ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

FOR THE UPGRADING OF
ISLAND WASTE MANAGEMENT CENTER
IN R. MAAKURATHU

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Prepared for: Ministry of Environment

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Contents

List of Figures

DECLARATION OF THE AUTHOR

I hereby declare that the information provided in this ESMP are true, complete and accurate to the best of my knowledge and is based on the information available at the time of writing.

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NON-TECHNICAL SUMMARY

The proposed project for the upgrading of the Island Waste Management Center (IWMC) in R. Maakurathu 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 threat of potential fire hazard, which would in turn safeguard the wellbeing of the workers, general community and the users of the nearby beach.

Although Maakurathu has a well-organized and sound household segregation and collection system, at present, they are unable to manage the waste brough to the IWMC properly, due to the limited space available at the IWMC corresponding to only 360 sqm, coupled with no electricity connection and the walls and roofs of the existing collection bay having undergone severe damages during the fire incident of 2017. Hence, green waste, plastics and used diapers are openly burnt every day in a hut placed close to the IWMC, causing several negative impacts to the people using the nearby beach for swimming and other recreational purposes. The ash from waste burning is disposed in bare ground next to the hut, while bulky waste including rusted metals are also placed in a small area east of the IWMC without any barrier, increasing the potential for contamination of soil and groundwater due to leachate and stormwater runoff. Furthermore, kitchen waste is being released into the adjacent lagoon which could intensify turbidity level of sea water and may cause health implications to swimmers using the beach.

To alleviate these issues, the project intends to develop the IWMC with proper spacious storage cells, leachate and stormwater collection drains, installation of fire safety equipment, high boundary walls to the side facing the beach and provide electricity connection to the facility.

The proposed site for IWMC upgrading and extension as well as the area required for the ancillary road diversion, does not contain any significant vegetation except shrubs and grass. Hence, the local biodiversity will not be directly impacted due to the project. 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. Moreover, there are no residential or recreational areas close to the IWMC, except the beach which is sometimes used by the public for swimming. The beach and the IWMC are separated by a green vegetation of buffer of approximately 60m, which would act as a natural inhibitor of any potential dust and noise generated during construction works. No environmentally sensitive or protected site exist in the island.

This project will provide the basic infrastructure for management of waste at the island level and ensure composting is undertaken at the island. After completion of upgrading of IWMC, it will facilitate the island council to smoothly manage waste in Maakurathu under current arrangements. The waste operators will be given the required training to undertake composting. A community mobilization program was undertaken from 4 to 5 December 2019, where a draft Island Waste Management Plan (IWMP) was prepared by the community representatives of Maakurathu, which will be further developed and finalized by 20 December 2019. Waste that is not manageable at the island level needs to be stored and regularly

transferred to Zone 2 RWMF. Maakurathu Council is yet to sign an agreement with WAMCO for regional collection, but negotiations are progressing at a satisfactory rate, with the island council being hopeful of finalizing the agreement before the end of the year. All civil works of the project are expected to be completed within 6 months.

Environmental impacts of the project were evaluated using the Rapid Impact Assessment Method (RIAM). Majority of the impacts envisaged for the project are highly positive. The project is expected to bring numerous economic benefits to the island community, in additional to the perceivable 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 removal of vegetation.

The monitoring program proposed in the ESMP will ensure the implementation of the mitigation measures and assist in the identification of unforeseen impacts throughout the project.

Overall, the project is expected to provide significant socio-economic and environmental benefits for the local community.

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CHAPTER 1 INTRODUCTION

1.1. Project Background and Justification

The project takes place in Raa Atoll Maakurathu located with geographic coordinates 29°07'57"E and 05°96'41"N. The island has a total land area of 45 hectare and a population of 1331. Daily generation of waste in Maakurathu is estimated to be 888 kilograms (kg). Organic waste, plastics and used diapers are the dominant type of waste generated in the island, followed by metal waste, glass waste and cardboards.

A 360 sqm Island Waste Management Center (IWMC) was constructed at the south side of the island in 2014. The project was funded by the Government of Maldives (GoM) and implemented through the Ministry of Environment (ME). However, this IWMC had undergone damages of various scales especially during the 2017 fire incident. The only parts of the IWMC in usable conditions are the compost slab and the floor screed of the existing collection bay that will be used to form part of the floor screed of the new collection bay.

The only significant waste management equipment at the island is a compressing machine, which was not damaged during the aforementioned fire incident, since it was stored at the compound of the Youth Centre. The island had never used this equipment since electricity was not provided to the IWMC. The upgrading project intends to address this limitation by installing an electric cable between the IWMC and the nearest distribution box.

Maakurathu island has a good number of 120L, 240L and 660L trolleyed dustbins that are being used for waste collection and are also placed in the road side and other public places to combat littering. These dustbins were not damaged during the fire incident and are in fairly good condition.

At present, waste is being managed at the existing IWMC. Kitchen waste brought to the IWMC is buried at the foreshore of the adjacent beach and subsequently carried into the lagoon through wave action, while green waste is burnt at the hut placed close to the IWMC along with plastic waste and used diapers. Used aluminum cans are stored at the existing collection bay. Bulky waste consisting of rusted roofing sheets and old furniture is being placed at the empty land east of the IWMC increasing the risk of leachate and subsequent contamination of soil and groundwater. The Council continues to receive several complains from the public regarding the smoke generated from open burning causing a nuisance to the people using the nearby beach for swimming.

The proposed project is, therefore, designed to address these limitations. High perimeter walls will be constructed at the side of the IWMC facing the beach, while the IWMC will be expanded to create much needed space for safely storing plastics, metals, glass, used diapers and hazardous waste for a period of 3 to 6 months. An adequately sized compost pad will also be constructed to facilitate compost production and prevent burial and burning of organic waste. Furthermore, an office, a toilet and resting areas will be developed to create a good working environment for the workers. Electricity will be provided to the IWMC to facilitate use of waste management equipment and provisions will be made to increase security features of the IWMC, such as supply and installation of fire safety equipment.

Once the upgrading of IWMC is completed, it will facilitate the island council to smoothly manage waste in Maakurathu under current arrangements. The council already has a good waste collection system (in which household segregation is also practiced), which is still in effect.

This project will provide the basic infrastructure for management of waste at the island level and ensure composting is undertaken at the island. The waste operators will be given the required training to undertake composting. The waste that is not manageable at the island level will be stored and transferred to a central regional facility every two to three months.

Previous research suggests that 70% of the waste generated in the Maldives are organic in nature, of which majority is food waste (Peterson, 2013). Thus, composting alone will significantly reduce the amount of waste that requires disposing. Moreover, economic benefits could be attained through selling of compost. This model of managing waste as much as possible at the island level prior to transfer of waste to the regional facility is the model promoted via the waste management policy of the Maldives (Ministry of Environment [ME], 2015).

Waste that cannot be management at island level has to be regularly transferred to Zone 2 Regional Waste Management Facility (RWMF) located in Raa Atoll Vandhoo. The Council has commenced negotiations with the operator of the Vandhoo RWMF, Waste Management Corporation (WAMCO), for regional collection.

1.2. Environmental and Social Management Plan and Environmental Permits

The Maldives national requirements for Environmental Impact Assessment are set out in the Environmental Impact Assessment (EIA) Regulations, 2012. Part III of this regulation includes a description of the Screening Process applied to development proposals. Schedule D of the Regulations provides a screening list of all development types for which full EIA is mandatory. According to Schedule D included in Amendment 2 to the EIA regulations 2012, waste management practices that require preparation of an EIA are:

1. Projects involving operation of large incinerators with a capacity of more than 10 tons per day.
2. Development of large waste management centers that treats more than 10 tons of waste per day.
3. Projects that involve development of a landfill by using waste.

Proposed developments that do not fall within Schedule D are subject to manual screening by the Environmental Protection Agency (EPA), for which a Screening Form must be submitted providing relevant development details. Within 10 days, the EPA will decide whether the proposed development is approved, or needs further study, which may be required in the form of an EIA or Environmental Management Plan (EMP) (Ministry of Environment [ME], 2012).

The proposed development is small scale and therefore is not listed under the Schedule D of the EIA Regulation. A screening process was followed and the screening decision from EPA was to prepare an EMP for the project and to submit for review and approval. The screening decision from EPA is provided in Appendix A of this report.

It is mentioned in the Environmental and Social Assessment and Management Framework (ESAMF) of MCEP that prior to the approval of disbursement of funds for project sub-components, International Development Association (IDA) will have to clear all safeguards documentation. Therefore, although an EMP is required as per the local regulation, an Environmental and Social Management Plan (ESMP) will be developed for the proposed project and simultaneously submitted to the World Bank for approval. This document is prepared consistent to the ESAMF.

A land selection process was followed with Maldives Land and Survey Authority (MLSA) since Maakurathu does not have an approved Land Use Plan (LUP) and as the boundary of the existing IWMC is proposed to be extended through the upgrading project. Land approval to the site was received from MLSA on 25 September 2019. Appendix B of this report provides the site approval letter issued by MLSA.

Other major laws, regulations and policies applicable to this project (both national and the World Bank) are reflected in table 1.

Table 1 Laws applicable to the project

#	Relevant laws, regulations, policies and guidelines	Requirement	Application specific to project
1	National Waste Management Policy 2015	National	The establishment of an IWMC is prerequisite to facilitate waste management at island level.
2	Waste Management Regulation	National	• The regulation reflects the following: - Sets standards for waste collection, transfer, treatment, storage, waste site management, landfills and managing hazardous waste. - Defines approval procedures for waste sites and waste transfer. - Standards and permits required for waste transport on land and sea, including transboundary movements. - Defines reporting and monitoring requirements and procedures. - Defines procedures to implement WMR and penalties for non-compliance. • The IWMC was designed conforming to the provisions of Waste Management Regulation. • Opening burning of waste should not be practiced once the IWMC becomes operational.
3	National Policy on Health Care Waste Management	National	• Stipulates that all health facilities have to be responsible for the safe management of health care waste in an environmentally sound manner that minimizes risk to the community and the staff involved in its management. • The IWMC should not accept healthcare waste as it has to be managed separate from the general waste directly at the health center.
4	The Land Act (1/2002)	National	• All transactions concerning the issuing, receiving, owning, selling, lease, utilizing and using Maldivian land shall be conducted in compliance with this Act. • The land area allocated for the upgrading and extension of IWMC has been approved by MLSA.

5	Land Use Planning Regulations and Guidelines (2005)	National	• The LUP of islands are reviewed by MNPI in consultation with MLSA and EPA. The LUP of M*aakurathu* has not been approved by MNPI.
6	Environmental Guidelines for Site Selection of Waste Management Centers (2017)	National	• Provides recommendation for optimum zoning of IWMC sites. • The proposed project site fulfills all the requirement stipulated in the guideline and maintains the required distances from vegetation line, common public places and residential areas.
7	Coral mining regulation	National	Coral mining from house reef and atoll rim is banned.
8	Sand mining regulation	National	Sand should not be mined from any part of an inhabited island, beach or the newly reclaimed island beach. Sand should also not be mined from within 100 ft. of the shoreline
9	Law on Cultural and Historical Places and Objects of the Maldives (27/79) WB PS8 (2012)	National World Bank	Requires client 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 shall not disturb any chance find further until an assessment by competent professionals is made.
10	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 run-off during operations of waste management facilities.
11	Employment Act (02/08)	National	• Worker shall not be forced to work for more than 48 hours per week. • Workers shall not be made to work for more than 6 days a week consecutively without providing 24 hours for rest. • Workers shall not be made to work continuously for more than 5 hours without providing a break for at least 30 minutes. • Salary should be paid to all permanent contract workers once a month. • Minimum 03 meals shall be provided to construction staff per day or appropriate meal break time shall be provided.
12	Immigration Act (01/07)	National	• All expatriate workers must have proper work visas and work permit cards.

1.3. Desk Study Review

A literature review was conducted to acquire background information related to the site and the general environment of the island, as well as to identify possible environmental impacts of projects of similar settings. In this context, the following documents were reviewed:

- EIA for the proposed harbor quay wall construction at Maakurathu, Raa Atoll, Maldives (Shaiq, 2017).
- EIA for the construction and setup of a sewerage system in Maakruathu Island, Raa Atoll, Maldives (Shah, 2017).
- EIA for the development of Waste Management Centre, R. Maakurathu (Zahid, 2013).
- ESMP for the construction and operation of an Island Waste Management Center in Dhonfanu, Baa Atoll (Shaiq, 2019).
- ESMP for the establishment of Island Waste Management Center in M. Mulah (Saleem, 2018a).
- ESMP for the establishment of Island Waste Management Center in Th. Madifushi (Saleem, 2018b).
- ESMP for the proposed upgrading of Island Waste Management Center in N. Holhudhoo (Zuhair, 2019a).
- ESMP for the proposed upgrading of Island Waste Management Center in R. Ungoofaaru (Zuhair, 2019b).
- EMP for the proposed development of Island Waste Management Center in F. Magoodhoo (Zuhair, 2017).
- EMP for upgrading Island Waste Management Center Fuvahmulah (Zuhair, 2016a).
- EMP for upgrading Island Waste Management Center Hulhudhoo-Meedhoo (Zuhair, 2016b).
- Maldives Clean Environment Project Environmental and Social Assessment and Management Framework (ESAMF) & Resettlement Policy Framework (RPF) (Ministry of Environment [ME], 2016).
- Island Waste Management Plan of Raa Maakurathu (Maakurathu Council, 2018).
- Environmental, Health, and Safety Guidelines for Waste Management Facilities (World Bank Group [WBG], 2007).
- Operational Environmental and Social Management Plan for RWMF – Zone 2, Vandhoo, Raa Atoll (Zuhair, 2018).

1.4. Report Preparation and Acknowledgement

This report is prepared by Mr. Ahmed Hassaan Zuhair, the Environmental and Social Safeguards Specialist of MCEP. According to the second and third amendments to EIA regulations 2012, ESMP reports can be prepared by anyone with a minimum educational qualification of first degree in a field related to environment and do not necessarily have to be an EIA consultant registered in EPA. The educational certificates and curriculum vitae of the author is provided in Appendix C.

The author would like to acknowledge the assistance and support received from the following people in organizing and undertaking field surveys and stakeholder consultations.

1. Mr. Mohamed Afraz, Civil Engineer of MCEP
2. Mr. Abdul Raheem Mohamed, Project Coordinator of MCEP
3. Mr. Hassan Ali, President of Maakurathu Council
4. Mr. Ismail Areef, Driver / IWMC supervisor of Maakurathu
5. Ms. Aminath Yumna, Economic Development Officer of Maakurathu Council

CHAPTER 2 PROJECT DESCRIPTION

2.1. Location and Study Area

The project takes place in Maakurathu, an inhabited island located in the eastern half of Raa Atoll with the geographic coordinates 29°07'57"E, 05°96'41"N. Maakurathu is the fourth largest island in Raa Atoll in terms of land area. The island is 925m long and 825m wide corresponding to a total land area of 45 hectares. The present population of the island is 1331.

An A-3 size map showing the study area is presented in Appendix D of the report. A scaled down version of this map is provided in figure 1.

Figure 1 Site Plan of the IWMC

The project involves upgrading and expansion of the existing 360sqm IWMC located at the southern tip of the island, which was damaged during a fire incident that happened in 2017. Existing walls have many cracks and cannot be retained. Part of the roof of the collection bay area has fallen, while the perimeter fence has been damaged and is in need of replacing.

Through the upgrading project the orientation of the IWMC and the collection bay area will be changed from facing to the sea side to face north, towards the existing small road. The southside boundary will be

moved up to the existing collection bay and expanded towards the north. The existing walls and fence will be removed. About 85% of the collection bay will be developed on top of the existing compost slab and collection bay floor screed. Floor screed will be extended to cover metal waste and glass waste storage cells of the bay. A new compost pad with a leachate collection well will be developed towards north of the IWMC. In addition to this, compost screening areas, an equipment room, a store room, an office and a toilet will be constructed. A new parameter wall and fence will be developed. The size of the IWMC after upgrading will be 701 sqm.

The layout of the proposed design is reflected in figure 2.

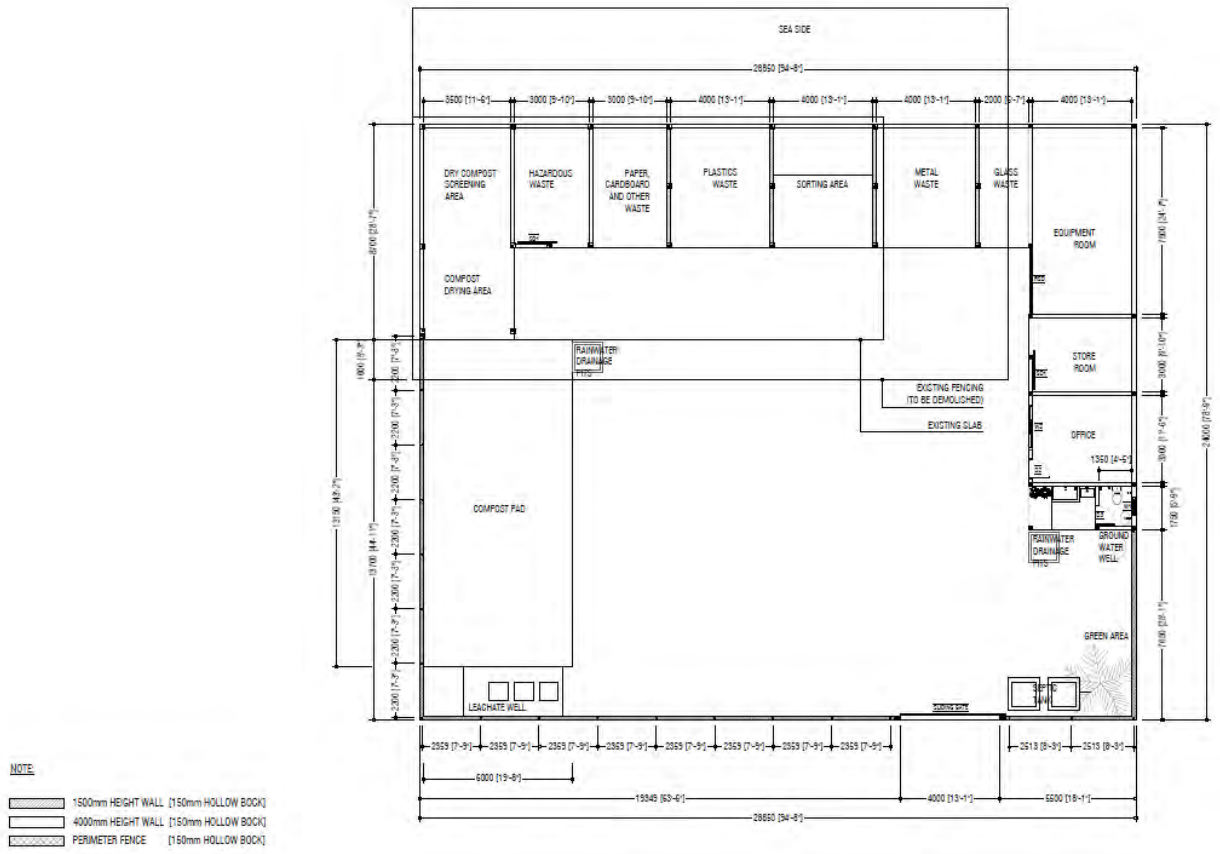


Figure 2 Layout of the proposed development

2.2. Existing Facilities at the Waste Management Centre

Details of existing facilities at the IWMC are given below.

1. Existing Compost Slab

An 85.5 sqm compost slab is found at the back of the existing collection bay. This slab will be incorporated into the new design to be used as part of the floor screed of the collection bay.

2. Existing Collection Bay

   A collection bay is found at the facility developed in an 85.5 sqm area. The bay has floor screed, 1.5m walls at the back and the sides and a roof supported by steel columns. Part of the roof has fallen, while many cracks are found at the walls. Hence, the structure will be demolished except the floor screed which will be retained to form part of the floor screed of the proposed new collection bay.

3. Existing Gate and Perimeter Fence

   The existing gate and perimeter fence are damaged and will be demolished and removed during site clearance.

4. Existing Groundwater well

   A groundwater well of 1m diameter is present at the center of the existing IWMC. This well exists outside the boundary of the proposed new design and hence will not be retained.

2.3. Project Components

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.

Construction phase of the proposed development includes the following:

1. Site Preparation

   a) Site Clearance and Deviation of road:

   The IWMC will be expanded 441.4sqm towards north and 60sqm towards west. A part of the 4.5m wide road found at this side of the island, located towards north of the existing IWMC, falls inside the proposed area for extension. Therefore, 60m of the road needs to be deviated to make it fall outside the proposed project boundary. Since road construction is not part of the mandate of the

ME, works corresponding to deviation of the road will be carried out by the island council. This is considered as an ancillary activity linked to the project and therefore the mitigation measures proposed in the ESMP needs to be implemented while carrying out works of the road as well.

Significant vegetations are not found inside the boundary of the proposed site nor proposed area considered for deviating the road. Therefore, only shrubs and grass are subject for removal.

The gate, perimeter fence, and walls and roof of the existing collection bay will be demolished and removed. Debris generated will be reused for construction as much as possible, while remaining unusable material will be disposed in the area designated for construction and demolition (C&D) waste disposal.

b) Clean-up of existing waste:

The existing IWMC primarily contains used aluminum cans stored in the existing collection bay and inside a metal container placed at one of the cells. Other wastes such as plastics, nappies and wood are burnt daily, while kitchen waste released into the lagoon, and therefore, such waste is not found in the IWMC or anywhere in the island. A small pile of bulky waste consisting of roofing sheets and old furniture are found next to the IWMC and a pile of ash next to the hut used for waste burning.

Appendix 6 of the ESAMF gives options for closure of small open dump sites, which is reflected in Appendix E of the ESMP. However, the in-place closure method is not practicable in the context of Maldives, due to land scarcity, depth of water lens and potential for marine pollution. Hence, the only feasible option for cleanup is evacuation method, which involves removing the existing waste piles and transferring to a regional facility for treatment and final disposal.

The island cleanup will be undertaken by WAMCO and transferred to Zone 2 RWMF when the council signs the agreement with WAMCO. Negotiations in this regard has already commenced and is expected to be finalized prior to contractor's mobilization on site.

2. Construction of Boundary Wall and Perimeter Fence

A 4m high masonry wall will be constructed at the side of the IWMC facing the beach which also forms part of the collection bay. The wall will be held together by 150mm thick concrete columns which will be casted in 150mm thick foundation beams. The strip foundation below the masonry wall will have a depth of 0.6m. The trenches required to receive the strip foundation and footings will be excavated manually.

The rest of the perimeter will be enclosed by a fence and a sliding gate. The fencing includes a 150mm thick masonry wall of 0.6m height from ground level, followed by the PVC coated mesh fence of elevation 2.8m from ground level. The mesh is held together by 50mm diameter GI pipes vertically at equal centres which are welded to three evenly spaced 50mm GI pipes horizontally. The strip foundation below the masonry wall has a depth of 0.6 m and a thickness of 150 mm. The trenches required to receive the strip foundation and footings will be excavated manually.

3. Construction of Office and Toilet

   An office and a toilet will be constructed at west side of the IWMC. A 12000 BTU air-condition, lights, ceiling fans and sockets will be installed at the office. The toilet will have adequate ventilation. A wash area will be constructed adjoining the toilet. The structure will consist of 4m high walls. Superstructure of the block will be made of concrete footings, columns and beams. The roofing will be made of LYSAGHT roofing sheets. Timber roofing frame will be supported by concrete roofing beams.

4. Construction of Septic Tank

   A septic tank will be constructed to manage the sewage generated from the toilet during the operational phase. The tank will be constructed to ensure water tightness. Waterproof paint will be used on the masonry wall. The septic tank consists of a primary tank of 1.3 m by 1.3 m made of 150 mm brick wall, covered with 75 mm thick concrete with 6 mm reinforcing steel placed at 150 mm center to center. The primary tank is 2 m deep. The primary tank is connected by a 100 mm diameter PVC pipe to a secondary tank of the same dimensions filled with 1m of coral stone and white sand filling. The bottom 1m of this secondary tank is perforated with 25mm equally distributed holes to allow for discharge of treated effluent.

5. Construction of Groundwater well

   The existing groundwater well in the IWMC will fall outside the boundary after the proposed upgrading works. Therefore, a groundwater well 1m in diameter will be constructed at the next to the proposed toilet. The well will be enclosed by a lid. Manual excavation is sufficient for the purpose due to the small scale of the scope of works involved. Water required for composting during operational phase will be drawn through this well.

   As the existing well is not constructed inside a hut it is necessary to permanently close the well after the completion of the project since it may become a site for mosquito breading if left unused. The existing well can be utilized by the construction workers during the construction phase of the project.

6. Construction of Collection Bay Area, Hazardous Waste Storage and Store Room

   The collection bay area will have 5 compartments including a sorting area at the center, and storage areas designated for metal waste, plastic waste, glass waste, and paper / cardboard / other waste. A 75mm thick screed will be laid at the ground and 1.5m high masonry walls will be constructed at either side of each compartment supported by a concrete column. A 4m high wall will be constructed at the back (side of the IWMC facing seaside), while the front side of the structure will be open. Roofing will be laid using LYSAGHT roofing sheets.

   A hazardous waste storage area will be constructed adjoining the collection bay area to the east, and a store room at the west, between the equipment room and the toilet. Both of these rooms will be fully enclosed by 4m high masonry walls and LYSAGHT roofing sheets. Access to the

hazardous waste storage area will be provided through a sliding door and a roller shutter door will be installed at the store room. Lights and exhaust fans will be installed.

7. Construction of Equipment Room

   A room for storing equipment will be constructed adjacent to the collection bay at the south west corner of the IWMC. Similar to store room and hazardous waste storage, the equipment room will be enclosed from all sides via 4m high masonry walls and LYSAGHT roofing sheets, while access will be through a roller shutter door. Lights, sockets, 2 ceiling fans and 2 exhaust fans will be installed.

8. Construction of Compost Pad

   A 78.9 sqm compost pad will be constructed at the eastern side of the proposed site. 100mm thick concrete slabs will be casted over ground beams B1, B2 and B3. The ground beams B1 and B2 have a depth of 0.3m while B3 has a depth of 0.4m from the top of the slab. B3 has a void on top of the beam centrally to receive a 100mm PVC pile cut in half sloping at 1% from the upper end to the lower end, connecting to the leachate well at the end. Excavation will be done manually to receive the ground beams as per the drawings. The maximum depth of excavation for the beams is 0.3m. The construction of the slab and ground beams include initially laying of HDPE membrane on the slab and beam footing. Formwork will be added to the sides of the beams, and following that, the arrangement of the required reinforcing steel. Concrete will be poured for the ground beams, followed by the slabs. Concrete mixing will be done on site.

