AUCKLAND AIRPORT

ENVIRONMENTAL MANAGEMENT PLAN

(EMP)

JULY 2018

Contents

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SECTION 1 – ENVIRONMENTAL MANAGEMENT PLAN OVERVIEW

1.1 INTRODUCTION

1.1.1 The airport was officially opened in 1965 as a joint venture between the Government and the Auckland territorial local authorities. Since 1988, the airport has been operated by Auckland International Airport Limited (Auckland Airport).

1.1.2 Auckland Airport recognises the importance of providing sustainable management of natural and physical resources for the benefit of present and future generations of New Zealanders. The basis for environmental performance at the airport is not only to ensure that the company complies with local, regional and national requirements, but also strives to exceed these standards and to continually improve its environmental performance. Given the Auckland Airport's location on the shores of the Manukau Harbour, its proximity to major residential and business areas and the ongoing growth of the airport area; environmental management is a key focus.

1.2 CORPORATE RESPONSBILITY POLICY

1.2.1 Auckland Airport has developed a Corporate Responsibility Policy (Appendix B). The purpose of this policy is to ensure the company operates and develops in a manner that finds the right balance between economic performance, environmental protection and social contribution, for the benefit of current, as well as, future generations. To achieve this policy, Auckland Airport has produced comprehensive metrics and has set specific and achievable sustainability goals and/or targets. The Corporate Responsibility Policy is reviewed, and updated (if required) every three years.

1.2.2 The Environmental Management Plan (EMP) reflects the purpose of the Corporate Responsibility Policy and the airport's overall commitment to environmental protection.

1.3 PLAN ESTABLISHMENT

1.3.1 The following EMP provides an umbrella document that supports a framework of operational documents (Figure 1) that ensures effective environmental management of the Auckland Airport. The EMP is the central controlling document for all environmental aspects at the airport site.

1.4 PLAN IMPROVEMENT

1.4.1 Auckland Airport's commitment to the environment is based on the concept that it will annually audit and review parts of the documentation framework, and evaluate the EMP in order to identify opportunities for improvement in environmental risk identification, environmental risk management and regulatory compliance.

1.5 PURPOSE OF EMP

1.5.1 The purpose of the EMP is to manage Auckland Airport's environmental sustainability performance by:

- Communicating how changing environmental legal obligations are monitored and managed.
- Identifying environmental impacts and prioritising their management using a risk based approach.
- Communicating environmental responsibilities.
- Setting out the documentation framework that exists to ensure regulatory compliance is achieved.
- Setting out high level annual objectives and targets to improve the documentation framework.

1.6 STRUCTURE OF EMP

1.6.1 The EMP provides:

- Auckland Airport's Environmental Policy (Section 1);
- Environmental setting for the site (Section 2);
- An overview of the regulatory framework that influences the Airport's environmental management (Section 3);
- A comprehensive risk assessment, prioritisation of risks, an indication of how risks are managed, and the setting of objectives and targets for the documentation framework (Section 4);
- Identifies operational and management plans that inform the documentation framework (Figure 1), and the business owners (Section 5);
- Monitoring and Review (Section 6);

SECTION 2 – ENVIRONMENTAL SETTING

2.1 BACKGROUND

2.1.1 The coastal environment in the vicinity of the airport is both natural and modified in character. The entire coastal environment in the airport vicinity has significant cultural and spiritual values. Some parts have significant geological, ecological, recreational and landscape values.

2.1.2 The Auckland Council's Auckland Unitary Plan (Operative in Part) (AUP-OP) identifies the ecological values of the Manukau Harbour in the vicinity of the airport. The coastal areas around the airport, although modified by past reclamation, have significant ecological values.

2.1.3 The Pukaki Creek area of the Manukau Harbour is a tangata whenua management area in recognition of its spiritual and cultural significance. This area also has important ecological values. The AUP-OP classifies the areas to the west and south of the airport and the Pukaki Creek to the east as 'Significant Ecological Area: Marine 2'; furthermore, coastal margins to the south and east of Wiroa Island are classified as 'Significant Ecological Area: Marine 1 and Marine 1w'. Definitions for these classifications are:

- Significant Ecological Area: Marine 1: Areas which, due to their physical form, scale or inherent values, are considered to be the most vulnerable to any adverse effects of inappropriate subdivision, use and development.
- Significant Ecological Area: Marine 2: Areas are of regional, national or international significance which do not warrant an SEA-M1 identification as they are generally more robust.
- Significant Ecological Area: Marine 1w: Areas that are identified as significant wading bird areas.

2.1.4 The Ihumatao fossil forest lies to the north west of the existing southern runway. It is identified as an Outstanding Natural Feature in the AUP-OP and is considered to be the best example in New Zealand of a fossilised mature kauri forest.

2.1.5 The area occupied by the airport has a long history of occupation by both Maori and early European settlers to New Zealand. Cultural heritage features on this site include archaeology and built heritage. Whilst some heritage features have already been identified, others are discovered as airport development occurs. These sites are to be managed appropriately by Auckland Airport through engagement and collaboration with appropriate parties i.e. cultural and historic heritage stakeholders.

2.1.6 The land associated with an airport requires management for a range of different purposes. Many of these are associated with the safety of aircraft, passengers and the local population. Notably, aircraft are at risk from collision with birds (bird strike) due to the close proximity to the Manukau Harbour and bird roosting habitats. Appropriate management is therefore required to deter the presence of certain bird species or minimising the risk of certain behaviour. Although rare, bird strike is a real threat to aircraft safety. There are comprehensive guidelines on bird control such as habitat management and airfield grass management.

2.1.7 The management of biodiversity at an airport is about achieving a balance between optimising the opportunities for a diverse range of habitats and species; whilst minimising the risk to people, aircraft, and wildlife.

2.1.8 Auckland Airport has a commitment to the long term environment of the site and its sustainable management. The ongoing management and maintenance of the external environment will enhance the customer experience, and assist in selling the airport as a welcoming and attractive arrival and departure point.

2.1.9 Auckland Airport has over 100 tenants which occupy a land area of approximately 1500 hectares that is leased. The tenants undertake activities that are related to the airport i.e. providing services to Auckland Airport or its customers. Key tenants include Air New Zealand which runs its engineering base (which services aircraft) from the airport, and Joint User Hydrant Installation (JUHI) who supplies fuels to planes at both the domestic and international aprons.

2.2 KEY REGULATORY ENVIRONMENTAL ASPECTS

2.2.1 The key regulatory environmental aspects at the airport are identified below, and further evaluated in Section 4:

- Aircraft noise;
- Flooding and discharges to water;
- Contamination of land;
- Waste management;
- Mangrove management.

2.2.2 To a large extent, the Resource Management Act (RMA) has already prompted Auckland Airport to identify the environmental aspects of its operations (refer Section 4). Auckland Airport has applied for resource consents as required by the RMA for various activities. On an ongoing basis Auckland Airport assesses whether further resource consents are required in relation to each new or revised activity.

2.3 ENVIRONMENTAL POLICY

2.3.1 Auckland Airport has put in place a Corporate Responsibility Policy. This includes its overall commitment to environmental protection (refer to Appendix B of this EMP). This EMP reflects the desire to turn this policy into avoidance and/or practical management of environmental risks. The Corporate Responsibility Policy is reviewed, and if required, updated every three years.

2.4 ENVIRONMENTAL GOALS AND TARGETS

2.4.1 Auckland Airport's vision is to manage the airport in an environmentally sustainable manner.

2.4.2 The environmental risk matrix included in this EMP will be reviewed annually. Goals and targets will be set to ensure the documentary framework continues to support and maintain environmental compliance.

SECTION 3 – REGULATORY FRAMEWORK

3.1 OVERVIEW OF ENVIRONMENTAL LEGISLATION

3.1.1 The basic legal framework for managing the airport's environmental impact is provided by the Resource Management Act (1991) (RMA). As part of its legal responsibilities, Auckland Airport is committed to avoiding, remedying or mitigating the adverse effects that its operations may have on the environment.

3.1.2 Strategic Planning manage Resource Consents (both gaining new consents and managing compliance with existing consent conditions). They also maintain a consent compliance register. Engineering Services manage HSNO compliance and Trade Waste Consents. The Environment and Sustainability Manager develops E&S goals and targets and is responsible for internal and external reporting on environmental performance against targets.

3.1.3 The company's Master-Planning Unit is responsible for keeping Auckland Airport up to date with environmental legislation and other requirements which also include:

- Industry Codes of Practice or guidelines;
- Agreements with public authorities; and
- Non-regulatory guidelines.

3.1.4 The following sections provide discussion of the various legislation and regulatory instruments that may influence environmental management at Auckland Airport.

3.2 RESOURCE MANAGEMENT ACT

3.2.1 The RMA is New Zealand's primary legislation that sets out how the environment should managed. The RMA defines processes such as resource consents, council plans and designations, proposals of national significance, and what legislative tools are issued under the RMA. It also explains how local authorities are monitored under the RMA. Auckland Airport is a network utility operator in terms of the RMA.

