بسم الله الرحمن الرحيم

Ministry of Environment and Energy
ހިސާބާއި ތާނައިގެ ވަޒާރާތް

Environmental Protection Agency
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ފ.ހަނިމާދޫ ގަޑީތެރެ ތަކުރާ ހުންނަ ހާދިސާ ކުރިން ހެދުމުގެ ރިޕޯޓް

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ތަކުރާ ހުންނަ ނަން	EMP for the Installation and Operation of Seaplane Platforms in Ifuru Island, Raa Atoll
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ކުންފުނީގެ ނަން Manta Air ތާރީޚް 9/2/2025

MANTA AVIATION PRIVATE LIMITED C-0811/2016 MALDIVES

ތިލަފުށި ބެލުން

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ENVIRONMENTAL MANAGEMENT PLAN (EMP)

FOR THE PROPOSED

SEAPLANE PLATFORMS AT IFURU ISLAND, RAA ATOLL

April 2025

Prepared for

Manta Air

Male', Maldives

Consultant

CDE Consulting, Maldives

Lead Consultant's Declaration

I certify that statements made in this Environmental and Management Plan (EMP) are true, complete and correct to the best of my knowledge and available information at time of writing this report.

Mariyam Hana Saeed

Letter of Commitment

Manta Air has provided the commitment letter.

(Please refer to next page)

MANTA AVIATION PRIVATE LIMITED | C-0811/2016
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Date: 23rd February 2025
Ref: LTCO-25/06

Mr. Ibrahim Naeem
Director General,
Environmental Protection Agency,
Male', Republic of Maldives.

Dear Sir,

Sub: Environmental Management Plans for the proposed installation and operation of a seaplane platforms at Ifuru Island, Raa Atoll

As the proponent of the above mentioned project, we guarantee that we have read the report and to the best of our knowledge all non-technical information provided here is accurate and complete.

We also hereby confirm our commitment to carry out and bear costs of environmental mitigation measures and monitoring outlined in the EMP report.

Thank you,

Yours Sincerely,

Capt. Ismail Imthiyaz
Director, Flight Operation
Manta Aviation Pvt Ltd

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ABBREVIATIONS

BOQ	Bill of Quantities
CAA	Civil Aviation Authority
CAPEX	Capital Expenditure
CAR	Civil Aviation Regulation
IFC	International Finance Corporation
ICAO	International Civil Aviation Organisation
INDC	Intended Nationally Determined Contributions
ERP	Emergency Response Plan
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Areas
EIA	Environmental Impact Assessment
GHG	Greenhouse Gas
GPS	Global Positioning System
ILO	International Labour Organisation
IOM	International Organisation for Migration
ISO	International Organisation for Standardisation
IUCN	International Union for Conservation of Nature
LRA	Labour Relations Authority
MACL	Maldives Airport Company Limited

MCAR	Maldives Civil Aviation Regulation
MPA	Marine Protected Areas
MNDF	Maldives National Defense Force
MOFA	Ministry of Fisheries and Agriculture
NGO	Non-Governmental Organisation
SEP	Stakeholder Engagement Plan
UNDP	United National Development Program
UNFCCC	United Nations Framework Convention on Climate Change

1 INTRODUCTION

1.1 PURPOSE AND OBJECTIVES OF THE EMP

This Environmental Management Plan (EMP) has been prepared as a tool to assist Manta Air in the management of seaplane platforms in accordance with national laws and international best practices. The EMP will examine the likely social and environmental impacts associated with the operation of seaplane docking platforms at Ifuru Island and proposes a management framework to address those impacts.

This EMP is prepared based on the principles of an audit as the platforms are already installed. Given the small scale of the project an EIA is not required, hence the Proponent has installed the platforms and now wishes to have an Environmental Management Plan in place to manage the platforms in a responsible manner.

The EMP contains location specific actions that Manta Air can implement to ensure the seaplane platform is managed in a sustainable manner. The EMP also provides direction for Manta Air employees on operational procedures to address environmental and social impacts associated with day-to-day activities of the platform.

1.2 TITLE

The title of the report is the Environmental Management Plan for the proposed seaplane platform at Ifuru Island, Raa Atoll.

1.3 PROPONENT

The proponent of this project is Manta Aviation Private Limited. It is a private airline operator founded in 2015 and headquartered in Male'. Manta Air currently has domestic flights and seaplanes operating within Maldives. The address and contact details of the proponent are as follows;

Manta Air
M.Kaneeru Villa, 4th Floor
Orchid Magu, Male'

Contact: 3346004

1.4 LOCATION

The proposed project site, Ifuru island is an uninhabited island located on the eastern rim of Raa Atoll. The island has an operational airport and acts as a transportation hub between Male' and Raa Atoll. It is also home to operational resort Ifuru Island Maldives Resort with 150 rooms (300 bed). The location of the island is shown in Figure 1. Table 1.1 below provides the details of the project site location.

Table 1.1 Key details about the project site

Island Name	**Ifuru Island**
Location	5°42'31.73"N, 73°01'20.16"E
Island length	1.51 Km
Island width at widest point	0. 5 Km
Distance to nearest inhabited island	About 5 km to Hulhudhuffaaru
Distance to nearest resort	About 13 km to Joali
Distance to Velana International Airport	180 km

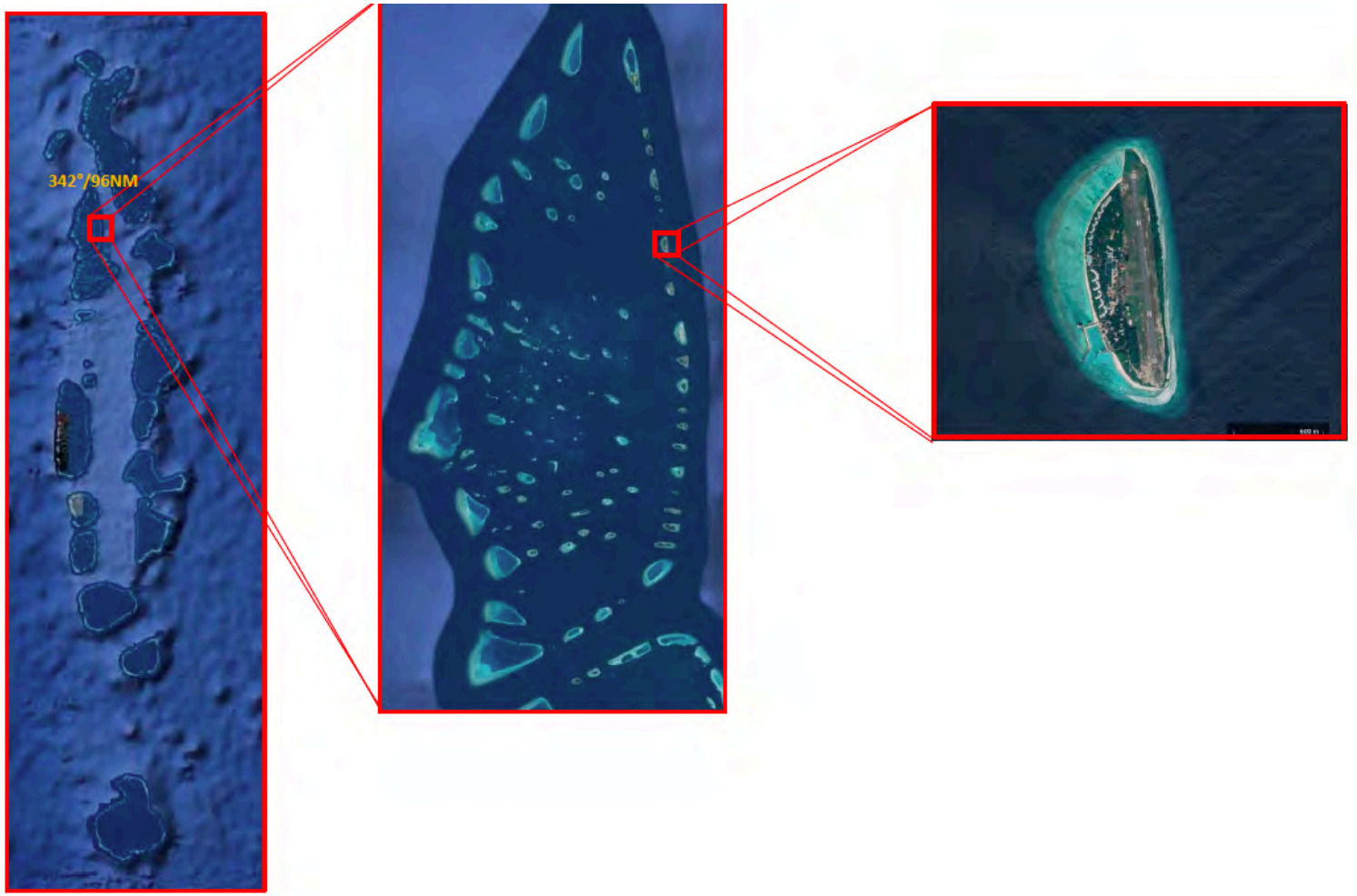

Figure 1.1 Location of the resort

1.5 RATIONALE AND NEED

Ifuru Island Maldives Resort is located in Ifuru Island and Manta Air has established a contract with the property to serve their guests with seaplane transfer to the resort due to the high demand. Guests to this resort require on demand transfers and domestic transfer via scheduled flights is not sufficient to cater for this, hence seaplane transfer is required. To enable seaplane transfers, the proponent required to install the platforms

1.6 SCOPE

The scope of the EMP includes the installation and operation phase of seaplane platform and supporting facility at Ifuru Island Maldives.

1.7 CONSULTANTS AND CONTRACTORS

The design criteria and project specifications were developed by Manta Air in consultation with the resort and in compliance with Civil Aviation Authority requirements.

CDE Consulting is the consultant for the preparation of the EMP.

1.8 PROJECT FINANCING

The project is financed by Manta Air.

1.9 STRUCTURE OF EMP

The EMP is structured in the following order;

1. Legislative and regulatory requirements
2. Description of the seaplane platform
3. Identification of risks and impacts
4. Impact management programme
5. Organizational capacity and competency
6. Emergency preparedness and response
7. Stakeholder engagement

8. External communication
9. Grievance mechanism
10. Monitoring and review

1.10 DOCUMENT CONTROL

A copy of the EPA Decision Note for seaplane operation and this EMP will be kept at Manta Air as well at the resort at all times. Manta Air will ensure that all of their staff and where relevant the sub-contractors are familiar and informed about the relevant requirements described in this EMP.

1.11 REVIEW AND UPDATES

Manta Air has the responsibility to review and update the EMP if the need be to ensure that it reflects the facilities and operations at the seaplane platform and any changes regulatory requirements. Manta Air will include in the EMP any changes or updates in the platform.

2 POLICY AND LEGAL COMPLIANCE

The constitution of the Maldives adopted in 2008 has several provisions to protect the rights of citizens to environment, health, and private property that are relevant to the establishment of the seaplane platform. Activities carried out at seaplane docking platform must comply with relevant provisions of all legislation relating operation of seaplane docking platform and water aerodromes in the Maldives. This includes but is not limited to the following:

2.1 ENVIRONMENTAL AND SOCIAL ASSESSMENT

2.1.1 Environmental Protection and Preservation Act

The Environmental Protection and Preservation Act (EPPA, Act No: 4/93) enacted on 19 March 1993 is the framework law related to environment protection in the Maldives. Articles 2, 4, 5, 6, 7, and 8 of the law are relevant to the seaplane platform Project.

Article 2: concerned government authorities shall provide necessary guidelines and advise on environmental protection in accordance with prevailing conditions and needs of country.

Article 5 (a): An Environmental Impact Assessment study shall be submitted to the Ministry of Environment before implementing any development project that may have a potential impact on the environment.

5 (b): The Ministry of Environment shall formulate the guidelines for EIA and shall determine the projects that need such assessment as mentioned in paragraph (a) of this clause.

Article 6: The Ministry of Environment has the authority to terminate any project that has any undesirable impact on the environment. A project so terminated shall not receive any compensation.

The authority responsible for the Environmental Protection and Preservation Act is the Ministry of Environment (ME).

2.1.2 EMP Regulations

Environmental Impact Assessment regulations were issued by MEE on 8 May 2012. The first step in environmental assessment process involves screening of the project to be classified as one that requires an EIA or not. Based on this decision, the Ministry then decides the scope of the EIA which is discussed with the proponent and the EIA consultants in a "scoping meeting". The consultants then undertake the EIA starting with baseline studies, impact prediction and finally reporting the findings with impact mitigation and monitoring programme. This report follows the principles and procedures for EIA outlined in the EIA regulations.

The EIA report is reviewed by MEE following which an EIA Decision Note is given to the proponent who will have to implement the Decision Note accordingly. As a condition of approval, appropriate environmental monitoring may be required, and the proponent shall have to report monitoring data at required intervals to the Ministry. The project proponent is committed to implement all impact mitigation measures that are specified in this EMP. Furthermore, the proponent is committed to environmental monitoring and shall fulfil environmental monitoring requirements that may be specified in the decision note as a condition for project approval. The processes specified in this EMP are based on the EIA regulations.

2.1.3 Environmental Liability Regulation (Regulation 2011/R-9)

The regulation is aimed at maintaining equal standards for reprimanding and enforcing environmental liabilities, fines for those who violate the rules and regulations and give guidance to those who are involved in the implementation process of the regulations pursuant to Preservation Act of Maldives (4/93). One of the key objectives of the environmental liability regulation is also to practice polluter-pay-principles in the Maldives.

This law is pursuant to Article 22 of national constitution that states that protection, preservation and maintenance of the Maldivian natural environment, the richness of the living species, the natural resources and the beauty of the Maldives for the present generations as well as for the future generations is a basic obligation of the Maldivian government. The government shall enforce that the activities conducted in order to gain economic and social development should be of sustainable nature that protect the environment and such activities shall not deteriorate the

environment, endanger any species, damage the environment, and shall not waste any natural resources.

This regulation is also pursuant to Environment Protection and Preservation Act of Maldives (4/93). The regulation is aimed at maintaining equal standards for reprimanding and enforcing environmental liabilities, fines for those who violate the rules and regulations and give guidance to those who are involved in the implementation process of the regulations pursuant to Preservation Act of Maldives (4/93). One of the key objectives of the environmental liability regulation is also to practice polluter-pay-principles in the Maldives.

2.2 AVIATION

2.2.1 Maldives Civil Aviation Regulation (MCAR)

Maldives Civil Aviation Regulation (MCAR), introduced in July 2007, is aimed at complying with ICAO requirements and harmonisation with international standards, e.g. EASA. This regulation has replaced the previous CAR's and MARs and has unified civil aviation regulations in the Maldives.

Regulatory requirements related to the certification of water aerodromes, general requirements of platforms, runways and visual aids, transfer of passengers, communication, emergency response and training are prescribed in CAA ASC 14-2

2.2.2 Air Safety Circular ASC 14-2

ASC 14-2 lays down the minimum requirements for site selection, floating platform fabrication and installation, rescue and firefighting equipment and facilitation at floating platform in order to meet licensing requirements.

Article 6 defines the considerations to look at when selecting a suitable site for the water aerodrome and installation of the floating platform. Compliance is mandatory for all Maldivian water aerodrome operators and floating platform operators.

Locations will be such that cross-wind operations are kept to a minimum and downwind operations shall be avoided. Landing and take-off areas should be oriented to permit operations into the wind. Nature reserved designated marine areas and fishing grounds shall not be used for water aerodromes. The strip of water shall be free from large obstructing coral rubbles to a definite depth and located inside protected waters which is safe to use during landing/takeoff by a definite aircraft.

Article 7 determines the floating platform dimensions and safety equipment. Adequate support and buoyancy, inspection at regular intervals, equipped with minimum equipment in the interest of passenger safety, life buoys easily accessible, emergency box provided with minimum safety equipment, location of emergency boxes.

Article 8 determines the size of the water runway. Dimensions of the runway will be based on the size of the aircraft in operation, the performance characteristics of the aircraft, clearance of approach path from obstacles.

Article 9 determines the operational requirements.

Article 19 talks about the removal of the floating platform. The floating platform and the anchoring blocks shall be removed from the location within three months after revocation of the license

2.3 WASTE MANAGEMENT AND POLLUTION PREVENTION

2.3.1 Environmental Protection and Preservation Act

According to **Article 7:** any type of waste, oil, poisonous gases or any substances that may have harmful effects on the environment shall not be disposed within the territory of the Maldives. In cases where the disposal of the substances becomes absolutely necessary, they shall be disposed only within the areas designated for the purpose by the government. If such waste is to be incinerated, appropriate precaution should be taken to avoid any harm to the health of the population.

Article 8 of the EPPA (4/93) states that Hazardous/ Toxic or Nuclear Wastes that is harmful to human health and the environment shall not be disposed anywhere within the territory of the country.

2.3.2 Waste Management Policy

The aim of the waste management policy is to formulate and implement guidelines and means for solid waste management in order to maintain a healthy environment. The key elements of the policy include:

- Ensure safe disposal of solid waste and encourage recycling and reduction of waste generated;
- Develop guidelines on waste management and disposal and advocate to enforce such guidelines through inter-sectoral collaboration;
- Ensure safe disposal of chemical, hazardous and industrial waste.

2.3.3 Waste Management Regulation

The Waste Management Regulation (WMR) put on gazette in August 2013 came into force in February 2014. EPA implements the WMR. The aim of WMR is to implement the national waste policy which contains specific provisions to (a) implement measures to minimize impacts on human health; (b) formulate and implement waste management standards; (c) implement an integrated framework for sustainable waste management (d) encourage waste minimization, reuse and recycling (e) implement Polluter Pays Principle; (f) introduce Extended Producer Responsibility.

WMR contains four main sections: (1) waste management standards; defines standards for waste collection, transfer, treatment, storage, waste site management, landfills and managing hazardous waste (2) waste management permits; defines approval procedures for waste sites (iii) waste transfer. Standards and permits required for waste transport on land and sea, including transboundary movements, (iv) reporting requirements: defines reporting and monitoring

requirements and procedures (v) enforcement: defines procedures to implement WMR and penalties for non-compliance.

If any hazardous waste including electronic waste is to be disposed in the Maldives, waste sites specifically approved to manage hazardous and Special Category waste should handle it. Transportation and handling shall also conform to the standards specified in WMR. If the waste is to be exported for reuse or disposal in another country, an application needs to be submitted to EPA 03 months prior to the shipping date. EPA will issue an approval based on compliance with WMR clauses and international conventions.

2.4 LAND ACQUISITION

2.4.1 Regulation on determining the lagoon boundary of islands leased for the development of tourist resorts, tourist hotels, tourist guesthouses and yacht marinas (2016/R-94)

This regulation specifies that if an island leased for tourism has a distance greater than 500 m extending from the vegetation line till the outer edge of the reef, the lagoon boundary allocated for that island will be 500m. Some exceptions to this include islands which already have a set lagoon boundary specified in the agreement, and islands which have another island or sandbank within their lagoon. If the island has a distance less than 500 m extending from the vegetation line till the outer edge of the reef, the lagoon boundary allocated for that island will be the distance between the vegetation line of the island and the edge of the reef. The lagoon boundary can also be extended to a maximum distance of 2000m under special circumstances. The regulation also specifies certain areas as 'no development zones'. The construction of any tourism related structures or land reclamation in these zones is not allowed. Areas that are classified as 'no development zones' include:

- A distance specified by the Tourism Ministry, if the island leased for the development of a tourist resort does not have a distance of 300m between the vegetation line and the outer edge of the reef, or if the distance between the vegetation line of the leased island and the vegetation line of another island in the same lagoon is less than 300m. In the latter case the 'no development zone' will be a distance between the two islands.

- If more than one island is present in the same lagoon, 100m inwards from the lagoon boundary will be classified as a buffer area and a 'no development zone'.

2.4.2 General Laws Act (4/68)

2.5 CULTURAL AND HISTORICAL PLACES AND OBJECTS ACT

The Law on Cultural and Historical Places and Objects of the Maldives (27/79) prohibits destroying or damaging any historical and cultural places, sites, objects and artefacts belonging to the sovereign area of the Maldives. The historical and cultural objects are those that were used by or feature the life of locals or foreign ancestors who had resided in the Maldives. The historical and cultural places refer to religious monuments, idols or place of worship or residences used by locals or foreign ancestors who had resided in the Maldives.

2.6 BIODIVERSITY CONSERVATION

2.6.1 Environment Protection and Preservation Act

According to Article 4 Ministry of Environment shall be responsible for identifying protected areas and natural reserves and for drawing up the necessary rules and regulations for their protections and preservation.

2.6.2 Coral and sand mining regulation

Coral mining from house reef and atoll rim has been banned through a directive from President's Office dated 26 September 1990. Regulation on sand mining covers sand mining from uninhabited islands that have been leased; sand mining from the coastal zone of other uninhabited islands; and aggregate mining from uninhabited islands that have been leased and from the coastal zone of other uninhabited islands.

Sand should not be mined from any part of the existing island, beach or the newly reclaimed island beach. Sand should also not be mined from within 100 ft. of the shoreline. Please see regulation on dredging and reclamation for further controls.

2.7 GHG EMISSIONS AND RESOURCE EFFICIENCY

2.7.1 Maldives Energy Policy and Strategy

Maldives Energy Policy and Strategy (2016) consists of 5 key policy statements:

- Strengthen the institutional and regulatory framework for the energy sector
- Promote energy conservation and efficiency
- Increase the share of renewable energy in the national energy mix
- Improve the reliability and sustainability of electricity service and maintain universal access to electricity
- Increase national energy security

2.7.2 Climate Emergency Act

The Climate Emergency Act published in May 2021 serves to develop a policy framework for emission reduction, to become carbon neutral by 2030, create awareness on climate change, align development plans with climate change mitigation or adaptation measures and to develop a framework for a carbon budget. One of the strategies proposed to reduce emission is by becoming carbon neutral by 2030 and it states that the amount of GHG emitted in 2030 must be equal to the amount of GHG offset in 2030. The Act also calls to develop a carbon budget to ensure the road to carbon neutrality. The carbon budget must be prepared in association with institutions, local councils, NGOs, business, and the public. A National Action Plan will also be developed to ensure the requirements under the Climate Change Act will be implemented.

