters prior to entering the SMAF detention tanks. A LittaTrap will be installed for the runoff from the communal waste storage area. See 6.3 above.
(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.	See above.
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.	See above.
(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.	See cultural impact assessments and Section 4 above.

<p>(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.</p>	<p>Adverse effects have been avoided as far as practicable by :</p> <ul style="list-style-type: none"> - 5mm retention tanks - On site treatment using StormFilters and a gross pollutant catchment (LittaTrap) - Detention (temporary storage) with a drain down period of 24 hours for the difference between the pre-development (grassed state) and post development runoff volumes from the 95th percentile, 24 hour rainfall event minus the retention volume for all impervious areas.
<p>(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.</p>	<p>Adverse effects have been avoided as far as practicable by :</p> <ul style="list-style-type: none"> - 5mm retention tanks - On site treatment using StormFilters and a gross pollutant catchment (LittaTrap) - Detention (temporary storage) with a drain down period of 24 hours for the difference between the pre-development (grassed state) and post development runoff volumes from the 95th percentile, 24 hour rainfall event minus the retention volume for all impervious areas.
<p>(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:</p> <p>(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.</p>	<p>The identified matters have been taken into account and the proposed stormwater management response is largely considered best practice.</p>
<p>(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</p>	<p>Adverse effects have been avoided as far as practicable by :</p> <ul style="list-style-type: none"> - 5mm retention tanks - On site treatment using StormFilters and a gross pollutant catchment (LittaTrap)

communal stormwater management measures; (e) practical limitations in respect of the measures that can be applied; and (f) the current state of receiving environments.	- Detention (temporary storage) with a drain down period of 24 hours for the difference between the pre-development (grassed state) and post development runoff volumes from the 95th percentile, 24 hour rainfall event minus the retention volume for all impervious areas.
(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.	Adverse effects have been avoided as far as practicable by : - 5mm retention tanks - On site treatment using StormFilters and a gross pollutant catchment (LittaTrap) - Detention (temporary storage) with a drain down period of 24 hours for the difference between the pre-development (grassed state) and post development runoff volumes from the 95th percentile, 24 hour rainfall event minus the retention volume for all impervious areas.
(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.	Flow management is achieved on site.
(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 optimize existing stormwater networks and provide for planned land use and development; and (h) operational requirements and space limitations.	The identified matters have been taken into account and the proposed stormwater management response is largely considered best practice.
(15) – (16): Ground Soakage	N/A – Ground soakage not proposed.
(17) Wastewater	N/A – Stormwater is not combined with wastewater
(18) Wastewater treatment plant	N/A – No wastewater treatment plant is proposed
(19) – (22) Wastewater network	N/A – Stormwater is not combined with wastewater
(23) – (25) On site and small scale wastewater network	N/A – Stormwater is not combined with wastewater
(26) Other discharges	N/A

Chapter B7

AUP Section B7 (Policies)	
B7.2. Indigenous biodiversity	
(1) Identify and evaluate areas of indigenous vegetation and the habitats of indigenous fauna in terrestrial and freshwater environments considering the following factors in terms of the descriptors contained in Schedule 3 Significant Ecological Areas –	No SEA’s are within the development area. The existing Olive Garden and the existing mixed exotic and native bush on the south-eastern portion of the site as identified on Page 6 of the