3.3 HAZARDOUS SUBSTANCES AND NEW ORGANISMS ACT (1996) (HSNO)

3.3.1 Auckland Airport and its tenants who store hazardous substances, hold appropriate location certificates for their storage under HSNO. Storage locations and controls

(to ensure safe storage of hazardous substances) are reviewed and audited annually by Auckland Airport's Quality Assurance and Compliance Manager. Auckland Airport also has several approved handlers of hazardous substances. The bulk fuel storage facility at the airport is run by JUHI, a joint venture owned by four petroleum companies, namely BP Oil New Zealand Limited (BP), Mobil New Zealand Limited (Mobil), Chevron Texaco Global Aviation (Caltex/Chevron) and Z Energy Limited. On behalf of the joint venture, the site is operated and managed by Air BP (a division of BP Oil New Zealand Ltd). The bulk fuel storage facility is used to store and supply Jet A-1 fuel to the domestic and international terminals. JUHI is responsible for obtaining, and holding its own HSNO licenses.

3.3.2 There are environmental risks associated with hazardous substances stored and/or used by Auckland Airport tenants and contractors. These locations are identified on Auckland Airport's GIS system. High risk locations are subject to audit by Auckland Airport representatives. Tenants and contractors who use and store hazardous substances, are responsible for obtaining and maintaining the appropriate HSNO licenses for their operations and/or facilities and for providing a copy of their HSNO licences to Auckland Airport on request.

3.4 NEW ZEALAND COASTAL POLICY STATEMENT (2010)

3.4.1 The New Zealand Coastal Policy Statement (NZCPS) provides the relevant policies in order to achieve the purpose of the RMA in relation to the coastal environment. The purpose of the NZCPS is to promote the sustainable management of the natural and physical resources of the coastal environment. The coastal environment includes coastal land, foreshore and seabed, and coastal waters from the high tide mark to the 12 nautical mile limit.

3.4.2 The airport is sited in the immediate surrounds to the Manukau Harbour and as a result, the airport has strong ties with the coast. Auckland Airport undertakes activities and owns assets within the coastal environment. These assets include: navigational assets, stormwater outfalls, seawalls, and slipways.

3.5 NATIONAL POLICY STATEMENT: FRESHWATER MANAGEMENT

3.5.1 The National Policy Statement for Freshwater Management (2014) (NPS FM) sets out the objectives and policies for freshwater management under the Resource Management Act 1991. The NPS FM came into effect on the 1 August 2014.

3.5.2 The NPS FM directs the Auckland Council to:

- Safeguard fresh water's life supporting capacity, ecosystem processes, and indigenous species including their associated ecosystems;
- Manage freshwater bodies so people's health is safeguarded;

- Maintain or improve the overall quality of fresh water within a region;
- Protect the significant values of wetlands and outstanding freshwater bodies;
- Require more efficient use of fresh water by end users;
- Avoid the over allocation of water takes and inputs of contaminants, and to phase out existing over allocation;
- Set freshwater objectives according to a specified process (the national objectives framework) to meet community and tāngata whenua values which include the compulsory values of ecosystem health and human health for recreation;
- Use a specified set of water quality measures (attributes) to set the freshwater objectives (an objective can only be set below national bottom lines in specified circumstances);
- Set limits which allow freshwater objectives to be met (e.g., a total catchment contaminant-load or a total rate of water take);
- Put in place measures to account for water takes and sources of contaminants, and monitor achievement towards meeting objectives;
- Take a more integrated approach to managing fresh water and coastal water; and
- Fully implement the National Policy Statement by 2025.

3.5.3 These directions are typically implemented by Auckland Council; this is through resource consent conditions and requirements within site specific management plans.

3.5.4 In the vicinity of the airport; permanent, intermittent and ephemeral freshwater watercourses are present. The airport is also located within the Manukau Kaawa aquifer. Where required by resource consents, Auckland Airport undertakes monitoring of discharge quality into these watercourses, as well as water quality and take volumes from the aquifer. This allows Auckland Airport to understand the potential influence the airport operations may have on these environments.

3.6 NATIONAL ENVIRONMENTAL STANDARD FOR ASSESSING AND MANAGING CONTAMINANTS IN SOILS TO PROTECT HUMAN HEALTH

3.6.1 The *National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health* (2012) (NESCS) was created to ensure land affected by contaminants in soils is appropriately identified, assessed and managed when soil disturbance and/or land development activities take place to ensure the land is safe for human use.

3.6.2 The purpose of the NESCS is to make land safe for human use. To this end, the NES contains soil contaminant standards (SCSs) and soil guideline values (SGVs) for a variety of land use scenarios. Soils remaining in-situ following any of the soil disturbance and/or development activities specified in the NES must contain concentrations of contaminants below these SCSs or SGVs.

3.6.3 An assessment against the requirements of the NESCS must be undertaken if a piece of land has been subject to land use(s) which appears on the Ministry for the Environment Hazardous Activities and Industries List (HAIL), (and may therefore be contaminated in such a way as to be a risk to human health) and where any of the following activities are proposed:

1. Removing or replacing all, or part of, a fuel storage system;
2. Sampling the soil;
3. Disturbing the soil;
4. Subdividing the land; and
5. Changing the land use.

3.6.4 In the event that any of these activities is proposed within the site, the Strategic Planning Manager must be notified and an appropriate assessment undertaken to determine if the NESCS applies.

3.6.5 If the NESCS is found to be applicable, appropriate action must be taken in accordance with the regulations.

3.7 NATIONAL ENVIRONMENTAL STANDARDS: AIR QUALITY

3.7.1 The *National Environmental Standards for Air Quality* (2004) (Air Quality NES) aims to set a guaranteed minimum level of health protection for all New Zealanders. Amendments to the standard were made in 2011.

3.7.2 The Air Quality NES is made up of 14 separate but interlinked standards. The 14 standards include:

- Seven standards banning activities that discharge significant quantities of dioxins and other toxics into the air;
- Five standards for ambient (outdoor) air quality;
- A design standard for new wood burners installed in urban areas; and
- A requirement for landfills over 1 million tonnes of refuse to collect greenhouse gas emissions.

3.7.3 The Air Quality NES prohibits the following activities that discharge dioxins and other toxins:

- Landfill fires;
- Burning of tyres in the open;
- Bitumen burning;

- Burning of coated wire in the open;
- Burning of oil in the open;
- School and healthcare incinerators unless allow for by resource consent; and
- High temperature incinerators.

3.7.4 Incinerators located at Hape Drive (perimeter Road of the airport) are however recognised within the Air Quality NES as a location where the use of an incinerator is not prohibited.

3.7.5 The Air Quality NES requires the Auckland Council to monitor air quality within the Auckland region airsheds. Air quality samples collected are to be assessed against specified ambient standards for the following contaminants provided by the Air Quality NES:

- Carbon monoxide;
- Nitrogen dioxide;
- Ozone;
- PM_{10}; and
- Sulphur dioxide.

3.7.6 In regards to the airport activities, key sources of carbon monoxide, nitrogen dioxide, ozone, have been identified as being derived from motor vehicular activity, i.e. the combustion of petrochemicals. As such, Auckland Airport proactively manages their motor vehicle fleet and emissions through the Energy Management Plan.

3.8 AUCKLAND UNITARY PLAN (OPERATIVE IN PART)

3.8.1 The AUP-OP has been developed to replace the former Auckland Regional Policy Statement and the 13 District and Regional Plans. Large components of the AUP-OP are now fully operative. As stated in Section 3.3.1 The Auckland Airport designations are operative under the AUP-OP except for Condition 20 and Schedule 2 of designation 1100, which are currently under appeal. These relate to the designation lapsing date and the list of dominant tenement legal parcels. Sections under appeal do hold legal weight but must be considered in conjunction with legacy plans and rules when undertaking planning assessments.

3.8.2 The objectives, rules and policies outlined in the AUP-OP associated with the management of air quality, land and water resources in the region are now fully operative. In May 2018, the Minister of Conservation formally approved the Regional Coastal Plan and provision for activities or resources in the coastal marine area are now operative.

3.8.3 The regional significance of air transport and the airport is noted in Chapter B of the AUP-OP (the Regional Policy Statement). However, the benefits need to be reconciled with the potential adverse effects of current and future airport operations on the environment. The adverse effects of the airport need to be managed in accordance with the designation and various consents held. Adverse effects should be managed while enabling the airport to operate so that people and the community can provide for their economic and social wellbeing.

3.8.4 The Rural Urban Boundary (RUB) identifies land potentially suitable for urban development. The location of the RUB is a district plan land use rule pursuant to section 9(3) of the RMA (1991) sets the boundary line between Auckland's urban and rural areas. It is used to minimise the adverse effects of urban development on regionally valued resources and to distinguish urban from rural uses. The planning maps show the RUB line. The land subject to the Airport designation and the majority of the land in the vicinity of the Airport is within the RUB, the exceptions are the land outside of the RUB to the east of Pukaki Creek and the land abutting the mouth of the Oruarangi Creek to the north of the Airport.

3.8.5 A precinct applies to the Auckland International Airport and its surroundings. Its purpose is to enable the efficient operation and development of the airport and the associated land and activities. The key objectives and policies of the Auckland Airport Precinct are to enable the efficient operation and continued development of the Airport to meet future demand, recognising its national and international significance, while protecting the ecological, geological, recreational, cultural, spiritual, and landscape values of the area and the Manukau Harbour coastal environment

3.8.6 The Auckland Airport Precinct is comprised of three sub-precincts: Core Sub-precinct, Gateway Sub-precinct and Coastal Sub-precinct. The Core Sub-precinct encompasses the land surrounding the existing runway and proposed northern runway, and provides a regulatory regime to efficiently operate the Airport and to expand to accommodate increasing passenger and freight volumes. The Gateway Sub-precinct includes the land to the north of the proposed northern runway which is suitable for commercial and industrial development associated with the airport. The Coastal Sub-precinct comprises the airport's operational area within the coastal marine area. The Coastal Sub-precinct provides for the continued use of the coastal marine area for activities necessary for the ongoing operation and development of the airport, while recognising the values of the coastal environment.