9. Resting Areas

   A resting area will be developed inside the proposed office space, as well as outdoor resting area with chairs (joali) within the proposed green area.

10. 3-Phase Electricity

    The nearest 3 phase distribution box is located 520m away from the IWMC. A 25sqmm 4 core power supply cable will be laid from this distribution box to the distribution board at the equipment room.

11. Plumbing Works

    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.

12. Leachate and Storm Water Management

    Rainwater pits will be next to the office and the compost pad. A leachate collection well will be constructed adjoining the compost pad for collection of leachates during compost production.

13. Supply and installation of firefighting equipment

    The contractor will supply and install the following firefighting equipment as part of the contract and as reflected in the BOQ.

    - 50KG DCP Trolley for collection bay (nos 2)
    - 50LTR Foam Trolley for collection bay (nos 1)
    - Wet Chemical 6Ltr with Cabinet for hazardous waste area (nos 1)
    - Water 9Ltr with Cabinet for Office Area – Outside (nos 1)
    - CO2 2KG with Cabinet for Office Area – Outside (nos 1)

Operational phase of the proposed development includes the following:

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. Maakurathu Council was consulted regarding this. The equipment council prefers is a wood chipper. 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. The project will also consider providing PPEs required for composting such as gloves, shovels and rubber boots.

2. Waste Collection Services

   After construction works are completed, the IWMC will be officially handed over to the Island Council of Maakurathu. The Island Council will resume waste management services in the island according to the current arrangement.

   Daily household collection services are provided except on Fridays from 8:00 to 12:00 hrs. at the rate of MVR 100 per registered household. Five council staffs and one driver hired on renumeration basis provide this service. In addition to this, the council also provides C&D and wood waste collection and disposal services on need basis at a fee of MVR 50 per trip. Waste can also be carried to the IWMC individually by providing a monthly gate fee of MVR 100.

   A pickup of 2-ton capacity is used to collect waste and bring it to the IWMC. This pickup contains 3 bins designated for collecting *kitchen waste*, *used diapers* and *metal and plastic waste*, while jumbo bags are used to collect *garden waste*. Prior to collection, waste is segregate at household level into the aforementioned 4 categories. Household segregation is carried out by the households at their own bins.

3. Sorting

   Collected waste will be kept in the waste storing area and sorted into compostable waste and other waste. After sorting, the non-compostable inorganic waste will be compacted / crushed /

shredded and stored in the designated areas for metal, paper and cardboard, plastic, glass and hazardous waste.

The stored waste will be processed and made ready for regional transport according to WAMCO's guidelines for types of waste accepted at R. Vandhoo RWMF provided in Appendix F and transported to the harbor before the scheduled arrival of landing craft to the island.

4. Composting

   Compostable waste will be transferred to the composting slab after removing branches and twigs. The removed branches and twigs will be fed into a wood chipper. Mixing will be done to provide optimum Carbon-Nitrogen ratio. After mixing windrow composting will be practiced at the compost slab.

   Windrow composting involves, stacking raw materials, roughly equal quantities of "green" and "brown" material into a compost pile and turning the pile regularly, ideally every seven days at a minimal level. The process is labor intensive. The three essential conditions for composting is right temperature, moisture content and oxygen. Food waste and garden waste can be used for composting.

5. Leachate Management

   Leachate produced during composting will be collected in the leachate collection well.

6. Waste Transport to a 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 two to three months. However, the council has not signed an agreement with WAMCO for regional waste collection as they were of the impression that the entire fee taken from households has to be paid to WAMCO to register for this service. This understanding is contrary to WAMCO's policy of taking 30% of the user fees for their services. The council has indicated that they do not have any objection for paying this amount. Hence, WAMCO was requested in writing to revisit the case and renegotiate with Maakurathu Council on extending their service to the island. As part of this agreement, prior to commencing regular services, WAMCO will provide a one-off cleanup of the island, where all the accumulated waste at the island except food waste will be collected and brought to the RWMF. After this initial round, 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.

For further details, refer to the concept engineering drawing provided in Appendix G.

2.4. Construction Schedule

The construction activities of the project are expected to commence in January 2020. All civil works of the project is anticipated to be completed within 6 calendar months. A rough schedule for construction is provided in the table 2.

Table 2 Construction Schedule

Activity	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Mobilization						
Site Preparation: Relocation of Existing Waste						
Civil Works						
Demobilization						

2.5. Project Inputs and Outputs

Major project inputs for the construction and operational phase of the proposed development are highlighted in table 3.

Table 3 Major Project Inputs

	Input Resource	Type and Amount	Means of obtaining the resource
CONSTRUCTION PHASE	Workers	8	Around 8 workers. Contractor is encouraged to use local or regional workers as much as possible. If expatriate workers are used, they must carry valid work permits. Construction workers are expected to be accommodated in local houses and / or guesthouses. No temporary site setup is required for this project. Contractor will make arrangements with the local council regarding accommodation arrangements.
	Site Supervisor	1	The site supervisor should ideally be local as he/she should be able to regularly communicate with the island council and the community over matters related to the project. It is important for the supervisor to have a fairly good undertesting of social and cultural norms of the society.
	Site Engineer	1	The site engineer shall not necessarily be based in the project island but should visit frequently during construction.
	Water for Construction	150 liters per day	Groundwater wells present in the island.
	Construction Materials	Concrete, cement, flood lights, G.I. pipes, metal sliding doors, emulsion paint, Lysaght Roofing Sheet, 3 phase power sockets, ceiling fan and Timber	Imported or purchased where available locally. Contractor will make arrangements to import or purchase these materials and transport to the island.

	Construction Machinery	Pickups, trucks or wheelbarrows (for land transport of construction material), transfer vessel, cement mixing machine.	Responsibility of the contractor. Local resources such as pickups for hire will be utilized as much as possible. If not available locally the contractor will import these machineries.
	Fuel	Diesel	Local suppliers
OPERATIONAL PHASE	Equipment	Glass crusher, Metal Can Baler, Plastic Shredder, Wood Chipper, Compost Sieve, Waste Collection Vehicle	Responsibility of the Island Council and the proponent. Purchased locally or imported.
	Water for composting	Groundwater	Groundwater well within the IWMC
	Power	3-phase power for operation of waste management equipment.	A 25sqmm 4 core power supply cable will be laid from the nearest distribution box to the waste yard distribution board.
	Labor	About 3 workers and 1 driver to manage waste in the IWMC and provide collection services to the community.	Responsibility of the local council. From the local community or expatriate workers. Island council will make accommodation arrangements within local houses and guesthouses if expatriate workers are recruited.
	Fuel	Diesel	Local suppliers.
	Waste	Waste generated within the island. Approximately 888 kilograms per day.	Waste will be collected from households and businesses within the island.

Major project outputs for construction and operational phase of the project are described in table 4.

Table 4 Major Project Outputs

	Output Resource	Type and Amount	Means of managing
	General Construction and Demolition Waste	Moderate amount of Solid Waste	Construction and demolition waste generated will be reused as much as possible. Any remaining waste will be transferred to the nearest regional facility by the contractor.
	Municipal Waste	Small quantity	Removed to the disposal site designated by the council.
	Soil	Excavation for substructure	To be used as backfilling during construction.
	Dust	Moderate amount during cement mixing and excavation	Wet the construction site regularly.
	Waste oil and diesel	Small quantity	Barreled and transfer to the nearest regional waste management facility for disposal.
	Greenhouse Gas Emissions	Small quantity. Emissions from construction material transporting	All vehicles and machinery must be well tuned.

		vehicles and construction machinery.	
OPERATIONAL PHASE	Compost	Open windrow composting.	Used locally for agricultural purposes or sold to nearby resorts.
	Inorganic Waste	Crushed glass, compacted metal, shredded plastic.	Reused within the community as much as possible. Remaining waste stored in their respective area within the IWMC and transferred to Vandhoo regional facility once a month.
	Greenhouse Gas Emissions	Electricity usage. Minute quantity.	N/A

CHAPTER 3 EXISTING ENVIRONMENT

The existing environment is described based on field observations. No detailed data collection and survey analysis techniques are used for this purpose as this is an ESMP, not a full ESIA report.

Information regarding existing environment of the project site and existing waste management practices within the island were obtained through field observations and subsequent meetings held with the Island Council. Field observations and meeting were held on 7th November 2019.

3.1. Current Waste Management Practices

The rate of solid waste generation depends on socio-economic situation, level of industrialization, type and number of industries, climate and land use and therefore can vary from island to island. However, such variations are not expected to be significantly different from island to island and therefore in making estimates waste audits conducted for similar islands ca be safely applied. Hence, past waste audits were refenced to estimate waste composition and quantities for Maakurathu.

Household waste generation rates for islands in the north province region is 0.83 kg per person per day and commercial waste generation rates for the region is 0.22kg per employee per day (excluding resort staffs). Likewise, organic fraction makes 66.1% of the household waste stream, plastic contributes 5.3%, paper and carboard 4.3%, 0.9% metals, 8.3% hazardous waste, 2.1% glass and 13.1% attributes to all other types of waste.

Based on this, the daily generation of household waste in Maakurathu is estimated to be 888 kg (1 ton) or 26,640 kg (29 tons) of waste per month. Major types of waste generated are organic waste, plastics and used diapers, while metal waste, glass waste and cardboards are also produced to some extent, although comparatively less in number. The type of waste commonly generated in the island and their corresponding percentages and weights are reflected in table 5.

Table 5 Waste Generated in Maakurathu

Type of Waste	Percentage	Daily Weight (kg)	Monthly Weight (kg)
Organic Waste	66.1%	587.0	17,609
Metal Waste	0.9%	8.0	240
Plastic Waste	5.3%	47.1	1,412
Paper and Cardboard	4.3%	38.2	1,146
Hazardous Waste	8.3%	73.7	2,211
Glass Waste	2.0%	17.8	533
Other Waste	13.1%	116.3	3,490
Total	**100%**	**888**	**26,640**

Waste management services in the island, including both collection and management at the IWMC, are provided by 5 expatriate staffs of the council and 1 local pickup driver hired on renumeration basis. Out of the 5 expatriate staffs, 2 are recruited as drivers with the intention to utilize them as backups to the

primary driver during periods of leave. The local pickup driver also assumes the responsibility of overall IWMC management.

A pickup of 2-ton capacity is used to collect waste and bring it to the IWMC. This pickup contains three trolleyed bins designated for collecting *kitchen waste (bin size: 120-l)*, *used diapers (bin size: 240-l)* and *metal and plastic waste (bin size: 120-l)*, while jumbo bags are used to collect *garden waste*. Prior to collection, waste is segregate at household level into the aforementioned 4 categories. Household segregation is carried out by the households at their own containers; sacks or small buckets.

Figure 3 Collection vehicle and trolleyed bins

Daily household collection services are provided except on Fridays from 8:00 to 12:00 hrs. at the rate of MVR 100 per registered household. Out of the 200 households in Maakurathu, 183 are registered in the council's waste collection program, which correlates to 91.5%. The pickup driver maintains a register of daily collection. In addition to this, the council also provides C&D and wood waste collection and disposal services on need basis at a fee of MVR 50 per trip. Waste can also be carried to the IWMC individually by providing a monthly gate fee of MVR 100. Some of the unregistered households burn their waste at their back yard.

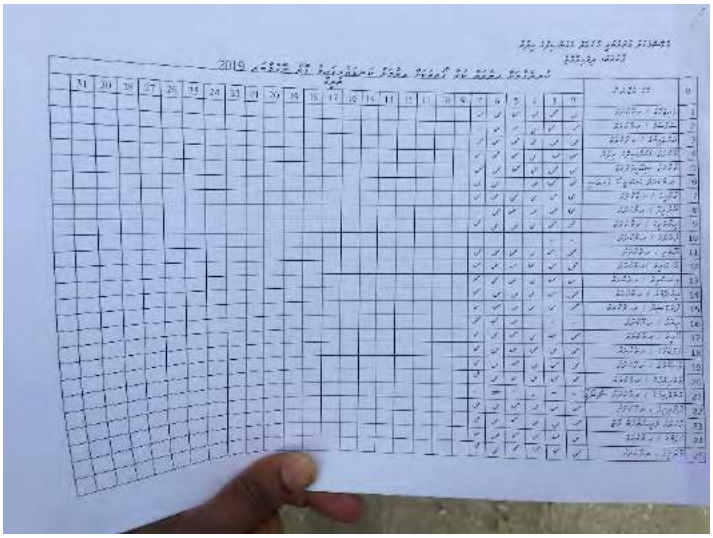


Figure 4 Checklist used by the driver / supervisor for daily HH collection

Only 30% of the organic waste generated in the island are brought to the IWMC. The reset goes to the goat farms that exist in the island. The operators of the goat farms at the western side of the island collects organic waste from the households that reside close to the farm. A wheel borrow is used for this purpose. Details of goat farm operators in Maakurathu are provided in table 6.

Table 6 Goat Farm Operators of Maakurathu

#	Name	Address
1	Abubakuru Ali	Mazaara, R. Maakurathu
2	Ali Rasheed	Alhivilaage, R. Maakurathu
3	Abdul Hameed	Maaolhu, R. Maakurathu
4	Ahmed Raseed	Raaz, R. Maakurathu

Figure 5 Western side goat farm

Figure 6 Kitchen waste burial area

Kitchen waste brought to the IWMC are buried at the foreshore of the adjacent beach. A very shallow hole (approximately 1 foot deep) is dug to bury the waste, so that during high tide, the waves will carry the waste into deeper waters. The collected green waste, used diapers and plastics are burnt daily at a hut outside the IWMC. Ash from waste burning is deposited next to the hut. Metal wastes are being stored

in the existing cells of the bay and inside a metal container placed inside the IWMC. Bulky waste including roofing sheets, old furniture and bicycles are found piled up in the open ground at the east of the IWMC.

Figure 7 Hut used for waste burning and ash generated from burning

Figure 8 Stored used aluminum cans

Figure 9 Bulky waste pile east of the IWMC

C&D waste is not brought to the IWMC. The council has designated a specific area at the north side of the island, west of harbor, for disposing C&D waste. C&D waste is generally being reused to emplace in eroding areas of the island, while some are also being reused for construction backfilling.'

The workers use gloves and masks during collection and waste processing. However, safety shoes, suits and long-sleeved shirts are not being used. The council plans to purchase such PPEs when the IWMC becomes fully operational.

Figure 10 C&D waste disposal area

Table 7 indicates the list of equipment provided to Maakurathu Council by ME and their respective conditions.

Table 7 Conditions of WM equipment

Equipment	Received	Not Received	Condition
Compressor	√		In good condition, but not used since electricity not provided to the IWMC
Plastic Shredder		√	
Glass Crusher		√	
Wood Chipper		√	
Dust bin (120 L)	√		14 in good condition
Dust bin (240 L)	√		12 in good condition
Dust bin (660 L)	√		6 in good condition
Compost Sieve		√	
Compost Packing Machine		√	
Shovel		√	
Rake		√	
Wheelbarrow		√	
Gloves	√		Gloves are used by the workers
Mask	√		Masks are used by the workers
Safety Boots		√	
Safety Helmet		√	

3.2. Island Waste Management Regulation

Maakurathu island waste management regulation (IWMR) is formulated under the power vested to the Council through clause 151 of the Decentralization Act of the Maldives (Law No: 7/2010). The regulation sets user fees and defines general rules for waste management in the island. A summary of the main components of this regulation is provided below.

Goals and Objectives

The goals and objectives of the regulation are defined as follow:

a) To introduce systematic and organized means for managing waste in the island.
b) To enhance cleanliness of the island and its surrounding beaches and lagoons, ensure protection and preservation of the environment and natural resource of the island, and to create a livable, safe and healthy environment for the island community.

Effective Date

The regulation should come in to force from the date of publishing in the national gazette.

Registration for Waste Management Service

Users are required to register at the council to be eligible for the services provided under this regulation. As such, an agreement should be made between the user and the council prior to commencement of services.

Bringing Waste to the IWMC

Households who opt to bring waste to the IWMC by themselves should following the following general set of rules

a) Waste shall be brought to the IWMC from 8:00 to 14:00 hrs. every day except on Fridays.
b) Waste brought to the IWMC shall be placed only at the designated respective cell of the collection bay. Each cell of the bay should be appropriately labeled by the council to indicate the type of waste specified for that cell.
c) Own waste bringers shall register at the council and is entitled for a registration fee of MVR 100. Afterwards a monthly gate fee of MVR 100 shall be paid to the council.
d) Waste shall not be disposed at any other location except the IWMC. If such an act is performed appropriate actions and penalties will apply as defined in this regulation.
e) If a person is caught dumping waste at the vegetation line, beach, lagoon or road side, that person will be subject to further penalties under the Environmental and Preservation Act of the Maldives.

User Fees

The IWMR sets monthly user fees for providing Waste Management Services in the island.

Table 8 Waste Management User Fees

#		Fee (MVR)
1	Households	100.00
2	Abandoned houses and registered land plots	75.00
3	Island Council Secretariat Office	800.00
4	Businesses	200.00
5	Cafés and Restaurants	200.00
6	Workshops and Carpentries	200.00
7	Health Center	800.00
8	School	800.00
9	Powerhouse	800.00
10	Mosques	800.00
11	Dhiraagu Site	800.00
12	Ooredoo Site	800.00
13	Football Ground	800.00
14	Sports Arenas	800.00
15	Youth Center	800.00
16	Magistrate Court	800.00
17	Pre-School	300.00
18	NGOs	150.00
19	Women's Development Committee	300.00
20	Pharmacy	200.00
21	Construction Sites	200.00
22	Recreational Areas	800.00
23	Gate fee for buckets	5.00
24	Gate fee for wheelbarrows	10.00
25	Gate fee for hand-driven carts	20.00
26	Gate fee for island pickup	30.00
27	Gate fee for pickup	50.00
28	Guesthouses (1 room to 6 rooms)	200.00
29	Guesthouses (7 rooms to 12 room)	300.00
30	Guesthouses (13 rooms or above)	600.00
31	Haruge	150.00
32	Goat Farms	150.00
33	Farm Lands	50.00
34	Sea vessels	100.00
35	Own waste bringers	100.00

a) Users are required to pay monthly fees in advance on or before 10th of every calendar month.
b) The council will issue a fee card to all registered parties.
c) Bills will be issued to government institutions and private companies that prefer payment by this method.
d) Fines will apply to overdue fees. A 2% additional charge will apply to each delayed day for overdue fees. If overdue fees are not paid by 30th of the month, service will be suspended. For suspended services, services will only be resumed when all the overdue fees including the fines are paid in full.
e) Waste collection times are set from 8:00 to 14:00 hrs. except Friday.
f) Green waste, metal, plastics, glass, ash, used diapers, e-waste and kitchen waste should be kept separately in either buckets or jumbo bags and placed near the door side.

g) If waste is not segregated pursuant to specifications prescribed in clause (f) waste will not be collected from that household, until the next day.
h) An additional charge of MVR 60 per trip will apply for the disposal of bulky waste and C&D. A gate fee of MVR 50 will be charged if bulky waste is brought to the IWMC by the individuals in their own vehicles.

Open Burning of Waste

a) Written consent from the Council has to be sort prior to performing any act of open burning of waste in backyards of houses and individual or public land plots.
b) Burning of empty gas cylinders, plastic waste and fibers are prohibited inside the backyard of houses due to its associated health implications.
c) Those who breach these conditions will be penalized under this regulation.

Penalties

a) If a party has breached any clause of this regulation, no penalties will apply for the first time, but will be brought to the council and given advice not to repeat such an act in the future.
b) If a party breaches the regulation for the second time penalties will apply. Details of penalties are reflected in table 9.

Table 9 Penalties and Fines defined in IWMR

#		Fine in MVR
1	Second time of breaching the regulation	500.00
2	Third time of breaching the regulation	1500.00
3	Fourth time of Breaching the regulation	4000.00
4	More than four times of breaching the regulation	5000.00

Consultation with the Advisory Committee to the Council

According to the Decentralization Act of the Maldives, Island Councils are required to establish advisory committees to consult on matters related to the development of the island including waste management. As such, Maakurathu Council has formulated an advisory committee to fulfill this obligation and to which they consult every 2 months. Representatives from school, health center, powerhouse, NGOs, general community and women forms the committee.

The advisory committee is updated every year since the representatives from institutions may change from year to year. The council sends letters to the respective institutions requesting to nominate members for the committee every year.

The committee for the year 2019 was established on the month January and is chaired by the President of the Island Council.

Table 10 Advisory Committee of R. Maakurathu Island Council

Name	Address	Institution
Mr. Hassan Ali	Reehul Sabaa, R. Maakurathu	Council President
Mr. Hussain Imad	Full Moon, R. Maakurathu	Council Vice President
Mr. Ahmed Abdul Raheem	Fenboa Huraa, R. Maakurathu	Council Member
Mr. Abdulla Naeem	Madhoshimaage, R. Maakurathu	Council Director
Mr. Ahmed Naeem	Raashidha Manzil, R. Meedhoo	Principal of School

Mr. Adam Suhail	Marinvilla, R. Hulhudhuhfaaru	Community Health Officer of Health Centre
Mr. Abdulla Latheef Yusuf	Neeloa Faruge, R. Maakurathu	FENAKA
Ms. Mariyam Saeeda	Karankaage, R. Maakurathu	Community Member
Mr. Ibrahim Rasheed	Maathila, R. Maakurathu	Community Member
Mr. Moosa Shaamil	Fehivina, R. Maakurathu	Jameeyathul Islaah

The advisory committee was consulted on the draft IWMR on 9 August 2018. The comments provided by the committee was incorporated in to the Regulation prior to its finalization and polishing in the national gazette. The details of this consultation are provided in Chapter 9.

Consultation with the General Public

General public meetings are undertaken by the council every 2 months to discuss and gather public opinion regarding various on-going and planned development actives of the island. The draft IWMR was consulted with the public meeting held on 12 October 2018. The details of this consultation are provided in Chapter 9.

3.3. Island Waste Management Plan

According to the Waste Management Regulation of the Maldives, Island Councils are required to formulate Island Waste Management Plans (IMWP) in coordination with the Atoll Councils and get subsequent approval from EPA.

However, R. Maakurathu Council is yet to prepare an IWMP, which is a pre-requisite for IWMC registration at the EPA and commencement of operations. Therefore, the Council should commence preparation of the IWMP immediately and get it approved by EPA prior to completion of civil works of the proposed project. As the regulation referred in section 3.2. covers major components of an IWMP, the regulation can be easily adopted and structured as an IWMP consistent to the requirement of EPA. The following components shall be reflected in addition:

- Population of the Island and future growth rate.
- Waste Generation Rate and Composition: types of waste commonly generated in the island and their respective daily, monthly and annual weights.
- Waste Management Committee: A waste management committee should be formulated to discuss on matters related to waste management at the island. This committee should include representatives from relevant sectors such as school, health center, fishermen, business, cafes / restaurant owners and NGOs. The committee can include the same as the council's advisory committee.
- Open burning of waste at the IWMC and the backyards of houses permitted by the IWMR should be revoked. Likewise, the plan should focus on composting of organic waste with emphasis given to stop burial of kitchen waste at the foreshore of the adjacent lagoon to the IWMC.
- Community Consultation: The draft plan shall be consulted with the public and endorsed. List of people consulted and their addresses shall be reflected.

A draft IWMP was prepared by the community representatives of Maakurathu Island during the recent community mobilization workshop held from 4 - 5 December 2019. This plan will be developed further by the Council and submitted to EPA and ME. The agreed deadline for submission is 20 December 2019.

3.4. Project Site and Access Road

The proposed area considered for extension of the IWMC only contains small shrubs and grass, which shall be removed during site clearance. Part of the 4.5m wide road found at this side of the island also falls inside the proposed area for extension. Therefore, this area of the road needs to be deviated to accommodate upgrading of the center. The proposed area also does not contain any vegetation except shrubs.

At the time of the visit, the western cells of the existing bay of the IWMC had large quantities of stored metal can waste. A roof was not found at this side of the bay as it was damaged during the fire incident of 2017 and subsequently removed. However, the roof at the eastern part of the bay is still intact and is being used to store trolleyed bins. A metal container filled with stored aluminum cans is also present inside the bay. Waste and other materials stored at the existing bay need to be removed to facilitate construction works since the floor screed is incorporated into the new design.

In addition to this, a small pile of bulky waste is found at the east of the IWMC, outside the proposed area for extension. This pile mostly contains damaged roofing sheets removed from the IWMC and some old furniture and barrels.

The hut used for waste burning is also found outside the proposed area for extension towards south of the existing IWMC.

The council plans to remove all the accumulated waste in the island prior to contractor's mobilization by negotiating with WAMCO. However, in case negotiations do not proceed as planned, the metal cans at the existing collection bay area should be placed either in jumbo bags or 660-l trolleyed bins available in the island and temporarily transferred to the adjacent area where bulky waste is currently being kept.

The inorganic waste collected in the interim shall be stored in 660-l trolleyed bins available at the island and transferred to the respective storage area of the IWMC once the upgrading works are completed.

The site is accessible from north and east via the existing 4.5m wide roads and is sufficient for the back and forth movement of medium sized trucks. This road at the south connects to the main road of the island that extents up to the harbor. The harbor is located at the opposite sides of the island, approximately 750m from the site. The harbor will be used as the docking area for the landing craft during regional collection.

The EPA has provided recommendations for optimum zoning of the IWMC site (EPA, 2017). MNPI and MLSA consults EPA prior to finalization of LUPs. The requirement includes, the site being at least 30m from the vegetation line, at least 30m from a natural wetland area, at least 30m from the nearest environmental protected area (EPA) or environmentally sensitive area (ESA), and any infrastructure not being present within a 30m radius. The field survey done on the island recorded the locations of the aforementioned categories, which is reflected in table 11.

Table 11 Distances between the proposed site and priority locations

Location	Distance from site (m)
Vegetation Line	53
Residential Area	305
Recreational Area	150
EPAs and ESAs	NA
School	265
Distribution Box	512

3.5. Unassigned Waste Dumping

The roads of the island generally appeared clean. Unassigned waste dumping was not observed during the site visit.

Figure 11 Bins placed on road side

3.6. Vegetation Removal

The proposed area for extension only contains small shrubs and grass and therefore vegetation removal is not required.

Figure 12 Area proposed for IWMC extension and road diversion

3.7. Coastal Erosion

The most prominent costal structure found in Maakurathu is the harbor and the associated rock boulder revetment at the north side of the island, constructed in 2013. The harbor is 191m long and 85m wide. The harbor was upgraded recently where some shallow areas within the harbor basin was deepened and a quay wall was constructed on the western side of the basin, which was originally left as a beaching area during its' initial development (Shaiq, 2017). The depth of the harbor basin is -4m below mean sea level (MLS), which is more than sufficient for docking of larger vessels including landing crafts.

