ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

For the upgrading of

ISLAND WASTE MANAGEMENT CENTRE

IN EYDHAFUSHI, BAA ATOLL

Proponent:

Ministry of Environment

Consultant:

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TABLE OF CONTENTS

CONTENTS

TABLE OF CONTENTS II

LIST OF FIGURES VII

LIST OF TABLES VIII

CONSULTANTS DECLARATION IX

PROPONENTS DECLARATION X

EXECUTIVE SUMMARY XI

ސާރާ ޚުލާސާ..XII

1 INTRODUCTION...1

1.1 BACKGROUND 1

1.2 THE PROPONENT..1

1.3 CURRENT WASTE MANAGEMENT PRACTICE AND JUSTIFICATION FOR PROJECT 2

1.4 AIMS AND OBJECTIVES OF ESMP 3

1.5 METHODOLOGY 3

1.6 LEGISLATIVE AND REGULATORY CONSIDERATIONS 5

1.6.1 LAWS, REGULATIONS AND GUIDELINES APPLICABLE TO THE PROJECT...5

1.6.2 APPROVALS AND PERMITS 11

2. PROJECT DESCRIPTION 12

2.1 OBJECTIVES OF THE PROJECT 12

2.2 SITE LOCATION AND LAND USE PLANNING 12

2.3 EXISTING FACILITY AND JUSTIFICATION TO UPGRADE...15

2.4 PROPOSED UPGRADING WORKS 16

2.5 SITE CLEAN UP AND PREPARATION 17

2.6 SITE ACCESS 17

2.7 ROAD CLOSURE AND TRAFFIC RE-ROUTING 17

2.8 DETAILS OF WORK TO BE CARRIED OUT 17

2.9 CONSTRUCTION MATERIALS AND MACHINERY 18

2.10 ELECTRICITY 18

2.11 WATER AND PLUMBING 19

2.12 SUPPLY AND INSTALLATION OF FIREFIGHTING EQUIPMENT 19

2.13 GENERAL SAFETY PRECAUTIONS AT SITE 19

2.14 ACCIDENT AND HAZARD SCENARIOS DURING CONSTRUCTION 20

2.15 PROJECT MANAGEMENT 22

2.16 WORK SCHEDULE 22

2.17 IWMC OPERATIONS 22

2.17.1 SUPPLY OF WASTE MANAGEMENT EQUIPMENT AND PPES 23

2.17.2 WASTE TRANSFER TO IWMC 23

2.17.3 WASTE ACCEPTANCE 24

2.17.4 WASTE SCREENING, SEGREGATION AND HANDLING 24

2.17.5 LOGGING WASTE RECORDS 24

2.17.6 WASTE COMPACTION 25

2.17.7 MANAGING MIXED USE RECYCLABLES 25

2.17.8 MANAGING ORGANIC WASTE & COMPOSTING 25

2.17.9 MANAGING SCRAP METAL 26

2.17.10 MANAGING HAZARDOUS WASTE 26

2.17.11 LEACHATE MANAGEMENT 27

2.17.12 WASTE TRANSPORT TO REGIONAL FACILITY 27

2.17.13 SAFETY AND HEALTH DURING OPERATIONS 28

2.18 PROJECT INPUTS AND OUTPUTS 28

3. DESCRIPTION OF THE EXISTING ENVIRONMENT 31

3.1 EXISTING WASTE MANAGEMENT PRACTICES 31

3.1.1 ACCESS TO IWMC SITE 32

3.1.2 WASTE LANDFILL AND OPEN BURNING 32

3.1.3 EXISTING IWMC SITE 33

3.1.4 WASTE MANAGEMENT MACHINERY 35

3.1.5 CONSTRUCTION AND DEMOLITION WASTE 37

3.1.6 FOOD WASTE MANAGEMENT 38

3.1.7 COMPOSTING 38

3.1.8 MEDICAL WASTES 38

3.2 ISLAND WASTE MANAGEMENT PLAN 38

3.2.1 BACKGROUND 38

3.2.2 GOALS AND OBJECTIVES 39

3.2.3 WASTE COMPOSITION 39

3.2.4 WASTE COLLECTION FEE 40

3.3 UNASSIGNED WASTE DUMPING 40

3.4 COASTAL MODIFICATION AND STABILITY 42

3.5 VEGETATION AT PROJECT SITE 44

3.6 PROTECTED AREAS AND ENVIRONMENTALLY SENSITIVE AREAS 44

3.7 AREAS OF HISTORIC AND CULTURAL SIGNIFICANCE 44

3.8 SOCIO ECONOMIC ENVIRONMENT 44

3.8.1 POPULATION 44

3.8.2 LAND USE AND HOUSEHOLDS 45

3.8.3 EDUCATION AND LITERACY LEVELS 45

3.8.4 HEALTH 45

3.8.5 EMPLOYMENT, ECONOMIC ACTIVITIES AND BUSINESS ESTABLISHMENT 45

3.8.6 NON GOVERNMENTAL ORGANISATIONS 45

3.8.7 SEWAGE 46

3.8.8 WATER SUPPLY 46

3.8.9 ELECTRICITY 46

3.8.10 TRANSPORT AND COMMUNICATION 46

4. IDENTIFICATION OF IMPACTS & SIGNIFICANCE 47

4.1 IDENTIFICATION OF IMPACTS AND THEIR SIGNIFICANCE 48

4.2 IMPACT IDENTIFICATION 48

4.3 IMPACT SIGNIFICANCE ASSESSMENT 51

4.4 UNCERTAINTIES IN IMPACT PREDICTION 58

5 ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURES 59

5.1 PROJECT MITIGATION MANAGEMENT DETAILS 59

5.2 WASTE REDUCTION AND REUSE 79

5.2.1 REDUCTION OF NAPPY AND SANITARY PADS. 79

5.2.2 RESTRICTION OF SINGLE USE PLASTICS 79

5.2.3 REUSE CONSTRUCTION AND DEMOLITION WASTE 79

5.2.4 SETTING UP A MECHANISM TO REUSE DISCARDED ITEMS 80

5.3 CONTRACTUAL MEASURES 80

6 TRAINING RECOMMENDATIONS 81

7 ENVIRONMENTAL MONITORING 85

7.1 MONITORING METHODOLOGY AND COSTS 85

7.2 RESPONSIBLE PARTY 86

7.3 RECOMMENDED MONITORING PROGRAMME 86

7.4 ENVIRONMENTAL MONITORING REPORT 89

7.5 IMPLEMENTATION SCHEDULE 89

8 REPORTING 90

8.1 REPORTING DURING CONSTRUCTION PHASE 90

8.1.1 MONTHLY REPORTING 90

8.1.2 ANNUAL OR AFTER COMPLETION REPORTING 90

8.2 REPORTING DURING OPERATION PHASE 91

8.2.1 MONTHLY REPORTING 91

8.2.2 INCIDENT REPORTING 91

8.2.3 ANNUAL REPORTING 92

9 GRIEVANCE MECHANISM 93

9.1 FIRST TIER: ISLAND COUNCIL 93

9.2 SECOND TIER: MINISTRY OF ENVIRONMENT 94

9.3 THIRD TIER: JUDICIARY 96

10 STAKEHOLDER CONSULTATIONS 97

10.1 CONSULTATIONS WITH THE DEVELOPER 97

10.2 ISLAND COUNCIL 99

10.1 HOUSEHOLD PERCEPTION SURVEY 100

10.2 WASTE MANAGEMENT COMMITTEE 103

10.3 WOMEN'S DEVELOPMENT COMMITTEE 105

11 CONCLUSION 106

12 REFERENCES 108

ANNEX 1 – EIA SCREENING DECISION 110

ANNEX 2 – LAND USE PLAN AND SITE LOCATION 111

ANNEX 3 - APPROVED DRAWINGS 112

ANNEX 4 – B. EYDHAFUSHI ISLAND WASTE MANAGEMENT PLAN 113

ANNEX 5 – SEGREGATION GUIDELINE OF WAMCO FOR REGIONAL WASTE COLLECTION 114

ANNEX 6 – GUIDELINES FOR ENVIRONMENTAL CLOSURE OF SMALL OPEN DUMP SITES 115

ANNEX 7 – GENERAL PUBLIC SURVEY FORMS 116

ANNEX 8 – PROPONENTS COMMITMENT FOR MONITORING AND MITIGATION 117

LIST OF FIGURES

Figure 1 B. Eydhafushi located in the maldives 13

Figure 2 islands of baa atoll 13

Figure 3 B. Eydhafushi satelite image 14

Figure 4 The IWMC located on the lup 14

Figure 5 Existing IWMC site (red) and Waste Stockpile Area (yellow) 15

Figure 6 Layout of the proposed Development 16

Figure 7 Some safety signboards to be used on site 20

Figure 8 Access to the IWMC site is via bare land that had been reclaimed 32

Figure 9 Open burning at waste stockpile outside IWMC site 33

Figure 10 Broken down boundary fence of the IWMC site 34

Figure 11 Waste sorting area severely rusted 34

Figure 12 Waste segregated at the IWMC site 35

Figure 13 Large metal objects stockpiled outside the IWMC 35

Figure 14 Waste management machinery at the IWMC 36

Figure 15 Power cables to all the machinery at the IWMC had been damaged 37

Figure 16 C&D Waste stockpile south west side of the island 37

Figure 17 Food waste dump location in B. Eydhafushi 38

Figure 18 Road conditions in B. Eydhafushi 41

Figure 19 Unassigned waste dump at the revetment line facing the IWMC and stockpile area 42

Figure 20 Erosion areas in B. Eydhafushi 43

Figure 21 Revetment structure condition in B. Eydhafushi 44

Figure 22 Project Impact areas including Direct Impact Area during construction stage at existing IWMC site (red) and waste stockpile (yellow) 47

LIST OF TABLES

Table 1 Accident and Hazard Risks 20

Table 2 Main inputs from the proposed project 28

Table 3 Major outputs from the proposed project 30

Table 4 Estimated waste composition in B. Eydhafushi 39

Table 5 Waste collection fees for different types of properties 40

Table 6 Impact Identification Matrix 49

Table 7 Impact Evaluation Criteria 52

Table 8 Analysis of potential impacts and their significance 54

Table 9 Mitigation management plan 60

Table 10 Training program for the implementation of ESMP 82

Table 11 Environmental Monitoring Plan 87

Table 12 Tentative ESMP Implementation Schedule 89

CONSULTANTS DECLARATION

This Environmental Management has been prepared according to the EIA Regulations 2012. I certify that the statements in this Environmental Management Plan study are true, complete and correct to the best of my knowledge and abilities

Amir Musthafa (EIA P01/2013)

27th January 2019

PROPONENTS DECLARATION

(Provided in Annex 8 with Proponent Commitment)

EXECUTIVE SUMMARY

The proposed project for the upgrading of the Island Waste Management Center (IWMC) in B. Eydhafushi is funded by the World Bank and executed through the Maldives Clean Environment Project (MCEP). The aim of the project is to develop a proper IWMC in the island, with adequate storage facilities and security and safety features to facilitate storage of inorganic waste for longer durations, create space for compost production, and eliminate the waste over accumulation issue currently faced by the island.

Although there is a waste management system currently in place in B. Eydhafushi, they are unable to store the waste brought to the IWMC properly as the site is currently badly damaged and its capacity is full. Hence, waste is being stored in bare ground outside the IWMC site increasing the potential for contamination of soil and groundwater due to leachate runoff. Furthermore, daily open burning is currently practiced. Food waste is also dumped to the lagoon via a platform on the revetment, which was setup by the council. While the island was generally clean and there was no unassigned waste dumping in the residential area, the surrounding area of the IWMC site was in poor condition. Different types of waste could be seen all around, while some waste was observed to have gone over the revetment and into the lagoon, thereby impacting the marine environment.

To alleviate these issues, the project intends to develop the IWMC with proper storage cells, leachate and stormwater collection drains, installation of fire safety equipment, high boundary walls and a vegetation buffer between the revetment and the IWMC site.

All construction activities will be managed inside the existing boundary of the IWMC, which does not contain any vegetation. Vegetation clearance is not part of the project as the site is located in a reclaimed area. Potential indirect impacts during transport and storage of construction material and waste can be effectively managed, by regular supervision and employing best practice approaches.

Likewise, impacts common to construction activities such as those associated with dust and noise can be minimized by regularly watering the site, installing dust screens and not conducting construction activities during night time. No environmentally sensitive or protected site exist in the island. The project will provide basic infrastructure necessary to manage waste at island level and ensure composting is undertaken in the island. After completion of upgrading of IWMC, it will facilitate the island council to smoothly manage waste in Eydhafushi under current arrangements.

The council already has recruited staffs that are even now managing waste in the IWMC site, while waste collection services are provided 2 vehicles, one of which is leased from a third party.

Training on composting for IWMC staffs have already been provided, while a refresher will be covered through MCEP after completion of the IWMC. A community mobilization program is planned for by the MCEP team Waste that is not manageable at the island level needs to be stored and regularly transferred to Zone 2 RWMF. All civil works of the project are expected to be completed within 6 months.

Environmental impacts of the project were identified and the significance of each impact assessed using standard methods. Majority of the impacts envisaged for the project are minor to moderate in nature, while there are some very significant positive impacts from the project. The project is expected to bring numerous economic benefits to the island community, in additional to environmental and public health related benefits. No permanent negative impacts are likely to occur as a result of the project as the project does not involve any disruption to the terrestrial or marine environment.

ސާރާ ޚުލާސާ

މިރިޕޯޓަކީ ބ. އަތޮޅު އޭދަފުށީގައި ކުނި މެނޭޖްކުރާ ސެންޓަރު އަޕްގްރޭޑް ކުރުމުގެ މަޝްރޫޢަށް ބިނާކޮށް ތައްޔާރުކުރެވިފައިވާ 'އެންވަޔަރަމަންޓަލް އެންޑް ސޯޝަލް މެނޭޖްމަންޓް ޕްލޭން' އެވެ. މިމަޝްރޫޢަކީ ވޯލްޑް ބޭންކުގެ ހިލޭ އެހީގައި ކުރިއަށްގެންދާ 'މޯލްޑިވްސް ކްލީން އެންވަޔަރަމަންޓް ޕްރޮޖެކްޓް (އެމް.ސީ.އީ.ޕީ)ގެ ދަށުގައި ކުރިއަށް ގެންދާ މަޝްރޫޢެކެވެ. މިމަޝްރޫޢުގެ މައިގަނޑު މަޤްސަދަކީ ހަރުދަނާ ކުނި މެނޭޖްމަންޓް ނިޒާމެއް ޤާއިމުކުރުމަށް ބޭނުންވާ ވަސީލަތްތަކާއި، ފަންނީ ޤާބިލުކަން ރަށުގައި ބިނާކޮށްދިނުމެވެ. މިގޮތުން ރަށުގެ ކުނި ހަރުދަނާ ގޮތެއްގައި މެނޭޖްކުރެވޭނެ ގޮތް ހަމަޖެހިގެންދާނެއެވެ.

މިރިޕޯޓް ތައްޔާރުކޮށްފައިވަނީ އެންވަޔަރަމަންޓަލް ކޮންސަލްޓަންޓް އަލީ މުސްޠަފާއެވެ.

ބ. އޭދަފުށީގައި މިހާރުވެސް ކައުންސިލްގެ ފަރާތުން ގޭބިސީތަކުން ކުނި ނަގާ މަސައްކަތް ކުރިއަށް ގެންދެއެވެ. ނަމަވެސް މިމަސައްކަތް ކުރިއަށް ގެންދިޔުމަށްވެސް އެކަށީގެންވާ ވަސީލަތެއް ނެތެވެ. މީގެ މައިގަނޑު އެއްސަބަބަކީ މިހާރު ޤާއިމުކޮށްފައިވާ ކުނި މެނޭޖްކުރާ ސަރަހައްދު، ތަރުތީބުކޮށްފައި ނުވުމާއި، ކުނި ބަހައްޓާނެ ތަނެއް ނެތުމެވެ. އަދި ކުނި ގިނައިން އަންދާ ކަމަށްވާތީ ރަށުގެ މާހައުލަށް ހުރި ނުރައްކަލަކީ ވެސް ބޮޑުކަމެކެވެ. އަދި ކުނިބާނެ ޖާގަ ނެތުމުން ރަށުގެ ގިނަ ސަރަހައްދުތަކެއްގައި ކުނި އުކާލައިގެން ހުރުމެވެ. އަދި މިގޮ ތަކެތި އަންދާލާތީ ވެސް ވަރަށް ގިނަ މީހުންނަށް ދުމުގެ ސަބަބުން އުނދަގޫ ކުރިމަތިވެއެވެ. އަދި އެހެނިހެން

ފޮތުތަކާ ގުޅުންހުރި ގެދޮރުތަކުގެ ފާސްކަނޑުތަކުގައި ކުނިކޮށްލާ ތަންތަނުގައި ކުނި ލައްވާ ގޮތް ދަށްދެކެވޭ ކަންކަމުގެ ތެރެއިން ކުރިއަށް ގެންދާ ކަންކަމެވެ. ތަކެތި ގެންނަ ގޮތް ބަލާ ގޮތުގައި ކުނި ލައްވާ ތަންތަނުގައި ކުނި ލައްވާ ގޮތް ބަދަލުކުރުން ގެންނަ ގޮތަށް ބަދަލުކުރުން ކުރިއަށް ގެންދާ ކަންކަމެވެ. ކުނި ލައްވާ ތަންތަނުގައި ކުނި ލައްވާ ގޮތް ބަދަލުކުރުމުގެ ތެރެއިން ކުނި ލައްވާ ގޮތް ބަދަލުކުރުމަށް ގެންނަ ގޮތަށް ބަދަލުކުރުން ކުރިއަށް ގެންދާ ކަންކަމެވެ.

ގޮތުން ދެނެގަތުމުގެ ބަދަލުތައް އަސަރުކުރާ ތިމާވެށްޓަށް ނިމުމަށްފަހުވެސް، އަދި ދާއިރު، ކުރިއަށް މަސައްކަތް މިމަޝްރޫޢުގެ
އެކި އުފެދޭނެ ތެރެއިން މަޝްރޫޢުގެ އަދި ހުށަހަޅާފައެވެ. ވަނީ ކުރިއަށްގެންދިއުމަށް ޕްރޮގްރާމެއް މޮނިޓަރިން އެންވަޔަރަމަންޓަލް
ނިޒާމެއްވެސް ހުށަހަޅާނެ ޝަކުވާ ބެހޭގޮތުން ސެންޓަރާއި މެނޭޖްމަންޓް ވޭސްޓް އައު އަދި މަޝްރޫޢާއި ހައްލުކުރުމަށް، މައްސަލަތައް
ތެރެއިން އުސޫލުތަކުގެ މިރިޕޯޓުގައި ކަންކަން މިހުށަހަޅާފައިވާ މިރިޕޯޓުގައި ކަމުން އެހެން ކުރެވިފައެވެ. ޤާއިމް ވަނީ
ކަންކަމެވެ. އިތުރުވެގެންދާނެ ފައިދާތައް އަދި ކުޑަކޮށް ގެއްލުން ލިބިދާނެ ސަބަބުން މިމަޝްރޫޢުގެ ގެންދިއުމަކީ ކުރިއަށް

1 INTRODUCTION

1.1 BACKGROUND

This Environmental and Social Management Plan (ESMP) report has been prepared in order to meet the requirements of Clause 5 of the Environmental Protection and Preservation Act of the Maldives to formulate a management plan for the proposed Island Waste Management Centre (IWMC) in B. Eydhafushi.

The proponent of the project is the Ministry of Environment (ME). The beneficiary or the end users are the community of B. Eydhafushi, represented by the Island Council. The consultant is Mr. Amir Musthafa.

ESMP is undertaken to study and determine the environmental and social impacts related to a project and to propose mitigation measures and how best to manage the project from an environmental point of view. ESMP is at a lower tier compared to an EIA and does not include high level surveys of the existing environment and in depth assessments. Generally ESMPs are carried out for projects with a smaller scope compared to EIAs.

The scope of works proposed for this project includes the construction of a waste management site in the island and the entire waste management operation in the island.

The ESMP provides a framework upon which the proponent together with the end user, the island community represented by the island council can develop and implement integrated sustainable solutions based on the framework.

1.2 THE PROPONENT

The project is being proposed by Ministry of Environment (ME). The Ministry is given the mandate of national waste management, which includes making policy and guidelines in addition to implementation of physical projects at site.

The Ministry is involved in the development of infrastructure required for waste management at island level and supply of required equipment. After construction of the IWMC, responsibility for the operations of the center lies with the respective island council. The center should be operated consistent to the Island Waste Management Plan devised by the island council and approved by EPA.

1.3 CURRENT WASTE MANAGEMENT PRACTICE AND JUSTIFICATION FOR PROJECT

Waste Management Practices are already established in the island. However, it is not very advanced as the most significant activity is only waste collection from households. Currently there is very limited waste segregation in the island, both at household level and at the IWMC and mismanagement of waste is prevalent.

There is a massive waste stockpile accumulated in the island right next to the existing IWMC. Both the island council and the island community regards this stockpile as one of the main reasons the island has not been able to properly manage waste. One of the key issues raised during the stakeholder meetings was that there needs to be a consistent mechanism in place to regularly transfer waste out of the island.

Open burning of waste is also currently practiced in the island. In addition to the negative impacts due to the fumes this generates, the existence of the landfill creates additional issues as well. During rainy seasons, there is bound to be leachate produced in the area which would get seeped to the ground thereby impacting the ground water aquifer. Furthermore, as the area does not have any boundary, waste is accumulated all around the site with some waste even trespassing beyond the revetment line and into the lagoon.

Regarding the existing IWMC site itself, the site is in poor condition as well and need almost complete replacement. The boundary fence area is completely broken and roofing has been fully rusted as well. And waste dispersion towards the lagoon side is also prevalent due to the lack of a proper boundary and the close proximity of the site to the revetment line. With respect to waste management machinery, the machinery currently at the site all have minor damages and need to be fixed to restart operations. Furthermore, the island council has reported that the existing metal compactor capacity is not sufficient for the amount of waste generated in the island and was regarded as the most important machinery needed for the new operations. A waste transfer vehicle was also cited as an urgent addition as one of the vehicles is currently leased from a third party and the council has been incurring a huge financial burden to operate the vehicle.

Once the upgrading of IWMC is completed, it will facilitate the island council to smoothly manage waste in B. Eydhafushi under current arrangements. This project will provide the basic infrastructure for management of waste at the island level and ensure composting is undertaken at the island. Therefore the current practice of dumping food waste to the lagoon can also be stopped. The waste

that is not manageable at the island level will be stored at the IWMC and transferred to a regional facility periodically.

Solid Waste Management is a priority sector for the Maldives due to the fact of high economic and social dependence on a healthy marine environment. In recent years there has been a significant increase in the magnitude of waste management problems throughout the country for a number of reasons, including but not limited to population increase, changing lifestyle, dependence on importation, coupled with the environmental challenges brought about by the growing tourism industry. Although tourism industry is not developed in Eydhafushi, once proper waste management is in place, it is an area the island community can further explore. Therefore, the IWMC upgrade and improvement in operation will have numerous socio economic benefits to the community in additional to the positive environmental impact.

1.4 AIMS AND OBJECTIVES OF ESMP

This ESMP aims to ensure the environmental and social safeguards have been taken into consideration for the construction of the IWMC and are in compliance with the existing relevant laws and regulations of the Maldives. The ESMP achieves this by completing the following objectives:

- Describe the project scope in detail
- Identify the policy and legal requirements for IWMC
- Briefly describe the local environment in which the IWMC will be setup
- Assess the environmental impacts of establishing the IWMC both on the short term and the long term
- Provide mitigation measures for any potential significant impact
- Provide possible institutional arrangements for managing environmental and social impacts.
- Provide a clear grievance mechanism for the end users.
- Setup of monitoring plan to ensure the sustainability of the project

1.5 METHODOLOGY

The major findings of this report are based on qualitative and quantitative assessments undertaken during site visits and reviewing existing literature in December 2019.

Available long-term data were collected from available sources, such as long-term data on meteorology and climate from local and global databases. Long-term data on the project site is lacking. Site specific terrestrial information is provided based on the conditions during site visit.

Consultations were carried out with the proponent to identify the exact scope of works before site visit. Further consultations were carried out during site visit with the end users.

Existing literature related to the type of project being undertaken were reviewed. These include:

- National environmental and social laws and policy guidelines.
- Similar Environmental Management Plans for IWMCs
- International best practices for IWMC management

Based on general and local data, and existing literature, site specific impact assessment were carried out. Mitigation and management tools were developed based on these impacts.

Similar Environmental Management Plans reviewed include the following:

- EMP for proposed development of IWMC in HDh. Nellaidhoo (Musthafa, 2019)
- EMP for proposed development of IWMC in Ha. Baarah (Musthafa, 2019)
- EMP for proposed development of IWMC in AA. Bodufulhadhoo (Musthafa, 2019)
- ESMP for the proposed upgrading of IWMC in N. Holhudhoo (Zuhair, 2019)

1.6 LEGISLATIVE AND REGULATORY CONSIDERATIONS

1.6.1 LAWS, REGULATIONS AND GUIDELINES APPLICABLE TO THE PROJECT

There are numerous regulations which instructs the establishment of proper waste management procedures in Maldives islands and development of waste management centers. A summary is provided in the following table.

Name	Requirement	Key components covered	Relevance to the project	Main regulatory body
Acts				
Environment Protection and Preservation Act (Act no. 4/93)	National	Mandates that Environmental approvals are obtained for all development project that may have an undesirable impact on the environment; addresses the disposal of oil, waste and toxic gas or any substance that may harmful effects on the environment within the Maldivian territory; covers non-compliance penalties.	Apply with respect to the social, economic and environmental impact of the project in the constructional and operational phase of the project.	Ministry of Environment
Maldivian Land Act	National	Encompasses the issuing, receiving, owning, selling, leasing, utilizing and using Maldivian land.	Apply with respect to utilization of chosen site location for the intended purpose	Ministry of National Planning and Infrastructure

Employment Act (02/08)	National	Encompasses the thresholds and limits for workers, and amenities to be provided to workers	Apply with respect to the amount of hours workers should be mandated to work at site including the following ➢ max. 48 hrs/week, ➢ consecutively work 6 days a week with 24 hour break) ➢ consecutively work max 5 hrs, and then 30 minute break is mandatory Furthermore, applies to when salary is required to be paid (once a month for permanent staff) and that minimum 3 meals should be provided daily.	Ministry of Economic Development
Immigration Act (01/07)	National	Main Act mandating guidelines and regulations with regards to immigration into the Maldives	Requires all expatriate workers to have proper work visas and work permits	Maldives Immigration
Regulations				
Environmental Impact Assessment 2012 and Amendments	National	The regulation sets out criteria to determine whether a development proposal is likely significantly affect the environment and is therefore subject to Environmental Impact Assessment or Environmental Management Plan	The developer had submitted a screening form to EPA to determine which level study is required as directed	Environmental Protection Agency

			by the Regulation. EPA had instructed to carry out an ESMP.	
Waste Management Regulation	National	Addresses safe disposal, disposal guidelines and specifications for wastes. Sets standards for waste collection, transfer, treatment, storage, waste site management, landfills and managing hazardous waste. Standards and permits required for waste transport on land and sea, including transboundary movements Provides details on waste management practices, approvals, license and penalties. Defines reporting and monitoring requirements and procedures. Defines procedures to implement WMR and penalties for non-compliance.	Apply with respect to management of waste during the construction and operational phase	Ministry of Environment / Environmental Protection Agency

Regulation on cutting down, uprooting, digging out and exporting of trees and palms from one island to another	National	Covers the requirements for cutting down, uprooting, digging out and export of trees and palms from one island to another without compromising the environmental integrity of the Maldivian islands.	Does not apply as vegetation would not be required to be removed from the proposed construction site as it is a newly reclaimed land	Ministry of Environment and Energy/ Environmental Protection Agency
The Environmental Liability regulation (Regulation 2011/R-9)	National	Provide the basis for levying fines on environmentally damaging violations to avoid environmental deterioration, extinction of biological resources, environmental degradation and wastage of natural resources.	Apply with respect to the environmentally relevant aspects of the construction and operation phase	Ministry of Environment and Energy/ Environmental Protection Agency
Guidelines, Standards and Policy Guidance				
Land Use Planning Regulations and Guidelines	National	Provides land use instruments such as zoning and quotas to be allocated. LUP is prepared either by the MNPI/MLSA or the island council in consultation with MNPI/MLSA	Apply for this project as site has to be allocated in a location that has been zoned for utilities and municipal zone LUP for Eydhafushi has been approved by MLSA	Ministry of National Planning and Infrastructure / Maldives Land and Survey Authority

National Biodiversity Strategy and Action Plan	National	Aims for the Conservation of biological diversity and sustainable use of biological resources; capacity building for biodiversity conservation through a strong governance framework and improved knowledge and understanding; fostering community participation, ownership and support for biodiversity conservation.	Does not pply with respect to the construction phase of the project as the project is in newly reclaimed area. Does apply for the operational phase of the project as proper solid waste management is important to mitigate degradation of biological local eco systems.	Ministry of Environment / Environmental Protection Agency
Environmental Guidelines for Site Selection of Waste Management Centers (2017)	National	The minimum environmental criteria for the site selection process to establish waste management centers in the inhabited islands of Maldives.	Apply with respect to site selection. Following Clauses need to be especially considered for the specific site: C. (1) Should not be prone to inundation of sea water. C (3) Should not be subjected to flooding C (4) Not near an area prone to erosion	Environmental Protection Agency
National Policy on Health Care Waste Management (2016)	National	Stipulates that all health facilities have to be responsible for the safe management of health care waste in an environmentally sound manner	The IWMC should not accept healthcare waste as it has to be	Ministry of Health

		that minimizes risk to the community and the staff involved in its management.	managed separate from the general waste directly at the health center.	
Waste Management Policy	National	Covers polluter pay principles; integrated solid waste management; Best Practice Environmental Option (BPEO), Best Available Technology Not Entailing Excessive Costs (BATNEEC); proximity principle and private sector participation.	Apply with respect to management of waste during the construction and operational phase	Ministry of Environment and Energy/ Environmental Protection Agency
Regulation on Sand and Aggregate Mining	National	The regulation further addresses the considerations which need to be made during sand mining in lagoons and deep sea areas of Maldives.	Mined sand and aggregates not to be used for any part of this project	Ministry of Environment / Environmental Protection Agency
Coral Mining Regulation	National	Coral mining from house reef and atoll rim has been banned through a directive from President's Office dated 26 September 1990	Mined corals are not be used for part of this project.	Ministry of Environment / Environmental Protection Agency
Law on Cultural and Historical Places and Objects of the Maldives	National World Bank	Requires stakeholders to develop provisions for managing chance finds through 'a chance find procedure' which will be applied in the event that cultural heritage is subsequently discovered.	The client and in turn the contractor shall not disturb any chance find further until an assessment by competent professionals is made.	Ministry of Arts, Culture and Heritage / World Bank

WB PS8 (2012)				
World Bank Group Environmental Health and Safety Guidelines for SWM Facilities	World Bank	Sets procedures to reduce the risk of accidents and injuries, minimize dust and air quality related impacts, reduce the probability spillage of oil and hazardous substances and leachate on site due to stormwater runoff during operations of waste management facilities.	Adhere to the thresholds and guidelines provided during construction and operations	World Bank

1.6.2 APPROVALS AND PERMITS

There are 2 main permits that is required nationally before any IWMC can be setup and operational at any site. These include the following.