3.8.7 The underlying zoning of land within this precinct is Special Purpose – Airports and Airfields Zone and Coastal – General Coastal Marine Zone.

3.8.9 Chapter E (Auckland-Wide) of the AUP-OP includes objectives, policies and rules for the management of the regions natural resources, including air, land and water. The AUP-OP recognises the Airport as a network utility, with specific infrastructure provisions also located in Chapter E.

3.8.10 Chapter E2 of the AUP-OP contains provisions relating to freshwater quantity and allocation. The airport currently holds one resource consent for the taking of groundwater from the Manukau Kaawa aquifer to be used for various purposes such as, stock drinking water, irrigation, and potable water supply. An additional water take consent was previously held but was not given effect to and has now lapsed.

3.8.11 Chapter E8 of the AUP-OP contains provisions which regulate the diversion and discharge of stormwater runoff from impervious areas onto or into land, water or the coastal marine area. The airport currently holds a number of resource consents for the diversion and discharge of stormwater from existing and future development of the airport. The airport currently undertakes routine monitoring and inspections of the condition of its stormwater devices.

3.8.12 The airport has tenants within its land designation that undertake industrial and trade process activities as set out in Chapter E9 of the AUP-OP. Global stormwater consents held by the Airport do not permit these activities. Such tenants are required to obtain their own resource consents (industrial trade activity discharge and land use) if required, in accordance with the AUP-OP, to permit these activities to be carried out.

3.8.13 Land disturbance activities are also addressed in Chapter E11. The AUP-OP defines Sediment Control Protection Areas in Table 11.4.1 as located 100 m either side of a foredune or 100 m landward of the coastal marine area (whatever is the more landward of the mean high water springs); or 50 m landward of the edge of a watercourse or wetland of area in excess of 1,000 m^2. The landholdings of Auckland Airport include Sediment Control Protection Areas on the edge of the Manukau Harbour, and freshwater streams and wetlands. The airport currently holds multiple consents for land disturbance activities to enable future land development.

3.8.14 The airport has a closed landfill onsite. Objectives of Chapter E13 of the AUP-OP require ongoing management of any closed landfill to ensure adverse environmental or public health effects are not occurring. The Airport currently undertakes routine monitoring of the landfill cap and surrounding environment to ensure the integrity of the landfill is maintained.

3.8.15 Chapter E30 of the AUP-OP requires contaminated land that contains elevated levels of contaminants, to be identified. Should contaminated land be identified,

the AUP then requires this land to be managed or remediated to a standard that is appropriate for the protection of human health and the environment, and to enable land to be used for suitable activities now and in the future.

3.9 AUP-OP DESIGNATIONS

3.9.1 Auckland Airport falls under three designations in the AUP-OP:

- Designation 1100 Auckland International Airport
- Designation 1101 Auckland International Airport – Renton Road Area
- Designation 1102 Obstacle Limitation, Runway Protection and Ground Light Restriction

3.9.2 These designations extend over 1200 hectares of land and enable Auckland Airport to carry out activities and developments at the airport subject to the conditions stated in the designation. The designation may be used for activities including but not limited to aircraft operations, runways, taxiways and other aircraft movement areas, aprons, terminals, rescue facilities, navigation and safety aids, maintenance and serving facilities including the testing of aircraft engines, catering facilities, freight facilities, quarantine and incineration facilities, fuelling facilities including Joint User Hydrant Installations, stormwater facilities, road, monitoring activities, site investigations activities, vehicle parking and storage, rental vehicle activities, vehicle valet activities, public transport facilities, landscaping, flags, signs and the relocation and restoration of heritage buildings within this designation.

3.9.3 The Auckland Airport designations are shown on Auckland Council GIS system and described in Chapter K – Auckland International Airport Ltd of the AUP-OP.

3.9.4 Under Schedule 3 and 4 of Designation 1100, any convenator (e.g. tenant) will accept any Auckland Airport Aircraft Noise Mitigation Works (ANMW) and will require approval from Auckland Airport if any modifications to the building will lessen the effectiveness of any ANMW.

3.10 AUP-OP COASTAL

3.10.1 On 11 May 2018 the Minister of Conservation approved the Regional Coastal Plan provisions of the Auckland Unitary Plan (except those subject to two High Court appeals) in accordance with clause 19(4) of Schedule 1 to the RMA.

3.10.2 The coastal sub-precinct comprises the airport's operational area within the CMA. This precinct provides for the continued use of the CMA for activities necessary for the ongoing operation and development of the airport, while recognising the values of the coastal environment.

3.10.3 The airport and the surrounding coastal environment have significant value to Mana Whenua in terms of historical, spiritual and cultural associations. Most of the water south of the southern runway is valued for its habitat, particularly as a feeding ground for international migratory birds.

3.10.4 The coastal environment receives stormwater discharges from the airport and accommodates structures such as ramps, bridges, and lighting and navigation devices. Existing impacts on the CMA including noise associated with aircraft movements within the airspace and restrictions to harbour use.

3.10.5 The objectives and policies contained in Chapter I402 Auckland Airport Precinct associated with the CMA seek that the ecological, geological, recreational, cultural, spiritual and landscape values of the Manukau Harbour coastal environment in the vicinity of the airport are protected and any adverse effects are avoided, remedied or mitigated; while providing for the operational requirements of the Auckland Airport within the coastal sub-precinct.

3.10.6 The Coastal – General Coastal Marine Zone objectives and policies apply to this precinct in addition to those specified in Chapter I042. The purpose of the General Coastal Marine Zone is to provide for use and development of the CMA while protecting natural character, landscape values, significant ecological values while maintaining and enhancing public access, open space and amenity values.

3.11 AUCKLAND COUNCIL GUIDELINE DOCUMENTS

3.11.1 *Stormwater Management Devices in the Auckland Region (GD01)* is a guideline document that focuses on the selection and design of stormwater management devices to achieve water quality treatment, retention of stormwater on-site, detention of the most frequent storm events for stream protection and detention of larger storm events for flood mitigation. This document is considered best practice for future stormwater design and maintenance.

3.11.2 Auckland Council's '*Water Sensitive Design for Stormwater (GD04)* provides guidance for the application of water sensitive design to land development and has a specific focus on stormwater and freshwater management. Water Sensitive Design is Auckland Councils preferred approach to stormwater management and is the keystone document for Auckland Airport in designing future stormwater systems.

3.11.3 Auckland Council's '*Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region'* Guideline Document (GD05) is an update and replaces *TP90 – Erosion and Sediment Control: Guidelines for Land Disturbing*

Activities in the Auckland Region. It is considered the best practice guideline for the design, use and maintain of erosion and sediment controls for a range of land disturbing activities within in an Auckland context. Future Earthworks Management Plans and Erosion and Sediment Control Plans will need to align with GD05 guidelines.

3.12 AUCKLAND AIRPORT RESOURCE CONSENTS

3.12.1 Auckland Airport holds various resource consents related to environmental and water management. These consents include:

- Stormwater diversion and/or discharge permits;
- Earthworks consents;
- Land use consents (related to earthworks and sediment control);
- Groundwater take permits;
- Diversion of surface water permits;
- Coastal permits related to the construction and occupation of structures within the Coastal Management Area; and
- A discharge consent associated with the former quarantine landfill.

3.12.2 Auckland Airport holds two global land use consents for earthworks. Resource Consent **28577** and Variation **35025** authorises 469ha of earthworks within the northern area of the airport. Resource consent **49330** was issued in August 2016 and allows for 624 hectares of earthworks within the southern area of the airport. Both consents expire on 1 December 2030.

3.12.3 Key conditions associated with Resource Consents **28577, 35025** and **49300** are:

- Design and implementation of erosion and sediment control in accordance with best practice;
- Seasonal earthworks restrictions between 30 April to 1 October in any year without prior to written approval;
- Limits to the area of exposed earth allowed at any one time;
- Submission of an Annual Earthworks Management Plan to Auckland Council for approval.

3.12.4 A variation to Condition 10 of Resource Consent **28577** was approved in December 2007. Consent **35025** increased the maximum total area of earth that can be exposed at any one time from 25ha to 50ha. This is to enable efficient development of the northern area of the airport for the second runway.

3.12.5 Auckland Airport holds global resource consents for the diversion and discharge of stormwater from the existing and future development. Resource consents **28575**, **36035, 21351, 29530, 35175** and numerous variations cover high contaminant generating areas and various stormwater treatment devices. These consents

extend to tenants of Auckland Airport and compliance is to be managed by Auckland Airport. These consents expire on 31 December 2029.

3.12.6 Key conditions associated with the stormwater discharge permits held by Auckland Airport include:

- Catchment specific stormwater treatment devices which are designed according to best practice;
- Provision of additional stormwater treatment devices or modification of existing devices to provide the required level of treatment as development progresses;
- Controls for habitable floor levels and roof material types;
- Ongoing monitoring, inspections and maintenance requirements;
- Implementation of the Stormwater Environmental Management Plan;
- A Site Catchment Implementation Plan to be employed and be reviewed annually.