2.7.3 Maldives Climate Change Policy Framework

The Maldives Climate Change Policy Framework published in 2015 outlines strategic policies that the Government can use to respond to climate change effects over the years 2015-2025. The framework outlines objectives and strategies for each of the 5 policy goals which include:

- Sustainable financing: Ensure and integrate sustainable financing into climate change adaptation opportunities and low emission development measures

- Low emission development: Strengthen a low emission development future and ensure energy security for the Maldives
- Adaptation and opportunities: Strengthen adaptation actions and opportunities and build climate-resilient infrastructure and communities to address current and future vulnerabilities
- Capacity building and leading advocacy at climate negotiation: Inculcate national, regional and international climate change advocacy role in leading international negotiations and awareness in cross-sectorial areas in favour of the most vulnerable and small island developing states
- Fostering sustainable development: Foster sustainable development while ensuring security, economic sustainability and sovereignty from the negative consequences of the changing climate

Some of the objectives of the third policy goal, 'Adaptation and opportunities' include protecting critical infrastructure such as international; airports, inhabited islands and tourist resorts from sea-related hazards and predicted climate change impacts.

2.7.4 Maldives Intended Nationally Determined Contribution

Maldives aims to achieve low emission development future and ensure energy security. In the Maldives Intended Nationally Determined Contribution (INDC), the government has committed for the following Unconditional Reduction:

In accordance with Decisions 1/CP.19 and 1/CP.20, Maldives communicated in 2015 that it intends to reduce unconditionally 10% of its Greenhouse Gases (below BAU) for the year 2030. The Government also communicated the following Conditional Reduction: "The 10% reduction expressed above could be increased up to 24% in a conditional manner, in the context of sustainable development, supported and enabled by availability of financial resources, technology transfer and capacity building." In 2020, the Government of Maldives updated the commitment with the aim to reduce 26% of emissions by 2030 and to strive to achieve net zero by 2030 if adequate international support and assistance is received.

2.7.5 Second National Communication of Maldives to UNFCCC

According to the Second National Communication of Maldives to UNFCCC, the total GHG emission in 2011 was 1225.598 Gg CO2e, of which 1152.869 GgCO2e is from energy sector.

2.8 LABOUR AND WORKING CONDITIONS

2.8.1 Human Rights Act

In 2005, the Human Rights Commission Act was passed. The Act (6/2006) was subsequently amended in 2006 to ensure compliance with the Paris Principles on the status and functioning of national institutions for protection and promotion of human rights. The amended Human Rights Commission Act provides the HRCM independence and autonomy as a statutory body.

2.8.2 Employment Act

The legal framework to govern the rights and responsibilities of workers in the Maldives is included in the Employment Act (2/2008) that was ratified and signed into law in May 2008. The Employment Act provides for the creation of a Labour Relations Authority, an Employment Tribunal and an Advisory Board on wages. To date, four amendments have been brought to the Employment Act (2/2008). The amendments were made through the following Acts: 14/2008; 12/2010; 3/2014; 14/2015. Of these amendments, the third and fourth Amendments are directly relevant to foreign migrant workers in the Maldives.

The Amendment 3/2014 passed by Parliament on 03 December 2013 requires an Employment approval for foreign migrant worker to be issued prior to arrival in the Maldives. The Amendment also made a deposit mandatory for all foreign migrant workers to be paid by the Employer. The Amendment 14/2015 is on Ramazan allowance for Muslim workers. The Amendment makes it optional for Employers of Muslim foreign migrant workers to pay them a Ramazan allowance.

2.8.3 Pensions Act

Article 12 of the Maldives Pensions Act (8/2009) introduced the Maldives Retirement Pension Scheme. It is mandatory for the private and public sectors as well as the self-Employed to participate in the contributory Maldives Retirement Pension Scheme. The annual contribution each Employee and Employer has to make to the Employees retirement savings accounts set at seven per cent of pensionable wage for a total of 14 per cent.

2.8.4 Immigration Act

The Maldives Immigration Act (1/2007) lays down the rules for entry, departure and deportation of foreign nationals. Article 15 of the Act provides for work visa: the permit to remain in the Maldives for the duration of a work permit granted to a foreign national visiting the Maldives for the purpose of working, where a work permit has been obtained by that foreign national consistent with the regulations of the concerned Government authority.

2.8.5 Anti-Human Trafficking Act

The Anti-Human Trafficking Act (12/2013) passed by the parliament on 03December 2013 and ratified on 08 December 2013 makes trafficking in persons a criminal offence in the Maldives. The purposes of the Act are to: prevent trafficking of persons through and across the Maldives; establish the crimes of trafficking in persons and prescribe punishments; provide for prosecution of perpetrators of trafficking in persons; provide protection and assistance to victims of human trafficking; promote and protect the human rights of trafficked victims; and engage with local and international NGOs working against human trafficking.

The Act defines the crimes of trafficking, exploitation, and debt bondage. According to this Act, forced labour and fraudulent recruitment are considered human trafficking. The Act specifies the penalties for perpetrators of trafficking. The penalty for trafficking offence is a jail imprisonment up to 10 years that can be extended to 15 years if children are involved.

2.8.6 Work Visa Regulation

The Department of Immigration and Emigration has issued a Work Visa Regulation (2010/R-7) under the Maldives Immigration Act (1/2007). The Work Visa Regulation (2010/R-7) gazetted on 12 October 2010 requires foreign migrant workers who enter the Maldives for the purpose of work to have a valid work visa. The conditions for entry of work visa holders as specified in the regulation includes the following: a passport with minimum six months validity; security deposit paid to DoIE 48 hours before arrival; truthful answers to questions posed by Immigration Officers; not prohibited from entry to the Maldives under article 4 of the regulation; specification of the purpose of entry; an Employment approval from the concerned authority with a copy transmitted to DoIE; and being over 18 years of age.

Documents and payments necessary for a work visa include: completed visa application form (IM25); passport standard photograph; original of the Employment contract or contract copy attested by a court or law firm; original of the Employment approval; passport with 6 months validity; MVR 250 for monthly visa fee; original of the medical report; MVR 50 for annual visa card fee; Employer's National Identity Card or Registration Certificate of Company; and medical insurance documentation.

2.8.7 Regulation on Employment of foreign workers in the Maldives

Employment of foreign migrant workers is regulated by the Regulation on Employment of foreign workers in the Maldives (2011/R-22) that was published on official gazette on 26 May 2011. This regulation is issued under Article 63 of Employment Act (2/2008) and Articles 32, 33 and 35 of the Maldives Immigration Act (1/2007).

The Regulation on Employment of foreign workers in the Maldives (2011/R-22) requires Employers to apply for a foreign worker quota; pay a security deposit for the foreign migrant worker; ensure that work permits are issued before a foreign migrant worker can commence work; apply for a work permit card within 15 days of arrival of the foreign migrant worker to the Maldives; apply for a work visa within 30 days of arrival of the foreign migrant worker to the Maldives; pay a work visa fee of MVR 250 per month; receive the foreign migrant worker at port

of entry to the Maldives; register the foreign migrant worker at the registry maintained by the applicable island council or city council.

2.8.8 International labour related commitments

The Maldives is a party to major ILO conventions on fundamental labour rights. Maldives became the 183rd member state of the International Labour Organization (ILO) on 15 May 2009.

On 4 January 2013, the Government of the Maldives ratified the 8 core conventions on the ILO's fundamental labour rights: the Forced Labour Convention, 1930 (No. 29), the Abolition of Forced Labour Convention, 1957 (No. 105), the Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87), the Right to Organise and Collective Bargaining Convention, 1949 (No. 98), the Equal Remuneration Convention, 1951 (No. 100), the Discrimination (Employment and Occupation) Convention, 1958 (No. 111), the Minimum Age Convention, 1973 (No. 138), and the Worst Forms of Child Labour Convention, 1999 (No. 182).

There are three international standards that apply to foreign migrant workers. They are the ILO Migration for Employment Convention, 1949 (No. 97), the ILO Migrant Workers (Supplementary Provisions) Convention, 1975 (No. 143), and the 1990 UN International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (CMW).

The ILO Convention 97 provides the foundation for equal treatment between nationals and regular migrants in areas such as recruitment procedures, living and working conditions, access to justice, tax and social security regulations. It sets out details for contract conditions, the participation of migrants in job training or promotion and offers provision for appeals against unjustified termination of employment or expulsion, and other measures to regulate the entire migration process.

ILO Convention 143 has two main objectives. First objective is to regulate migration flows, eliminate clandestine migration and combat trafficking and smuggling activities. The second objective is to facilitate integration of migrants in host societies. The convention contains minimum norms of protection applicable to migrants in irregular situation, or who were employed illegally, including in situations where they cannot be regularized. Article I established States to

"respect the basic human rights of all migrant workers," independent of their migratory status or legal situation in the host State.

In 1990, UN Member States adopted the United Nations (UN) Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (CMW). The CMW is recognized as the most comprehensive international instrument on the rights of migrant workers and it extended the legal framework for migration, treatment of migrants, and prevention of exploitation and irregular migration. The CMW reaffirms and re-establishes the basic human rights norms that it considers necessary for migrant workers to have free and equal enjoyment of rights and dignity throughout all stages of labour migration. The above three Conventions (97, 143 and CMW) together provide a comprehensive basis for policy and practice regarding foreign migrant workers and their family members. The Maldives has not yet ratified these three conventions.

In 2002, the South Asian Association for Regional Cooperation (SAARC) adopted and signed the SAARC Convention on Prevention and Combating Trafficking in Women and Children. Under this Convention SAARC member states have established a regional taskforce to combat trafficking of women and children in South Asia.

2.8.9 Regulation on the Safety Standards for Construction Work

The Regulation on the Safety Standards for Construction Work is a recent regulation aimed at improving working conditions. If the contractor's work exceeds MVR 1,500,000 a health and safety plan and an emergency response plan should be prepared and followed for the safety of employees as well as the public. A site safety supervisor with more than five years of experience should also be appointed for the project. Responsibilities of the site safety supervisor include carrying out daily site inspections to ensure the proper measures are being taken to ensure safety. Personal protective equipment must also be provided for workers and they must be trained in the use of equipment. The contractor should ensure that workers are using personal protective equipment at all times when on site.

It is of utmost importance that this regulation is followed during the streetscaping project to ensure the safety of the workers as well as the public. Pedestrians should be provided with deteours,

excavated pits must be properly closed off and appropriate signs must be placed, construction waste should be disposed of appropriately and construction equipment and material should be used and stored responsibly.

2.9 HEALTH, SAFETY AND SECURITY

2.9.1 Public Health Protection Act (07/12)

The purpose of the public health protection act is to establish policies for protection of public health, identify persons responsible for protection of public health, define how public health protection policies will be implemented. The objectives of the Act also include: establishing policies to respond to public health emergencies; classify situations which may be harmful to health and establish methods to act in such a situation; establish roles and responsibilities of island, atoll, and city councils in protection of public health. Chapter 5 of the Public Health Protection Act covers identifying health hazards, eliminating risk, reporting health hazards, and orders on things to be done or not done in relation to a building.

2.9.2 Export Import Act (31/79)

Importing items into the Maldives, re-exporting, selling of imported goods, the exporting of items naturally formed and produced in the Maldives, and operation of such activity shall be carried out with the permission of the Ministry of Economic Development, and in accordance with the regulations made by the Ministry.

2.9.3 Substances Prohibited to be Brought into the Maldives Act (04/75)

The objective of Act (4/75) is to deal with substances that are prohibited to be imported unless for government purposes, or only to be imported with special permission, or materials which are completely prohibited from being imported into the country. Chemical substances are under import, use and manufacture control unless accompanied with a special permission from the Ministry of Defense and National Security. These include hazardous chemicals and chemical based

toxins that do not fall under the category of explosives, but may be used as substances for chemical weapons.

3 PROJECT DESCRIPTION

3.1 PROJECT COMPONENTS

As mentioned above, this EMP is prepared based on the principles of an audit, describing the process taken by the proponent to install the proposed platforms and the plan for management during operation phase.

The seaplane water aerodrome and platform work at remote stations begins with the engagement of the Civil Aviation Authority for the operation of the Seaplane service by Manta Air.

The following components are involved;

1. Resort inspection to prepare the safety assessment report by Manta Air
2. Submit an application for installation of floating platform and license for operation
3. Preparation of BOQ
4. Fabrication works to install the platform
5. Demobilising

3.1.1 Floating Platform

One floating platform is installed at the island. The location of the floating platform will be changed during each monsoon.

For Northeast Monsoon

The floating platform during Northeast monsoon will be installed to the west of Ifuru island at 5°42'11"N 73° 1'13"E. The mooring buoy will be placed at 5°42'15"N 73° 01'12"E.

For Southwest Monsoon

The location of the platform will be changed during Southwest monsoon to the east Ifuru Island at 5°42'21"N 73° 01'38"E. The mooring buoy will be placed at 5°42'24"N 73° 01'37"E.

3.1.2 Fixed Platform

A fixed platform is proposed at the arrival jetty in Ifuru Island. The platform is placed at 5°42'15"N 73° 01'18"E.

Figure 3.1 shows the site plan of the proposed platforms.

3.1.3 Fuel Tanks

A fuel tank is not proposed for the Island and will not be established.

Figure 0.1 Site plan of the proposed platforms

3.2 DETAILED PROJECT OUTLINE

3.2.1 Seaplane Docking Platform

3.2.1.1 Resort Inspection

The inspection was conducted by the Flight Operations Department of Manta Air to carry out the inspection of the island and determine the location of the platform and depth. The Safety and Security Department and the Quality and Compliance department ensures that the platform meets all the regulatory requirements.

3.2.1.2 Application to Civil Aviation Authority

An application was made ready for submission to Maldives Civil Aviation Authority to get approval for the platforms in Ifuru Island and the unconditional approval is subjected to the approval of this EMP by EPA. The application will be submitted along with an aerial map which outlines the boundaries of the proposed platforms and mooring positions.

3.2.1.3 Preparation of BOQ

Once the safety assessment report was generated, the Engineering and Maintenance Department of Manta Air prepares the BOQ and CAPEX forms for platform installation and commissioning.

3.2.1.4 Temporary Site Setup

A temporary setup was not set up as the platforms will be prefabricated and transported to the island only for installation.

3.2.1.5 Fabrication Works

Once the CAPEX was approved and materials are procured, fabrication work began for the following components. This was led by the Engineering and Maintenance Department.

1. Fabricating floating platforms along with the required elements such as hinges, bollards, signage and markings and handrail
2. Casting concrete blocks
3. Platform installation - floating platform
4. Mooring buoy installation

Figure 3.2 below shows an illustration of the proposed floating platforms to be installed at the island.

3.2.1.6 Mooring Buoy Installation

Anchoring of the mooring is similar to that of a floating platform. A sample illustration is shown in Figure 3.2.

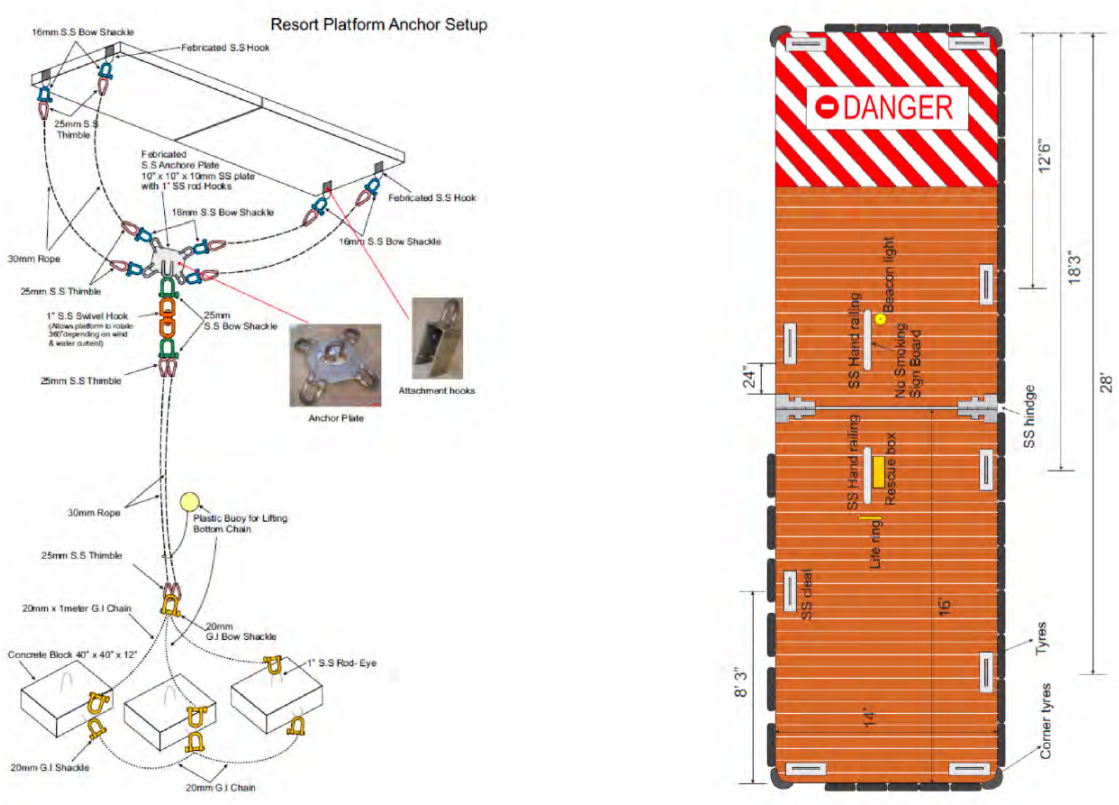

Figure 0.2 Illustration of the proposed floating platform

3.2.1.7 Design Details

As a standard safety guideline, the minimum depth of the sea bed on the water runway and taxiway is maintained at 1.8 meters during low tide. The length of the water runway is no less than 2500 feet, and the width of the runway is 100 feet and obstacle free. The taxiway has a minimum clearance of 35 feet between the aircraft wing tip and other obstacles that are in level with the aircraft. A minimum depth of 1.8 meters is also maintained for the floating platform and mooring buoy. The full list of minimum requirements followed for water runway, taxiway and platforms are summarized in the table below.

Table 0.1 Summary of minimum requirements for the platform components

Component	**Minimum requirement**
Water Runway	
Depth of water at low tide	1.8 meters
Width of the runway	100 feet
Length of the runway	2,500 feet
Clearance from seawall to runway	98.4 feet
Taxiway	
Depth of water at low tide	1.8 meters
Minimum width of the taxiway	65 feet
Clearance between aircraft wingtip and other obstacles in	35 feet
Channel markers/polls/seawall in line with path	Less than 5 feet above water on low tide
Floating platform	

Depth of water at low tide	4 feet
Floating platform	50 feet radius
Clearance between aircraft wingtip and other obstacles in level	35 feet
Mooring Buoy	
Depth of water at low tide	4 feet
Clearance for aircraft maneuvering	98.4 feet radius

3.2.1.8 Demobilisation

Once the platforms were fabricated, they are installed for operation. The workforce and other equipment used were then demobilized.

3.3 PROJECT SCHEDULE AND LIFE SPAN

It takes about 24-48 hours to complete the installation of the platforms at the site. The platforms have already been installed on the site and this EMP is prepared along the principles of an audit.

3.4 LABOUR REQUIREMENT AND SERVICES

3.4.1 Workforce during Installation

During the fabrication and installation process, a total of 10 people were involved.

3.4.2 Workforce during Operation

A total of 12 employees were involved during the operation of the seaplanes.

3.4.3 Services

The schedule of operations of the platform is based on bookings received for a particular date. In general, there will be 4 arrival and 4 departure flights at the island daily. Passengers will be transferred by a speed boat if the sea plane lands at the floating platform.

3.5 WASTE MANAGEMENT, LOGISTICS AND SAFETY MEASURES

3.5.1 General Waste Management

There are no specific policies regarding waste management from the platform as general waste management is done by resorts daily and there is no specific waste generated by platforms at outstations. At Manta Air Seaplane Terminal, there is a waste disposal system as per MACL requirements. In addition, there is no waste generated inside the seaplane as there are no lavatories installed.

3.5.2 Safety Measures

To ensure the safety of the entire platform, maintenance inspections are conducted quarterly by Engineering and Maintenance Department and an annual inspection is carried out by the Safety and Security Department. The aircraft has two small fire extinguishers on board. Warning signs will also be repainted as often as required. In addition, pilots, crew and resort agents are required to report about the status of the platform on a continuous basis.

Life jackets are available under each seat of the aircraft. Both fixed and floating platforms have mooring buoy, safety markings and signage. The emergency box kept near the platform contains the following items;

- 1 axe
- 1 crowbar
- 1 tin snapper
- Rope (8mm)
- 1 life hammer

An emergency box is also on the dhoni or speedboat that transports passengers from the floating platform to the island.

Safety inspections are carried out periodically in various functions and areas of the organisation. A safety assessment report is also made for each platform following the assessment. Maintenance is carried out if required after the quarterly inspections of the platforms.

3.6 HEALTH AND SAFETY MEASURES

All staff members working on the platforms are required to adhere to company PPE policies as per the standard aviation safety norms. The average response time for incidents ranges from 3 to 7 minutes, depending on the location and time the incident takes place. All Resort Agents and Managers involved in seaplane operations receive Emergency Response training sessions once every 24 months. Department specific Safety Management Systems Trainings are also conducted for staff of all Operational Departments at Manta Air. All staff receive a basic induction training and department specific SMS trainings are refreshed once every 24 months.