Land use consent

The Maldives Land and Survey Authority (MLSA) and the Island Council has given approval to use the allocated site for Waste management purposes. MLSA approval is provided in the Annex. There were no issues related to land acquisition and resettlement as the land is a newly reclaimed land.

Approval to construct and operate IWMC

Decision Statement by EPA will be needed to get the environmental clearance to construct and operate the Island Waste Management Center (IWMC)

2. PROJECT DESCRIPTION

2.1 OBJECTIVES OF THE PROJECT

The IWMC is aimed at addressing the solid waste management problem faced by the island community in B. Eydhafushi. For waste management at island level, the establishment of an IWMC is a prerequisite as identified in the National Waste Management Policy 2015.

The IWMC design and construction has to meet regulatory requirements stipulated in the Solid Waste Regulation 2012.

The proposed construction of IWMC will improve the overall waste management system of the island.

The overall targets of island waste management projects include the following:

- Alleviate the waste management issues faced by the island community.
- Facilitate island council to establish rules and regulations for waste management through the development of the required infrastructure.
- Assist island council to establish a sound waste collection system through fee collection, which in turn can contribute to a part of the entire waste management cost.
- Reduce the waste produced and to use reusable materials.
- Aggregate all waste that is produced and dispose of it properly.
- Raise awareness of the community regarding the economic benefits of keeping the island clean.

2.2 SITE LOCATION AND LAND USE PLANNING

The proposed IWMC site is located in B. Eydhafushi. Eydhafushi is located at geographic coordinates 5° 6'12.16"N, 73° 4'14.69"E on the south eastern rim of Baa Atoll. The island is located in between popular resort island Soneva Fushi and uninhabited island, Maddoo Eydhafushi is the capital island of Baa Atoll. Baa Atoll consists of 13 inhabited islands. The Atoll has been designated as a UNESCO Biosphere Reserve in June 2011.

B. Eydhafushi is recorded to be 30.9 Ha big. The population of the island as recorded by the last Census in 2014 is 2,530. Based on registered population data from 2017, the population is recorded at 3,339. The island location is given below.

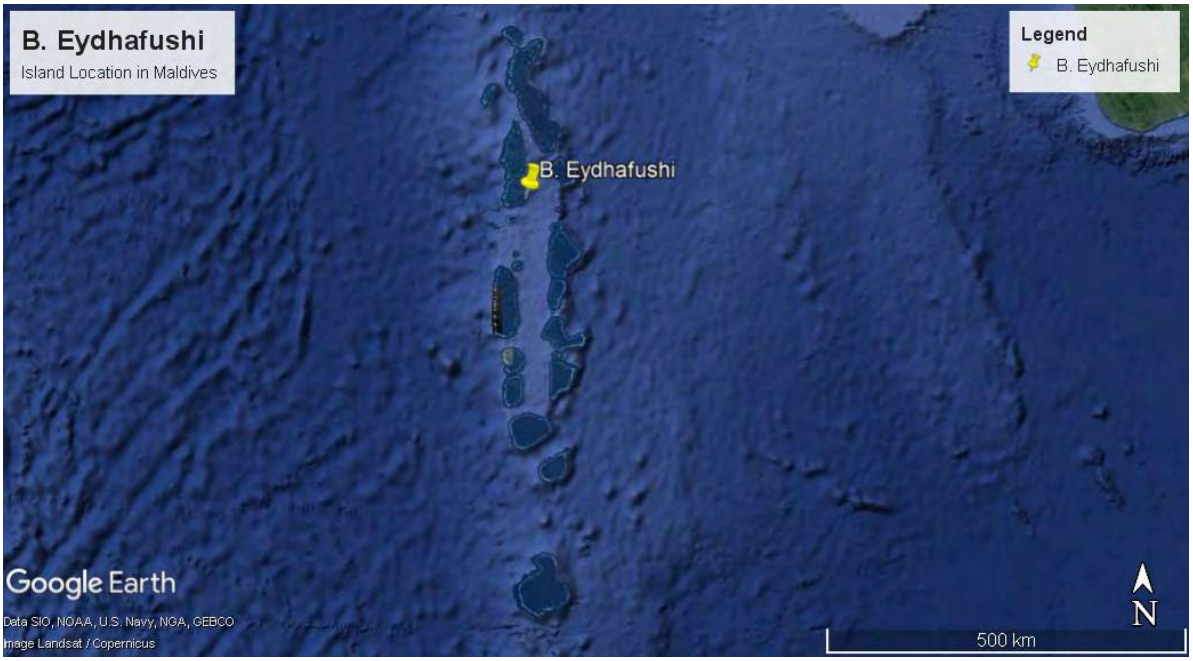

Figure 1 B. Eydhafushi located in the maldives

Figure 2 islands of baa atoll

Figure 3 B. Eydhafushi satelite image

Eydhafushi is a semi urbanized island with minimum vegetation and has recently undergone a major reclamation project. The existing IWMC site and the proposed expansion is located in the reclaimed area. The Land Use Plan (LUP) for the island has been finalized and approved by the Ministry of National Planning and Infrastructure. The site location in the LUP is given below.

Figure 4 The IWMC located on the lup

The Google Earth satellite Image close up of the site and the waste stockpile area is presented below

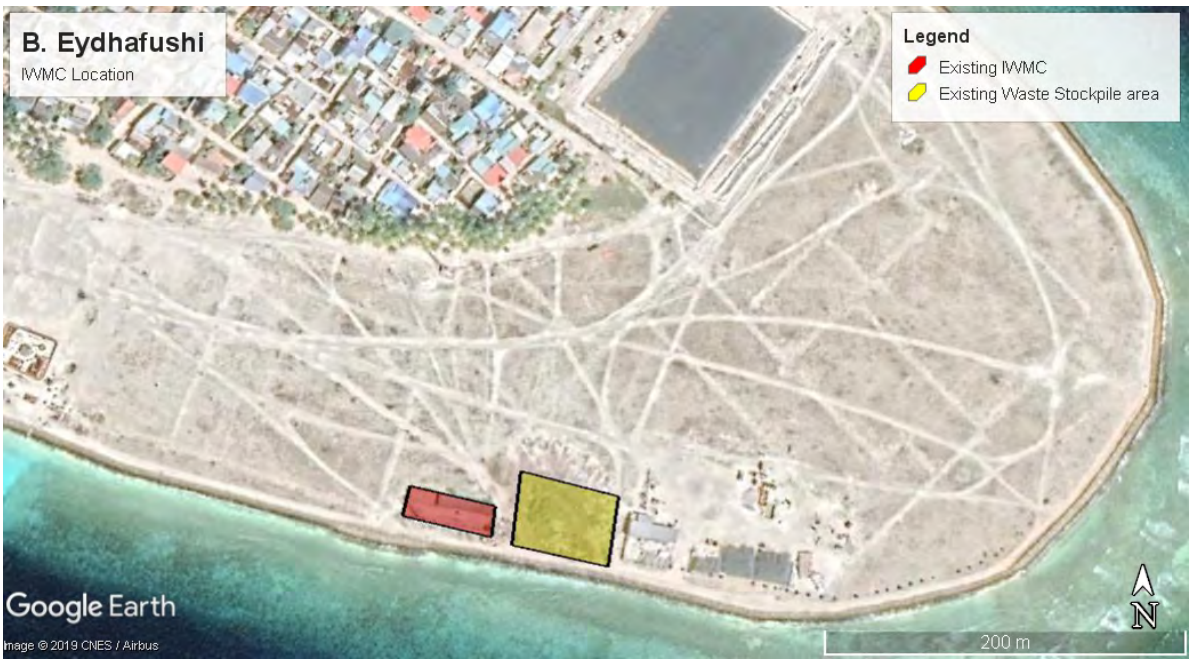

Figure 5 Existing IWMC site (red) and Waste Stockpile Area (yellow)

2.3 EXISTING FACILITY AND JUSTIFICATION TO UPGRADE

A 784 sqm IWMC was developed in B. Eydhafushi in 2015 under the world bank funded Maldives Environmental Management Project (MEMP). This IWMC located at the reclaimed area in the southeast side of the island was developed using roofing sheets and boundary fence with no walls being constructed except fence footings. Due to the materials being used for construction coupled with the center being located just 8m to the revetment laid at this side, the roofing sheets and the surrounding fence had undergone severe rusting and damages.

Moreover, the size of the existing IWMC is not sufficient to cater for the population of the island. It is estimated that 2,661 kg of waste is generated in Eydhafushi daily. Due to lack of sufficient storage space at the existing IWMC, the adjacent remote land is being used by the council to dispose waste. Waste collected in this area is burnt daily, which had resulted in the generation of a huge pile of waste mixed with ashes.

Therefore, the IWMC of Eydhafushi is in urgent need of expansion and upgrading to a contemporary design to cease open burning and create much needed space to manage waste in a sustainable manner. At present, the existing IWMC is not used for waste management. Aluminum cans are found segregated and stored in the existing collection bay area and on top of the compost pad.

2.4 PROPOSED UPGRADING WORKS

Through the upgrading project the following key works will be undertaken at the site:

- South side boundary will be moved inwards up to existing collection bay which will increase the offset from the revetment from 8m to 20m.
- The existing fence and roofing sheets will be removed.
- A 2.5m high boundary wall will be constructed surrounding the IWMC, while collection bay, equipment room, store and office will have 4m highwalls.
- Rust proof materials will be used for the new roofing.
- The existing compost slab and adjoining leachate well will be retained.
- A new collection bay, equipment room, store, office, toilet with wash area and resting area will be developed to a contemporary design.
- The collection bay will be constructed at the side of the IWMC furthest to the revetment.
- A new well will be constructed adjacent to the toilet and wash area to provide water to the facility during operations. The existing well will not be utilized since it is located outside the proposed project boundary.
- Leachate well will be repaired and storm water drains will be constructed to manage leachate and mitigate stormwater runoff during operations.
- Green buffer will be developed at the south adjacent to the boundary of the IWMC at the space created due to shifting.

The layout of the proposed design for the IWMC encompassing these changes is given below.

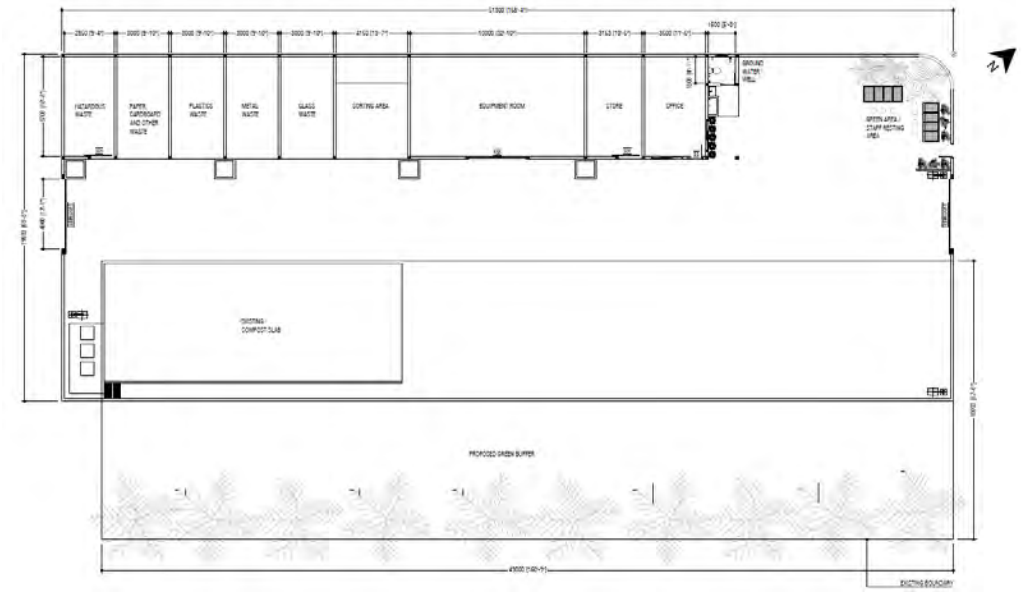

Figure 6 Layout of the proposed Development

2.5 SITE CLEAN UP AND PREPARATION

The existing structure will be cleared as the first step in the site preparation works. There are a significant amount of inorganic waste stored at the IWMC currently, which is to be removed and transferred to the nearest RWMF through the routine collection services provided by WAMCO prior to commencement of works.

However, in case RWMF is not able to receive waste and/or WAMCO fails to provide collection on time, all the accumulated waste is to be stockpiled and removed from the project site during demobilization.

The same applies to Building and Construction waste. Once the site is cleared, most of the existing structure will be demolished as preparation for the new structure.

2.6 SITE ACCESS

Site access will be from the east of the island towards the project site. More details on the access road is presented in the Existing Environment Section. Vegetation removal is not expected to provide access to site as there is already an existing road.

The site will be fenced, at areas where there is no structure. Access to the IWMC will be via a gate. The gate signage would be installed by the island council prior to commencement of operations to give direction and notice to the public. This includes the conditions of entry, opening hours, types of wastes accepted at the facility, safety precaution to be taken before entering site, speed restrictions for vehicles.

Construction team members will be accommodated in island existing households. Material and equipment will be kept at the IWMC site.

2.7 ROAD CLOSURE AND TRAFFIC RE-ROUTING

Road Closures will not be required during the construction works as the site is at the southern end of the island, away from residential areas

2.8 DETAILS OF WORK TO BE CARRIED OUT

Construction of new perimeter wall, collection bay, store room, hazardous waste storage area, equipment room, office, toilet with wash area and resting area as shown in the drawing. The existing compost slab will be used as the floor screed of the collection bay.

- Concrete Works:
    - Provide 75mm concrete floor screed for areas where required.

- Repairing of leachate collection well and construction of rainwater drain pits.
- Concrete for perimeter wall column and beam.
- Foundation for flood light pole.

- Doors and Windows: Installation of doors and windows where necessary in equipment room, hazardous waste storage area, store room, office, toilet etc.
- Roofing: Lysaght roofing sheet (maroon color) for collection bay area, including all necessary laps, fastening, fixtures and sealing of joints. Existing roofing sheets of the damaged IWMC will not be reused as it is severely rusted.
- Septic Tank: Construction of septic tank for flush toilet, which should include connection of flush toilet to the septic tank, provision of appropriate drain, bends, fittings and others as maybe necessary.
- Rainwater Darin Pits: Construction of rainwater drain pits, which should include the connection of downpipes to the drain pits, providing gravel, bends, fittings and others as maybe necessary.
- Construction of Groundwater well.

2.9 CONSTRUCTION MATERIALS AND MACHINERY

The construction materials to be used are detailed in the Inputs table. All the materials such as cement, Aggregate and Sand will be delivered to site based on consumption. Steel and Plywood will be stored at the contractor's warehouse. Barb bending and carpentry work will be prefabricated at company work yard and transported to site.

Concrete mixers will be used. Generally ready mix concrete made on site will be predominantly used.

2.10 ELECTRICITY

As the contractors staff will be placed in existing houses, existing island water and sewage options would be used. Rainwater collection is not part of the project. However, a groundwater well will be constructed and groundwater will be used at the site. The well will be enclosed at all times to ensure no contamination occurs.

Electricity will be provided by FENAKA. Backup generator will not be used at the site. 3 phase power point and single phase power point will be connected. As electricity is already connected to the existing IWMC in the same location, a new cable need not be laid to the new IWMC.

Supply and installation of 3 phase 15A power sockets, ceiling mount LED lights, switches, ceiling fans, 9000BTU AC for office, exhaust fans for equipment room and hazardous waste storage area. 13 A power socket will be provided for well water pump inside store room. A 200 W flood light will be

provided to illuminate the waste yard. All switches will be weather proof. Wall mounted exhaust fans will be placed. The site will be well lit using 100W energy saving light.

2.11 WATER AND PLUMBING

Internal water piping will be laid to connect water to the center. A water pump will be installed to connect water to the toilet, wash area and compost pad area from the groundwater well. Wash area and the compost pad area will be supplied with 2 water taps each to withdraw water.

Water required for composting during operational phase will be drawn through the well. Construction of fresh water pipe work including all pipe work, vent pipe work, fittings, valves, etc including outlet pipes to PVC taps, plumbing to toilet and wash area, and fixing toilet fittings and floor drains.

2.12 SUPPLY AND INSTALLATION OF FIREFIGHTING EQUIPMENT

Fire safety is an important aspect of the project to ensure the sustainability and resilience of the IWMC. Supply and installation of the following firefighting equipment is part of the project.

- 50KG DCP Trolley for collection bay
- 50LTR Foam Trolley for collection bay
- Wet Chemical 6Ltr with Cabinet for hazardous waste area
- Water 9Ltr with Cabinet for Office Area – Outside
- CO2 2KG with Cabinet for Office Area - Outside

2.13 GENERAL SAFETY PRECAUTIONS AT SITE

General precautionary methods applied for virtually all similar projects in island environments will be implemented. Precautions will be taken for safety of workers during the construction stage. Barricades, warning signs or devices will be placed on the road around project site.

All workers are given instructions about the health and safety at site. The Site Engineers and Supervisors will give a brief on daily basis before the work starts to all workers and all proper health and safety precautions will be implemented on site. Safety signs will be used on site, some of which are shown in the following Figure.

Personal protective equipment will be available for all the workers, for hazardous dust or chemicals, or high working areas. Emergency first aid kit will be at site for minor injuries. First aid kit will be provided in the site office, where all safety clothing and equipment will be held. All workers and personnel entering the premises will be given hard hats and safety shoes.

Figure 7 Some safety signboards to be used on site

2.14 ACCIDENT AND HAZARD SCENARIOS DURING CONSTRUCTION

Assessment for accident and Hazard is given below.

The following hazard and accident assessment is based on the following 3 stages of the building lifecycle, including construction, use, and operation. Risk levels & probability are qualitatively assessed based on the following parameters; High, Moderate and Low.

Table 1 Accident and Hazard Risks

Performance Consideration	Risk Level	Risk Probability	Responsible Personnel
Presence of hazardous substances, which impact on construction work eg: asbestos, SMF, hydrogen chloride, etc.	High	Moderate	Project manager, Site Supervisor
Construction workers will be protected from / proximity to HV electrical, high risk energy sources	High	Moderate	Site Supervisor

Traffic / pedestrian risks are minimised for planned loading & unloading for construction vehicles	Moderate	Low	Site Supervisor, Project Manager
Neighbourhood construction considerations	Low	Low	Project Manager,
Sufficient space is planned for access & to install / major fixed plant or equipment or specialised equipment, plant rooms	Low	Moderate	Project Engineer
Floor loading design has been assessed by engineer to be able to accommodate heavy equipment / plant to be installed in future	Moderate	Moderate	Project Engineer
Access to roof tops – safe access to within safety zone, minimised manual handling of material, equipment tools.	Low	Moderate	Project Engineer
Accessible roof cleaning methods	Low	Moderate	Project Engineer
Accessible dirt or rubbish collection points	Moderate	Moderate	Project Engineer Maintenance Officer

High risk scenarios provided by the above table, along with specific mitigation is given below.

Presence of hazardous substances, which impact on construction work eg: asbestos, SMF, hydrogen chloride, etc. While the risk level is high, the risk probability is low as material including such substances will not be used. As a mitigation measure, this has to be ensured during material procurement. Moreover, hazardous substances should all be in sealed containers. It should be checked which substances can be stored together or not; and stored in separate containers accordingly.

Construction workers will be protected from / proximity to HV electrical, high risk energy sources While the risk level is high, the probability is given as moderate. Proper insulator gloves and protective cloth are to be worn by workers in close proximity to high risk energy sources. Moreover, it has to be ensured that these are not exposed at any given time.

2.15 PROJECT MANAGEMENT

The project is proposed to be managed by the contractor. Procurement of a contractor will initiate once the ESMP report is submitted.

All labourers will be accommodated at houses rented from the island.

Machinery and materials will be permanently stored at the proposed waste management site and surrounding area. All operations, work planning for the on-going construction work will be done at Site Office; a space rented from a residential house.

Council elected members would be checking daily progress and Site would be monitored and evaluated mid construction and end of construction upgrade. Council will report to the Ministry if there are any issues. Ministry project team would inspect the site before taking over and commencing operations.

2.16 WORK SCHEDULE

The project is expected to commence soon after the approval of this ESMP report. The site is required to be completed within 180 days of project physical works commencement.

Initially the architectural and structural design works had been completed and approved before undertaking the ESMP. Once the ESMP is approved, site mobilisation will take place.

The detailed expected project work scheduled is attached in the Annex.

2.17 IWMC OPERATIONS

The main activities of the IWMC will include the following:

- Receive domestic waste
- Receive commercial waste and waste from public institutions
- Separation of received waste
- Storage and transfer of waste
- Log and keep records of waste
- Retrieval and redistribution of recyclable resources
- Leachate management
- Composting

Permanent staff would be hired by the council to be stationed at the IWMC for security, management and logging records. Staff at the IWMC would ensure the following

- Providing proper direction to individuals bringing waste to site

- Ensure security of site
- Recording any issues of where the public keep waste outside the premises
- Supervise disposal of waste
- Record and keep log of waste transferred and deposited
- Proper segregation of the incoming waste
- Ensure waste is sufficiently compacted
- Ensure waste transfer vehicles are enclosed
- Management of weed, pests, fire and litter at site
- Supervise the waste burning process
- Leachate Management
- Engage in composting

Waste burning will continue during the initial phase of the project and will only stop once the regional waste management site is operational.

2.17.1 SUPPLY OF WASTE MANAGEMENT EQUIPMENT AND PPES

The project will provide one waste management equipment and a collection vehicle for all upgrading and new centers to be developed in Zone 2 under MCEP. Eydhafushi Council's was consulted regarding this. T

he equipment council prefers in addition to a transfer vehicle is a waste compacting machine.

The project team is currently in the process of finalizing the list of equipment and vehicles and their specifications. These items will be procured in bulk as they have to be sourced internationally and hence will not be included in the BOQ of individual contracts.

2.17.2 WASTE TRANSFER TO IWMC

Currently a 2 tonne pickup and a 1.5 tonne pickup both are used for household waste collection. However, the 1.5 tonne vehicle is leased from a third party and results in a high cost burden to the council.

Therefore, an additional 2 tonne pickup needs to be procured and dedicated for waste transfer works. A part time or full time driver and assistant would need to be hired for waste collection. The vehicle would require to be covered and partitions should be placed in order to maintain waste segregation during transfer.

It is expected that the vehicle would make 1 round around the island during morning hours for daily waste collection. Further waste collection can occur on an ad hoc basis based on requests to remove bulky wastes for a set fee.

Procurement of a vehicle is regarded as the priority investment for equipment/machinery by the island council.

2.17.3 WASTE ACCEPTANCE

All waste streams that enters the IWMC will be inspected before disposal to ensure they are among the accepted waste streams. Their entry will be recorded. If the load is suitable for the disposal, the drivers will be subsequently advised as to which section of the IWMC each component of their load should be taken.

The IWMC operators will not permit or allow any waste to be received at the premises except for those expressly referred to in the EPA approved Island Waste Management Plan (IWMP). The materials listed below will not be accepted at IWMC. Council staff will be responsible for preventing their acceptance.

- Liquid wastes
- Explosive and flammable materials
- Medical wastes

2.17.4 WASTE SCREENING, SEGREGATION AND HANDLING

Households will be encouraged to sort waste materials at homes. Waste collection service operators will be encouraged by staff at the IWMC entrance to sort waste materials into designated stockpiles or transfer bins at the point of access.

Material suitable for sale in the IWMC is to be identified and placed aside for processing.

All staff members that monitor the site entrance shall be trained in the identification and classification of waste. New staff will undergo at least one week of supervised training in the identification of materials not accepted at the IWMC. Unacceptable loads of waste will be refused entry to the site. Waste handling will be undertaken in accordance with relevant government guidelines and standards.

2.17.5 LOGGING WASTE RECORDS

Staff at the gate will inspect all waste loads that come into the IWMC. A volumetric survey will be used for the recording of quantities of wastes received. This will involve the Council surveyors surveying green waste and scrap metal stockpiles at the end of each reporting period. More details of waste logging and recording is given under Section 8.

2.17.6 WASTE COMPACTION

The IWMC will utilize waste compaction equipment. This is required to ensure that waste is adequately compacted. All the equipment used will be suitable for the small size of the site and relatively low quantity of waste streams.

Currently it is proposed to use compaction for metal cans and plastic bottles while glass material will be crushed. It is not anticipated that new large equipment for waste treatment will be required for the IWMC operation. However, the equipment that is currently at site has minor damages including damaged power cables which needs to be fixed to restart operations. Maintenance and fixing the existing equipment is to be undertaken by the IWMC operator.

2.17.7 MANAGING MIXED USE RECYCLABLES

IWMC staff should direct customers to deposit any mixed recyclables into a large bin near the entrance of the IWMC. The bin will be monitored daily and sorted to identify materials which can be recycled and materials that should end up in the predefined waste streams. Materials that can be reused can be separated and displayed as detailed under Section 5.2.4

2.17.8 MANAGING ORGANIC WASTE & COMPOSTING

The IWMC will accept source separated compostable material. The source separated organics are made up of the following materials:

- Vegetables and fruits
- Bread, rice, pasta, and cereals
- Dairy products and eggs
- Fish Visceral
- Meat and poultry
- Coffee grounds, and tea bags
- Non-recyclable paper
- Certified compostable products

Current practice of food waste dumping to sea will be stopped entirely.

All green waste will be shredded using garden shredder and deposited adjacent to the green waste stockpile once the material is procured and supplied. Volume of deposited green waste should be closely monitored before it is pushed up into the stockpile.

The green waste stockpile shall not exceed the limits set in the composting plan. All works required to keep the stockpile within the size constraints will be conducted by IWMC staff.

Once the stockpiles have reached adequate size, the composting staff will transfer it to the composting slab. At the composting slab, it will be ensured the correct mix ratio is present for effective composting. Composting is undertaken on the slab to ensure no interaction with the terrestrial environment including groundwater aquifer.

Pure food waste, garden waste, wood chips, and to some extent paper are suitable for producing good-quality compost and will be given priority. The temperature of the biomass increases due to the microbial activity and the insulation properties of the piled material. The compost area may be watered to reach the desired moisture content for effective composting. The leachate will be collected separately in the leachate tank.

Once composting is completed, all the product compost will be stockpiled. Compost will be used at site for vegetation. Stockpile space should be closely monitored and would need arrangements for transfer when space constraints are reached.

2.17.9 MANAGING SCRAP METAL

Scrap metal will be separated into ferrous metal and non-ferrous metal.

Ferrous metals will be stockpiled in a separate area. The non-ferrous metals comprising mainly aluminum and copper will be stockpiled separately. All works required to keep the stockpile within size constraints will be conducted by IWMC staff. Public will be restricted from scavenging directly from the scrap metal stockpile. Council will make arrangements for the removal of scrap metal and receive any income from scrap metals.

2.17.10 MANAGING HAZARDOUS WASTE

In general, management of hazardous waste will fall into 2 different phases.