3.12.7 Auckland Airport holds a consent to discharge up to 250m^3/day of treated contaminants to water from the Live Fire Training Ground on Wiroa Island. Resource consent **29564** expires in December 2019. The fire training ground is not currently in operation. Key conditions associated with the consent include:

- The operational and training areas are managed in accordance with the approved Environmental Management Plan;
- An annual report of the site environment management performance to be submitted to Council; as detailed in the EMP.

3.12.8 Resource consent **949640** has approved the discharge up to 38 litres/minute of leachate from a quarantine waste landfill into the ground and expires in 2024. Key conditions include:

- Regular groundwater monitoring and site inspections in accordance with the approved Monitoring and Contingency Plan.

3.12.9 Auckland Airport holds two water take consents (Consents **40245** and **40246**) which expire on 31 May 2037. The consents allow for the take and use of groundwater from two existing bores for the irrigation of market garden crops and stock drinking water at 196 and 145 Ihumatao Road, respectively. Key reporting conditions of these consents include:

- The meter required in accordance with Condition 11 shall be read at weekly intervals and records kept of each date and corresponding water meter reading. The records of the preceding quarter shall be submitted to the Manager by no later than 10 working days after 28 February, 31 May, 31 August and 30 November each year.

3.12.10 Resource Consent **28576** authorises the reclamation of and the placement of stormwater pipes on, the bed of approximately 1968 m of perennial watercourses. Key conditions include:

- Environmental protection measures to be installed on site, prior to commencement of any work on site.
- An annual earthworks management plan to be submitted to Council outlining the areas of expected streamworks operations for the following 12 months.
- An annual report on the stream restoration and enhancement programme works to be undertaken for the following 12 months.

3.12.11 Consent **40154** and **44142** authorises a Comprehensive Development Plan (CDP) for Precincts A & B – Mangere Gateway Business Zone (Ihumato) (Landing Stage 1&2 and Stage 3&4 respectively). No ongoing compliance requirements requiring action are required for this consent.

3.12.12 Integrated resource consents **42573, 42007** and **42006** authorise district earthworks, regional earthworks and regional stormwater discharges respectively, for bulk earthworks and stormwater diversion and discharge at 67 Ihumato Rd and 490 Oruarangi Rd (Landing Stage 2b). Permit 42007 (regional earthworks) expired on 30 April 2018 and as such has no ongoing compliance requirements. There are no specific ongoing compliance conditions related to consent 42573. General, ongoing requirements of consents 42573 and 42006 include:

- Pre-commencement meetings prior to district and regional earthworks and prior to installation of stormwater devices.

3.12.13 Integrated resource consents **42832, 42833** and **42834** were granted in 2013, associated with the realignment of a public sewer line and construction of a dam to create an off-line stormwater pond system at 17 Timberly Road. The following ongoing compliance requirements are associated with these consents:

- Inspection and monitoring of the dam structure and spillway with a maximum interval period of 12 months, and submission of a monitoring report to the Auckland Council upon request.

SECTION 4 – ENVIRONMENTAL RISKS, OBJECTIVES AND TARGETS

4.1 KEY ENVIRONMENTAL RISK IDENTIFICATION

4.1.1 The environmental risks of the activities undertaken at the airport either by Auckland Airport, its contractors or its tenants, have been evaluated for the purpose of prioritisation and action.

4.2 ENVIRONMENTAL RISK ASSESSMENT

4.2.1 Annual review of environmental risks will be undertaken using the following risk matrix:

Consequence	Likelihood					
Environmental impact and company reputation	**Highly unlikely to occur**	**Unlikely to occur**	**Likely to occur**	**Very likely to occur**	**Almost certain to occur**	**Severity**
Nil damage but very localised impacts that can be easily remedied and no impact on company reputation	1	2	4	7	11	Minor
Small scale damage with short term management of impacts required with local impact on company reputation	3	5	8	12	16	Significant
Localised damage requiring medium to long term management of impacts with regional impacts on company reputation	6	9	13	17	20	Serious
Extensive damage requiring large scale action but short term remedial action, national and international impact on reputation	10	14	18	21	23	Critical
Extensive damage requiring large scale and long term remedial action, significant national and international impact on reputation	15	**19**	**22**	24	25	Disastrous

4.2.2 The following assessment considers the significant risks to the environment from the main activities undertaken at the airport. Further details of the documentary framework in place to manage environmental risks are given in Section 5.

Environmental Aspect	Description	Potential Risk	Facilities and Operational controls	Division/Persons Responsible	Risk Rating (normal operating conditions)
Noise					
Take-off and landing of aircraft, including freight operations	Potential for annoyance of surrounding residential area from noise levels.	Noise levels exceed that permitted in Designation 231 (a potential noncompliance) and local residents complain.	• Noise monitoring • Annual Aircraft Noise Contours • Noise complaint procedure • Air Noise Consultative Community Group • Aircraft noise management plan • Annual Noise Report	• Auckland Airport Airlines • Airways New Zealand	**20**
Engine runs and noise from maintenance of aircraft	Potential for annoyance of surrounding residential areas from noise levels.	Noise levels exceed that permitted in Designation 231 (a potential noncompliance) and local residents complain.	• Monitoring of Noise • Engine run logs • Noise complaint procedures	• Auckland Airport • Air New Zealand • Technical Operations • Airlines	**11**
Earthworks					
Acid Sulphate Soils	Release of sulphuric acid and sulphates during earthworks	Acidified groundwater and surface water environments Damage to underground concrete and steel infrastructure	• Acid Sulphate Soil Management Plans • Consent Approvals • Lime applications • Infrastructure amendments	• Auckland Airport Construction contractor • Auckland Airport	**18**
Stormwater/Groundwater/Surface Water					
Contamination of stormwater runoff from earthworks machinery, maintenance and/or operations (property and	Possible surface water contamination from sediments, oil, fuel, metals from parked and / or moving vehicles. Incorrect storage and/ disposal of waste materials generated during construction.	Contamination of stormwater entering stormwater drains, creeks and the Manukau Harbour. Potential contamination of soils, groundwater and the coastal environment.	• Erosion and Sediment Control plans • Consent Approvals • Stormwater Ponds • Emergency Response /Spill procedures	• Auckland Airport Construction contractor • Waste management contractors	**17**

Environmental Aspect	Description	Potential Risk	Facilities and Operational controls	Division/Persons Responsible	Risk Rating (normal operating conditions)
aeronautical developments).					
Contamination of stormwater runoff from apron operations	Spills (fuel/water/waste water) on international and / or domestic apron during aircraft servicing. Possible surface water contamination from oil, sewage from Ground Service Equipment and aircraft on stand. Incorrect storage, and disposal of waste materials generated on the apron.	Contamination of stormwater entering stormwater drains, creeks and the Manukau Harbour. Potential contamination of soils, groundwater and the coastal environment.	• Apron Interceptors • Fox valves • Stormwater Ponds and Wetlands • Oil/Water interceptors • Upflow filters • Bunding • Site management plans. • Emergency Response /Spill Procedures	• Auckland Airport Airlines • Ground Handling Agents Caterers • Refuellers • Cleaning contractors • Waste management contractors	**16**
Contamination of stormwater runoff from airside aeronautical operations	Possible surface water contamination from: Oil, fuel, heavy metals from parked and moving aircraft and vehicles. Incorrect storage and disposal of waste materials generated during operations.	Contamination of stormwater entering stormwater drains, creeks and the Manukau Harbour. Potential contamination of soils, groundwater and the coastal environment.	• Interceptors • Fox valves • Stormwater Ponds • Oil/Water interceptors • Bunding • Site management plans. • Emergency Response /Spill Procedures • Tenant Audit	• Auckland Airport Airlines • Ground Handling Agents Caterers • Refuellers • Cleaning contractors • Waste management contractors	**16**
Contamination of stormwater runoff from landside aeronautical operations	Possible surface water contamination from oil, fuel, heavy metals from parked and moving vehicles. Incorrect storage and disposal of waste materials generated during operations.	Contamination of stormwater entering stormwater drains, creeks and the Manukau Harbour.	• Interceptors • Fox valves • Stormwater Ponds • Oil/Water interceptors • Emergency Response /Spill	• Auckland Airport Airlines • Ground Handling Agents Caterers	**16**

Environmental Aspect	Description	Potential Risk	Facilities and Operational controls	Division/Persons Responsible	Risk Rating (normal operating conditions)
		Potential contamination of soils, groundwater and the coastal environment.	Procedures • Tenant Audit	• Refuellers • Cleaning contractors • Waste management contractors	
Contamination of stormwater runoff from tenant's property.	Possible surface water contamination from oil, fuel, heavy metals from parked and moving vehicles. Possible surface water contamination from site operations (refuelling). Incorrect storage and/or disposal of waste materials generated during operations.	Contamination of stormwater entering stormwater drains, creeks and the Manukau Harbour. Potential contamination of soils, groundwater and the coastal environment.	• Interceptors. • Fox valves. • Stormwater ponds. • Oil/Water interceptors. • Emergency Response /Spill Procedures. • Tenant audit.	• Auckland Airport • Property tenants • Cleaning contractors • Waste management contractors	**16**
Surface flooding at airside aeronautical operations.	Possible surface flooding as a result of rainfall events exceeding stormwater reticulation drainage capacity, blockage of stormwater inlets and outlets, and blockage of overland flow paths.	Flood water causing restriction or impedance to the airport operations.	• Stormwater reticulation network. • Overland flow paths. • Pond. • Operation and maintenance plans. • Tenant audits.	• Auckland Airport contractors • Tenants	**16**
Surface flooding at landside aeronautical operations.	Possible surface flooding as a result of rainfall events exceeding stormwater reticulation drainage capacity, blockage of stormwater inlets and outlets, and blockage of overland flow paths.	Flood water causing restriction or impedance to the airport operations. Increased risk to public safety.	• Stormwater reticulation network. • Overland flow paths. • Pond. • Operation and maintenance plans. • Tenant audits.	• Auckland Airport contractors • Tenants	**16**