3.7 SUMMARY OF PROJECT INPUTS AND OUTPUTS

The types of materials that will go into the project and from where and how this will be obtained are given in Table 3.4 and 3.5

Table 0.2 Major project inputs

Input resource(s)	**Source/Type**	**How to obtain resources**
Installation stage		
Construction workers	Local and foreign Quantity: 10	Manta Air's employees

Engineers and Site supervisors	Local and foreign Quantity: 2	Manta Air's employees
Construction material	Tyres, Plastic Barrels, Brackets, Ropes, Thimble, Concrete block, Chains, Balau Timber, Beacon light, Shackles, Hooks etc	Import and purchase where locally available at competitive prices – Main Contractor's responsibility.
Water supply (during construction)	Bottled water. Quantity: ~ 20 1.5 Litre bottles	Locally available sources, Purchased from local businesses;
Maintenance material	Maintenance parts and fluids required for the machinery and piping.	Import or purchase locally where available
Accommodation	In the resort. Three rooms at the resort	Resort
Fire Fighting equipment	1 Fire Extinguisher	Contractor's equipment
Telecommunication	Personal Mobile phones and internet facilities at the resort.	Contractor's responsibility

Food and beverage bottles	PET bottles, glass bottles, various frozen, packaged and fresh food.	Contractor's responsibility
Operations stage		
Electricity supply	Diesel. From the resort grid. About 3kW demand for each room occupied.	Local power supply system in the resort
Operational staff	Resort agents and staff in Manta Air office. Quantity: Approximately 30-40 including maintenance team from Manta Air Approximately 5-10 employees from the resort.	Resort agent and department in Manta Air

Table 0.3 Major project outputs

Products and waste materials	**Anticipated quantities**	**Method of disposal**
Installation stage		
Food waste	Small quantities. Approximately 1kg per day.	Managed under existing waste management system in the resort.

4 BIOPHYSICAL ENVIRONMENT

4.1 SENSITIVE AREAS

There are no Marine Protected Areas within 5km radius of Ifuru island. The closest environmentally sensitive areas include the mangrove area at R.Kandoogandu, a mangrove site located approximately 18 Km Ifuru island.

It is not anticipated that these areas will be an impact on these areas due to this project.

4.2 CLIMATE AND METEOROLOGY

The climate in the island is warm and humid, typical of the other islands in the Maldives. The average temperature ranges between 25°C to 30°C and relative humidity varies from 73 percent to 85 percent. The annual average rainfall is approximately 1,948 mm. The island receives plenty of sunshine throughout the year. On average the island is expected to receive 2,704 hours of sunshine each year. Table 4.1 provides a summary of key meteorological findings for Maldives that is applicable for the project location.

Table 4.1 Key meteorological parameters for Maldives

Parameter	**Data**
Average Rainfall	9.1mm/day in May, November; 1.1mm/day in February
Maximum Rainfall	184.5 mm/day in October 1994
Average air temperature	30.0 C in November 1973; 31.7 C in April
Extreme Air Temperature	34.1 C in April 1973;17.2 C in April 1978

Average wind speed	3.7 m/s in March; 5.7 m/s in January, June
Maximum wind speed	W 31.9 m/s in November 1978
Average air pressure	1012 mb in December; 1010 mb in April

The climate of project location is characterised by two monsoon seasons: the Northeast (Iruvai) and the Southwest (Hulhangu) monsoon. The southwest monsoon is the rainy season while the northeast monsoon is the dry season. The southwest monsoon occurs from May to September and the northeast monsoon is from December to February. The transition period of southwest monsoon occurs between March and April while that of northeast monsoon occurs from October to November.

Besides the annual monsoonal wind variations there are occasional tropical storms or low intensity tropical cyclones in the central atolls which increases wind speeds up to 110 km/h, precipitation to 30 to 40 cm over a 24 hour period and storm surges up to 3 m in open ocean.

The Disaster Risk Profile of Maldives (UNDP, 2006) reports 11 cyclonic events over the Maldives in the last 128 years and only one event over the central Maldives. All of these events were of category 1 cyclones. There have been no cyclonic events since 1993. Ifuru is located in a high risk cyclonic hazard zone with a probable average tide height of 0.98 m and storm tide of 1.97 m. (UNDP, 2006).

4.3 NATURAL HAZARDS AND RISKS

According to the UNDP Disaster Risk Assessment Report of Maldives in 2006, proposed site is located in a low risk tsunami hazard zone and a moderate risk cyclonic hard zone. The following parameters can be deduced for the island based on Disaster Assessment Report and the Detailed Island Risk Assessment Reports (UNDP, 2009).

Tsunami: Maximum probable wave height less than 0.3 m

Cyclone or storm (wind): Probable maximum wind speed 84.2 knots

Storm surge: predicted storm surge height – 0.45 m; predicted storm tide height 1.38 m

Rainfall: probable maximum daily rainfall for a 500 year return period 175.6 mm

4.4 CULTURAL AND HERITAGE VALUES

There are no areas of cultural and historic significance in the vicinity of the seaplane platform site.

5 IDENTIFICATION OF RISKS AND IMPACTS

5.1 INTRODUCTION

Potential adverse and beneficial impacts during installation and operation stage of the proposed of the seaplane platform are identified and evaluated in this section. Significant impacts are identified and evaluated in two stages. The impacts have been predicted based on the work sequence and the existing condition of the site

The first stage identifies the environmental and socio-economic components that may be impacted from key project activities. The second stage determines the significance of impacts of each component. The following sections provide details of the evaluation of impacts.

Nature of potential impacts is defined here as No Impact, Adverse Impact or Beneficial Impact. Table 5.1 below provides the nature of potential impacts from the proposed project on environmental and socio-economic aspects by the project components. Where impacts are not applicable to different components, this is indicated as 'X'. Some aspects may be affected both adversely (indicated as [-]) and beneficially (indicated as [+]) from the project.

5.2 IMPACT IDENTIFICATION AND EVALUATION

Environmental and socio-economic aspects that may be impacted by the project as identified in Table 5.1 are further evaluated to identify significant impacts. Assessments of the impacts are conducted using the four criteria of Magnitude, Reversibility, Duration and Distribution as described below. Evaluation of key impacts is provided in Table 5.2 and 5.3.

Magnitude: Refers to the quantum of change that will be experienced as a consequence of the impact.

Reversibility: Refers to the degree of reversibility of an impact (i.e. ease of reversing the conditions).

Duration: Refers to the temporal scale (i.e. duration, frequency) of the impact. It does not take into account the duration of the impact's effects.

Distribution: Refers to the spatial scale of the area impacted (e.g. a small portion of a reef or an entire lagoon)

Estimates for negative impacts represent a 'worst case scenario' based on the assumption that the project will undergo full-scale development with no consideration for its environmental and social consequences, i.e. significance is assessed prior to implementation of mitigation measures. Values are attributed by the EMP team on the basis of direct observation of surveyed sites, professional judgment and pre-existing experience in development projects of similar nature.

5.3 EVALUATION OF CUMULATIVE IMPACTS

While direct primary impacts are relatively easy to identify and evaluate, special consideration needs to be given to evaluate cumulative impacts. While it is relatively simple to identify and evaluate direct primary impacts, the complex nature of natural systems makes it difficult to accurately predict synergistic and interactive impacts of a particular development project. On the other hand, it is relatively simple to identify potential additive impacts. The following sources of cumulative impacts were considered in evaluating the potential impacts of the proposed project.

- Time crowding: overall impacts of many similar concurrent developments.
- Space crowding: high density of impacts on a single environmental medium.
- Indirect impacts: secondary and tertiary impacts resulting from an activity.
- Triggers and thresholds: ecological systems can undergo fundamental changes beyond certain thresholds. Standards and guidelines have been developed based on anticipated threshold

Table 5.1 Identification of impacts during installation and operation stage

Project Activity	Ambient noise level	Ambient air quality	GHG emissions	Marine water	Groundwater	Terrestrial Flora & Fauna	Marine Biodiversity	Soil Condition	Landscape Integrity/ Scenery	Natural Hazard Risk	Health and Safety	Demand for Resources & Services	Local Economy	Social Cohesion
Installation Phase														
Mobilization and inspection	-	-	-	X	X	-	X	X	-	X	-	X	+	+
Workers transportation & accommodation	X	X	-	-	X	X	X	X	X	X	X	-	+	-
Equipment and material storage	X	X	X	X	X	X	X	X	-	X	X	+/-	X	X

Concrete & fabrication works	-	-	-	-	X	-	X	X	-	X	-	-	+	X
Installation of the platforms	-	-	X	-	X	X	X	X	-	X	-	X	X	X
Demobilization	-	-	-	X	X	X	X	X	X	X	X	X	X	X
Operation Phase														
Seaplane operation to and from resort	-	-	-	-	X	-	X	-	-	X	-/+	+/-	+	-
Maintenance works	-	-	-	-	X	X		X	-	X	X	+/-	+	X

Table 5.2 Evaluation of impacts during installation stage

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
Ambient noise level	***Noise Pollution:*** Operation of few machineries during mobilization, fabrication activities (e.g. casting concrete blocks, attaching SS items and demobilization is expected to generate some noise. However these will not be operated continuously for a long period of time.	The proposed project sites are away from the residential zones in the resort Hence, impact of noise generated during installation works was not significant to resort operations.	Minor negative	Easily reversible	Short term	Vicinity of project sites	Insignificant (Limited hours of operation)
Ambient air quality	**Air quality degradation**: Negligible level of dust and air emissions during demobilisation and transport of equipment's to the project	Cumulative from different project activities	Minor negative	Easily Reversible	Short term	Site level	Insignificant (Negligible levels of dust and air emission)

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
	site. In addition, small amounts of emission are anticipated during operation of machineries and vessels during installation stage. However, this will be negligible.						
GHG emissions	**Increase in GHG in atmosphere** due to demobilisation, fabrication equipment, power generation for equipment	Cumulative from different project activities and over time	Minor negative	Reversible in the long term	Short term	Site level	Insignificant (Negligible amount of GHG emissions over short period)

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
Marine water	**Marine water contamination** due to accidental spillages during demobilisation, fabrication works and the installation of the platforms (floating).	Potential cumulative impacts from other resort infrastructure developments on the island	Moderately negative	Easily reversible	Short term	Site level	Insignificant
Marine Biodiversity	**Loss of marine biodiversity** There is minimal to zero impact on biodiversity loss from this project. There are no Marine Protected Areas or sensitive sites near the island and it does not pose any concern as the installation		Minor negative	Reversible	Short term	Site level	Minor

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
	process will not involve activities which can cause adverse impacts on marine biodiversity.						
Landscape Integrity/ Scenery	Loss of visual amenity due to installation works.	Cumulative from other development works in the area	Minor negative	Easily reversible	Short term	Site level	Minor
Health and Safety	Accidents related to equipment handling and fabrication work		Moderate negative	Possibly irreversible	Long term	Site level	Moderate
Demand for Resources and Services	Demand for energy and water during installation	Cumulative impact on resort	Minor negative	Reversible	Short term	Site level	Insignificant

Table 5.3 Evaluation of impacts during operation stage

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
Ambient noise level	***Noise Pollution:*** During take-off and landing, seaplane operation will generate noise.	The proposed take-off, landing, taxi and manoeuvring areas are away from guest villas and staff areas Cumulative impact of domestic flight operations at Ifuru Airport.	Minor negative	Reversible	Short intervals 2-5 minutes	Vicinity of the platform	Moderate - as the project site is close to inhabited islands
GHG emissions	**Moderate increase in GHG in atmosphere** due to seaplane operation with 2-3 departures/arrivals per day	Cumulative from other resort activities. Cumulative impact of domestic flight operations at Ifuru Airport.	Minor negative	Reversible in the long term	Long term	Regional level	Insignificant

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
Terrestrial Flora and Fauna	Increased noise levels may cause disturbance to birds and seaplane operations pose a risk of bird collisions	Cumulative impact of domestic flight operations at Ifuru Airport.	Minor negative	Reversible in the long term	Long term	Site level	Minor
Marine Water	Marine water contamination and degradation due to accidental spillage of waste	Potential cumulative impacts from other resort infrastructure developments	Moderate	Reversible in the short term	Short term	Site level	Minor
Groundwater	**Groundwater contamination** There will be minimal impact on	Indirect impact on terrestrial flora, fauna, and soil condition	Moderate negative	Irreversible	Long term	Island level	Moderate

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
	groundwater quality as the groundwater will not be used for any purpose. However there are chances of accidental spillage of fuel during fuel transportation and can contaminate the groundwater lens						
Landscape Integrity/ Scenery	Loss of visual amenity during sea plane take-off and landing.	Cumulative from other development works in the area	Minor negative	Easily reversible	Short term	Site level	Minor

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
Health and Safety	Risk of accidents for guests and employees while on the platform and while boarding the seaplane.		Moderate negative	Possibly irreversible	Long term	Island level	Moderate
	Risk of exposure to high noise levels for staff working at the platform for longer periods of time. Accidents due to malfunction of seaplanes and poor operation due to poor health of		Moderate negative	Possible irreversible	Long term	Site level	Moderate

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
	pilots and crew passengers.						
	Accidents due to malfunction of seaplanes and poor operation due to poor health of pilots and crew passengers.		Moderate negative	Possibly irreversible	Long term	Site level	Moderate

Impact area	**Direct Impacts**	**Indirect/ Cumulative Impacts and Impact Interactions**	**Magnitude**	**Reversibility**	**Duration**	**Distribution**	**Significance**
	Fire hazards during refuelling the plane and risks of a fire at the docking platform		Moderate negative	Possibly irreversible	Long term	Site level	Major – if the appropriate safety precautions are not followed
	Risk of accidents due to movement of other vessels in the lagoon.		Moderate negative	Reversible	Short term	Site level	Moderate
	Injury to guests snorkelling, diving and undertaking water sports in the lagoon near the platforms		Moderate negative	Possible irreversible	Long term	Site level	Moderate

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
Demand for Resources and Services	Demand for energy and water during operation	Cumulative impact on resort	Minor	Reversible	Short term	Site level	Insignificant
Local Economy	Increase in employment opportunities: workers will be employed for operation of seaplane platform	-	Minor positive	Reversible	Long term	Regional level	Minor positive
Social Cohesion	Negative impact and grievances due to resort prioritising guests over staff. Staff usually get bumped	Indirect impact on the employees.	Minor negative	Reversible	Long term	Island level	Moderate

Impact area	Direct Impacts	Indirect/ Cumulative Impacts and Impact Interactions	Magnitude	Reversibility	Duration	Distribution	Significance
	from seaplane at the last minute						

6 IMPACT MANAGEMENT PROGRAMS

6.1 ENVIRONMENTAL AND SOCIAL IMPACT MANAGEMENT PLAN

Mitigation measures for environmental and social impacts during both installation and operational stage are provided in Table 6.1 below. The mitigation measures proposed in the EMP will be implemented by the proponent.

Table 6.1 Environmental management plan

Impact	**Mitigation Measure**	**Responsible Party**	**Justification**	**Total Cost (MVR) and other logistics**
Operational Stage				
Marine water contamination	Measures should be taken to ensure that no waste spills into the ocean.	Manta Air and Ifuru Island	To minimize impact on marine water contamination.	Manpower: 1 supervisor and 2 workers Equipment: Bins, garbage bags Cost: MVR 40,000
Ground water contamination	Transport Jet fuel in securely tight and bunded containers. High risk materials such as diesel shall be stored in appropriate containers and placed in paved surface	Manta Air and Ifuru Island	To prevent contamination of groundwater lens in the island.	Included in operational costs

Impact	**Mitigation Measure**	**Responsible Party**	**Justification**	**Total Cost (MVR) and other logistics**
	Containers shall be inspected regularly for leakage Any spillage of paint will be immediately taken note of and recorded.			
Fire risk	Implement the emergency response plan developed. Identify and engage staff from resort in emergency response trainings. Staff involved in high fire risk operations such as refueling should be well trained in fire safety and should have easy and quick access to fire safety equipment in the event of an emergency. An assembly point must be determined in the resort and all guests should be made aware of the point and ways of accessing the point.	Manta Air and Ifuru Island	To ensure safety protocols during an event of fire and to ensure minimal impact from a fire accident.	Manpower: 2 supervisor and identified 7 agents at the resort who are trained Equipment: fire safety equipment (harness, fire extinguisher, fire hydrants) Cost: ~ MVR 250,000

Impact	Mitigation Measure	Responsible Party	Justification	Total Cost (MVR) and other logistics
	Assembly point signages must be placed in walkways of the resort and it must be visible Regular fire drills must be held to ensure the systems in place works efficiently. An Auto alarm system to alert the staff and management of the resort for efficient and quick response during a fire. MNDF recommends to use foam based fire extinguishers at the platform. A selected number of resort staff and all pilots should be trained to use fire extinguishers and to engage in emergency first response.			
Fatigue and General Health of Pilot and Crew	Duty hours must be limited to ensure pilots and crew receive the adequate rest to ensure safe operation of the plane.	CAA , Manta Air and Ifuru Island	To ensure safety of the seaplane operation	Manpower: 1 Supervisor

Impact	Mitigation Measure	Responsible Party	Justification	Total Cost (MVR) and other logistics
	Regular monitoring and inspection must be carried out to ensure pilots work within the specified work hours and does not exceed the limit Adequate accommodation must be provided in resorts for pilots and crew during overnight stay. In case there are no rooms available in resort, the aircraft will be diverted to a nearby resort with possibility for crew accommodation. Regular health screening shall be conducted for all pilot and crew.		and safety of the passengers.	Equipment: log sheets for record keeping Cost: ~ MVR 200,000
Airworthiness of Seaplanes	The seaplanes must be serviced and maintained as per CAA approved manuals and program. Regular checks must be carried out to identify any operational impact to the aircraft. All maintenance	Manta Air	To ensure safety of the seaplane operation	Manpower: 2 Supervisor and 5 workers Equipment: log sheets for record keeping

Impact	Mitigation Measure	Responsible Party	Justification	Total Cost (MVR) and other logistics
	records and data must be stored as per approved manuals			Cost: ~ MVR 200,000
Risk of Accidents on the platform and while boarding the seaplane	Train and engage Pilots and Crew to guide passengers. Instruct and indicate safety measures while boarding the seaplane. A crew or pilot shall always be present at the boarding point to ensure passengers are boarded safely. A first aid kit shall be placed in the transfer vessel or on the platform.	Manta Air	To ensure safety of the seaplane operation and for safety of passengers.	Manpower: 1 Supervisor Equipment: First aid kit, log sheets to record engagement/training sessions Cost: ~ MVR 200,000
Risk of exposure to high noise levels to staff or to passengers.	Ear mufflers shall be provided to employees working at the platform for longer periods of time.	Manta Air	To ensure health and safety of passengers,	Manpower: 1 Supervisor

Impact	Mitigation Measure	Responsible Party	Justification	Total Cost (MVR) and other logistics
	Ear plugs shall be made available to passengers if needed.			Equipment: log sheets for record keeping, lighting beacons Cost: ~ MVR 200,000
Risk of accidents due to movement of other vessels in the lagoon.	Ensure the channel is kept free from vessels during flight operations.	Ifuru Islnad	To minimize impacts to other vessels and avoid potential accidents	Manpower: 2 Supervisor Equipment: NA Cost: ~ MVR 50,000
Injury to guests snorkelling, diving and undertaking water sports in the	Avoid using the area near the platforms and takeoff and landing sites for any guest	Ifuru Island	To ensure health and safety of tourists in the resort.	Manpower: 1 Supervisor

Impact	Mitigation Measure	Responsible Party	Justification	Total Cost (MVR) and other logistics
lagoon near the platforms	recreational activities during aircraft movement. Inform staff involved in handling guest recreational activities about seaplane arrival and departure hours and plan recreational activities accordingly.			Equipment: Ear mufflers/plugs Cost: ~ MVR 250,000
Complaints from local staff	Implement the external communication system and grievance mechanism developed in Manta Air to address the concerns raised by local staff in using sea planes.	Manta Air	To ensure grievances from local staff are resolved and attended and to ensure all passengers are dealt with equally.	Manpower: 1 Supervisor Equipment: log sheets to record grievances Cost: ~ MVR 200,000

7 ORGANISATIONAL CAPACITY AND COMPETENCY

7.1 EXISTING ORGANISATIONAL STRUCTURE

Manta Air is managed as a single organisation with 12 principle departments reporting to its Chief Executive Officer (CEO) and Board of Directors. The 12 departments are listed below;

1. Safety and Security
2. Quality and Compliance
3. Ground Operations
4. Flight Operations
5. Engineering and Maintenance
6. Training
7. Human Resources
8. Facilities and Maintenance
9. Procurement and Logistics
10. Accounts and Finance
11. Commercial
12. Information Technology

The organisational structure of Manta Air is provided in Figure 7.1 below;

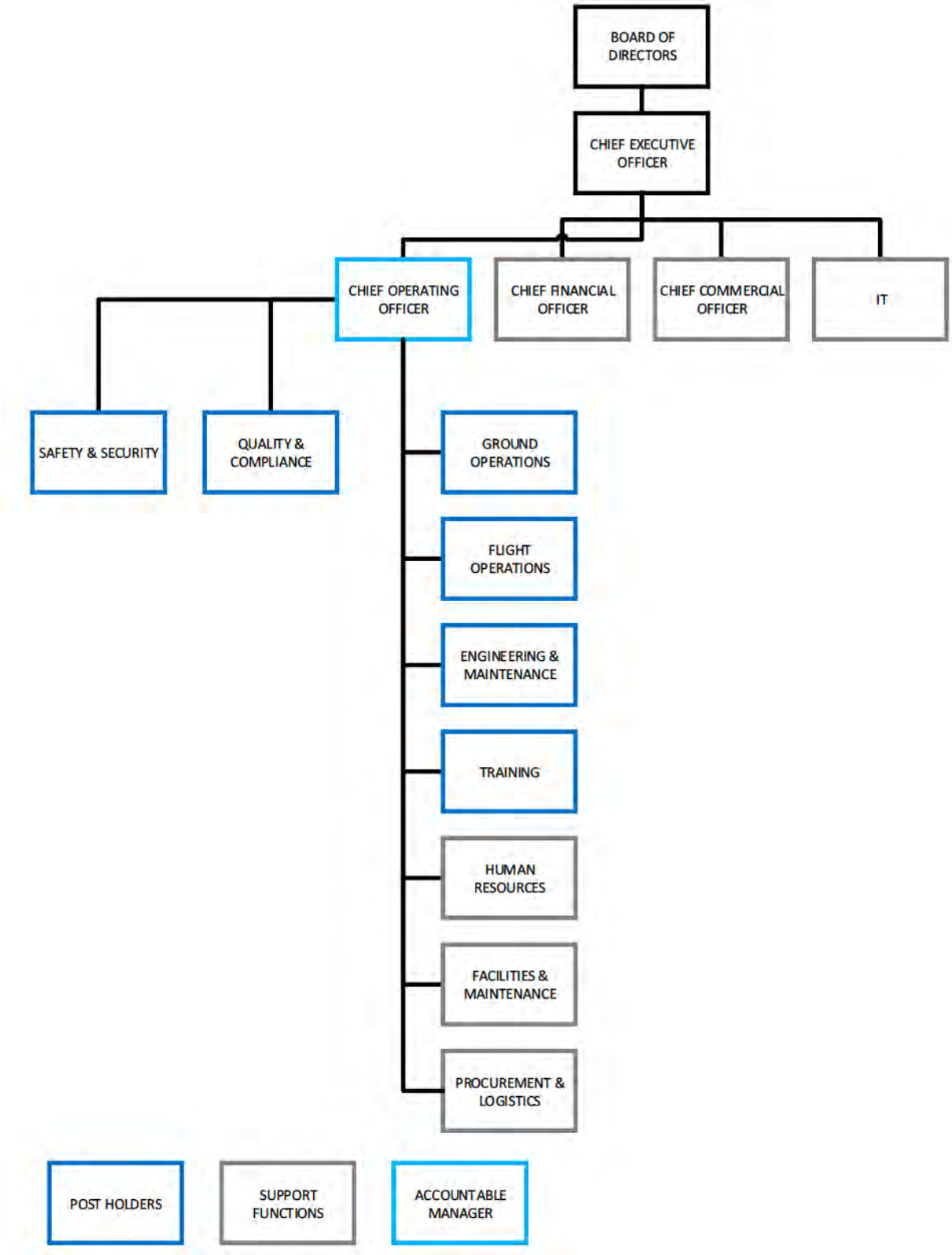

Figure 7.1 organizational structure of Manta Air

Each of the main departments within Manta Air has several sub departments with a wide range of roles. The departments which are most relevant to the EMP is provided in Table 7.1 below with their role in the EMP also highlighted.