Terrestrial Schedule: (a) representativeness; (b) stepping stones, migration pathways and buffers; (c) threat status and rarity; (d) uniqueness or distinctiveness; and (e) diversity.	Bioresearches report is proposed to be retained.
(2) Include an area of indigenous vegetation or a habitat of indigenous fauna in terrestrial or freshwater environments in the Schedule 3 of Significant Ecological Areas – Terrestrial Schedule if the area or habitat is significant	No SEA's are within the development area, but see Bioresearches report for ecological assessment.
(3) Identify and evaluate areas of significant indigenous vegetation, and the significant habitats of indigenous fauna, in the coastal marine area considering the following factors in terms of the descriptors contained in Schedule 4 Significant Ecological Areas – Marine Schedule: (a) recognised international or national significance; (b) threat status and rarity; (c) uniqueness or distinctiveness; (d) diversity; (e) stepping stones, buffers and migration pathways; and (f) representativeness	No SEA's are within the development area, but see Bioresearches report for ecological assessment.
(4) Include an area of indigenous vegetation or a habitat of indigenous fauna in the coastal marine area in the Schedule 4 Significant Ecological Areas – Marine Schedule if the area or habitat is significant.	No SEA's are within the development area, but see Bioresearches report for ecological assessment.
(5) Avoid adverse effects on areas listed in the Schedule 3 of Significant Ecological Areas – Terrestrial Schedule and Schedule 4 Significant Ecological Areas – Marine Schedule.	No SEA's are within the development area, but see Bioresearches report for ecological assessment.
B7.3. Freshwater systems	
Integrated management of land use and freshwater systems	
(1) Integrate the management of subdivision, use and development and freshwater systems by undertaking all of the following: (a) ensuring water supply, stormwater and wastewater infrastructure is adequately provided for in areas of new growth or intensification; (b) ensuring catchment management plans form part of the structure planning process; (c) controlling the use of land and discharges to minimise the adverse effects of runoff on freshwater systems and progressively reduce existing adverse effects where those systems or water are degraded; and (d) avoiding development where it will significantly increase adverse effects on freshwater systems, unless these adverse effects can be adequately mitigated.	The relevant outcomes have been achieved, see accompanying Infrastructure Report in terms of adequate servicing, this report for management of stormwater, and the Bioresearches report for hydrological and ecological effects. No significant adverse effects arise.
Management of freshwater systems	
(2) Identify degraded freshwater systems	See Bioresearches report.
(3) Promote the enhancement of freshwater systems identified as being degraded to progressively reduce adverse effects.	See Bioresearches report.
(4) Avoid the permanent loss and significant modification or diversion of lakes, rivers, streams (excluding ephemeral streams), and wetlands and their margins, unless all of the following apply: (a) it is necessary to provide for: (i) the health and safety of communities; or (ii) the enhancement and restoration of freshwater systems and values; or (iii) the sustainable use of land and resources to provide for growth and development; or (iv) infrastructure; (b) no practicable alternative exists; (c) mitigation measures are implemented to address the adverse effects arising from the loss in freshwater system functions and values; and (d) where adverse effects cannot be adequately mitigated, environmental benefits including on-site or off-site works are provided.	Permanent loss of the intermittent stream on site has been avoided.
(5) Manage subdivision, use, development, including discharges and activities in the beds of lakes, rivers, streams, and in wetlands, to do all of the following:	Most of the sensitive features referred to are not applicable. As identified, the intermittent stream will be retained and no discharge is proposed to the intermittent stream. No structures