In the initial phase, if the regional waste transfer station is not fully operational, management will be difficult and some types would need to be stockpiled in the island for longer periods before being transported to R. Vandhoo. Moreover, some waste types would need to be burnt in enclosed huts in the island. However, once regional waste transfer station is fully operational with regular routine

collection in place, there shall be no waste burning in the island and waste will be transferred more frequently to the regional center.

Waste that are regarded among hazardous waste such as waste filter oil and chemicals used by FENAKA and any other waste oil collected would be stored in hazardous waste storage in the island and transport to R. Vandhoo once it is fully operational. Waste such as contaminated nappies, sanitation pads etc will also be eventually stockpiled and transported to R. Vandhoo

Medical waste such as syringes and wound dressing would be burnt at the health center. Medical wastes would not be transported to the waste center unless it is autoclaved and sterilized at the Health Center. Ministry of Environment has instructed Health Ministry and related health facilities that any medical waste will be accepted at the IWMCs after it is autoclaved. Health Centers are required to have their own autoclave machinery.

Batteries will be separated and stockpiled separately at the center. Batteries will be removed from the island and transported to R. Vandhoo eventually. All arrangements for the removal of batteries shall be informed to EPA and permission obtained.

2.17.11 LEACHATE MANAGEMENT

Leachate is described as any liquid that when it passes through waste matter extracts soluble and suspended solids or any other component of the material through which it has passed. Therefore at a waste management site, generation of leachate will be high. Leachate management is important to prevent interaction between components of the waste and the underlying geology including the groundwater aquifer. However, at a small IWMC site as proposed, the main form of leachate management is to explore avenues to minimize leachate.

Leachate produced during composting will be collected in the leachate collection well and subsequently released to the sewer network of the island.

2.17.12 WASTE TRANSPORT TO REGIONAL FACILITY

Based on the population and the estimated quantity of waste generated at the island, stored inorganic waste that cannot be managed at island level needs to be regularly transferred to Vandhoo RWMF once every month or two months. The Island Council has signed an agreement with WAMCO for regional collection. Under this agreement regional collection will be provided by WAMCO once a month. At the time of compiling this report, regional collection had been suspended. However, the Ministry in consultation with WAMCO had informed more routine collection is envisaged in the near

future and fully expects collection from B. Eydhafushi before the IWMC upgrading works are completed.

All the waste accumulated at the IWMC will be collected and brought to R. Vandhoo RWMF at the initial round of collection once it is fully operational again.

However, for any future waste material transfer WAMCO will negotiate with the council to amend the contract made with them, where the council will be pre-conditioned to segregate and pack waste according to WAMCO's segregation guideline and bring to the harbor prior to their vessel reaching the island.

2.17.13 SAFETY AND HEALTH DURING OPERATIONS

All staff will be made aware of the potential hazards and risks present at the IWMC. During their initial orientation and training. Training will be undertaken by the Developer, the Ministry of Environment. It will be ensured that the staff are provided with personal protective equipment, by the IWMC operator, in order to ensure the staff are able to perform their duties in a safe and responsible manner.

Signage showing safety on site will be clearly displayed for the public, and staff visiting the site to ensure that safety precautions are adhered to.

Personal protective clothing and equipment would need to be at the site as detailed under Mitigations Section. Earmuffs will be required to be used during noise intensive work. Dust masks should be used when handling organic wastes and hazardous wastes. Safety shoes should be worn at the IWMC at all time. Entry without safety shoes will be prohibited.

2.18 PROJECT INPUTS AND OUTPUTS

Each component of the project has inputs and outputs based on human resources, economic resources, and the environment. However, since the operation is carried out in house, project inputs and outputs are greatly conserved and limited.

The major inputs and outputs associated with the project encompassing all the components, are tabulated below. The most significant inputs are during the construction of the project and the significant outputs are during the operation phase. Table 1 highlights the main inputs, while Table 2 highlights the major outputs.

Table 2 Main inputs from the proposed project

Input resource(s)	Estimated Quantity	Main sources of resource

Construction workers	01 Project Manager 01 Site Engineer 02 - 05 Skilled Foreign Laborers 05 - 10 Non Skilled Laborers 02 Security Staff (24 Hours security)	Contractor's permanent staff. Project staff. Labourers mostly registered workers from Bangladesh.
Machinery and equipment	Excavator Concrete Mixer Dump Truck Loader Bar bender	Contractor's own equipment mobilised to site
Energy supply (during construction)	30kW	From STELCO mains
Construction materials	Masonry blocks, reinforcement bars, sand, cement, aggregate, roofing material, cement boards, PVC conduits, tiles, paint, varnish	Procured in Male' and transported to site on landing craft during mobilisation.
Water supply	Bottled water for drinking. Groundwater used for concrete mixing.	Glass bottles procured and kept at site. Large 15L plastic bottles to be used to refill individual glass bottles to reduce waste.
Maintenance material .	Construction machinery maintenance	Procured from local supplier and mobilised to site

	chemicals and lubricants	
Masonry Blocks (300x150x150)	100,000 No.	Imported from abroad
Accommodation	2-3 houses	Rented from the island.
Operation staff	3-4	From the island community
Electricity supply during operations	-	From the FENKA mains. Distribution box near site
First aid kit	About 3 at site	Procured from local supplier
Fire extinguishers	About 3 at site	Procured from local supplier

Table 3 Major outputs from the proposed project

Products and waste materials	Anticipated quantities	Method of disposal
Waste generated during construction	100 – 200 kg per day	Collected and sorted at site, stocked at site to be attended once IWMC is operational. Food waste dumped to deep sea daily.
Sand from excavation	Limited quantity for single story structure	Re-used at site
Waste oil and grease	Minute quantities	Collected in used containers and transported to waste site
Air pollution	Debris in minute quantities	External influence minimised by site demarcation temporary boundary walls.
Noise pollution	>80 db(A)	Minimised by site demarcation barriers. Ear muffs and safety equipment for workers on site.

3. DESCRIPTION OF THE EXISTING ENVIRONMENT

This section covers the existing environmental conditions of the project site. Since this is an Environmental Management Plan, existing natural environment of the island is not studied in depth. However, important aspects that may affect the execution and sustainability of the project is assessed. Furthermore, components of the existing environment which may have a direct impact from the project is also covered in this Section. These include the following:

- Existing waste management practices in the island
- Unassigned waste dumping
- Proposed site, access road and neighbouring structures
- Coastal modifications
- Existing vegetation at the project site
- Protected areas and Environmentally sensitive areas
- Areas of historic and cultural significance
- Socio-economic environment

3.1 EXISTING WASTE MANAGEMENT PRACTICES

The island does have a waste management center that had been in operation. It was reported that there are over 8 expatriate staff and 1 Maldivian supervisor carrying out waste collection and management in the island. There are 2 vehicles; one that was procured, and one that is leased, both 1.5 to 2 tonnes capacity. Waste segregation is not widely practiced in the island. Only food waste is segregated from other types of wastes at household level.

There is no waste segregation at households except for the separation of food waste from all other types of wastes. Currently waste is segregated in the following streams in the IWMC:

- Metal cans
- Large metals
- Large plastic bottles
- Construction and demolition waste
- And all other types of waste for open burning.

It had been estimated that over 2.77 tonnes of solid waste is generated in B. Eydhafushi daily.

A central waste management system is in place, where the council undertakes the responsibility of collecting waste from households for a set fee.

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3.1.1 ACCESS TO IWMC SITE

The existing and the proposed site is more or less in the same location. It is far south of the island away from residential areas. There are no other built environment near the proposed area except for the construction site setup which was given for the road project team.

Access to the site is via roads from the natural island. The roads are already constructed and is currently in the process of being paved. As the reclaimed area is largely still bare land, there is no designated road to the IWMC. The site can be accessed from any direction along the reclaimed area. The ground condition of the reclaimed area is stable and compacted. Closest distribution box is informed to be about 190m north from the site near the residential area.

Figure 8 Access to the IWMC site is via bare land that had been reclaimed

3.1.2 WASTE LANDFILL AND OPEN BURNING

There is a huge waste stockpile just outside the IWMC site, where open burning is currently practiced daily. The highest point of the stockpile is at 20ft above ground level and covering a 2400 sqm area. The waste dump sites in the island had not been cleared and it can be observed that the existing sites would not be able to hold much additional waste.

Figure 9 Open burning at waste stockpile outside IWMC site

It was informed by the developer that the waste stocked outside the IWMC site would not be cleared as part of this project. However, there is another ongoing program by the Ministry of Environment on clearing long term waste stock piles in the region. WAMCO will reportedly carry out this work. Additionally, an island wide clean-up programme need to be implemented at this current waste management area, and the surrounding area needs to be rehabilitated

3.1.3 EXISTING IWMC SITE

the existing IWMC is in poor condition currently and waste has accumulated beyond the capacity of the center as shown above mainly due to inability to transport the excess waste out of the island. This has reportedly led to a breakdown of a proper waste management system in the island

Regarding the existing IWMC structure, the boundary fence of the IWMC had broken down, including the gate as shown below. These structures are currently unusable. Masonry walls are required as replacements.

Figure 10 Broken down boundary fence of the IWMC site

Waste sorting structure is still in tact at the IWMC; however in bad condition. The roof has badly rusted and has been damaged at certain points. The roof and the sheets used to separate each compartment appears to be unusable and needs immediate replacement.

Figure 11 Waste sorting area severely rusted

At the IWMC, metal cans and bottles appear to have been sorted. While the cans are dumped into the metal compartment, plastic water bottles are packed into jumbo bags. However, a large number of similar materials could still be found outside the structure as well.

Figure 12 Waste segregated at the IWMC site

While metal cans are sorted in the facility, there are large metal objects that are stockpiled outside the IWMC site. The stockpile appears to be quite old and requires urgent removal as well. It is estimated that the highest point of this stockpile reaches 10ft above ground level.

Figure 13 Large metal objects stockpiled outside the IWMC

3.1.4 WASTE MANAGEMENT MACHINERY

There are several waste management machinery already at the IWMC site. This includes

- Metal can compacter
- Glass bottles crusher

- Paper baler

The machinery all are generally in good condition. However, the council informs that metal can compacter does not exert sufficient pressure and the capacity of the equipment is lower than is required for the island.

Figure 14 Waste management machinery at the IWMC

The power cables for all the machineries appears to have been sabotaged. Therefore, the power cables need to be fixed in order to reuse the machinery again.

Figure 15 Power cables to all the machinery at the IWMC had been damaged

3.1.5 CONSTRUCTION AND DEMOLITION WASTE

Construction and demolition waste is transported by the individuals themselves and 2 sites have been assigned to stockpile the C&D waste on the south west side of the island near the erosion area. It was reported that a large quantity of C&D waste was utilized for the football pitch construction project which is currently ongoing. it is quite apparent that currently the stockpiles are not properly managed. There is no particular boundary for the stockpile and it is seen to be spreading out inland. The C&D waste stockpiles are shown below.

Figure 16 C&D Waste stockpile south west side of the island

3.1.6 FOOD WASTE MANAGEMENT

The council has a system currently in place where food waste is being dumped to the lagoon right outside the revetment via a small ramp like structure as shown below.

Figure 17 Food waste dump location in B. Eydhafushi

3.1.7 COMPOSTING

There is no composting being done in the island currently even though manual composting setup is present in the existing IWMC.

3.1.8 MEDICAL WASTES

Medical wastes are burnt daily and weekly at the IWMC. The process is undertaken by staff of the Health Center using a small incinerator setup at the site. It is recommended for this practice to be undertaken at Health Center facility at an enclosed area. Autoclave is a requirement to attend to medical waste in order to sterilize them before undergoing normal waste treatment. However, such a setup is currently not present in the island.

3.2 ISLAND WASTE MANAGEMENT PLAN

3.2.1 BACKGROUND

According to the Waste Management Regulation of the Maldives, Island Council are required to formulate Island Waste Management Plans (IWMP) in coordination with the Atoll Councils and get it approved from EPA. The island council of B. Eydhafushi has formulated an IWMP initially on 29th December 2011. This was later updated on 25th November 2015 in consultation with the relevant stakeholders and community members. This plan had been approved by EPA on 1st January 2016.

The IWMP sets objectives, goals, user fees and activities on waste management for the next 5 years. The IWMP is provided in the Annex.

3.2.2 GOALS AND OBJECTIVES

The general objectives of the IWMP are similar to other islands IWMP as well. It is to ensure the sustainable management of the IWMC in an environmentally friendly manner and to ensure a holistic solution to the island's waste management issues. Specific objectives of the plan include the following:

1. Formulate principles on waste management and ensure its timely implementation
2. Create awareness among the community on the advantages and benefits of proper waste management and keeping the island clean
3. Create awareness regarded 3R concept of waste management
4. Identify the equipment needed to manage waste. Procure the equipment and provide trainings to staff
5. Establish systematic mechanisms to collect waste from households to be transferred to IWMC
6. Encourage proper segregation, storage and management of waste in the IWMC
7. Set fees to be taken from households, commercial areas and institutions to ensure financial sustainability of the waste management operation.

3.2.3 WASTE COMPOSITION

The composition of waste generated in B. Eydhafushi identified in the IWMP is given below. It had been estimated that in general waste generated in the island is 2.77 tonne/person/day. Therefore, the total estimated weight of waste generated in the island is

Table 4 Estimated waste composition in B. Eydhafushi

Type of Waste	Percentage	Estimated Daily Weight (kg)	Monthly weight
Organic Waste	70%	1939	58,977.92
Metal Waste	2%	55.4	1,685.08
Plastic Waste	5%	138.5	4,212.71
Other waste	15%	415.5	12,638.13

Hazardous waste	8%	221.6	6,740.33
Total	100	2,770	84,254.17

3.2.4 WASTE COLLECTION FEE

The following table shows the fee structure setup in B. Eydhafushi to collect waste from different types of properties.

Table 5 Waste collection fees for different types of properties

Description	**Fees (MVR)**
NGO administrative offices	50.00
Uninhabited household	75.00
Inhabited household	100.00
Private Offices	200.00
Workshops	250.00
Government Offices	500.00
Restaurant/ Café	500.00
Carpentry	500.00
Special Occasions and parties	500.00
Hospital (except medical waste)	1,000.00
Police	1,000.00
AEC	1,000.00
Land under Atoll council	1,000.00
Land under Island council	1,000.00
SOE and Ooredoo	1,000.00
Boat Yard	1,000.00
Community center	1,000.00
Wholesale spaces	1,000.00
Retail grocery shops	500.00
Garments shops	300.00
Corner shops	150.00
Tailor shops	200.00

It was reported by the council that a significant number of households and other properties have not joined the waste collection program. Furthermore, some households that were previously part of the program has opted out of the program later on due to the current situation of waste mismanagement in the island.

3.3 UNASSIGNED WASTE DUMPING

There are virtually no unassigned waste dumping being practiced in Eydhafushi residential areas. The roads in the island are clean and there wasn't any significant quantity of waste observed at any of the roads along the residential area. Some images showing the clean roads are provided below.

Figure 18 Road conditions in B. Eydhafushi

Waste dispersal from the waste management area is an issue and it could be observed lot of waste has accumulated and has gone beyond the revetment facing the waste management center as shown below. This can be regarded as a severe case of unassigned waste dumping and need to be urgently cleaned.

Figure 19 Unassigned waste dump at the revetment line facing the IWMC and stockpile area

It is vitally important for strict boundaries to be in place to ensure that waste material do not interact with the surrounding water. Therefore, a significant buffer from the revetment line and a proper boundary wall is needed to demarcate the area beyond which waste should not be found.

3.4 COASTAL MODIFICATION AND STABILITY

There has been numerous coastal projects undertaken in B. Eydhafushi. The entire coast line is heavily modified from the harbour construction project that was undertaken in the 1990s and reclamation and shore protection project carried out in 2014-2015.

While the harbour is constructed along about 300m of the northern coastline, reclamation has been carried out all around the island. The island coast line was previously about 2,360.0 m. After reclamation, the coastline parameter is now at about 3,153.0 m. The reclamation was 26 Ha. There is only one area of the island without a revetment structure on the south west side as shown below. This area has been undergoing severe erosion and requires some intervention to stop further loss of sand.

Figure 20 Erosion areas in B. Eydhafushi

The revetment structure also looks to have failed at several points around the island. Especially at the south side. There appears to be continuous wave overtopping due to the low height of the revetment structure which has lead to sand seeping out, and eventual settlement of the revetment. The geotextile underneath also appears to have teared at several points leading to potential structural failure as shown in the images below.

Figure 21 Revetment structure condition in B. Eydhafushi

3.5 VEGETATION AT PROJECT SITE

There are no significant vegetation at the site as it is a newly reclaimed land.

There were no significant vegetation at the access path to the site as existing roads have been constructed in the natural island and there are no significant vegetation on the newly reclaimed area

3.6 PROTECTED AREAS AND ENVIRONMENTALLY SENSITIVE AREAS

There are no designated protected areas or sensitive areas in B. Eydhafushi. However, the Biosphere Reserve administrative office is located in the island.

3.7 AREAS OF HISTORIC AND CULTURAL SIGNIFICANCE

There are no designated areas of historic and/or cultural significance.

3.8 SOCIO ECONOMIC ENVIRONMENT

Eydhafushi is the most developed island in the Atoll and is the capital of Baa Atoll. Many facilities available in Maldives islands are available in the island, details of which are given below.

3.8.1 POPULATION

The population of Eydhafushi is recorded as 2658 in the 2014 Census. The council informed that there are over 3000 locals living in Eydhafushi including 150 students from other islands. The council estimates there are about 400 expatriates living in the island.

3.8.2 LAND USE AND HOUSEHOLDS

There are 645 households recorded at the Eydhafushi island council including both inhabited and uninhabited households. Additionally, there are 20 apartments at the '*Dhanaal'* boarding, where students from other islands reside. There are about 76 commercial units in the island and 10-12 cafés and restaurants. There are 10 sites regarded as workshops and 14 government office buildings.

3.8.3 EDUCATION AND LITERACY LEVELS

The Atoll Education Center (AEC) is located in Eydhafushi. The Center has a capacity of almost 700 students. The other main educational institute is MI - Bahiyya School. The school takes classes for Baby Nursery and Nursery grades. Additionally higher education opportunities are provided in MI College within the same institute up to post graduate degree standards.

3.8.4 HEALTH

The Atoll Hospital for Baa Atoll is located in Eydhafushi. Facilities in the hospital includes 12 beds. There are 2 Pharmacies in the island.

3.8.5 EMPLOYMENT, ECONOMIC ACTIVITIES AND BUSINESS ESTABLISHMENT

The residents of the island are employed in various different sectors such as fisheries, trade, business, tourism, construction and carpentry. Traditional activities such as rope weaving and thatching was common in the island but now has declined. Since the Atoll council is located in the island, there are numerous civil service jobs available in the island. 600 government employees.

There are over 3 large Dhonis for fishing. 20-25 people actively engaged in fishing. 2/3 of population engaged in tourism in other resort islands. There are no tourism establishments in the island.

3.8.6 NON GOVERNMENTAL ORGANISATIONS

There are 9 NGOs registered in Eydhafushi. However, only 4 NGOs are currentlyactive. These include:

- Jamiyyathul Wafa – traditional activities
- AEC Environment Club – sports and community activities
- The Beginners – sports and community activities

- FEYLI (Foundation of Eydhafushi Youth Linkage) – sports and community activities

The NGOs all are mostly engaged in sports activities and community empowerment activities.

3.8.7 SEWAGE

A gravity based sewerage network system has been established in the island, where waste water is collected to the main network from households and discharged out via the outfall.

3.8.8 WATER SUPPLY

There is a desalination plant facility and water network established in B. Eydhafushi. However, rainwater is still commonly used for drinking and cooking, while groundwater is also still used for washing and other purposes.

3.8.9 ELECTRICITY

The island has access to electricity 24 hours a day. The powerplant is operated by FENAKA Corporation Ltd. There are 4 gensets at the powerhouse with capacity 1000kVA, 800kVA, 600kVA, 300 kVA. There has not been major power failures recently recorded and power consumption is generally stable.

3.8.10 TRANSPORT AND COMMUNICATION

Main means of transport within the atoll is by use of ferry system. There are numerous speed boats operational in the region which can be hired/chartered for travel. Access to the island to and from Male' is commonly via air transport from the domestic airport in B. Dharavandhoo. Option of sea transport on large supply vessels and speed boats from Male' is also there.

Both Ooredoo and Dhiraagu telecommunication network is present in the island. Cable TV services are available to all households.

4. IDENTIFICATION OF IMPACTS & SIGNIFICANCE

This section is based on the potential environmental impacts due to the project implementation including both for the construction of the IWMC and the subsequent waste management operation. Significant project components that could lead to environmental impacts during the construction phase include the following:

- Mobilisation, equipment and material storage
- Project site clearance
- Excavation
- Concrete works

Project components that could lead to impacts during operational phase include the following:

- Collection and transportation of waste within the island
- Composting
- Exporting and transporting waste out of the island
- Pollution due to operation including noise pollution and air pollution
- Maintenance issues

Methods of identification of potential impacts and assessing the significance of the impacts are described in the following sections. The general impact area is regarded as the whole island area as shown below. However, the direct impact area is the project site area.

Figure 22 Project Impact areas including Direct Impact Area during construction stage at existing IWMC site (red) and waste stockpile (yellow)

4.1 IDENTIFICATION OF IMPACTS AND THEIR SIGNIFICANCE

Impacts on the environment from various activities of the proposed project have been identified through:

- Literature review of ESMPs done for existing IWMC sites
- Literature review on impacts and issues at Waste management sites in similar environments in other countries
- Reviewing research data that has been accumulated specific to the Maldivian context.
- Consultation with the Waste department of the Ministry
- Public consultation with the island community and the council.
- Using decision frameworks for assigning significance to impacts
- Baseline environmental conditions collected.
- Past experience of the consultant with similar projects.

4.2 IMPACT IDENTIFICATION

Purpose Built Checklist has been used to identify the specific impacts from this project based on the resources given above. There are 3 main receptors of potential impact in any such project in an island environment including; marine environment, terrestrial environment, atmospheric environment and the socio economic environment of the human population of the island.

The impact identification matrix for these receptors due to this proposed project is presented below.

Table 6 Impact Identification Matrix

		RECEPTORS																
Phase	**Project Activities**	**Marine Environment**				**Terrestrial Environment**				**Others**				**Socio Economic**				
		Reef Structure	Marine Habitats	Marine Flora and Fauna	Marine Water quality	Coastal Structure	Terrestrial Flora and fauna	Soil Condition	Ground water quality	Noise Level	Air quality	significant GHG emissions	Aesthetics	Employment	Health and Safety	Service and Infrastructure	Social Well being	Economic Development
Construction	Mobilisation and Demoblisation	o	o	O	-	o	o	-	o	-	-	o	-	+	-	+	-	o
	Operation of vehicles/machinery	o	o	O	o	o	o	-	-	-	-	o	-	+	-	+	o	o
	Equipment and material storage	o	o	O	o	o	o	o	-	o	O	o	o	o	-	o	o	o
	Building construction	o	o	O	o	o	o	o	-	-	O	o	-	+	-	+	o	o
	Site Clearance	o	o	-	-	o	o	o	-	-	O	o	-	+	-	o	o	o
	Waste generation	o	o	-	o	o	o	o	-	o	O	o	-	o	-	o	o	o
Operation	Waste Collection at households	o	o	O	+	o	o	-	O	-	O	o	-/+	+	-	+	+	+
	General waste management at IWMC	o	o	O	-/+	o	o	-	-/+	-	-	o	-/+	+	-	+	+	+
	Waste Transfer to and from IWMC	o	o	-	-/+	o	o	o	o	o	o	o	-/+	+	-	+	+	+
	Accidents and fire incidents	O	O	O	O	O	-	-	-	-	-	-	-	O	-	O	-	-

Key:

+ Potential positive impact

- Potential negative impact

o Potential neutral impact

+/- Potential positive and negative impact

Based on the matrix and the other resources, following are the types of negative impacts foreseen as part of the project.

During Construction, impacts on:

- Marine water quality
- Soil Condition
- Ground water
- Noise
- Aesthetic
- Health and Safety

During Waste Management operations, the following issues are foreseen

- Fly accumulation
- Pests and vermins
- Odour
- Noise pollution
- Litter
- Excessive accumulation of compost
- Leachate
- Air Pollution (Dust)
- Loose waste dispersion beyond site / vehicle
- Fire Prevention

During operation, impacts would be due to mismanagement of waste collection, management, and transfer operations. If properly managed, the operations will have positive impacts on all receptors.

There will be numerous positive impacts due to the project as well both from a socio-economic aspect and environment aspect. The project has been proposed to improve the waste management of the island which in turn has the following beneficial impacts

- Improvement of the general lifestyle of the community
- Creating cleaner terrestrial environment
- Improving groundwater conditions
- Reduce open burning, thereby reducing aesthetic impacts and air pollution and associated health impacts
- Reduction of flies and mosquito population is the island

4.3 IMPACT SIGNIFICANCE ASSESSMENT

This section provides a summation of the impacts of the project components discussed above. The impacts of the project have been evaluated according to the criteria proposed by Posford Haskoning (2004). The decision framework is given in the following figure. The framework had been chosen since it gives a visual representation of how impact significance is determined so that it will be easier for public comprehension.

In order to make the evaluation quantitative, the framework proposed by Haskoning has been modified. Spatial distribution of impact is also added in order to consider the spatial scale to the significance of the impacts. Scores are given for each impact once it is identified that the resource is vulnerable to the impact. Scores are based on the following factors.

- Sensitivity of Receptor
- Recoverability of Receptor
- Importance of Receptor
- Spatial Distribution of impact

The scales associated with the above criteria are given in the following table.

Table 7 Impact Evaluation Criteria

Criteria	Scale	Attribute
Sensitivity How sensitive the receptor is to the impact	-1	Positive
	0	None
	1	Low
	2	Medium
	3	High
Recoverability or Return to original conditions How long it would take for the receptor to recover from the impact	1	High (0 – 6 months)
	2	Medium (6 months – 5 years)
	3	Low (>5 years or not at all)
Importance The importance of the receptor to the environment	1	Low
	3	High
Spatial Distribution Distribution of impact	1	At project site only
	2	At an island level
	3	At a national level
	4	At a global level

In the Haskoning framework, if impact receives a -1 for sensitivity, it deems the impact to have a positive effect on the receptor and the other criteria is then not applied. The impact is referred to as a Beneficial impact as is done by the Haskoning framework.

However, then the magnitude of the positive impact is not measured.

The significance of the negative impacts will be given based on the following range:

- 1 – 5 : Minor Impact
- 6 – 9 : Moderate Impact
- 10 – 12: Major Impact

This framework is used to ensure the public easily comprehends the factors upon which impact significance has been determined and therefore can relate to the impact better.