Environmental Aspect	Description	Potential Risk	Facilities and Operational controls	Division/Persons Responsible	Risk Rating (normal operating conditions)
Surface flooding at tenant's property.	Possible surface flooding as a result of rainfall events exceeding stormwater reticulation drainage capacity, blockage of stormwater inlets and outlets, and blockage of overland flow paths.	Flood water causing restriction or impedance to the tenant operations. Increased risk to public safety.	• Stormwater reticulation network. • Overland flow paths. • Operation and maintenance plans. • Tenant audits.	• Tenants	**16**
Sediment runoff from exposed (un-vegetated) areas.	Areas under development are stripped of grass and no sediment controls adopted.	Possible contamination of surface water runoff from sediments from exposed areas.	• Erosion and sediment control plans. • Consent approvals. • Stormwater ponds. • Site management plans.	• Auckland Airport • Construction contractors	**16**
Generation of leachates from the onsite closed landfill.	Release of leachate to the receiving environment (groundwater, surface water receptors).	Possible contamination of soils, groundwater, surface water, and sediments within receiving drains.	• Landfill management plan. • Consent approvals. • Monitoring.	• Auckland Airport	**16**
Contamination of stormwater from site buildings in particular unpainted metal roofs.	Stormwater from all site building roofs discharges to the stormwater system, prior to discharging to the stormwater ponds	Negligible impacts on stormwater quality but roofing materials subject to resource consent conditions.	• Consent approvals.	• Auckland Airport • Construction contractors	**11**
Fuel/chemical storage and distribution (large scale)					
Incoming fuel pipelines and general underground piping.	There is a pipeline carrying Jet A-1 fuel from the Wiri Oil terminal to JUHI and then from JUHI to the international apron. The underground pipelines have cathodic protection, which gives early warning of a	Potential spills from pipe rupture and poor pipeline connections leading to contaminated stormwater, soil and/or groundwater, and the coastal environment.	• Fuel leak detection (cathodic protection) along pipeline. • Wiri Oil Services Ltd maintains pressure along line and monitors pipeline continuously.	• Auckland Airport • JUHI Wiri Oil Services Ltd	**14**

Environmental Aspect	Description	Potential Risk	Facilities and Operational controls	Division/Persons Responsible	Risk Rating (normal operating conditions)
	potential leak. These pipes are in continuous use and so under pressure and monitored. Wiri Oil Services Ltd (WOSL) and JUHI as tenants of Auckland Airport are responsible for these pipelines.		• Apron interceptors.		
Fuel storage tanks at JUHI.	Fuel tanks storing a total of up to 5,800,000 litres (5800 m^3) Jet A-1fuel (Tanks 51, 52 and 53), are located in the north and west of the site, within a lined bund. In addition storage of 97,700 litres of Avgas in one above ground tank (Tank 56); other storage tanks for slops, methmix, and diesel. Activities on site include storage of fuel and transfer of fuel by pipeline to apron, loading of trucks with fuel and transfer to domestic terminal, parking of fuel dispensers which are used to transfer fuel from hydrant pits to plane.	Potential spills from poor pipeline connection, rupture or accidental damage of tanks resulting in contaminated stormwater, and/or soil/groundwater. Potential spills from overfill and accidental pipeline damage leading to contaminated stormwater.	• Fuel Leak detection for pipelines and tanks. • Tanks are in lined bund. • Oil/water Interceptors in SE corner of site. • Stormwater discharges to Pond L and Pond K (from bulk product bunds provided no hydrocarbon sheen present, if present stormwater is pumped to interceptor in SE corner of site. • Emergency Spill Response Procedures	• Auckland Airport • JUHI	**14**
Fire foam storage on tenant's property.	Fire foam is stored by Air New Zealand for use in Hangar 2 and 3.	Accidental release of fire foam leading to stormwater contamination in pond L. Contamination of underlying soil/groundwater.	• Emergency response procedures (stormwater ponds spill procedures). • Spill response procedures.	• Auckland Airport • Air New Zealand • Technical operations	**14**

Environmental Aspect	Description	Potential Risk	Facilities and Operational controls	Division/Persons Responsible	Risk Rating (normal operating conditions)
Fire water tank and foam storage area.	Fire foam is stored at the airport in dedicated storage areas which are locked and bunded	Potential accidental spills leading to contaminated stormwater and/or underlying soil/groundwater at the airport.	• Live fire training procedures. • Emergency procedures. • Spill response procedures.	• Auckland Airport • Air New Zealand • Technical Operations	**9**
Waste Management					
Creation, management and disposal of waste.	Production of waste in terminals, properties operations. Inappropriate and/or ineffective disposal/recovery and/or recycling.	Ineffective waste reduction recovery and recycling. Contamination of waste streams. Increasing waste to landfill.	• Waste Management Working Group.	• Auckland Airport • Tenants • Waste and cleaning contractors	**16**
Historical Quarantine Landfill.	Potential contamination of groundwater or surface water from leachate generation.	Possible contamination of groundwater or surface water from leachate generated from historical landfilling activities.	• Monitoring and Contingency Plan in place.	• Auckland Airport • Construction contractors • Waste contractors	**11**
Hazardous Substances					
Chemical storage.	Chemicals, particularly those classed as hazardous substances with the potential to cause harm to the environment or people and contaminate ground, groundwater and stormwater.	Potential for spills through leaking equipment and through rupture of containers. Leaching of chemicals where rainwater	• Appropriate storage and use of chemicals (tenants and/or contractors responsibility). • Tenant / contractor audits.	• Auckland Airport • Contractors • Tenants	**17**

Environmental Aspect	Description	Potential Risk	Facilities and Operational controls	Division/Persons Responsible	Risk Rating (normal operating conditions)
		ingress into containers or equipment occurs.			
Grounds maintenance activities.	Pesticides, herbicides and fertiliser booth in storage and in use create risk to both the environment and health.	Possible stormwater contamination with pesticides, herbicides and fertiliser. Potential exposure to staff and/or public.	• Tenants and/or contractors responsibility. • Tenant / contractor audits.	• Auckland Airport • Contractors • Tenants	**9**
Emissions to Air					
Aircraft emissions form engine start-up to idling on aprons.	Discharge of exhaust fumes during idling or taxiing on apron.	Increases of ground level pollutant levels and greenhouse gases	• Aircraft pushbacks. • Ground Power Units.	• Auckland Airport • Tenants • Airlines	**16**
Open air burning as part of fire training.	Increased levels of greenhouse gases, smoke and visible plume.	Cause nuisance and affect visibility on runway.	• Live fire training procedures. • Notifications.	• Auckland Airport	**11**
Dust and nuisance from construction and development sites.	Potential nuisance impacts from dust being created as part of construction operations.	Nuisance complaints from public and/or existing tenants.	• Erosion and sediment control plans. • Consent approvals.	• Auckland Airport • Construction contractors	**5**
Resource Use					
Use of finite resources such as water, fuels, materials etc.	There will be an increasing need to understand the implications of finite resource use and how best to manage these, in particular water.	Shortages occur of finite resources that have a negative impact on airport operations.	• Use of ground water bore for potable water, rainwater harvesting, and water conservation measures.	• Auckland Airport	**19**
Biodiversity					

Environmental Aspect	Description	Potential Risk	Facilities and Operational controls	Division/Persons Responsible	Risk Rating (normal operating conditions)
Bird strikes	Avian wildlife flying into aircraft	Damage to aircraft and welfare of passengers	• Wildlife hazard management practices. • Removal of avian fauna habitat	• Auckland Airport • Contractors	**14**
Mangrove establishment	An increased population of mangroves.	Increased habitat for avian populations. Reduced access to the coastal environment. Reduced surveillance of Airport land	• Mangrove monitoring and removal	• Auckland Airport	**11**
Population loss of fauna and flora.	Negative impact on wildlife due to wildlife hazard management practices.	Reduction of numbers of some high risk species.	• Wildlife hazard management practices.	• Auckland Airport • Contractors	**11**
Not capturing opportunities to enhance fauna and flora populations.	Evaluation of airport operations on wildlife to promote and implement creation of habitats and protection of native species.	Missing the opportunity to integrate bio-diversity and ecological outcomes within airport land.	• Grounds maintenance practices support and enhance wildlife.	• Auckland Airport • Contractors	**1**

4.3 OBJECTIVES AND TARGETS

4.3.1 Based on the outcome of the comprehensive risk assessment, a risk ranking of environmental aspects can be produced against which are listed the relevant parts of the documentary framework that manage that risk. Objectives and targets are reviewed on an annual basis (by 30 June); the exception to the annual review process is item 3, which is reviewed through the resource consent process.