Slight erosion is occurring at the west of the harbor that extends to a distance of approximately 45m. This is the only area of the island subject to erosion at present. The council is managing C&D waste at this location. Some C&D waste is found emplaced at this area to act as a line of defense against erosion.

The southern beach is the widest beach, generally comprised of fine sand. There is no evidence of erosion at the south side of the island where the IWMC is located. Furthermore, a strong vegetation line exists at this side and the project site maintains a buffer of 53m from the vegetation line. Hence, there is no immediate threat of erosion to the proposed development.

Figure 13 Beach close to the IWMC

3.8. Environmentally Protected Areas and Sensitive Areas

Environmentally protected or sensitive areas are not present in Maakurathu. There are no protected areas within a 10km radius of Maakurathu. Vilingilee Thila, the only protected area found in Raa Atoll, is located about 26.5km from Maakurathu. Villingili thila was declared as a protected are on 21st October 1999 and is known for its abundance of stunning colors of fish life. The small thila is fringed with overhangs and terraces that are home to Blue Stripe snappers, trevallies, shrimps, glass fish and crabs. Nurse Sharks can be seen occasionally. Anemones and clownfish reside on the reef top. The proposed developed is not envisaged to cause any negative impacts to Vilingili thila.

3.9. Areas of Historic and Cultural Significance

There are three mosques on the island, one for men and two for women: Majid-Al-Salaam, Masjid-Al-Anwaar and Masjid-Al Rilvaan. Masijid-Al Rilaan is exclusive for women, while the other 2 mosques are primarily for men. There are no mosques of cultural significance. The project site maintains a distance of 530m from the nearest mosque. The project site also maintains a sufficient distance from the cemetery.

3.10. Socio-Economic Environment

3.10.1. Population

The total population of Maakurathu estimated in 2014 census is 798 corresponding to 393 males and 405 females. The 2014 census reports the total residential population of the island to be 765 and foreigners to be 33 (National Bureau of Statistic [NBS], 2014). The table below depicts comparison of total population with 2006 census.

Table 12 Average Annual Growth Rate, R. Maakurathu

	Census 2006	Census 2014	Percentage change in population (2006 – 2014)
Total	877	798	-9.0%
Male	413	393	-4.8%
Female	464	405	-12.7%

According to the census, from 2006 to 2014, the total population of Maakurathu had declined by 9%. However, there has been a rapid growth in population after 2014 with the council's records showing the current population to be 1,333. This corresponds to an increase in total population by 67% from 2014 to 2019.

Maakurathu accounts for the eighth largest population of the atoll, behind Dhuvaafaru, Vaadhoo, Ungoofaaru, Meedhoo, Maduvvari, Inguraidhoo and Hulhudhuffaaru.

Based on the information provided by the Island Council, there are approximately 29 people per hectare of the island.

3.10.2. Households

There are 200 households in Maakurathu representing houses, flats and apartments.

3.10.3. Education and Literacy Level

There are three educational institutions in the island. They are a primary and secondary school, a preschool and a Quran class. The main educational institution in the island school is Maakurathu School, which is a government school that provides education from lower kindergarten up to grade 12. 253 students are currently enrolled in the school. The preschool is owned and run by the public and backed

by Maakurathu Sports Club, which provides education for lower and upper kindergarten. There are no higher education providers in the island.

According to Census 2014, 97.7% of the resident population in Maakurathu is literate in mother tongue and 68.6% literate in English language. Literacy in both languages were determined by the person's ability to read and write, with understanding of the language (NBS, 2014).

3.10.4. Health

Maakurathu currently has one government health centre and one government pharmacy. The health centre is serviced by 1 doctor and 2 nurses. The pharmacy is serviced by 3 pharmacists on rotating duties.

3.10.5. Employment, Economic Activities and Business Establishments

The main sources of income in the island are sea cucumber fishery, agriculture, fishing, thatch weaving, carpentry, coir rope weaving, construction work, breeding respectively. There are 19 shops, 4 restaurants/cafes, 3 workshops, 1 carpentry and 1 guesthouse in Maakurathu. There are 39 fishing vessels operated in Maakurathu.

3.10.6. Non-Governmental Organizations

There are 5 NGOs registered in the island. However, only 2 NGOs are active. Names of NGOs, there current status and associated activities or main area of focus is reflected in the table 13 below.

Table 13 NGOs in Maakurathu

#	Name of NGO	Registered Date	Status	Focus Area
1	Maakurathu Sports Club	1 March 2000	Active	Sports activities and Youth Empowerment. Organizing Quran competitions.
2	Maakurathu Akuveringe rooh	17 January 2005	Inactive	NA
3	People's Association of Maakurathu - PEAMA	2009	Inactive	NA
4	Jamiyyathul islaah	29 January 2015	Inactive	NA
5	Maakurathu cooperative society	-	Active	Assists in programs conducted by the Council and School such as cleanup activities.

3.10.7. Council Secretariat

According to the 6th Amendment to the Decentralization Act of the Maldives, 3 members constitute the island councils of islands with a population of less than 3000, while 5 members are elected for island councils of islands with more than 3000 in population. In the Act, the tenure of the council is specified as 3 years from the date of election. It also states that a new council shall be elected 30 days prior to the end of the current council's term.

As the island of Maakurathu has a population of 1333, the Island Council is comprised of 3 members, namely, President Mr. Hassan Ali, Vice President Mr. Hussain Imad and Member Mr. Ahmed Abdul Raheem. The council took oath on 4 June 2017.

The President and Vice President of the island council are elected by a secret ballot held among the elected members of the island council. If a member's post is vacated before the end of the tenure, another member shall be elected within 45 days through a bi-election. The elected member in a bi-election will remain in the post till the end of the term of that council.

The President and Vice-President of the Councils are responsible for day to day operational management of the Council. The responsibility of Council members includes attending official meetings of the Council, discussion and reaching resolutions on the agenda items for the meetings, and participation in the making of policies needed to achieve the objectives of the Council.

Specific duties of the Council President are as follows:

(a) Conduct council meetings and preside over these meetings;

(b) Administer and direct the council towards achieving its objectives;

(c) Publish and implement the decisions of the council through the Council's Administrative Office;

(d) Oversee the compilation of the council reports and ensure that the reports are submitted on time to the relevant authorities;

(e) Foster and maintain good relations and cooperation between the council and Government authorities, associations and groups;

(f) Monitor to see if the council's finances are managed by the Council's Administrative Office, according to the decisions made by the council;

(g) Facilitate a mechanism to keep records of the Council's revenue and expenditures;

(h) Perform other work assigned by the atoll council and the island council.

Specific duties of the Council Vice President are as follows:

(a) Assist the President of the council in performing council's work;

(b) Perform the duties of the President of the island council, during such times as when the President of the island council is incapacitated or is excused or if the post is vacant. In addition to this, undertake responsibilities assigned by the president of the council;

(c) Perform other work assigned by the island council.

Specific duties of the Island Council Members are as follows:

(a) Work towards achieving the objectives of the island council.
(b) Carryout any work assigned by the council as per the procedures of the island council.

The island council is responsible for providing the following municipal services to the people of the island:

(a) Build and maintain roads of the island;

(b) Dispose waste in a reasonably safe manner at the island level as it does not create any inconvenience to the community;

(c) Maintain the jetty of the island, build and maintain wharf, and operate the ferry terminal of the island;

(d) In accordance with the Law of the Maldives, take necessary measures to alleviate the land erosion problem and maintain the jetty and the breakwater of the island;

(e) In accordance with the law of the Maldives, provide and maintain public facilities such as water, electricity, and sewage system;

(f) In accordance with the Law of the Maldives, provide primary health care and other basic health security services;

(g) In accordance with the Law of the Maldives, provide preschool education and organize and conduct educational and vocational programs to train adults;

(h) Administer the island library, archive official documents, preserve old and historical documents of the island in the library and with the help of modern facilities, provide access to information;

(i) Maintain social centers, play grounds or sports fields and provide sporting facilities, public parks and entertainment services;

(j) In accordance with the Law of the Maldives, run a center to provide social security services, take measures to stop domestic violence and provide the victims of such violence with security and assistance and put in place a system to help senior citizens and people with special needs;

(k) In accordance with the Land Law of the Maldives and in a manner which does not contravene the island's Land Use Plan, allocate land and register land and buildings, and monitor if all building work undertaken is in accordance with the building regulations of the Maldives and other regulations by relevant Government ministries, and in accordance with the Land Laws and other such Laws of the Maldives, keep record of all dealings undertaken by parties in regards to matters of land;

(l) Maintain a land registry of the island and provide information required for the national land registration authority;

(m) Maintain mosques;

(n) Maintain cemeteries, establish burial service mechanism and organize for burial services;

(o) Maintain historical places and promote and revive culture;

(p) Commemorate religious and national days of importance and hold religious and national functions;

(q) Organise to sweep and clean the roads, maintain cleanliness of the island and its beauty;

(r) Provide the island with adequate lighting at night;

(s) Pest controlling;

(t) Establish a mechanism that provides assistance in an event of emergency;

(u) Monitor and check if shops, tea boutiques, restaurants, café's, guest houses and public markets comply with standards, rules and regulations set by the law of the Maldives and take corrective measures;

(v) Organize and manage for pedestrians, motor vehicles and non-motor vehicles to use the roads as according to the standards set by the statutes of the Maldives, and organize and manage public land and sea transport services which levy a fee to operate in compliance with the standards set by the relevant Government authority;

(w) Assist the Courts of Law and Government authorities to execute the sentences passed by the Courts of Law.

(x) Issuing and cancellation of permits and registries; that Government ministries provide through the island councils, and on matters that fall within the jurisdiction of the island council, and on matters that have been assigned to the island council under various laws;

(y) Manage the birth and death registry of the island, and gather and maintain the statistical records of the island, maintain a registry of citizen and noncitizen of the island, and maintain a registry of foreigners living on the island;

(z) Provide other services that are prescribed by Laws.

3.10.8. Electricity

Electricity is provided by FENAKA Corporation 24 hours a day. The power house is located at the southern part of the island at a relatively close proximity to the football ground. The distance between the proposed site and the powerhouse is 190m.

FENAKA uses 1 diesel generators of capacity 250kW to provide electricity to the island.

3.10.9. Sewerage

At present, Maakurathu island does not have a sewerage network installed. Hence, the population still relies on conventional septic tanks for sewage disposal.

However, works are in progress for establishing a sewerage system in the island. It is a gravity sewerage system where sloping pipelines will allow waste water from the entire island to flow to three zonal pumping stations. The sewage will be pumped from the pumping station to the treatment plant where it will be treated and discharged via a sea outfall pipeline into the sea. The system comprises of elements of a given specification for sewer mains, cleanouts, manholes, vents, pump stations, outfall pipeline and diffuser that will ensure a 30-year design flow. The system will cover all the households and institutions in the island at present (Shah, 2017).

3.10.10. Water Supply

There are no desalinated plants in the island. The government of Maldives provided 174 water tanks of 2500l to individual houses in 2008. The main source of water for drinking is rainwater that is collected using these tanks. Groundwater is used through wells for non-portable use.

3.10.11. Transport and Communication

The nearest airport to Maakurathu is Ifuru Airport which is approximately 11km away.

Sea transport to and from the island is facilitated by the island harbor. For public sea transport, Maakurathu has 1 ferryboat. The island also has 2 small traditional vessels or “Bokkura”, 3 speed boats, 27 dinghies, 8 traditional fishing boats, 40 engine boats. For land transportation, there are 54 private motorcycles, 8 private pickups, 5 public pickups, 1 ambulance. There are no taxis, private cars, vans or lorries in the island.

Telecommunication services are provided by Dhiraagu and Ooredoo. Antennas of the service providers are found next to the powerhouse at the designated utility area. The island gets good reception from both the service providers. Dhiraagu 3G Broadband Service are also available in the island since the beginning of 2015.

CHAPTER 4 IMPACT IDENTIFICATION

This chapter describes the key adverse and beneficial impacts envisaged for both construction and operational phase of the project and the methodology used for impact prediction.

4.1. Impact Assessment Methodology

Potential impacts of the project were determined based on the author's experience in the field of study, evaluation of previous impact assessment reports of similar projects, filed observations and information provided by the Island Council. Rapid Impact Assessment Method (RIAM) is used for impact prediction.

RIAM is a contemporary analytical tool used in many EIAs for impact prediction since 1995. This method attempts to troubleshoot many of the shortcomings of the traditionally used impact identification techniques particularly the issue of subjectivity and transparency. The concepts of RIAM were first developed by Pastakia (1998) which were then tested in the field by Jensen (1998).

The RIAM method defines important assessment criteria and provides an accurate and independent score for each condition. The impacts of the project activities are evaluated against environmental components and a score is derived for each component reflective of the degree of impact envisaged from t0 he component.

The two important assessment criteria used in the system are

(A) Criteria that are important to the condition and can individually alter the score obtained, and

(B) Criteria that are of value to the situation, but cannot individually alter the obtained score.

Criteria A is subdivided in to two components and criteria B in to three components. table 14 describes these subcomponents and the scale used to assign scores (Pastakia and Jens, 1998).

Table 14 RIAM Assessment Criteria

Criteria	Scale	Description
A1: Importance of condition	4	Important to national / international interests
	3	Important to regional / national interest
	2	Important to areas immediately outside the local condition
	1	Important only to the local condition
	0	No importance
A2: Magnitude of change/effect	+3	Major positive benefit

	+2	Significant improvement in status quo
	+1	Improvement in status quo
	0	No change / status quo
	-1	Negative change to status quo
	-2	Significant negative dis-benefit or change
	-3	Major dis-benefit or change
B1: Permanence	1	Temporary
	2	Permanent
	3	No change / not applicable
B2: Reversibility	1	No change
	2	Reversible
	3	Irreversible
B3: Cumulative	1	No change / not applicable
	2	Non-cumulative / single
	3	Cumulative / synergistic

Criteria group A scores are multiplied so that it holds more weightage. In contrast, criteria group B scores are added together to provide a single sum to ensure that individual value scores do not influence the overall score.

The sum of the group (B) scores are then multiplied by the result of the group (A) scores to provide a final assessment score (ES) for the condition. This is represented by the formula below:

(A1) X (A2) = (AT)

(B1) + (B2) + (B3) = (BT)

ES = (BT) x (AT)

The environmental components that are evaluated under RIAM technique will fall under any one of the following four categories.

• Physical/Chemical (PC)

Covering all physical and chemical aspects of the environment.

• Biological/Ecological (BE)

Covering all biological aspects of the environment.

• Sociological/Cultural (SC)

Covering all human aspects of the environment, including cultural aspects.

• Economic/Operational (EO)

Qualitatively to identify the economic consequences of environmental change, both temporary and permanent.

The following environmental components were investigated for both the construction and operational phase of the proposed IWMC development project (Pastakia and Jens, 1998).

1. Physical / Chemical (PC)
   Groundwater
   Air
   Soil
   Noise
   Waste

2. Biological / Ecological (BE)
   Vegetation
   Fauna
   Wetlands and marine habitats

3. Social / Cultural
   Road Closure
   Health and Safety (of workers and nearby residents)
   Sociocultural conflict

4. Economic / Operational (EO)
   Economic benefit or burden

Final assessment of each component is evaluated based on the ES values and range brands provided in table 15.

Table 15 Environmental Scores and Range Bands

Environmental Scores	Range Value	Range Value (Numeric)	Description
108 to 72	E	5	Major positive
71 to 36	D	4	Significant positive
35 to 19	C	3	Moderate positive

10 to 18	B	2	Positive
1 to 9	A	1	Slight Positive
0	N	0	No change
-1 to -9	-A	-1	Slight negative
-10 to -18	-B	-2	Negative
-19 to -35	-C	-3	Moderate negative
-36 to -71	-D	-4	Significant negative
-72 to -108	-E	-5	Major negative

4.2. Potential Impacts of the Project

Potential adverse and beneficial impacts of construction and operation phase of the proposed IWMC were identified using the rapid impact assessment method specified in the forgoing section.

4.2.1. Construction Phase Impacts

Summary of the scores and range values obtained for each evaluated environmental component evaluated for the construction phase are provided in table 16.

Table 16 Construction Phase Impacts

Environmental Category	Total Score	Range Value	Range Value (Numeric)	Description
Construction Phase				
1. Physical / Chemical				
Ground Water	-5	-A	-1	Slight negative
Soil	-3	-A	-1	Slight negative
Noise	-5	-A	-1	Slight negative
Air	-5	-A	-1	Slight negative
Waste	-5	-A	-1	Slight negative
2. Biological / Ecological				
Vegetation	-12	-B	-2	Negative
Fauna	-12	-B	-2	Negative
3. Sociological / Cultural				
Road Closure	-6	-A	-1	Slight negative

Health and Safety	-5	-A	-1	Slight negative
Sociocultural Conflict	-8	-A	-1	Slight negative
4. Economic				
Loss or benefit	+8	A	1	Slight Positive

Site Preparation

The site proposed for the upgrading of the waste management center nor the associated road do not contain any significant vegetation except shrubs and grass. Therefore, no direct negative impacts to the biodiversity is perceived to occur as a result of the project since uprooting or cutting down of palms will not be a part of the project or the ancillary road project.

Mobilization, Transport and Storage of Construction Materials

In case of illegal sand mining from the island lagoon, a direct negative impact to seawater quality in terms of increased turbidity will be felt coupled with potential exacerbation of coastal erosion and loss of beach aesthetics. However, any such impacts will be short term, while more importantly such acts shall never be practices as it is prohibited by law and will result in the cancellation of the contract and further penalties from EPA if found guilty. As such, the possibility of such an incident happening is unlikely and hence is ruled out as a potential impact of the project.

Although no direct negative impacts are envisaged to occur to the flora and fauna from the construction phase, the transport and supply of construction materials and machineries to the site may impose indirect negative impacts to the terrestrial and aquatic biodiversity and slight negative impacts to the soil and groundwater. The impacts may arise from accidental spillage of construction materials (cement bags, timber, iron bars etc.), accidental oil spills (used oil) and damage to vegetation as a result of improper handling and careless driving during transportation of materials.

Spillage of oil to the ground has a high potency to contaminate soil and groundwater. Likewise, an oil spill to marine waters may lead to death of marine organism, as it would significantly diminish the dissolved oxygen content of seawater supplemented by an increase in carbon dioxide concentration, leading to suffocation of marine organisms. In addition to smothering, coral reef and aquatic flora and fauna, will be at extreme risk from exposure to toxic substances contained within oil. However, the project is not expected to generate large quantities of used oil since only a cement mixing machine is proposed to be used, which may even not require changing of oil during the lifespan of the construction period. Any potential spillage of used oil to seawater is considered as an indirect impact as used oil generated (if any) is expected to be properly stored in sealed container, introduced to the island waste management stream and ultimately transferred to Vandhoo RWMF.

Construction Waste

Inappropriate handling of construction waste which will be generated during the upgrading of the IWMC and its disposal into the surrounding environment may contaminate groundwater and pollute marine environment. The types of waste generated during construction are primarily comprised of plastics, paper, empty cement bags, empty aggregate bags, pieces of GI pipes, PVC mesh, wood, waste oil and other irregular objects. Such items if disposed improperly can reduce the aesthetic beauty of the island and

degrade ground and marine water quality, which would in turn affect human health and marine organisms.

Socio-Cultural

A sociocultural negative impact may arise due to influx of a foreign labor force that have limited understanding of local context and might not respect the cultural and religious norms followed by the local community. But such impacts will also be temporary, limited only to construction phase.

A slight negative impact to the regular traffic flow is also possible during transfer of construction materials to the project site, especially since the site is located at opposite ends of the island to the harbor. However, any such impact is expected to be temporary and minute, since construction materials are usually transferred to the project island only once in such type of projects and as there are not many vehicles operating in Maakurathu.

The workers may also be subjected to slight negative health and safety impacts if proper PPEs are not worn during progression of construction works. As no settlements are close by, the general public is not expected to be affected by the dust generated during cement mixing.

Economic

A slight positive impact to the local economy is envisaged from the construction phase as the contractor may obtain certain materials required for construction locally depending on availability. Similarly, the contractor may hire local employees for construction works creating job opportunities within the island. Even if expatriate workers are hired, demand for resources such as food and accommodation for construction workers, equipment, machinery, vehicles and vessels hire will likely benefit the local suppliers and businesses. However, this prospect is only temporary as the opportunity will cease after the completion of construction works.

4.2.2. Operational Phase Impacts

Scores and range values predicted for the operational phase of the proposed development are portrayed in table 17.

Table 17 Operational Phase Impacts

Environmental Category	Total Score	Range Value	Range Value (Numeric)	Description
Operational Phase				
1. Physical / Chemical				
Ground Water	+32	C	3	Moderate positive
Soil	+32	C	3	Moderate positive
Noise	-5	-A	-1	Slight negative
Air	+42	D	4	Significant positive

Waste	+84	E	5	Major positive
2. Biological / Ecological				
Vegetation	0	N	0	No change
Fauna	+36	N	4	Significant positive
3. Sociological / Cultural				
Road Closure	0	N	0	No change
Health and Safety	+63	D	4	Significant positive
Sociocultural Conflict	-20	-C	-3	Moderate Negative
4. Economic				
Loss or benefit	+54	D	4	Significant positive

Most of the impacts during operational phase are expected to be positive if the proposed mitigation measures suggested in this management plan are stringently followed.

Waste Management

Upgrading of the IWMC will provide adequate storage space needed to manage and store island waste in a systematic and organized manner. Electricity will be connected to the upgraded center through the project enabling the use of compactor during operations, which is currently being stored in the compound of Youth Center, since no electrical connectivity is available at the existing IWMC. The project will also facilitate the operator to resume compost production. Training on compost production will be provided to IWMC operators prior to commencement of operations of the IWMC.

Groundwater, Soil, Seawater and Noise

The collection bay area of the IWMC will have concrete screed and roofing, while a leachate collection well and stormwater drains will be installed, which would ensure proper management of leachate and mitigation of stormwater runoff during operations of the center. At present, some of the bulky waste, mostly comprised of metal waste, are kept in the open ground adjacent to the IWMC, without any barrier or cover on top. As most of such wastes are rusted, the probability of contamination of groundwater and soil through leachate is a high probability. Additionally, the present method of storing ash generated from open burning of waste in bare ground next to the hut could potentially result in further degradation of groundwater and soil. The proper operations of the IWMC will assist in ceasing open burning and mitigating such negative impacts. Therefore, the project is expected to moderately improve the soil and groundwater condition of the island.

Moreover, with the upgraded center, the operator should be able to store and pack waste according to WAMCO's segregation guideline for transfer of waste to Vandhoo RWMF, thereby, reducing the probability of any potential waste spillage from the landing craft during transfer of waste to Vandhoo. The current practice of burial of kitchen waste at the foreshore of the adjacent beach and its subsequent release to the lagoon also has the potential to diminish sea water quality of the lagoon by increasing turbidity. This will also result in certain health implication if these waters are used by the public or tourists alike for the purpose of swimming. This is particularly prevalent in the case of Maakurathu since the IWMC

exist at a relatively close proximity to the planned area for local tourism development. Resuming compost production at the IWMC will ensure that waste do not go into the sea and therefore, the operations of the proposed development will improve the sea water quality both directly and indirectly.

As expected, some amount of noise will be generated during waste processing activities undertaken in the IWMC. However, the noise generated during the operational phase is expected to be very small as heavy machineries that emit significant noise are not expected to be used. Moreover, no residential or public areas exists within a 50m boundary of the IWMC, while the areas between residential and communal zones and the IWMC are covered with thick vegetation, which would act as receptors of noise and reduce the amount of noise reaching the residential population.

Air Quality, Public Health and Nuisance to Community

A fully functional IWMC with added security features (elevated perimeter walls, installation of firefighting equipment etc.) will assist in the mitigation of fire hazards and ensure associated damages to expensive infrastructure and equipment are averted. It will also facilitate in ceasing of daily open burning of green waste, used diapers and plastics at the hut placed outside the IWMC. Open burning of waste is known to cause numerous health implications to people having respiratory diseases such as asthma, bronchitis, emphysema, and pneumonia. Hence, the project is expected to bring about major positive impacts towards the health and wellbeing of the IWMC operators as well as the general society. The health benefits perceived would also indirectly contribute to reduce the amount of money spent by individuals on healthcare.

Socio-Economic

Workforce demand is expected to be high during the operational stage as well, with a number of low skilled jobs and skilled jobs made available to provide waste collection, composting and waste processing services. In contrast to the construction phase, the jobs created during operational phase will be permanent or for long term. Furthermore, if a market for composted material and recyclables can be found, the IWMC can self-sustain by cost recovery which will be positive for the island economy.

Similar to construction phase, a moderate negative impact maybe possible in terms of sociocultural conflict if expatriate workers are employed to provide waste management services. However, in contrast, the impact at operational phase is considered moderately negative, since IWMC staffs are expected to be employed for longer duration given that the operations of the IWMC will be continuous.

CHAPTER 5 MITIGATION MEASURES

One of the most important functions of an Environmental and Social Management Plan (ESMP) is to propose ways to manage the negative impacts that are likely to occur as a result of the proposed development. For this purpose, it is essential to identify mitigation measures to minimize impacts and identify cost of mitigation measures and parties that are responsible for implementation of these measures. As highlighted in the description provided in the chapter 4, most of the negative impacts envisaged for the proposed development occur during construction phase. Therefore, the proposed mitigation measures mostly focus on the construction phase of the project. However, the slight negative impacts envisaged for the operational phase are also taken into consideration and mitigation measures are proposed for these impacts as well.

Table 18 provides details of the key mitigation measures for various environmental and socioeconomic aspects that are impacted as a result of the project.