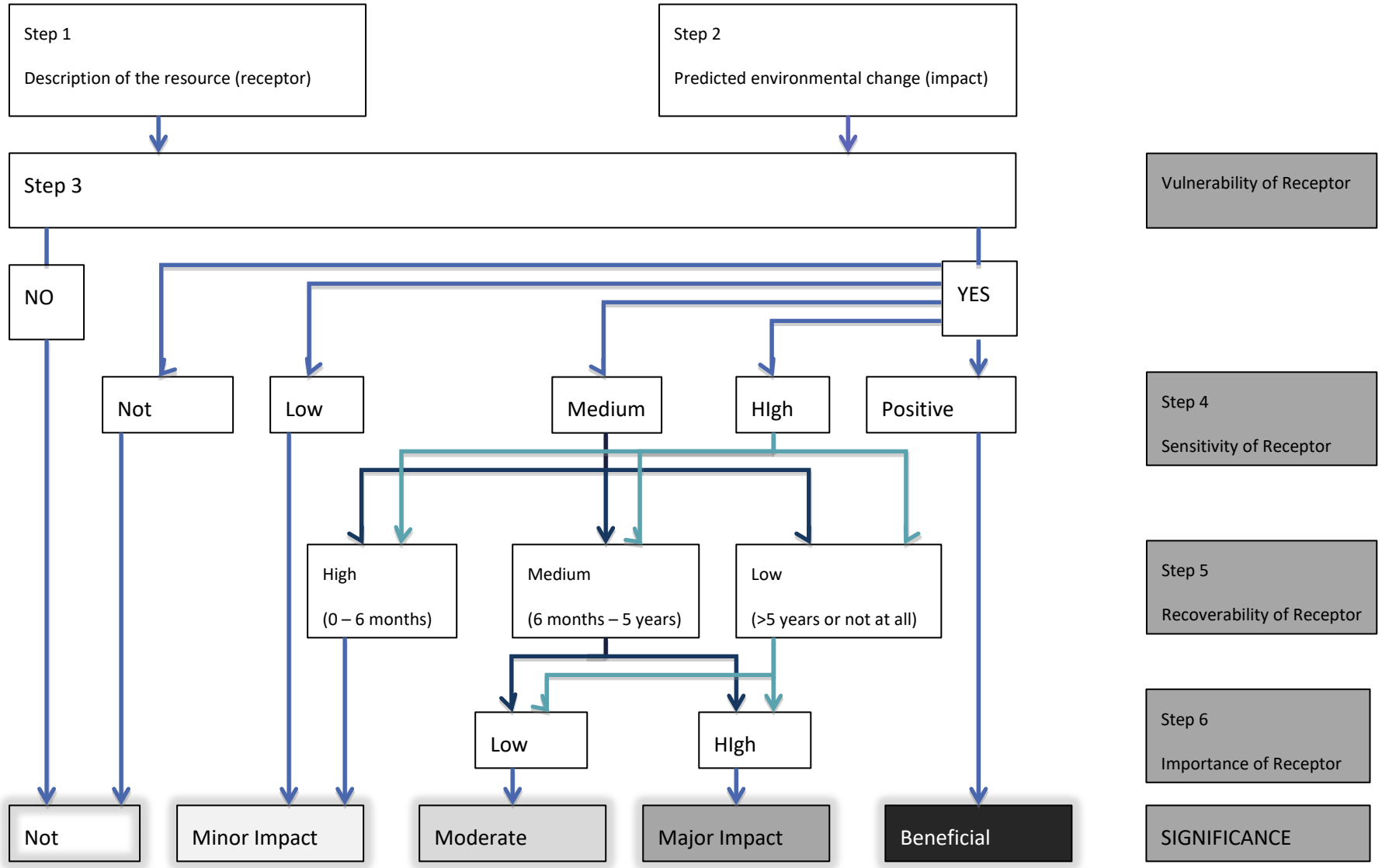
Step 1
Description of the resource (receptor)
Step 2
Predicted environmental change (impact)
Step 3
Vulnerability of Receptor
NO
YES
Not
Low
Medium
HIgh
Positive
Step 4
Sensitivity of Receptor
High
(0 – 6 months)
Medium
(6 months – 5 years)
Low
(>5 years or not at all)
Step 5
Recoverability of Receptor
Low
HIgh
Step 6
Importance of Receptor
Not
Minor Impact
Moderate
Major Impact
Beneficial
SIGNIFICANCE

Table 8 Analysis of potential impacts and their significance

Potential Impact	Cumulative(C) /Immediate (I)	Direct/Indirect	Sensitivity	Recoverability	Importance	Spatial Distribution	Significance
CONSTRUCTION PHASE							
Loose materials dispersion from vessels during mobilisation	I	Direct & Indirect	1	1	1	2	5 - Minor
Impact on natural and built environment during construction equipment and machinery transportation	I	Direct	2	1	1	2	6 – Moderate
Health and safety impact on workers and neighbours during physical works	I	Direct & Indirect	3	2	3	1	9 - Moderate
Impact on terrestrial surrounding environment due to movement and operation of vehicle and machinery.	I and C	Direct & Indirect	2	2	3	1	8 - Moderate
Soil and Groundwater contamination from leaks	C	Direct	2	1	3	2	8 - Moderate
Groundwater degradation due to excessive excavation and spill	C	Direct	3	1	1	2	7 - Moderate

As the site is very close to the shoreline, waste maybe dumped to the lagoon during site clearance leading to marine environment impacts	I and C	Direct	2	1	3	2	8 - Moderate
Noise emissions during machinery operation (site is far away from residences)	C	Direct	1	1	1	1	4 - Minor
Loss of visual amenity and disruption to island environment aesthetics	C	Indirect	2	1	1	1	5 - Minor
Littering and waste mismanagement leading to terrestrial impacts	C	Indirect	2	2	1	3	8 - Moderate
OPERATION PHASE							
Accumulation of flies at the IWMC and surrounding areas	C	Direct	3	1	1	2	7 - Moderate
Prevalence of pests and vermin at the IWMC and surrounding areas leading to disruption of work and also spreading diseases	C	Direct and Indirect (disease)	3	2	1	2	8 - Moderate
Foul odour emitted from the IWMC impacting on staff working on site and general public that is in the vicinity	C	Direct	1	3	1	1	6 - Moderate
Noise emissions when machinery is working leading to noise pollution (site is away from residential area)	C	Direct	1	1	1	1	4 - Moderate

Litter beyond the dedicated areas at the IWMC and also in the surrounding areas	C	Direct	3	1	3	2	9 - Moderate
Leachate due to stormwater run off from segregated waste stockpile area, green waste stockpile and compost area	I and C	Direct	3	2	3	1	9 - Moderate
Air pollution due to emission of dust from waste streams	C	Direct	2	1	1	2	6 - Moderate
Air pollution due to fire hazards and open burning of waste	I	Direct	2	2	3	2	9 - Moderate
Marine water pollution due to food waste dumping	C	Direct	2	2	3	2	9 - Moderate
Marine water pollution due to spills from transfer vessel	C	Direct	2	2	3	2	9 - Moderate
General health and safety issues for workers	C	Indirect	3	2	3	1	9 - Moderate
Impact on health and safety of workers due to accidents	I	Direct	3	2	3	1	9 - Moderate
Fire incidents leading to health and safety issues as well as disruption to terrestrial environment and air pollution	I	Direct	3	3	3	2	11 - Major
Improvement of the general lifestyle of the community	C	Indirect	-1				Positive
Impact on economy due to the effect on tourism industry	C	Indirect	-1				Positive

Formation of a cleaner environment for terrestrial flora and fauna to thrive	C	Direct	-1				Positive
Improvement of groundwater conditions due to lack of leachate at various areas of the island	C	Direct	-1				Positive
Reduction of air pollution and aesthetic impact due to reduction of open burning	C	Direct	-1				Positive

In conclusion, the project construction works are not expected to have a major impact on the environment due to the following main reasons

- The site has previously been in use
- There is no vegetation at site or nearby as it is a reclaimed land
- There is no residences nearby

Apart from that, the project will have general minor to moderate impacts on the environment common to other waste management sites. The main receptors for any impact is the population residing in the island in addition to terrestrial environment impacts. The major impacts in this aspect are with respect to accidents and health hazards, for which the probability is low. Nevertheless, mitigation for these and other impacts will be provided in the following section.

The project will have more positive impacts once it leads to proper waste management in the island. During the stakeholder consultation meetings as well, it was well noted that lack of sufficient infrastructure as the main reason behind the islands waste mismanagement.

Proper waste management will have positive environmental impacts on different sectors. These include positive environmental impacts on the island shoreline and general terrestrial environment. Other positive impacts include the socio-economic benefit for the island community with general well being of the community in addition to supporting other industries in the island including potential for tourism industry growth.

4.4 UNCERTAINTIES IN IMPACT PREDICTION

The impact prediction has been carried out based on literature and tested methods. However, the probability of occurrence relies on the judgement of the consultant based on incidents from previous similar project, and would therefore lead to uncertainties.

Moreover, the monitoring plan has been formulated over a short period and therefore there may be novel areas that is not found in existing local literature and that could not have been researched sufficiently. Alternatively, such projects as has been described in this report has been carried out on numerous islands in the Maldives. Therefore, observing past literature on a local context, the uncertainty can be reduced. However, as there is no literature on monitoring, the exact magnitude of impacts cannot be measured and understood.

Uncertainties will be therefore be reduced by undertaking the monitoring program and re-analysing impacts, after comparing the monitoring data with the baseline data in this report

and previous recent environmental studies done for the island. The lack of such monitoring reports is one of the main reasons for persistent uncertainties from similar projects.

5 ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURES

Mitigation measures are proposed where significant impacts are expected; impacts that have been assessed to be either moderate or major. Furthermore, mitigation measures are provided for those impacts that can easily be mitigated even if the significance of the impacts is minor.

Successful implementation of the measures given would lead to a major reduction and/or nullification of the impacts on the environment and thereby ensuring that the project is environmentally sustainable.

5.1 PROJECT MITIGATION MANAGEMENT DETAILS

The following table provides the details of the mitigation measures to be implemented for this project.

As the exact cost of the measures are unknown and depends on the market rates and therefore the analysis of a quantity surveyor, the exact market rates are not given. Instead, it is qualitatively stated which component of the measures given is associated with any costs, and if costs are already likely accounted for in the budget or if no costs will be incurred. A lot of the mitigation depends on proper planning and therefore does not necessarily incur additional material costs as such.

Responsibility of implementation of the measures falls on the proponent, the contractor, and the island council as the IWMC operator and the responsible party is given for each measure stated.

Table 9 Mitigation management plan

Environmental Management Plan				
Project Activity	**Impact**	**Mitigation Measure**	**Responsible Party**	**Cost of Mitigation**
Management of impacts during Design Phase				
Generation of leachate at site during waste management	Contamination of Ground water and Soil	• Ensure waste storage areas are covered to prevent contaminated storm water run off • Ensure hazardous waste storage area is bounded • Construct leachate barrier between soil, substrata and the composting or stored organics • Establish systems for collected and treating leachate (concrete pad with open drainage channels that drain to leachate collection wells • Ensure the slope and orientation of windrows or leachate drains are maintained such that free drainage of leachate to collection drains are facilitated • Shape the piles and windows in such a way to maximise run off and reduce infiltration	P: Civil Engineer MCEP	Included In overall project budget

Operation of machinery	Noise Pollution	• Construction of high perimeter walls • Inclusion of 3m long vegetation buffer surrounding the IWMC, leaving space for vehicle entry only • Set a 30m buffer from the IWMC and highlight on the site layout and Land Use Plan which indicates residential areas and other public area constructions is restricted or not recommended within this boundary.	P: Civil Engineer, MCEP P: Island Council S: MLSA, EPA	Included in the overall project budget No cost involved
General waste management	Air Pollution due to fire hazard and open burning of waste	• Inclusion of 3m long vegetation buffer surrounding the IWMC, leaving space for vehicle entry only • Include provision for firefighting equipment in IWMC design and BoQ • Installation of surveillance cameras and smoke detectors at the site	P: Civil Engineer, MCEP P: Civil Engineer & Project Manager, MCEP P: Island Council	Included in the overall project budget
General waste management.	Marine Water Pollution	• Ensure that 20m buffer is maintained between the IWMC and the southside revetment • Ensure there is no opening of the structure on the south side facing revetment. Ensure thick vegetation buffer area	P: Civil Engineer P: Island Council S: MLSA, EPA	No additional costs involved

Existing food waste dumping process		• Remove the existing platform setup on the revetment used to dump food waste to the lagoon. Food waste dumping should be prohibited once IWMC is fully setup		
General waste management	Public health Impacts	• Include provision of firefighting equipment in the IWMC design and BOQ. • Design to setup signboards for no smoking, fire safety and storage cells in the collection bay area. Include printing and fixing of the sign board as parts of the works of the contractor • Installation of surveillance cameras and fire alarms	P: Civil Engineer, Project Manager, MCEP P: Communications specialist, MCEP S: Civil Engineer, MCEP P: Island Council	Included in the overall budget Included in the IC budget
General waste management	Work environment issues for IWMC staff	• Include designs for office, toilet and resting areas in the IWMC design	P: Civil Engineer, MCEP	Included in the overall project budget

General waste generation during construction stage	Generation of general Waste types at construction site	• Establish written procedures on how waste should be managed within construction site and at leased households during the project	P: Civil Engineer, MCEP	Included in the overall project budget
Management of impacts during Preconstruction Phase				
Mobilisation and demobilisation to the island	Impact on marine environment	• Ensure no loose materials get dispersed to the lagoon during loading and unloading in the harbour • Ensure that materials are not kept beyond the height of the vessel boundary and properly covered • Materials are to be imported in bulk to minimise transportation trips to minimise probability of impact occurrence.	P: Contractor	Costs associated with covering materials.
Mobilisation and demobilisation within the island	Impact on terrestrial environment	• During transport of construction materials from the harbor to the site, all sand and aggregate should be transported in covered vehicles or wheelbarrows.	P: Contractor	Costs associated with covering materials.

		• Inspect and ensure that all materials imported to the island are free of any alien species or pests. • Ensure that oils, paints, and any other liquid is sealed properly before transportation to island		
Operation of vehicles for waste transfer. Operation of machinery for waste management	Noise Pollution and Aesthetic Impact	• Vehicle movement should be via routes that does not trespass into the residential areas. • Transportation should be at low vehicular speeds and loading and unloading should be conducted within the site. • Establish green buffer zone around the IWMC site, leaving space only at entrance area.	P: Contractor Island Council	Native vegetation to be used for green buffer. Cost associated with using equipment to plant trees
Mobilisation and demobilisation within the island	Air Pollution	• All vehicles used in the project should have an up to date road worthiness certificate • All vehicles and machinery mobilised to site should have undergone maintenance	P: Contractor	Costs associated with vehicle maintenance

		• Stockpiled material at the site should be covered to minimize dust generation due to wind		and covering materials
Setting up construction site	Health and safety of public	• Demarcate the site boundary properly • Place warning sign boards around the project site	P: Contractor S: Island Council	Costs associated with printing and placing sign boards
Mobilisation and demobilisation and site setup	Socio cultural conflicts	• As socio cultural issues are applicable for both construction and operation stage, the following requirements are for both stages that needs to be attended during the initial design and tendering stage: • Ensure locals are hired as much as possible • Brief expatriate workers on local culture and customs. Briefing should cover topics related to gender based violence • Develop a 'Code of Conduct' outlining the set of rules that the workers have to follow to preserve the social norms and religious values of the society. The Code should specify	P: Contractor	Cost associated with developing materials

		penalties for breaching these rules. This should be thoroughly communicated to workers pior to mobilisation • The "Code of Conduct" developed should also cover good environmental governance and responsibilities workers have to follow to safeguard the environment. Though the number may be minimal, code of conduct and awareness in HIV related issues need to be considered. • The contractor should ensure that all communications to the workers are presented in their local language. • Information on the project and the GRM should be displayed in the project site board, council noticed board as well as other communal place as much as possible.	P: Island Council S: MCEP	
General IWMC operations	Construction staff health and safety	• Undertake health and safety orientation • Procure and provide first aid kits • Have an emergency response plan in place to ensure fast response to accidents • Establish contact with island hospital and have plans in place to transfer staff to larger health facility in response to accidents and sickness	P: Contractor	Costs associated with first aid kits

Management of impacts during Construction Phase				
General construction activities	Noise Pollution	• Ensure construction activities do not occur at night time from 6pm to 8am. • Construction workers should wear ear muffs at all times when engaged in activities that generate noise above 50 db	P: Contractor	Cost included in project
General construction activities	Groundwater and soil contamination	• Regularly inspect containers to identify leakages • Hazardous construction waste such as waste oil should be stored in sealed containers separately and placed on hard concrete to be transferred to nearest operational RWMF for final disposal	P: Contractor S: IC Supervisor	Cost related to purchasing storage containers and transport to RWMF
Site setup. General construction activities	Air Pollution	• Wet the construction site to reduce dust emission from the site • Site boundary fence to be erected to prevent dust dispersion	P: Contractor	No additional costs

Material sourcing for construction. General construction activities.	Impact on Coastline	• Ensure that all sand and aggregate material are sourced in compliance with the national laws and regulations • All sand and aggregate material to be imported. • Debris and loose waste along the revetment line facing the IWMC site and waste stockpile area to be completely cleared • Ensure that the existing revetment structure is not disturbed. Ensure heavy materials are not kept alongside the revetment crest.	P: Contractor S: Island Council	Costs associated with revetment area cleanup
General construction and demolition activities	Generation of C&D waste	• Reuse the concrete waste produced during demolition of the existing fence footing and waste sorting structure for construction of the new IWMC as much as possible • Utilise the C&D waste stockpiled in the island as much as possible • C&D waste generated from the project that cannot be reused to be stockpiled at the council designated site for C&D waste	P: Contractor S: Island Council	Cost associated with transporting C&D waste within the island

Waste generation	Generation of general waste	• Place 2 bins at construction site for bio degradable waste and non bio degradable waste • Penalise workers or teams that do not follow general waste management	P: Contractor	Cost associated with bins
General construction activities	Impact on marine environment	• Workers to be informed to not catch marine species during their stay in the island • Ensure that no loose waste goes beyond the site boundary. Inspect for such waste along revetment line and remove immediately if found	P: Contractor	No additional costs
Operation of vehicles and machinery	Impact on terrestrial flora and fauna	• Workers to be informed to avoid any trees and disturbance to animals during vehicle transportation • Avoid narrow roads and any road with significant vegetation during transportation within the island • Construction materials and equipment should be as close as possible to construction site to avoid additional transportation within the island	P: Contractor	No additional costs

General construction activities	Health and safety of public	• Monitor the status of the sign boards. Replace if misplaced or damaged • Regularly monitor the site for entrance of residents to site • Any personnel outside the construction staff should get prior approval before visiting site and must wear PPE before entry	P: Contractor S: Island council	Costs associated with replacing sign boards if any
Site clearance General construction activities	Health and Safety of construction workers	• Daily inspect adherence of the construction workers to Personal Protective Equipment and Clothing as directed at orientation • Chemical liquid protective gloves should be used when handling chemicals • No open electrical wiring or cables should be kept at site • Working hours of construction staff to adhere to Employment Act of Maldives	P: Contractor	Cost associated with purchasing and replacing safety materials
Site clearance. General construction activities	Fire Hazards	• Ensure that portable fire extinguishers are readily available in case of an emergency • Have contacts at hand from island council and police to call during an emergency	P: Contractor	Cost associated with purchase of

		• Ensure electrical cables are installed by a certified personnel		fire extinguishers and hiring certified electrician
Mobilisation and demobilisation. Site clearance. General construction activities.	Socio cultural conflicts	• Ensure the construction staff do not disseminate information regarding the project without supervisor approval • Hold regular meetings with the council (preferably weekly) to discuss any socio cultural issues and measures to resolve them	P: Contractor	No additional costs
	Economic impacts	• Ensure materials (at least those required in small quantities) are purchased from within the island as much as possible • Ensure local staff are engaged as much as possible • Ensure local logistic services are hired as much as possible	P: Contractor	Costs related to difference in rates

Management of impacts during Operation and Maintenance Phase				
Waste collection. General waste management. Waste transfer within island	Over accumulation of waste in the island and at site	• Ensure consistent daily waste collection services • Secondary transfer of waste to RWMF to be done twice a month • Repair existing waste management machinery at IWMC (electric power cables have to be replaced)	P: Island Council	Cost associated with IWMC operation Cost associated with repairing machinery
Waste collection. General waste management. Waste transfer within island	Impacts due to Litter and waste mismanagement	• Adequate bins with closures to be provided at the drop off locations. Conditions of the bins should be regularly supervised and rectified if there is any damage • Waste collection vehicles should be secured from all sides to prevent spillage • Provide composting training to all laborers and management	P: Island Council/ IWMC Manager P: ME	Cost associated with IWMC operation Cost associated

		• Control incoming waste stream to ensure effective waste processing, treatment, and disposal of the waste and the quality of end products (eg. Quality compost) • Visually evaluate, weight and document incoming waste loads • Conduct visual inspection of incoming waste, along with sorting and removal procedures • Reject or segregate potentially hazardous materials or waste, including those waste that may potentially carry infectious pathogens, and manage as hazardous waste • Analyse suspected hazardous materials before acceptance so that they are segregated relative to compatibility and so that they can be adequately treated and disposed of • Sperate recoverable secondary materials for recycling and organic waste for composting to the extent practical • Waste that cannot be managed at island level must be processed (chipped crushed, compacted) and stored in appropriately labelled containers or jumbo bags and kept	S: MCEP	with purchasing jumbo bags and/or containers Costs associated with IWMC operation

		in the respective bays within the IWMC for transportation to RWMF		
General waste management. Waste transfer within island	Impacts related to foul odour emissions from the site	• Ensure regular consistent removal of organic waste stockpile to reduce foul odour emissions from the site. • Keep the waste site clean and dry as much as possible. Undertake site cleaning on daily basis. • Ensure there is nowhere for material to sit or pile up behind walls, in pits, in corners or anywhere else throughout the site. • Ensure the free flow of leachate by keeping the drains clean	P: Island Council	No additional costs
General waste management.	Impacts related to pests, vermin and vectors	• Ensure regular consistent removal of organic waste stockpile to reduce foul odour emissions from the site. • Regularly Inspect the site for pests and vectors. • Use insecticides and other means to remove them from site	P: Island Council	No additional costs Costs associated with

				procuring insecticides
Waste collection. Waste transfer within island	Impacts due to medical/ hazardous wastes	Do not accept any type of medical wastes. To be attended separately at the Health Center Facility Incoming hazardous waste to the IWMC should be stored in the hazardous waste storage room and frequently transported to RWMF The following measures to be taken during transportation of hazardous wastes: • Use containers that are securely tightened and related to the waste type. • Inspect any damage to containers before use. Only use containers that do not have any possibility of leaks • Label all containers clearly identifying the following: contents, hazards, actions required in emergency situations • Tampons, nappies and similar waste can be composted or stockpiled and transferred to RMWF to be incinerated	P: Island Council / IWMC Manager	

Waste transfer to RWMF	Marine water pollution due to spillage and leaks during waste transfer to RWMF	• All outgoing waste to be stored in enclosed bins or enclosed jumbo bags. • All containers to be appropriately labelled indicating type of waste. • Maintain log records of all outgoing waste from IWMC. Record weight or volume of jumbo bags and bins and provide logs to RMWF operator. Compare inbound and outbound logs for each trip.	P: Island Council/ IWMC operators	Cost associated with printing the labels
General waste management	Noise pollution	• All works involving machinery should be undertaken during day time • Ear muffs to be worn by staff while using machinery	P:IWMC operator	No additional costs

Waste collection. Waste transfer. General waste management.	Air pollution from vehicles and IWMC	• Waste transport vehicles to have up to date road worthiness certification • Optimise waste collection routes such that travel distances are minimised • When IWMC and RWMF is operational, no open burning shall be practiced	P: IWMC operator	No additional costs
General waste management. Accidents and fire incidents	Health and Safety impacts on waste handling staff	• Provide workers with Personal Protective Equipment and Clothing This includes; gloves, safety shoes, respiratory face masks. • Ear muffs to be worn by staff operating machinery • Hard hats to be worn by staff near heavy mobile equipment • Follow emergency response plan. Arrange urgent transfer of victims to health center.		
General waste management. Accidents and fire incidents	Impact due to fire hazards	• Hazardous waste should be kept away from flammable waste such as wood, plastic and paper • Fire safety equipment should be at IWMC. Additionally fire alarms should be regularly tested.	P: Island Council S: MCEP (sign boards)	Cost of equipment purchasing

		• Fire safety equipment should be at waste transfer vessel • Enforce no burning policy at IWMC. No naked flames should be allowed at the site • Smoking to be prohibited inside the IWMC. Warning signs should be placed. • Fire safety training to be held regularly for all IWMC staff (biannual or annual basis at least)		Cost of printing and placing sign boards Cost of purchasing alarms.

5.2 WASTE REDUCTION AND REUSE

The island council has reported that waste generation has nearly doubled over the last 3-4 years. If this trend continues, the waste management site that is currently being built may soon be insufficient. Therefore, waste reduction is critical. This can be achieved via general waste reduction awareness programs and reduction of targeted waste streams as given below.

5.2.1 REDUCTION OF NAPPY AND SANITARY PADS.

Nappy and Sanitary pads take up the bulk of the volume that includes materials that are difficult to attend to at an IWMC. This waste stream would be significantly reduced if the waste generation of this waste type can be reduced from the source. This can be achieved by using alternative materials to the disposable materials currently predominantly in use. It is recommended to seek alternatives such as cloth diapers and sanitary cups which can be reused multiple time, thereby significantly reducing this waste stream. It is recommended for the proponent to carry out awareness programs in the island in collaboration with the island council on alternative sources.

5.2.2 RESTRICTION OF SINGLE USE PLASTICS

Ban of single use plastics is a critical step to reduce waste volume in the island. With the establishment of the IWMC, it is recommended to enforce this further by giving incentives to practitioners and eventually penalizing those who import such materials into the island.

One of the main sources of single use plastics come in the form of plastic water bottles. This can be minimized by having a glass bottling plant operation in the island. It is recommended for the proponent or the island council to study the feasibility of undertaking such a project in the island.

The other main source of single use plastics is plastic bags. Use of cloth reusable bags can reduce dependency on plastic bags. The council can take the initiative together with the NGOs on making island specific cloth bags and distributing or selling to households.

5.2.3 REUSE CONSTRUCTION AND DEMOLITION WASTE

There is currently a significant stockpile of C&D waste on the south west side of the island. The stockpile takes up a relatively large area as was described under the Existing Environment

section. This waste stream can be reused for shore protection measures at the erosion area in front of the stockpile and any other similar locations. It is recommended to group the concrete pieces and rocks in a metal wire mesh to make gabions so that unit weight of the structure would be increased and will be more stable when waves hit the shoreline.

Note that any coastal work can be done with the approval of EPA. Therefore, it is recommended for the Island Council to explore this option further as a means of reducing C&D waste and protecting shoreline, obtain necessary approvals and implement at the erosion area.

5.2.4 SETTING UP A MECHANISM TO REUSE DISCARDED ITEMS

It is proposed to setup a mechanism by which items that are discarded from households can be re-used. A Reuse Center can be setup by the island council where items that are discarded from households that are in good condition can be made available for pickup by other members of the community. This can be setup preferably at or near the IWMC or elsewhere in the island. Set times can be made for members of the community to drop of such items in a designated space that can potentially be re-used and these can be put on display at the site.

5.3 CONTRACTUAL MEASURES

It is compulsory for the contractor to implement the mitigation measures during the construction phase of the project. The EPA and World Bank approved ESMP should form part of the contract and the mitigation matrix shall be extracted from the ESMP and reflected as an appendix to the contract.

Furthermore, the following clauses should be incorporated in to the contract document of the selected contractor as condition of the contract to ensure effective, timely and stringent implementation of the ESMP.

- Retention payment will be released after defects are rectified and compensating for any significant environmental and social safeguards violations.
- Payment claims made by the Contractor should be accompanied by progress reports that reflect works completed and Environmental and Social mitigation measures implemented. Payments will only be released after verifying the authenticity of these reports.

The Employer or the Contractor may terminate the Contract if the other party causes a

fundamental breach of the Contract. Fundamental breaches of Contract shall include, but shall not be limited to, the following:

- If the Contractor fails to implement the mitigation measures proposed in the ESMP of the project.
- If the Contractor fails to submit staff list and valid work permits of the expatriate staffs within 10 days of signing the agreement

6 TRAINING RECOMMENDATIONS

Training is required for the following aspects of the project;

- Construction stage
- Operations stage
- Environmental Monitoring
- Community awareness

During construction, the contractors will be required to undertake general HSE awareness for their project workforce and specific training for those who handle heavy machinery and/or have to carry out high risk work. Moreover, special training will be required for work that may have significant impact on the environment.

During operation stage, the developer together with the island council are required to formulate training programs targeted for staff of IWMC to ensure effective management of the center.

Staff will be trained in the following areas

- Waste collection
- Waste acceptance and rejection
- Waste sorting
- Site supervision
- Use of equipment including compaction, crushing and composting equipment. (once they are provided)
- First Aid
- Site safety
- Response to fire and similar emergencies
- Documentation and record keeping

Apart from training related to plant operations, training is also important to ensure that the ESMP provisions are implemented efficiently. Therefore, in addition to IWMC staff, it will be ensured that all persons that have roles to play in the implementation of the ESMP are competent with appropriate training. Facilitating environmental monitoring.

Community awareness programs are required especially with respect to waste reduction and waste segregation. The developer and the island council are to undertake the responsibility to conduct community mobilization and public awareness programs to enhance knowledge on best waste management practices and to further implement 3R concept of waste management. From among the community, community leaders including those from NGOs and women's development committees are to be engaged.

Table 10 Training program for the implementation of ESMP

Training Activity	**Participants**	**Type of Training and Content**	**Responsibility**	**Scheduling**	**Cost Estimates**
Strengthening capacity of contractor on reporting and implementation of ESMP	Managing Director and Site Supervisor of Contractor	Meeting Reporting Template	Safeguards specialist of MCEP	Pre bid meeting Kick off meeting	Costs associated with hiring trainer, printing materials, venue hire, and food and refreshments
Strengthening PMU's capacity on compliance monitoring	APCs	Briefing Reporting Template	Safeguards specialist of MCEP	Construction Phase	Costs associated with hiring trainer, printing materials, venue hire,

					and food and refreshments
General awareness of HSE	Workers at Site	HSE orientation including site safety rules, PPE, emergency response, etc.) Daily safety refresher including feedback from previous incidents if any	Contractor's Site supervisor	Pre Construction Phase Construction Phase	Costs associated with hiring trainer, printing materials, venue hire, and food and refreshments
Waste Management awareness	Waste Management Committee NGOs Women's Development Committee	Introduction to WM policy Introduction to WM Regulation Roles of IWMC operator Implementation of IWMP Concept of 3R	Communications specialist of MCEP	Preconstruction phase	Costs associated with hiring trainer, printing materials, venue hire, and food and refreshments

		Ways to reduce waste. Use of alternative more sustainable materials			
Compost Training	IWMC Staff	Introduction to compost preparation Guidance on windrow composting	MCEP project coordinator WMPCD Island council Communications specialist of MCEP	Pre-operations	Costs associated with hiring trainer, printing materials, venue hire, and food and refreshments
Fire Safety training and drills	IWMC staff	Introduction to fire safety Hands on training of the equipment installed at IWMC Details of safety procedures and evacuation plan during a fire	Island council with the assistance of professional working or retired fire fighter	Prior to commencement of operations	Costs associated with hiring trainer, printing materials, venue hire, and food and refreshments

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7 ENVIRONMENTAL MONITORING

This section deals with the Environmental Management and Monitoring plan for the development of IWMC in B. Eydhafushi. The proposed monitoring plan is for the construction and operation phase of the project. The data collected for this assessment will be used as baseline data while undertaking the monitoring plan. Undertaking environmental monitoring is essential for several reasons including:

- To aid in impact management and identify unforeseen impacts,
- To assess impact of mitigation measures and to improve impact prediction and mitigation methods.
- To gather long term data to minimise uncertainty for this project as well as other similar projects.
- To ensure sustainable development

The proposed monitoring programme will yield beneficial results if it is undertaken for a long period. The monitoring is proposed to take place during the construction phase once every 3 months until construction is completed, and then 6 months after construction completes.