Table 7.1 Manta Air sub-departments with roles relevant to EMP

Manta Air Department	Responsibilities	Role in EMP Team
Quality & Compliance Department	Liaise with regulatory bodies on aspect of audits, all maintenance of aircraft, licenses, approvals.	Team Leader; Safety and Security Team; Training Coordinators; Environment Officer; Health and Safety Officer; Social Officer
	Monitor technical literatures, company and conduct all internal audits when required.	
	Carry out Internal Audits and Inspections	
	Regulate and maintenance of Integrated Management System standards	
Safety and Security Department	Develop and implement safety management system and conduct trainings	Team Leader; Quality and Compliance Team; Training Coordinators, Health and Safety Officer; Social Officer, Environment Officer
	Management of the 'Emergency Response Plan' and all other processes related to safety of entire operation.	
	Regulate and maintenance of Integrated Management System standards	

	Identify best practices and lead continuous improvements	
	Conduct safety audits	
	Monitoring safety conditions	
	training on safety	
Flight Operations Department	Identify possible landing sites.	Team Leader; Quality and Compliance Team, Safety and Security Team; Health and Safety Officer
	Carry out safety assessments and risk management	
	Report any environment and social issues	
Engineering and Maintenance	Installation and maintenance of platforms in required locations, installation and maintenance of fuel systems and relocation of platforms as required in a timely manner.	Liaising with Environment Officer
Ground Operations	Management of water aerodromes	Liaising with Social Officer
	Delivery of services in accordance with established contracts within regulatory requirements.	
Commercial Team	Coordinate with Independent AMP Advisors	Social Officer Teal Leader
	Manage external grievances	

Human Resources	Distinguish existing and required competencies for each job role in the company and take actions to develop/acquire the same	Liaising with Communication and Trainings Manager and Social Officer
	Manage and conduct all trainings related to development of soft skills required for all job roles	

7.1.1 Roles, Responsibilities and Authorities to implement the EMP

The EMP Team will be established to take responsibility for implementing the EMP. The role and overall function of the EMP team is described below;

The EMP Team will fulfill the following functions:

1. Assure that Manta Air's policy and guidelines are followed
2. Develop procedures and action plan for implementing the EMP
3. Coordinate the implementation of procedures established in the EMP
4. Liaise with government organisations, the public, and non-governmental organisations on environmental and social issues.
5. Inform the relevant authorities of any incidents that occur during the operation of seaplane platforms.
6. Reporting on the progress of the implementation of the EMP

The EMP Team will consult with people from all levels of Manta Air, including supervisors and employees, who are key frontline identifiers of problems when identifying risks and impacts, developing improved procedures, and designing actions plans.

The EMP Team will also assist the Board of Directors of Manta Air in its oversight of:

1. Environmental and social risks

2. Manta Air's compliance with applicable national laws and regulations associated with environmental and social concerns;
3. Manta Air's performance in relation to environmental and social commitments specified in the EMP
4. The performance and leadership of the environmental and social function; and
5. Manta Air's external communication and annual reporting in relation to environmental and social commitments

7.1.2 The EMP Team

The EMP Team will be a cross-functional team with multiple members assigned to review different aspects of the environmental and social issues on a regular basis. The main deliverables will be reported to senior management team. The proposed organisation for the EMP Team is provided in Figure 7.2 below

Figure 7.2 Proposed organizational structure for EMP

The specific responsibilities associated with these units of the EMP Team are summarized as follows:

7.1.2.1 Senior Management Unit of EMP

Team Leader. The EMP Team will be led by the Outstations Manager, Ground Operations Department, who will act as the Team Leader to develop the EMP Team within Manta Air. The Team Leader holds overall accountability for compliance and responsibility for ensuring that the environmental and social commitments of the EMP are fulfilled. The Team Leader will report directly to the Manager Ground Operations of Manta Air will present environmental and social issues to the Chief Operating Officer and when required to Chief Executive Officer and Manta Air Board.

The Outstations Manager will be responsible for tracking compliance with all environmental, social and safety requirements, regular reporting, and oversight of social, environmental and training issues as required by national laws and international best practice. The Outstations Manager is responsible for the management and implementation of the compliance register and will manage the functions of Environment Officer, Social Officer and Safety Officer.

Policy Development. Manager Quality and Compliance and Manager Safety and Security will be responsible for developing policies for environmental and social safeguards and defining the roles of the officer that will be involved in the EMP Team. They will be responsible for consulting with people from all levels of the company, including supervisors and employers, who are key frontline identifiers of problems which will inform the development of improved procedures and design of actions plans. They will also partner with an external consultant to bring in the expert knowledge to develop policies, strategies and develop the EMP Team.

Communication and Trainings. Training Coordinators from all departments will hold the responsibility for organising trainings, identifying needs of employees and streamlining communication. It will be the objective of the Outstations Manager in the EMP Team to lead the effort and communicate to all employees at all levels, that this is a long-term commitment by Manta Air.

7.1.2.2 Environmental, Social and Safety Officers

Environment Officer. The Environment Officer will be all seaplane aircrew in Manta Air. The Environment Officer will be responsible for day-to-day environmental observation and reporting as required by the various management plans. The Environmental Officer will collaborate the Team Leader whom in turn will coordinate with third party environment consultant.

Social Officer. The Social Officer will be from Commercial and Human Resource Teams of Manta Air. HR Team will manage internal grievances, stakeholder engagements and community relations. Commercial Team will manage external grievances. They will implement social safeguard policies and action plans stated in the EMP.

Health and Safety Officer. The Health and Safety Officer will be from the Safety and Security department. The Officer will be responsible for periodic monitoring of project activities to ensure continuing compliance with the occupational health and safety aspects of the EMP. The Health and Safety Officer will provide input to the HSE monitoring report, and may also conduct focused inspections of specific health and safety or social/community relations issues at the request of the Outstation Manager.

7.1.2.3 Independent EMP Advisors

The independent EMP advisors are responsible for assisting and guiding in the implementation of the environmental and social components of the EMP on site, and particularly the monitoring of environmental and social impacts. The consultants will work closely with the Senior Management team to advice on strategies for implementing the components of the EMP with other business units.

7.1.2.4 Manta Air Employees

Beyond the EMP Team commitment, all Manta Air employees will be individually and collectively responsible for:

1. Working safely, within the guidelines and requirements established by this EMP;

2. Supporting the environmental, social, and OHS policies established for the management of seaplane platforms in the day to day performance of their work;
3. Notifying their supervisors, the Environmental Officer, the Social Officer, or the Safety Officer of any observed spills, equipment malfunctions, unsafe or unhealthy situations, improper environmental practices, worsening trends, or other issues that could represent non-conformance with the requirements this EMP.

7.2 COMMUNICATION AND TRAINING

Training modules will be designed and conducted by the Head of Departments for relevant teams and departments of Manta Air to gain commitment and provide the knowledge and skills they need to implement the EMP. In addition to the detailed training of the team, all Manta Air employees will need to receive awareness training so there is a shared understanding of the goals of the EMP. Refresher training shall be provided to all staff involved in EMP as needed.

Specific training modules should be selected for each of the target groups based on the specific risks and the potential improvement opportunities. Focused trainings will be provided to EMP Team for the proper implementation of EMP. A sample list of some of the relevant topics/items for the above specific group is presented in the table below.

Table 7.2 Topics for trainings in each department

Department	**Relevant Topics for Training**
Senior Management	Introduction to EMP; Environmental and social awareness program; IFC Performance Standards; Stakeholder engagement
EMP Team	EMP elements; Competency program; Identification and evaluation of risks and impacts; Monitoring and measurement of performance indicators; Stakeholder engagement; Internal and external communication; Environmental and social reporting; EMP

	documentation; Internal auditing; Root cause analysis; Implementation of corrective and preventive actions
HR Department	Introduction to EMP; Complaint management and resolution procedure; Social and labor policies; Employee interaction; EMP related trainings required for crew
All Employees	Introduction to EMP; EMP policies; Operational procedures; OHS and emergency response procedures; Controlled and banned substances; Complaint management procedure, Customer requirements; Notifying procedure; Environmental and social awareness program

7.3 REPORTING REQUIREMENTS

The EMP Team will be required to report on the progress of the implementation of the EMP according to the framework outlined in the Management Plan.

The EMP Team will report their activities to the Team Leader quarterly. The Team Leader will report directly to the Manager Ground Operations of Manta Air and will present environmental and social issues to the Chief Operating Officer of Manta Air annually. The COO will present environmental and social matters to CEO and Manta Air Board upon their request.

Annual reports on environment and social monitoring activities, stakeholder engagement and grievances will be prepared and submitted to Chief Operating Officer. The COO will share the report to CEO and Manta Air Board of Directors upon their request.

8 EMERGENCY PREPAREDNESS AND RESPONSE

Emergency preparedness and response planning is a critical component of the management system. This chapter presents a summary of main components that should be in an emergency response plan (ERP). An Emergency Response Plan has already been prepared by Manta Air for Ifuru Island Maldives. The ERP will need to be periodically reviewed and updated.

The Sample Regulations for Water Aerodromes (International Civil Aviation Organisation, 2015) and the IFC Performance Standards (International Finance Corporation, 2012) has been used as a basis for some of the suggestions in this chapter.

8.1 OBJECTIVE

Emergency Response Plans serve as a guiding document for Manta Air in preparing and responding effectively to emergency situations during seaplane operations at Ifuru Island. It is not possible to prevent every emergency situation, however, advance preparation for potential emergencies will be effective in preventing and mitigating harm to passengers, crew, community and the environment.

MNDF Coast Guard and the resort will be responsible for responding to aircraft accidents that occur in the vicinity of the resort. All persons involved in emergency planning and response at Manta Air and Ifuru Island will have a role in the successful implementation and maintenance of the ERPs.

8.2 KEY FACTORS

According to The Sample Regulations for Water Aerodromes (International Civil Aviation Organisation, 2015) an emergency plan must address the following points:

- Activities commensurate with the operation of seaplanes and other activities at the aerodrome
- Procedures for coordinating emergency responses in the event of an emergency on or near the aerodrome

- If the aerodrome is located in a difficult environment and a significant proportion of operations takes place over these areas, coordination with readily available appropriate specialist rescue services and
- Human factor principles to ensure optimum response

The Sample Regulations also notes that the certified water aerodrome should establish an aerodrome emergency committee as in the MOS- Water Aerodrome Standards. A Safety Management System should also be established according to the framework provided by ICAO. Rescue and firefighting equipment should also be provided at the aerodrome in accordance with the MOS- Water Aerodrome Standards.

8.3 HAZARD IDENTIFICATION AND EMERGENCY SCENARIO MAPPING

Some of the potential hazards and emergency scenarios for seaplane operations include:

- Boat capsizing
- Passenger evacuation in sea
- Wildlife collusion on water
- Drowning
- Drifting
- Fire and explosions
- Medical emergencies during flight
- Maritime accidents
- Engine failure
- Failure of information and communication systems
- Terrorism
- Fuel shortage
- Storms
- Chemical exposure
- Emergency landing
- Plane crash

8.4 EMERGENCIES COVERED IN THE ERP

- Aircraft Accident
- Bomb threat associated with aircraft
- Unlawful interference
- Missing aircraft and
- Any other aircraft- related emergency situation as decided by Manta Air EMC chair

8.5 EMERGENCY MANAGEMENT TEAM (EMT)

The resort EMT shall be decided by the General Manager of the resort and shall consist of the following members:

- General Manager
- Resort Manager
- Front Office Manager
- Housekeeping Manager
- Security Manager
- Chief Engineer and
- Doctor

Further details of the roles of the EMT members is provided in the Emergency Response Plan attached in Appendix B.

8.6 EMERGENCY RESPONSE TEAM (ERT)

The ERT shall consist of the following:

- Response Team: Life Guard & Rescue, Water Sports Team
- Welfare Team: GRO Team and
- Medical Team- Doctor and Personnel Trained in Advanced First Aid

8.7 EMERGENGY RESPONSE TRAININGS

All Resort Agents and Managers involved in the seaplane operations are required to complete an emergency response training prior to Manta Air starting seaplane operations to the resort. This training will be conducted once every two years. Emergency exercises shall also be conducted at the resort every two years.

8.8 EMERGENCY RESPONSE FACILITIES

In emergency situations the Resort Emergency Management Team (EMT) and Manta Air's EMC shall identify a location as Triage & Casualty Clearing Station, Uninjured Holding Area and a Crew Holding Area. Descriptions of each area is provided below. The Resort EMT in coordination with Manta Air's EMC and the Resort Doctor will determine which hospitals to transport those affected.

Triage & Casualty Clearing Station: This area will be used to treat, classify and dispatch those affected in the emergency for further treatment.

Uninjured Holding Area: Area where uninjured passengers will be taken.

Crew Holding Area: Area where uninjured crew members will be taken.

8.9 RESPONDING TO EMERGENCIES

In the event of an emergency the staff who witnesses the aircraft accident shall inform the Front Office. The Front Office shall then activate the Emergency Response Procedures for the resort by creating a WhatsApp Group and calling all relevant parties. A checklist for emergency situations shall be kept at the Front Office of the resort at all times.

The Emergency Response Plan, attached in Appendix B, includes further details on how relevant parties should act in the event of an emergency. The plan also includes specific actions for the type of emergency.

9 STAKEHOLDER ENGAGEMENT

Stakeholder engagement is a critical element of responsible environment and social management. It is important to establish fluent and inclusive communications that involves regularly listening to our stakeholders and keeping them informed for the successful assessment, evaluation, and management of the project.

The stakeholder engagement process is designed to establish an effective platform for productive interaction with key stakeholders during the operation of seaplane platform at Ifuru Island.

It involves:

1. the identification of all stakeholders with an interest in the project and those who can be affected by its implementation or can influence the course of the management of the seaplane platform Ifuru Island.
2. the establishment of mechanisms enabling Manta Air to proactively, effectively and continuously engage with these stakeholders throughout the project lifecycle.

9.1 STAKEHOLDER IDENTIFICATION

Prior to the start of the consultations, stakeholders who would be directly or indirectly impacted were identified according to the nature of the impacts, and the ability to influence the project. The stakeholders were mapped based on this assessment into internal, external primary and external secondary stakeholders.

The stakeholder map for the EMP is presented 9.1 below.

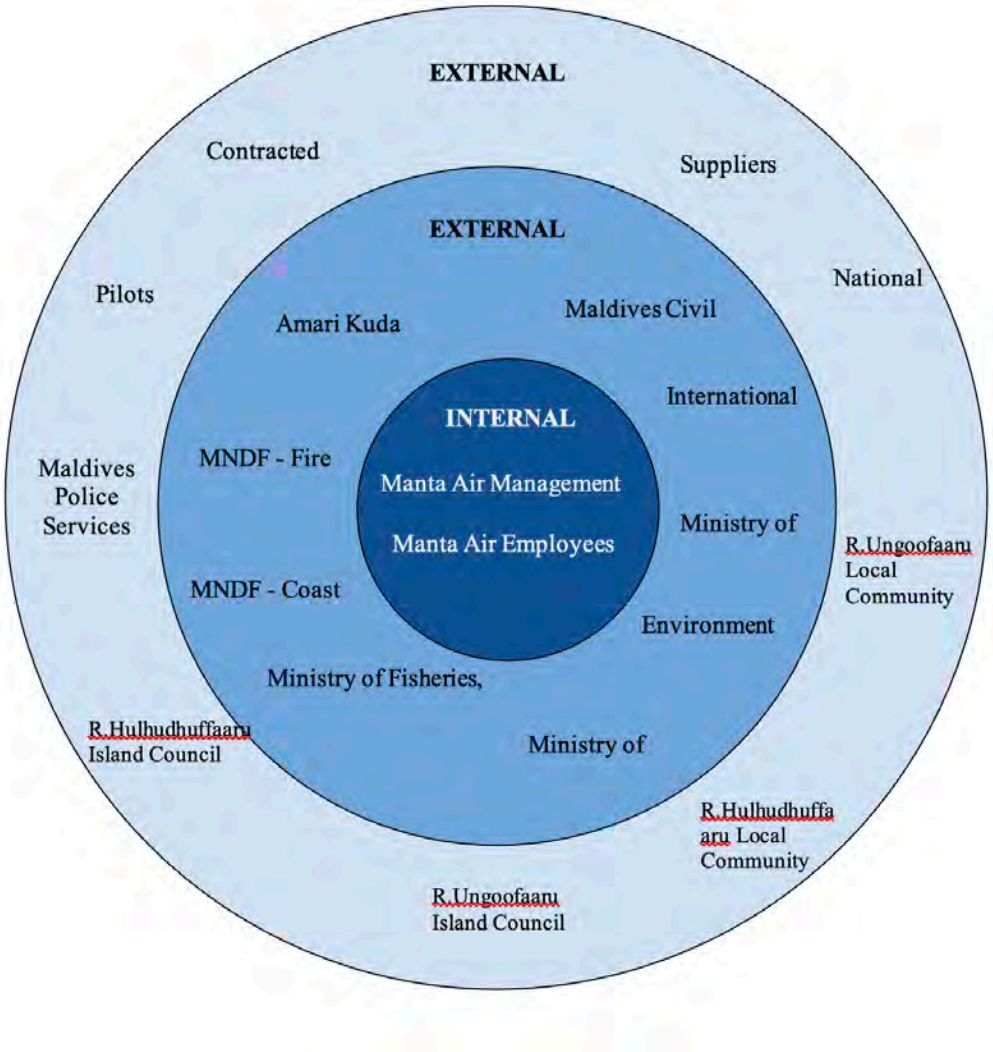

Figure 9.1 Stakeholder Map for the seaplane platform at Ifuru Island

Table 9.1 Stakeholder identification framework

Stakeholder Level	Stakeholder Category	Stakeholder Type	Stakeholder
Primary Stakeholders	Owner	Aviation	Manta Air Management
	Employees	Aviation	Pilots/Crew
	User	Tourism	Ifuru Island
	Regulator	Aviation	Maldives Civil Aviation Authority
		Tourism	Ministry of Tourism and Environment
		Environment	Environment Protection Agency
	Policy	Environment	Ministry of Tourism and Environment
		Fisheries	Ministry of Fisheries, Marine Resources and Agriculture
	Service Provider	Fire Safety	Fire & Safety, MNDF
		Marine Safety	Coast Guard, MNDF
	International	Aviation	International Civil Aviation Organization

Secondary Stakeholders	Contractors	Aviation, Installation	Contracted Workers
			Suppliers
	Service Provider	Public Safety	Maldives Police Service
		Disaster	National Disaster Management Center
	Governance	Local Governance	R.Hulhudhuffaaru Island Council
			R.Ungoofaaru Island Council
	Society	Public	R.Hulhudhuffaaru Local Community
			R.Ungoofaaru Local Community
	Society	NGO's	Pilots Association

9.1.1 List of Key Stakeholders

The main stakeholders that have roles and responsibilities relevant to this project are summarized below:

9.1.1.1 Civil Aviation Authority

Civil Aviation Authority develops and administers policies and regulations to ensure safe, secure, orderly and economic development of aviation in the Maldives. The Maldives Civil Aviation

Regulation, MCAR-139 Aerodrome Rules regulation published in May 2012 consists of general standards and practices of aerodromes, and aerodrome certification.

9.1.1.2 Ministry of Tourism and Environment

The Ministry of Tourism and Environment is mandated to develop the tourism industry at a national level, and carry out long-term planning, development, monitoring, and regulatory functions to ensure a sustainable tourism industry for the benefit of the people of the Maldives. Any construction within the boundary of a tourist resort has to be approved by the Ministry of Tourism.

The Ministry is also mandated for the effective implementation of the Environmental Protection Act of the country and has the statutory power over issues related to the environment. It has the central control over the environment protection, management, conservation and environmental emergencies. The Ministry operates mainly at a policy level and the more regulatory and technical assessment activities are mandated to the Environmental Protection Agency (EPA). In this respect EPA has now been mandated to manage all issues relating to Environmental Impact Assessment of individual projects.

The Ministry of Climate Change, Environment and Energy also seeks the advice of National Commission for the Protection of Environment (NCPE) on all significant environmental matters. The commission is appointed by the president and is mandated to advice the Minister of Environment on environmental matters such as environment assessment, planning and management, and political decisions with regard to the protection of environment.