Table 18 Mitigation measures proposed for significant impacts

Environmental Management Plan			
Impact	**Mitigation Measure**	**Responsible Party**	**Cost of Mitigation**
Management of Impacts during Preconstruction and Design Phase			
1. Physical / Chemical			
Contamination of groundwater and soil through leachate and stormwater runoff.	Ensure (i) waste storage areas are covered to prevent contaminated storm water runoff, and (ii) hazardous waste storage area is bounded. The material processing or storage areas of the facility should have a leachate barrier system that forms a secure barrier between the groundwater, soil, and substrata and the composting or stored organics, as well as systems for collecting and treating leachate such as a concrete pad with open drainage channels that drain in to a leachate collection well. Design and maintain the slope and orientation of windrows and/or leachate drains such that free drainage of leachate to a collection drain is facilitated and ponding of leachate is avoided; shape the piles and windrows to maximize run-off and hence reduce infiltration.	P: Civil Engineer, MCEP	Included in the overall project budget.
Noise pollution	Ensure that the outer boundary wall of the IWMC maintains a minimum distance of 30m from commonly used public places.	P: Island Council S: MLSA, EPA	No cost involved

Impacts of air pollution to nearby residents due to fire hazard and open burning of waste	Include provision for firefighting equipment in IWMC design and BOQ. Arrange cells in the collection bay to control fire outbreaks (contrasting cells with low conductivity materials). Installation of surveillance cameras and/or fire alarm systems (smoke detectors). Ensure that a minimum buffer of 30m is maintained between the project site and the nearest residential and communal zones.	P: Civil Engineer & Project Manager, MCEP P: Civil Engineer, MCEP P: Island Council P: Island Council S: MLSA, EPA	Included in the overall project budget. No cost involved To be covered through the council's budget No cost involved
Marine water pollution	Ensure that a minimum buffer of 30m is maintained between the IWMC and south side vegetation line. Ensure that an adequate sized compost pad is included in the design so as to facilitate compost production and prohibit any organic waste being disposed into the lagoon.	P: Island Council S: MLSA, EPA P: Civil Engineer, MCEP	No cost involved Included in the overall project budget.
2. Biological			
Negative impacts on ecologically significant wetland and marine habitats	Ensure IWMC is not designed within a wetland or marine outfall and sets a minimum distance of 30m from environmentally sensitive areas.	P: Island Council S: MLSA, EPA	No cost involved
Negative impact due to vegetation removal	Consideration should be given during detailed designing stage to build infrastructure around existing vegetation, thus minimizing any clearance.	P: Island Council S: MCEP	No cost involved
3. Sociological and Cultural			
Public health impacts and damage to public and private property due to potential fires and open burning.	Include provision for firefighting equipment in IWMC design and BOQ.	P: Civil Engineer & Project Manager, MCEP P: Communications Specialist, MCEP	Included in the overall project budget. Cost of printing and fixing the boards,

	Design sign boards for no smoking, fire safety and storage cells in the collection bay area. Include printing and fixing of the sign board as parts of works of the contractor. Installation of surveillance cameras and/or fire alarm systems (smoke detectors). Create sufficient storage space to facilitate storage of plastics and used diapers for 2 - 3 months, so that current practice of open burning of such waste can be avoided. Ensure that an adequate sized compost pad is included in the design so as to facilitate compost production and stop open burning of green waste. Ensure that the wood chipper (most preferred equipment by the council) is delivered prior to commencement of IWMC operations.	S: Civil Engineer, MCEP P: Island Council P: Civil Engineer, MCEP P: Civil Engineer, MCEP P: Zone-2 Project Coordinator, MCEP	included in the overall budget. To be covered through IC budget. Included in the overall project budget. Included in the overall project budget. Included in MCEP budget for Zone-2 equipment.
4. Economic			
Creating comfortable work environment for potential workers	Include office, toilet and resting areas in the IWMC design.	P: Civil Engineer, MCEP	Included in the overall project budget.
Management of Impacts during Construction Phase			
1. Physical / Chemical			
Note: All construction activities should be undertaken in the presence of an experienced supervisor.			
Contamination of groundwater and soil due to chemical spillage and seepage	Hazardous waste such as waste oil and diesel should be stored in sealed containers and placed on a hard concrete surface and transferred to the nearest regional waste management facility for final disposal. Stored containers should be regularly inspected to identify any leakages.	P: Contractor S: IC Supervisor	Cost associated with purchasing of containers and transport to RWMF
Noise pollution due to construction activities and use of machinery	Ensure construction activities occur between 8 am and 6 pm. Construction workers should wear ear muffs when using machinery that produce significant noise.	P: Contractor	Cost associated with purchasing ear muffs

	The proposed development will not emit significant level of noise due to the scale of work involved.		
Negative impact on air quality during transfer of construction materials and progression of works	During transport of construction materials from the harbor to the site, all sand and aggregate should be transported in covered vehicles or wheelbarrows and vehicle movement should be via roots that are well away from community roads where possible. Transportation should be at low vehicular speeds and loading and unloading should be conducted within the site. All vehicles used in the project should have an up to date road worthiness certificate. All vehicles and machinery should be well tuned. Ensure that construction site is wetted to minimize impact of dust as a result of the project. Materials that are stockpiled at the location for long period of time should be covered to minimize impact of dust generation due to windy conditions. Similar to above (relate to noise), there will not be significant impact on the air quality.	P: Contractor	No cost involved.
Coastal erosion and loss of beach aesthetics due to sand mining	Ensure that all construction materials including sand are sourced in compliance with the national laws and regulation. Sand should not be sourced from the beach or lagoon of an inhabited island, tourist resort, or any protected island. This includes the area of the island designated for sand mining of local public use.	P: Contractor	Cost associated with purchasing sand from a reputable source (hardware shops) and transporting to the island.
C&D waste produced during demolition of the existing IWMCs	Reuse the waste produced during demolition of the existing fence, roof and damaged walls for construction of the new IWMC as much as possible. Consideration shall also be given to reuse the general C&D waste generated in the island as much as possible. Any remaining C&D waste shall be disposed at the area designated by the council for C&D waste disposal.	P: Contractor S: Island Council	Cost associated with transport to RWMF

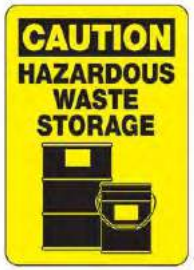
Littering and general waste generated by construction workers	Place a bin at the site to dispose general waste generated by the workers. Establish procedures for general waste disposal which should include actions to be taken if the procedures are breached.	P: Contractor	Cost associated with purchasing a bin
2. Biological			
Negative impacts to vegetation due to improper handling and driving during material transportation.	Workers will be informed to avoid damaging trees and disturbances to animals and to generally avoid engaging in destructive activities to the environment intentional or unintentional. Avoid roads with significant vegetation during transportation within the island. Avoid bringing heavy vehicles to the island where possible.	P: Contractor	No cost involved
Negative impact on fauna during material transport	Workers will be informed to avoid damaging trees and disturbances to animals and to generally avoid engaging in destructive activities to the environment intentional or unintentional. Materials shall be obtained from the closest source. The materials shall be brought in bulk and transported to the island within a single trip where possible. The materials shall be stored at the project site or in a close proximity to avoid unnecessary movement of vehicles within the island through the construction phase. Ensure that all construction materials imported to the island are free of any alien species or pests. Ensure that oils and paints are properly sealed prior to transportation. Ensure that materials are not kept beyond the height of the sides of the vessels and are properly covered, when transporting via sea.	P: Contractor	Cost associated with purchasing of containers designed for storing hazardous substances.
3. Sociological and Cultural			

Health and Safety of construction workers	All workers should be provided with safety gear and should ensure that safety gear is utilized at all times. This includes: safety hats, boots, glasses, masks and gloves. Ear muffs shall be provided where equipment or machinery that emit significant amount of noise is used. Chemical-Liquid protective gloves should be used when handling any chemicals, waste oil or other liquid waste. No open electrical wiring or cables should be kept on site. Health and Safety briefing should be given to all construction workers. The maximum working hours of all construction workers should be 48 hours per week as per the Employment Act of Maldives. Meals should be provided to construction staffs 3 times a day. Safe drinking water should be supplied to construction workers. Appropriate sleeping arrangements shall be made for the construction workers. A safety inspection checklist should be prepared taking into consideration what the workers are supposed to be wearing and monitored monthly and recorded in the monitoring.	P: Contractor	Cost associated with purchasing safety materials.
Health and safety of public	Demarcate the site boundary through taping or hoarding. Place sign boards to indicate that only authorized personnel are allowed entry. Make sure that the general public do not have access to the site and its vicinity. Regularly monitor for entrance of residents. Make sure that public chairs are not found at the vicinity of the site.	P: Contractor S: Island Council	Cost associated with designing and printing sign boards.

Fire hazard	Ensure that electrical wires are installed properly by a certified person. Ensure that portable extinguishers are readily available in case of an emergency fire.	P: Contractor	Cost associated with hiring an expert electrician and purchasing of fire extinguishers
Sociocultural conflict due to arrival of expatriate workers	Ensure that local workers are used as much as possible. If expatriate workers are used ensure that they respect the local culture. The contractor in collaboration with the Island Council shall undertake a training to sensitize the labor to the local context and customs. This training should also cover topics related to Gender-based violence. To mitigate conflict that may arise due to the arrival of expatriate workers, the consultant should develop a "Code of Conduct" outlining the set of rules that that the workers have to follow to persevere the social norms and religious values of the society. The Code of Conduct should also specify penalties for breaching these rules and should be thoroughly communicated to workers prior to mobilization.	P: Contractor S: Island Council	Cost associated with hiring staffs
Code of Conduct and Communication	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 the local language. If expatriate workers are employed communications should be made in a language that they understand. 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: Contractor P: Island Council S: MCEP	Cost associated with developing materials.
Loss of source of sand for local public use due to sand mining from the area of the lagoon permitted for local public sand mining	Ensure that sand is not taken from the lagoon of the island.	P: Contractor	Cost associated with purchasing sand from a reputable source (hardware shops) and transporting to the island.

4. Economic			
Benefit to local economy	Ensure that construction materials are purchased from the island as much as possible. Preference shall be given to hire local construction workers from the island and the atoll or region.	P: Contractor	Cost associated with material purchase
Management of Impacts during Operational Phase			
1. Physical / Chemical			
Waste processing and storage. **Litter, odor and vector nuisance.**	Ensure that primary waste collection services are provided at least daily. Secondary transfer to a regional facility shall be arranged at least twice a month. Adequate bins with closures must be provided at the drop off locations if the IWMP has demarcated them. Waste collection vehicles and transfer vessels must be secured from all sides to prevent spillage. Provide composting training to all laborers and management staff of the facility. Control of the incoming waste stream is necessary to ensure safe and effective processing, treatment, and disposal of the Waste and the quality of end products (e.g., quality compost). • Visually evaluate, weigh, and document incoming waste loads; • Conduct visual inspection of the incoming waste, along with sorting and removal procedures, can minimize this potential hazard; • Reject or, if the facility is equipped to process the waste, segregate potentially hazardous materials or wastes identified, including infectious waste, and manage as a hazardous or infectious waste, as applicable; • Analyze suspected hazardous materials before acceptance so that they are segregated relative to compatibility and so that they can be adequately treated and disposed of; • Separate recoverable secondary materials for recycling and organic waste for composting to the extent practical.	P: Island Council/ IWMC Manger P: ME S: MCEP P: Island Council / IWMC Manager	Cost associated with IWMC operation Cost of providing compost training Cost associated with purchasing jumbo bags and/or containers

	• Waste that cannot be managed at island level must be processed (chipped, crushed or compacted) and stored in containers or jumbo bags and kept in the respective bays within the IWMC for transportation to Vandhoo RWMF. • The jumbo bags and/or containers must be appropriately labeled to indicate the type of waste they contain. • Maintain log records of all outgoing waste either in terms of weight or volume of jumbo bags and/or containers. The log sheets must be provided to the regional collection supervise or vessel caption.		
Hazardous Waste Management and Transportation	Do not accept medical hazardous waste as it has to be managed by the island health center and incinerated separately. Types of hazardous waste managed at the health center mainly include needles, syringes, expired medicine and contaminated materials (cloth/gauze/disposable gloves). Other types of hazardous wastes generated within the households including small batteries, solvents, paints, used oils, pharmaceuticals and old lights which use mercury shall be managed at the IWMC. Incoming hazardous waste to the IWMC should be stored in the hazardous waste storage room and regularly transported to Vandhoo RWMF. The following measures must be taken during transportation of hazardous waste: • Use containers appropriate for the wastes they are intended to carry; • If drums or other containers are used to transport waste, containers should be in good condition and compatible with the waste and are adequately secured in the transport vehicle; • Adequately label all transport tanks and containers to identify the contents, hazards, and actions required in various emergency situations.	P: Island Council /IWMC Manager	Cost associated with purchasing containers designed to store hazardous waste and printing of labels.

	  Tampons and nappies, while indicated as hazardous wastes in the ESMP, are biodegradable and can be composted. The high temperature of the composting process has been documented to eradicate any harmful pathogens containing potential biohazards.		
Marine Water Pollution and associated impacts to marine organisms due to potential spillage of waste to the sea during transfer of waste from the IWMC to the RWMF (loading and unloading)	The IWMC operators and the island council should ensure implementation of the following measures prior to regional transfer: • All outgoing waste from the IWMC shall be stored in bins or jumbo bags and properly labeled to indicate the type of waste. Below are some examples of the signages that can be used to label bins and jumbo bags: 	P: Island Council /IWMC Operators	Cost associated with printing the labels.

	• Maintain log records of all outgoing waste from the IWMC either in terms of weight or volume of jumbo bags and bins and provide to WAMCO during regional collection.	P: WAMCO Management	
	WAMCO should make sure that the following measures are implemented during loading and unloading of waste into the collection vessel (landing craft): • Provide jumbo bags or bins required for regional collection to the councils.	P: WAMCO Management	Cost of purchasing jumbo bags and bins
	• Prepare a collection manual that gives instructions related to storage of waste for regional collection and share with the councils. The manual should clearly specify the types of waste that are accepted and not accepted for regional collection, categories to which waste has to be sorted and packaged by the councils (plastics, glass, nappies, metals, hazardous etc.) and any special requirements for packaging waste such as hazardous waste (sealed containers, proper signage etc.). • Prepare a schedule for regional collection and share with the respective councils. In addition to this, it is recommended to inform the exact date of regional collection to the respective council 3 days prior to arrival of the transfer vessel (landing craft).	P: RWMF Manager / Supervisor	Cost of printing manual, posters and billboards
	• Properly label the jumbo bags or bins to reflect the type of waste (if this has not been done by the councils).	P: Collection Supervisor	
	• Record data of all loaded waste in terms of weight or jumbo bags and bins (volume of the bags and bins must be specified).	P: Collection Supervisor	
	• Waste must not be kept in the open in any circumstance during transfer.	P: Collection Supervisor	
	• Hazardous waste (such as batteries, paint, thinner, fiber glass etc.) should be kept in the landing craft in sealed containers. The containers should be properly labeled with appropriate signs (for example	P: Collection Supervisor	

	hazardous, flammable, toxic etc.). Hazardous waste should be kept away from flammable waste such as wood, plastic and paper.		
	• All waste loaded to the transfer vessel should be covered from the top to minimize potential for spillage during transport.	P: Collection Supervisor	
	• The height of loaded waste should not exceed the height of sides of the landing craft. In circumstances where excessive waste is absolutely necessary to be loaded, the sides should be lifted to meet this requirement.	P: Collection Supervisor	
	• Log records of all unloaded waste (incoming waste to the RWMF) should be recorded either in terms of unloaded weight or volume of bins and jumbo bags for different categories of waste.	P: RWMF Manager / Supervisor	
	• Maintaining log records of loaded and unloaded waste quantities are critical and compulsory as it can indicate the amount of waste lost to the sea during transfer (if any).	P: Collection Supervisor / RWMF Manager	
	• Give proper instructions and training to the staffs involved in regional collection.	P: WAMCO Management	
	• Loading shall be undertaken under the direct supervision of a qualified responsible staff. This staff or supervisor will monitor all activities related to regional collection and transfer and ensure that environmental compliance is achieved.	P: WAMCO Management	
	• The waste transfer vessel must be equipped with firefighting equipment and smoke detectors.	P: WAMCO Management	Cost of purchasing safety equipment
	• The waste transfer vessel should be equipped with navigational safety equipment such as life vests.	P: WAMCO Management	
	• The landing craft should be accompanied by a whaler to be used for accessing islands that do not have harbors.	P: WAMCO Management / PMU	Cost of purchasing whaler

Noise pollution during waste management	Depending on availability, battery operated vehicles can be used to provide collection services. Waste handling works involving operation of machinery shall be undertaken during day time.	P: Island Council S: MCEP (for vehicle)	Cost associated with purchasing collection vehicles
Air emissions from MSW collection and transport	Emissions from on-road vehicles shall be regulated through national and regional programs. All waste transport vehicles must have up to date road worthiness licenses. Optimize waste collection routes to minimize distance traveled and overall fuel use and emissions Drivers shall be instructed on the benefits of driving practices which reduce both the risk of accidents and fuel consumption, including measured acceleration and driving within safe speed limits. When the IWMC and RWMF becomes operational no open burning shall be practiced.	P: Island Council S: EPA	Cost of training drivers
2. Sociological and Cultural			
Health and Safety of waste handling staffs	Provide workers with appropriate protective clothing, gloves, respiratory face masks and slip-resistant shoes for waste transport workers and hard-soled safety shoes for all workers to avoid puncture wounds to the feet. For workers near loud equipment, include noise protection such as ear muffs. For workers near heavy mobile equipment, buckets, cranes, and at the discharge location for collection trucks, include provision of hard hats; Establish engineering and materials norms for special facility and stationary equipment design requirements that minimize exposure to hazards (e.g., ventilation, air conditioning, enclosed conveyor belts, low loading and sorting heights, non- skid flooring, safety rails on stairs and walkways, spill protection and containment, noise control, dust suppression, gas alarm systems, fire alarm and control systems, and evacuation facilities).	P: Island Council	Cost of purchasing safety materials

Fire hazard	Burning of waste at the IWMC should never be practiced under any circumstances. Naked flames shall not be allowed at the IWMC. Ensure that waste management staffs are briefed of fire hazard management. Firefighting equipment, including clear aisles among windrows and access to an adequate water supply shall be made available with access to pumps. Smoking should be prohibited inside the premise of the IWMC, placing awareness signs in the premise. Highly flammable areas such as those area allocated for the storage of paper, wood and cardboards, should be clearly marked with appropriate sign boards indicating the flammable nature of the waste. Installation of cameras, fire alarm system and hiring of security guard for 24hrs surveillance. Fire safety training on how to use the installed equipment and act in case of an emergency fire should be provided to the security guard and all the waste management staffs of the IWMC	P: Island Council S: MCEP (for sign boards)	Cost of purchasing equipment Cost of printing and placing sign boards included with the overall project budget. Cost of purchasing cameras, alarms. MVR 10,000.00 Salary of security guard (approximately MVR 4000.00 per month)
Sociocultural conflict	Ensure that waste handling staffs are selected from the local community as much as possible. If expatriate workers are used ensure that they respect the local culture. Conduct a training to sensitize the labor to the local context and customs. This training should also cover topics related to Gender-based violence. Develop a "Code of Conduct" outlining the set of rules that that the workers have to follow to persevere the social norms and religious values of the society. The Code of Conduct should also specify penalties for breaching these rules and should be thoroughly communicated to workers prior to mobilization.	P: Island Council	Cost associated with hiring staffs

3. Economic			
Collection Fee	Ensure that the collection fees are feasible for the community. Undertake consultation meetings with stakeholders and set a suitable collection fee acceptable to the community.	P: Island Council	Cost associated with conducing stakeholder sessions
Employment Opportunities	Ensure that waste handling staffs are selected from the local community as much as possible.	P: Island Council	Cost associated with hiring staffs

Proponents commitment to undertake proposed mitigation measures is provided in Appendix H.

CHAPTER 7 TRAINING RECOMMENDATIONS

Training is essential for ensuring that the ESMP provisions are implemented efficiently and effectively. MCEP shall therefore ensure that all persons that have roles to play in the implementation of the ESMP are competent with appropriate education, training or experience. Similarly, the contractors shall be required to undertake general HSE awareness for their project workforce and specific training for those whose work may significantly have impact on the environment. The Island Council in collaboration with the MCEP shall also devise and execute training programs targeted for staffs of IWMC to facilitate effective and sound management of waste during household collection and operations of the center. Furthermore, MCEP and the Island Council shall conduct community mobilization and public awareness programs to enhance knowledge of the community on good waste management practices and to promote implementation of 3R concept.

Table 19 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	NA
Strengthening PMU's capacity on compliance monitoring	APCs	Briefing Reporting Template	Safeguards Specialist of MCEP	Construction Phase	NA
General Awareness Health, Safety and Environment (HSE)	Worker on Site	HSE Introduction / Orientation (site safety rules, PPE, Emergency response etc.) Daily tool box talk for workers at the start of each day's job.	Site Supervisor of Contractor	Pre-construction phase. Construction phase	NA
Community Mobilization	Waste Management Committee	Introduction to WM Policy Introduction to WM Regulation Roles of WMC Implementation of IWMP	Communications Specialist of MCEP	Pre-construction phase. 4 to 5 December 2019 (completed)	Travel cost of facilitators. Designing and printing of training materials and flyers to be used for door to door campaign

		Household waste segregation Door to Door campaign			
Compost Training	IWMC staffs	Introduction to compost preparation using organic waste Step by step guidance on windrow composting	Zone-2 Project Coordinator of MCEP WMPCD Island Council Communications Specialist of MCEP	Prior to commencement of operations	Travel cost of trainer Developing and printing of Training Manual
Fire safety training and drills	IWMC staffs Nearby Residents	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 through MNDF	Prior to commencement of operations	Cost associated with training hall and refreshments

CHAPTER 8 MONITORING AND REPORTING

8.1. Monitoring Activities

The inclusion of a monitoring plan in the ESMP is essential to assess the effect of the project on natural and cultural environment. It is a tool used to measure the accuracy of predictions and to determine whether the proposed mitigation measures have been effectively carried out by the proponent as recommended in the ESMP. Another important aspect of environmental monitoring is its capacity to determine unforeseen impacts that have not been predicted during the impact identification stage. It should be noted that adopting of mitigation measures do not guarantee unforeseen impacts.

The main key objectives of the environmental and social monitoring plan are to:

1. determine whether the proposed mitigation measures in this management plan are followed during the construction phase of the project.
2. analyse the effectiveness of the operation of IWMC in terms of spillage prevention and overall cleanliness of the island.

The monitoring plan for the ESMP is presented in table 20. Monitoring results shall be documented with preventive/corrective actions to be implemented.

Table 20 Monitoring Plan

Aspect	Parameter	Frequency	Responsible Party	Cost of Monitoring (MVR)
Construction Phase				
Implementation of mitigation measures during construction	Records of successful implementation of mitigation measures	Monthly during construction period	Contractor MCEP	18,000 cost of traveling to the island
Groundwater Quality	Visual observations and perceptions of nearby residents. Salinity, smell, color of water of the groundwater well within the IWMC	Once during mobilization prior to construction and once after completion of the project	Contractor MCEP	9,000 Cost of traveling to the island
Grievance	Log records of number of complaints received and actions taken during construction phase	Throughout the construction phase	Island Council MCEP	9,000
Operational Phase				
Implementation of mitigation measures during operations of the IWMCs	Records of successful implementation of mitigation measures.	6 months after commencement of operations	Island Council / IWMC Operator	Included in Operational Cost

Spillage Assessment	Waste Collection Arrangements Littering around the island (Beach, harbor area and other public areas) Spillage during transfer to IWMC Any Spillage within the IWMC Proper use of IWMC Spillage during transfer to regional waste facility	Once when the project is completed and one year after project completion	Island Council / IWMC Operator WAMCO	Included in Operational Cost
Groundwater Quality	Visual observations and perceptions of nearby residents. Salinity, smell, color of water of the groundwater well within the IWMC.	6 months after commencement of operations	Island Council, IWMC Operator	Included in Operational Cost
Grievance	Log records of number of complaints received and actions taken during operational phase	Throughout the operational phase	Island Council	Included in Operational Cost

8.2. Reporting Procedures

The reporting procedures presented in table 21 have been developed in order to ensure that the proponent is able to receive feedback from the implementation of the ESMP on an ongoing basis and to take rapid corrective actions if there are issues of non-conformance.

Table 21 Reporting Procedures

Phase	Responsibility	Deliverables	Accountability
Construction	Contractor	Monthly monitoring progress reports (3 to 6) prepared consistent to the template provide by the Safeguards Specialist of MCEP. These reports should indicate the level of implementation of mitigation measures and must be accompanied by photographic evidence.	Contractor. To be attached with interim payment claims made by the contractor. Payments to be released subject to timely submission of the monitoring reports.
	Zone 2 APC	Two (2) interim reports prepared consistent to the template provide by	MCEP.

		the Safeguards Specialist of MCEP. Verification of accuracy of the monthly progress reports submitted by the contractors.	APC should submit report to Safeguards Specialist for review and verification.
Completion of construction and demobilization of contractor from site	Safeguards Specialist	Final monitoring report including all monitoring activities throughout project implementation.	MCEP. Report to be submitted to the World Bank and EPA.
6 months after commencement of operations	Island Council	Operational phase monitoring report including activities implemented during operations of the IWMC.	Island Council. Report to be submitted to EPA.

8.3. Implementation Schedule

The activities related to environmental management and monitoring have to be integrated in the overall construction schedule. The project implementation phase is estimated to be completed in 6 months. The implementation schedule is presented in table 22.

Table 22 Tentative ESMP Implementation Schedule

#	Activity Description	Responsible	Preconstruction (Week)						Construction (Months)						Operation (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	Finalization of Engineering Designs	MCEP																		
4	Inclusion of ESMP in the contract document	MCEP																		
5	Disclosure of GRM in project sites	MCEP Island Council																		
6	ESMP briefing to Contractor at kickoff meeting	MCEP																		
7	Contractor's ESMP monitoring reports	Contractor																		
8	Compliance check / Interim monitoring reports (2 nos)	MCEP																		
9	Preparation and submission of consolidated monitoring report	MCEP																		
10	Preparation and submission of operational phase ESMP report	Island Council																		

8.4. Contractual Measures

Implementing the mitigation measures are an obligation of the contractor 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. In addition to this, the following clauses should be incorporated in to the contract document of the selected contractor as conditions of the contract to ensure effective, timely and stringent implementation of the ESMP.

1. Retention payment will be released after defects are rectified and compensating for any significant environmental and social safeguards violations.

2. 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.

3. 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.

8.5. Cost Estimate for ESMP Implementation

To effectively implement the mitigation and monitoring measures recommended in this ESMP, necessary provision will have to be made. The cost of these measures has been estimated in consultation with the Civil Engineer and Project Coordinator of MCEP, separately for construction and operational phase and presented in table 23 and table 24. The BOQ will reflect the items specified in table 23 and the bidders should consider these costs while preparing bid documents. The overall project budget should consider the cost estimates presented in both the tables. The total estimated cost for the ESMP implementation is MVR 60,000 for construction phase and MVR 137,500.00 for operational phase.