The proponent expressed their full commitment to carry out the monitoring program outlined in this report. The proponent's commitment to undertake the environmental monitoring and mitigation measures is given in the Annex.

7.1 MONITORING METHODOLOGY AND COSTS

The methodology used for monitoring will be those methods prescribed by EPA in Environmental Impact Assessment (EIA) TORs.

Ground water monitoring will be required to be undertaken before the commencement of the physical works at site. Minimum 3 locations are to be tested. Groundwater has to be collected at the IWMC site and at 2 set locations in the island (council office area and harbour area) using a 1000ml glass water bottle. After collection, sample is to be sent Male' within 12 hours of collection and tested at either the National Health Laboratory or MWSC laboratory. Samples for microbiology can be collected in either 100ml sterilised bags or 200ml+ sterilised glass water bottles.

Noise pollution can be measured using a handheld sound meter or any smartphone with a dedicated application for noise measurement. Noise is to be measured at the IWMC site, 30m away from site, and 60m away from site. Measure noise outside council office as control.

Visual observations. Terrestrial environment should be observed visually at set intervals. Report status of vegetation at the green area surrounding the IWMC. Take logs of Pests and/or foreign species at the IWMC site. Use council office area as control.

The parameters that are most relevant for monitoring the impacts that may arise from the project are included in the monitoring plan. Therefore, the monitoring programme will cover the following aspects of the project at the IWMC location:

- Implementation of mitigation measures
- Health risk incident records
- Ground water quality
- Noise Pollution
- Air Pollution
- Terrestrial flora and fauna impacts.

7.2 RESPONSIBLE PARTY

The Monitoring responsibility will be taken by the developer, Ministry of Environment. The Ministry is required to hire an environmental consultant or engage a member of MCEP to undertake periodic monitoring as given in the Monitoring program. This can be done with the assistance from the Island Council.

The developer should hold the contractor accountable for monitoring during the construction stage and the island council accountable during the operation stage of the project.

7.3 RECOMMENDED MONITORING PROGRAMME

As instructed in the TOR, the monitoring programme will be divided into 2 stages, and monitoring report shall be submitted based on the following schedule

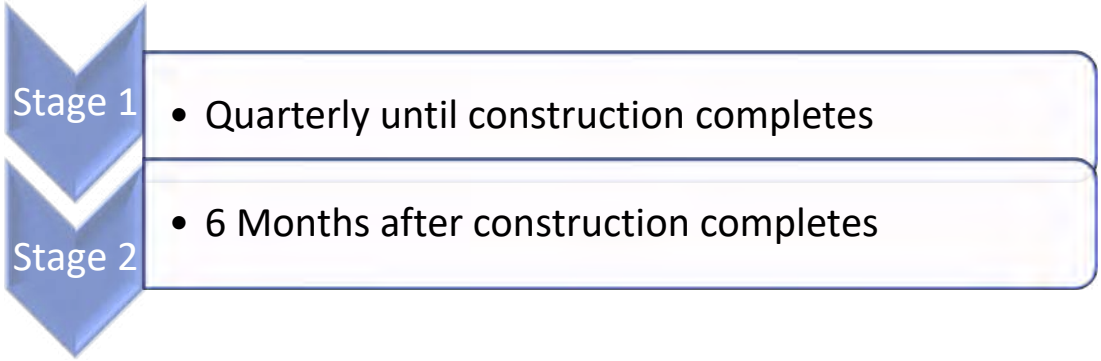

Table 11 Environmental Monitoring Plan

Aspect	Parameter	Frequency	Responsible Party	Cost (MVR)
STAGE 1 – CONSTRUCTION PHASE				
Implementation of mitigation measures during construction	Records of successful implementation measures	Monthly	Contractor MCEP	9,000.00
Ground water contamination	Visual observation of physical parameters including: smell, colour and salinity	Quarterly	Contractor MCEP	7,000.00
Noise Pollution	Measurement at the construction site, 30m away, and 60m away	Quarterly	MCEP	0
Grievance	Log records of number of complaints received and actions taken during construction phase	Through the construction phase	Island Council MCEP	9,000.00
Health and Safety	Record logs of safety incidents at project site	Throughout the construction phase	Contractor	In project costs
STAGE 1 – OPERATIONAL PHASE				
Implementation of mitigation measures	Records of successful implementation measures	6 months after commence of operations	Island council IWMC operator	In operational costs. Under paid staff responsibility

during construction				
Groundwater quality	Visual observation of physical parameters including: smell, colour and salinity	6 months after commencement of operations	Island council, IWMC operator	7,000.00
Noise Pollution	Measurement at the construction site, 30m away, and 60m away	Monthly	IWMC Operator	0
Odour	Record logs of Odour issues at IWMC site, 30m away and 60m away	Monthly	IWMC Operator	In operational costs. Under paid staff responsibility
Spillage Assessment	Logs of litter around the island Logs of spillage during transfer to IWMC Logs of any spillage within the IWMC Logs of any spillage during transfer to RMWF	Throughout the operations. Data to be compiled 6 months after commencement of operations	Island council/IWMC operator	Included in operational costs. Under paid staff responsibility
Grievance	Logs of no. of complaints received and actions taken during operational phase	Throughout the operational phase	Island council	Included in operational costs

7.4 ENVIRONMENTAL MONITORING REPORT

Monitoring report should be compiled based on the baseline data collected. This report should be submitted to the EPA annexed to the IWMC annual report. The report structure may include but not limited to;

- Introduction
- Details of the site at the time of investigation,
- Data collection and analysis,
- Details of methodologies and protocols followed
- Quality control measures,
- Sampling frequency and monitoring analysis
- Conclusion and recommendations

7.5 IMPLEMENTATION SCHEDULE

The environmental management and monitoring plan have to be integrated to the overall construction schedule. The project implementation phase is estimated to be completed within 6 months. The implementation schedule is presented below.

Table 12 Tentative ESMP Implementation Schedule

#	Activity description	Responsible Party	Preconstruction (Week)						Construction (Months)						Operations (Months)					
			1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1	Clearance and formal disclosure of ESMP	MCEP	■	■	■	■														
2	Inclusion of ESMP in bid document	MCEP	■																	
3	Finalisation of Engineering Designs	MCEP	■																	
4	Inclusion of ESMP in contractor document	MCEP						■												
5	Disclosure of GRM in project sites	MCEP						■												
6	ESMP briefing to contractor at kickoff meeting	MCEP						■												
7	Contractor's ESMP monitoring reports	Contractor							■	■	■	■	■	■						
8	Compiance check/ interim monitoring reports (2nos)	MCEP									■			■						

9	Preparation and submission of consolidated monitoring report	MCEP																		
10	Preparation and submission of operational ESMP report	Island Council																		

8 REPORTING

8.1 REPORTING DURING CONSTRUCTION PHASE

8.1.1 MONTHLY REPORTING

The contractor's staff should provide the developer, within 10 days at the end of each month, a monthly report that includes information on the following:

- The quantity and type of waste collected at the construction site
- No. of health and safety incidents at construction site
- Daily log record of fumigation
- Volume of water dewatered each day if any.
- Type of vegetation that was removed or transplanted if any

The developer shall keep records for annual report.

8.1.2 ANNUAL OR AFTER COMPLETION REPORTING

An annual report is to be prepared by the developer and submitted to the EPA for the required reporting period, i.e. three months from the project completion date. Developer must submit the annual report to the EPA no later than 60 days after the expiry of the reporting period with a signed statement of compliance and monitoring and complaints summary.

The monitoring and complaints summary will generally include information such as:

- A summary report on total waste produced at site
- Summary report on health and safety issues
- Summary of accidents occurred at site
- Summary of total quantity of groundwater dewatered if any
- Summary of all vegetation that was removed or transplanted

- Quarterly water quality tests.

8.2 REPORTING DURING OPERATION PHASE

Environmental monitoring reports can be annexed to the annual report produced during the operation phase. Annual reports are summary of the monthly reports that will be produced by the IWMC operators each month.

8.2.1 MONTHLY REPORTING

The MWC operational staff must collect the following data, compile monthly monitoring report and submit to the council before the 10th of each month.

1. Compilation of the quantity, source and type of waste received at the IWMC daily
2. Compilation of the quantity, source and type of waste transported from the IWMC daily
3. Quantity of waste that are stocked at the IWMC at the end of the month
4. Quantity of waste that were burned at the IWMC by the end of the month
5. Quantity of waste used for compost at the site and quantity of compost produced at the end of the month
6. Quantity of hazardous waste that were collected including all forms of batteries and medical wastes
7. Record of all public complaints to the IWMC operators

The council is required to keep hard copy records of the reports collected for at least 5 years. Monthly reports may be submitted to EPA upon request.

8.2.2 INCIDENT REPORTING

The developer must report to EPA immediately if any of the following occurs

- Accident causing harm to nearby structure, large vegetation or individuals
- Oil spill from machinery
- Fire incidents
- Any form of direct groundwater contamination
- Structural failure of the facility
- Excessive odours being emitted from the facility
- Excessive smoke being emitted from the facility

Should these occur, contractor and operator should inform the island council and the developer immediately by telephone. The contractor shall also log the incident and provide a brief report within 1 day. The developer shall notify the EPA initially by telephone as soon as they are informed. Further investigations should take place at the site and subsequently a written brief must be submitted within seven (7) days of the date on which the incident occurred with a brief on actions that were taken or are to be taken at that stage.

Such incidents should be recorded in the site daily logbook, which will form the basis of the report that will be formulated subsequently for submission. The log should include; incident type, incident details, date, time, name of individual reporting, and signature.

The incident report will include the following

- The cause, time and duration of the event
- The type, volume and concentration of pollutant discharged due to the event
- The name, and title of personnel at the site during the incident
- Actions taken on site during the event
- Mitigation measures proposed to prevent such future events

8.2.3 ANNUAL REPORTING

An annual report is to be prepared by the IWMC operator. Report has to be submitted annually, within 60 days after the end of each 12th month in operation to the island council. The council shall in turn submit the report to the developer and EPA within 2 weeks of receiving the report. The report will be in a preapproved format with a statement of compliance and monitoring and complaints summary signed by the IWMC operator. The Annual report should include summary of data collected on a monthly basis including and in addition to the following:

- Total waste moving in and out of the IWMC,
- Changes to the quantity of waste accumulated at site by type and quantities.
- Quantity of by products produced at the site
- Summary of all the incidents that had been reported within the year. Incident reports should be annexed to the annual report.
- Summary of all complaints that were received at the site throughout the year including incidents of odour, litter and flies.
- Environmental monitoring report should be annexed to the annual report

9 GRIEVANCE MECHANISM

Grievance mechanism will be based on 3 tiers of institutional levels.

- First Tier : The island Council
- Second Tier : Ministry of Environment
- Third Tier : Judiciary

9.1 FIRST TIER: ISLAND COUNCIL

Timeframe to address grievance: 15 working days

The focal point for Tier 1 GRM is:

- Name: Siraj Adam
- Post: Assistant Project Officer
- Contact number: 7903065

If under any circumstances, the focal point is to be changed, the island council is required to inform the Ministry of Environment in advance.

The general contact details of the Council Secretariat:

- Telephone: 6608503
- Email: info@eydhafushi.gov.mv
- website: http://eydhafushi.gov.mv/
- facebook: https://www.facebook.com/Secretariat-of-South-Maalhosmadulu-Eydhafushi-Council-344778752313078/

Tier 1 is the most important tier as it is the closest to the island community. Every effort needs to be made to ensure that grievances can be made seamlessly with minimum friction.

GRM should be publicly displayed initially at the construction site as well as the site office. GRM should be outlined in official website and/or social media pages of the Council and the Ministry of Environment including contact details of the focal point for each Tier.

Electonic version of the complaint form should be made available from the website and/or social media pages of the Ministry of Environment and the Council. Physical copies of the forms should be readily available at the council desk.

The form shall include the following as a minimum requirement:

- Date and time;

- The contact details of the complaint;
- Weather at the time of the incident which is the cause of the complaint;
- The date and time the incident took place;
- Description of the complaint;

For people who have difficulty writing, council reception staff should assist to fill in the complaint form.

Grievances can be submitted either formally or informally to encourage people to submit grievances as much as possible. Formal grievances should be submitted using the GRM form either via email or submitting to the council office. The council should keep separate registries for informal and formal complaints and maintain records of all complaints received.

The complaints should be discussed internally within the council and with the Waste Management Committee and if the matter is an issue that cannot be resolved at the island level, the Ministry and EPA shall be informed immediately.

A response to the complaint should be provided within 15 working days of receiving complaint. A template response document should be made and maintained at the council. The response document should state whether a solution has been reached or not, providing a brief justification.

The aggrieved party must acknowledge the receipt of decision and submit their agreement or disagreement with the decision within 10 working days. If no acknowledgement is submitted from the aggrieved party within this period, then the decision will be considered as accepted.

If the complain requires more time to be addressed, this shall be communicated to the aggrieved party in writing within 15 working days and the aggrieved party must consent and sign off the request for the extension to take effect. An extension can be made to an additional 15 working days.

The focal point would need to record the complaints and maintain the data which would be presented to the relevant authority and would be annexed to the annual report as well.

9.2 SECOND TIER: MINISTRY OF ENVIRONMENT

Timeframe to address grievance: 15 working days

The focal point for Tier 2 GRM is:

- Name: Ahmed Hassaan Zuhair

- Post: Environmental and Social Safeguards Specialist from MCEP PMU
- Contact number: 7886707
- Email: ahmed.hassaan@environment.gov.mv

If the grievances raised at the first tier remains unresolved to the satisfaction of the aggrieved party or if the issue is outside the jurisdiction of the council, the aggrieved party can submit the grievance directly to the Environmental Protection Agency (EPA) and/or the Ministry of Environment (ME) using Tier 2 complaint form.

A copy of the form (with Ministry of Environment seal) should be provided to the aggrieved party as evidence of receipt. Electronic version of the complaint form should be available from the websites and/or social media pages of the Ministry and the council. Physical copies of the form should be available from the council and the Ministry's front office

Focal points for Tier 2 shall be established at the Ministry. Environment and Social Safeguards Officer at the PMU will be contact person in processing a grievance through Tier 2.

Submission to the government authority can be via the complaint form attached to a cover letter or written in a letter directly. Grievance can also be submitted via emails. In any documentation, the subject or title shall be 'IWMC Grievance' to ensure it is routed to the focal point.

All grievances received by the Ministry should be discussed with EPA. EPA will screen the grievance and determine its relevance. If unrelated to IWMC, a response shall still be provided to the party via a letter within 15 working days providing direction on the way forward for the grievance or providing explanation on how the grievance is unrelated.

If the grievance is related, the authorities shall discuss internally and either address the grievance publicly or directly to the aggrieved party. Response shall be made within 15 working days of receiving grievance unless it is an exceptionally major issue that requires feedback from other agencies or at a policy level (if there are any delays, this shall be notified to the aggrieved party within 15 working days).

The MCEP PMU will be responsible to ensure that there is no cost imposed on the aggrieved person due to the grievance mechanism at Tier 2.

The aggrieved party shall acknowledge the response from the authority within 10 working days of receiving the response. If not responded positively or negatively, it will be regarded as a positive response and the grievance have been resolved.

If responded negatively, tier 3 will need to be activated. The aggrieved party may notify the Ministry in writing of the intention to move to Tier 3.

9.3 THIRD TIER: JUDICIARY

Timeframe: As per established judicial procedures

The aggrieved party shall submit the grievance directly the courts if the issue has not been resolved with the first two Tiers.

Assistance from MCEP PMU is to be provided for vulnerable person(s) as per this grievance mechanism.

In cases where vulnerable person(s) are unable to access the legal system, the Attorney General's (AG) office will provide legal support to the vulnerable person(s). The PMU must assist the vulnerable person(s) in getting this support from AG office. PMU must also ensure that there is no cost imposed on the aggrieved person if the person belongs to the vulnerable groups.

The courts will pursue the matter further as per the established judicial procedures and timeline established in the Maldives. The verdict of the Courts will be final.

A vulnerable person(s), for the purpose of this project, is defined as a person who is poor, physically or mentally disabled/handicapped, destitute, disadvantaged for ethnic or social reasons, an orphan, a widow, a person above sixty years of age, or a woman heading a household.

10 STAKEHOLDER CONSULTATIONS

Stakeholder consultations were carried out with the developer, the island council, and Women's Development Committee, Waste Management Committee along with Non-Government Organizations (NGOs) in the island. Additionally, random households were surveyed throughout the island. The language of communication in each consultation was in Dhivehi. Email inquiries with the developer was in English.

Details of the consultations are given in the following sub sections.

10.1 CONSULTATIONS WITH THE DEVELOPER

Initially before the site visit, numerous consultations were undertaken with the developer to ensure the details and of the project components were clear. Consultations were primarily undertaken in the form of inquiries/clarifications via emails. One meeting was held in person at the Ministry of Environment

Items	Description
Date of Consultation	7th December 2019 (email), 9th December 2019 (in person), 11th December 2019 (email), 15th December 2019 (email).
Venue	Ministry of Environment (9th Dec 2019)
Name of Stakeholders	Ahmed Hassan Zuhair (Environmental and Social Safeguards Specialist), ahmed.hassaan@environmnet.gov.mv Aishath Ajfan (Asst. Project Cordinator) aishath.ajfaan@environment.gov.mv Mohamed Afraz (Civil Engineer), mohamed.afraz@environment.gov.mv
Introduction	Scope of the project were initially clarified, after which the most environmentally sensitive components and potential mitigation measures were discussed. The developer informed that the project construction tender would commence only after the ESMP process is completed. The Ministry wished to implement the physical works on site as soon as possible.

Summary of main discussions	**General scope of works** The existing IWMC site will be significantly expanded and located slightly further away from the shoreline. However, no major changes to the IWMC location. New concrete works will be undertaken including construction of boundary walls, storage and office areas, and waste collecting cells. **Grievance Redress Mechanism (GRM)** GRM has been formulated and is required to be shared with the council. The Ministry will request council to nominate a focal point for the GRM if not already selected. **Additional equipment and machineries** The council can choose 1 additional equipment or machinery they require in order to make the waste management system more efficient. The equipment and vehicle will be procured and provided to the council within the year 2020. **Existing waste stockpile clearance** Collection and clearance of waste accumulated outside the existing project boundary will not be the responsibility of the project contractor. This will be done through WAMCO under a separate program. However, it will also be attended when currently existing waste sites in all Zone II islands are being cleared. The project contractor will only clear the areas within the project boundary within the scope of this project. Furthermore, all available documents with regards to the project were shared in addition to previous documents concerning the IWMC site in Eydhafushi

10.2 ISLAND COUNCIL

The meeting was held in person in the Island Office. Few members of the council were not present during the field visit as they had gone on their annual holidays. However, key members including the main focal point for the waste management operations in Eydhafushi were present.

Items	Description
Date of Consultation	16th December 2019
Venue	Island Council Office
Name of Stakeholders	Hawwa Sameeha – Council Vice President – 7530663 Naushad Ahmed – Council Member (focal point for waste management) – 9676070 Moosa Faiz – Assistant Director (Civil servant) - 7787307
Introduction	The current state of the waste management operation were initially discussed. Information on the proposed project were then shared, based on which the council gave their comments and feedback
Summary of main discussions	**Records of waste collected and meeting minutes** The council did not have proper records of waste collected thus far in the island. Moreover, minutes of meetings that were held regarding waste management also could not be located during the site visit. **Existing waste management program** Waste collection is being carried out by the council. However, there is no proper systems in place at the waste management center. Segregation of waste is very limited and most of the waste stream is dumped to the existing stockpile area. Open burning is practiced on a daily basis. One of the most critical points noted in the meeting was that the council needed assistance to remove the existing stockpile and waste management in the island can only improve after it is removed.

	Equipment most needed for the facility The council currently use 2 vehicles, 1 of which is leased and incurs high cost to the council. Therefore, a 1.5 tonne pickup was regarded as the most important machinery/vehicle required. From the machineries within the IWMC, Metal can compactor machine was regarded as the most important as the council has collected a large volume of cans. **Grievance Redress Mechanism (GRM)** The council informed that they need more information from the Ministry to setup the GRM. They require additional materials such as posters and standard form templates. A focal point for waste management had already been chosen, and the same member will be the focal point for GRM as well. **Public Consultation on willingness to pay** Consultation with the public was undertaken in 2014 regarding their fee structure for waste collection and their willingness to pay. Currently there are some households who has refused to pay and insist the fee is too big for the service provided. However, council believes more will come on board the waste collection program if they are able to manage waste more effectively then currently being done.

The council was generally supportive of the project and believes with the right infrastructure, they will be able to solve the existing waste issues in the island. In conclusion, the greatest need for the council is for a mechanism to transfer the waste out of the island on a regular basis. They reported that If such a system is not in place, there will always be a tendency of waste over accumulation in the island, which would eventually lead to waste mismanagement.

10.1 HOUSEHOLD PERCEPTION SURVEY

Households were chosen at random among households from different districts in the island for the perception survey to identify the constraints the community face in terms of current waste management practices, the problems they face and their recommended solutions.

All the households were more than 150m away from IWMC site as the IWMC is located at the southern edge of the newly reclaimed land.

Signed consent from the surveyed households were obtained to use and publish the results of this survey. Some households preferred not to share their house names while others preferred to not share their individual personal names. The household details are given by area/district in such circumstances.

The survey method used includes face to face interviews and use of survey forms. Copies of the signed survey forms are provided in Annex 6. The surveys were conducted at 12 households; from which 8 households provided the names of those individuals who took part in the survey. This 8 household is listed in the table below.

Assistance was obtained from interns from the island to carry out the surveys.

The survey results are presented below.

Items	Description
Date of Consultation	19th – 21st December 2019
Households consulted	West district – Aishath Waheedha West district – Fazloon Center district – Aminath Risma West district – Aminath (Aithu) East district – Mariyam Rasheedha Athamaage – Aminath Rasheedha Hulhanguge – Aboobakuru Hussain Huvandhumaage – Fathimath (Fathun)
Summary of Key findings	
No. and demography within households	They surveyed households were predominantly comprised of women. Only in one household a male took part in the survey. 2-3 chidren were present in each household.
Waste generation quantities	The standard size of waste container or bin used in the island is about 20L

	The majority of the households reported that about 1 container (bin) of organic waste was generated daily. One household reported 2 containers were generated, while 1 other household reported 0.5 container was generated there. Inorganic waste were generally put in sacks. Majority of the households reported 1 sack of inorganic waste is generated daily. 2 households reported 2 sacks were generated. Organic waste generation was much higher than inorganic waste.
Waste Disposal method	Majority of the households informed that they are part of the council waste collection program. Only 2 households reported that they manage waste disposal themselves. Organic wastes were dumped to the lagoon using the platform created by the council at the revetment.
Levels of segregation	Waste was generally poorly segregated. However, majority of the households had segregated organic and inorganic waste.
Waste storage	Waste is stored at the household for about a day in waste bins or sack of volume 20L – 30L
Waste transport to IWMC	Waste transport to IWMC was predominantly via the council operated vehicles.
Perception on waste collection fee and willingness to pay	Majority of the households supported the fee structure currently setup in the island and were willing to pay. However 1 household complained that the fee was too high. They recommended halving the current fee to 50 MVR/day.
Perception on IWMC location	All the households were satisfied with the current IWMC location.

Recommended features for the IWMC	All the households reported that there has to be a reliable system in place where waste collected at IWMC is regularly transferred out of the island. Over accumulation of waste was regarded as the main issue at the current IWMC operation by all the households. 75% of the households recommended better methods to store waste at the IWMC 25% reported on importance of raising the walls and having a green buffer around the IWMC site 33% recommended having fire fighting equipment within the IWMC site.

10.2 WASTE MANAGEMENT COMMITTEE

Waste Management Committee was met with together with the Island Council. All the members of the committee was not present during the consultation. Furthermore, the committee members had been selected in 2015 and has not been active recently.

Items	Description
Date of Consultation	16th December 2019
Venue	Island Council Office
Stakeholders Consulted	Ali Shafeeq (7992334) – 'The beginners' Aboobakr Hussain (7878072) – 'Jamiyyathul Wafa' Ahmed Shareef (7903903) – AEC Environment Club Mohamed Naureef (7786007) – Former Council Member
Introduction	Discussions were held regarding the role of the waste management committee and how active they had been in overseeing or participating in waste management operations.
Summary of Main Discussions	**Their current involvement in waste management**

The committee is not currently involved at any level. A new committee needs to be formulated soon and the work of the committee needs to be restarted along with the proposed project

Works undertaken thus far

The committee had been very engaged upon formation in 2015. The committee was actively involved in setting up the fee structure and raising awareness among households to participate in the waste collection program. However, the committee has not had any involvement in the last few years.

Their perspectives on how waste management can be improved in the island

To improve waste management in the island the committee members recommended the following

- Remove the existing waste stockpile near the IWMC location
- Ensure the new structure is properly enclosed and waste management centre area is properly demarcated.
- Procure better machinery which can handle the volume of waste generated
- Have a system in place by which waste can be regularly removed from the island
- Impose fines and penalties on households that do not participate in the waste collection program
- Impose fines and penalties on people who litter and does not follow the waste management guidelines
- Stop the food waste dumping system that is currently practiced in the island

Actions to be taken to reduce waste

- Water bottling plant was discussed as the best way forward to reduce plastic water bottles in the island.
- Use of nappies can be reduced by opting for more environment friendly reusable nappy options

	- There needs to be a system in place by which good condition items that are discarded from one household can be easily identified by households that may like to keep using such items **Equipment most needed for the IWMC** - A compost system which does not require much manual labor - A waste collecting vehicle - A metal can compactor - Wood chipper

10.3 WOMEN'S DEVELOPMENT COMMITTEE

Women's Development Committee is the main body from which women participation takes place within the committee. The committee has been inactive for a long period. However, recently new members have been selected and there were plans in place to re-activate the committee. There were still not much efforts undertaken as they reported there were some uncertainty due to the upcoming council election. They reported that the committee will be fully operational after the council election is completed.

Items	Description
Date of Consultation	16th December 2019
Venue	Island Council Office
Stakeholders Consulted	Zahiyya Ibrahim - 7904485 (President) Niuma Ahmed – 7972068 (Vice President) Fathimath Abdul Rahman – 7838786 (Member) Milna Ali – 7716050 (Member)
Introduction	Relatively new commitee
Summary of Main Discussions	**Their current involvement in waste management** The committee is currently somewhat involved in raising awareness regarding waste management. However, there were no major programs

	as such at the moment. They reported that they do hold regular clean up events. **Their perspectives on how waste management can be improved in the island** - Removal of waste stockpile was cited as the most important measure to be taken currently - Additional fines and penalties need to be in place to discourage residents who mismanage waste - Waste segregation needs to be done at household levels. Need bins for households for this to be done efficiently **Actions to be taken to reduce waste** - Making better use of the existing water network to reduce water bottle import. This can be done by placing filters at homes and using supplied water for drinking water - Use of reusable bags - Undertaking awareness programs at household levels - Placing advertisement banners encouraging good waste management practice.

11 CONCLUSION

The upgrading of the IWMC and clearance of the existing waste stockpile near the IWMC in B. Eydhafushi is critical to ensure proper waste management in the island. Current waste management practices is not adequate for a population such as Eydhafushi and the situation will get worse if it is left unattended. Therefore, urgent implementation of the project works is recommended. A fully functional IWMC with proper boundaries, storage cells and added security features will enable the Island Council to properly monitor the center, manage security and mitigate

From the council side, more work has to be done with regards to record keeping and proper day to day management of the facility and waste collection operation. The waste

management committee needs to be re-elected and regular meetings need to be held to ensure community participation in waste management. More training is also recommended with respect to general housekeeping, reporting and records maintenance. A re-orientiation session has to be held for composting and use of machineries already in the island. The machinery in the island needs to be repaired as electric power cables for all machinery has been damaged.

With good waste management practices in place, attempts should be made to bring on board households and other facilities which has not joined and/or has opted out of the waste collection program. In order for the project to succeed and to be fully effective, a proper waste transfer system needs to be in place. Eydhafushi is located in the designated Zone 2, and therefore, R. Vandhoo needs to be fully operational and able to accept waste to ensure waste does not get accumulated in the island beyond the capacity of the IWMC.

The project will have numerous benefit to the natural and socio economic environment in the island. Waste dispersion from the waste collecting /dumping area will completely stop and therefore all waste material can be confined within the IWMC boundary and away from the public. Therefore, impact on the natural environment near the structure would be greatly reduced. As the project proposes slightly shifting the IWMC away from the revetment line, the current situation of waste tipping over to the revetment and the lagoon will significant reduce, and therefore having less impact on coastal infrastructure and the marine environment.