9.1.1.3 Ministry of Fisheries and Ocean Resources

Ministry of Fisheries and Ocean Resources is responsible for the development and sustainable management of marine and agricultural resources of the country. The Ministry is responsible for policy formulation and regulation of fisheries and fisheries management and development in the Maldives.

9.1.1.4 MNDF Fire and Rescue Services

Maldives National Defence Force (MNDF) Fire and Rescue Services has the mandate to implement all necessary regulations to prevent fire incidents and carryout steps to mitigate fire incidents and carry out firefighting and rescue operations in order to save lives and minimize damage to property.

9.1.1.5 MNDF Coast Guard

Maldives National Defence Force (MNDF) Coast Guard has the mandate to protect the territorial waters, safeguard the marine environment, enforce the Maritime Law, respond to national emergencies and crises and conduct search and rescue missions.

9.1.1.6 International Civil Aviation Organization

The International Civil Aviation Organization is a specialized agency of the United Nations. It codifies the principles and techniques of international air navigation and fosters the planning and development of international air transport to ensure safe and orderly growth. Maldives Civil Aviation Authority adheres by ICAO principles in regulating and implementing Maldives Aviation Safety Programme. It includes Global Aviation Safety Plan (GASP), which fosters an advanced safety oversight system including predictive risk management.

9.2 STAKEHOLDER ENGAGEMENT PLAN

After the identification of the most important stakeholders, a plan was developed for how to engage with the groups identified. Engagement will be stronger and more frequent with those groups that are most affected and those that have a greater ability to influence the project (primary stakeholders).

The Stakeholder Engagement Plan (SEP) prepared includes but is not limited to:

1. Post EMP disclosure consultation
2. Project information meetings
3. Project technical workshops

4. Postings on the Manta Air website and social media platforms
5. Message Boards and Newsletter
6. Media Advertisements and Press Releases
7. Complaints and Grievances from stakeholders

The SEP will be updated periodically and in accordance with major project changes to reflect engagement activities that may be required during the life of the project. Any major changes to the Project activities and to its schedule will be duly reflected in the SEP.

The SEP will address the concerns, information to disclose to the relevant stakeholder to the extent necessary and useful information to obtain from the stakeholder as given in the SEP below.

9.2.1 Consultations during Assessment and Evaluation for EMP

Consultations were held with the primary stakeholders for initial EMPs are used during the assessment and evaluation phase of the project. Primary stakeholders were consulted at this stage to understand the regulatory requirements of relevant regulating authorities and existing frameworks by government authorities. See Appendix C for details of stakeholder consultations during assessment and evaluation for EMP. Consultations findings from previous EMPs for similar projects were utilized for this EMP given its similarity.

Table 9.2 Stakeholder Engagement Plan

STAKEHOLDER ENGAGEMENT PLAN				
Stakeholder	Concerns (What is the stakeholder's concern regarding seaplane	Engagement Method (method of communication	Information to disclose (What should the stakeholder know)	Information to obtain (What does Manta Air need to know

		platform at Ifuru Island)	And frequency of engagement)		from the stakeholder)
Internal	Management	Current system; identification of issues; required trainings; fatigue management for pilots/crew; maintenance of safety; resort agent training	Meeting, email	-	-
	Employees	Grievance management; fatigue management; training requirements	Meeting, email	ESMP policies; Operational procedures; OHS and emergency response procedures; Complaint management procedures;	Issues that might come up with operating the sea plane platforms; pain points in the system

				Environmental and social awareness	
External Primary	Ifuru Island	Capacity to aid in safety/emergency; training; impacts to tourist activities - water sports; operational concerns	Meeting; monthly	ESMP procedures that is relevant to the resort	Resort's capacity in aiding with emergencies; concerns regarding seaplane operations
	Maldives Civil Aviation Authority	Requirements for emergency response; aviation emergency protocols; safety trainings; safety briefing; duty	Meeting; as required	ESMP policies; Safety standards put in place	Requirements by CAA

		limitations for flying			
	Ministry of Tourism and Environment	Operational requirements	Meeting; as required	ESMP policies	Concerns regarding activities in a tourist resort
	Environment Protection Agency	Environmental requirements; impacts to protected areas; impacts to biodiversity in the area; marine litter	Meeting; as required	Procedures put in place to protect the environment	Concerns regarding activities that may affect the environment; Regulatory requirements
	Ministry of Climate Change, Environment and Energy	Environmental requirements; impacts to protected areas; impacts to biodiversity in the area; marine litter	Meeting; as required	Procedures put in place to protect the environment	Concerns regarding activities that may affect the environment

	Ministry of Fisheries and Ocean Resources	Fishing points in the area; impacts to fisheries	Meeting; as required	Location and operational pathways	Concerns regarding activities that may affect fishing in the area; Regulatory requirements
	MNDF Fire & Safety	Fire & safety requirements ; emergency response protocol; fire safety training	Meeting; twice a year	Safety standards put in place	Concerns regarding fire safety; regulatory requirements
	MNDF Coast Guard	Safety requirements ; emergency response protocol; training	Meeting; twice a year	Safety standards put in place	Concerns regarding marine safety; regulatory requirements
External Secondary	Contractors	Managing the E&S performance in terms of subcontracti	Meeting; as required	Environment , social and safety requirements of ESMP	Concerns / road blocks regarding compliance

		ng and procurement			with requirements
	Suppliers	Managing the E&S performance in terms of subcontracting and procurement	Meeting; as required	Environment, social and safety requirements of ESMP	Concerns / road blocks regarding compliance with requirements
	Maldives Police Service	Theft; safety	Meeting; as required	Safety standards put in place	Concerns regarding safety
	National Disaster Management Center	Disaster management; requirements for disaster preparedness	Meeting; as required	Safety standards put in place	Concerns regarding preparedness for national disasters
	R.Hulhudhuffaaru Council	Capacity to aid in emergencies; Use of services	Meeting; as required	To inform them of the parameters of the project and assure	Concerns related to public use of services or livelihood being affected

				them that their livelihood will not be detrimentally affected	
	R.Ungoofaaru Council	Capacity to aid in emergencies; Use of services	Meeting; as required	To inform them of the parameters of the project and assure them that their livelihood will not be detrimentally affected	Concerns related to public use of services or livelihood being affected

	R.Ungoofaaru Local Community	Resorts prioritising tourists over locals; getting bumped from seaplane flights at the last minute; seaplane fares being expensive	Public Meeting; as required	To inform them of the parameters of the project and assure them that their livelihood will not be detrimentally affected	Concerns related to use and price of seaplane services
	R.Hulhudhuffaaru Community	Resorts prioritising tourists over locals; getting bumped from seaplane flights at the last minute; seaplane	Public Meeting; as required	To inform them of the parameters of the project and assure them that their livelihood will	Concerns related to use and price of seaplane services

		fares being expensive		not be detrimentally affected	
	Pilots Association	Issues and concerns of pilots	Meeting; as required	To make sure they are these groups are properly informed of the relevant issues	Concerns related to the way seaplane platforms are operated; issues experienced by pilots

9.2.2 Implementation of the SEP

Implementation of the SEP will include the following:

1. Advising the EMP Team Leader on issues and/or risks to stakeholder relationships as soon as they arise to ensure that the risks are mitigated or managed properly.
2. Taking an active role in carrying out the stakeholder engagement activities in partnership with concerned departments within Manta Air (i.e., facilitating forums or consultative events and liaising with appropriate stakeholder concerned).
3. Ensuring that the management and staff of Manta Air understand the value of and are committed to – the genuine participation of stakeholders in the identification and implementation of reclamation projects.
4. Developing a system for monitoring and evaluating the effectiveness of the SEP.

5. Coming up with indicators to evaluate the effectiveness of SEP strategies and revise them accordingly.
6. Preparing and submitting quarterly and annual reports on stakeholder engagement activities.
7. Assisting in resolving the concerns and grievances that a stakeholder may bring to Manta Air.
8. Keeping a record of questions, comments and suggestions that should be used to adapt the action plans and improve the EMP.

10 EXTERNAL COMMUNICATIONS

Effective communication with external sources will be a priority when handling seaplane operations at Ifuru Island External communications will include addressing enquiries and concerns of the community as well as collaboration with media sources. This chapter recommends the external communication standards of the IFC Performance Standards (International Finance Corporation, 2012).

10.1 OBJECTIVE

Having an external communications strategy in place will help strengthen relations with both the media and public. Members of the community can provide valuable information during critical situations and provide feedback regarding operations. This information can be used to improve current procedures. An external communication strategy will also help in ensuring that the information published in the media is accurate and can help in preserving the company image.

10.2 KEY FACTORS

The key factors of external communications procedures suggested in the IFC Performance Standards include:

Table 10.1 Key factors of external communication in IFC Standard

Key aspects of effective external communication procedures	Method used by Manta Air
Methods to receive and register external communications received from the public	Direct hotline Social media Website General email

Screen and assess the issues and determine how they should be addressed	All communications with the media will be handled by the COO, CEO or a member of the senior management. The Commercial department will be responsible for dealing with queries shared through Social Media and the website. The Commercial department will be responsible for sharing and resolving the concerns that are received with the relevant departments and respond to customers. Communications with any regulatory bodies will be handled by the respective department head.
Provide, track and document the responses provided	Response times are dependent on the level of urgency
Periodically review and adjust the external communications procedures	The Quality and Compliance Department is in charge of maintaining the standard of external communication procedures

It is also encouraged to make publicly available periodic reports on environmental and social sustainability (IFC, 2012).

10.3 PROCESS FOR PUBLIC COMMUNICATION DURING AN EMERGENCY

Having a process for external communication in the event of an emergency can help limit the spread of misinformation and lessen the chaos caused within the society and the organisation. The six step process for communicating with the public during an emergency has been listed below (World Health Organisation, 1998).

1. Develop a communication strategy

- The strategy should designate a person to decide what information to collect
- A designated person who will collect information
- A designated person who will prepare messages
- A designated person to authorize messages
- A designated person to contact the media

2. Identify critical information

- The information coordinator should identify and prioritise issues
- Conduct an analysis of the target audience

3. Detailed, clear messages

- Who (is affected)
- What (is the problem and the next step)
- When (did the situation happen, when to act)
- Where (is the place that was affected, where is the place to go)
- Why (it is important to follow this message)
- How (to respond and take the necessary steps)
- Avoid technical language
- Reassure the community
- Clear and short messages

4. Select mechanisms for communication

- Press release
- Public service announcement
- Advertisements
- Flyers
- Local community, local emergency committee, Voluntary organisations, MNDF officers

5. Send message

- Select the optimal time for sending the message
- Messages should be tested on a similar audience before being sent

6. Monitor and evaluate

- Evaluate how effective, efficient and appropriate the message was. This can be done using exercises, questionnaires and reviews post- emergency

10.4 RECOMMENDATIONS

- Develop an external communication plan including procedures to follow during an emergency. This should include a method to screen, assess and classify any form of external communication by the level of urgency. The plan can also include a communication structure showing who is responsible for dealing with external communications.
- Regular training of staff who will be dealing with external communications.

11 GRIEVANCE MECHANISMS

11.1 OBJECTIVE

A grievance mechanism has been established to create a way for those affected by the seaplane base operation at Ifuru Island to contact Manta Air and lodge a complaint, concern or enquiry. All Manta Air staff and resorts are given access to Centrik through which any safety and non-safety reports can be filed. Reports are attended within 24 hours by Safety and Security Department. The reports are classified, risk assessed and investigated and forwarded to relevant departments for actions. Manta Air has Just Culture Policy which is displayed along with Quality and Safety Policy in all working areas of Manta Air staff. Under Just Culture Policy no staff will be penalized unless deliberate violation is determined after investigation. All staff are given trainings on these two policies and how to use Centrik, file reports and view status.

12 MONITORING AND REVIEW

Monitoring must be undertaken as required under the decision note by EPA to ensure legislative and regulatory requirements are met. Environmental monitoring is essential because, although with proper mitigation measures, the overall environmental damage can be significantly minimized, an unforeseen impact may still occur. Furthermore, some of the impacts predicted may turn out to be far greater than predicted, making mitigation measures ineffective. Therefore, in order to avoid or reduce the chances of such events, regular and frequent environmental monitoring is vital. All monitoring costs for this project are included in the contractor fees.

12.1 OBJECTIVES

The main objectives of the monitoring plan are:

- To identify whether the predicted impacts are accurate and mitigation measures taken are effective
- To identify any unforeseen impacts so that appropriate mitigation measures can be taken at the earliest
- To identify and resolve any issues of social unrest at the earliest
- To eliminate or reduce environmental costs

12.2 MONITORING DURING OPERATIONAL PHASE

Monitoring for operation phase has been included in this EMP. The table below shows the details of different monitoring attributes, objective of monitoring the attribute and parameters, which must be monitored during this phase.

Table 12.1 Monitoring during operational phase

Monitoring attribute	**Objective**	**Indicator**	**Methodology**	**Evidence**	**Locations & samples**	**Frequency**	**Reference Guideline / Standard**	**Est. Total Costs /USD**
Accidents and injuries	To monitor accidents and injuries so that preventative measures can be taken and the resort can be better prepared	Type and number of accidents and injuries	Maintain accident and injury logs	Accident and injury logs	At or near the seaplane platforms	Quarterly during the operation phase for five years	Air Safety Circular 14-2	Included in Manta Air operation fees
Health screening of pilot and crew	To ensure that the pilot and crew are fit to handle the	Medical check-up, fatigue reports	Results of regular medical check-ups of crew and pilots	Results of medical check-ups	-	Quarterly during the operation	NA	Included in Manta Air operation fees

	seaplane operations		and fatigue reports	and fatigue reports		phase for five years		
Fire safety	To ensure that the resort is prepared in the event of a fire	Equipment availability and maintenance and training of staff	Equipment maintenance logs and staff training logs	Equipment maintenance logs and staff training logs	At the resort	Twice a year during the operation phase for five years	MNDF regulation regarding storage of fuel in resorts	Included in Manta Air operation fees
Oil spillage	To monitor oil spillage and take preventative measures to avoid oil spills	Amount and number of oil spills	Observation of the fuel storage area and logs of any oil spills	Observation reports and logs of oil spills	At the resort and in the marine environment	Quarterly during the operation phase for five years	MNDF regulation regarding storage of fuel in resorts	Included in operator fees
Grievance mechanism	To ensure that workers can communicate their grievances and are able to find	Number of grievances reported, response timings and	Review records of grievances submitted and interview employees	Grievance reports and employee feedback	-	Quarterly during the operation phase for five years	Air Safety Circular 002	Included in Manta Air operation fees

	effective solutions for their grievances	response satisfaction						

12.3 MONITORING REPORT FORMAT

Monitoring for the proposed project is proposed for the operation stage, since the installing the platform in the site takes a short period of time (2 days maximum).

During operations stage, the proponent must undertake monitoring activities as per the specified schedule in Table 12.1 of the EMP report and submit the monitoring report annually to EPA.

The format of the monitoring report should be structured as follows.

I. Report Information

This section should include the reporting period and name(s) of Environmental Consultant(s) that was involved in the preparation of the report.

II. Project Brief

Summary of project including a brief description of the project components and operation process.

III. Methodology

Detail of methods used to monitor environmental and socio-economic parameters, including monitoring locations and frequencies. The following performance indicators/monitoring attribute must be measured as indicated in the monitoring schedule in the EMP report.

a. Marine water quality
b. Log of accidents and injuries
c. Logs of Health and screening of pilot and crew
d. Fire safety measures
e. Oil Spillages
f. Platform maintenance
g. Grievances

IV. Findings and Observations

Details of key findings for the monitoring period for the indicators must be provided in the report. The report should also identify the measures and actions taken by the proponent to remedy any significant issue in any of the indicators. This should include the following details in a table format.

a. Monitoring attribute
b. Findings or results
c. Actions taken
d. Resources used
e. Responsible party

V. Conclusion

The conclusion must provide a summary of the attributes measured in the monitoring period, actions taken to remedy any issues.

12.3.1 Schedule of Monitoring Report

Monitoring report will be submitted to EMP once a year during operational phase.

13 CONCLUSION

The proposed project involves operation of seaplane platforms Ifuru Island, Raa Atoll. This EMP has been prepared based on the principles of an audit.

One floating platform and one fixed platform is installed at the resort. The location of the floating platform will be changed according to the monsoon. The platform will be used to dock seaplanes carrying resort guests and staff to the resort.

The assessment shows that the fabrication and installation of the platform can be done with minimal impact on the environment. The assessment of the existing environment reveals the area where proposed platforms will be installed are in the ocean where the depth also conforms to the required 2 m depth by the Civil Aviation Authority.

One of the main concerns raised by stakeholders are that the platforms must comply with the regulations by the CAA. The design and installation has been undertaken accordingly. The assessment reveals minimal impacts on the environment during installation stage given small scope of the work required to install the platforms. During operation stage, ambient noise is expected be elevated and to ensure the safety of the seaplane operation, it is recommended to assure pilots and crew are in good health and fatigue is avoided by limiting duty hours and providing adequate space for resting during layover at resorts. The proponent has committed to implement mitigation measures recommended in this EMP.

In conclusion, this project has been designed in conformance to the relevant laws and regulations of Maldives. Installation stage impacts were considered insignificant. Operational stage impacts can be mitigated through this EMP. Overall, the project will have positive impacts to the resort and Manta Air. The EMP recommends to go ahead with the project and to implement the mitigation measures to avoid significant impacts.

14 REFERENCES

CDE Consulting, 2017, Environmental Management Plan for the Proposed Operations of Seaplane Docking Platform At Orivaru Island, Noonu Atoll.

CDE Consulting, 2019, Environmental Management Plan for the Proposed Operations of Seaplane Platform Fairmont Sirru Fenfushi Maldives, Shaviyani Atoll.

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International Civil Aviation Organisation, 2015, *Sample Regulations for Water Aerodromes,* accessed 14 April 2019,

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International Finance Corporation, 2012, *Performance Standards on Environmental and Social Sustainability,* World Bank Group, accessed 14 April 2019,<https://www.ifc.org/wps/wcm/connect/115482804a0255db96fbffd1a5d13d27/PS_English_2012_Full-Document.pdf?MOD=AJPERES>.

World Health Organisation, 1998, Health Sector Emergency Preparedness Guide

APPENDIX A: SAFETY ASSESSMENT REPORT

RISK ASSESSMENT REPORT

Work/Project Title	Assessment Number
Commencing Seaplane Operations at Ifuru Island □□□□	**RPFO-SA-23/004**

Location	Assessment Dates	Report Compiled Date
Ifuru Island Raa Atoll	5th September 2023	5th September 2023

Assessing Inspectors	
Capt. Naif Abdul Rahman (Chief Pilot DHC-6) Capt. Mohamed Hamza Ahmed (Safety and Quality Pilot DHC-6) Capt. Ahmed Shazeen(Deputy Chief Pilot DHC-6)	

1. Executive Summary

The purpose of this risk assessment report is to identify any Inherent risks associated with commencing operation at Ifuru Island aerodrome for seaplane operations, and to propose mitigation actions for any identified risks to ensure that the severity of these are reduced to as low as reasonably practical.

The description of the work done is given in Section 2 of this report. The risk assessment based on the work done is given Section 3. The resort specific risks are in Section 3.1 and a list of general risks associated with seaplane operations to resort are given in Section 3.2 for the consideration of the resort management.

The following are the specific risks which needs to be addressed to mitigate the outcomes identified in Section 3.1 of this report:

#	Safety Risk	Mitigation Action	Responsible Party
1	**Hazard:** Rough water and swells during SW Monsoon **Risk:** Proposed Take-off and Landing Area might be challenging to utilise during westerly winds	1. Exercise caution during SW monsoon and practice good judgement	Flight Operations
2	**Hazard:** Strong current near floating platform in both monsoons **Risk:** Might be challenging to dock	2. Exercise caution when docking and practice good judgement	Flight Operations

2. Description

2.1 Assessment on Ifuru Island

Assessment was made on Ifuru Island on 24th August 2023 by a team from Manta Air to assess the water aerodrome and other requirements in accordance with the regulations to determine conformity with the minimum standards that are given in **Appendix 5.2**. The results of the inspection are given below:

1. <u>Water Aerodrome</u>

a. *Water Runway*

b. The length and width of the water runway meets the minimum standards.

c. There are no obstacles within the minimum clearance requirement.

d. There is sufficient depth.

e. *Taxiway*

f. The length and width of the water taxiway meets the minimum standards.

g. *Platform*

h. The current floating platform area meets the minimum requirements in terms of depth and minimum clearance.

i. The current Attached platform meets the minimum requirements in terms of depth and minimum clearance.

j. *Mooring Area*

k. The mooring area meets the minimum requirements.

l. *Meteorological Information*

m. Though means for obtaining meteorological Information is a regulatory requirement, this is currently not practiced by other seaplane operators nor enforced by CAA hence at the moment no Weather Monitoring device is currently installed at the Resort.

n. This requirement is being reviewed internally.

2. Emergency Response

a. Emergency Response Training

b. N.A at the moment

c. Emergency Response Equipment

d. N.A at the moment

e. Emergency Response Exercises

f. N.A at the moment

3. Crew Accommodation

a. N.A at the moment

b. Refer to **Appendix 5.7.2** for the minimum standards for crew accommodation.