	Environmental Aspect	Risk Rating (normal operating conditions)	Management Plan	Plan Ownership and Responsibility
1	Take-off and landing of aircraft, including freight operations.	20	Noise Management Plan	Aeronautical Operations
2	Use of finite resources such as water, fuels, materials etc.	19	Energy Management Plan Water Minimisation Plan Waste Minimisation Plan	Aeronautical Operations
3	Acid Sulphate Soils	18	Acid Sulphate Management Plan Site Specific Acid Sulphate Management Plan	AD&D
4	Contamination of stormwater runoff from earthworks (property and aeronautical developments).	17	Stormwater Management Plan	Strategic Planning
5	Chemical storage.	17	Stormwater Management Plan	Strategic Planning
6	Contamination of stormwater runoff from apron operations.	16	Stormwater Management Plan	Strategic Planning
7	Contamination of stormwater runoff from airside aeronautical operations.	16	Stormwater Management Plan	Strategic Planning
8	Contamination of stormwater runoff from landside aeronautical operations.	16	Stormwater Management Plan	Strategic Planning
9	Surface flooding at airside aeronautical operations.	16	Stormwater Management Plan	Strategic Planning
10	Surface flooding at landside aeronautical operations.	16	Stormwater Management Plan	Strategic Planning
11	Surface flooding at tenant's property.	16	Stormwater Management Plan	Strategic Planning
12	Contamination of stormwater runoff from property tenants.	16	Stormwater Management Plan	Strategic Planning
13	Sediment runoff from exposed (un-vegetated) areas.	16	Stormwater Management Plan	Strategic Planning

	Environmental Aspect	Risk Rating (normal operating conditions)	Management Plan	Plan Ownership and Responsibility
			Erosion Sediment Control Plan	
14	Release of leachate from the closed landfill.	16	Landfill Management Plan	AD&D
15	Creation, management, and disposal of waste.	16	Waste Minimisation Plan	AD&D
16	Aircraft emissions from engine start-up to idling on aprons.	16	Sustainability	AD&D
17	Incoming fuel pipelines and general underground piping.	14	Stormwater Management Plan	Strategic Planning
18	Fuel storage tanks at JUHI.	14	Stormwater Management Plan	Strategic Planning
19	Fire foam storage on tenant's property.	14	Stormwater Management Plan	Strategic Planning
20	Bird Strike	14	Wildlife Hazard	Aeronautical Operations
21	Historical Quarantine Landfill.	11	Waste Minimisation Plan	AD&D
22	Contamination of stormwater from site buildings in particular roofs.	11	Stormwater Management Plan	Strategic Planning
23	Engine runs and noise from maintenance of aircraft.	11	Noise Management Plan	Aeronautical Operations
24	Open air burning as part of fire training.	11	Live fire training	Aeronautical Operations
25	Mangrove establishment	11	Mangrove Management Plan	Aeronautical Operations
26	Negative impacts on fauna and flora.	11	Wildlife hazard Mangrove Management Plan	Aeronautical Operations
27	Grounds maintenance activities.	9	Tenant audit	Aeronautical Operations
28	Fire water tank and foam storage area.	9	Tenant audit	Aeronautical Operations

	Environmental Aspect	Risk Rating (normal operating conditions)	Management Plan	Plan Ownership and Responsibility
29	Dust and nuisance from construction/development sites.	5	Tenant audit	AD&D
30	Positive impacts on fauna and flora.	1	Biodiversity	Aeronautical Operations

Noise		Fuel/chemical storage and distribution (large scale)	
Resource use		Emissions to air	
Stormwater/groundwater/surface water		Biodiversity	
Hazardous substances		Waste management	

Note: Plans are reviewed and updated, where appropriately, on an annual basis except item 3, which is reviewed through the resource consent process.

SECTION 5 – DOCUMENTARY FRAMEWORK

5.1 INTRODUCTION

5.1.1 For the main environmental risks, which are directly under Auckland Airport's control, there are management and operational plans in place to ensure that effects on the environment are minimised. These form the documentation framework outlined in Figure 1.

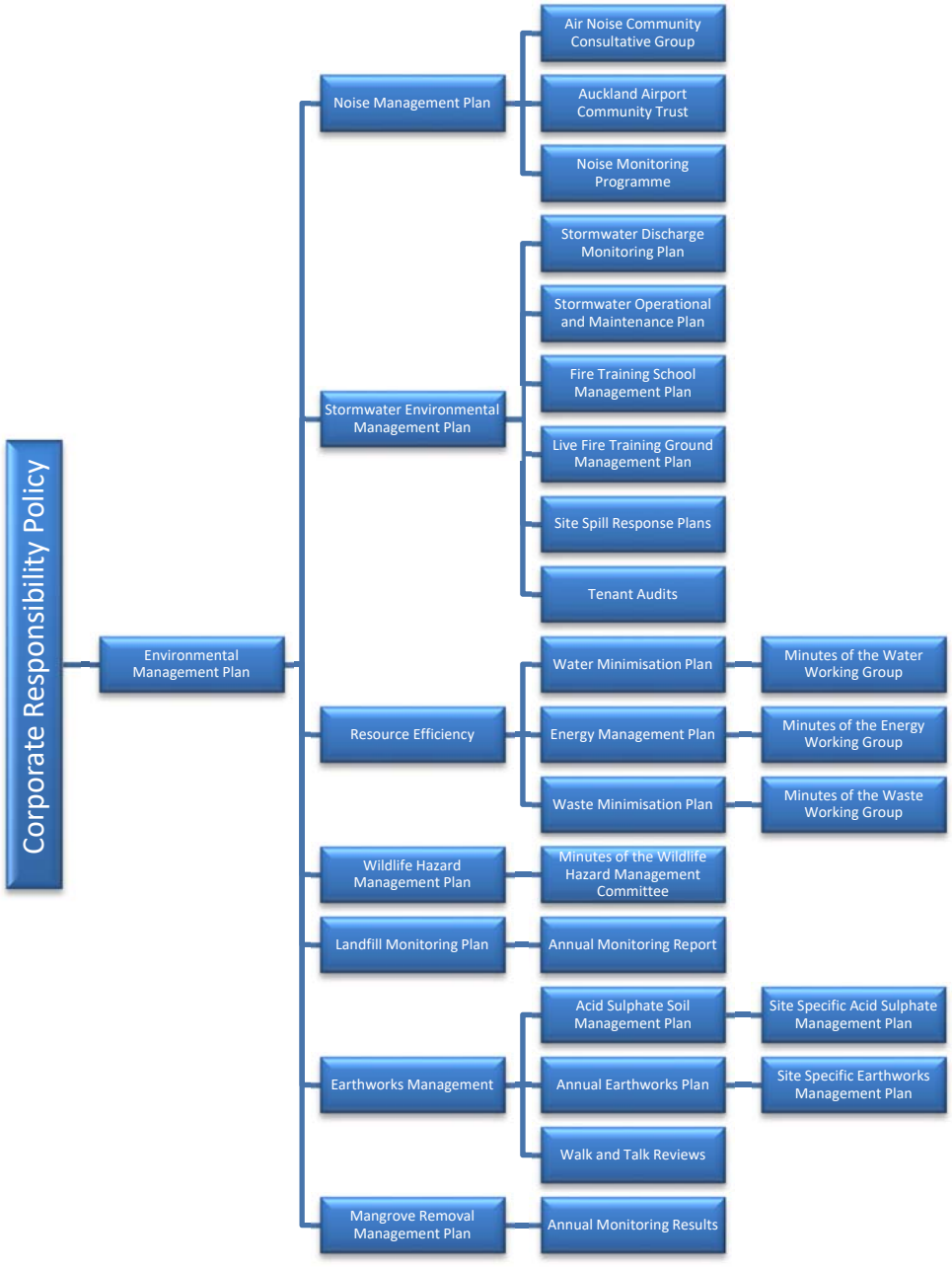

Figure 1. Auckland Airport documentation framework.

5.1.2 A summary of the focus of these operational plans are provided below.

5.2 NOISE MANAGEMENT PLAN

5.2.1 Aircraft noise management is an important challenge for airport and aircraft operators worldwide. Auckland Airport works with aircraft operators and air traffic control to manage noise levels at and around the airport so that impacts on the community are minimised. Noise associated with an airport can be attributed to a number of sources or activities such as:

- Aircraft take-offs and landings.
- Aircraft flying over residential areas.
- Engine runs – these are created by engine testing while the engine is still attached to the aircraft.
- Reverse thrust – used to slow an aircraft when landing on the runway
- General noise from ground operations.

5.2.2 The Manager Master-planning – Statutory Planning and Aeronautical, is responsible for the Noise Management Plan and all aspects of its implementation including:

- Noise monitoring programme (contracted to Marshall Day Acoustics).
- Noise complaints.
- The Air Noise Consultative Community Group.

5.2.3 Responsibility of the Noise Management Plan, including its review and monitoring is held by the Strategic Planning team.

5.3 STORMWATER MANAGEMENT PLAN

5.3.1 Auckland Airport has a Stormwater Management Plan which outlines the implementation of programs and actions to address potential flooding of airport land and the discharge of stormwater pollutants. The Plan provides details of the operational and maintenance procedures that are adopted for different areas of the airport. The airport catchment is also served by a series of stormwater ponds which are installed as the airport develops. Auckland Airport holds global stormwater discharge consents within the airport designation, and is therefore responsible for the discharge of stormwater to the Manukau Harbour.