<p>(a) protect identified Natural Lake Management Areas, Natural Stream Management Areas, and Wetland Management Areas;</p> <p>(b) minimise erosion and modification of beds and banks of lakes, rivers, streams and wetlands;</p> <p>(c) limit the establishment of structures within the beds of lakes, rivers and streams and in wetlands to those that have a functional need or operational requirement to be located there; and</p> <p>(d) maintain or where appropriate enhance: (i) freshwater systems not protected under Policy B7.3.2(5)(a); (ii) navigation along rivers and public access to and along lakes, rivers and streams; (iii) existing riparian vegetation located on the margins of lakes, rivers, streams and wetlands; and (iv) areas of significant indigenous biodiversity.</p>	<p>are proposed within the intermittent stream.</p>
<p>(6) Restore and enhance freshwater systems where practicable when development, change of land use, and subdivision occur.</p>	<p>No riparian vegetation is proposed to be removed.</p>
<p>B7.4. Coastal water, freshwater and geothermal water</p>	
<p>Integrated management</p>	
<p>(1) Integrate the management of subdivision, use, development and coastal water and freshwater, by:</p> <p>(a) ensuring water supply, stormwater and wastewater infrastructure is adequately provided for in areas of growth; and</p> <p>(b) requiring catchment management planning as part of structure planning;</p> <p>(c) controlling the use of land and discharges to minimise the adverse effects of runoff on water and progressively reduce existing adverse effects where those water are degraded; and</p> <p>(d) avoiding development where it will significantly increase adverse effects on water, unless these adverse effects can be adequately mitigated.</p>	<p>The Infrastructure Report shows that there is sufficient capacity for the development.</p> <p>The design achieves best practice.</p> <p>There are no significant adverse effects on water.</p>
<p>National Policy Statement for Freshwater Management</p>	
<p>(2) Give effect to the National Policy Statement for Freshwater Management 2014 by establishing all of the following: (a) freshwater objectives; (b) freshwater management units and, for each unit: (i) values; (ii) water quality limits; (iii) environmental flows and/or levels; and (c) targets and implementation methods where freshwater units do not meet freshwater objectives.</p>	<p>Freshwater values are protected through the recommendations of the Bioreserches report for hydrological and ecological effects.</p>
<p>(3) Integrate Mana Whenua values, mātauranga and tikanga when giving effect to the National Policy Statement for Freshwater Management 2014 in establishing all of the following: (a) water quality limits for freshwater, including groundwater; (b) the allocation and use of freshwater resources, including groundwater; and (c) measures to improve the integrated management of the effects of the use and development of land and freshwater on coastal water and the coastal environment.</p>	<p>The stormwater management plan is consistent with the CIA's received for this development. See section 6.4 above.</p>
<p>Water quality</p>	
<p>(4) Identify areas of coastal water and freshwater bodies that have been degraded by human activities.</p>	<p>These are identified in the Bioreserches report.</p>
<p>(5) Engage with Mana Whenua to: (a) identify areas of degraded coastal water where they have a particular interest; and (b) remedy or, where remediation is not practicable, mitigate adverse effects on these degraded areas and values.</p>	<p>The stormwater management plan is consistent with the CIA's received for this development. See section 6.4 above</p>
<p>(6) Progressively improve water quality in areas identified as having</p>	<p>No discharge is proposed to the intermittent stream on site.</p>

degraded water quality through managing subdivision, use, development and discharges.	
(7) Manage the discharges of contaminants into water from subdivision, use and development to avoid where practicable, and otherwise minimise, all of the following: (a) significant bacterial contamination of freshwater and coastal water; (b) adverse effects on the quality of freshwater and coastal water; (c) adverse effects from contaminants, including nutrients generated on or applied to land, and the potential for these to enter freshwater and coastal water from both point and non-point sources; (d) adverse effects on Mana Whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and (e) adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply.	No significant bacterial contamination will come from the stormwater network. The quality of freshwater will be appropriately managed through onsite treatment.
Sediment runoff	
(8) Minimise the loss of sediment from subdivision, use and development, and manage the discharge of sediment into freshwater and coastal water, by: (a) promoting the use of soil conservation and management measures to retain soil and sediment on land; and (b) requiring land disturbing activities to use industry best practice and standards appropriate to the nature and scale of the land disturbing activity and the sensitivity of the receiving environment.	Impervious surfaces minimise sedimentation. Stormwater will be treated at the source through StormFilters and gross pollutant trap to minimise sedimentation.
Stormwater management	
(9) Manage stormwater by all of the following: (a) requiring subdivision, use and development to: (i) minimise the generation and discharge of contaminants; and (ii) minimise adverse effects on freshwater and coastal water and the capacity of the stormwater network; (b) adopting the best practicable option for every stormwater diversion and discharge; and (c) controlling the diversion and discharge of stormwater outside of areas serviced by a public stormwater network.	The development achieves this outcome through onsite treatment of stormwater adopting best practice options.
Wastewater	
(10) Manage the adverse effects of wastewater discharges to freshwater and coastal water by all of the following: (a) ensuring that new development is supported by wastewater infrastructure with sufficient capacity to serve the development; (b) progressively reducing existing network overflows and associated adverse effects by all of the following: (i) making receiving environments that are sensitive to the adverse effects of wastewater discharges a priority; (ii) adopting the best practicable option for preventing or minimising the adverse effects of discharges from wastewater networks including works to reduce overflow frequencies and volumes; (iii) ensuring plans are in place for the effective operation and maintenance of the wastewater network and to minimise dry weather overflow discharges; (iv) ensuring processes are in place to mitigate the adverse effects of overflows on public health and safety and the environment where the overflows occur; (c) adopting the best practicable option for minimising the adverse effects of discharges from wastewater treatment plants; and (d) ensuring on-site wastewater systems avoid significant adverse effects on freshwater and coastal water.	This report does not address wastewater management.
Freshwater and geothermal water quantity, allocation and use	