Table 23 Estimated budget for ESMP implementation during construction phase

#	Item	Responsibility	Cost Estimate (MVR)
1	PPEs required for construction such as hard hats, gloves, safety shoes and safety harness.	Contractor	10,000.00
2	Firefighting Equipment: • 50KG DCP Trolley for collection bay (nos 2) • 50LTR Foam Trolley for collection bay (nos 1) • Wet Chemical 6Ltr with Cabinet for hazardous waste area (nos 1) • Water 9Ltr with Cabinet for Office Area – Outside (nos 1)	Contractor	35,000.00

	• CO2 2KG with Cabinet for Office Area – Outside (nos 1)		
3	Project board and Construction Safety sign board	Contractor	3,000.00
4	IWMC name board, collection bay labels and fire safety sign boards.	Contractor	5,000.00
5	Bin for placing general waste	Contractor	1000.00
6	Site demarcation through hoarding	Contractor	1000.00
	Subtotal		**55,000.00**
	Contingency	10% of Sub-Total	5,500.00
	Total		**60,000.00**

Table 24 Estimated budget for ESMP implementation during operational phase

#	Item	Responsibility	Cost Estimate (MVR)
1	PPEs required for operations such as gloves, safety shoes and masks.	Island Council	10,000.00
2	Fire safety Training	Island Council	10,000.00
3	Yearly servicing of the firefighting equipment	Island Council	5,000.00
6	Community Mobilization and Awareness (completed)	MCEP	100,000.00
	Subtotal		**125,000.00**
	Contingency	10% of Sub-Total	12,500.00
	Total		**137,500.00**

8.6. Grievance Redress Mechanism

Based on the ESAMF, MCEP has formulated a Grievance Redress Mechanism (GRM). GRM is established to receive and facilitate grievances of the affected persons during the implementation of the project.

Council President, Mr. Hassan Ali and Council Member, Mr. Ahmed Abdul Raheem were briefed on the GRM and setting a focal point for managing GRM during the site visit on 7th November 019. This was preceded by an official letter from ME requesting for the same (dated 5 November 2019). The council confirmed in writing that they will nominate a focal point for this purpose and make the complaint forms physically available from the council front office. Information on the GRM will also be displayed in the Council's Notice Board, website and social media pages.

Following are the details of the GRM developed by MCEP. The council nominated Ms. Aminath Yumna (Economic Development Officer, Ph: 7608482 / 9755438, E: maakurathuoffice@gmail.com) to manage grievances at tier 1. GRM at tier 2 will be managed by the ESS Specialist of MCEP. Tier 2 GRM forms will be made accessible from the respective council office and ME front office and is published in ME website. Below are the links.

English page: http://www.environment.gov.mv/v2/en/download/7189

Dhivehi page: http://www.environment.gov.mv/v2/dv/download/7191

A poster that give information on the GRM and QR code for downloading the forms was prepared by MCEP and printed copies will be forwarded to the Island Council after initiation of the project. These

posters will be displayed in the council notice board, as well as other communal places like schools, health center and youth center.

Table 25 GRM of MCEP

Tiers of Grievance Mechanism	Nodal Person for Contact	Contact Communication and other facilitation by the project	Timeframe to address grievance
First Tier: Island Council	Island Council will be the first point of contact for any grievances. The staff designated as the waste management focal point by the island council will manage grievances on behalf of the council.	GRM should be publicly displayed in the construction site as well as the council office. GRM should also be outlined in official website and/or social media pages of Council, MEE (and/or the project), including contact details of the nodal person in each tier. Grievances can be addressed informally by contacting the council through email / telephone / in person. If the grievance cannot be resolved informally, an aggrieved party must submit a complaint on the Tier I Complaint Form. A copy of the form (with the council 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 MEE and the council. Physical copies of the form should be available from the council front office. Council will provide assistance to fill the form for those who cannot write. The council should keep separate registries for informal and formal complaints and maintain records of all complaints received. The council will discuss the matter with the Women's Development Committee and other relevant stakeholders (Farmers, Fishermen, School, Health Center etc.), where deemed necessary and attain views of them. If such meetings are arranged, the date, time, location or venue, list of participants (with contact details) and a summary of the main outcome of the consultation must be annexed to the written decision issued by the council. If the complaint is resolved within 15 working days, the council must communicate the decision to the aggrieved party in writing. The aggrieved party must acknowledge the receipt of decision and submit their agreement or disagreement with the decision within 10 working days.	15 working days

		If no acknowledgement is submitted from the aggrieved party within this period, then the decision will be considered as accepted. If a complaint requires more time to address, this requirement must be communicated to the aggrieved party in writing 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 staff designated as the waste management focal point by the island council will manage and provide feedback for grievances submitted to the council.	
Second Tier: Ministry of Environment (ME)	Environmental and Social Safeguards Specialist at the Project Management Unit (PMU) will be the focal point.	If the grievance cannot be resolved through Tier 1 to the satisfaction of the aggrieved party or if the issue is outside the jurisdiction of the council (issues related to RWMF), an aggrieved party may submit a complaint on the Tier 2 Complaint Form. A copy of the form (with MEE 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 MEE and the council. Physical copies of the form should be available from the council and MEE front office. A copy of the Tier 1 Complaint Form should be submitted with the Tier 2 Complaint Form. MEE will forward the grievance to PMU. PMU screens the grievance and determine if its related to MCEP. If it is unrelated, the aggrieved party must be notified in writing and the way forward must be outlined to them including the necessary government institutions to follow up. Environment and Social Safeguards Officer at the PMU will be the contact person in processing a grievance through the Second Tier. PMU will discuss the matter with EPA and other relevant institutions, where deemed necessary and attains views of them. PMU will also arrange site visits and hold onsite discussions and meetings if necessary. The PMU will be responsible to ensure that there is no cost imposed on the aggrieved person, due to the grievance mechanism at the second tier. If the complaint is resolved within 15 working days, the PMU must communicate the decision to the aggrieved party in writing.	15 working days

		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, then the decision will be considered as accepted. If a complaint requires more time to address, this requirement must be communicated to the aggrieved party in writing 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. If the grievance is not resolved to the satisfaction of the aggrieved party within 15 working days of submission of the grievance to tier 2 then the aggrieved party may notify the MEE, in writing, of the intention to move to tier 3.	
Third Tier: Judiciary Power / Assistance to Vulnerable Persons beyond the Project's Grievance Redress Mechanism	Judiciary system is an option for an aggrieved person and/or community in case that the other tiers have not been effective	The legal system is accessible to all aggrieved persons. Assistance from the PMU of MCEP is available only 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 office will provide legal support to the vulnerable person(s). The PMU must assist the vulnerable person(s) in getting this support from Attorney General´s Office. PMU must also ensure that there is no cost imposed on the aggrieved person if the person belongs to the vulnerable groups. The list of vulnerable groups is as defined in the footnote but may be further defined by MEE. The verdict of the Courts will be final.	As per established Judicial Procedure

*Vulnerable person(s): A vulnerable person(s) for the purpose of this project is 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.

CHAPTER 9 STAKEHOLDER CONSULTATION

9.1. Introduction

Consultations with stakeholders were undertaken on different occasions, which included consultation with the island council and IWMC supervisor / driver, consultation with the community representative (as part of community mobilization program) and a public perception survey conducted by MCEP during the site visit to find out concerns of the public on current waste management practices and how best to rectify those issues through the proposed new design. During these consultations an overview of the project, the proposed interventions as well as the scope and objectives of the ESMP and the GRM were presented to the stakeholders. Furthermore, the challenges that could impede the implementation of the project, potential environmental and social impacts that could arise from civil works and the support needed from beneficiary communities to ensure successful implementation were also discussed.

9.2. Summary of consultation with Island Council and IWMC supervisor

The Island Council was consulted through phone on numerous occasions to establish the baseline on current waste management practices. Further to this, the Council and the IWMC supervisor / driver were consulted on 7th November 2019 during the site visit for the preparation of the ESMP. Further consultations with the Civil Service staffs of the Island Council were conducted on 12 December 2019. Below is the summary of these 2 consultations.

Table 26 Consultation with Island Council and IWMC Supervisor

Items	Description
Date of Consultation	7 November 2019 and 12 December 2019 Various phone conversations in the month of October to December 2019.
Venue	Council Secretariat Office, IWMC site R. Maakurathu, Maldives
Name of Stakeholders	1. Mr. Hassan Ali, Council President, Maakurathu Council P: 7505746, E: maakurathuoffice@gmail.com 2. Mr. Ahmed Abdul Raheem, Council Member, Maakurathu Council P: 9138782, E: maakurathuoffice@gmail.com 3. Mr. Ismail Areef, Driver (IWMC supervisor), Community Member P: 7642918 4. Mr. Abdulla Naeem, Director, Maakurathu Council P: 7794682, E: maakurathuoffice@gmail.com 5. Ms. Aminath Yumna, Economic Development Officer, Maakurathu Council P: 7608482 / 9755438, E: maakurathuoffice@gmail.com
Participants from MCEP	1. Mr. Ahmed Hassaan Zuhair, Environmental and Social Safeguards Specialist (MCEP) P: 7886707 E: ahmed.hassaan@environment.gov.mv 2. Mr. Abdul Raheem Mohamed, Zone-2 Project Coordinator (MCEP) P:7999263 E: abdul.raheem@environment.gov.mv
Language of communication	Dhivehi
Introduction	The objectives of these discussions were to acquire background information on the existing environment of the proposed development and to provide information on

	the GRM and support needed from beneficiary communities to ensure successful implementation of ESMP.
Summary of Main Discussions	**On waste collection services:** • Collection services are provided from 7am to 12pm every day except Fridays. • 95% of the collected waste is segregated at HH level, while 5% comes mixed. • Compressing machine is available but not in use since electricity is not connected to the IWMC. • Waste is collected from 183 HH, while the remaining 17 HH bring waste to the IWMC by themselves or is burnt at the backyard of their houses by taking permission from the council. • Only 30% of the organic waste is collected, the rest goes to the goat farms. • Some goat farm operators at the eastern side goes to individual houses to collected waste using a wheel barrow. • According to Mr. Areef only half of the 120L bin used to collected organic waste gets full each day, while a 240L bin full of used diapers are collected daily. • The service is provided by using a 2ton pickup of the council. **On waste management arrangements:** • Used diapers, green waste and plastic bottles are burnt at the hut. Ash from burning is deposited next to the hut. • Food waste is buried at the nearshore inside a 1m diameter hole. • Metal waste is kept inside the IWMC at the designated area. • Bulky waste is kept adjacent to the IWMC. **Ceasing of Open Burning and Dumping waste to the sea:** • Mr. Hassaan highlighted that open burning of waste or dumping of waste into the lagoon shall not be carried out at any scale as it is against the world bank's safeguards policies. Mr. Areef asked about the alternatives to which Mr. Hassaan responded by saying that the upgraded IWMC will have sufficient storage space to store inorganic waste for around 3 months and the collected waste can be processed either by chipping or through compression, while glass waste can be reused for construction backfilling etc. Mr. Hassaan also highlighted that it is absolutely essential for the council to sign the agreement with WAMCO for regional collection since the inorganic proportion of waste collected in the island has to be taken out of the island on a regular basis. Mr. Areef highlighted that not much inorganic waste is generated in the island and even if WAMCO comes every 3 to 6 months it would suffice. **On HSE of IWMC operators** • Ordinary face masks and gloves are used by the workers. • Safety shoes and long sleeved clothes are not used. **On socio-economic environment:** • Information about education providers, economic ventures, health center, NGOs etc. were provided by the council. **On fire safety:** • Mr. Hassaan highlighted that the IWMC will be provided with necessary firefighting equipment through the contractor and it is important for the

	council to hire a security guard and provide the person and the IWMC operators with necessary training. **On the preferred WM equipment:** • Mr. Hassaan highlighted that the project intends to provide one waste management equipment of the council's choosing and a collection vehicle adequate for the island. In response, Mr. Areef, highlighted that the operators are mostly in need of a wood chipper, which would assist in ceasing open burning of green waste. • Mr. Areef further enquired about what to do with the larger wood wastes like tree trunks, to which Mr. Hassaan responded in saying that the most preferred option would be to find a market for such wood and sell it, while any remaining waste from old furniture etc. can be chopped into smaller pieces and fed into the wood chipper. Mr. Hassaan noted that the chipped wood can be directly placed in the woods as it will biodegrade and will not harm the environment. **On GRM:** • Mr. Hassaan briefed the council on the GRM system that needs to be established throughout the lifespan of the project. This system will be used to receive and address complaints by the public. He stated that the council needs to consult with the relevant stakeholders / waste management committee prior to making a decision on official complains received at tire 1. • Mr. Hassaan requested the council to display the GRM posters which will be provided through MCEP in public places like school notice board, community center, youth center, health center etc. to which Ms. Yumna agreed. • Mr. Hassaan also requested the council to post GRM posters in council website and social media pages, to which Ms. Yumna agreed. **On Re-Negotiating with WAMCO for regional collection:** • When queried by Mr. Hassaan, Mr. Hassan Ali mentioned that the council has not signed the draft agreement sent by WAMCO to commence regional collection since they were of the impression that the entire collection fee generated from the island has to be paid to WAMCO in full. Mr. Hassaan, clarified that only 30% of the collection fee is taken by WAMCO and suggested for the council to renegotiate with WAMCO and come to an agreement ASAP prior to commencement of the proposed project. Mr. Hassan Ali further highlighted that the community will not have any objection to increase the fees in case it is required. Mr. Hassaan informed that he will write to WAMCO regarding this so as to help the Council to fast pace the process and establish the link between the two parties. Mr. Hassan Ali welcomed this suggestion. • Mr. Hassan Ali queried if all the waste currently accumulated in the island will be collected by WAMCO. In response, Mr. Hassaan mentioned that after signing the agreement WAMCO will do a one-off cleanup of the island, where all the waste accumulated in the island except food waste will be collected and brought to the RWMF for treatment and after this initial round, 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.

9.3. Household Perception Survey

As there are no households that exist close to the IWMC, a random household survey was done by taking samples thorough out the island. The objective of this survey was to identify the constraints the households face in terms of current waste management practices employed in the island and to find out their views towards the project. Signed consent from the surveyed households were acquired for using and publishing the results of this survey. The survey method employed is both by means of survey forms and face to face interviews. The sample size of the survey is 7. Following are the main themes that were surveyed.

- Name of House
- Number of Residents: Men, Women and Children
- Daily Household Generation of Waste (in terms of weight / volume / number of containers): Organic and Inorganic
- Current waste disposal method: Organic and Inorganic
- Household Segregation: Yes or No
- How segregated waste is stored: bins, buckets, containers or other means
- How waste is taken to the IWMC: Own or Council's collection system
- Perception of the waste collection fee: Satisfied or Not Satisfied (If not satisfied is chosen specify the recommended amount)
- Perception of the IWMC location: Satisfied or Not Satisfied (If not satisfied is chosen specify the reason)
- Features to include in the project to minimize impacts to the public:
  - Increase the clear height of the perimeter walls.
  - Prohibit open burning of waste
  - Proper storage of waste at the IWMC
  - Regular transfer of waste to the RWMF
  - Install firefighting equipment
  - Other (please specify)

Name of the surveyed houses and the household and their respective distances from the IWMC are indicated in table 27.

Table 27 Details of surveyed households

#	House Name	Household Name
1	Fenboa Huraa	Ahmed Abdul Raheem
2	Kausharu	Mohamed Adam
3	Fesco	Fathimath Ziyaadha
4	Vaadhee	Aminath Yashfa
5	Boagan Villa	Shareefa Ibrahim
6	Amaaz	Shithreen Adam Shareef
7	Udu Villa	Aminath Yumna

The results of this survey are presented below.

Number of Households

On average the surveyed households were mostly comprised of men, closely followed by women and then children. These results are presented in figure 14.

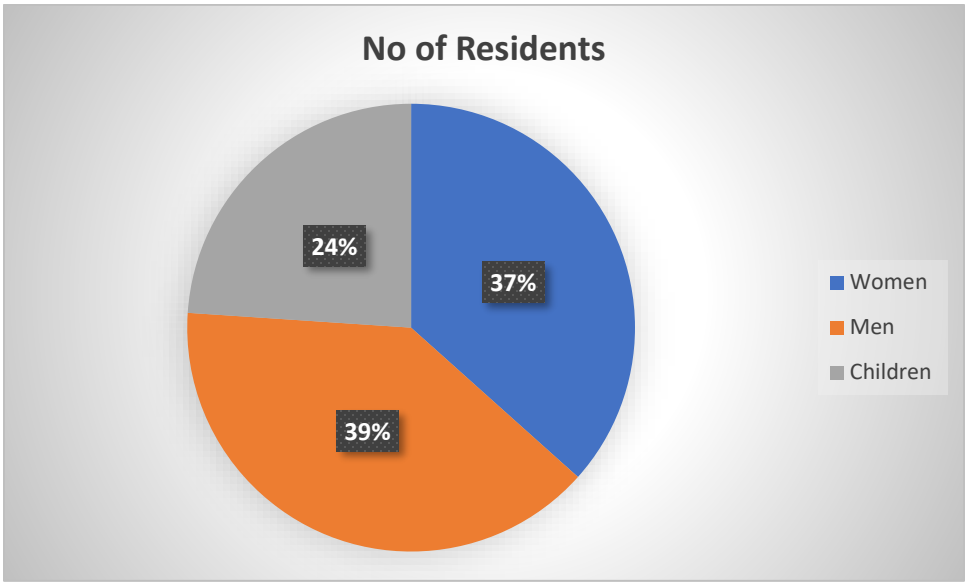


Figure 14 Household Composition by Gender

Household Waste Generation

The households were asked to provide the estimated daily quantities of waste generated in the house for both organic and inorganic waste. All the respondents indicated that half a bucket full of organic waste is generated daily. As for inorganic waste, expect one participant who indicated that half a bucket full or inorganic waste is produced per day, the rest suggested that one bucket full of inorganic waste is produced daily. The size of the buckets used are on average 20L. Based on this the total quantity of daily household generation of organic and inorganic waste for the surveyed sample size were estimated, which is presented in the figure 15 below.

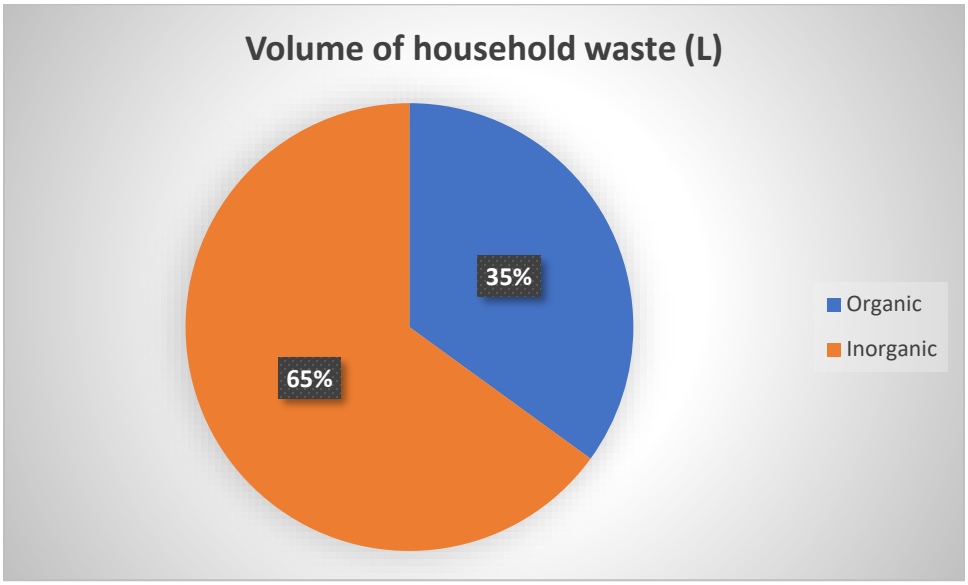


Figure 15 Volume of waste generated at households per day

According to the survey inorganic waste is generated more than organic waste in Maakurathu However, this contradicts with previous studies undertaken in the region, where the organic fraction was at 65% and the inorganic fraction at 35%. A reason for the reversal in results could be due to a large quantity of organic waste being taken daily to the goat farms and the surveyed HH assuming that only the waste going into the IWMC are required to be provided.

Waste Disposal Method

All the 7 households stated that both organic and inorganic waste are transferred daily to the IWMC.

Household Segregation

Six of the surveyed households said that they segregate waste in their homes, while one household indicated that they keep the waste mixed.

Item used to store waste

All the surveyed households store waste in 20L buckets.

How waste is taken to the IWMC

All the seven surveyed households send waste to the IWMC through the council's collection system.

Perception of the waste collection fee

Households were asked to provide their feedback on the waste collection fee taken by the council. Except one household, all the households were satisfied with the waste collection fee set by the council. The household that was not satisfied suggested for the fee to be reduced to MVR 75.

Perception of IWMC location

As shown in figure 16, majority of the participants were not satisfied with the current location of the IWMC.

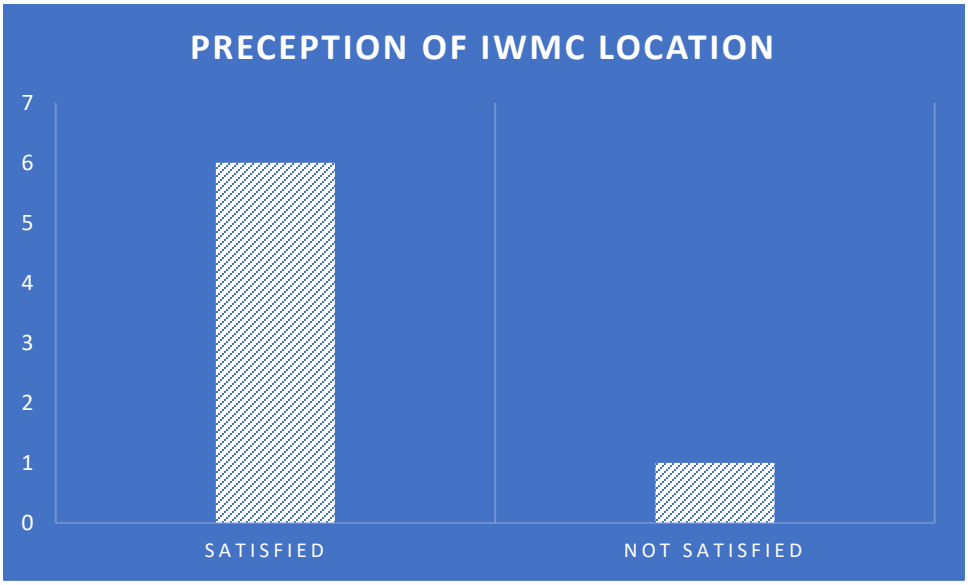


Figure 16 Perception of IWMC location

The primary reason stated by the respondents not satisfied with the location were in relation to the IWMC being close to the beach used by the community for swimming and the effects of smoke arising from open burning of waste being felt by the people using the beach. All the respondents, however, stated that they will be happy with the existing location of the IWMC provided that open burning of waste is completely stopped during the operations of the new center. Moreover, the design of the IWMC has also taken this into consideration, with a 4m high wall being considered at the side of the IWMC facing the beach.

Features to include in the project to minimize impacts to the nearby residents

Participants were asked to give their opinion about including certain provisions in proposed design of the IWMC. The results of this are reflected in figure 17.

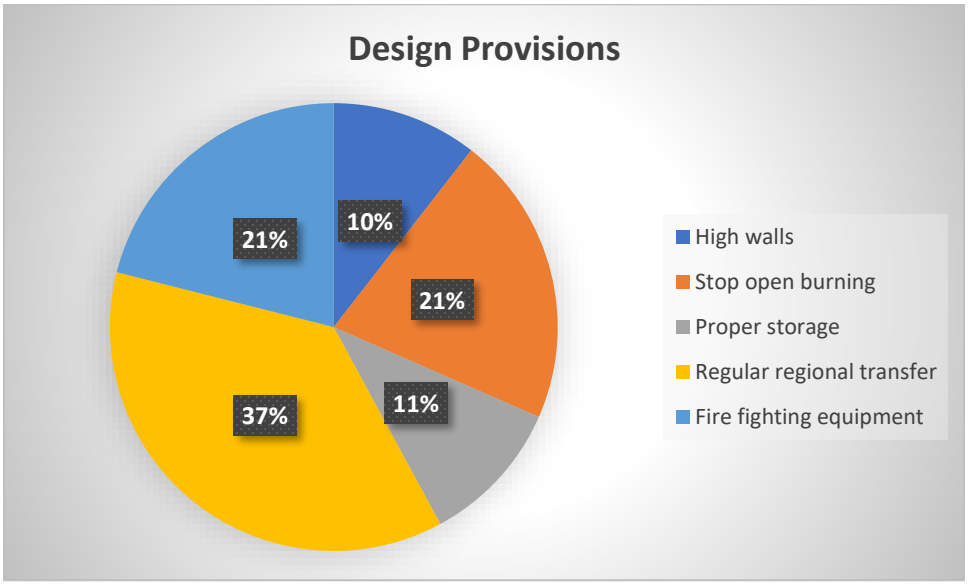


Figure 17 Design provision to include in the project

37% of the participants felt that regular regional transfer of waste out of the island is very important for managing island waste in a sustainable manner. 21% of the participants indicated that ceasing open burning of waste and installation of firefighting equipment are important, while 11% indicated that proper storage is customary to an effective system. The least favored option at 10% is increasing the height of the perimeter walls of the IWMC. None of the participants provided additional suggestion. additional suggestions.

Copies of the signed survey forms are provided in Appendix I.

9.4. Summary of Consultations with Advisory Committee to the Council.

An Advisory Committee meeting was held on 9 August 2018 to get their opinion on the draft IWRM. A summary of this consultation is provided in table 24.

Table 28 Details of WMC consultation on June 2019

Items	Description
Date of Consultation	9 August 2018
Venue	Conference Hall, Council Secretariat Office R. Maakurathu, Maldives
Stakeholders Consulted	Members of 2018 Waste Management Committee: 1. Mr. Hassan Ali, Council President 2. Mr. Hussain Imad, Council Vice-president. 3. Mr. Abdulla Naeem, Director of Council 4. Mr. Ahmed Ashfaq, School Principal 5. Mr. Moosa Shaamil, Jameeyathul Islaah 6. Mr. Adam Suhail, Maakurathu Health Centre
Language of communication	Dhivehi

Introduction	The objective of this meeting was to discuss the IWMR and its clauses and to refine and improve it prior to the public consultation. The draft plan was presented to the members by the Director of Council in a 20 minutes briefing.
Summary of Main Discussions	• The meeting commenced at 11:06 am. • In his presentation, Mr. Abdulla Naeem mentioned that an announcement was made in the national gazette and opened to the public for commenting, but so far, no comments have been received to the draft and therefore, the input of the committee is paramount to finalize the plan. • The floor was then opened for debate. • Mr. Ahmed Ashfaq (principal of the school at that time) proposed to include revisions: - Allow government and private institutions to pay the user fee through billing method. - To charge the users with a gate fee of MVR 50 for disposing bulky waste using the council pickup. - To include issuance written advise notice for those who breaches the regulation for the first time. - To include the billing format on Annex 4. - To decrease the household user fee to MVR 75 for those who register within the first 6 months of the regulation coming into its effect and to charge the suggested fee of MVR 100 for those who register after that. - To increase the user fee of Dhiraagu and Ooredoo to MVR 800. • Mr. Abdull Naeem informed the members that the council plans to implement the plan from 1 November 2019. • The meeting was concluded at 11:58 am.