5.3.2 Auckland Airport is required to carry out stormwater audits of tenants on a regular basis to ensure the Stormwater Management Plan is understood and being complied with.

5.3.3 Tenant education is an important aspect of stormwater protection and there are spill and stormwater management handbooks in place.

5.3.4 Documentation and systems for the operation and maintenance and checking of stormwater ponds, interceptors/cesspits are managed and held by EES.

5.4 EARTHWORKS MANAGEMENT PLAN

5.4.1. The objective of the Earthworks Management Plan is to minimise the discharge of elevated sediment loads to stormwater runoff and ultimately to the harbour. During developments where earthworks are undertaken, Auckland Airport erosion and sediment control measures are adopted in accordance with the Erosion and Sediment Control Plan. This plan is aligned to best practice guidelines: *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD 2016/005).* An annual earthworks management plan is prepared (as required by the resource consent 16339 for this activity) which includes details of site specific erosion and sediment control guidelines.

5.4.2 Similarly the Auckland Council GD05 *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region* are followed during the clean filling operations (as required for the consent 36365 for this activity). There is also a Chemical Treatment Management Plan in place in case chemical dosing has to be undertaken to assist removal of sediment from stormwater runoff.

5.4.3 During all earthworks or clean filling operations areas are re-vegetated as soon as possible to reduce sediment loading to stormwater. Also, the exposed area is kept to a minimum.

5.4.4 Monitoring of earthworks activities are carried out on a regular basis, as stipulated by relevant resource consent conditions and the Auckland Airport's Erosion and Sediment Control Plan.

5.4.5 Responsibility of the Earthworks Management Plan, including its review and monitoring is held by the Strategic Planning team.

5.5 (FORMER) LANDFILL MONITORING PLAN

5.5.1 A former quarantine landfill is located to the south of the main runway at the airport next to the Manukau Harbour. The landfill accepted domestic refuse from the airport, and was closed prior to 1994. The landfill has been continuously monitored since 1995 in accordance with an Auckland Regional Council (ARC) resource consent (issued to permit the discharge of leachate into the ground from the historical landfill).

The ARC resource consent requires that the monitoring of the closed landfill be undertaken in accordance with a Monitoring and Contingency Plan, prepared in accordance with the conditions of the resource consent.

5.5.2 The monitoring requirements and the purpose of the monitoring which is undertaken are detailed in the updated version of the 'Auckland International Airport Quarantine Landfill – Monitoring and Contingency Plan' (July 2013). It may be summarised as follows:

- To undertake annual groundwater chemistry monitoring in three groundwater monitoring wells which are installed within the former landfill footprint and compare the analytical results to guideline values derived to determine whether impacts to the receiving environment are occurring.
- To visually inspect the bund walls of the landfill for leachate breakout to determine whether remedial actions are required.

5.5.3 Further, the Monitoring and Contingency Plan provides:

- A detailed methodology for the required water chemistry monitoring.
- A rationale for the guideline values which have been derived for comparison of the water quality monitoring results (so that a determination of whether contamination is occurring may be made).
- A contingency plan describing the remedial actions that must be carried out should leachate contamination be observed in any part of the landfill or be interpreted from the groundwater monitoring results.

5.5.4 The Monitoring and Contingency Plan may be reviewed at five yearly intervals by an officer of the Auckland Council. Modifications of the plan may be required as a result of this review.

5.5.5 This monitoring is conducted by external consultants with review by the Airport Strategic Planning team prior to submission to Auckland Council.

5.6 WASTE MINIMISATION PLAN

5.6.1 Auckland Airport does not produce most of the waste generated on its site but it is responsible for coordinating the main waste disposal contract. Airports produce a large quantity of waste, from a wide variety of sources including the following, only some of which is under their direct control:

- Domestic and office waste, including paper;
- Catering waste, including food and vegetable oils;
- Oils and solvents, components/parts from aircraft maintenance;
- Scrap metal;
- Construction waste; and
- In flight waste.

5.6.2 Auckland Airport can control its own waste and works with tenants to help minimise other waste generated at the airport. Auckland Airport has adopted the waste hierarchy approach to address waste issues i.e. waste prevention, re-use, recycle/compost and disposal.

5.6.3 Public recycling stations have been installed at the airport since 2008. There are ten in the international terminal and five in the domestic terminal for plastic, cans and glass. Facilities are also provided for the airport's retail and airline tenants to recycle their waste. Altogether over 400 tonnes per annum is recycled from the terminals, giving an overall recycling rate of around 20%.

5.6.4 Other recycling programmes include:

- Office waste paper;
- Electrical equipment and metal items recycled by the company;
- Concrete removed from runway and apron areas during upgrading (recycled as sub-base for new;
- Runway and apron areas); and
- Top soil from new build property developments.

5.6.5 Responsibility of the Waste Minimisation Plan, including is review and monitoring is held by the Airport Development and Delivery Division.

5.7 MANGROVE REMOVAL MANAGEMENT PLAN

5.7.1 Auckland Airport identified in 2010 a potential air safety hazard associated with a large number of black swans (approximately 1500-2000 birds) which currently visit and rest in an area of mangroves within the embayment immediately to the north of the western end of the runway. To remove the hazard associated with these birds flying directly over the runway, Auckland Airport has removed approximately 13 ha of mangroves from the Coastal Marine Area (CMA) adjacent to the runway. This was carried out under resource consent 38862, which has now expired.

5.7.2 There is a need to monitor black swans and mangrove recolonization within the embayment on an ongoing basis.

5.7.3 The Mangrove Removal Management Plan was produced in 2014 to guide the management of ongoing seeding removal activities within the embayment and small scale seeding or mature mangrove removal within other coastal areas around the airport.

5.7.4 The implementation of the Mangrove Removal Plan is the responsibility of the Wildlife and Grounds Overseer.

5.8 ACID SULPHATE SOIL MANAGEMENT PLAN

5.8.1 Acid sulphate soils have been identified at the Auckland Airport. Acid sulphate soil is a naturally forming soil which contains a particular mineral that when exposed to air, forms an acid. When mixed with water, this can lead to acidic groundwater with elevated sulphate concentrations.

5.8.2 Elevated sulphate concentrations can cause significant impacts to concrete infrastructure. Exposure to sulphuric acid can potentially lead to failure of the concrete. When water is removed from acid sulphate soils, they can rapidly shrink, potentially leading to settlement issues for foundations and pipelines. Increased acidity in water can also poison plants, fish and other aquatic organisms.

5.8.3 Auckland Airport has developed an Acid Sulphate Soil Management Plan which provides an understanding of the issues and potential effects of acid sulphate soils, identifies various management options and discusses the benefits, constraints and consenting and/or monitoring requirements for each option.

5.8.4 Auckland Airport is currently preparing variations to modify existing earthworks and stormwater discharge consents for the airport's northern and southern areas to allow for the continued investigation and management of acid sulphate soils. The Acid Sulphate Soil Management Plan is a supporting document for the updated resource consents and provides a high level strategic overview as to how acid sulphate soils will be investigated, managed and monitored at the Auckland Airport.

SECTION 6 – MONITORING AND REPORTING

6.1 MONITORING AND REPORTING FOR REGULATORY COMPLIANCE

6.1.1 An overview of monitoring and reporting requirements for regulatory compliance is given in Table 1 below.

6.1.2 More specific detail on monitoring programmes, and reporting of outcomes, can be found in the relevant management and operational plans contained in the documentation framework.

Table 1 Summary of Monitoring and Reporting Requirements

Consent	Routine Monitoring or Reporting	Key Parameters Monitored (if relevant)	Annual Reporting	Division Responsible
Nil: Environmental Management Plan	The Environmental Management Plan is to be reviewed as a minimum, annually.	Nil.	The Environmental Management Plan is to be reviewed annually. If modifications to the plan are made, a revised version of the plan is to be submitted the Auckland Council.	AD&D
Resource consents 28575, 36035, 21351, 29530 and numerous variations authorise the diversion and discharge of stormwater from the existing and future development across the airport.	• Visual inspection of ponds weekly • Inspection of hydrant pits and oil/water interceptors monthly • Sediment depth in stormwater ponds measured annually	As per the Stormwater Treatment Systems Operation and Maintenance Manual (Spiire, 2014). • Monitoring of grassed areas, • Inspection of stormwater treatment devices and stormwater ponds.	• Annual monitoring reports • Site catchment implementation plan (reviewed annually)	Aeronautical Operations, Strategic Planning team
Consents 35148 and 35175 for diversion and discharge of stormwater from 20.8 ha (Cross Taxiway) and associated coastal	Devices (UpFlo Filters and swales) and outfalls monitored and maintained in accordance with approved Operation	As per the Stormwater Treatment Systems Operation and Maintenance Manual (Spiire, 2014).	• Annual Stormwater Management Plan • Annual monitoring report	Aeronautical Operations, Strategic Planning team