(11) Promote the efficient allocation of freshwater and geothermal water by all of the following: (a) establishing clear limits for water allocation; (b) avoiding over-allocation of water, including phasing out any existing overallocation; (c) safeguarding spring flows, surface waterbody base flows, ecosystem processes, life-supporting capacity, the recharge of adjacent aquifers, and geothermal temperature and amenity; and (d) providing for the reasonable requirements of domestic and municipal water supplies.	N/A this is not a water take / allocation or use of water (including geothermal water).
(12) Promote the efficient use of freshwater and geothermal water	N/A this is not a water take / allocation or use of water (including geothermal water).
(13) Promote the taking of groundwater rather than the taking of water from rivers and streams in areas where groundwater is available for allocation	N/A this is not a water take / allocation or use of water (including geothermal water).
(14) Enable the harvesting and storage of freshwater and rainwater to meet increasing demand for water and to manage water scarcity conditions, including those made worse by climate change.	N/A this is not a water take / allocation or use of water (including geothermal water).
B7.5. Air	
Not Applicable	
B7.6. Minerals	
Not Applicable	

Chapter B8

AUP Section B8 (Policies)	
B8.2. Natural character	
(1) Identify and evaluate areas of outstanding natural character or high natural character considering the following factors: (a) natural elements, processes and patterns; (b) biophysical, ecological, geological and geomorphological aspects; (c) natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks; (d) the natural movement of water and sediment; (e) the natural darkness of the night sky; (f) places or areas that are wild or scenic; and (g) experiential attributes, including the sounds and smell of the sea, and their context or setting.	N/A – not outstanding natural character or high natural character.
(2) Include an area in the coastal environment with outstanding or high natural character in Schedule 8 Outstanding Natural Character and High Natural Character Overlay Schedule.	N/A – not outstanding natural character or high natural character.
(3) Preserve and protect areas of outstanding natural character and high natural character from inappropriate subdivision, use and development by: (a) avoiding adverse effects of activities on natural character in areas of the coastal environment scheduled as outstanding natural character; and (b) avoiding significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment.	N/A – not outstanding natural character or high natural character.
(4) Avoid significant adverse effects and avoid, remedy or mitigate other adverse effects on natural character of the coastal environment not identified as outstanding natural character and high natural character from inappropriate subdivision, use and development.	N/A – not outstanding natural character or high natural character.
(5) Enable land use practices and restoration projects that will	N/A – not outstanding natural character or high natural