4. Fuel Tank

a. N.A at the moment

3. Risk Assessment

3.1 Resort Specific Risks

#	Hazard and Risk	Pre-Control Assessment			Control Measures	After Control Assessment		
		Likelihood	Severity	Risk Class		Likelihood	Severity	Risk Class
1	**Hazard:** Rough water and swells during SW Monsoon **Risk:** Proposed Take-off and Landing Area might be challenging to utilise during westerly winds	Occasional	Significant	REVIEW	1. Exercise caution during SW monsoon and practice good judgement	Remote	Marginal	REVIEW
2	**Hazard:** Strong current near floating platform in both monsoons **Risk:** Might be challenging to dock	Occasional	Significant	REVIEW	1. Exercise caution when docking and practice good judgement	Remote	Marginal	REVIEW

3.2 General Risks Associated with Seaplane Operations to Resorts

#	Hazard and Risk	Pre-Control Assessment			Control Measures	After Control Assessment		
		Likelihood	Severity	Risk Class		Likelihood	Severity	Risk Class
1	**Hazard:** Frequent vessel movement in the area **Risk:** May collide with the aircraft and cause damage to both the aircraft and the vessel	Occasional	Catastrophic	UNACCEPTABLE	Educate all the resort vessel crew to have the situational awareness to give way to aircraft and comply with the minimum clearance requirements	Improbable	Marginal	ACCEPTABLE
2	**Hazard:** Vessels may be moored inside the lagoon **Risk:** Difficult to safely manoeuvre the aircraft if vessels are moored in the lagoon and may collide with the vessel as a result	Occasional	Catastrophic	UNACCEPTABLE	Ensure that the channel is kept free from vessels during flight operations	Improbable	Marginal	ACCEPTABLE
3	**Hazard:** Large vessels maybe used for transportation of passengers and their luggage **Risk:** May damage the platform and the aircraft	Occasional	Significant	REVIEW	Use a smaller sized vessel to transport passengers and their luggage to and from the floating platform	Improbable	Marginal	ACCEPTABLE
4	**Hazard:** Proper docking procedures may not be followed by the vessel crew for floating platform operations **Risk:** May damage the platform and the aircraft	Occasional	Significant	REVIEW	Train the staffs who would operating the vessels to follow the procedures set by Manta Air	Improbable	Marginal	ACCEPTABLE
5	**Hazard:** Snorkelling, diving and water sports at proposed landing, take-off, taxiing and manoeuvring area may result in accidents **Risk:** Injury to persons and damage to aircraft	Remote	Catastrophic	UNACCEPTABLE	Avoid using this area for such activities during aircraft movements. Inform boat crew to be alert on aircraft movements if this area is used	Improbable	Marginal	ACCEPTABLE

6	**Hazard:** Aircraft parked for day shutdowns and overnight **Risk:** Unauthorised access to the aircraft	Remote	Catastrophic	UNACCEPTABLE	Avoid using this area for such activities during aircraft movements. Inform boat crew to be alert on aircraft movements if this area is used	Improbable	Marginal	ACCEPTABLE
7	**Hazard:** Snorkelling, diving and water sports at proposed landing, take-off, taxiing and manoeuvring area may result in accidents **Risk:** Injury to persons and damage to aircraft	Remote	Catastrophic	UNACCEPTABLE	Avoid using this area for such activities during aircraft movements. Inform boat crew to be alert on aircraft movements if this area is used	Improbable	Marginal	ACCEPTABLE

Risk Assessment Matrix

Likelihood

Frequent	**5**	**5A**	**5B**	**5C**	**5D**	**5E**
Occasional	**4**	**4A**	**4B**	**4C**	**4D**	**4E**
Remote	**3**	**3A**	**3B**	**3C**	**3D**	**3E**
Improbable	**2**	**2A**	**2B**	**2C**	**2D**	**2E**
Extremely Improbable	**1**	**1A**	**1B**	**1C**	**1D**	**1E**
		Catastrophic	**Critical**	**Significant**	**Marginal**	**Negligible**
		A	**B**	**C**	**D**	**E**

Severity

Assessment Risk Index	Classification
1C, 1D,1E 2D, 2E 3E	Acceptable
1A, 1B 2A, 2B, 2C 3B, 3C, 3D 4C, 4D, 4E 5D, 5E	Review
3A 4A, 4B 5A, 5B, 5C	Unacceptable

Risk Classification	Actions Required
UNACCEPTABLE	The risk is not acceptable, and the activity should be stopped until improvements are made. The matter receives immediate attention of relevant HODs and/or ACM.
REVIEW	The risk is tolerable and needs to be monitored continuously in order to prevent escalation to unacceptable level. Reinforcing existing measures and taking further reduction measures need to be considered.
ACCEPT	The risk is accepted, and no specific action is required.

4. Persons Involved

Manta Air	Resort
Capt. Mohamed Hamza Ahmed (Safety and Quality Pilot DHC-6)	

Declaration

The above work has been assessed and risk analysis carried out for the hazards identified. With consideration given to the controls highlighted above, I hereby declare that:

☑ There is no significant risk involved in the project titled above and that the work can be carried out in accordance with MCAA requirements and company procedures provided that the proposed defences are implemented

☐ Significant safety risks and concerns are involved in the project titled above and carrying out the project is NOT recommended by the assessing inspector(s)

Assessed By:

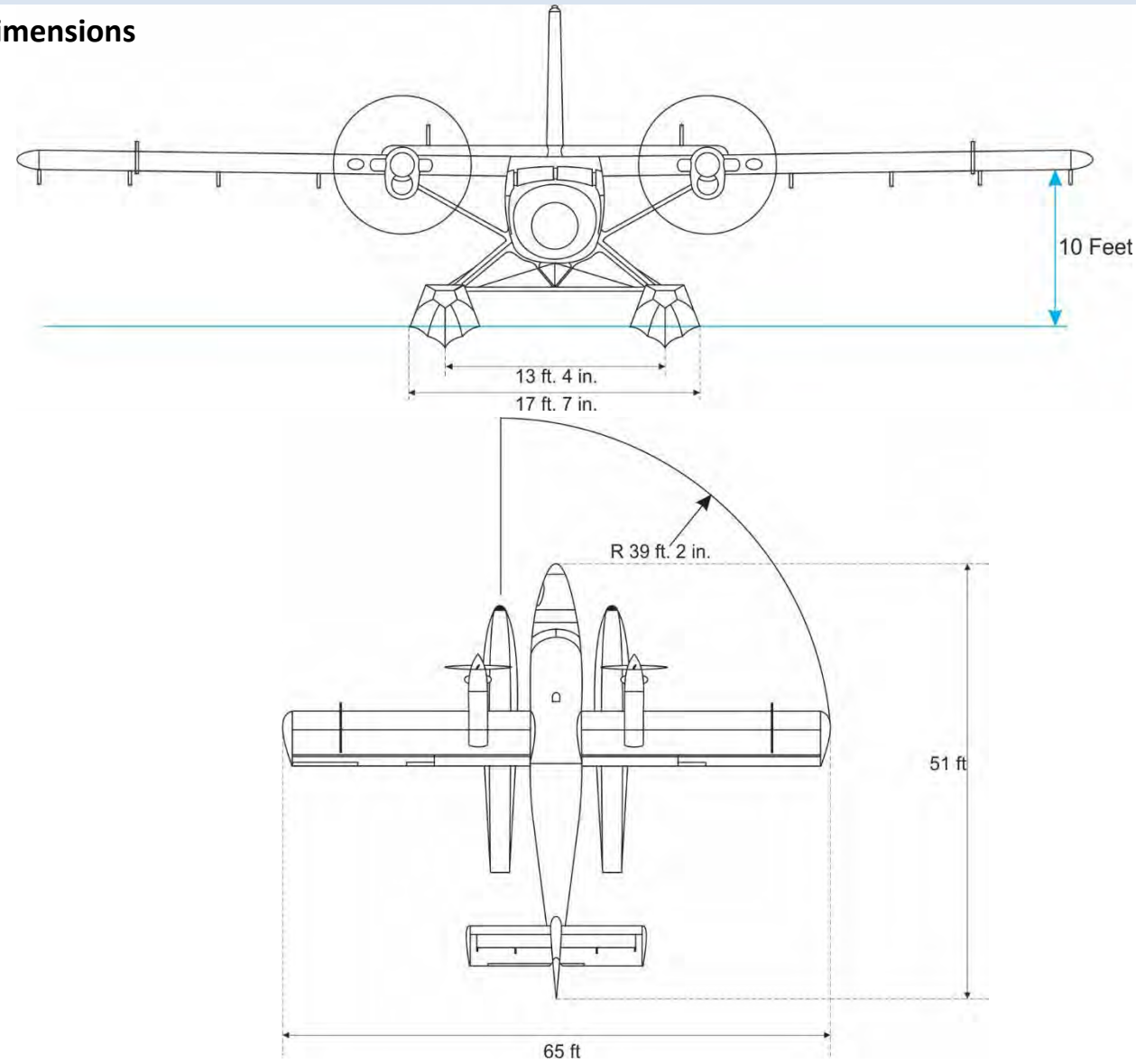
Capt. Mohamed Hamza Ahmed
Safety and Quality Pilot DHC-6

Accepted By:

Capt. Hassan Haneef
Director, Flight Operations

5. Appendix

5.1 Aircraft Dimensions



5.2 Minimum Requirements

*Refer to **Appendix 5.7** for the regulations that are referenced in this section.*

5.2.1 Water Runway

Criteria	Regulatory Reference
Minimum length of the water runway must be 2500 ft.	ASC 14-2 Section 6 & 8
Minimum depth of the water runway at low tide must be 6 ft. (1.8m)	ASC 14-2 Section 6 & 8
Minimum width of the water runway must be 100 ft.	ASC 14-2 Section 6 & 8
Minimum clearance between wingtip and any obstacles in level with aircraft (seawalls, channel marker poles etc.) must be 98.4 ft. (30m)	ASC 14-2 Section 6 & 8

5.2.2 Taxiway

Criteria	Regulatory Reference
Minimum depth of the taxiway at low tide must be 6 ft. (1.8m)	ASC 14-2 Section 6 & 8
Minimum width of the taxiway must be 65 ft.	ASC 14-2 Section 6 & 8
Minimum clearance between wingtip and any obstacles in level with aircraft (seawalls, channel marker poles etc.) must be 35 ft.	ASC 14-2 Section 6 & 8

5.2.3 Platforms (Fixed and Floating)

Criteria	Regulatory Reference
There must be a minimum depth of 4 ft. at low tide for 50 ft. radius	ASC 14-2 Section 6 & 7
There must be a minimum clearance of 98.4 ft. (30m) radius for aircraft maneuvering	ASC 14-2 Section 6 & 7
There must be a vessel available for the purpose of transferring passengers to and from the floating platforms to the respective resorts	ASC 14-2 Section 11

The vessel used for transferring passengers must be in an appropriate size that poses minimal risk of damage to aircraft during docking	ASC 14-2 Section 11
The vessel must be positioned at least 200 m away from the floating platform and water runway when the aircraft is ready to land or at take-off and not obstruct the water runway	ASC 14-2 Section 11
The vessel crew must receive training and instructions about: a. the direction of water runway b. the movements of the aircraft for taxi c. the specific time of its arrivals; and d. docking procedure at floating platform	ASC 14-2 Section 11

5.2.4 Mooring Buoy

Criteria	Regulatory Reference
There must be a minimum depth of 4 ft. at low tide for 100 ft. radius	ASC 14-2 Section 6
There must be a minimum clearance of 98.4 ft. (30m) radius for aircraft maneuvering	ASC 14-2 Section 6

5.2.5 Meteorological Information

Criteria	Regulatory Reference
A weather monitoring device must be equipped to provide wind direction and other meteorological data	ASC 14-2 Section 10

5.2.6 Emergency Response Training

Criteria	Regulatory Reference
Personnel must be trained for rescue and firefighting duties	ASC 14-2 Section 17
All personnel involved in rescue and firefighting duties must receive appropriate and regular training in the use of rescue and firefighting equipment	ASC 14-2 Section 17
Records of such emergency response trainings must be maintained and made available upon request	ASC 14-2 Section 17

5.2.7 Emergency Response Equipment

Criteria	Regulatory Reference
Adequate medical and rescue equipment must be available to be used during an emergency	ASC 14-2 Section 7

5.2.8 Emergency Response Exercises

Criteria	Regulatory Reference
Emergency response exercises must be conducted at least once per quarter	ASC 14-2 Section 17
Records of such exercises must be maintained and made available upon request	ASC 14-2 Section 17

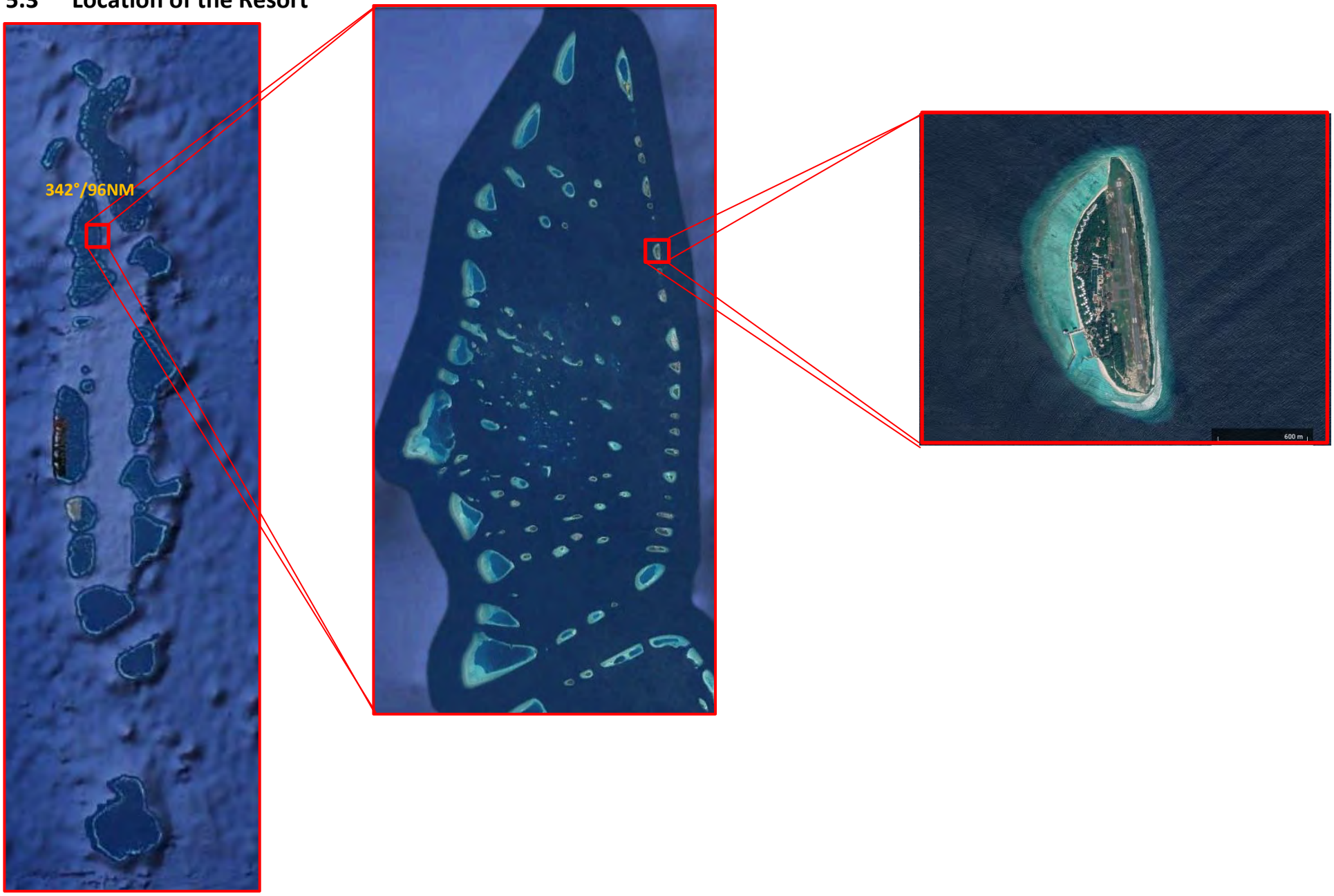
5.2.9 Crew Accommodation

Criteria	Regulatory Reference
A separate room must be provided for each crew	MCAR ORO.FTL.105
The accommodation must be located in a quiet environment	MCAR ORO.FTL.105
The room must be equipped with a bed that allows the occupant to lie horizontally on his/her stomach, back or either side with adequate space for unconscious movement of the body during sleep	MCAR ORO.FTL.105
The accommodation must be sufficiently ventilated	MCAR ORO.FTL.105
The accommodation must have a device for regulating temperature and light intensity	MCAR ORO.FTL.105
The accommodation must have a mechanism to block daylight completely from entering inside the room	MCAR ORO.FTL.105
There must be arrangements made to provide access to food and drink for the crew	MCAR ORO.FTL.105
The accommodation must be kept clean, tidy and in hygienic condition	MCAR ORO.FTL.105
A separate bathroom facility with shower and hot water must be available per accommodation	MCAR ORO.FTL.105

5.2.10 Storage of Fuel in Resorts

Criteria	Regulatory Reference
If more than one tank is to be constructed at a given location, minimum 1-meter clearance should be made between two tanks	Maldives Gazette No. 2015/R-43
Bund wall should be constructed to prevent spread of fuel resulting from leakage or any other incident	Maldives Gazette No. 2015/R-43
Bund wall should meet the following requirements: a. Shall have 110% capacity of the largest tank in a given location. b. Shall have 1% sloping floor towards the bund wall. c. Shall have min. 7.5 m clearance from closest building or facility. d. Shall be constructed with reinforced concrete or cement bricks to prevent leakage of fuel. e. Shall have all fuel and any other horses running above the wall. f. Shall have a mechanism to empty the water which gets collected inside the bund wall. g. Shall not have any flammable items including full or empty fuel barrels near the premise of the bund wall. h. Shall have a stair running above the wall both inside and outside the bund wall	Maldives Gazette No. 2015/R-43
The fuel tank must be free from any sort of ignition	Maldives Gazette No. 2015/R-43
There must be 2 DCP (9kg) extinguishers installed at the fuel storage area	Maldives Gazette No. 2015/R-43
The fuel tank must be bonded and earthed properly to prevent lightning strike	Maldives Gazette No. 2015/R-43
The following signs must be displayed in both English and Dhivehi: a. No Smoking b. No Naked Lights c. Highly Flammable	Maldives Gazette No. 2015/R-43
The signs must be made with a clear font and size on board no smaller than 1x3 feet	Maldives Gazette No. 2015/R-43
The fuel tank must have an English signboard stating the fuel type and capacity	Maldives Gazette No. 2015/R-43
There must not be any flammable items present in the area	Maldives Gazette No. 2015/R-43

5.3 Location of the Resort



5.4 Water Aerodrome Layout

(1) Floating Platform NE Monsoon - 5°42'11"N 73°01'13"E

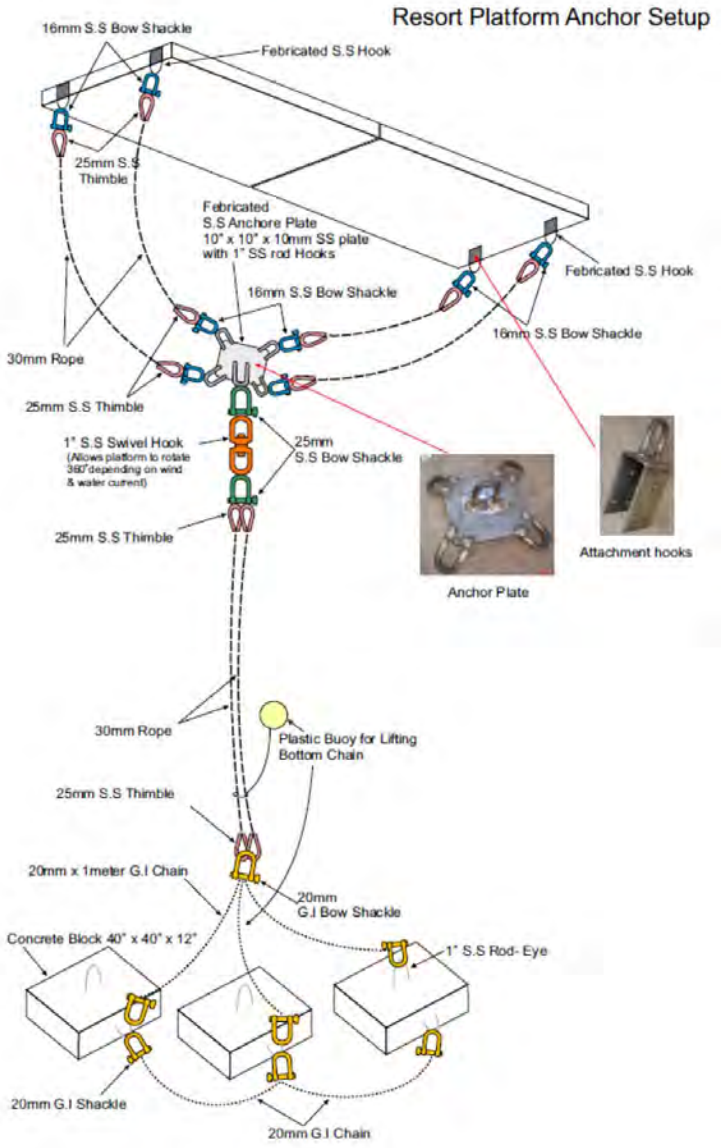
(1) Overnight Buoy NE Monsoon - 5°42'15"N 73°01'12"E

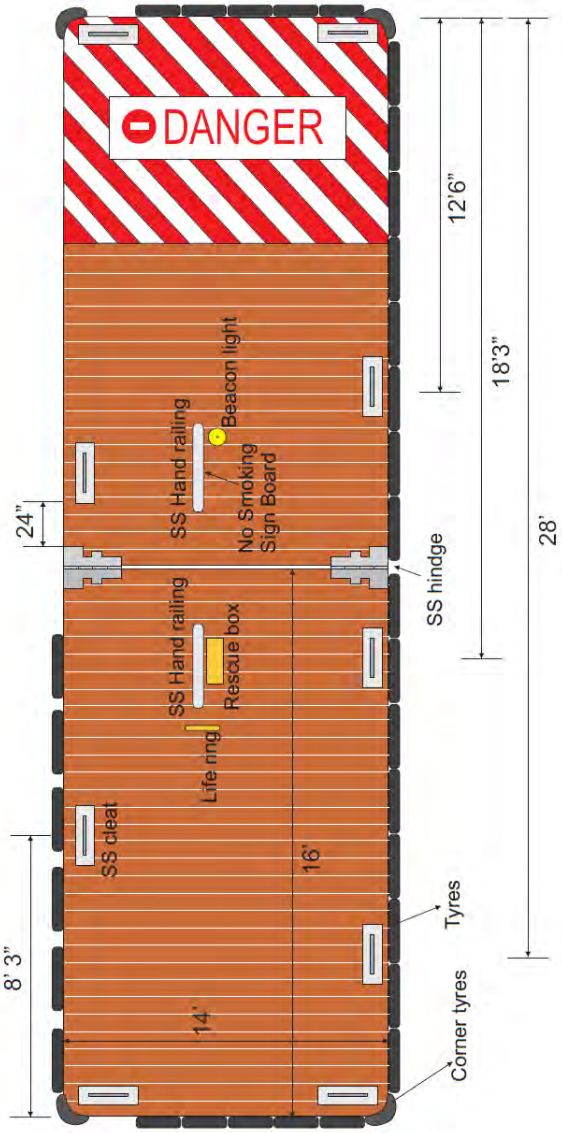
(2) Floating Platform SW Monsoon - 5 42'21"N 73°01'38"E