Furthermore, the project will directly benefit the economy of the island by increasing revenue through the sale of composted material and recyclables and by creating employment opportunities. Far greater impact will occur indirectly as the islands image will significantly improve, thereby creating ore business opportunities in tourism and other business sectors.

No permanent negative impacts to the environment are likely to occur as a result of the project as the site is in a reclaimed land and does not consist of any significant vegetation. Potential indirect negative can be effectively minimized or even completely eradicated, if the mitigation measures proposed in the management plan are adhered.

Recommendations for the project include;

- Have an arrangement in place to completely clean the existing waste stockpile in the island

- Have a green buffer zone around the project site either at project level or after construction is completed at an island council level.
- To incorporate this ESMP as a part of the contractor's contract.
- Implement the mitigation measures proposed in the ESMP.
- Island council to pursue waste reduction and reuse methods as recommended in the report
- Conduct regular monitoring and supervision works during construction and operational phase.
- Ensure the Grievance Redress Mechanism is followed consistently throughout the project construction and operation phase
- Ensure all the reporting requirements including environmental monitoring is regularly undertaken as stated in the report.

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ANNEX 1 – EIA SCREENING DECISION

Environmental Protection Agency
އެންވަޔަރަންމަންޓަލް ޕްރޮޓެކްޝަން އެޖެންސީ

ނަންބަރު: 203-EIARES/438/2019/54

ސްކްރީނިން ކުރުމަށްފަހު ނިންމުން

Screening Decision

މިއީ ބ.އޭދަފުށީ ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑް ކުރުމުގެ މަސައްކަތް ސްކްރީނިން ކުރުމަށްފަހު ނިންމުން އެންގުމަށްޓަކައި މިނިސްޓްރީ އޮފް
އެންވަޔަރަންމަންޓް އަށް ދަންނަވާ ރަސްމީ ލިޔުމެކެވެ.

This is an official document issued to **Ministry of Environment**, for the purpose of communicating the decision made after screening of the project; **Upgrading of Island Waste Management Center at B. Eydhafushi**

މި މަޝްރޫޢުގެ ސަބަބުން ތިމާވެއްޓަށް ނުރަކާ ބޮޑު އަސަރުތައް ކޮށްފާނެ ކަމަށް ފެނުނެވެ. ވީމާ، ތިމާވެއްޓަށް އަސަރު ފޯރާނެ މިންވަރު ބެލުމުގެ ރިޕޯޓެއް ހުށަހަޅާށެވެ. This project is likely to cause significant negative environmental impacts. Hence, please submit an EIA report.	☐
މި މަޝްރޫޢުގެ މަސައްކަތުގެ ތިމާވެށީގެ ފުރަތަމަ ދިރާސާއެއް ހުށަހަޅާށެވެ. Submit an Initial Environmental Examination for this project	☐
މި މަޝްރޫޢުގެ މަސައްކަތުގެ ތިމާވެށީގެ މެނޭޖްމަންޓް ޕްލޭނެއް ހުށަހަޅާށެވެ. Submit an Environmental Management Plan for this project	☑
މި މަޝްރޫޢުގެ ސަބަބުން ތިމާވެއްޓަށް ނުރަކާ ބޮޑު އަސަރުތައް ކޮށްފާނެ ކަމަށް ނުފެނުނެވެ. ވީމާ، މަޝްރޫޢުގެ މަސައްކަތް ކުރިއަށް ގެންދިއުން އެންމެ ރަނގަޅުކަމުގައި ދަންނަވަމެވެ. This project is unlikely to have a significant negative impact on the environment. Hence, you may proceed with the project.	☐
މި މަޝްރޫޢުގެ ސަބަބުން ތިމާވެއްޓަށް ކޮށްފާނެ ނުރަކާ އަސަރުތައް ކުޑަކުރުމަށް މި އެޖެންސީއިން އަންގާ ފިޔަވަޅުތަކާއި މަސައްކަތް ކުރިއަށްގެންދަން ދަންނަވަމެވެ. The measures stipulated by this agency shall be used to mitigate the negative environmental impacts of the project.	☐

މިއީ ތިމާވެށީގެ ގޮތުން ކުރެވޭ ސްކްރީނިންގެ އެއްޗެކެވެ. ވީމާ، މި މަސައްކަތް ކުރުމަށް ސަރުކާރުގެ އެހެން ކަމާބެހޭ އިދާރާތަކުން ހުއްދަ ނަގަންޖެހޭ
ހުރި ހުއްދަތަކެއް ނަގަންޖެހޭނަމަ ދަންނަވަމެވެ. މިސްކްރީނިން ކުރުމަށްފަހު ނިންމުމުގެ ލިޔުމުގައި ބުނެފައި ހުންނަ މުއްދަތަކީ
ބަޔާންކުރެވިފައިވާ މިއެޖެންސީން ނިންމުން ފުރިހަމަ ކުރުމަށް ދެވޭ މުއްދަތެވެ.

This is an environmental screening. Hence, obtain all necessary approvals/permits from other relevant government authorities before commencement of the project activities. The date of expiry stated in this Environmental Screening Decision Statement is the duration given to implement the decision made by this agency.

Screening Institution: **Environmental Protection Agency of Maldives**

سۆښېړښ ټاټ ډېټګ: ތަފްތީޝް ފާލާ ދިވެހިރާއްޖެ ފެނާއި ވަށާ ބަލަހައްޓާ ބެލެނިވެރި ދާއިރާ

Date of issue:**4th November 2019**
Date of Expiry: **4th November 2020**

ڤرټاټ ګېټ: 04 ټڅ ۲۰۱۹
ډډګرګ رډګ ګېټ: 04 ټڅ ۲۰۲۰

Name: **Mr. Ibrahim Naeem**
Designation: **Director General**

ټګټ: ئىبراھىم ناسىم
ډډګډ: ډېټګټ ډېټګ

Signature:

سڅ:

ANNEX 2 – LAND USE PLAN AND SITE LOCATION

APPROVED

Planning and Urban Development Department

Ministry of National Planing and Infrastructure

Proposed New Location of BMH

DHIRAAGU Submarine cable

OOREDOO Submarine cable

LEGEND:

EXISTING:

- EXISTING RESIDENTIAL AREA
- INSTITUTIONAL & COMMUNITY FACILITIES
  - 1 Atoll Office
  - 3 Island Court
  - 4 Pre-school
  - 5 Hospital
  - 6 Youth Centre
  - 7.1-7.2 School
  - 8 Police Station
  - 9.1 - 9.3 Mosque
  - 10 Friday mosque
  - 11 Media Centre
  - 12 Dhanaal
  - 13 Island Office
  - 14 STO
  - 15.1 boalhajehi Jamiyyaa
  - 15.2 Vafaa Jamiyyaa
  - 15.3 Feyli Jamiyyaa
  - 16.1 Social Protection Centre
  - 16.2 Dhandifaru
  - 17 Multi-Purpose Centre
- UTILITY AND MUNICIPAL SERVICES
  - 19 Power House
  - 20 Oil Storage
  - 20.1 Theyoge
  - 21 Cemetry
  - 22 Dhiraagu Site
  - 23 Wataniyya site
  - 24 Waste management Centre
- COMMERCIAL ZONE
  - 25.1-25.2 Water Tanks
- INDUSTRIAL ZONE
- EXISTING SPORTS & RECREATION
  - 27 Football ground
  - 28 Futsal Ground
  - 29 Open play area
  - 30 Stage
  - 18 School Children's Park
- EXISTING HARBOUR BASIN
- OPEN/GREEN BUFFER AREAS
- ENVIRONMENTAL PROTECTION ZONE (EPZ)

PROPOSED:

- RESIDENTIAL AREA
- PUBLIC HOUSING AREA - LAND FOR SALE
- PUBLIC HOUSING AREA - HOUSING FLATS
- INSTITUTIONAL & COMMUNITY ZONE
  - 40.1 - 40.2 - PreSchool
  - 40.3 - School
  - 40.4 - 40.5 - Mosque
  - 40.6 - Driving Track
  - 40.7 - Bank
  - 40.8 - Ferry Terminal
  - 40.9 - office space (B. atoll bayousfeyer reserve
- COMMERCIAL & RETAIL ZONE
  - 50.1 - Local Market
- UTILITY AND MUNICIPAL ZONE
  - 60.1 - Waste management
  - 60.2 - Ooredoo antenna
  - 60.3 - Water & RO Plant
  - 60.4 - Vehicle Parking Zone
- SPORT AND RECREATIONAL AREA
  - 70.1 - 70.2 - Children's Park
  - 70.3 - Futsal ground
  - 70.4 - Cultural Park
- INDUSTRIAL AREA
  - 80.1 - Boat Building / Repair
  - 80.2 - Bottling Plant
- GUEST HOUSE DEVELOPMENT ZONE
- RESERVED FOR FUTURE USE
- PARKS
- GREEN / OPEN AREAS
- EPZ
- REVETMENT

0 50 100 150 200 250M

MINISTRY OF NATIONAL PLANNING AND INFRASTRUCTURE

AMEENEE MAGU, MAAFANNU 20392, MALE', REPUBLIC OF MALDIVES

TEL: 3004300 FAX: 3004301 email: spatial@planning.gov.mv

TITLE: B. EYDHAFUSHI LAND USE PLAN

PROJECT: B. EYDHAFUSHI LAND USE PLAN

DRAWN BY:

CHECKED BY:

SURVEYED BY:

SCALE:

DATE: 15 JULY 2019

ANNEX 3 - APPROVED DRAWINGS

بسم الله الرحمن الرحيم

"ދިވެހިންގެ ފުރިހަމަކަމަށް - ތިމާގެ ހިއްސާ ހުރިހާ"

ފުވައްމުލަށް ދަތުރުކުރާ ކައުންސިލްގެ ލިޔަންވެރިކަން

ދެކުނު ހޯދަދޫ، ދިވެހިރާއްޖެ.

Secretariat of the Eydhafushi Council, South Maalhosmadulu

Baa·Eydhafushi, Republic 0f Maldives

ނަންބަރު: 320/438/2020/1

ދިވެހިންގެ ތާއީދު ހޯދުމަށްފަހު ތ. ފުވައްމުލަށް ދަތުރުކުރާ ކައުންސިލް ބަދަލުކުރަން ތިން.

ވަޒީފާ ސާވްކުރުމުގެ ފަރާތް.

ތިއްބެވި ނަންބަރު: 438-WMPC/CIR/2020/01 (29 ނޮވެމްބަރ 2020) ވާ ބުރަސްފަތި ދުވަހުގެ

ފަރާތް.

ه. ދެކުނު ހޯދަދޫ ކައުންސިލްގެ ކައުންސިލަރ ވަޒީފާ ދެއްކުމަށް ދަތުރުކުރާ ފަރާތް ގައުމީ ސިވިލް

ސާވިސް ކޮމިޝަނަށް ހުށަހަޅަންވާ ކަންތައް.

ތިއްބެވި ތާރީޚް ފަށާ ދުވަހުން ފެށިގެން

05 ޖުމާދަލްއާޚިރ 1441

30 ނޮވެމްބަރ 2020

ކ. ދެކުނު ހޯދަދޫ

ކައުންސިލް ލިޔަންވެރިކަން

ދިވެހިންގެ ތާއީދު ހޯދުމަށްފަހު

ދ. ދެކުނު، ދިވެހިރާއްޖެ.

Secretariat of the Eydhafushi Council, South Maalhosmadulu
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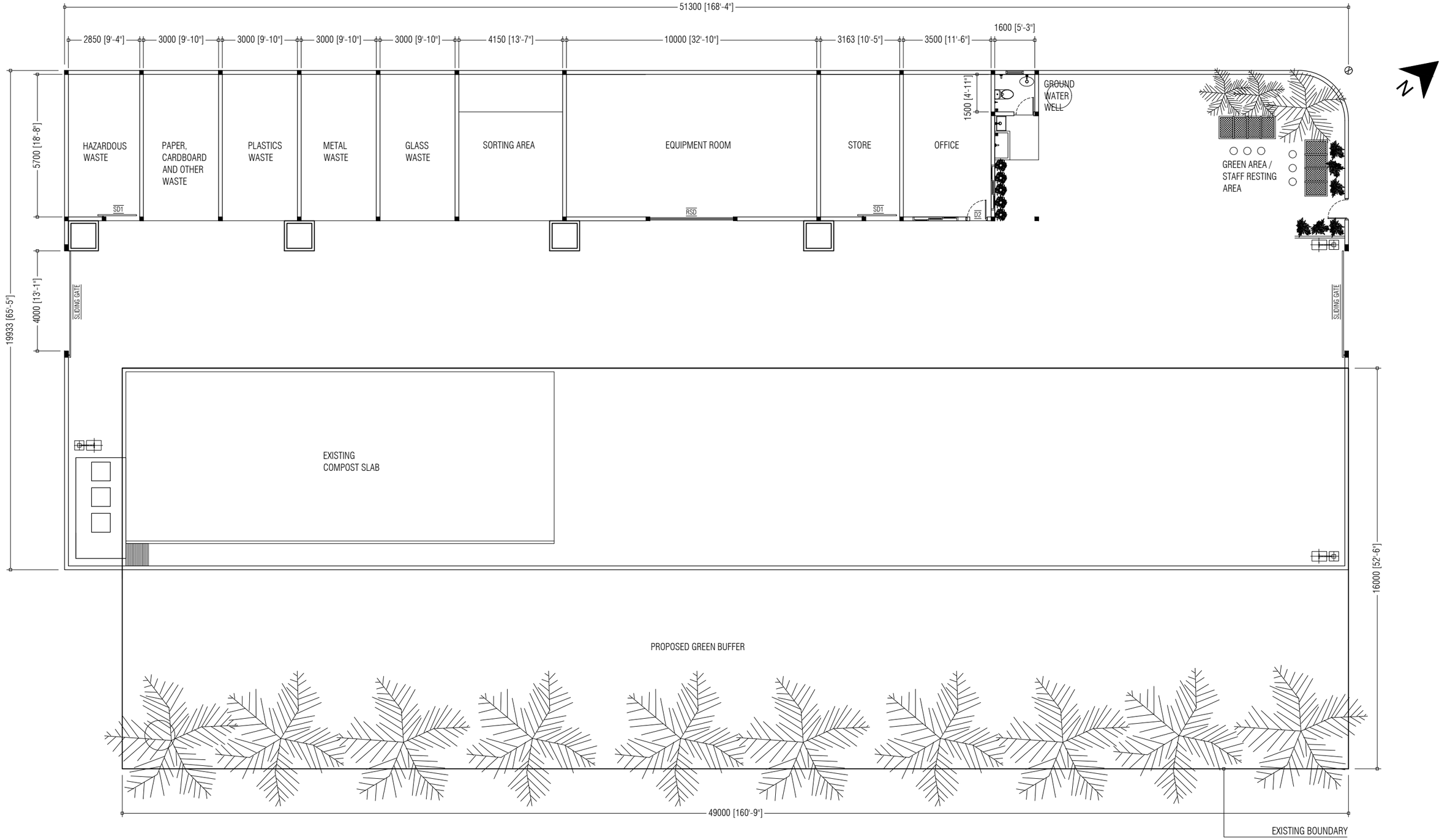
e-mail: eydhafushi@baa.gov.mv

ދެކުނު ހޯދަދޫ ފުރާނަގަރު ކައުންސިލް ލިޔަންވެރިކަން
ފޯނު: +960 6608303 ފެކްސް: +960 6608503
ޕޯ ބޮކްސް: eydhafushi@baa.gov.mv



APPROVED BY	PROJECT	DESIGN BY	AMENDMENTS
	UPGRADING OF WASTE MANAGEMENT CENTRE B. EYDHAFUSHI	AFRAZ	
MCEP MINISTRY OF ENVIROMENT AND ENERGY GREEN BUILDING, HANDHUVAREE HIGUN, MAAFANNU, MALE' (20392), REPUBLIC OF MALDIVES, TEL: +960-3018431, +960-3018300, FAX: +960-328301	TITLE SITE LAYOUT	STRUCTURE BY AFRAZ	
	CLIENT DEPARTMENT WMPC DEPARTMENT	DRAWN BY AFRAZ	
	PAPER SIZE A3	SCALE 1:150	
	PAGE NO. 01	DWG NO. EYDH-A1-01	
		DATE 17.09.2019	

ANNEX 4 – B. EYDHAFUSHI ISLAND WASTE MANAGEMENT PLAN

ކުންނ ފުނަދުވެރިކަމުގެ ތަރައްޤީ

ސްޓްރެޓެޖީ

ފާހަގަކުރުމުގެ ދަށްދެއްކުން

01 ފެބްރުއަރީ 2016ން 31 ޑިސެންބަރ 2020ގެ ހިތާމަކުރާ (05ތަނަވަސް)

ވިލާތުން ތައްޔާރުކުރެވުނު ތާރީޚް: 25 ނޮވެންބަރ 2015

بسم الله الرحمن الرحيم

ތ.ދިވެހިރާއްޖެ ތަރައްޤީކުރާ ފަންނީ ތަމްރީނުތަކުގެ ކަންކަން ބަލާ ދާއިރާ ހަމަ ކުރުމުގެ ކުރިން

1. ތަޢާރަފް

ދިވެ ތ.ދިވެހިރާއްޖެ ކަރަންސީ ތަންތަނުގެ ގޮތުގައި، ފަނާ ވެދާނެ ކަންކަމުގެ ލިސްޓެއް ތަޔާރުކުރުމަށް ދިވެ ތ. ދިވެހިރާއްޖެ ތަރައްޤީކުރާ ފަންނީ ތަމްރީނުތަކުގެ ކަންކަން ބަލާ ދާއިރާ ތ. ދިވެހިރާއްޖެ ކަރަންސީ ތަންތަނުގެ ކަންކަމުގެ ދާއިރާ ތ.

4. ތަކުރާރު ކުރެވޭ ގޮތުގެ ތަފާތު ފަރާތްތައް

ކުންފުނީގެ ގޮތުގައި	ތަކުރާރު ކުރާ ފަރާތްތަކުގެ ދަށުން ދެވޭ ދަށްވުން (ދަށުވާ ގޮތުގައި)
ކުންފުނިން ދެވޭ ދަށް	70%
ފަރާތަކުން ގެނެވޭ ގޮތުގެ	2%
ގްރޫޕް	5%
ގެ	15%
ތަނަވަސް ގޮތަށް	8%

5. ދަށްކުރެވޭ ގޮތުގެ

ފުރިހަށް ތަކުރާރުކުރާ ފަރާތަކުން ކުންފުނިން ދެވޭ ދަށްވުން ދަށްކުރާ ގޮތަށް (ތަކުރާ ތިރީ ތަކުރާރު) 8435 ތަކުރާ ކުރެވޭ ގޮތުގެ ތަފާތު ފަރާތްތަކުގެ ދަށުން ދެވޭ ދަށްވުން ދަށްކުރާ ގޮތަށް ތަކުރާ ކުރާ

6. ޕްރޯގްރާމް އެކްރެޑިޓޭޝަން ކުރެވުނު މަޝްވަރާ

މިޕްރޯގްރާމް އެކްރެޑިޓްކޮށްފައިވަނީ 29 ޑިސެމްބަރ 2011 ގައި މޯލްޑިވްސް އެންވަޔަރަންމަންޓަލް މެނޭޖްމަންޓް ޕްރޮޖެކްޓް އާއި ކައުންސިލް އިދާރާ ގުޅިގެން ތަރުތީބުކޮށް ހިންގި ބައްދަލުވުމުގައި ބައިވެރިވެ ތިބި ފަރާތްތަކާއި ހުށަހެޅުނު މަޝްވަރާތަކުގެ ބޭސްލައިން ބައިވެރިވުމާއި ކުނި މެނޭޖްކުރުމުގައި ކުރެވިފައިވާ މަސައްކަތްތަކާއި ތަޖުރިބާތަކުގެ އަލީގައި ރަނގަޅު ބަދަލުތަކެއް ގެނެސް ބައިވެރިވާ ފަރާތްތަކުން ޓީމުގެ މަޝްވަރާތަކުގެ ބައިވެރިވުމާއި ބައިވެރިވި ފަރާތްތަކުގެ ލިސްޓް މިޕްރޮގްރާމްގެ އެނެކްސް 1 ގައި އެވަނީއެވެ.

7. ހާސިލްކުރަން ބޭނުންވާ މައިގަނޑު މަޤްޞަދު

- ބ.އަތޮޅުން ރަށްތަކުގައި އަދި ދުވެހިރާއްޖޭގެ އަތޮޅުތަކުގެ ރަށްތަކުން ވިލާފުށްޓާއި ރަޖިސްޓަރީކުރަނިވި ކުނި މެނޭޖްކުރުމާއި އަދި ކުނީގެ ސަބަބުން ދިމާވާ މައްސަލަތައް ހައްލުކުރުމަށް ހުރަހަކުން ހެދުން.

8. ލަނޑުދަނޑިތައް

1. ރަށުގައި ކުނި މެނޭޖްކުރުމުގެ ހުރިހާ ފަރާތްތަކާއި އެކުލަވާލައި އެކުލަވާލައި ބަލަހައްޓާކުރުން.
2. ރަށް ސަފާކުރުމުގެ ބޭސްލައިން އިންވެސްޓިގޭޝަނާއި އިންތިޒާމުކޮށް ހަރު ފައިދާތަކުން ރަށްއިލޭން ހޯދުމަށްކުރުން.
3. މިހާރު ކުނިއެކުލާ ސަރަހައްދުގައި ވަސީލަތްތައް ފޯރުކޮށްދިނުން ސްކޫލްތަކުގެ ފާހަގަކުރެވޭ ބަލިތަކުގެ ބޭނުންކުރުން ފެށުން.
4. ވަސީލަތް ފޯރުކޮށްދިނުމާ ސްކޫލްތަކުގައި ބޭނުންކުރުމާ ވަސީލަތް ފޯރުކޮށްދިނުމާ އިންވެސްޓްކުރުމާ ހުރިހާ އެކަކު ބޭނުންކުރުމަށް އެކަމާގުޅޭ އިންތިޒާމުތައް ފާހަގަކޮށް މިހާރު ތަރުތީބުކުރުން.
5. ގޭގެބިސް އެއްކޮށް ވަކިވަކިން ބަހާލުމަށް އެކުލަވާލެވޭ ކުނީގެ ބާވަތްތައް ރާވައި ކުނި އިންތިޒާމުކުރުމަށް ރައްޔިތުންގެ ހިއްސާ ފާހަގަކުރުން.
6. ރަށުގައި އުފެދޭ ކުނީގެ މިންވަރު މަޢުލޫމާތު ހޯދުމާއި އެކުލާ ބޭނުންކުރެވޭނެ ގޮތް ބޭނުންކުރުމުގެ އުސޫލު ކަނޑައަޅާދިނުން.
7. ރަށުގައި އުފެދޭ ކުނި ހަރުގަނޑު ކުނިގަނޑަށް ބެލެހެއްޓުމަށް ބައިވެރިވުމާ، ކުނިކޮށްގައި ހަރުގަނޑު އަދި ވިލާފުށްޓާއި ރަޖިސްޓަރީ އެއްކުރުމުގެ ދަށުން ކުނި މެނޭޖްކުރުން.
8. ރައްޔިތުން ހިއްސާވުމުގެ ދަށުން މަރުކަޒު ވަކިކޮށް ކުނި މެނޭޖްކުރުމުގެ ހަރުދަނާ ދުވެހިރާއްޖެ އެކުލަވާލައި ފާހަގަކުރުން.

9. ލަނޑުދަނޑިތައް ހާސިލްކުރާނެ ގޮތް

ލަނޑުދަނޑި 1	ރަށުގައި ކުނި މެނޭޖްކުރުމުގެ ހުރިހާ ފަރާތްތަކާއި އެކުލަވާލައި އެކުލަވާލައި ބަލަހައްޓާކުރުން					
[illegible]	[illegible]					
ހަރަކާތްތައް	ވަސީލަތްތައް	ބައިވެރިވާ ފަރާތްތައް	ޒިންމާ ނަގާ	އަދަދު	[illegible]	[illegible]
ވަސީލަތް ފޯރުކޮށްދިނުން [illegible]		[illegible]	ރަށު ކައުންސިލް			
ކުނި މެނޭޖްކުރުމުގައި [illegible]		ވަސީލަތް ފޯރުކޮށްދިނުން [illegible]	ރަށު ކައުންސިލް			
ކުނި މެނޭޖްކުރުމުގައި [illegible]	[illegible]	ވަސީލަތް ފޯރުކޮށްދިނުން [illegible]	ވަސީލަތް ފޯރުކޮށްދިނުން [illegible]			
ކުނި މެނޭޖްކުރުމުގައި [illegible]			ރަށު			

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އަޕްޑޭޓްކުރި ތާރީޚު	ކުރިއެރި ދަރަޖަ	އަމާޒުކުރާ މުއްދަތު	ޒިންމާވާ ފަރާތް	ބައިވެރިވާ ފަރާތްތައް	ވަސީލަތްތައް	ހަރަކާތްތައް
			[illegible]			[illegible]

ލަނޑުދަނޑި 2	[illegible]
މިހާރު އޮތް ހާލަތު	

ހަރަކާތްތައް	ވަސީލަތްތައް	ބައިވެރިވާ ފަރާތްތައް	ޒިންމާވާ ފަރާތް	އަމާޒުކުރާ މުއްދަތު	ކުރިއެރި ދަރަޖަ	އަޕްޑޭޓްކުރި ތާރީޚު
[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]			

ލަނޑުދަނޑި 3	[illegible]
މިހާރު އޮތް ހާލަތު	[illegible]

ހަރަކާތްތައް	ވަސީލަތްތައް	ބައިވެރިވާ ފަރާތްތައް	ޒިންމާވާ ފަރާތް	އަމާޒުކުރާ މުއްދަތު	ކުރިއެރި ދަރަޖަ	އަޕްޑޭޓްކުރި ތާރީޚު
[illegible]		[illegible]	[illegible]			
[illegible]		[illegible]	[illegible]			
[illegible]		[illegible]	[illegible]			

ލަނޑުދަނޑި 4	[illegible]
މިހާރު އޮތް ހާލަތު	[illegible]

ހަރަކާތްތައް	ވަސީލަތްތައް	ބައިވެރިވާ ފަރާތްތައް	ޒިންމާވާ ފަރާތް	އަމާޒުކުރާ މުއްދަތު	ކުރިއެރި ދަރަޖަ	އަޕްޑޭޓްކުރި ތާރީޚު
[illegible] 2 [illegible]		[illegible]	[illegible]			
[illegible]		[illegible]	[illegible]			
[illegible]		[illegible]	[illegible]			

ލަނޑުދަނޑި 5	[illegible]
މިހާރު އޮތް ހާލަތު	[illegible]

	ވަސީލަތްތައް	ބައިވެރިވާ ފަރާތްތައް	ޒިންމާވާ ފަރާތް	އަމާޒުކުރާ މުއްދަތު	ކުރިއެރި ދަރަޖަ	އަޕްޑޭޓްކުރި ތާރީޚު
[illegible]		[illegible]	[illegible]			

ލަނޑުދަނޑި 6	[illegible]
މިހާރު އޮތް ހާލަތު	[illegible]

ހަރަކާތްތައް	ވަސީލަތްތައް	ބައިވެރިވާ ފަރާތްތައް	ޒިންމާވާ ފަރާތް	އަމާޒުކުރާ މުއްދަތު	ކުރިއެރި ދަރަޖަ	އަޕްޑޭޓްކުރި ތާރީޚު
[illegible]	[illegible]	[illegible]	[illegible]			

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ރަށު ކުނި ނައްތާލުމުގެ ކަންތައްތަކުގައި ސަރުކާރާއި ގުޅިގެން ކުރިއަށްގެންދާ ހަރަކާތްތައް	ކެމްޕެއިން، ޕްރޮގްރާމް	ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް އަދި ސްކޫލް	ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް އަދި ސްކޫލް			
އަތޮޅު ފެންވަރުގައި ބޭއްވޭ ޕްރޮގްރާމްތަކާއި ގުޅިގެން ރަށުގައި [illegible]						

މިސްރާބު 7	[illegible]
މިންގަނޑު	

ހަރަކާތްތައް	ވަސީލަތްތައް	ބައިވެރިވާ ފަރާތްތައް	ޒިންމާވާ ފަރާތް	[illegible]	[illegible]	[illegible]
ގޭބިސީ ފެންވަރުގައި ކުނި 3 ބައިގަނޑަކަށް ވަކިކުރުމަށް [illegible]	ކުނިއުކާލަން 3 ކުލައިގެ ކޮތަޅު ގޭބިސީ ތަކަށް ދިނުން	ވަމްކޯ، ރަށު ކައުންސިލް	ރަށު ކައުންސިލް			
[illegible] ކޮމްޕޯސްޓް ހެދުން	ކޮމްޕޯސްޓް ހެދޭނެ ސަރަހައްދު ހޯދުން	ވަމްކޯ، ރަށު ކައުންސިލް	ރަށު ކައުންސިލް			
[illegible]	[illegible]	ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް	ރަށު ކައުންސިލް، ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ			
[illegible]	[illegible]	ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް	ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް			
[illegible]		ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް	ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް			
[illegible]		ރަށު ކައުންސިލް	ރަށު ކައުންސިލް			

މިސްރާބު 8	[illegible]
މިންގަނޑު	

ހަރަކާތްތައް	ވަސީލަތްތައް	ބައިވެރިވާ ފަރާތްތައް	ޒިންމާވާ ފަރާތް	[illegible]	[illegible]	[illegible]
[illegible]						
[illegible]		ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް	ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް			
[illegible]		ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް	ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީ، ރަށު ކައުންސިލް			

10. ރަށު [illegible]

- ގޭބިސީގެ ފެންވަރުގައި 3 ބައިގަނޑަކަށް ރަށު ކުނި ވަކިކުރުން. [illegible] (މިސާލަކަށް: [illegible]...)
- [illegible] 1 [illegible]

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- ކުނިކޮއްޗަން ކުނިގެންދިއުމާއި، ކުނިކޮށީގެ ވަސީލަތްތަކަށް ބަލަހައްޓާ އަދި ހިންގާނީ ވިޔަފާރި އުސޫލުން ރަށުގެ އަމިއްލަ ކުންފުންޏެއް، ޕާޓްނަރޝިޕެއް، ލޯކަލް އިންވެސްޓްމަންޓެއް ނުވަތަ ޖަމްޢިއްޔާ/ ޖަމާޢަތަކާއި ހަވާލުކުރެވިދާނެ.
- ހިދުމަތަށް ކަނޑައެޅޭ ފީއެއް ކޮންމެ ގެއަކުންނާއި ވިޔަފާރިތަކުން އަދި މުއައްސަސާތަކުން ކައުންސިލަށް ނެގުމުގެ އިންތިޒާމެއް ހަމަޖައްސައި އެކަން ތަންފީޒުކުރުން.
- ރ.ވަންދޫގައި ޤާއިމުކުރެވޭ ރީޖަނަލް ވޭސްޓް މެނޭޖްމަންޓް ފެސިލިޓީ ޤާއިމުކުރެވެންދެން، ކޮންމެ 3 މަހުން 1 ފަހަރު، ރަށުގައި ނައްތާނުލެވޭ ކުނި ތިލަފުށިއަށް ގެންދިއުން. ރީޖަނަލް ފެސިލިޓީ ޤާއިމުކުރެވުމުން މަހަކު 2 ފަހަރު އެފެސިލިޓީއަށް ފޮނުވުން. އޯގަނިކް ވޭސްޓް ނުވަތަ ބަޔޯޑިގްރޭޑަބަލް ކުނި އަދި ކޮމްޕޯސްޓަބަލް ވޭސްޓް ފިޔަވައި ދެން އުފެދޭ ހުރިހާ ބާވަތެއްގެ ކުނި. (ރަށުގައި އުފެދޭ ކުނީގެ 22%)
- އޯގަނިކް ވޭސްޓް ނުވަތަ ބަޔޯޑިގްރޭޑަބަލް ކުނި އަދި ކޮމްޕޯސްޓަބަލް ވޭސްޓް ރަށުގައި ޤާއިމުކޮށްފައިވާ ކުނިކޮށީގައި ނައްތާލުން. (ރަށުގައި އުފެދޭ ކުނީގެ 78%)
- ސިއްޙީ ދާއިރާގެ ކުނި (ކެމިކަލް ވޭސްޓް) ނައްތާލުމަށް ޚާއްޞަ ސަރުކާރުން ހަވާލުކުރާ އިންސިނަރޭޓަރ ރަށުގައި ޤާއިމުކުރުމާއި ކުނިކޮށީގައި ބަހައްޓައިގެން އެކުނިތައް ކުނިކޮށީގައި ނައްތާލުން.