Copies of the meeting minutes are provided in Appendix J.

9.4. Summary of Consultations with the General Public

A general public meeting was held on 12 October 2018 to consult the IWMR with the general public and get their endorsement to it. A summary of this consultation is provided in table 24.

Table 29 Details of consultation with General Public

Items	Description
Date of Consultation	12 October 2018
Venue	Conference Hall, Council Secretariat Office R, Maakurathu, Maldives
Stakeholders Consulted	1. Mr. Hassan Ali, Council President 2. Mr. Hussain Imad, Council Vice-president 3. Mr. Abdulla Naeem, Council Director 4. Ms. Aminath Yumna, Economic Development Officer of Council 5. Ms. Fuaziyya Ahmed, Administrative Officer of Council 6. Ms. Aminath Vafiyya, Administrative Officer of Council 7. 25 Men from the general public 8. 10 women from the general public
Language of communication	Dhivehi

Introduction	The objective of this meeting was to explain the different clauses of the IWMR and to publicly endorse the waste collection user fees.
Summary of Main Discussions	The meeting commenced on 20:38 hrs. The IWMP was presented to the public by Mr. Abdulla Naeem. The floor was then opened to the public to express their views towards the plan. The meeting concluded at 21:16 hrs. Following is a summary of the main points discussed: • Waste management arrangements in the island were explained to the public by the council. • Household segregation and the parts to which waste will be segregated was agreed with the community. It was agreed to use households' own bins for storing the segregated waste. • The user fees were agreed with the public. • Mr. Naeem informed the participants that registration for waste collection services will be opened on 1 November 2018. • Mr. Naeem stressed that appropriate action will be taken under the regulation for littering on public places. He also stated that the council receives various complains from the community regarding burning of waste inside houses and other public places and that such acts will be prohibited under the regulation.

Copies of the meeting minutes are provided in Appendix K.

9.4. Summary of Community Mobilization Workshop

A community mobilization workshop was conducted by MCEP on 4 -5 December 2019. This workshop was held in R. Ungoofaaru and was attended by the community representatives of the R. Ungoofaaru, R. Maakurathu, R. Dhuvaafaru and R. Rasmaadhoo. The workshop was facilitated by a team of MCEP and WAMCO. A summary of this workshop in the perspective of R. Maakurathu is provided in table 30.

Table 30 Summary of Community Mobilization Workshop

Items	Description
Date of Consultation	4 to 5 December 2019
Venue	Youth Centre Hall, R, Ungoofaaru, Maldives
Stakeholders Consulted	1. Mr. Abdul Raheem Mohamed, Zone 2 Project Coordinator, MCEP 2. Mr. Musad Shujau, Financial Management Assistant, MCEP 3. Ms. Hawwa Namsa, Safeguards Officer, WAMCO 4. Ms. Fathimath Ziyaadha, Maakurathu Council 5. Mr. Mohamed Ramiz, Maakurathu Cooperative Society (NGO) 6. Ahemeem Adam, Maakurathu Club (NGO)
Language of communication	Dhivehi
Introduction	The objective of this workshop is to assist the council to formulate Waste Management Committee and ensure that the committee plays an active role in island waste management. The participants were asked to prepare a draft IWMP for the island, which should include objectives, principles, programs and activities.

	The draft plan will be developed further when the representatives go back to the island.
Summary of Main Discussions	The workshop commenced at 10:30 hrs. in the morning of 4th December 2019 and concluded at 14:30 hrs. of 5th December 2019. Presentations on the following topics were delivered by the facilitators on 4th December 2019. • Introduction to WM Policy • Introduction to National WM Regulation • Importance of 3R concept and household segregation • Roles of Island Waste Management Committee • Preparation IWMP and the contents to include in such a plan. • WAMCO's requirement for regional transfer and their Segregation Guideline. This was followed by a door to door campaign where the participants formed groups and visited selected houses in Ungoofaaru to deliver information on Household Segregation and 3R concept. The outcomes of these visits were presented by the 3 groups during the first session of 5th December 2019. This was followed by the session on draft IWMP preparation and presentations by the groups. All the participants of the meeting agreed to develop the draft plans further in consultation with other stakeholders and the council and to submit a final version to ME and EPA on 20 December 2019.

CHAPTER 10 RECOMMENDATIONS AND CONCLUSION

The upgrading of the IWMC in R. Maakurathu is a much-needed development to avert waste management constraints at the island, increase security of the IWMC, as well as safeguard the wellbeing of the public. A fully functional IWMC with proper boundaries, adequately sized compost pad, electricity connection, increased storage space and added security features will enable the Island Council to properly manage waste and move away from the current unsound practice of open burning of waste and release of organic waste in to the lagoon. The project is also expected to improve the soil and groundwater quality of the island as the increased storage space will ensure that waste is not kept in bare ground. Moreover, as the storage cells of the IWMC are designed with proper barriers such as concrete floors and roofing which will eventually ensure prevention of leachate runoff. In addition to this, the project will also bring about economic benefits to the island by increasing revenue through the sale of composted material and recyclables and by creating employment opportunities.

No permanent negative impacts to the environment are likely to occur as a result of the project as the site and area for road deviation are devoid of any significant vegetation. Potential indirect negative impacts to the flora and fauna during transport and storage of construction material can be effectively minimized or even completely eradicated, if the mitigation measures proposed in the management plan are adhered.

The author's recommendation for the project include;

- To include this ESMP as a part of the contractor's contract.
- Implement the mitigation measures proposed in the ESMP.
- Conduct regular monitoring and supervision works during construction and operational phase.

The aim of this ESMP is to guide the proponent in implementing the project with conformity to EIA regulation 2012 and the ESAMF of MCEP.

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APPENDICES

APPENDIX A

EIA Screening Decision

Environmental Protection Agency
އެންވަޔަރަމަންޓަލް ޕްރޮޓެކްޝަން އެޖެންސީ

ނަންބަރު: 203-EIARES/438/2019/51

ސްކްރީނިން ކުރުމަށްފަހު ނިންމިގޮތް

Screening Decision

މިއީ ރ.މާކުރަތު ވޭސްޓް މެނޭޖްމަންޓް ސެންޓަރ އަޕްގްރޭޑް ކުރުމުގެ މަޝްރޫޢުގެ ސްކްރީނިން ކުރުމަށްފަހު ނިންމިގޮތް މިނިސްޓްރީ އޮފް
އެންވަޔަރަމަންޓަށް ދޫކުރި ރަސްމީ ލިޔުމެކެވެ.

This is an official document issued to **Ministry of Environment**, for communicating the decision made after screening of the project; **Upgrading of Island Waste Management Centre at R. Maakurathu.**

މި މަޝްރޫޢުގެ ސަބަބުން ތިމާވެށްޓަށް ނުރައްކާ ބޮޑު އަސަރުތައް ކޮށްފާނެ ކަމަށް ފެނެއެވެ. ވީމާ، ތިމާވެށްޓަށް އަސަރު ފޯރާނެ މިންވަރު ބަލާ ރިޕޯޓެއް ހުށަހަޅުއްވާ. This project is likely to cause significant negative environmental impacts. Hence, please submit an EIA report.	☐
މި މަޝްރޫޢުގެ މަސައްކަތްތަކަށް ތިމާވެށީގެ ފުރަތަމަ ދިރާސާއެއް ހުށަހަޅުއްވާ. Submit an Initial Environmental Examination for this project	☐
މި މަޝްރޫޢުގެ މަސައްކަތްތަކަށް ތިމާވެށީގެ މެނޭޖްމަންޓް ޕްލޭނެއް ހުށަހަޅުއްވާ. Submit an Environmental Management Plan for this project	☑
މި މަޝްރޫޢުގެ ސަބަބުން ތިމާވެށްޓަށް ނުރައްކާ ބޮޑު އަސަރުތައް ނުކޮށްފާނެ ކަމަށް ފެނެއެވެ. ވީމާ، މި މަޝްރޫޢުގެ މަސައްކަތްތައް ކުރިއަށް ގެންދިއުމަށް އެއްވެސް ހުރަހެއްނެތްކަމުގައި ދަންނަވަމެވެ. This project is unlikely to have a significant negative impact on the environment. Hence, you may proceed with the project.	☐
މި މަޝްރޫޢުގެ ސަބަބުން ތިމާވެށްޓަށް ކުރާނެ ނޭދެވޭ އަސަރުތައް ކުޑަކުރުމަށް މި އެޖެންސީން އަންގާ ފިޔަވަޅުތައް މަސައްކަތު ކުރިއަށްގެންދާއިރު ދަންނަވަމެވެ. The measures stipulated by this agency shall be used to mitigate the negative environmental impacts of the project.	☐

މިއީ ތިމާވެށީގެ ގޮތުން ކުރިއަށްގެންދާ ސްކްރީނިންގއެކެވެ. ވީމާ، މި މަސައްކަތް ކުރިއަށް ގެންދިއުމުގެ ކުރިން ސަރުކާރުގެ އެހެން ކަމާބެހޭ އިދާރާތަކުން ހޯދަންޖެހޭ
ހުއްދަތައް ހޯދުމަށް ދަންނަވަމެވެ. މި ސްކްރީނިން ކުރުމަށްފަހު ނިންމިގޮތުގެ ލިޔުމުގައި ބަޔާންކޮށްފައިވާ މުއްދަތަކީ
މި އެޖެންސީން ނިންމި ނިންމުން ތަންފީޒުކުރުމަށް ދޫކުރެވޭ 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**

Date of issue: 2nd **October 2019**
Date of Expiry: 2nd **October 2020**

Name: **Mr. Ibrahim Naeem**

Designation: **Director General**

Signature:

ސްކްރީނިން ކުރި އިދާރާ: އެންވަޔަރަމަންޓް ޕްރޮޓެކްޝަން އޭޖެންސީ، ދިވެހިރާއްޖެ

ދޫކުރި ތާރީޚު: 2 އޮކްޓޫބަރ 2019

މުއްދަތު ހަމަވާ ތާރީޚު: 2 އޮކްޓޫބަރ 2020

ނަން : އަލްފާޟިލް އިބްރާހިމް ނައީމް

މަޤާމު: ޑިރެކްޓަރ ޖެނެރަލް

ސޮއި:

APPENDIX B

Land Approval Letters

Maldives Land and Survey Authority
Ministry of National Planning and Infrastructure
Male', Republic of Maldives.

މޯލްޑިވްސް ލޭންޑް އެންޑް ސަރވޭ އޮތޯރިޓީ
މިނިސްޓްރީ އޮފް ނޭޝަނަލް ޕްލޭނިންގ އެންޑް އިންފްރާސްޓްރަކްޗަރ
މާލެ، ދިވެހިރާއްޖެ.

އިގްތިސާދީ ފުރުޞަތުތައް - އިންސާފުވެރި ހަމަހަމަކަން

ނަންބަރު:431-LIS/305/2019/2

މާޅޮސްމަޑުލު އުތުރުބުރީ މާކުރަތު ކައުންސިލްގެ ރައީސް އަލްފާޟިލް ހަސަން އަލީއަން،
[illegible] ދަންނަވަމެވެ.

ތިޔަ އިދާރާގެ ނަންބަރު: 305/471/2019/13 (16 ސެޕްޓެމްބަރު 2019) ސިޓީއާ ހަވާލާދީ ދަންނަވަމެވެ.

މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓްގެ ނަންބަރު: 438-MWPC/471/2019/110 (01 ސެޕްޓެމްބަރު 2019) ސިޓީއާއެކު ފޮނުވާފައިވާ ރ.މާކުރަތު ގޯތިގައި ކުނިކޮށި އެޅުމަށް ފާހަގަކޮށްފައިވާ 692·40 އަކަމީޓަރުގެ ބިން ދޫކުރުމުގެ ހުއްދަދިނީމެވެ. މިސިޓީއާއެކު މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓްގެ ނަންބަރު: 438-MWPC/471/2019/110 (01 ސެޕްޓެމްބަރު 2019) ސިޓީގެ ކޮޕީއެއް ފޮނުވީމެވެ.

އިޙްތިރާމް ޤަބޫލުކުރެއްވުން އެދެމެވެ.

26 މުޙައްރަމް 1441
25 ސެޕްޓެންބަރު 2019

ޚާދިމުކުމް

ފާތިމަތު ސަނާން
އެސިސްޓެންޓް ޑިރެކްޓަރ

މާޅޮސްމަޑުލު އުތުރުބުރީ މާކުރަތު ކައުންސިލްގެ އިދާރާ
ރ. މާކުރަތު، ދިވެހިރާއްޖެ.
ކޮޕީ: މާޅޮސްމަޑުލު އުތުރުބުރީ އަތޮޅު ކައުންސިލްގެ އިދާރާ
މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓް

بسم الله الرحمن الرحيم

Ministry of Environment
Male', Republic of Maldives.

މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓް
މާލެ، ދިވެހިރާއްޖެ.

އިގްތިސާދީ ފުރުޞަތުތަކާއި - އިޖްތިމާޢީ ހަމަޖެހުން

ނަންބަރު: 438-WMPC/471/2019/110

މިނިސްޓަރ އޮފް ނޭޝަނަލް ޕްލޭނިންގ އެންޑް އިންފްރާސްޓްރަކްޗަރ އަލްފާޟިލް މުޙައްމަދު އަސްލަމް،

ވުދުން ސަލާމަށް ފަހު ދަންނަވަމެވެ.

ކުނި މެނޭޖުކުރުމުގެ ގޮތުން ސަރުކާރުން ހިންގާ މަޝްރޫޢުތަކުގެ ދަށުން ރ.ވަންދޫ ކުނި މެނޭޖުކުރާ މަރުކަޒު އިމާރާތް ކުރުމުގެ މަސައްކަތް މޯލްޑިވްސް ކްލީން އެންވަޔަރަންމަންޓް ޕްރޮޖެކްޓުން އިމާރާތްކުރުމުގެ މަސައްކަތް ނިންމާފައެވެ. އަދި ކައުންސިލުން މިމަޝްރޫޢު ކުރިއަށްގެންދިއުމަށް މިމިނިސްޓްރީއަށް ފިޔަވަޅު ހުށަހަޅާފައެވެ. ނަމަވެސް ކައުންސިލުން ކަޑައަޅާފައިވާ ޓިޕިންގ ފީއާއި ބެހޭ ގޮތުން ސޮލިޑް ވޭސްޓް ފީއެއް ސާވިސް އެގްރީމަންޓް އަދި ހުއްދަ ދޫކުރުމަށް ނުވެއެވެ. އެހެންކަމުން މިނިސްޓްރީގެ ފަރާތުން ސޮލިޑް ވޭސްޓް ފީއާއި ސާވިސް އެގްރީމަންޓްގެ ހަދައިގަން އެދުން ޖެހި ކައުންސިލުން ފޮނުވި ސާވިސް އެގްރީމަންޓް ހުށަހަޅާ ކަށަވަރުކޮށްދިނުމަށް ޑިޒައިން ޑްރޯއިންގ ނިންމަވައި ކަޑައަޅާފައިވާ މުއްދަތުގައި ވަސީލަތްތައް ފަހިކޮށްދިނުމުގެ ސަބަބުން އަވަސް ކުރުމަށްޓަކައި މިނިސްޓްރީއިން މިކަމުގައި ހަރަކާތްތެރިވެވޭނެ ގޮތެއް ނެތް ކަމުގައި ދެކެނީ ކުރިއަށް ގެންދެވޭނެ ގޮތްތައް ހޯދައިދެއްވުން އެދެމެވެ.

ވީމާ، މިމަސައްކަތް އަވަސް ކުރުމަށްޓަކައި ލިޔަ އެޕްރޫވަލް ބޭނުންވާ ހުރި އަވަސްކުރައްވައިދެއްވުން އެދެމެވެ.

އިޙްތިރާމް ޤަބޫލުކުރެއްވުން އެދެމެވެ.

2 ރަބީޢުލްއައްވަލް 1441ހ.

1 ނޮވެމްބަރު 2019މ.

ޚާދިމުކުމް

އާއިޝަތު [illegible]
އެސިސްޓެންޓް ޑިރެކްޓަރ

މިނިސްޓްރީ އޮފް ނޭޝަނަލް ޕްލޭނިންގ އެންޑް އިންފްރާސްޓްރަކްޗަރ
މާލެ، ދިވެހިރާއްޖެ.

ކޮޕީ: ރ.ވަންދޫ ކައުންސިލް އިދާރާ

ފޯމު: B

بسم الله الرحمن الرحيم

މޯލްޑިވްސް ލޭންޑް އެންޑް ސާވޭ އޮތޯރިޓީ

މާލެ، ދިވެހިރާއްޖެ

ދިރިއުޅުމަށް ގޯތި ދޫކުރުން ފިޔަވައި އެހެނިހެން ބޭނުންތަކަށް ބިން ދޫކުރެއްވުމުގެ ހުއްދަދިނުމަށް ބޭނުންވާ މައުލޫމާތު ފޯމު

ރަށާއި ބެހޭ މައުލޫމާތު			
އަތޮޅާއި ރަށް:	ރ. މާކުރަތު	ރަށުގައި މީހުން ދިރިއުޅޭ ސަރަހައްދުގެ ބޮޑުމިން (ހެކްޓަރ އިން):	21
ރަށުގެ އާބާދީ:	1331	ރަށުގައި އޮތް ހުސްބިމުގެ ބޮޑުމިން (ހެކްޓަރ އިން):	24
ރަށުގެ ބޮޑުމިން (ހެކްޓަރއިން):	45		
ކޮސްޓްބިން އޮތްނަމަ، ބޮޑުމިން (އަކަފޫޓުން):	ނެތް	ހިމާޔަތް ކުރުވިފައިވާ ބިމުގެ ބޮޑުމިން (އަކަފޫޓުން):	ނެތް
ފާ އޮތްނަމަ، ބޮޑުމިން (އަކަފޫޓުން):	ނެތް	ހިމާޔަތް ކުރުވިފައިވާ ގަސް ހުރި ބިމުގެ ބޮޑުމިން (އަކަފޫޓުން):	ނެތް
ކުޅި އޮތްނަމަ، ބޮޑުމިން (އަކަފޫޓުން):	ނެތް	އާރާމީ ސަރަހައްދުގެ ބޮޑުމިން (އަކަފޫޓުން):	ނެތް

ދޫކުރުމަށް ކަނޑައަޅާފައިވާ ބިމާއި ބެހޭ މައުލޫމާތު	
ބިމުގެ ބޮޑުމިން (މިންތަކާއި އެކު):	(28.85m x 24.00m) = 692.40m2
މީހުން ދިރިއުޅޭ ސަރަހައްދާއި އެބިމާއި ދެމެދު ހުރި ދުރުމިން:	227.00m
ބިމާއި ރަށުގެ ގޮޅިފަރާއި ދެމެދު ހުރި ދުރުމިން:	53.07m
ބިން ދޫކުރާ ސަރަހައްދުގައި ރުކާއި ބޮޑެތި ގަސް ހުރިނަމަ،	ރުއް: ނެތް ބޮޑެތި ގަސް: ނެތް
ކަނޑައެޅޭނެ ކަމަށް ލަފާކުރެވޭ ރުއްގަހުގެ އަދަދު:	ނެތް
އެޖެންސީ ފަހަރު ބަލައިގެން ދޫކުރާ ބިމެއްނަމަ، ބަލައިގެން ބޭނުންކުރާނީ:	ފަހަރު: ފެއިބަރު:

ބިން ބޭނުންކުރާނެ ގޮތުގެ ތަފްސީލު:

މިބިން ބޭނުންކުރެވޭނީ ރ. މާކުރަތުގައި 2014 ވަނަ އަހަރު ގާއިމުކުރެވިފައިވާ ކުނި މެނޭޖްކުރާ މަރުކަޒު (ސަރަހައްދީ ވޭސްޓްގައި ނުހިމެނޭ ރަށްރަށުގެ ކުނި ފާހަގަކުރެވިފައިވާ ސަރަހައްދު) މަރާމާތުކޮށް އަޕްގްރޭޑްކުރުމުގެ މަސައްކަތަށެވެ. މިމަރުކަޒުގައި ރ. މާކުރަތުގައި އުފެދޭ ކުނީގެ އިތުރުން ފަހަރު ހަމަ ތާރީޚެއްގެ ކުނި ބޭނުންކުރެވޭނެ ގޮތް ހަމަޖެއްސޭނެއެވެ. އަދި ފެށިގެން ތާރީޚުން ކުނި ބެލެހެއްޓުމުގެ މަސައްކަތް ހިންގޭނެ ގޮތަށް ރ. ވަނަ ސަރަހައްދީ ކުނި މެނޭޖްކުރާ މަރުކަޒުން ޚިދުމަތްދޭނެއެވެ. މިމަރުކަޒުގައި އެހެން ރަށްރަށުގެ ކުނި އެކުލަވާލާނެއެވެ.

ބިންދޫކުރެއްވުމާއިމެދު ރަށު ކައުންސިލުން ނިންމާފައި ވާގޮތް:

(ރައްޔިތުން ބިންވެރި ފިޔަވަޅުތަކާއި ހިސާބުގެ ފަރާތްތަކާއި ސަލާމަތަށް ދިމާވާނެ ކަންތައްތައް ބަލައި، އަދި ކައުންސިލުގެ ޖަލްސާ ނިންމުމާއި ބެހޭ ލިޔުންތައް ހުށަހަޅާފައި ވެއެވެ.)

ފޯމާއި އެކު ހުށަހަޅަންޖެހޭ ތަކެތި:

1 ބިންދޫކުރުމުގެ ހުއްދައަށް އެދޭ ރަޖިސްޓަރީގެ ސިޓީ

2 ފޯމް A : ރަށުގެ އައުޓްލައިން ޗާޓް (ބިން ދޫކުރުމަށް ބޭނުންވާ ސަރަހައްދު ރަށުގެ އައުޓްލައިން ޗާޓުގައި ފާހަގަކުރައްވާފައި)

3 ފޯމް B : ބިންދޫކުރެއްވުމަށް ބޭނުންވާ ބިމުގެ ސަރަހައްދުގެ ޗާޓް (ދޫކުރެއްވުމަށް ބޭނުންވާ ބިމުގެ ވަށައިގެން ހުރި ބިންތަކުގައި ކުރާ މަސައްކަތް އެނގޭނެހެން ފާހަގަކޮށް، ބިމުގެ މިންތަކާއި، ވަށައިގެން ހުރި ބިންތަކާއި ހުރި ދުރުމިން ފާހަގަކުރައްވާފައި)

4 ފޯމް D : ބިންދޫކުރެއްވުމަށް ބޭނުންވާ ބިމުގެ ސަރަހައްދު ގޫގަލް އާތްގައި ފާހަގަކޮށްފައިވާ (*.kmz) ފައިލް؛ މިފައިލް ތައްޔާރުކުރާނެ ގޮތުގެ ތަފްސީލު ލޭންޑް ސާވޭ އޮތޯރިޓީގެ ވެބްސައިޓް www.surveyofmaldives.com އިން ޑައުންލޯޑްކުރެވިދާނެއެވެ.

* ނޯޓް: ތަފްސީލު ލިޔުއްވުމަށް ދެވިފައިވާ ޖާގަ ނުފުދޭނަމަ، އިތުރު ކަރުދާހެއްގައި ލިޔުއްވާ ހުށަހެޅުއްވުން އެދެމެވެ.

ﷺ 1 - ތަކުރުގ ތއުދުﷺތަކުﷺ ﷺ، ތ. ދ.ތ.ތަ.