(2) Overnight Buoy SW Monsoon - 5°42'24"N 73°01'37"E

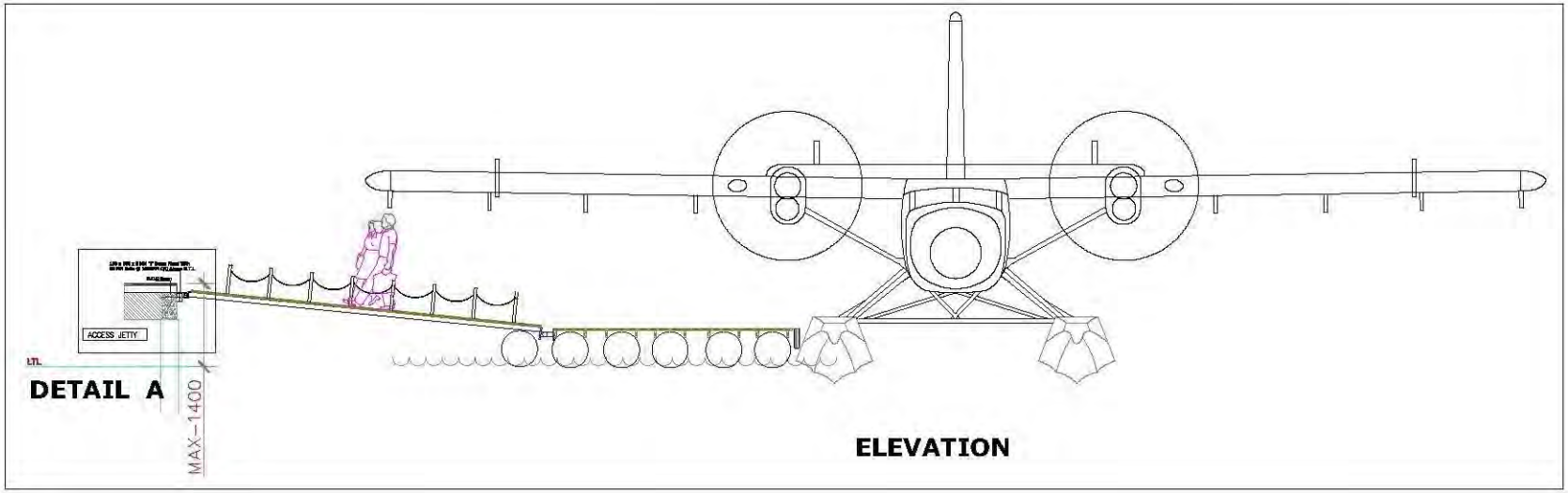
Proposed Fixed Platform - 5 42 15"N 73°01'18"E

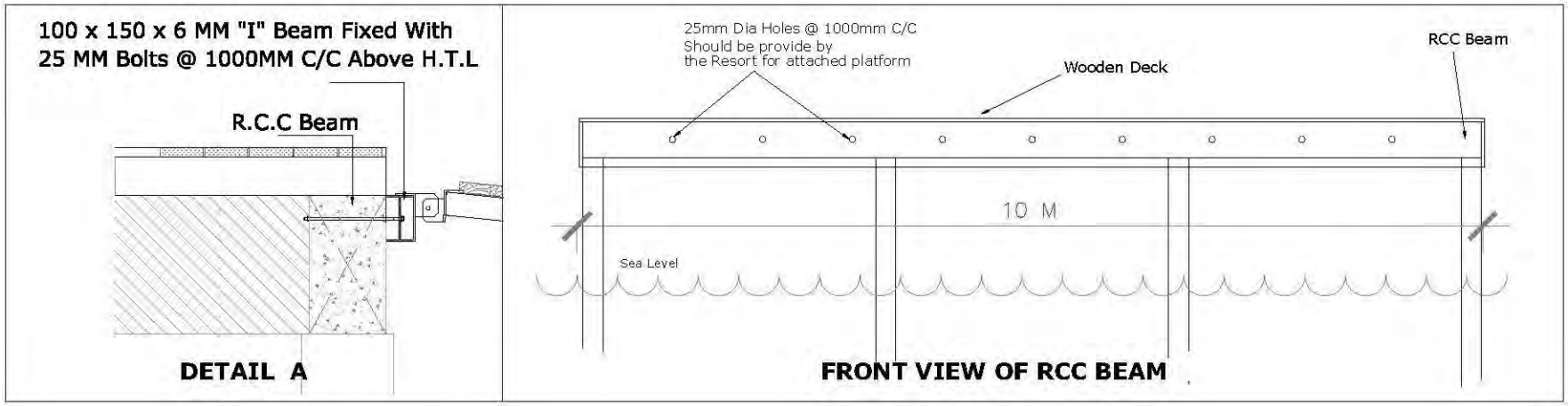
5.5 Connecting Details of Floating Platform





5.6 Connecting Details of Attached Platform





5.7 Regulatory References

5.7.1 Air Safety Circular ASC 14-2: Procedure and Requirements for Licensing Water Aerodromes and Floating Platforms

CIVIL AVIATION DEPARTMENT
Republic of Maldives

AIR SAFETY CIRCULAR

ASC 14-2

Procedure and requirements for licensing water
Aerodromes and floating platforms

Amendment 1, 04 February 2009

1. REGULATORY COMPLIANCE

Compliance with this Circular is mandatory for all Maldivian water Aerodrome operators and floating platform operators.

2. RELATED REGULATIONS

This Circular does not relate to any existing regulations.

3. PURPOSE

This Air Safety Circular has been issued to replace the previous regulation MAR C14. ASC 14-2 lays down the minimum requirements for site selection, floating platform construction and installation, rescue and fire fighting equipment and facilitation at floating platform in order to meet the licensing requirements.

4. DEFINITIONS

For the purpose of this Circular, the following definitions shall apply:

'Aeroplane' A power-driven heavier than air aircraft deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight

'Turn around' An aircraft while operating a scheduled or charter flight after having reached its destination and having discharged its passengers, cargo etc. returns to its station from which the flight had earlier originated;

Amendment 1 1-1 04 February 2009

'Floating platform' A defined platform anchored inside protected waters licensed under the Maldivian Civil Aviation Regulations for the purpose of embarkation and disembarkation of passengers or cargo by aircrafts;

'Water aerodrome' A defined area on land or water (including any buildings installations and equipments) intended to be used either wholly or in part for the arrival, departure and movement of aircraft;

'Channel' A defined rectangular area on a water aerodrome, intended for the landing and take-off run of aircraft along its length;

'Goods' Anything taken on an aircraft as personal belongings, baggage or cargo;

'Response time' is the time between the initial call to the Rescue and Fire Fighting Services (RFFS) and the first effective intervention at the accident site by a rescue and fire fighting vehicle;

'Resort agent' Person employed by the Aerodrome Licence holder who will be responsible for handling passengers at the acrodrome and to prepare the load sheet;

The resort agent shall have undergone some in house training to take such responsibilities and shall be trained for fire fighting and other safety matters.

'Nature reserved designated area' These are marine areas that are environmentally protected and preserved as reserves;

'Protected areas' These areas are usually located on the atoll wardside near islands, which is protected from large wave by the surrounding reef or lagoon;

5. APPLICATION FOR WATER AERODROMES

5.1 All the applications for Water Acrodrome and installation of floating platform shall be forwarded to Civil Aviation Department, on application form AD-01 available at CAD website, www.aviainfo.gov.mv. Upon making an application for the grant of a licence, the applicant shall pay a charge in accordance with MCAR-187.

5.2 When more than one platform is being installed the coordinates for each platform shall be listed in the application form to be included in the licence.

5.3 If there is an intention of moving the platform to any other site, the position should be notified in the application form.

5.4 With each application, an aerial map of the island shall be provided to this department.

5.5 If the applicant is not the landlord of the locality then the application shall be forwarded with a no objection letter from the land lord of the proposed locality to use the intended lagoon/reef or protected water as a water aerodrome.

5.6 A license will be issued only to one applicant per lagoon.

5.7 The applicant shall either be the owner/operator of the resort, a tour operator or the land lord of that locality where it is intended to base the water aerodrome.

5.8 The applicant shall bear the cost of travel, accommodation and food for the surveyors appointed by this department to survey the proposed site to use as a water aerodrome and to install a floating platform. And depending on the outcomes of the survey, the applicant shall make a contract with the land lord (if the applicant is not the land lord) before installing the floating platform.

5.9 The applicant shall request the Civil Aviation Department for an inspection once the floating platform is installed, safety equipment are obtained and personnel are trained as specified in this Circular for licensing the aerodrome for public/ordinary use. The cost of travel and accommodation shall be provided for the Civil Aviation Department inspector by the applicant.

5.10 No water aerodrome or floating platform shall be used for passenger embarking/ disembarking unless otherwise it is licenced by the Civil Aviation Department.

6. GENERAL REQUIREMENTS FOR FLOATING PLATFORM

SITE SELECTION

6.1 When selecting a site for water aerodrome and installation of floating platform, the following will be considered:

(a) if the location of the proposed water aerodrome is inside protected waters
(b) depth of sea bed on the proposed water runway and the size of aircraft intended to operation.
(c) distance of water aerodrome from the servicing resorts and islands
(d) maritime movements in the location,
(e) navigable airspace,
(f) effect on the surrounding community
(g) available length of clear and safe water runway strip with respect to the size and type of aircraft intended for use.

NB: location shall be such that cross wind operations are kept to a minimum and downwind operations shall be avoided. In other words the landing and take-off areas should be oriented to permit operations into the wind. Nature Reserved designated marine areas and Fishing Grounds shall not be used for water aerodromes. The strip of water shall be free from large obstructing coral rubbles to a definite depth and located inside protected waters which is safe to use during landing/take-off by a definite aircraft.

7. FLOATING PLATFORM DIMENSIONS AND SAFETY EQUIPMENTS.

7.1 Floating platform shall provide adequate support and buoyancy for the loads imposed by embarking/disembarking passengers and their luggage.

7.2 The floating platform shall be inspected at regular intervals to check the structural conditions of platform and other safety equipment. Records of such inspections shall be kept and available for inspection by Civil Aviation Department, if needed.

7.3 Each floating platform shall be equipped with the following minimum equipment in the interest of passenger safety and all the equipment except for the life buoy shall be contained in a red box which is fastened to the floating platform. The life buoys shall be easily accessible for use in case of an emergency.

7.4 In the interest of passenger safety the water aerodrome or floating platform certificate/licence holder shall provide an Emergency Box with the following minimum safety equipment in it (see 7.8.1 and 7.8.2 for the location of E/Box);

7.5 Equipment that shall be provided in the E/Box are:
- 01 axe
- 01 crow bar
- 01 tin sniper
- 01 harness cutting tool

7.6 Equipment that shall be placed on the platform are:-
- 30m life line rope
- 02 life buoys
- 01 flashing yellow light/beacon (if located outside the lagoon and in open sea)

7.7 The flashing yellow/beacon when provided shall be installed on the floating platform and its height shall not be one (1) meter from the level of the platform. The beacon and its fixing strut shall be made out of frangible material. The beacon and its fixing strut shall be made out of frangible material. The beacon shall be ON from dusk to dawn.

7.8 Location of emergency boxes shall be as follows:-

7.8.1 In normal circumstances where a floating platform is located adjacent to the island or when located outside the house reef the emergency box shall be placed on the floating platform itself.

7.8.2 Where a platform is located in open water and where it is difficult to maintain/police the equipment on the floating platform the provision of organizing where the emergency box should be located lies with the water aerodrome or floating platform certificate/license holder. (Such scenarios if/when implemented shall be communicated to the CAD and appended in the respective operational/emergency response plan for that location).

8. SIZE OF WATER RUNWAY

The dimensions of the water runway will depend on;

(a) on the size of the aircraft in operation.
(b) the performance characteristics of the aircraft
(c) the clearance of approach path from obstacles.

Any obstacle in or out of water, on the water runway or taxi way, that may endanger safety shall be marked with a floating buoy.

9. OPERATIONAL REQUIREMENTS

The facilities shall be made available for the use of all bonafide AOC holders, with the permission of the licence holder, such permission shall not be withheld unreasonably. The licence holder may charge for the use of the facility and such charges shall not be higher than US$ 1.00 per 1000 kg or part thereof the MTOW of the aircraft operating.

The licence holder may levy an administrative fee for a Turn Round, not exceeding US$ 20.00.
The licence holder shall make available the Resort Agent, transfer dhoni and all equipment, including RFFs during such operations.

The licence issued by the Civil Aviation Department will cease to be valid if:

- failure to pay the annual fees for the aerodrome licence, which shall be paid to Civil Aviation Department,

- the contract with the land lord expires or cease to be valid (if applicable),

- any of the mandatory equipment and facilities specified in this Circular lacks.

10. VISUAL GROUND AIDS

All aerodromes shall be equipped with at least one wind direction indicator and it shall be mounted so as to be visible from aircraft in flight or on the movement area and in such a way as to be free from the effects of air disturbances caused by nearby objects.

11. TRANSFER DHONI/BOAT

A mechanised dhoni/boat shall be available for the purpose of transferring passengers to and from the floating platforms to the respective resorts.

A dboni/boat shall be at least 200 m away from the floating platform and water runway when the aircraft is ready to land or at take-off and shall not obstruct the water runway.

Instructions shall be given to the dhoni/boat captain about the direction of water runway, and the movements of the aircraft for taxi and the specific time of its arrivals.

12. COMMUNICATION

The aerodrome licensee shall ensure that the Pilot and Resort Agent are linked by the telephone or radio for giving flight details in advance allowing the Resort Agent to be prepared to attend the arriving flight. For communication during flight under VFR, it is recommended that each Resort Agent is equipped with suitable radio equipment capable of conducting two-way communication with the aeroplane. For this purpose the Resort Agent shall be suitably trained and authorised by the Department for the purpose.

13. IFR OPERATION

Night Operations and operations under IFR conditions is NOT permitted to water aerodromes.

14. VISUAL AIDS

A Wind Direction Indicator shall be fixed on land at a point that is in the nearest vicinity to the water runway and floating platform to enable the pilot to find the wind direction and have an indication of wind velocity. *For this purpose* a Wind Sock of sufficient size shall be installed to be visible from an aeroplane flying at a height of 200 meters. Details of the size of the Indicator are given at Appendix II for guidance.

15. RESPONSE TIME:

15.1 The operational objective of the rescue and fire fighting service shall be to achieve a response time not exceeding three (03) minutes to any point of each operational runway, in optimum visibility and surface conditions.

15.2 shall apply to water aerodromes certified within the house reef.

15.3 Were the platform is located outside the house ref or away in a lagoon the certificate holder shall determine a reasonable le response time and establish this response time in the emergency Response Plan for that location.

15.4 The certificate holder shall prepare an Emergency Response Plan for the particular aerodrome for which the certificate is granted and submit the Emergency Response Plan to CAD.

15.5 The Resort Agent shall be trained for fire fighting and rescue operations and shall be familiar with the aircraft. The Resort Agent shall be in attendance on the transfer Dhoni at take off and landing.

16. MANNING LEVEL

Manning levels will take into accounts the type and number of appliances in use at the floating platform, the method of operation of appliances and equipment and any other relevant details.

17. TRAINING

All personnel involved in rescue and fire fighting duties must receive appropriate regular training in the use of equipment provided. This should include an operational exercise at least once per quarter and records of such training shall be made available to whenever an inspector from this department requests.

18. FIRST AID KIT

The medical equipment commensurate with the category of aircraft operated must be readily available at the floating platform and arrangement shall be made to convey to incident scene as quickly as possible. For DHC-6 aircraft, fist aid kit shall include all contents specified in Attachement A of this Circular.

19. REMOVAL OF THE FLOATING PLATFORM

The floating platform and the anchoring blocks shall be removed from the location within three months after revocation of the licence.

20. EFFECTIVITY

This Circular becomes effective on 04 February 2009.

21. CANCELLATION

This Amendment of Circular cancels the latest ASC 14-2 issued on 18th January 2009 which should be destroyed.

For the Civil Aviation Department
Aminath Solih
DIRECTOR GENERAL

ATTACHMENT A – First Aid Kit (FAK)

The following contents are required for aeroplanes engaged in commercial passengers carrying operations

Note 1:- For 0-50 pax seats 1xFAK is required.
For 51-150 pax seats 2xFAK is required.
For 151-250 pax seats 3xFAK is required.
For more than 250 pax seats 4xFAK is required.

Note 2:- List of contents is to be firmly attached to the container. Note 3:-Container to be sealed.

Note 4:- Container to be checked annually-name of inspector to be recorded on the container.

Note 5:- Date of inspection and next inspection due date to be clearly shown on container.

	ITEM	QTY	REMARKS
1	Bandage white-cotton 3mx8cm (9'x3")	3	
2	Bandage white-cotton 3mx8cm (9'x2")	3	
3	Bandage white-cotton 3mx8cm (9'x1")	3	
4	Bandage – crepe 3mx8cm (9'x3")	2	
5	Bandage crepe 3mx8cm (9'x2")	2	
6	Burns – dressing pads – large	12	
7	Wound dressing pads – large	12	
8	Adhesive elastic tape 3mx8cm (9'x3")	1 roll	
9	Adhesive elastic tape 3mx8cm (9'x2")	1 roll	
10	Safety pins assorted sizes	24	Stainless steel type
11	Scissors – small or medium	1	Stainless steel type
12	Dressings adhesive small/medium/large	24	eg. sticking plasters/band Aid
13	Antiseptic fluid (eg: Dettol)	bottle 125ml	
14	Burn ointment	1 tube	
15	An Artificial Plastic Airway	1	
16	Analgesic tablet	100	eg. Cinnarizine or equivalen
17	Anti-emetic-tablet	25	eg. Paracetamol 500mg
18	Nasal de-congestant fluid	1 bottle	eg. Afrin or Sinutex
19	Gastro intestinal antarid tablet	25	eg. Maalox/Actan
20	Anti-diarrhoeal medication	1 bottle or 25 tablets	eg. Ioderamide
21	Ground to air Visual Code booklet	1	For use by survivors
22	Disposable Rubber Gloves	1 pair	
23	Mosquito Repellent cream	1 bottle	eg. Autan or Johnson's OFF
24	Splints	set	Suitable for upper & lower limb use
25	Emollient Eye Drop	1 bottle	
26	Handbook on First Aid		

5.7.2 Maldives Civil Aviation Regulation (MCAR) Air Operations Annex III Part ORO.FTL.105 "Definitions"

'**Rest facility'** means a bunk or seat with leg and foot support suitable for crew members` sleeping on board an aircraft.

'**Reserve'** means a period of time during which a crew is required by the operator to be available to receive an assignment for an FDP, positioning or other duty notified at least 10 hour in advance.

'**Rest period'** means a continuous, uninterrupted and defined period of time, following duty or prior to duty, during which a crew member is free of all duties, standby and reserve.

'**Rotation'** is a duty or a series of duties, including at least one flight duty, and rest periods out of home base, starting at home base and ending when returning to home base for a rest period where the operator is no longer responsible for the accommodation of the crew member.

'**Single day free of duty'** means, a time free of all duties and standby consisting of one day and two local nights, which is notified in advance. A rest period may be included as part of the single day free of duty;

'**Sector'** means the time between an aircraft first moving for the purpose of taking off until it comes to rest after landing on the designated parking position.

'**Standby'** means a pre-notified and defined period of time during which a crew member is required by the operator to be available to receive an assignment for a flight, positioning or other duty without an intervening rest period.
(a) ***airport standby*** means a standby performed at the airport;
(b) ***other standby*** means a standby either at home or in a suitable accommodation.

'**Suitable accommodation'** means, for the purpose of standby, split duty and rest, a separate room for each crew member located in a quiet environment, equipped with a bed, which is sufficiently ventilated, has a device for regulating temperature and light intensity, and access to food and drink.

'**Ultra long range operations (ULR)**' means long range flights having a planned flight duration greater than 16 hours or a flight duty period that exceeds 18 hours.

'**Window of Circadian Low (WOCL)**' means the period between 02:00 and 05:59 hours in the time zone to which a crew member is acclimatised.

5.7.3 Unofficial English Translation of 2015/R-43 MNDF Regulation Regarding Storage of Fuel in Resorts

MNDF Regulation Regarding Storage of Fuel in Resorts

Regulation No: 2015/R-43

Effective Date: 11 March 2015

16. Storing Fuel in Resorts

a) Petrol, diesel, kerosene or jet-fuel at resorts may be stored above or underground. Design and construction of such tanks to store fuel shall be carried out by professionals and shall comply with international standards.

b) If more than one tank is to be constructed at a given location, minimum 01 meter clearance should be made between two tanks.

c) Bund wall should be constructed to prevent spread of fuel resulting from leakage or any other incident.

d) Construction of bund wall as stated in point c) shall meet the following requirements:

1. Shall have 110% capacity of the largest tank in a given location;
2. Shall have a 1% sloping floor towards the bund wall;
3. Shall have minimum 7.5 meter clearance from closest building or facility;
4. Shall be constructed with reinforced concrete or cement bricks to prevent leakage of fuel;
5. Shall have all fuel (and any other) hoses running above the wall;
6. Shall have a mechanism to empty the water which gets collected inside the bund wall;
7. Shall not have any flammable items including full or empty fuel barrels near the premises of the bund wall; and
8. Shall have a stair running above the wall both inside and outside the bund wall.

e) Every effort should be made to prevent any sort of ignition inside the bund wall as it may have fuel vapor. Smoking, sparks, welding, frictions, radiated heat, electric short circuits and any actions that may lead to heat generation shall be avoided inside the bund wall. Precautions should also be taken to prevent a fire emergency occurring from lightening.

f) Two Dry Chemical Powder (of 9kg each) cylinders shall be installed at all fuel storage areas. If the fuel storage container is of 10,000 liters and above, then it shall have:

1. Foam pouring system; and
2. Water drencher system.

g) Testing and repair of fuel tank shall be carried out only by professionals

h) Bonding and earthing shall be made for each tank to prevent lighting strike.

i) Fuel storage areas shall display the following signs both in English and Dhivehi:

NO SMOKING	ތަކުރުގަދަ ތަންތަނުގައި ބޭނުންކުރުން ނުވަތަ ބުއިކުރުން	(1)
NO NAKED LIGHTS	ބަރާބަރު ދައްކާ ލައިޓް	(2)
HIGHLY FLAMMABLE	ލަސްވެ ފުލުން	(3)

The sign shall be made with a clear font and size on boards no smaller than 1 x 3 feet. In addition, fuel tanks shall have an English sign board stating the fuel type and capacity

j) Any type of flammable items such as grass, leaves etc. shall not be present in the areas of fuel storage. Smoking and naked flames, explosives and sparking items shall be avoided at these areas.