restore, rehabilitate or enhance natural character in outstanding natural character and high natural character areas in the coastal environment.	character, not a coastal area.
(6) Provide for the use of transferable development rights to avoid inappropriate subdivision, use and development in or on land adjoining to areas of outstanding natural character and high natural character.	N/A – not outstanding natural character or high natural character.
B8.3. Subdivision, use and development	
(1) Recognise the contribution that use and development of the coastal environment make to the social, economic and cultural well-being of people and communities	Land is being developed for social wellbeing – housing.
(2) Avoid or mitigate sprawling or sporadic patterns of subdivision, use and development in the coastal environment by all of the following: (a) concentrating subdivision, use and development within areas already characterised by development and where natural character values are already compromised; (b) avoiding urban activities in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal, historic heritage and special character; and (c) ensuring that subdivision, use or development involving land above and below the mean high water springs can provide for any associated facilities or infrastructure in an integrated manner.	Complies, land is being developed at higher intensity than propose zone, is within an urbanized area characterised by existing development, and is not proximate to mean high water springs or natural hazards.
(3) Provide for use and development in the coastal marine area that: (a) have a functional need which requires the use of the natural and physical resources of the coastal marine area; (b) are for the public benefit or public recreation that cannot practicably be located outside the coastal marine area; (c) have an operational need making a location in the coastal marine area appropriate and that cannot practicably be located outside the coastal marine area; or (d) enable the use of the coastal marine area by Mana Whenua for Māori cultural activities and customary uses	N/A – not development in the CMA.
(4) Require subdivision, use and development in the coastal environment to avoid, remedy or mitigate the adverse effects of activities above and below the mean high water springs, including the effects on existing uses and on the coastal receiving environment.	N/A – development is not within the coastal environment.
(5) Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown or little understood, but could be significantly adverse.	N/A – development is not within the coastal environment.
(6) Consider the purposes for which land or water in the coastal environment is held or managed under any enactment for conservation or protection purposes and: (a) avoid adverse effects that are significant in relation to those purposes; and (b) avoid, remedy or mitigate other adverse effects in relation to those purposes.	N/A – development is not within the coastal environment.
(7) Set back development from the coastal marine area, where practicable, to protect the natural character and amenity values of the coastal environment.	N/A – development is not within the coastal environment or CMA.
Ports – Not Applicable	
Reclamation – Not Applicable	
Aquaculture – Not Applicable	
B8.4. Public access and open space	

(1) Subdivision, use and development in the coastal environment must, where practicable, do all of the following: (a) maintain and where possible enhance public access to and along the coastal marine area, including through the provision of esplanade reserves and strips; (b) be designed and located to minimise impacts on public use of and access to and along the coastal marine area; (c) be set back from the coastal marine area to protect public open space values and access; and (d) take into account the likely impact of coastal processes and climate change, and be set back sufficiently to not compromise the ability of future generations to have access to and along the coast.	N/A – development is not within the coastal environment or CMA.
(2) Provide for a range of open space and recreational use of the coastal environment by doing all of the following: (a) identifying areas for recreational use, including landbased facilities for those uses, where this ensures the efficient use of the coastal environment; (b) enabling the provision of facilities in appropriate locations that enhance public access and amenity values; (c) enabling Māori cultural activities and customary use; and (d)) managing uses to avoid conflicts and mitigate risks.	N/A – development is not within the coastal environment or CMA.
(3) Restrict public access to and along the coastal marine area, particularly walking access, only where it is necessary to do any of the following: (a) protect public health and safety; (b) provide for defence, port or airport purposes; (c) protect areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal, historic heritage and special character; (d) protect threatened indigenous species; (e) protect dunes, estuaries and other sensitive natural areas or habitats; (f) have a level of security necessary to carry out an activity or function that has been established or provided for; (g) provide for exclusive use of an area to carry out an activity granted an occupation consent under section 12 of the Resource Management Act 1991; (h) enable a temporary activity or special event; or (i) in other exceptional circumstances sufficient to justify the restriction.	N/A – development is not within the coastal environment or CMA.
B8.5. Managing the Hauraki Gulf/Te Moana Nui o Toi/Tikapa Moana	
Integrated management	
(1) Encourage and support the restoration and enhancement of the Hauraki Gulf's ecosystems, its islands and catchments	N/A – development is not within the coastal environment or CMA.
(2) Require the integrated management of use and development in the catchments, islands, and waters of the Hauraki Gulf to ensure that the ecological values and life-supporting capacity of the Hauraki Gulf are protected, and where appropriate enhanced.	N/A – development is not within the coastal environment or CMA.
(3) Require applications for use and development to be assessed in terms of the cumulative effect on the ecological and amenity values of the Hauraki Gulf, rather than on an area-specific or case-by-case basis.	N/A – development is not within the coastal environment or CMA.
(4) Maintain and enhance the values of the islands in the Hauraki Gulf	N/A – development is not within the coastal environment or CMA.
(5) Avoid use and development that will compromise the natural character, landscape, conservation and biodiversity values of the islands, particularly in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal, historic heritage and special character.	N/A – development is not within the coastal environment or CMA.
(6) Promote the restoration and rehabilitation of natural character values of the islands of the Hauraki Gulf.	N/A – development is not within the coastal environment or CMA.
(7) Ensure that use and development of the area adjoining	N/A – development is not within the coastal environment or