N

MCEP MINISTRY OF ENVIROMENT GREEN BUILDING, HANDHUVAREE HIGUN, MAAFANNU, MALE' (20392), REPUBLIC OF MALDIVES, TEL: +960-3018431, +960-3018300, FAX: +960-328301	PROJECT UPGRADING OF WASTE MANAGEMENT CENTRE R. MAAKURATHU	DESIGN BY	AMENDMENTS
	TITLE OUTLINE CHART	STRUCTURE BY	
	CLIENT DEPARTMENT WMPC DEPARTMENT	DRAWN BY AFRAZ	
	PAPER SIZE A3 PAGE NO. 01	SCALE 1:5000 DWG NO. MAAK-A1-01 DATE 27.03.2019	

ޗާޓް 2 - ބިން ދޫކުރުމަށް ބޭނުންވާ ބިމުގެ ސަރަހައްދު ޗާޓް، ރ. މާކުރަތު

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PROJECT
UPGRADING OF WASTE MANAGEMENT CENTRE
R. MAAKURATHU

TITLE
WASTE MANAGEMENT SITE PLAN

CLIENT DEPARTMENT
WMPC DEPARTMENT

PAPER SIZE A3
PAGE NO. 02

DESIGN BY

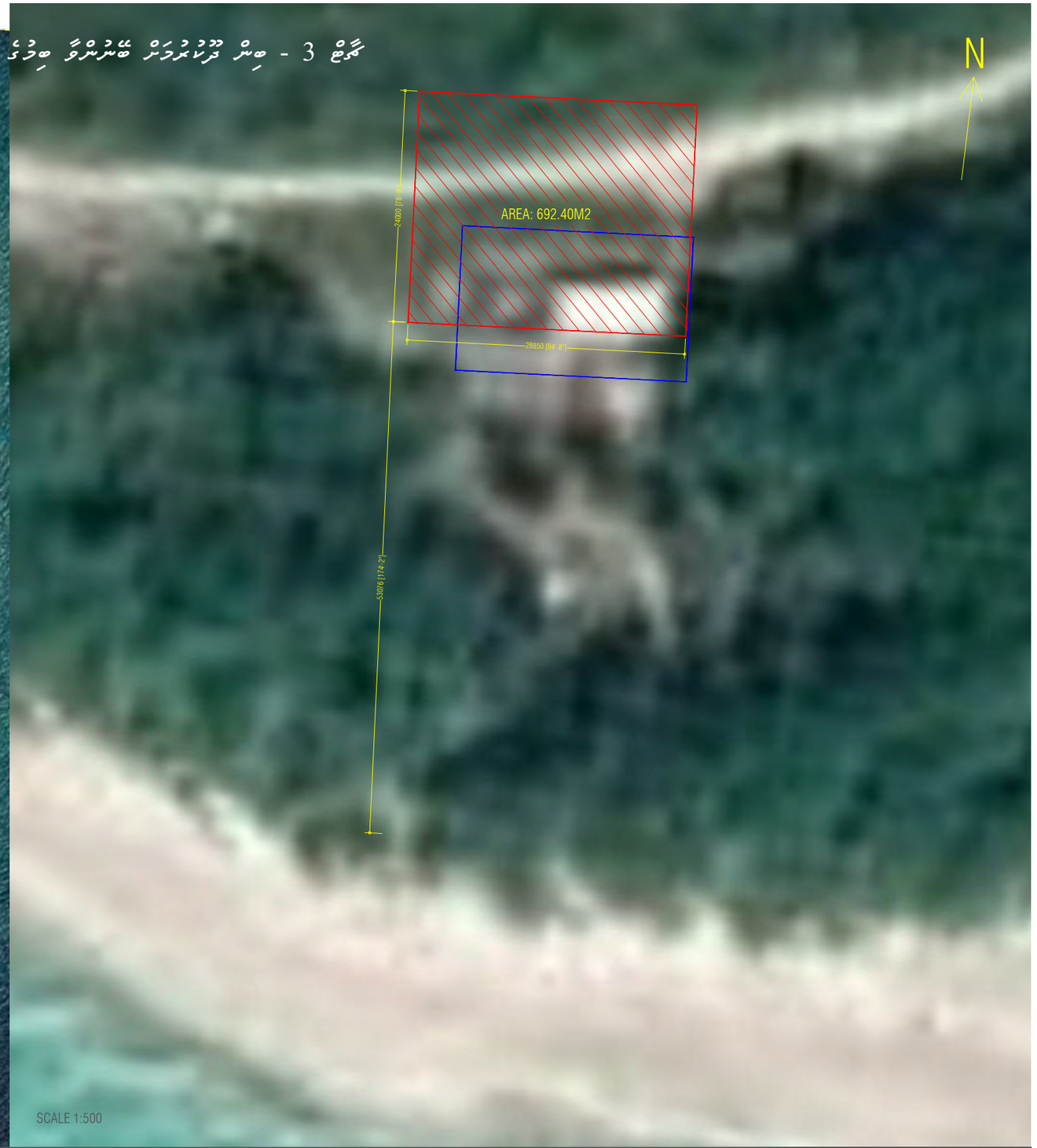
STRUCTURE BY

DRAWN BY
AFRAZ

SCALE 1:5000, 1:500
DWG NO. MAAK-A1-02
DATE 27.03.2019

AMENDMENTS

ގޮށް 3 - ހިނި ފުރުތެރި ބަންދަށް ހިމެނޭ ގޮށް، ކ. ގާބަރަމް



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PROJECT		DESIGN BY	AMENDMENTS
UPGRADING OF WASTE MANAGEMENT CENTRE R. MAAKURATHU			
TITLE		STRUCTURE BY	
WASTE MANAGEMENT SITE PLAN			
CLIENT DEPARTMENT		DRAWN BY	
WMPC DEPARTMENT		AFRAZ	
PAPER SIZE	A3	SCALE	1:5000, 1:500
PAGE NO.	03	DWG NO.	MAAK-A1-03
		DATE	27.03.2019

بسم الله الرحمن الرحيم

ފުވާމުލަކު ތަރައްޤީ ދާއިރާ ކާމަރާ ކޮމާންޑް ތަކުގެ ލިޔުން

ނަންބަރު: 305-MS305/438/2019/5

ދިރިއުޅެން ތާށި ތަންތަނުގައި ހެދިފައި ހުންނަ ހަނގުރާ ބަނދަރު ތަކާ ގުޅިގެން

ފާހަގަ ކުރަންވާނީ،

ދިވެހި ކުރިއަށް ދަތުރުކުރާ ކަންތައްތަކުގައި ހަނގުރާ ބަނދަރު ތަކުގެ ބޭނުންތައް ބޮޑު ކަމަށް ވާ ކަމަށް ދެނެގަތުމާ ގުޅިގެން، ތަރައްޤީ ދިރާސާ ކުރުމުގެ ބޭނުމަށް ތާށި ތަންތަނުގައި ހެދިފައި ހުންނަ ހަނގުރާ ބަނދަރު ތަކުގެ ލިސްޓެއް ތައްޔާރު ކުރެވިގެން ވެއެވެ. ތާށި ތަންތަނުގައި ހެދިފައި ހުންނަ ހަނގުރާ ބަނދަރު ތަކުގެ ލިސްޓުގައި ހިމެނޭ ބަނދަރުތަކުގެ ތަފްޞީލު ތަކާ ގުޅިގެން ބަލާ ހިނދު، ބަނދަރުތަކުގެ ދިގުމިން 80' ފޫޓާ، ފުދުމުން 50' ފޫޓާ ދުވަސް ވަނީ ތަންތަނުގެ ބޮޑުކަން ބަލައިގެން ބަދަލުތަކެއް ގެނެވިފައި ހުންނަ ކަމަށް ފާހަގަ ކުރެވިއްޖެ. ތާށި ތަންތަނުގައި ހެދިފައި ހުންނަ ހަނގުރާ ބަނދަރު ތަކުގެ ލިސްޓު ތަކާ ގުޅިގެން ބަލާ ހިނދު، ބަނދަރުތަކުގެ ބޮޑުކަމާ ގުޅިގެން ބަދަލުތަކެއް ގެނެވިފައި ހުންނަ ކަމަށް ފާހަގަ ކުރެވިއްޖެ.

ވީމާ، ދިވެހި ކުރިއަށް ދަތުރުކުރާ ކަންތައްތަކުގައި ބޭނުންވާ ހަނގުރާ ބަނދަރު ތަކުގެ ލިސްޓު ތައްޔާރު ކުރެވިގެން ވެއެވެ.

ތާށި ތަންތަނުގައި ހެދިފައި ހުންނަ ހަނގުރާ ބަނދަރު ތަކުގެ ލިސްޓު ތަކެއް ތައްޔާރު ކުރެވިގެން ވެއެވެ.

21 ފާހަގަ 1440

22 ނޮވެމްބަ 2019

ދ. ތުލާދޫ

ކާމިލް ދީދީ

ކޮމާންޑަރ، ފުވާމުލަކު ކޮމާންޑް

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APPENDIX C

CV and Certificates of Author

CURRICULUM VITAE *Ahmed Hassaan Zuhair*

PERSONAL DETAILS

- Full name: Ahmed Hassaan Zuhair
- Date of birth: 02 Aug 1985
- Mailing address: H. Maaniga (5th Floor), Sikka Goalh, Male' 20082, Maldives
- Residential address: G.Vehi, Male', Maldives
- Mobile telephone number: (+960)7886707
- Email address: hassaan.zuhair@gmail.com

WORK EXPERIENCE

ENVIRONMENTAL AND SOCIAL SAFEGUARDS SPECIALIST

- Name of Employer: Maldives Clean Environmental Project (MCEP)
  World Bank
  Ministry of Environment and Energy, Male', Maldives
- Position title: Environmental and Social Safeguards Specialist
- Period of work: July 2018 to present
- Major Responsibilities:
  - Ensure environmental and social safeguard measures are adequately implemented in MCEP administered by the MCEP PMU/MEE.
  - Educate project affected families on the relevant environmental and social safeguards issues and relevant policies.
  - Where applicable, develop information, education and communication (IEC) materials and facilitate workshops on good environmental and social practices relevant to all projects administered by the PMU/MEE.
  - Co-ordinate with the various island administration offices on periodic basis on environmental issues.
  - Assist GoM in ensuring environmental responsibilities of the project, such as compliance with the environmental protection laws and regulations of the country.
  - Assist GoM in ensuring social responsibilities of the project, such as compliance with the labour laws, prohibition of child labour, HIV/AIDS and gender issues.
  - Ensure safeguard measures are adequately implemented.
  - Establish a grievance redress system and assist community in the redress of their grievances through the system.'

ENVIRONMENTAL AND SOCIAL SAFEGUARDS OFFICER

- Name of Employer: Maldives Clean Environmental Project (MCEP)
  World Bank
  Ministry of Environment and Energy, Male', Maldives
- Position title: Environmental and Social Safeguards Officer
- Period of work: June 2017 to June 2018
- Major Responsibilities:
  - Ensure environmental and social safeguard measures are adequately implemented in MCEP administered by the MCEP PMU/MEE.
  - Educate project affected families on the relevant environmental and social safeguards issues and relevant policies.
  - Where applicable, develop information, education and communication (IEC) materials and facilitate workshops on good environmental and social practices relevant to all projects administered by the PMU/MEE.
  - Co-ordinate with the various island administration offices on periodic basis on environmental issues.
  - Assist GoM in ensuring environmental responsibilities of the project, such as compliance with the environmental protection laws and regulations of the country.
  - Assist GoM in ensuring social responsibilities of the project, such as compliance with the labour laws, prohibition of child labour, HIV/AIDS and gender issues.
  - Ensure safeguard measures are adequately implemented.
  - Establish a grievance redress system and assist community in the redress of their grievances through the system.

ENVIRONMENT ANALYST

- Name of Employer: Ministry of Environment and Energy, Male', Maldives
- Position title: Environment Analyst (Coastal Unit)
- Period of work: March 2016 to May 2017
- Major Responsibilities:
  - Managing Coastal PSIP projects and donor assisted projects (ORIO and KAFED).
  - Ensuring the implementation of the project components are in line with the government policies and/or donor requirements.
  - Interacting with the financial, procurement and technical staff of the Ministry and EPA to enable smooth implementation of the project components.
  - Coordination among the stakeholders including the atoll/island councils, contractors and engineers in resolving various issues that come up during the implementation.
  - Processing bills raised by contractors.
  - Preparing and compilation of the project progress reports, quarterly reports and updates in a timely manner.
  - Providing information, monthly progress reports and other documentation requested by the Project Director for review and/or for presentation to Steering/Technical committees, donor review missions or by other relevant authorities of the Government in a timely manner.
  - Preparation of Terms of Reference, Tender Documents and Evaluation of Bids and Proposals.
  - Preparing Contract Documents and Contract Amendments.

- Monitoring the progress of project activities on a regular basis.
- Visiting project sites periodically and reporting back on the status of on-site activities to the management.
- Participating in EIA scoping meetings related to the project and guiding contractors in the EIA application process.
- Ensuring that the projects are formulated in an environmentally friendly and sustainable manner by consulting EPA and other relevant parties.

ENVIRONMENT ANALYST

- Name of Employer: Ministry of Environment and Energy, Male', Maldives
- Position title: Environment Analyst (Awareness Unit)
- Period of work: July 2010 to December 2013
- Major Responsibilities:
  - Conducting regional environmental awareness sessions in different atolls.
  - Conducting waste management workshops in different regions of Maldives.
  - Organizing and celebrating major environmental significant days at national level.
  - Preparing booklets, broachers and newsletters in view to increase public knowledge on existing environmental issues in Maldives.
  - Creating Environmental Awareness through Media.
  - Provided assistance to legal unit in drafting sold waste management regulation, standards on biodegradable plastic bags and Environmental impact assessment regulation.

ENVRIONMENT OFFICER (T)

- Name of Employer: Ministry of Environment, Energy and Water , Male', Maldives
- Position held: Environment Officer (Trainee)
- Period of work: February 2005 – July 2007
- Major Responsibilities:
  - Provide assistance in facilitating and carrying out various works in relation to environmental awareness and community mobilization.
  - Writing and publishing 2005 World Environment Day Awareness handbook.
  - Conducting a weekly environmental awareness raising radio program on national radio.

Additional Experience

- Registered EIA Reviewer in EPA (since April 2016)

• ISWA Beacon Conference	13 – 15 Dec 2019 *Singapore*
• Training on Geo- Enabling Method for Monitoring and Supervision (GEMS)	15 – 20 Sept 2019 *Chennai, India*
• TESTO Mobile Stack Emissions Monitoring Training	6 Feb 2019 *Male', Maldives*
• Introduction to Mapping with Drones Geoinformatics Center, Asian Institute of Technology (AIT)	10 – 14 Sept 2018 *Pathumthani, Thailand*
• World Bank Procurement Training	2-4 Oct 2017 *Colombo, Sri Lanka*
• Training Program for Environmental Regulators	19-30 Nov 2012 *New Delhi, India*
• Consultation for the Asia-Pacific Region in preparation for the fifth session of the intergovernmental negotiating committee on mercury	31 Oct - 1 Nov 2012 *Bangkok, Thailand*
• Tbilisi+35: Intergovernmental conference on Environmental Education for Sustainable Development	6-7 Sept 2012 *Tbilisi, Georgia*
• Third Asia Pacific Regional Meeting on SAICM	8-9 Sep 2011 *Beijing, China*
• UNITAR Regional Workshop on Nanotechnology and Manufactured Nanomaterials	6-7 Sep 2011 *Beijing, China*
• UNEP/OECD Workshop on Perfluorinated Chemicals and transition to safer alternatives	5 Sep 2011 *Beijing, China*
• Seminar on Integrated Coastal Management for Developing Countries	Oct/Nov 2010 *Xiamen, China*
• Capacity building in ecosystem-based management approaches for the Coastal areas in the Maldives	18 – 20 June 2007 *The University of Queensland*

- Training on preparation and interpretation of Climate Risk profile for the Maldives — 20 – 21 Feb 2006, *Ministry of Environment, Maldives*

ACADEMIC RECORD

Name and address of institution	Degree obtained (Master and Bachelor only)	Study period from - to	Medium of instruction
Griffith University *170 Kessels Rd, Nathan QLD 4122, Australia*	Master of Urban and Environmental Planning	2 March 2014 – 15 December 2015	English
University of Mysore *Mysore, Karnataka, India*	Bachelor of Science	1 Jul 2007 – 30 Jun 2010	English
Centre for Higher Secondary Education *Male', Maldives*	London GCE Advanced Level	1 Jun 2002 -30 Jun 2004	English
Majeediyya School *Male', Maldives*	London GCE Ordinary Level	1 Jan 1999 – 31 Jan 2002	English

AWARDS / HONOURS/ COMMENDATIONS

- PIA (Planning Institute of Australia) Awards for Planning Excellence 2015 - Commendation for Outstanding Student Project "Connected with Water: Integrated and Adaptive Water Management Framework" – University Sponsored by Queensland Government.
- Griffith Award for Academic Excellence 2015.
- Griffith Award for Academic Excellence 2014.
- Australia Awards Scholarship 2014.
- Certificate of Acknowledgement in recognition of outstanding contribution to Earth Hour campaign 2013.
- Certificate of Achievement (Discipline Prize), Majeediyya School.
- Certificate of Achievement (Passed in all curriculum subjects), Majeediyya School.

RESEARCH EXPERIENCE AND PUBLICATIONS

- Author of Environmental and Social Management Plan for the proposed upgrading of Island Waste Management Center in R. Ungoofaaru (October 2019).
- Author of Environmental and Social Management Plan for the proposed upgrading of Island Waste Management Center in R. Ungoofaaru (February 2019).
- Author of Environmental and Social Management Plan for the proposed upgrading of Island Waste Management Center in Lh. Kurendhoo (November 2018).
- Author of Operational Environmental and Social Management Plan for Regional Waste Management Facility – Zone 2, Vandhoo, Raa Atoll (September 2018).
- Coauthor of Environmental Impact Assessment Report for the proposed tourist jetty at Hulhumale' (June 2018).
- Author of Environmental Management Plan for the proposed development of Island Waste Management Center in Dh. Rinbudhoo (January 2018).
- Author of Environmental Management Plan for the proposed development of Island Waste Management Center in F. Magoodhoo (December 2017).

- Author of Environmental Management Plan for the proposed development of Island Waste Management Center in Th. Vandhoo (September 2017).
- Coauthor of Environmental Impact Assessment Report for the proposed agricultural project at R. Ungulu.
- Coauthor of Environmental Impact Assessment Report for the proposed 10 storey residential development at H. Sandhaleege.
- Connected with Water: Integrated and Adaptive Water Management Framework for South East Queensland (Studio Project, Griffith University).
- Urban Analysis of Brisbane CBD – Case Study (Studio Project, Griffith University).
- Feasibility Study for Low Density Residential Development in Park Ridge Queensland (Studio Project, Griffith University).
- Effects of leachates on the quality of ground water (Bachelor of Science Dissertation, University of Mysore).
- Pemphis Newsletter Issue number 22 – 40 (Publication of Ministry of Environment and Energy).
- Environment Impact Assessment Regulations 2012 (Publication of Ministry of Environment and Energy).
- Standards on Biodegradable Plastic Bags 2012 (Publication of Ministry of Environment and Energy).
- State of the Environment of Maldives 2011 (Publication of Ministry of Environment and Energy).

REFEREES

- Professor Darryl LOW CHOY
  Professor – Environment and Landscape Planning
  Urban Research Program

  Head of Discipline (Planning)
  School of Environment
  Griffith University
  Brisbane, QLD 4111 Australia

  Program Co-Leader
  Program B: Waster Sensitive Urbanism
  Cooperative Research Centre for Water Sensitive Cities
  E: d.lowchoy@griffith.edu.au

- Dr Tooran Alizadeh
  Lecturer, Urban & Environmental Planning
  Griffith School of Environment
  Griffith University
  Brisbane, QLD 4111 Australia
  E: t.alizadeh@griffith.edu.au

- Ahmed Murthaza
  Director General, Waste and Pollution Control Department
  Ministry of Environment & Energy, Male', Maldives
  Work: (+960) 3004315 / Mobile: (+960)7771504

Sincerely,

Ahmed Hassaan Zuhair

APPENDIX D

A3 Map of the Project Site

LEGEND:

- ISLAND WASTE MANAGEMENT CENTER (IWMC)
- POWER HOUSE (FENAKA)
- FOOTBALL GROUND
- PRE-SCHOOL
- SCHOOL
- NEAREST RESIDENTIAL AREA
- MOSQUE
- GOAT FARM (SOUTH EASTERN SIDE)
- ROUTE FROM IWMC TO HARBOR
- ROAD DIVERSION
- C&D DISPOSAL AREA
- ORGANIC WASTE BURIAL AREA

MCEP
MINISTRY OF ENVIROMENT
GREEN BUILDING, HANDHUVAREE HIGUN,
MAAFANNU, MALE' (20392), REPUBLIC OF MALDIVES,
TEL: +960-3018431, +960-3018300, FAX: +960-328301

PROJECT	DESIGN BY	AMENDMENTS
UPGRADING OF WASTE MANAGEMENT CENTRE R. MAAKURATHU		
TITLE	STRUCTURE BY	
SITE LOCATION PLAN		
CLIENT DEPARTMENT	DRAWN BY	
WMPC DEPARTMENT	AFRAZ	
PAPER SIZE A3	SCALE 1:5000	
PAGE NO. 01	DWG NO. MAAK-EMP-A1-01	
	DATE 12.12.2019	

APPENDIX E

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.

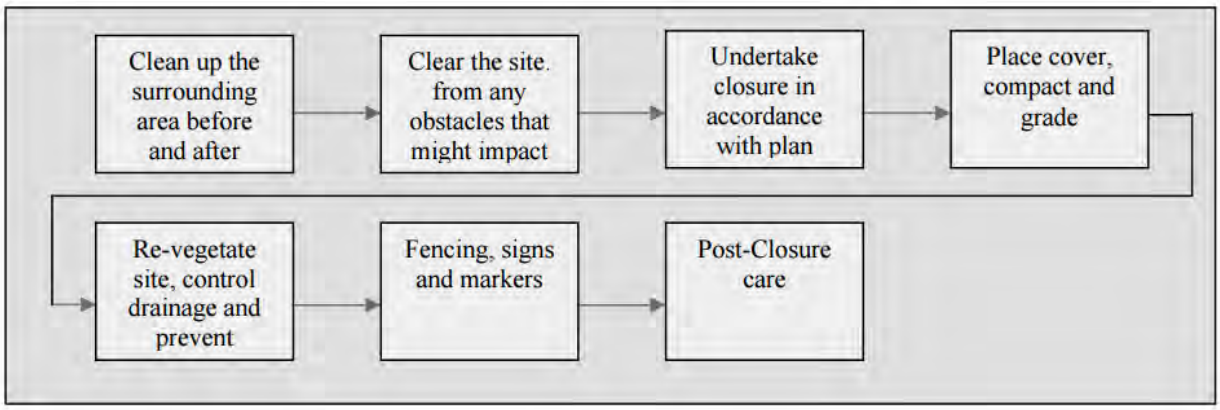
1.1. In-Place Closure

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.

APPENDIX F

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

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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.

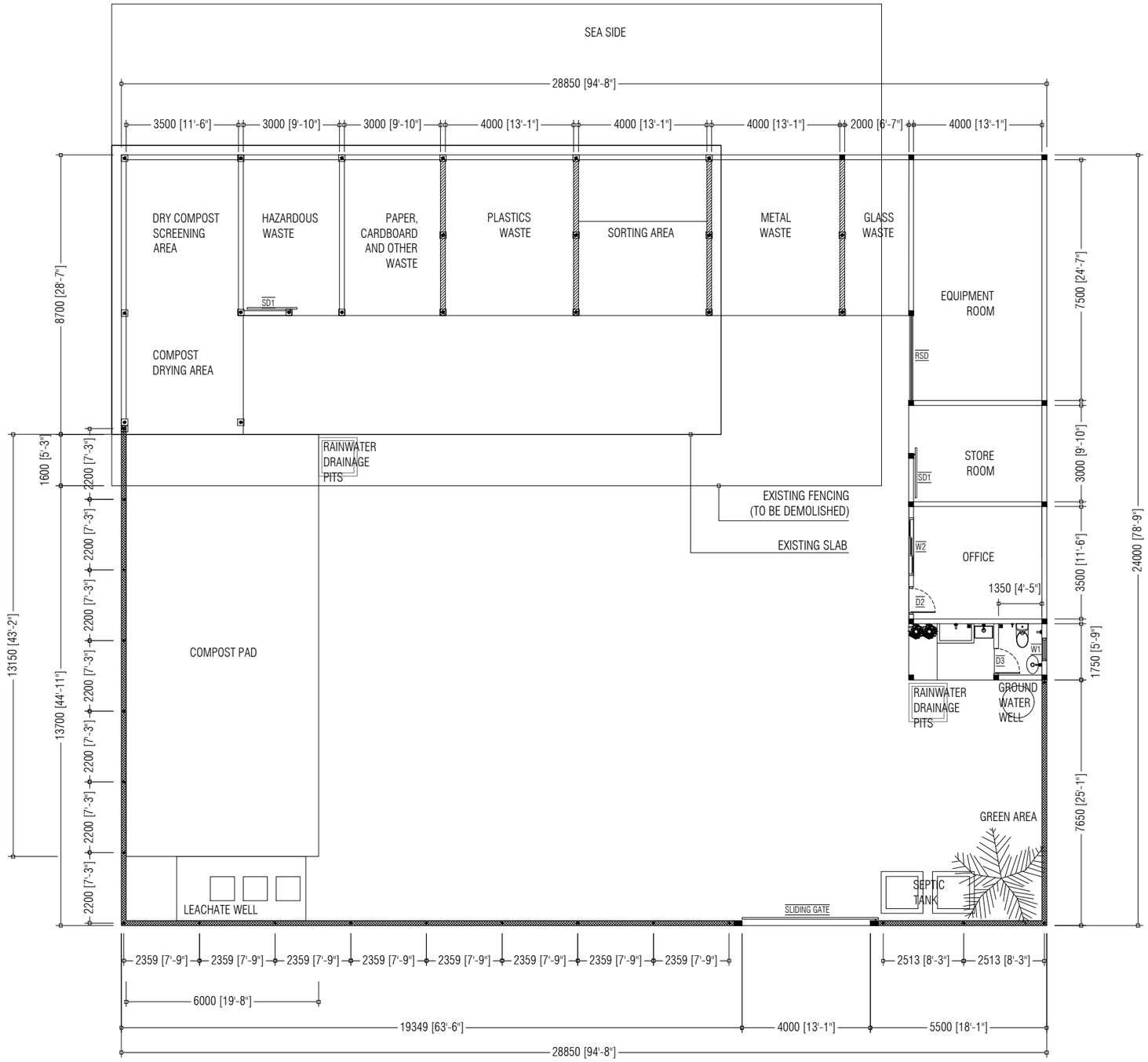
١٠ ތަކުރާރު ގޮތުގެ ގޮތުގައި ކަންކަން ކުރުމަށް ބޭނުންވާ ގޮތުގެ ގޮތުގައި

- 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.

APPENDIX G

Concept Engineering Drawing



NOTE:

- 1500mm HEIGHT WALL [150mm HOLLOW BOCK]
- 4000mm HEIGHT WALL [150mm HOLLOW BOCK]
- PERIMETER FENCE [150mm HOLLOW BOCK]

APPROVED BY	PROJECT	DESIGN BY	AMENDMENTS
	CONSTRUCTION OF WASTE MANAGEMENT CENTRE R.MAAKURATHU	AFRAZ	
	TITLE	STRUCTURE BY	
	PROPOSED SITE LAYOUT	AFRAZ	
	CLIENT DEPARTMENT	DRAWN BY	
	WMPC DEPARTMENT	AFRAZ	
	PAPER SIZE A3	SCALE 1:150	
	PAGE NO. 01B	DWG NO. MAAK-A1-01B	
		DATE 20.02.2019	

MCEP
MINISTRY OF ENVIROMENT
GREEN BUILDING, HANDHUVAREE HIGUN,
MAAFANNU, MALE' (20392), REPUBLIC OF MALDIVES,
TEL: +960-3018431, +960-3018300, FAX: +960-328301

APPENDIX H

Commitment for Mitigation and Monitoring

بسم الله الرحمن الرحيم

Ministry of Environment
Male', Republic of Maldives.

ވާތަވަރާއި ދަށް ބަދަލުކުރުމުގެ ވަޒާރާ
މާލެ، ދިވެހިރާއްޖެ.