APPENDIX B: EMERGENCY RESPONSE PLAN

1. TEMPLATE FOR RESORT EMERGENCY RESPONSE PLAN

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Table of Contents

1.1. Letter of Commitment

This is to certify that this Emergency Response Plan, is in full text applicable to Manta Air and [RESORT] relating to aircraft operation.

The owners, board of directors and senior management of Manta Air and [RESORT] hereby pledge our commitment to the implementation, sustenance and improvement of the Emergency Response Plan of [RESORT].

All the costs associated with the activation of the Emergency Response Plan will be borne by Manta Air.

On behalf of Manta Air:	**On behalf of Resort:**
Name: Edward Alsford	Name:
Designation: Chief Operating Officer	Designation:
Date:	Date:
Signature:	Signature:

1.2. Foreword

When reference is made to resort in this ERP, it shall be referred to [RESORT] (RESORT CODE).

The ERP provides recommended guidelines and procedures for handling an emergency, but it is understood that it is not practical to include all the emergency response procedures that may be required for any given incident and procedures must be modified as required by the situation. Staff involved in or witnessing such a situation must apply the knowledge and skills learnt from trainings and their best judgement to ensure that the situation is handled in the best possible manner.

All departments of the resort must be familiar with the contents of this manual. Particular attention should be addressed to train the staff on their responsibilities and procedures for the respective departments mentioned in this manual.

Every staff is expected to know what their responsibilities are in the event of an emergency situation.

1.3. Document Review and Amendment

1.3.1. Review Frequency

The Emergency Response Plan of [RESORT] is a living document, and thus revisions may be brought from time to time to ensure that it remains current. Such revisions may be addressed in whole or in part and will replace obsolete material at the time of issuing the revised manual. The details of the procedure is included in the Resort ERP

1.4. Scope of ERP

ERP is intended to respond to and recover from the following types of emergency situations:

1 Aircraft Accident;
2 Bomb Threat Associated with Aircraft;
3 Unlawful interference; and
4 Missing Aircraft
5 Any other aircraft-related emergency situation as decided by Manta Air EMC Chair.

The ERP is formulated to achieve a response time of no more than three minutes for aircraft emergencies inside the house reef and no more than six minutes for aircraft emergencies outside the house reef of the resort.

This ERP does not consider consequences of following situations:

1 Natural Disaster;
2 War or Warfare Danger;
3 Emergency Situations Endangering Democracy or State System;
4 Fire or Conflagration; and
5 Act of illegal interference.

Should one of the above situations occur, all staff are advised to proceed according to the relevant response plan of the resort as and when required.

As there are no dedicated staff of Manta Air stationed at the resort to monitor and direct the emergency response at the resort, the emergency response actions are to be taken by the resort staff. Hence the resort staff must be trained adequately to respond to such situations. Refer to Chapter 4 for more details.

1.5. Emergency Levels

Manta Air ERP refers to three levels of emergency:

1 Local Standby,
2 Full Emergency and
3 Aircraft Accident.

However, unlike landplane operation, there is no control tower or air traffic control in seaplane operation around the resorts. Hence declaring Local Standby or Full Emergency by resorts will be practically impossible. Moreover, in the case of seaplane operation, flight phase will be very short, hence, escalation from Local Standby to Full Emergency is highly unlikely.

Hence, for the purpose of activating resort emergency response plan, Aircraft Accident and Other Emergency are used within the scope of this ERP to define the emergency level.

1.5.2. Aircraft Accident

Aircraft Accident is a situation where aircraft with an intention of flight sustained a major damage or a person on board or on ground suffered a fatal injury as result of collision with part of the aircraft which has intention of flight.

1.5.3. Other Emergency

Other Emergency is any emergency situation involving bomb threat, unlawful interference, missing aircraft or any other emergency declared by Manta Air EMC that could lead to an aircraft accident within 2 nautical miles from the resort shoreline.

1.6. Responsibility for Business Continuity

Immediately following notification of a major accident involving a Manta Air aircraft, resort staff must respond quickly with the appropriate action while simultaneously maintaining normal operations to ensure business continuity. Manta Air acknowledges that this will place a varying burden on all staff of the resort, but this is a time when teamwork, patience and cooperation are extremely important for the benefit of the industry.

1.7. Disclosure of Information

The release of premature and or erroneous information, inadvertent comments taken out of context, inability or slowness to comply with reasonable request, loss of patience in dealing with others and similar (seemingly minor) matters can result in the development of attitudes or the creation of animosity which will adversely affect the interest of Manta Air or Resort, or may result in legal exposure.

Making statements or giving information about the emergency to the news media or public officials by any employee other than the Central Command Centre or those delegated to do so is STRICTLY PROHIBITED. This includes such information as the names and/or condition of crew or passengers, details of company equipment (whether directly involved in the accident/incident or not), company liability, company insurance, or any other accident/incident related information.

It is Manta Air's policy that only designated employees have authority to provide comments to the media. Other employees may speak to the media only with the approval of the ACM.

1.8. Resort Emergency Management Centre

The Resort EMC will coordinate with Manta Air EMC to manage overall control, support and co-ordination of emergencies and will be headed by the senior most manager of the resort and in his absence by an appointed deputy. If any event that is covered in the scope of ERP as per Chapter 1.4 occurs, the Resort EMC will be activated.

The Resort EMC will be an area nominated and agreed by the Resort GM. All key departments of the resort will be represented in the Resort EMC which will be equipped with facilities and equipment appropriate for coordinating of emergency.

1.9. Accident Site

For the purpose of Resort ERP, the landing and take-off area licensed for the resort and 700m radius around the platform is considered as resort. Aircraft Accidents away from the 700m but within two nautical mile (2NM) is considered as in the vicinity of the resort.

MNDF Coast Guard will be responsible for aircraft accidents in the vicinity area. However, it is generally understood that the Resort will be asked to respond within this area, as the resort is the closest facility to the accident site and the response would be expediated.

A Crisis Response Team should be established based on the accident scenario to respond to the accident site. Following is the composition of the Crisis Response Team:

1 Rescue Team: Recreation and Water Sports Team
2 Passenger and Crew Welfare Team (PCWT): Front Office Team
3 Medical Team: Resort Doctor and Medical Team

Refer to Chapter 3.2.4 for more information.

1.10. Triage and Casualty Clearing Station (CCS)

The Medical Team will take lead of triage in prioritizing the casualties. Persons are identified in accordance with following categories:

- **Priority I:** Critical (life threatening) injuries - immediate hospitalisation required
- **Priority II:** Seriously injured - hospitalisation required quickly but not immediately
- **Priority III:** Uninjured or minor injuries only - no hospitalization required
- **Priority 0:** Deceased (Dead) - not expected to survive in the very short term

The Resort EMC in coordination with Manta Air EMC shall identify an appropriate location as CCS. This is an area in the resort where casualties from Triage will be treated and classified and dispatched for further treatment.

The Resort EMC will appoint a CCS Leader (usually the Doctor) who will coordinate with others, including Resort CC and Resort Passenger and Crew Welfare Team (PCWT) Leader.

Every effort must be made to identify each occupant, as soon they arrive to CCS and Causality Clearance Status Form (refer to Appendix 5.4) must be filled and passed to the Resort EMC. Refer to Chapter 3.2.5 for more information.

1.11. Uninjured Holding Area (UHA)

The Resort EMC in coordination with Manta Air EMC shall identify an appropriate location(s) as UHA. This is a location at the resort where uninjured passengers will be taken. This can be guest rooms, lounges or any other appropriate location.

Resort PCWT Leader will send a Resort PCWT Member to UHA to coordinate and manage UHA. Resort staff will assist Resort PCWT Member in managing the uninjured passengers. Refer to Chapter 3.2.5 for more information.

1.12. Crew Holding Area (CHA)

The Resort EMC in coordination with Manta Air EMC shall identify an appropriate location(s) as CHA. This is a location at the resort where uninjured crew members will be taken. This can be guest rooms, lounges or any other appropriate location.

Resort PCWT Leader will send a Resort PCWT Member to CHA to coordinate and manage CHA. Resort staff will assist Resort PCWT Member in managing the uninjured crew. Refer to Chapter 3.2.5 for more information.

1.13. Hospitals

Hospitals are medical service institutes that provide medical services to injured passengers, persons and crew members. Resort EMC in coordination with Manta Air EMC will decide to which hospitals are to be utilised for injured passengers and crew. Medical Team will assist Resort EMC to in determining appropriate hospitals.

1.14. Activation of Resort Emergency Response Procedures

Front Office is the designated point of contact to activate the ERP. Any staff witnessing or involved in an aircraft accident shall inform Front Office with adequate details. Front Office may activate the ERP by sending an SMS Alert or phone calls or any other means.

Flowchart showing notification flow is provided in Resort ERP. The checklists of each person or group of persons involved in emergency response management are also provided in the Resort ERP that reflects the communication flow as documented in the notification flowchart. The checklists include appropriate actions and tasks to ensure important items necessary for emergency management is not overlooked or missed.

1.15. Other Emergencies

For all other emergencies stated in Manta Air ERP, Resort will provide support as requested by Manta Air EMC. If resort becomes aware of these emergencies before Manta Air, Resort will inform Manta Air OCC and standby for information from Manta Air EMC. These emergencies include:

1 Bomb threat associated with aircraft;

2 Single Engine Landing or Both Engine Failures;

3 Serious Incidents;

4 Unlawful Interferences;
   a. Hijack or Attempting to Hijack of Aircraft
   b. Hijacker on Flight Deck of Aircraft
   c. Hostage-taking On-Board Aircraft
   d. Forcible Intrusion On-Board an Aircraft

e. Taking Weapons or Hazardous Material On-Board Aircraft
f. Communicating False Information that may Jeopardise Safety

5 Missing Aircraft.

1.15.2. Bomb Threat Associated with Aircraft

ANY BOMB THREAT AGAINST COMPANY AIRCRAFT MUST BE TREATED WITH UTMOST CARE.

If resort operator receives a bomb threat relating to Manta Air operations, the recipient should fill Threat Report Form FCSS-010 and pass the filled form to Manta Air OCC. Manta Air OCC Duty Manager shall coordinate with Director Flight Operations before notifying to MNDF.

Resort will standby for more information from Manta Air EMC.

1.15.3. Unlawful Interference

If the resort experiences any act of unlawful interference, the information should be passed to OCC Duty Manager and standby for more information and actions from Manta Air EMC or OCC. All unlawful Interferences will be informed to MNDF by Manta Air as soon as possible. Every unlawful interference is different; hence, depending on the situation and severity, MNDF will deploy the best possible mechanism to handle the situation. More information on Unlawful Interferences are given in below subparagraphs. Details of these events are given in Resort ERP.

1.15.3.1. Hijack or Attempting to Hijack of Aircraft
1.15.3.2. Hijacker on Flight Deck of Aircraft
1.15.3.3. Hostage-taking On-Board Aircraft
1.15.3.4. Forcible Intrusion On-Board an Aircraft
1.15.3.5. Taking Weapons or Hazardous Material On-Board Aircraft
1.15.3.6. Communicating False Information that may Jeopardise Safety

1.15.4. Missing Aircraft

An aircraft is considered to be missing when one of the following conditions is known to exist:

1 When an aircraft has failed to report position within 30 minutes of the time that it is estimated to report its position to Flight Follow or ATC; or
2 When fuel on board the aircraft is known to have exhausted.

1.15.4.1. If Declared Aircraft Accident

If missing aircraft is declared an aircraft accident within the vicinity of the resort, follow Chapter 3.2 and take appropriate actions.

1.15.5. Any Other Aircraft-Related Emergency Situation

Any other event that may occur in which the Manta Air EMC Chair decides to activate the ERP. In such cases, Manta Air OCC will call Front Office to inform about the emergency situation, and resort should standby for further instructions.

1.15.5.1. Single Engine Landing or Both Engine Failure

For single engine landings or both engine failures, resort is expected to provide support to tow the aircraft to safety by providing a small dinghy if aircraft lands successfully.

If there is an accident during landing, follow Chapter 3.2 and take appropriate actions.

1.16. Removal of Disabled Aircraft and Salvage Operation

Manta Air EMC will coordinate with Resort EMC and MNDF to find suitable arrangement for removal of disabled aircraft and salvage operation. Where applicable, support of local organisations will be utilised for removal of disabled aircraft and salvage operation.

1.17. Recovery

It is important to note that recovery and return to normal operation is a key business objective behind an effective ERP. After emergency is terminated, Manta Air EMC will coordinate with Resort EMC to determine appropriate actions that will be required for recovery depending on the type and seriousness of the emergency.

1.18. Training

Manta Air is committed to ensuring that all relevant resort staff are provided with appropriate level of training required in order to have an effective emergency response.

Manta Air has incorporated the Emergency Response Training as part of the SMS training for Resort Agents and Management after conducting a training-needs-analysis for seaplane outstations. This training will be conducted separately as to make resort management and other relevant resort staff competent on the responsibilities regarding emergency response.

The Manager Ground Operations is responsible for ensuring all staff are provided with the training required to enable them to perform responsibilities related to emergency response and for keeping accurate training records.

The participant's competence on ERP knowledge will be ensured in the classroom through open questions, discussions, case studies, research results and/or examples.

Name of the Course:	ERP Training for Resort Agents and Management
Requirement:	All Resort Agents and Managers involved in seaplane operation should complete this training before Manta Air starts commercial operation to resort.

Duration	1 hour 30 mins
Recurrence	Once every 2 years
Course Specifics	• Resort ERP Structure • How Manta Air ERP and Resort ERP work in coordination with each other • Types of Emergency and Emergency Levels • Key Responsibilities • Resort Responding Teams • Manta Air Responding Teams • Communication Channels

1.19. Emergency Exercise

The purpose of the emergency exercises is to test the effectiveness of emergency response plan and response activities. As per the regulations, the resort is required to conduct emergency exercises once every two years. Manager Safety and Security is responsible for ensuring appropriate emergency exercises are conducted at resorts. Manager Safety and Security, in collaboration with Ground Ops and Commercial Team, will coordinate with resort management to decide the type and extent of emergency exercise.

After every exercise a de-briefing should be organized to capture feedback from participants so that required improvements can be brought to the ERP. A report should be compiled comprising of key elements such as scenarios, response timings and effectiveness, weak areas and suggested improvements.

An implementation plan should be derived from the report to bring necessary changes to the Manta Air ERP and Resort ERP and training requirements and response activities.

1.19.1. Communication Exercise

Communication Exercises will be conducted as and when required to test the effectiveness of emergency notification. A mock emergency message will be passed from Front Office Duty Manager down the line to everyone in the communication flowchart of Resort ERP. Time will be checked with complete and fullness of the message.

1.19.2. Table-Top Exercise

Table-top Exercises will be conducted in classroom to simulate some parts or full scope of emergency response. Simulation will help to understand the response preparedness and effectives. This will also help to make more clarity on each other's role in an emergency. This is a cost-effective way of testing emergency response plan.

1.19.3. Partial Emergency Exercise

Partial Emergency Exercises will be conducted in the field in real time to simulate some areas of emergency response plan (e.g. passenger handling areas). This type of exercises will test resource mobilization and response preparedness more effectively.

1.19.4. Full Scale Emergency Exercise

Full Scale Emergency Exercises will be conducted in the field in real time to simulate full scope of emergency response plan and may be conducted once all areas are tested separately in partial emergency exercises.

APPENDIX C: STAKEHOLDER CONSULTATION

Manta Air **Participants:** 1. Capt. Ismail Imthiyaz, Head of Training 2. Capt. Hassan Haneef, Director of Flight Operations	- The safety and compliance team of Manta Air will be responsible for dealing with external parties and ensuring compliance is achieved for their operations. - The Engineering department will be responsible for the installation of platforms, fabricating the structures. - Emergency Response Plans are prepared and implemented and resort agents are trained for firefighting as well. - Manta Air will have a resort agent working in coordination with them.
Civil Aviation Authority **Participants:** 1. Fathimath Ramiza, Director 2. Aminath Shiznee, Senior Aerodrome Inspector.	- There has been no amendment to the regulation and guidelines in relation to the seaplane platforms. - The minimum depth of the area for seaplane landing is 2 m. - CAA requires the 'No Objection' letter from Ministry of Tourism and Environment, to approve the platforms and this requires an Environmental Impact Assessment and Environmental Management Plan. - CAA recommends to consult with the Ministry of Tourism and Environment. - CAA conducts yearly monitoring of the seaplane platforms to check if the required

	buoyancy is maintained. In addition, operational aspects of the seaplane platforms are monitored including the adherence to Emergency Response Plan and resorts are trained. - Usually two platforms are proposed due to rough seas with strong currents. Due to high cost in installing two platforms, the floating platforms are moved when the monsoon changes. - Most of the accidents related occur due to rough weather conditions. However, there has been no fatal accidents to date.
Environmental Protection Agency **Participants**: Consultation was carried out via email. EPA shared the email with the relevant departments and a response was provided by Aishath Samiyya, Administrative Officer	- No major concerns regarding sea plane platforms, however depending on location concerns may arise, especially if the areas are close to environmentally sensitive receptors. - No specific recommendations other than general mitigation measures.
Ministry of Tourism **Participants:** Ibrahim Fikree, Assistant Director	- Ministry of Tourism will issue the 'No objection' letter after submission of the approved EMP to the Ministry of Tourism. Manta Air can continue with the seaplane platform construction and operation after this letter is issued.

	- Ministry of Tourism does not conduct any inspections of the platforms. - Previously the Ministry used to handle EIA related work for Tourist resorts. This is now under the mandate of EPA. - There is no specific regulation or guideline under the Ministry of Tourism regarding EMPs for seaplane platforms.

APPENDIX D: CVS OF CONSULTANTS

MARIYAM HANA SAEED

Phone: +9607970022 | Email: mariyamhanas@gmail.com

Bio

A Renewable Energy and Sustainability consultant with a specific interest in community energy systems and innovative business models in the era of the new energy market. Currently, I work as a Senior Consultant at CDE Consulting, Maldives. The sectors I lead at CDE are sustainable energy, housing, waste management and transport.

Education

2017 – 2018 **MSc in Sustainable Energy and Entrepreneurship**

University of Nottingham, United Kingdom

Passed with Distinction

2012 – 2014 **Bachelor of Environments**

University of Melbourne, Australia

Passed with Second Class Honors

Work Experience

2018 – Present **CDE Consulting, Maldives**

Senior Consultant on Sustainability, Energy and Innovation

Manager leading projects on energy, transport, housing and waste

Registered EIA consultant and lead author of EIAs

2015 – 2017 **CDE Consulting, Maldives**

Consultant on Sustainable Development

Consultant providing sustainability services and managing projects on energy, waste, transport, housing, water and sewerage sectors.

Nov 2015 – Dec 2015 **United Nations Development Programme UNDP**

National Consultant for the Terminal Evaluation for the project titled Increasing Climate Resilience Through An Integrated Water Resource Management Programme in Ha.Ihavandhoo, Adh.Mahibadhoo Gdh.Gadhdhoo

2011 – 2012 **The President's Office, Maldives**

Administrative Assistant

Monitoring the policies and strategies for the governance department of the Policy Office. Organising events, preparing timeline and protocols for events of the 'International Day Against Drug Abuse and Illicit Trafficking'.

Led vetting process for officials during the 17th SAARC Summit in Addu City of the Maldives in November 2011.

Volunteering and Extra Curricular Activities

2016-2018 **VESHI NGO**

Sustainability Consultant for the project 'Introducing Green Healing Hospital Concept At Adh. Atoll Hospital'

Undertaking energy audit and water audit of the hospital, analysing existing energy usage in the hospital and providing recommendations for increasing energy efficiency. Assisting in conducting the feasibility for installation solar panels on the rooftop of the hospital. Conducting workshop to the community and hospital staff on measures for energy efficiency and conservation.

2017 **Maldives National University**

Guest Lecturer on Sustainable Development

Guest Lecturer on Politics of Climate Change

2016 **Voice of Maldives**

Speaker on Climate Change and GHG emissions

Speaker on Sustainable Development Goals on World Environment Day

Interests

Reading, travelling, fitness

Language

Dhivehi (mother tongue)
English (Proficient)

REFEREES

Prof. Mark Gillot
Head of Department
Architecture and Built Environment
University of Nottingham, UK
mark.gillot@nottingham.ac.uk

Dr. Simad Saeed
Managing Director
CDE Consulting
Male', Maldives
simad@cde.com.mv

APPENDIX E: EMP SHARING WITH ATOLL COUNCIL

EMP Sharing

From: **Hana Saeed** | hana@cde.com.mv Wednesday, 9 Apr at 13:56

To: **info@rac.gov.mv**

Dear Sir,

Dear Sir,

We sharing the EMP for proposed seplane platforms at Ifuru Island, Raa Atoll for your reference. Please use the link and password below to access the report.

EMP for proposed platforms at Ifuru, Raa Atoll.pdf
Password: 9B50CoigNO5f
cdeconsulting.egnyte.com/dl/wt2t16s7i5

Best Regards,
Hana

Hana Saeed
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