11. މިޕްލޭން ތަންފީޒުކުރުމުގައި އެކި ފަރާތްތަކުގެ ދައުރު

- ރަށު ކައުންސިލުގެ ފަރާތުން އިސްނަގައިގެން ރަށުގެ މުޖުތަމަޢު ދާއިރާތަކުން ބޭފުޅުން ބައިވެރިކޮށްގެން ވޭސްޓް މެނޭޖްމަންޓް ޕްލޭން އެކުލަވާލައި އެޕްލޭނުގެ މަސައްކަތްތަކާ މަތިން މިޕްލޭން ތަންފީޒުކުރުމަށް ދިއުން.
- ވޭސްޓް މެނޭޖްމަންޓް ޕްލޭނުގެ ޚުލާސާއެއް އާއްމު ގޮތުގައި ރަށު ކައުންސިލުގެ ނޯޓިސް ބޯޑުގައި ހަރުކުރުން.
- ރަށުގައި ކުނި މެނޭޖްކުރުމުގައި އަދިވެސް ރަނގަޅުކުރަން ފެންނަ ކަންތައްތައް ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީގެ މަޝްވަރާއާއެކު އެކުލަވާލައި އެފަދަ ތަންފީޒުކުރުމުގެ މަސައްކަތް ކައުންސިލުން ކުރިއަށް ގެންދިއުން.
- ކުނިކޮއްޗަން ކުނިގެންދިއުމާއި، ކުނިކޮށީގެ ވަސީލަތްތަކަށް ބަލަހައްޓާ އަދި ހިންގާނީ ރަށުގެ އަމިއްލަ ކުންފުންޏެއް، ޕާޓްނަރޝިޕެއް، ލޯކަލް އިންވެސްޓްމަންޓެއް ނުވަތަ ޖަމްޢިއްޔާ/ ޖަމާޢަތަކާއި ކޮންޓްރެކްޓުގެ އުސޫލުން ހަވާލުކުރެވިދާނެ.
- ފަހަރަކު 3 މަސްދުވަހުގެ ތެރޭގައި ދުވަހަކު 1 ފަހަރު ކުނިކޮށީގެ މަސައްކަތް ހިނގާ ނިޒާމު ބަލަހައްޓަންޖެހޭ ވޭސްޓް މެނޭޖްމަންޓް ކޮމިޓީގެ ފަރާތުން ބެލުން. އަދި 4 ވަނަ މަހުން ފެށިގެން ހަފްތާއަކު ދުވަހަކު މަސައްކަތް ހިނގާ ނިޒާމު ބެލުމަށް އިންތިޒާމު ހަމަޖެއްސުން.
- މިޕްލޭން ތަންފީޒުކުރުމުގައި އެންމެހައި ފަރާތްތަކުން ވޭސްޓް މެނޭޖްމަންޓް ޕްރޮޖެކްޓުގެ ފަރާތުން މާލީ ގޮތުންނާއި ފަންނީ ގޮތުން އެހީތެރިވެދިނުން. އަދި މާލީ އެހީތެރިކަން އެކި ފަރާތްތަކުން ހޯދުން.

APPROVED

ގުޅިގެން ތަކެތިގެފަރާތުން 29 ޖެނުއަރީ 2011 ގައި ތަކުލީފު ހުށަހެޅުއްވި ދަށުގެ ގޮތުގައި ތަކެތި ގަނެވުނު ފަރާތްތަކުގެ ތަފްޞީލް

#	ތަކެތީގެ ތަފްޞީލް	ފަރާތް
1	ތަކުލީފު ހުށަހެޅި ފަރާތް / ތ.ތަކުލީފު	ތަކުލީފު ހަމަކުރުމުގެ ތަރުތީބު
2	ތަކުލީފު ދުއްވަން ބޭނުންވާ ދުވަސް / ތ.ތަކުލީފު	ތަކުލީފު ހަމަކުރުމުގެ ނިންމާލަންޖެހޭ ދުވަސް
3	ތަކުލީފު ދުއްވަން ބޭނުންވާ ގަބޫލު ކުރެވޭ ގޮތް/ ތ.ތަކުލީފު	ތަކުލީފު ހަމަކުރުމުގެ ގެންދާ ގޮތް
4	ތަކުލީފު ފަދާ ތަނުގެ ލަސްވެރިކަމެއް / ތ.ތަކުލީފު	ތަކުލީފު ހަމަކުރުމުގެ ގެންދާ ގޮތް
5	ތަކުލީފު ހުށަހެޅުމަށް ބޭނުންވާ ކަނޑައަޅާ ފައިސާ/ ތ.ތަކުލީފު	ތަކުލީފު ހަމަކުރުމުގެ ގެންދާ ގޮތް
6	ތަކުލީފު ހިއްދަ ތަކެއް ދޫކުރުން / ތ.ތަކުލީފު	ތަކުލީފު ހަމަކުރުމުގެ ހިއްދަ ދޫކުރާ ގޮތް
7	ތަކުލީފު ދުއްވަން ޝުރޫ ވާހަކަ/ ތ.ތަކުލީފު	ކަނޑައެޅިފައި/ ތަކުލީފު ހަމަކުރުމުގެ
8	ތަކުލީފު ހިއްދުގެ ތަފްޞީލް ލަފާ/ ތ.ތަކުލީފު	ކަނޑައެޅިފައި/ ތަކުލީފު ހަމަކުރުމުގެ
9	ތަކުލީފު ދުއްވަން ކަނޑައަޅާ ސަރުކާރުން/ ތ.ތަކުލީފު	ތ.ތަކުލީފު ހަމަކުރާ ގޮތް
10	ތަކުލީފު ފަދަ ތަނުގެ ލަފާ/ ތ.ތަކުލީފު	ތ.ތަކުލީފު ތަކެތި ގެނެވޭ ގޮތް
11	ތަކުލީފު ހިންގުމަށް ދުވަސް ގުޅުން/ ތ.ތަކުލީފު	ފުރިހަމަ ގޮތަށް
12	ތަކުލީފު ގަބޫލުކުރާ ދުވަސް ތެރޭގަ/ ތ.ތަކުލީފު	ގޮތުގެ ތަފްޞީލް
13	ތަކުލީފު ގޯސް ފަދަ ލޮލް/ ތ.ތަކުލީފު	ސ.ސ ލ
14	ކަނޑައަޅާ ހުށަހެޅުމަށް ކަނޑައަޅާ/ ތ.ތަކުލީފު	ތ.ތަކުލީފު ތަކެތި ގެނެވޭ ގަދަ
15	ފުރިހަމަ ދޮށަށް / ތ.ތަކުލީފު	ތ.ތަކުލީފު ތަކެތި ގެނެވޭ ގަދަ
16	ތަކުލީފު ހުށަހެޅި ތަނުގެ/ ތ.ތަކުލީފު	ތ.ތަކުލީފު ތަކެތި ގެނެވޭ ގަދަ

APPROVED

ކާނާ ފެނާއި ގުޅުވައިގެން ބޭނުންކުރާ ތަކެތި

#	ތަކެތީގެ ތަފްޞީލް	ލިބިގަ	ނެގުމާ
1	ކާނާ ގަރާ		✓
1	ތަށި ފިހާ ފެނަށް	✓	
1	ގްލާސް ކަޕް ކުޑަ	✓	
1	ގްލާސް ކަރަންޓަ	✓	
1	ވަޅ ކެނުމަށް		✓
	ގްލާސް ކަޕް (120 ލިބެގަ)	✓	
	ގްލާސް ކަޕް (240 ލިބެގަ)	✓	
	ގްލާސް ކަޕް (6600 ލިބެގަ)	✓	
4	ތަށަވަހެ	✓	
4	ތަށިފަ	✓	
4	ދަހަންތަމަ	✓	
2	ވިލާގަ	✓	
5	ފޯކް (ކުޅިފަ)	✓	
2	ހަދާ ތަށި (ކާނާ ގަންނަ)	✓	
2	ކަށި		✓
2	ދަރި (ކުއްޖާ)	✓	
1	ހަދާ ގަންނާ ވިލާ ކުއްޖާ	✓	
1	ކުއްޖާ ކާ ވިލާ	✓	
1	ހަދާ ކާ ވިލާ ފެނާ		✓
1	ގަބަ ދަށަ	✓	
1	ގަބަ ފަދަ	✓	
	ގަބަ ހަދާ ތަށި ވަގަ (ކާ)	✓	

ކައުންސިލްގެ ހިއްސާގައި ހިންގާ ވިޔަފާރި ތަކުގެ ލައިސަންސް ފީ ރޭޓުތައް

#	ތަފްޞީލް	ފީ (ރުފިޔާ)
1	ކާނާ، ފާރުމާސްޓަރ ތިމާގެ ގެއިން ބޭނުންކުރާ ވާހަކަ ދެކެވޭ ކާރ ތަކަށް	50.00
2	ފާރުން ބިޔަށްދޭ ވަޒަނުގެ ތަކެތި/ތަރި ބިނާކުރާ ތަންތަނުގައި ކުލަ ދެއްކުމަށް ދުވަހަކަށް ފީ ދައްކަންޖެހޭ	75.00
3	ކޮންސްޓްރަކްޝަން ކުންފުނި ކުލަ ދެއްކުމަށް ދުވަހަކަށް ފީ ދައްކަންޖެހޭ	100.00
4	ތަދުވަ ކައުންސިލުގެ ގެއިންސާގެ ކުލަ ދެއްކުމަށް ދުވަހަކަށް ފީ ދައްކަންޖެހޭ	200.00
5	ފުރިހަމަ ކަރަންޓް ވަޔަރިން ދުވަހަށް ފީ ދައްކަންޖެހޭ	250.00
6	ސަރުކާރުގެ ގެއްސާ ބިނާކުރާ ކުލަ ދެއްކުމަށް ދުވަހަކަށް ފީ ދައްކަންޖެހޭ	500.00
7	ސަރުކާރު/ކައުންސިލްގެ ކަންކަމަށް ދުވަހަށް ފީ ދައްކަންޖެހޭ	500.00
8	ކާނާ ހެދޭ ތަންތަނަށް ދުވަހަށް ފީ ދައްކަންޖެހޭ	500.00
9	ފާރުގެ ކަނޑާ ދިގު ބަދަލުކުރުމަށް ފީ ދައްކަންޖެހޭ	500.00
10	ތ.ތަކެތި ހުއްދަ ދިނުމުގެ ކުލަ ދެއްކުމަށް ދުވަހަކަށް ފީ ދައްކަންޖެހޭ	1000.00
11	ފާރުގައި ހެދިފައިވާ ކުލަ ދެއްކުމަށް ދުވަހަށް ފީ ދައްކަންޖެހޭ	1000.00
12	ތ.ތަކެތި ވަރުގަދަ ކަނޑައެޅުމުގެ ތެރެއިން ތަކެތި ބަދަލުކުރުމަށް ފީ ދައްކަންޖެހޭ	1000.00
13	ތ.ތަކެތި ކައުންސިލުގެ ތެރެއިން ތަކެތި ބަދަލުކުރުމަށް ފީ ދައްކަންޖެހޭ	1000.00
14	ކަނޑައެޅުންތަކުގެ ތެރެއިން ތަކެތި ބަދަލުކުރުމަށް ފީ ދައްކަންޖެހޭ	1000.00
15	ސަރުކާރު ބިނާކުރާ ކައުންސިލުގެ/ ދިވެހި، ބިދޭސީ ތަކެތި ބަދަލުކުރުމަށް ފީ ދައްކަންޖެހޭ	1000.00
16	ގެއްލުންތަކުން ފީ ދައްކަންޖެހޭ	1000.00
17	ތިމާވެއްޓިން ސަރަހައްދުތަކުން ފީ ދައްކަންޖެހޭ	1000.00
18	ވިއުގައިބާއި ފަރަންތަކުން ދުވަހަށް ފީ ދައްކަންޖެހޭ	150-1000
19	ފަރަންތަކުން	200.00

*ވިއުގައިބާއި ފަރަންތަކުން ދުވަހަށް ފީ ދައްކަންޖެހޭ ތަކެތި ކަނޑައެޅުމުގެ ތެރެއިން ފަރަންތަކުން 04 ގަޑިއިން ގާތަށް ވަޒަންކުރާ ތަންތަނަށް. ތ.ގ

1	ފުލުހުންގެ ފަރަންތަކުން.	1000.00
2	ތިމާއަށްޓަން ތަކެތި ބަދަލުކުރާ ދާނެ ތަނަށް ވެސް ފަރަންތަކުން.	500.00
3	ފަތުރުވެރިންނަށް ވެސް ފަރަންތަކުން.	300.00
4	ކައުންސިލް ކާރ ފަރަންތަކުން.	150.00

ANNEX 5 – SEGREGATION GUIDELINE OF WAMCO FOR REGIONAL WASTE COLLECTION

GUIDELINES FOR TYPES OF WASTE ACCEPTED AT R. VANDHOO REGIONAL WASTE MANAGEMENT FACILITY

Waste Management Corporation Ltd. (WAMCO)

Combustible waste

This includes materials that are not made of metal, glass, or fiber glass, such as paper, plastic, nappies, wood, leaves, etc. Combustible waste must be kept separate from sand, and also metal, glass, or fiber glass.

Tar

If tar, kept in closed containers, is brought to the facility, it will be accepted.

Metal

Products made of metal must be kept in a way that is easy to be picked up. It must also be kept separate from other types of waste.

Fiber

Products made of fiber such as mats, carpets, or resin products must be kept separate from sand and other waste types.

Heavy paper material

Heavy paper material such as cardboard boxes must be kept separate from other types of waste.

Wood waste

This waste includes wood such as palm trees without leaves. This type of waste must be chopped as much as possible, kept in a way that is easy to be picked up. It must also be kept separate from sand and other types of waste.

Plastic

Plastic waste includes plastic bottles, plastic containers, regiform boxes, etc. Plastic waste must be separated in a way that it is easy to pick up, and must be kept separate from sand and other types of waste.

Glass

Including bottles and other products made of glass, this type of waste must be kept separate from other types of waste.

Construction & Demolition (C&D)

Construction and demolition (C&D) waste will not be accepted at this facility.

INFORMATION

All waste that is brought to R. Vandhoo Regional Waste Management Facility (RWMF) must be separated as per the guidelines outlined in this pamphlet.

Please note that waste brought to R. Vandhoo RWMF that does not adhere to the guidelines will not be accepted at this facility.

Head Office:	3rd flr, Ma.Jambugasdhoshuge, K. Malé, Maldives
Phone:	3000581
Hotline:	1666
Email:	info@wamco.com.mv
Website:	www.wamco.com.mv

ޖަދުވަލު 1

ރ. ވަންދޫ ވޭސްޓް މެނޭޖްމަންޓް ފެސިލިޓީއަށް ކުރި ގެންދިއުމަށް ރަށުގެ ކުނި ޖަމާކުރާ ސެންޓަރުތަކުން ކުނި ވަކިކުރުމަށް ސަޕޯޓްކޮށްދިނުމުގެ ކަންތައްތައް

ރ. ވަންދޫ ރިޖަނަލް ވޭސްޓް މެނޭޖްމަންޓް ފެސިލިޓީއަށް ކުނި ގެނެސްދޭ ރަށުގެ ކުނި ވަކިކުރުމާއި ކުނި ނަގާ ކަނޑައެޅުމުގެ ސިފަތައް. މިގޮތުން ކަނޑު ފެސިލިޓީއާއި ހަވާލުކުރުމުގެ ކުރިން ބާވަތްތައް ހިއްސާކުރަންޖެހޭ ކަނޑަވަރު ބަލައިފައިވާ ކަންކަން، ކުނި ރަށުގެ ބާވަތްތައް ހުށަހަޅާފައި ރަނގަޅަށް ބެހެއްޓުމުގެ ތެރޭގައި ބޭނުންކުރާ ކަލަށް ތަރުތީބުން ވަކިކޮށް، ރަށުގެ ކުނި ޖަމާކުރާ ސެންޓަރުތަކުގައި ބެލެހެއްޓުމުގެ ވަކިވަކިން ބަހާލަންވާނެއެވެ.

ދަގަނޑުގެ ބާވަތްތައް

ދަގަނޑުގެ ބާވަތްތައް ހުސްކޮށްފައި ނަގަންވާނީ ހުސްކަންފަތްކޮށް ގޮޅިތަކެއް ވަކިކުރެވިފައެވެ. އަދި މިބާވަތުގެ ކުނި އެއްވެސް އެހެން ބާވަތެއްގެ ކުނިތަކާއި އެއްކޮށްނުލާ ނަގާށެވެ. މިގޮތުގެ ތެރެއިން ބަނޑުބަނޑުގެ (ބޯމި ހަރި، ޖިން، އޮރެންޖް އަދި ޖީ ބީލް، އެއްގޮތް އުފެއްދުމަތަކުގެ ފުރާޅު) އާއި ފުޅި ދަގަނޑު (ދަރު، އެލުމިނިއަމް، ނަރު) ހުށަހަޅާފައި ވަކި ކުރެވިފައެވެ. މިގޮތުން ފުޅި ދަގަނޑު ހުސްކޮށް ބަންދު ކުރެވިފައެވެ.

ފައިބަރު

ފައިބަރުގެ ކުނީގެ ބޮޑުމިން ފޫޅުގެ ބާވަތްތަކުގެ ކަނޑުފުޅާ ނަގަންވާނީ ބާވަތްތަކެއް ހުށަހަޅާފައި ވަކިކުރެވިފައެވެ. މިބާވަތުގެ ކުނިތަކެއް ފުޅި އެއްކޮށްލައި ހުސްކޮށްފައި ނަގަންވާނެއެވެ. އަދި މި ކުނިތައް ހުށަހަޅާފައި ކުނި އަޅާ ފެންގަނޑުގެ ބޮޑުކަމުގައި ފައިބަރުގެ އެކަމަށް ބޭރުން ނުހަރާން ފަޅައިން ބަރަބަރަށް ބަންދު ކުރެވިފައެވެ.

ކަރުބޯޑު

ބަނޑުގެ ބޮޑުކަމުގައި ހިމެނޭ ކަރުބޯޑު، ހުށަހަޅާފައި ހަނި ނަގާފަ ޕާނީ ފަދަ އެއްކޮޅުގައި ބަންދުކުރެވިފައެވެ. ބަންދު ނުކޮށް ހުސްކަރު އެއްވެސް ބޮޑުޑ ފަތްކުރެވިފައި ކުނި ހަރުގަނޑު ގާއިމުކޮށް ނަގަންވާނެއެވެ.

ކަރުދާސް

ބޮކްސްކަރުދާސްގެ (ކޮރުގޭޓް ބޮކްސް) ބާވަތްތައް ހުށަހަޅާފައި ވަކިކުރެވި އަދި ފަތްފަތް ކޮށްފައިވާގޮތަށް ބަންދުކުރެވިފައެވެ. މިގޮތުގައި ހިމެނޭ ކަށި (ސޮފްޓް ޑްރިންކް ޓެޓްރާ، އެހެނިހެން ކާޑުބޯޑު، ނޫސް މަޖައްލާ)، ކަރުދާސް (A4 ކަރުދާސް، ނޫސް ކަރުދާސް) ހުށަހަޅާފައި ކަރުދާސް ބޮޑުގައި ބަންދު ކުރެވިފައެވެ.

ތަފްސީލް

ތަފްސީލް ގޮތުގެ ގޮތުގައި ހަމަ ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމަކީ ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ. ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމަކީ ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ. ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމަކީ ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ.

ފްލާސްޓިކް

ފްލާސްޓިކް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމަކީ ފްލާސްޓިކް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ. ފްލާސްޓިކް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމަކީ ފްލާސްޓިކް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ.

- PET ގުޅި (ބޮތަށް ބޭނުން ކުރާ ބަންދަށް ހުންނަ ގުޅި)
- HDPE ގުޅި (ކެރަފްލަން، ދެމަދު ބާވާފައި، ކައްޕާ ބޭނުން ކުރާ ގުޅި، ގޭބިލް ކެޕްސް)
- PVC (ފްލާސްޓިކް ކުއްލަށް ކަނޑައި ދިގު، ގަސް ކަން ބަދަލު)

ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމަކީ ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ.

ކެއުމުގެ

ކެއުމުގެ ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމަކީ ކެއުމުގެ ގުޅިގައި ކެއުމުގެ ކެއުމުގެ ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ. ކެއުމުގެ ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމަކީ ކެއުމުގެ ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ.

١٠ ތަކުރާރު ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ބޭނުންވާ ގޮތުގެ ގޮތުގައި

- ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ގޮތުގެ ގޮތުގައި
- ބޭނުންވާ ގޮތުގެ ބޭނުންވާ ގޮތުގެ ގޮތުގައި

ތަފްސީލް ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަން ކުރުމަށް ކުރިން ދަންނަވައި ފާހަގަ ކުރަން ބޭނުންވާ ކަންކަމެވެ.

ANNEX 6 – GUIDELINES FOR ENVIRONMENTAL CLOSURE OF SMALL OPEN DUMP SITES

Guidelines for Environmental Closure of Small Open Dump Sites

The following guidelines are developed in line with recommendations made via the Guidelines for Design and Operation of Municipal Solid Waste Landfills in Tropical Climates prepared by the International Solid Waste Association in 2013 and have been amended to suite the project context.

1. Environmental Closure Methods

In the context of the Maldives and current solid waste management practices the following two principle 3 methods should be adopted to environmentally close the current waste management locations. Field evaluations have shown that these sites contain small open dump sites, where inorganic waste material such plastics, glass metal have been mixed with garden waste and soil.

1. Closing by covering the waste (in-place method)
2. Closing by removing the waste from the site (evacuation method)

However, in the context of the Maldives the

Which option to use should be explored via the feasibility studies to be conducted for each island, taking into consideration the sustainability and affordability of waste management options in the local context, all the while remaining cognizant of trying to affect real improvement in relation to the actual and potential environmental effects of the dump site?

When choosing a closure/upgrading method it should be borne in mind, that it is not always the most technically advanced solution that is the most appropriate. Depending on the situation, simple improvements of operational aspects (such as applying cover soil and eliminating open burning) can often result in marked site performance and greatly reduced environmental impacts. The key principle should always be to keep things simple and sustainable in a local context, while maximizing actual improvement in environmental performance.

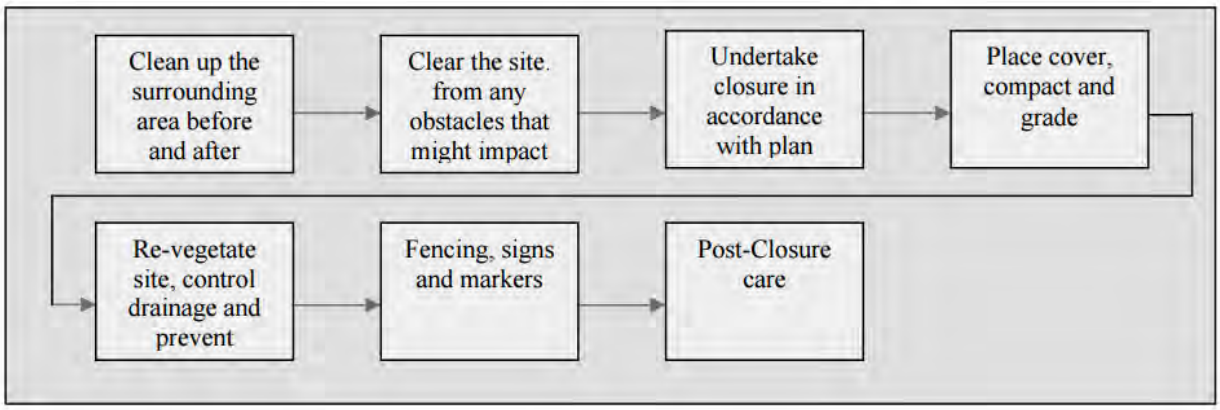
1.1. In-Place Closure

This method is the most commonly used option. The solid waste is left at the site and covered with a layer of local soil and re-vegetated. The function of the cover layer is to:

- Reduce waste exposure to wind and vectors
- Prevent people and animals from scavenging
- Control odor
- Minimize the risk of fires
- Stop people from using the site
- Control infiltration of rainwater / surface water
- Control migration of landfill gas
- Serve as growth medium for vegetation
- Support suitable post-closure activities

The ability of the cover layer to limit infiltration of water into the dump is an essential environmental protection measure. This is achieved through a suitable combination of cover soil type, thickness, slope and vegetation. In other than very arid conditions a clay cover layer is best suited as it minimizes leachate production, and controls landfill gas migration and odor. The durability of the cap layer and the degree of resistance that the cover offers to infiltration are important design considerations. What constitutes a suitable cap design is site specific and depends on the climate, locally available soil materials and plant

types, the extent of protection necessary for the local aquifer and surface water systems etc. Typical operational steps for in-place closing of an open dump are shown in the figure below.



When deciding on a suitable final contour for the closed dump, consideration should to be given to the management of surface water and erosion in the Post- closure period. Post closure care may be defined as requirements placed upon solid waste management facilities after closure to ensure environmental impacts are controlled and public health and safety are adequately maintained, for a specified number of years after closure (typically 20 years may be considered and appropriate period of time for Post-closure care of an open dump).