conservation islands, regional parks or Department of Conservation land, does not adversely affect their scientific, natural or recreational values.	CMA.
(8) Enhance opportunities for educational and recreational activities on the islands of the Hauraki Gulf if they are consistent with protecting natural and physical resources, particularly in areas where natural and physical resources have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal, historic heritage and special character.	N/A – development is not within the coastal environment or CMA.
(9) Identify and protect areas or habitats, particularly those unique to the Hauraki Gulf, that are: (a) significant to the ecological and biodiversity values of the Hauraki Gulf; and (b) vulnerable to modification.	N/A – development is not within the coastal environment or CMA.
(10) Work with agencies and stakeholders to establish an ecological bottom line, or agreed target, for managing the Hauraki Gulf's natural and physical resources which will do all of the following: (a) provide greater certainty in sustaining the Hauraki Gulf's ongoing lifesupporting capacity and ecosystem services; (b) assist in avoiding incremental and ongoing degradation; (c) co-ordinate cross-jurisdictional integrated management and effort to achieve agreed outcomes; (d) better measure the success of protection and enhancement initiatives; (e) assist in establishing a baseline for monitoring changes (f) enable better evaluation of the social and economic cost-benefits of management; and (g) provide an expanded green-blue network linking restored island and mainland sanctuaries with protected, regenerating marine areas where the ecological health and productivity of the marine area will be enhanced.	N/A – development is not within the coastal environment or CMA.
Providing for the relationship of Mana Whenua with the Hauraki Gulf	
(11) Work in partnership with Mana Whenua to protect and enhance culturally important environmental resources and values of the Hauraki Gulf that are important to their traditional, cultural and spiritual relationship with the Hauraki Gulf.	N/A – development is not within the coastal environment or CMA.
(12) Incorporate mātauranga Māori with western knowledge in establishing management objectives for the Hauraki Gulf	N/A – development is not within the coastal environment or CMA.
(13) Require management and decision-making to take into account the historical, cultural and spiritual relationship of Mana Whenua with the Hauraki Gulf, and the ongoing capacity to sustain these relationships.	N/A – development is not within the coastal environment or CMA.
Maintaining and enhancing social, cultural and recreation values	
(14) Identify and protect the natural and physical resources that have important cultural and historic associations for people and communities in and around the Hauraki Gulf.	N/A – development is not within the coastal environment or CMA.
(15) Identify, maintain, and where appropriate enhance, areas of high recreational use within the Hauraki Gulf by managing water quality, development and potentially conflicting uses so as not to compromise the particular values or qualities of these areas that add to their recreational value	N/A – development is not within the coastal environment or CMA.
(16) Encourage the strategic provision of infrastructure and facilities to enhance public access and recreational use and enjoyment of the Hauraki Gulf.	N/A – development is not within the coastal environment or CMA.
Providing for the use of natural and physical resources, and for economic activities	
(17) Provide for commercial activities in the Hauraki Gulf and its catchments while ensuring that the impacts of use, and any future expansion of use and development, do not result in further degradation or net loss of sensitive marine ecosystems.	N/A – development is not within the coastal environment or CMA.

(18) Encourage the strategic provision of infrastructure and facilities that support economic opportunities for the resident communities of Waiheke and Great Barrier islands.	N/A – development is not within the coastal environment or CMA.
(19) Promote economic development opportunities that complement the unique values of the islands and the Hauraki Gulf.	N/A – development is not within the coastal environment or CMA.
(20) Promote the national significance of the Hauraki Gulf Marine Park by: (a) supporting the development of Auckland’s waterfront as the gateway to the Hauraki Gulf; and (b) promoting the Hauraki Gulf as a visitor destination	N/A – development is not within the coastal environment or CMA.