Consent	Routine Monitoring or Reporting	Key Parameters Monitored (if relevant)	Annual Reporting	Division Responsible
disturbance and occupation (outfalls).	and Maintenance Plan.		• Monitoring and maintenance records maintained (supplied on request by council)	
Consent 28576 authorises the reclamation of 1968m of perennial watercourses and the installation of stormwater pipes	• Submission of an Erosion and Sediment Control Plan to the Council for written approval. • Any amendments that may affect the performance of environmental protection measures on site to be approved by the Council prior to commencement of works.	Nil.	• Annual Earthworks Management Plan • Annual Report of stream and restoration • Enhancement Programme	Strategic Planning team
Trade waste agreement no 4717 to authorise the discharge of wastewater arising from training ground firefighting foam wastewater	A representative sample of wastewater for a typical working day is to be analysed on an annual basis.	• Flow • pH, Wastewater • Temperature • Total petroleum hydrocarbons.	Results forwarded to Watercare within four weeks of receipt of results.	Aeronautical Operations
Consent 49330 authorises 624 ha of earthworks associated with developing the southern section of the airport.	• Site specific Erosion and Sediment Control Plan • Chemical Treatment Management Plan • Inspection of erosion and sediment control measure (during earthworks)	Erosion control measures (specified in ESCP)	• Annual Earthworks Management Plan • Annual archaeological survey	Strategic Planning team
Consents 28577 and 35025 authorise 469 ha of earthworks from the northern section of the airport.	• Erosion and sediment control plan (ESCP)	• Erosion control measures (specified in ESCP)	• Annual Earthworks Management Plan	Strategic Planning team

Consent	Routine Monitoring or Reporting	Key Parameters Monitored (if relevant)	Annual Reporting	Division Responsible
	• Flocculation Management Plan • Inspection of erosion and sediment control measure (during earthworks)			
Consent 29563 and 29564 authorise the discharge of contaminants from operational and training areas of the Live Fire Training Ground.	• Regular and one-off (post storm event) operation and maintenance inspections.	• As per general inspection checklists contained within the EMP.	• Annual Performance Report	Aeronautical Operations
Consent 38768 to authorise the take and use of groundwater from the Manukau Kaawa aquifer at Tahinga Lane.	• Monitoring of groundwater levels in the airport bore W3. • Water quality monitoring from the production and monitoring bores.	• Groundwater take quantity • Groundwater levels • Electrical conductivity at 25˚C • Chloride • Sulphate.	• Quarterly water level, use and chemistry report • Annual compliance report • Submission of monitoring and compliance report to iwi.	Aeronautical Operations
Consent 40245 and 40246 and 38768 authorise the taking and use of groundwater from an existing bore in the Manukau Kaawa aquifer at 145 and 196 Ihumato Road.	• Groundwater monitoring plan • Water supply demand management plan (prior to monitoring)	• Groundwater take quantity • Groundwater levels • Electrical conductivity at 25˚C • Chloride • Sulphate.	• Quarterly reporting on water quality and water use data • Annual compliance report	Strategic Planning team
Consent 42006 authorises the diversion and discharge of stormwater at 67 Ihumatao Road and Oruarangi Road, Mangere.	• Maintenance report (upon request)	• Who is responsible for maintenance, details of any maintenance undertaken, • What inspections were carried out over the preceding twelve months.	Nil	Strategic Planning team
Consent 36365 10 ha of earthworks	• Monitor maximum area	• Maximum area of open	• Records are maintained of	AD&D

Consent	Routine Monitoring or Reporting	Key Parameters Monitored (if relevant)	Annual Reporting	Division Responsible
associated with cleanfill operation.	of open earthworks, and status of revegetation/ stabilisation. • Sediment control measures inspected to ensure effective operation on a daily basis or after a significant storm event. • Inspection of sediment control measures during regular site inspections.	earthworks at any one time (not allowed to exceed 1 ha) • Current status of revegetation/stabilisation.	area of open earthworks on weekly check sheets.	
Consent 949640 authorises the discharge of leachate to groundwater from the Historical Quarantine Waste Landfill	• Annual groundwater monitoring of three groundwater monitoring wells within the landfill footprint, at low tide. • An inspection once per annum to observe for leachate breakout along the bund wall.	• pH • Conductivity • Chloride • Ammoniacal-N • Dissolved sodium, • Dissolved boron • Nitrate-N in three boreholes (BHG, BHP and BHQ)	• Annual groundwater monitoring report	Strategic Planning team
Designation 1100 – Noise Management Plan	9(d) If AIAL makes any changes to the procedures or other matters recorded in the Noise Management Plan, it shall forthwith forward an amended copy of the NMP to the Council and the ANCCG. 9A. AIAL shall maintain a register (electronic and hard copy) which is	5(a) A Day/Night Level of 65 dB Ldn anywhere outside the HANA. For the purpose of this control, aircraft noise shall be measured in accordance with NZS 6805:1992 and calculated as a 12 month rolling logarithmic average; 5b. A Day/Night Level of 60 dB Ldn anywhere outside the HANA and the MANA. For the	5(d) provides details of the monitoring locations required for the existing and northern runway and states that AIAL shall provide a detailed written report to the Council every 12 months describing and interpreting the results of the monitoring and describing and explaining the	Strategic Planning team and Aeronautical Operations

Consent	Routine Monitoring or Reporting	Key Parameters Monitored (if relevant)	Annual Reporting	Division Responsible
	available for public inspection of all exceptions to the Noise Minimisation Procedures. 13(b) AIAL shall monitor and record all testing of in situ aircraft engines and provide a summary report of the tests undertaken and the calculated noise levels whenever requested by the ANCCG.	purpose of this control, aircraft noise shall be calculated as a 12 month rolling logarithmic average using the INM and records of actual Aircraft Operations.	calculations and findings. 10A AIAL is to monitor the implementation of the Noise Mitigation Programme as set out in Condition 10 (Designation 1100) and provide a written report setting out its finding in detail to Council on an ongoing basis at six monthly intervals each year. 10B AIAL shall prepare annually the 60 dB L_{dn} AABC and 65 dB L_{dn} AANC and publish a public notice	

APPENDIX A - RECORD OF REVIEWS & APPROVAL OF EMP CONTENTS

A document review process is in place requiring the document's owner to ensure content is reviewed at least every 18 months, or as significant changes require.

Document number	Reviewer	Owner	Date of Approval
V0.1	Martin Fryer	Martin Fryer	07/03/2012
V0.2	Martin Fryer	Martin Fryer	4/03/2012
V0.3	Martin Fryer	Martin Fryer	15/03/2012
V0.4	Martin Fryer	Martin Fryer	24/04/2013
V0.5	Martin Fryer	Martin Fryer	05/06/2014
V0.6	Pattle Delamore Partners Ltd	Martin Fryer	09/06/2015
V0.7	Pattle Delamore Partners Ltd	Martin Fryer	24/01/2017
V0.8	Pattle Delamore Partners Ltd	Helen Jenkins Amy Rennel	18/07/2018
Next review date			January 2019

APPENDIX B - CORPORATE RESPONSIBILITY

Corporate Responsibility
Company Policy

Purpose

To ensure the Company operates and develops in a manner that finds the right balance between economic performance, environmental protection and social contribution, for the benefit of current, as well as, future generations.

As an expanding international airport, and business district, Auckland Airport has a positive impact on local, regional and national economies. Sound economic performance enables Auckland Airport to contribute to society through e.g. employment opportunities and sponsorship programmes.

Auckland Airport is also located on the very edge of the Manukau Harbour, a unique site that includes sensitive natural environments, important native species and a rich local heritage and culture.

Corporate responsibility, therefore, needs to be integrated into the management of our business. It is an essential element in creating and realising the long term vision for Auckland Airport.

Auckland Airport will:

- Implement a pro-active corporate responsibility strategy for its business that meets stakeholder expectations;
- Produce comprehensive metrics, set specific, achievable sustainability goals and/or targets for the following material areas:
    - Economic contribution
    - Community and Iwi engagement
    - Smart design and construction
    - Customer experience
    - Work location of choice
    - Safety and security
    - Ground transport
    - Noise and emissions
    - Energy and carbon
    - Waste and water

Successful implementation of this policy will enhance Auckland Airport's reputation, customer loyalty and passenger experience. It will also play a crucial role in the delivery of long term value for our owners, as well as our other stakeholders.

References

Global Reporting Initiative (GRI G4) and GRI Airport Operators Sector Supplement 2011
Hazardous Substance and New Organisms Act (HSNO) 1996
Resource Management Act (RMA) 1991

Next Review

This policy replaces an existing Sustainability Policy and will be reviewed in May 2018

Approved for distribution to staff by the Leadership Team on 04/05/2015

Auckland Airport

911232

APPENDIX C - ABBREVIATIONS & DEFINITIONS

AANC	Annual Aircraft Noise Contours
AD&D	Airport Development and Delivery Division
ANCCG	Aircraft Noise Community Consultative Group
ARP: C	Auckland Regional Plan: Coastal
Auckland Airport	Auckland International Airport Ltd (AIAL)
AUP-OP	Auckland Unitary Plan (operative in part)
CMA	Coastal Marine Area
CPA	Coastal Protection Area
EES	Engineering and Emergency Services Division
EMP	Environmental Management Plan
HAIL	Hazardous Activities and Industries List
HSNO	Hazardous substances and new organisms
Ldn	Day–night equivalent level (a measure for noise exposure)
JUHI	Joint User Hydrant Installation
NES	National Environmental Standard
NPS FM	National Policy Statement - Freshwater Management
RMA	Resource Management Act 1991
RUB	Rural Urban Boundary
SCS	Soil contaminant standards
SGV	Soil guideline values
SEA	Significant Ecological Area
SWMP	Auckland Airport Stormwater Management Plan