1.1.1. Basic Principles of In-Place Closure

The following steps need to be adhered to during the closure process:

- The dumpsite should be cleaned up and demarcated in a manner that will prohibit public access in order to avoid risk to the public. Recyclables should be separated to be managed appropriately.
- After closing the site to public access, the facility and surrounding area should be cleaned up so that any waste piles or piles of metallic materials, burnable materials, debris, and windblown paper are consolidated and placed in a final disposal cell for final covering.
- Particular attention should be given to any environmentally sensitive areas where waste may have been piled too steeply, may have been placed in or next to wetlands or beaches, or where wastes have been placed in drainage ways or in areas that impede surface water drainage.
- Site closure should help moderate the environmental impact of such improper disposal.
- As appropriate, waste materials may need to be moved or relocated to higher portions of the site, or the waste may be placed in appropriate areas to help sloping of the closed site.
- It is important to promote surface water drainage from landfill areas in order to keep surface water from filtering into and through the garbage, thus creating a hazard of ground water and surface water degradation.
    - A primary concern of site closure is the slope of filled portions of the site to promote surface water runoff without causing ponding or severe erosion of the final cover.
- The slope or grade of the land and the length strongly affects soil erosion of the slope.
    - Final slopes of filled portions of the landfill site should be at least 2 percent in grade and should not exceed 8 percent in grade.
    - Slopes of up to 12 percent may be used where the slope length is short and run off is not concentrated or increased by adjacent slopes.
- Terraces, waterways, diversions or other measures should be used as appropriate to minimize soil erosion. The USDA Universal Soil Loss Equation may be used to predict soil loss and the life of the cover.

1.1.2. Application of a Final Cover in In-Place Closure

- After the open landfilled areas have been sloped and all waste buried, compacted, and covered, an inert waste landfill site should be covered with at least 20-25 inches of clay-rich soil and 36 inches for municipal solid waste landfills that contain organic matter.
- In the Maldives due to the lack of abundant clay-rich soil, more dense sandy soil may be used.
- This final cover of soil should be placed in layers.
    - The first or deepest being about 12 inches for inert waste landfills or 18 inches for municipal solid waste landfills, which should be carefully compacted in six-inch lifts to minimize surface water infiltration. Compaction testing of this "barrier layer" may be required to ensure the soil material be properly placed.
    - An additional 12-18 inch of soil material should be placed over the compacted clay layer to help protect it from damage due to erosion, plant roots, vehicular traffic, freezing and thawing, etc. This "buffer layer" also provides a rooting depth for the final vegetative cover.
    - Based on site conditions, additional layers may be desirable. At least six inches of topsoil or suitable plant growth material such as compost, should be spread over the site.
    - Where possible Soil nutrient testing of the topsoil is suggested. Soil pH, nitrogen, potassium, phosphorous, conductivity, bulk density, and organic matter are suggested parameters.
    - Based on this analysis, appropriate organic matter may be added to the topsoil to increase fertility.

1.1.3. Site Revegetation and Long Term Management

- The site should be revegetated when practicable to a mixture of native grass or shrub species as recommended by the local environmental protection agency.
- Tree plantings may be placed around the landfill site, however, unless special precautions are taken, trees should not be planted on top of the landfill and should not be planted in positions which will cause excessive soil drifting on the landfill.
- Tree plantings help improve the aesthetics of the landfill site and may improve the site for long term use as wildlife habitat, scenic areas, etc.
- As appropriate, the landfill site may need additional covering applied, additional erosion control structures installed, and/or reseeding of the vegetative cover.
- In the post-closure period there may be regulatory requirements to establish a monitoring programme to assess risks over the long term. The basic principles are as follows, to:
    - Maintain the Integrity of the Cover layer through regular maintenance to address:
        - Settlement, cap subsidence, slope instability and vegetation cover
        - Storm water run-off / run-on drainage controls, and drain and cap erosion
    - Operate, Monitor and Maintain
        - Leachate management system (if any)
        - Landfill gas controls and wells (if any)
        - Groundwater wells; stream sampling (if any)

1.2. Evacuation Method-Removing Waste

- With this method the solid waste in the open dump is excavated and disposed off-site (typically to a sanitary landfill, or a waste incineration plant). As no sanitary landfills are currently located in the Maldives the final disposal option will be incineration at the Regional Waste Management Center in the North in Vandhoo Island in the Raa Atoll.
- Where possible, from the large amounts of accumulated cans, bottles, metal and plastic waste found in the dumpsites of inhabited islands the option of sourcing them to recyclers or companies that partake in resource recovery should be explored.

- For all such material that can be incinerated as per the National Incineration guidelines, the MEE along with WAMCO should facilitate with the IWMC and organize for the material to be transported accordingly to the incineration plant at Vandhoo.
  In the event that transportation to the Vandhoo facility will not be financially viable a second option is, once a site for the Regional Waste Management Center for Zone IV has been established, an onsite storage facility should be constructed and all material that can be incinerated should be transported via barge to this location and stored. The material can be sourced for initial testing and commissioning of the incinerator.
- All material that cannot be incinerated nor has a recyclable/resource value should be sorted should be either incorporated in to the existing open dump site prior to In-Place Closure.
- In the case of the small-medium scale open dump piles that are mixed with soil and other organic matter, unless properly sorted, incineration will not be an option. Thus for these In-Place Closure should be adopted.

ANNEX 7 – GENERAL PUBLIC SURVEY FORMS

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16 ޑިސެމްބަރު 2019

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1. ގޭގެ ނަން: ~~[illegible]~~

2. ޢާއިލާގެ އަދަދު:

☐ 5 އަންހެނުން ☐ 4 ފިރިހެނުން ☐ 1 ކުޑަކުދިން

3. [illegible] ([illegible] / [illegible] / [illegible])

ފިރިހެނުން ☐ [illegible]

އަންހެނުން ☐

4. [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

5. [illegible]

☑ އާން ☐ ނޫން

6. [illegible]

☑ [illegible] ☐ [illegible] ☐ [illegible] ☐ އެހެނިހެން ( )

7. [illegible]

☐ [illegible]

☑ [illegible]

8. ތިބާ ތަންކޮށް ކަންކަމެއްގައި ހަމޫދު ވާތީ ވާނީ ކީކޭ؟

☑ ތިބާގެ ފާޑު ☐ ތިބާގެ ދަލީ

ތިބާގެ ދަލީގައި ވާ ކަންކަމުގެ ( )

9. ތިބާ ދުއްވާފައި ބަލަނީ ކިހާ ހިސާބަކަށް ދުވާލަށްފަ؟

☑ ތިބާގެ ފާޑު ☐ ތިބާގެ ދަލީ

ތިބާގެ ދަލީގައި ހުންނަ ކަންތައް

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10. ބަލަނީ ވަރަށްގާތްގައި ކައިވެނި ކުރަން ހުށަހަޅާފައި ހުންނަ، ފާހަ ދަތުރެއް ކަނޑައެޅިފައި ހުންނަ، ތިބާ ދެކެ ދެކެ ހުންނަ ކަންތައް ކޮބައިކަށް ތިބާ ހިތަށް ގަންނަ؟

☐ ކިހާ ބިދޭސީ ހަނދާނެއް ބަލަނީ ދުވަސް ގާތަށް ވެސް ހަނދާން ކުރަން

☐ ފާހަ ދަތުރެއް

☐ ތަކެތި ގަނެ ގަނެ ބަލަނީ ތިބާ ދެކެ ދެކެ

☐ ކައިވެނި ކުރާ ތާރީޚަށް ތިބާ ދެކެ ދެކެ

☑ ގަނެ ގަނެ ތިބާ ކައިވެނި ކުރާ

☐ ކައިވެނި ކުރާ ތާރީޚަށް ތިބާ ދެކެ ދެކެ

ކުރިންވެ

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ބަދަލުތަކެއް

ފަހަރުގައި ކުށްވެރިކަމަށް ހަދާ ހަދާ ކަންކަމުގައި ތިބާ ދެކެ ދެކެ ހުންނަ ބަދަލުތަކެއް ވަނީ ކިހާ ކަންތައްތަކެއް ތިބާ ދެކެ ދެކެ ހުންނަ ކަމަށް ވެސް ބަލަނީ ކިހާ ކަންތައްތަކެއް ތިބާ ދެކެ ދެކެ ހުންނަ ކަމަށް ވެސް ބަލަނީ ކިހާ ކަންތައްތަކެއް ތިބާ ދެކެ ދެކެ ހުންނަ ކަމަށް ވެސް ބަލަނީ

ތާރީޚް: .....

ސޮއި: .....

[illegible]

[illegible]

16 [illegible] 2019

[illegible]

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1. [illegible]: [illegible]

2. [illegible]:

☐6 [illegible] ☐3 [illegible] ☐2 [illegible]

3. [illegible] ([illegible] / [illegible] / [illegible])

[illegible] ☐ /

[illegible] ☐ –

4. [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

5. [illegible]

☑ [illegible] ☐ [illegible]

6. [illegible]

☑ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible] (   )

7. [illegible]

☐ [illegible]

☑ [illegible]

ތިބެ ތަކެތި ކައުންސިލަށް ދެއްކުމަށް ބޭނުންވާ ގޮތް ކިހިނެއް ( )

☑ ހިއްލަވާ ގޮތް ☐ ހިއްލަވާ ނުލެވޭ

9. ތިބެ ފަރާތުގެ ވަކާލަތު ލިބިގެން ތިބެ ސަލާމަތްވެގެންދާ ފަރާތް

☑ ހިއްލަވާ ގޮތް ☐ ހިއްލަވާ ނުލެވޭ

ހިއްލަވާ ނުލެވޭނެ ސަބަބު

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.....

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10. ވަކާލަތު ދީފައިވާ ފަރާތަށް ތަނަވަސް ކުށެއް ހެދިފައިވާ ކަމަށް ކަށަވަރުވެ، ފާސް ކުރެވޭ ތަނަށް ބަދަލު ދިނުމުގެ ކުށް

ކަންތައްތައް:

☐ ފަރާތް ތިއްބެވި ސަލާމަތްތަ ވަކާލަތު ދީފައި ވަނީ ކަމަށް

☐ ފާސް ކުރެވުނު

☐ ކުށްވެރި ވަކާލަތު ވަކާލަތުދިން ތިބެ ދުވަސްވެ

☐ ތަނަވަސްކުރެވުމަށް ތިބެ ގެންދާ ކުށް

☑ ވަކާލަތުން ތިބެ ތަނުން ދުރުކުރުން

☐ ތަކެތި ތިއްބެ ގޮތް ބަދަލުވުން

ތަނަވަސް.....

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ތިއްބެވި ގޮތް

ފަރާތް: .....

ސޮއި: .....

[illegible]

[illegible]

16 ޑިސެމްބަރ 2019

[illegible]

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1. ގޭގެ ނަން: ~~[illegible]~~

2. ގޭބީސީގެ އަދަދު
   - އަންހެން [3]
   - ފިރިހެން [1]
   - ކުޑަކުދިން [-]

3. [illegible]
   - ފުރަތަމަ [illegible]
   - ދެވަނަ [ ]

4. [illegible]
   - ފުރަތަމަ [illegible]
   [illegible]
   - ދެވަނަ [illegible]
   [illegible]

5. [illegible]
   - ☑ އާން
   - ☐ ނޫން

6. [illegible]
   - ☑ [illegible]
   - ☐ [illegible]
   - ☐ [illegible]
   - ☐ އެހެނިހެން (   )

7. [illegible]
   - ☐ [illegible]
   - ☑ [illegible]

8. ކުރި [illegible]

☑ ހިތްހަމަ ޖެހޭ ☐ ހިތްހަމަ ނުޖެހޭ

ހިތްހަމަ ނުޖެހޭނަމަ [illegible] (   )

9. ކުރި [illegible]

☑ ހިތްހަމަ ޖެހޭ ☐ ހިތްހަމަ ނުޖެހޭ

ހިތްހަމަ ނުޖެހޭނަމަ ސަބަބު

10. [illegible]

[illegible]:

☐ [illegible]
☐ [illegible]
☐ [illegible]
☐ [illegible]
☑ [illegible]
☐ [illegible]

އެހެނިހެން

އިޤްރާރު

މިސަރވޭ ފޯމުގައި އަޅުގަނޑު ހިމަނާފައިވާ ސައްޙަ ތެދު [illegible]

[illegible]

ނަން: [illegible]

ސޮއި:

ތ. ގައުމީ ކުލަ ގުޅުންތަކާ ގުޅޭ ގަވާއިދުތަކާ ގުޅޭ ގަވާއިދު

ގައުމީ ތަރައްޤީ ފަންނުވެރިންގެ ދަށްދެނެގަތުމުގެ ސަރުވޭ

16 ޖެނުއަރީ 2019

ތަޢާރަފް: ދިވެހިރާއްޖެ ދިރިއުޅޭ ބައި ގައުމަތަށްދާ ފަންނުވެރިކަމުގެ ދަށްދެނެގަތުމުގެ ގަވާއިދު ތ. ގައުމީ ކުލަ ގުޅުންތަކާ ގުޅޭ ގަވާއިދު ގެންނަ ގޮތުން ގައުމީ ތަރައްޤީ ފަންނުވެރިންގެ ދަށްދެނެގަތުމުގެ ގަވާއިދާ ގުޅޭގޮތުން ދިވެހިރާއްޖެ ތަރައްޤީ ކުރަމުންދާ ގައުމަތަށްދާ ފަންނުވެރިކަމުގެ ދަށްދެނެގަތުމުގެ ސަރުވޭ ކުރުމަށް ގަވާއިދު ތ. ގައުމީ ކުލަ ގުޅުންތަކާ ގުޅޭ ގަވާއިދުގެ ދަށުން ތައްޔާރުކުރެވިފައިވާ ގޮތުގައި ކަންކަން ކުރަންވާނެ ގޮތް ބަޔާންކުރަނީ.

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1. ގާތް ނަން: .....

2. ގާތްގަނޑުގެ ތަފާތު:
   ☐ ތަންކޮޅު ☐ ފިރިހެން ☐ ހުސްވެ

3. ތަމްރީނުގެ ފަންނުވެރިކަމާ ގުޅޭ ކުލަ (ތަމްރީނު / ދަސްވެދާ / ތަންކޮޅުގެ ތަފާތު)
   ☐ ދަސްވެ/ ދަސްވާ ☐ ދަސްވާ

4. ތަމްރީނު ކުރެއްވި ގޮތް ބަލާ ފަހު ތަމްރީނުގައި ދަސްވި ފަންނުވެރިކަމާ ގުޅޭ ގޮތުން
   ☐ ދަސްވި ☐ ދަސްވާ ☐ ދަސްވާ ☐ ދަސްވާ ☐ ދަސްވާ ☐ ދަސްވާ

5. ތަންކޮޅު ދަށްވެގެންދާ ގޮތް ބަލައިގަންނަ ގޮތުން
   ☑ ތަންކޮޅު ☐ ތަންކޮޅު

6. ގޮތް ބަލައިގަންނަ ގޮތުގެ ގޮތުން ތަމްރީނުގައި ދަސްވި ފަންނުވެރިކަމާ ގުޅޭ ގޮތުން
   ☐ ގޮތް ބަލައިގަންނަ ☐ ގޮތް ☐ ދުވަ ☐ ގެންނަ ( ) ☐ ☐

7. ތަމްރީނު ކުރެއްވި ގޮތް ދަށްވާ ގޮތުން
   ☐ ގެންނަ ގޮތުން
   ☑ ގެންނަ ގޮތުން ދަ ގެންނަ ގޮތުން

8. ތިބާ ތަންތަނުން ކަންބޮޑުކުރާ ގޮތް ފެނުމުގެ ދަށް ފެށި ގޮތް

☐ ހިތްގަދަ ވެފި ☐ ހިތްގަދަ ނުވެފި

ހިތްގަދަ ނުވެއްޖެނަމަ ކީއްވެ ހިތްގަދަ ނުވާކަން ތަފުސީލު (—)

9. ތިބާ ދަންނަވާ ގޮތުގެ ބޭރުން ތިބާ ހަނދާންކުރާ ވަގުތު ކަމެއް ހުއްޓާލާ ބަލާ

☐ ހިތްގަދަ ވެފި ☐ ހިތްގަދަ ނުވެފި

ހިތްގަދަ ނުވެއްޖެނަމަ ސަބަބު

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10. ގެންދާ ދަތުރުތަކުގައި ތަނަށް ދާ ކުރިން ކުރާ ތައްޔާރީތައް ކޮބައިތަ، ފުރިހަމަ ކުރާ ގޮތް ތަފުސީލުކުރައްވާ

ކަންތައްތައް:

☐ ދާ ކުރިން ތަނާ ގުޅޭ ހަނދާންތަކާ ގެންދާ ތަކެތި ހަމަ ކުރުން

☐ ފައިސާ ހިންގުން

☐ ތަންތަނާ ގުޅޭ ގެންދާ ތަކެތި ހަމަ ކުރުން

☐ ތަނަށް ދާ ގޮތާ ގުޅޭ ތަކެތި ހަމަ ކުރުން

☐ ގަދަ ވިދުމުގެ ކުރިން ތަނާ ގުޅޭ ތަކެތި ހަމަ ކުރުން

☐ ތަކެތި ބިނާ ކުރުން ހުއްޓާލުން

ތަފުސީލު .....

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ތަކެތި

ދަތުރުގައި ގެންދާ ތަކެތީގެ ތެރެއިން ސަބަބެއް ނެތްނަމަ ގެންދާ ތަކެތި، ތިބާ ދަތުރުގައި ހުންނަ ތަނުގެ ކުރީގައި ލިޔެ ބަލާ

ކަންތައްތަކެއް ކުރަންވާނެ ގޮތް ތަފުސީލުކުރައްވާ.

ނަން: .....

ސޮއި: .....

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ANNEX 8 – PROPONENTS COMMITMENT FOR MONITORING AND MITIGATION

بسم الله الرحمن الرحيم

Ministry of Environment
Male', Republic of Maldives.

ދިވެހިރާއްޖެ ތަރުތީބާއި ވާތావரణ ދާއިރާ
މާލެ، ދިވެހިރާއްޖެ.

ތަރުތީބާއި ވާތావரණ ދާއިރާ - ދިވެހިރާއްޖެ

Date: 28 January 2020

No: 438-WMPC/203/2020/12

Mr. Ibrahim Naeem,
Director General,
Environmental Protection Agency,
Green Building, Handhuvaree Hingun, Maafannu,
Male', 20392, Maldives.

Dear Sir,

Sub: Commitment to undertake Mitigation and Environmental Monitoring

The Environmental and Social Management Plan (ESMP) prepared for the proposed upgrading of Island Waste Management Centre (IWMC) in B. Eydhafushi has been prepared in accordance with the EIA Regulations 2012 and its amendments, issued by the Ministry of Environment.

We would like to confirm our commitment to the proposed mitigation measures and the monitoring programme that has been highlighted in the ESMP report prepared for the above referenced project.

Sincerely,

Aishath Rashfa,
Assistant Director

Green Building, Handhuvaree Hingun,
Maafannu, Male', 20392, Republic of Maldives.
+(960) 301 8300
www.environment.gov.mv

ދިވެހި ތަރުތީބާއި، ވާތావරණ ދާއިރާ،
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ދ. 20392، ދިވެހިރާއްޖެ
secretariat@environment.gov.mv
www.twitter.com/ENVgovMV
www.facebook.com/environment.gov.mv

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

For the upgrading of

ISLAND WASTE MANAGEMENT CENTRE

IN EYDHAFUSHI, BAA ATOLL

ADDITIONAL INFORMATION

Proponent:

Ministry of Environment

Consultant:

Amir Musthafa (EIA P01/2013)

March 2020

Table of Contents

1. Additional information requested by Environmental Protection Agency, Maldives. 3

2. Additional information requested by World Bank Social Safeguards Specialist. 5

3. Annex 1 – Work Schedule of the Project..... 9

4. Annex 2 – Community Mobilisation Plan..... 10

1. Additional information requested by Environmental Protection Agency, Maldives.

1. **A detailed work schedule for the proposed works.**

   Please find attached in Annex 1 of this document.

2. **Under Approvals and Permits section on Page 11, need to add details of the waste management permit that has to be taken by the waste management operator under waste management regulation 2013/R-58 prior to the commencement of waste management operations in the IWMC.**

   Waste management permit has to be taken by the waste management operator under waste management regulation 2013/R-58 prior to the commencement of waste management operations in the IWMC.
   The regulation provides a form in Appendix / Jadhuvalu (Lhaviyani) of the Regulation which details the submission requirements to get the permit, including site details, and waste management plan. The 3rd Section of the Regulation details the requirements for the permit, general standards the operator needs to adhere to, documentation process, etc.

3. **Revise the method for food waste disposal in outputs table as it is not permitted by the waste regulation to dispose any type of waste into the sea**

   The revised outputs table, Table 3 is provided below.

Table 3 Major outputs from the proposed project

Products and waste materials	Anticipated quantities	Method of disposal
Waste generated during construction	100 – 200 kg per day	All waste generated collected and sorted and stocked at site to be attended once IWMC is operational.

		Food waste shall not be dumped to deep sea under any circumstances.
Sand from excavation	Limited quantity for single story structure	Re-used at site
Waste oil and grease	Minute quantities	Collected in used containers and transported to waste site
Air pollution	Debris in minute quantities	External influence minimised by site demarcation temporary boundary walls.
Noise pollution	>80 db(A)	Minimised by site demarcation barriers. Ear muffs and safety equipment for workers on site.

4. **Temporary location to be used for waste management during the construction phase as the current waste disposal site is proposed to be developed for this project.**

   Existing IWMC site is currently not been used by the Island Council for waste disposal. Instead, the waste stockpile area illustrated in Figure 5 of the report is being used. Therefore, during construction phase of the IWMC, the same disposal area will continue to be used until the upgrading works are completed and the IWMC is operational

2. Additional information requested by World Bank Social Safeguards Specialist.

1. Use of the Site Selection checklist/evaluation given in the E&S framework

The site selection checklist is not applicable for this project as this is an upgrading works of an existing site. The existing site is located at the area designated for waste management under the Ministry of National Planning and Infrastructure approved Land Use Plan of the island as shown in Figure 4 of the report. The site also adheres to EPA's "Environmental Guidelines for Site Selection of Waste Management Centers (2017)" as well as the criteria specified in Section 5.3.2 of the ESAMF

2. Details of sensitive areas near the site and the distances of households, schools, hospitals, mosques, and other public places, etc.

As detailed in the report and illustrated in Figure 5 of the report, the IWMC site is located in newly reclaimed barren land. The site is far away from all other structures in the island including households, schools, hospitals, mosques, and any other public areas, which are all located in the natural land.

The IWMC site selection guideline of EPA gives a minimum distance of **30m** from any potential sensitive area including surface water bodies, any public/commercial/residential structure, environmentally sensitive area, and significant vegetation. The existing IWMC site conforms to this as the site is more than **150m** away from the nearest such structure. The only public area on the reclaimed land is a children's park, which is over 200m west of the IWMC site.

The only concern with respect to the site location is whether the site could be in an area prone to flooding or erosion as stated in Clause C (3) and (4) of the "Environmental Guideline for Site Selection of Waste Management Centers". However, there is a revetment structure along the shoreline facing the structure to prevent erosion and flooding and as stated in Section 2.4 of the report, the proposed upgrading works includes shifting the site 20m away from this revetment line to further protect the structure.

3. Details of consultations outreach

Public Consultation was carried out in the form of a Household Perception Survey as given under Section 10.1. Households from different districts were consulted during the survey. B. Eydhafushi is divided into 3 main districts; West, Center and East. 12 households in total were consulted, which included 4 households from each district to ensure even distribution based on the region. Additional households could not be consulted during the field visit.

However, additional consultations had taken place with major stakeholders living in the island including the Island Council, Women's Development Committee, and members of NGOs in the island, who were also members of the Waste Management Committee. Therefore, a significant outreach as required within the scope of works had been achieved.

4. Stakeholder engagement/community mobilization strategy

Community Mobilisation Plan for all islands in Zone 2, which includes B. Eydhafushi, has been provided by the Communications Specialist of the Maldives Clean Environment Project and is provided in Annex 2 of this document.

5. Measures to monitor WAMCOs involvement/role

Operational Phase of the Environmental Monitoring Plan given in Table 11 has been revised to include measures to monitor WAMCO's role in transferring waste.

Table 11 Environmental Monitoring Plan (Operational Phase)

STAGE 2 – OPERATIONAL PHASE				
Aspect	**Parameter**	**Frequency**	**Responsible Party**	**Cost (MVR)**
Implementation of mitigation measures	Records of successful implementation measures	6 months after commence of operations	Island council IWMC operator	In operational costs. Under

during construction				paid staff responsibility
Groundwater quality	Visual observation of physical parameters including: smell, colour and salinity	6 months after commencement of operations	Island council, IWMC operator	7,000.00
Noise Pollution	Measurement at the construction site, 30m away, and 60m away	Monthly	IWMC Operator	0
Odour	Record logs of Odour issues at IWMC site, 30m away and 60m away	Monthly	IWMC Operator	In operational costs. Under paid staff responsibility
Spillage Assessment	Logs of litter around the island Logs of spillage during transfer to IWMC Logs of any spillage within the IWMC Logs of any spillage during transfer to RMWF	Throughout the operations. Data to be compiled 6 months after commencement of operations	Island council/IWMC operator	Included in operational costs. Under paid staff responsibility
Grievance	Logs of no. of complaints received and actions taken during operational phase	Throughout the operational phase	Island council	Included in operational costs
Waste transfer	Ensure WAMCO is providing collection services to the island in a timely manner as per the	Throughout operational phase	Island Council and EPA	Included in operational costs

	agreement made between the Island Council and WAMCO. Monitor and log WAMCO's island waste transfer schedule Ensure that the waste is transferred from the Island to Vandhoo RWMF according to the requirements specified in the WM regulation. Log incidents where WAMCO fails to adhere to the requirements in WM regulation.			

3. Annex 1 – Work Schedule of the Project

Upgrading of IWMC in B. Eydhafushi
Work Schedule

#	Activity	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
1	Mobilization ot the site						
2	Site clearence						
3	Demolition works						
4	Excavation works						
5	Concrete works						
6	Backfilling						
7	Masonry works						
8	Plastering works						
9	Painting works						
10	Roofing works						
11	Electrical and Plumbing works						
12	Fixing doors and windows						
13	Tiling works						
14	Ceiling works						
15	Installing firefighting equipment and signs						
16	Site cleanup and demobilization						

4. Annex 2 – Community Mobilisation Plan

Community Mobilization – Zone 2 (Noonu, Raa, Baa Atoll and Lhaviyani) - Maldives Clean Environment Project (MCEP)

Activity	Objective	Target Audience	Frequency	Target to reach	Follow-up Actions	Resources	Tools
TOT Workshop: Training of Trainers for Waste Management Committees of all Islands in Zone 2.	Strengthen the capacity of the participants who will be supporting the project to deliver Waste Management Actions Plans Proposed by Waste Management Committee.	Island Council, FENAKA, Women's Development Committee, School, Health Centre, Active NGOs : 2 (Two participants from each entity)	One session for each island	Train at least two staff from the most active entities within the island.	Monitor community progress	Facilitated by a team from MCEP PMU • Project Coordinator for Zone 2 • Communication Specialist • Assistant Project Coordinator for Zone 2	Presentations Flyers Door to Door Simulation Exercise.
Establishing an Island Waste Management Committee	Island Waste Management Committee: Serve as advocates for the development and implementation of an awareness and community education program because of their reach and connections in the community.			Minimum of two staff from the Key stakeholders	Initially Send formal correspondences to Island Council requesting to nominate members Follow-up with IC to confirm the nominated members MoU between Members of WMC and ME	Island Council Committee members	Official circular to the Island council copied to the relevant entities
Door to Door Campaign	Reach the community and household owners directly.	All households	Once in each island during the life of the campaign.	Cover all or the majority of the households	Monitor Progress, how many households are covered or to be covered.	Material kit WM committee	Flyers, leaflets, posters
Distribution of Segregation flyer to households	The purpose of a graphical flier is to make the community understand on the aspects of household segregation				List down issues / challenges faced by the members of the households.	Members of WMC Volunteers from Island (ie: Youth groups , NGO's)	Hard copies of the segregation flyer Flash cards Posters
Design, print and Installation of Billboard on Waste segregation guideline	Large billboards with visual is an effective mean of getting messages in front of people's eyes.	Island Community	Once during the campaign	Fix billboards in prime locations of the Island.	Monitor changes in the behavior of the community	Communication Specialist	Billboards Waste Segregation guideline by WAMCO
Mass message: Cast messages to all mobile phone users from the island.	Make use of a fastest and reliable way to send key messages related to this campaign to the entire community.	All mobile phone users	Once every month during the campaign.	Verify the list of the community members and finalize to go with service provider	Monitor the behavior after the mass messages, If it is effective?	Draft messages	Mass text messages
TOT for School Environment Club	Motivate the students to be champions of waste management within the island and take ownership of moving further with the campaign.	Students leaders of Schools. The management of the schools. Environment Club	Once a week? Or the days they hold environment club	The active leaders of school, the student leaders to convey information on waste and bringing the parents on board.	Hold meetings with the active student leaders and get their feedback and how they managed to pass on the information. Monitor any changed behavior.	Environment Club Presentations	Environment Club
Reaching the island community using social media Targeted dissemination of waste management awareness content	Passing the message across trending online platforms where it can cover more wider audience	Social media users from the target islands. Youth	Messages, infographics , videos on fixed routine	Select ambassadors from islands and assign to an identified focal to take lead.	Hold an online survey to asses' follower's knowledge. Make a comparison of how the waste is being gathered then and now.	Social media pages / groups from the selected islands.	Social media platforms MCEP IEC toolkit

MCEP Community Mobilizaiton for Zone 2