ވާތަވަރާއި ދަށް ބަދަލުކުރުމުގެ ވަޒާރާ - ތިމާވެއްޓެއް ހަދައިދިނުން

Date: 12 December 2019

No: 438-WMPC/203/2019/69

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 R. Maakurathu 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,

Amru Adam
Assistant Director

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

ގްރީން ބިލްޑިން، ހަނޑުވަރެ ހިންގުން،
ފާތަނ، ދިވެހިރާއްޖެ، 20392
secretariat@environment.gov.mv
www.twitter.com/ENVgovMV
www.facebook.com/environment.gov.mv

APPENDIX I

Signed Survey Forms

ނ. ފުރަތަމަ ކާނާ ދަންނަވާ ތަނުގެ ތަފާތު ބަލައި ފާހަގަ ކުރުން

ތާވަލުގެ ފަހަރަށް ދިވެހި ބަހުގައި ލިޔުން

7 ނޮވެމްބަރ 2019

ތަޢާރަފް: ދިވެހިރާއްޖެ ދިވެހި ބަހުގެ ތަރައްޤީ ދަނޑުގައި ނ. ފުރަތަމަ ކާނާ ދަންނަވާ ތަނުގެ ތަފާތު ބަލައި ފާހަގަ ކުރުމުގެ ގޮތުން ތާވަލުގެ ފަހަރަށް ލިޔުންތަކެއް ލިޔުމަށް ދަސްކޮށްދިނުމަށް ތަމްރީނު ދިނުމުގެ ގޮތުގައި ތާވަލުގެ ފަހަރަށް ލިޔުން ތަކެއް ތައްޔާރުކުރެވެ.

ދިވެހިރާއްޖެ ފާހަގަ ކުރާތާ ކަންނަ ކާނާ ތަނުގެ ތަފާތު ބަލައި ލިޔުމަށް ދަސްކުރާ ދަރިވަރުންނަށް ލިޔުމުގެ ގޮތުގައި ކުރިއަށް ގެންދާ ކަންތައް ދެނެގަތުމަށް ފަހަރަށް ލިޔުން ތަކެއް ތައްޔާރުކުރެވެ.

---

1. ކްލާސް ނަންބަރ: ---ފަސްވަނަ ދަރަޖަ/ ހ---ދ---ދ---

2. ކްލާހުގެ ތަނަވަސް:

[4] ތަންކޮޅު [6] ވިލާނު [3] ކުލަބުތަ

3. ފާހަގަ ކުރާ ދަތުރުގެ ތާވަލު ތަކުގެ (ތަންތަން / ދުވަސް / ހަފްތާ / ތަނަވަސް) ތަފާތު

ކުރީ [½ ހަފްތާ]

ކުރުން [1 ހަފްތާ (2014)]

4. ތާވަލު ކުރެއްވި ފަރާތް ހޯދުމަށް ކުރި ތަފާސް ތަކުގެ ތަފްޞީލު

ކުރީ ގޮތުގެ ތަފާސް

.....ދ---ދ---ހ---ދ---

.....

ކުރުން ގޮތުގެ ތަފާސް

.....ދ---ދ---ހ---ދ---

.....

5. ކްލާހުގެ ކުދިންގެ ތާވަލު ތަކުގެ ތަފާތު

[ ] ތަކެއް [✓] ތަކެތި

6. ތާވަލު ތަކުގެ ތަފާތު ކުރުމަށް ބޭނުންކުރި ތަކެތި

[ ] ހަމަ ތަކެއް [✓] ހަމަ [ ] ވެގެ [ ] ތަކެތި ( )

7. ތަކެތި ހަމަކުރުމަށް ކުރި ކުދިންގެ ތަފާތު

[ ] ތަކެތި ހަމަ ކުރުން

[✓] ތަކެތި ހަމަ ކުރުމުގައި ވ ތަފާތު ކުރުން

8. ކުއްލި ބަދަލުގެ ގޮތުގައި ދަނޑުވެރިކަމުގެ ތަކެތި ގެންދިއުމަށް ހުއްދަ ދިނުމުގެ ކުރިން ކަނޑުގެ ކަނޑުގެ ( )

☑ ހުއްދަ ދީފައި ☐ ހުއްދަ ދީފައި

9. ކުއްލި ބަދަލުގެ ގޮތުގައި ދަނޑުވެރިކަމުގެ ތަކެތި ގެންދިއުމަށް ހުއްދަ ދިނުމުގެ ކުރިން ކަނޑުގެ ކަނޑުގެ

☐ ހުއްދަ ދީފައި ☑ ހުއްދަ ދީފައި

ހުއްދަ ދީފައި ހުއްދަ ދީފައި

.....

.....

.....

10. ދަނޑުވެރިކަމުގެ ގޮތުގައި ތިމަންގެ ކަނޑުގައި ކުއްލި ބަދަލުގެ ގޮތުގައި ކުއްލި ބަދަލުގެ ގޮތުގައި ކުއްލި ބަދަލުގެ ގޮތުގައި ކުއްލި ބަދަލުގެ ގޮތުގައި

☐ ފާރު ބަދަލުވެގެން

☑ ތަކެތި ގެންދިއުމަށް ދަނޑުވެރިކަމުގެ ކުރިން ހުއްދަ ދިނުން

☐ ތަކެތި ގެންދިއުމަށް ކުރިން ފަރާތް ބަދަލުވެގެން

☑ ފާރު ތަކެތި ގެންދިއުމަށް ކުރިން ބަދަލުވެގެން

☐ ތަކެތި ގެންދިއުމަށް ކުރިން ބަދަލުވެގެން

ތަކެތި.....

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ތިމަންގެ ފާރު

ދިވެހިރާއްޖެ ދަނޑުވެރިކަމުގެ ތަކެތި ގެންދިއުމަށް ކުރިން ހުއްދަ ދިނުމުގެ ގޮތުގައި ތިމަންގެ ކަނޑުގައި ކުއްލި ބަދަލުގެ ގޮތުގައި ކުއްލި ބަދަލުގެ ގޮތުގައި ކުއްލި ބަދަލުގެ ގޮތުގައި ކުއްލި ބަދަލުގެ ގޮތ

ރ. މާކުރަތު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫޢު

އާންމުން ދެކޭގޮތް ދެނެގަތުމުގެ ސަރވޭ

7 ނޮވެމްބަރ 2019

ތަޢާރަފު: މިސަރވޭއަކީ މިނިސްޓްރީ އޮފް އެންވަޔަރަމަންޓްގެ ފަރާތުން ރ. މާކުރަތު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫޢާއި ގުޅޭގޮތުން އާންމު ރައްޔިތުންގެ ހިޔާލާއި މަޝްވަރާ މަރުޙަލާތަކުގައި ހިމަނަން މުހިންމު ކަންކަން ދެނެގަތުމުގެ ގޮތުން ކުރާ ސަރވޭއެކެވެ. މިސަރވޭއިން ދެނެގަނެވޭ ކަންކަން މަޝްރޫޢުގެ ތިމާވެށީގެ ރިޕޯޓްތައްޔާރުކުރާއިރު ހިމެނުމަށް ވަނީ ހަމަޖެހިފައެވެ.

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1. ގޭގެ ނަން: [illegible]

2. ގޭބިސީގެ އަދަދު:
   2 އަންހެން   2 ފިރިހެން   2 ކުޑަކުދިން

3. ދުވާލަކުގެ މައްޗަށް އުފެދޭ ކުނި (ބަރުދަން / ވޮލިއުމް / ގޭބިސީގެ އަދަދުން)
   ފަނާވާ: ½ ޑަސްޓްބިން
   ފަނާނުވާ: 1 ޑަސްޓްބިން

4. އުފެދޭ ކުނިތައް ފުދު މިހާރު އަމަލުކުރަމުންދާ ގޮތް
   ފަނާވާ ބާވަތުގެ ކުނި
   އުކާލަނީ

   ފަނާނުވާ ބާވަތުގެ ކުނި
   އުކާލަނީ

5. ގޭބިސީ ފެންވަރުގައި ކުނި ވަކިކުރުން
   ☑ އާން   ☐ ނޫން

6. ކުނި ވަކިކުރުމަށްފަހު ގެދަންކޮށްފައި ބެހެއްޓުމަށް ބޭނުންކުރާ އާލާތެއް
   ☐ ޑަސް ބިން   ☐ ހޮން   ☐ ފީފާ   ☑ އެހެނިހެން (ގޯނި، ބާލިދި)

7. މަދުރަސާ ހަމައަށް ކުނި ގެންދާ ގޮތް
   ☐ އަމިއްލައަށް
   ☑ ކައުންސިލަށް ފީ ދައްކައިގެން

8. ކުއްލި ތަކެއްޗާ ގުޅިގެން ކަންކަމެއް ކުރާ ގޮތަށް ދެއްކި ބަޔާން ހުއްދަ ؟

☐ ލިބިގެންވެއެވ ☑ ލިބިގެން ނުވާނެ

ލިބިގެންވާ ނުވާ ސަބަބު (75 ދުވަހުގެ)

9. ކުއްލި ދަތުރުތަކާ ގުޅިގެން ދެއްކި ބަޔާން ހަމަ ހެއްކަ ކަން ؟

☑ ލިބިގެންވެއެވ ☐ ލިބިގެން ނުވާނެ

ލިބިގެންވާ ނުވާ ސަބަބު

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10. ދެއްކި ބަޔާނުގައި ބާއްވާ ކަންކަމާ ގުޅިގެން ކުރިން ދެއްކި ބަޔާނުތަކާ ހަމަ ނުވާ ކަންކަން ހުށަހަޅާ ގޮތަށް ބަޔާން ދޫކުރުމަށް ހުށަހަޅާ ކަންކަން

☑ ފައިސާ ހިނގުން
☑ ތަކެތި ގެނައުން ދެއްކުމާ ގުޅޭ ކަންކަމެއް
☑ ތަކެތި ގެންދިއުމާ ގުޅޭ ކަންކަން
☑ ގާތްގަނޑުން ކަންކަން ކުރުން
☑ ތަކެތި ގެނެވޭ ގޮތް

ތަފްޞީލް.....

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ވަޒީފާ

ދިވެހިރާއްޖެ ގައި ހުންނަ ދިވެހި ރައްޔިތަކަށް ހަމަ ވަޒީފާ ދިނުމުގައި ކަންކަން ކުރުމުގައި ކަންކަމުގައި ވަކިކަމެއް ނުކުރުމަށް ވެސް ވަކި ކަންކަމެއް ކުރުމަށް ވެސް ބަލަހައްޓާ ދާ ގޮތަށް ކަންކަން ކުރުން.

ނަން: .....

ސޮއި: .....

ސުވާލުތަކެއް

ކ. ގާފަރު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫޢު

އާންމުން ދެކޭގޮތް ދެނެގަތުމުގެ ސަރވޭ

7 ނޮވެމްބަރ 2019

ތައާރަފު: މިސަރވޭއަކީ މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓްގެ ފަރާތުން ކ. ގާފަރު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫޢާއި ގުޅިގެން އާންމު ރައްޔިތުންގެ ހިޔާލުފާޅު މަރުކަޒު މަރާމާތުކުރާއިރު ހިމަނަން މުހިންމު ކަންކަން ދެނެގަތުމުގެ ގޮތުން ކުރާ ސަރވޭއެކެވެ. މިސަރވޭއިން ދެނެގަނެވޭ ކަންކަން މަޝްރޫޢުގެ ތިމާވެށީގެ މެނޭޖްމަންޓް ޕްލޭން އެކުލަވާލާއިރު ހިމެނުމަށް ވަނީ ހަމަޖެހިފައެވެ.

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1. ގޭގެ ނަން: [illegible]

2. ގޭބިސީގެ އަދަދު:

   3 އަންހެން 5 ފިރިހެން 1 ކުޑަކުދިން

3. ދުވާލެއްގެ މައްޗަށް އުފެދޭ ކުނި (ބަރުދަން / ވޮލިއުމް / ގޭބިސީގެ އަދަދުން)

   ފަނާވާ 1/2 ޑަސްބިން

   ފަނާނުވާ 1/2 ޑަސްބިން

4. އުފެދޭ ކުނިތަކާއި މެދު މިހާރު އަމަލުކުރަމުންދާ ގޮތް

   ފަނާވާ ޒާތުގެ ކުނި

   [illegible]

   ފަނާނުވާ ޒާތުގެ ކުނި

   [illegible]

5. ގޭބިސީ ފެންވަރުގައި ކުނި ވަކިކުރުން

   ☑ އާން ☐ ނޫން

6. ކުނި ވަކިކުރުމަށްފަހު ގެދޮރުން ބޭރުކުރުމަށް ބޭނުންކުރާ އާލާތްތައް

   ☐ ޑަސް ބިން ☐ ހަން ☐ ޕީޕާ ☑ އެހެނިހެން (ބާލިދި)

7. މަރުކަޒާ ހަމައަށް ކުނި ގެންދާ ގޮތް

   ☐ އަމިއްލައަށް

   ☑ ކައުންސިލަށް ނ ދައުލަތުގެން

8. ކުއްލި ބަދަލުގެ ކޮންސެޕްޓުގެ ތަފާތު ވާހަކަ ދައްކާ ހިނދު ( )

☑ ހުއްދަ ދެއްވާ ☐ ހުއްދަ ދޭކަށް ނުލެވޭ

9. ކުއްލި ބަދަލުގެ ގޮތުގައި ދިވެހި ރައްޔިތަކަށް ދެވޭ ސަރުކާރުގެ ފައިދާ ލިބެން ހުރި

☐ ހުއްދަ ދެއްވާ ☑ ހުއްދަ ދޭކަށް ނުލެވޭ

ހުއްދަ ދޭކަށް ނުލެވޭ ސަބަބު

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10. ބަދަލުގެ ގަރާރުތަކާއި ގުޅުންހުރި ކަންކަމުގައި ފާސްކުރާ ނަތީޖާ ތަކެއް ނުކުންނަ ގޮތަށް ކުރިއަށް ގެންދާ ކަންކަމުގެ ތަފާތު ބަލައި

☐ ގޮތް ބަދަލުވުން

☑ ތަންތަން ބަދަލުކުރުން ބަދަލުގެ ގޮތުގައި ކުއްލި ބަދަލު ދިނުން

☐ ތަނުގައި ހުންނަ ކުއްލި ބަދަލު ދިނުން

☑ ގަވާއިދުން ކުއްލި ބަދަލު ދިނުން

☑ ތަކެތި ގެންދިއުމާ ގުޅޭ ކަންކަން

ތަފާސްކަން.....

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ތަކެތި ގެންދިއުން

ދިގުމުއްދަތަށް ބަދަލުގައި ހުންނަ ފަރާތަށް ކުރިން ދަންނަވާ ހިނދު ތަކެތި ގެންދާ ގޮތާ ގުޅޭ ކަންކަމުގެ ތަފާސްކަން ކުއްލި ބަދަލުގައި ހުންނަ ފަރާތުން ކުރަންވާނެ ކަންކަމާ ގުޅޭ ތަފާސްކަން.

ތާރީޚް: .....

ސޮއި: .....

ސްޓޭޓްބެންކް

ރ. މާކުރަތު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫއު

އާންމުން ދެކޭގޮތް ދެނެގަތުމުގެ ސާރވޭ

7 ނޮވެމްބަރ 2019

ތައާރަފު: މިސާރވޭއަކީ މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓްގެ ފަރާތުން ރ. މާކުރަތު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫއާއި ގުޅޭގޮތުން އާންމު ރައްޔިތުންގެ ހިޔާލާއި މަޝްވަރާތަކާއި ހިމަނަން މުހިއްމު ކަންކަން ދެނެގަތުމުގެ ގޮތުން ކުރާ ސާރވޭއެކެވެ. މިސާރވޭއިން ދެނެގަނެވޭ ކަންކަން މަޝްރޫއުގެ ތިމާވެށީގެ މެނޭޖްމަންޓް ޕްލޭންއެކުލަވާލާއިރު ހިމެނުމަށް ވަނީ ހަމަޖެހިފައެވެ.

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1. ގޭގެ ނަން: [illegible]

2. ގޭބިސީގެ އަދަދު:
☐ 4 އަންހެން ☐ 4 ފިރިހެން ☐ 3 ކުޑަކުދިން

3. ދުވާލެއްގެ މައްޗަށް އުފެދޭ ކުނި (ބަރުދަން / ލީޓަރު / ޖެސްބިންގެ އަދަދުން)
ފަނާވާ ☐ ½ ޖަސްބިން
ފަނާނުވާ ☐ 2 ޖަސްބިން

4. އުފެދޭ ކުނިތަކާއި މެދު މިހާރު އަމަލުކުރަމުންދާ ގޮތް
ފަނާވާ ބާވަތުގެ ކުނި
[illegible]

ފަނާނުވާ ބާވަތުގެ ކުނި
[illegible]

5. ގޭބިސީ ފެންވަރުގައި ކުނި ވަކިކުރުން
☑ އާން ☐ ނޫން

6. ކުނި ވަކިކުރަމުންދާނަމަ ގުދަނުކޮށްފައި ބެހެއްޓުމަށް ބޭނުންކުރާ އާލާތެއް
☐ ޖެސް ބިން ☐ ހަން ☐ ފީފާ ☑ އެހެނިހެން (ގޯނި، [illegible])

7. މަރުކަޒާ ހަމައަށް ކުނި ގެންދާ ގޮތް
☐ އަމިއްލައަށް
☑ ކައުންސިލަށް ފީ ދައްކައިގެން

8. ކުނި އުކުމަށް ކައުންސިލުން ނަގާ ފީއާއި މެދު ދެކޭ ގޮތް

☑ ހިތްހަމަ ޖެހޭ ☐ ހިތްހަމަ ނުޖެހޭ

ހިތްހަމަ ނުޖެހޭނަމަ ފީގެ ގޮތުގައި ކަނޑައަޅަން ފެންނަ އަދަދު ( )

9. ކުނި މެނޭޖްކުރާ މަރުކަޒު މިހާރު ހުރި ސަރަހައްދާމެދު ދެކޭގޮތް

☐ ހިތްހަމަ ޖެހޭ ☑ ހިތްހަމަ ނުޖެހޭ

ހިތްހަމަ ނުޖެހޭނަމަ ސަބަބު

[illegible]

[illegible]

10. މަރުކަޒު މަރާމާތުކުރާއިރު ތިމާވެށީގެ ގޮތުންނާއި އިޖުތިމާޢީ ގޮތުން ފޯރާ ނޭދެވޭ އަސަރު ކުޑަކުރުމަށް ހިމަނަން މުހިންމުކަމަށް ފެންނަ ކަންތައްތައް

☐ ފާރު އުސްކުރުން

☐ އެއްވެސް ވަގުތަކު މަރުކަޒުގައި ކުނި ނުއަނދުން

☐ ރަށުގެ އެއްކޮޅުގައި ކުނި ގުދަން ކުރުން

☑ ގަވާއިދުން ކުނި ރަށުން ބޭރުކުރުން

☑ އަލިފާން ނިއްވާ ސާމާނު ބެހެއްޓުން

އެހެނިހެން.........

އިޢުލާނު

މިސަރުވޭ ފޯމުގައި އަޅުގަނޑު ހިއްސާކޮށްފައިވަނީ ސައްހަ ތެދު މަޢުލޫމާތެވެ. އަދި މިސަރުވޭގެ ނަތީޖާ މަސްޢޫލުންގެ ތިމާވެށީގެ މެނޭޖްމަންޓް ޕްލޭން އެކުލަވާލުމަށް ބޭނުންކުރުމަށް އެންމެ ރަނގަޅުކަމުގައި ދަންނަވަމެވެ.

ނަން: [illegible]

ސޮއި:

ޝުކުރިއްޔާ

ރ. މާކުރަތު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫޢު

އާންމުން ދެކޭގޮތް ދެނެގަތުމުގެ ސަރވޭ

7 ނޮވެމްބަރު 2019

ތައާރުފު: މި ސަރވޭއަކީ މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓްގެ ފަރާތުން ރ. މާކުރަތު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫޢާއި ގުޅޭގޮތުން އާންމު ރައްޔިތުންގެ ހިއްސާދާރުން މަޝްވަރާކުރާއިރު ހިމަނަން މުހިންމު ކަންކަން ދެނެގަތުމުގެ ގޮތުން ކުރާ ސަރވޭއެކެވެ. މިސަރވޭއިން ދެނެގަނެވޭ ކަންކަން މަޝްރޫޢުގެ ތިމާވެށީގެ ދެނެގަތުމުގެ ރިޕޯޓުގައި ހިމެނުމަށް ފަހު ވަނީ ހަމަޖެހިފައެވެ.

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1. ގޭގެ ނަން: ވަކަރުވިލާ / ރ. މާކުރަތު

2. ގޭބިސީގެ އަދަދު:

6 އަންހެން   5 ފިރިހެން   3 ކުޑަކުދިން

3. ދުވާލެއްގެ މައްޗަށް އުފެދޭ ކުނި (ބަރުދަން / ވޮލިއުމް / ޑަސްޓްބިންގެ އަދަދުން)

ފަނާވާ: ½ ޑަސްޓްބިން

ފަނާނުވާ: 1 ޑަސްޓްބިން

4. އުފެދޭ ކުންޏާއި ގުޅޭ މިހާރު އަމަލުކުރަމުންދާ ގޮތް

ފަނާވާ ބާވަތުގެ ކުނި

އުކާލަނީ

ފަނާނުވާ ބާވަތުގެ ކުނި

އުކާލަނީ

5. ގޭބިސީ ފެންވަރުގައި ކުނި ވަކިކުރުން

☑ އާން   ☐ ނޫން

6. ކުނި ވަކިކުރުމަށްފަހު ގެދޮރުގައި ބަހައްޓަން ބޭނުންކުރާ އާލާތްތައް

☐ ޑަސް ބިން   ☐ ހަން   ☐ ފީފާ   ☐ އެހެނިހެން (ގޯނި ، ބަކެޓް)

7. މަރުކަޒާ ހަމައަށް ކުނި ގެންދާ ގޮތް

☐ އަމިއްލައަށް

☑ ކައުންސިލަން ފީ ދައްކައިގެން

8. ކުނި އުކުމަށް ކައުންސިލުން ނަގާ ފީއާއި މެދު ދެކޭ ގޮތް

☑ ހިތްހަމަ ޖެހޭ ☐ ހިތްހަމަ ނުޖެހޭ

ހިތްހަމަ ނުޖެހޭނަމަ ފީގެ ގޮތުގައި ކަނޑައަޅަން ފެންނަ އަދަދު (   )

9. ކުނި މެނޭޖްކުރާ މަރުކަޒު މިހާރު ހުރި ސަރަހައްދާމެދު ދެކޭ ގޮތް

☐ ހިތްހަމަ ޖެހޭ ☑ ހިތްހަމަ ނުޖެހޭ

ހިތްހަމަ ނުޖެހޭނަމަ ސަބަބު

[illegible]

[illegible]

10. މަރުކަޒު މަރާމާތުކުރާއިރު ތިމާވެށީގެ ގޮތުންނާއި އިޖުތިމާއީ ގޮތުން ފޯރާ ނުރައްކާ އަސަރު ކުޑަކުރަން ހިމަނަން މުހިންމުކަމަށް ފެންނަ ކަންތައްތައް

☑ ފާރު އުސްކުރުން

☑ އެއްވެސް ވަރަކަށް މަރުކަޒުގައި ކުނި ނުއަނދުން

☑ ރަނގަޅުގޮތުގައި ކުނި ގުދަން ކުރުން

☑ ގަވާއިދުން ކުނި ރަށުން ބޭރުކުރުން

☑ އަލިފާން ނިއްވާ ސާމާނު ބެހެއްޓުން

އެހެނިހެން...

އިޢުތިރާފު

މިސަރވޭ ފޯމުގައި އަޅުގަނޑު ހިމަނާފައިވާ ސަވާލަށް ތެދު މައުލޫމާތެވެ. އަދި މިސަރވޭގެ ނަތީޖާ މަޝްވަރާގެ ތިމާވެށީގެ ފަންނީ ރިޕޯޓް އެކުލަވާލުމަށް ބޭނުންކުރިޔަސް އެންމެ ރަނގަޅުކަމުގައި ދެންނެވަމެވެ.

ނަން: [illegible]

ސޮއި: ....

ޝުކުރިއްޔާ

ރ. މާކުރަތު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫޢު

އާންމުން ދެކޭގޮތް ދެނެގަތުމުގެ ސަރވޭ

7 ނޮވެމްބަރ 2019

ތައާރަފު: މިސަރވޭއަކީ މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓްގެ ފަރާތުން ރ. މާކުރަތު ކުނި މެނޭޖްކުރާ މަރުކަޒު އަޕްގްރޭޑްކުރުމުގެ މަޝްރޫޢާއި ގުޅޭގޮތުން އާންމު ރައްޔިތުންގެ ހިޔާލާއި މަރުކަޒު މަރާމާތުކުރާއިރު ހިމަނަން މުހިންމު ކަންކަން ދެނެގަތުމުގެ ގޮތުން ކުރާ ސަރވޭއެކެވެ. މިސަރވޭއިން ދެނެގަނެވޭ ކަންކަން މަޝްރޫޢުގެ ތިމާވެށީގެ މެނޭޖްމަންޓް ޕްލޭންއެކުލަވާލާއިރު ހިމެނުމަށް ވަނީ ހަމަޖެހިފައެވެ.

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1. ގޭގެ ނަން: [redacted]

2. ގޭބީސީގެ އަދަދު:

4 އަންހެން　4 ފިރިހެން　2 ކުޑަކުދިން

3. ދުވާލެއްގެ މައްޗަށް އުފެދޭ ކުނި (ބަރުދަން / ވޮލިއުމް / ގޭބީސީގެ އަދަދުން)

ފަނާވާ　1/2 ކުޑަ ބާސްކެޓުން

ފަނާނުވާ　1 ކުޑަ ބާސްކެޓް

4. އުފެދޭ ކުނިތަކާއި މެދު މިހާރު އަމަލުކުރަމުންދާ ގޮތް

ފަނާވާ ޖާތުގެ ކުނި

[illegible]

ފަނާނުވާ ޖާތުގެ ކުނި

[illegible]

5. ގޭބީސީ ފެންވަރުގައި ކުނި ވަކިކުރުން

☑ އާން　☐ ނޫން

6. ކުނި ވަކިކުރަމުންދާނަމަ ގުދަންކޮށްފައި ބަހައްޓަނީ ކޮންކަހަލަ އާލާތެއްގައި

☐ ޑަސްޓްބިން　☑ ގޯނި　☐ ފީޕާ　☐ އެހެނިހެން (　　　)

7. މަރުކަޒާ ހަމައަށް ކުނި ގެންދާ ގޮތް

☐ އަމިއްލައަށް

☑ ކައުންސިލުން ފީ ދައްކައިގެން

8. ކުއްލި ހުއްދަށް ކަމަށްވާތީ ދަށް ދެއްވާ ސަބަބު ( )

☐ ހިއްކަމަށް ނެތް ☑ ހިއްކަމަށް ދެއްވާ

9. ކުއްލި ހުއްދާ ގުޅިގެން ދަންނަވާ ހެއްކެއް ހުރި ނަމަ ތަފުޞީލު ( )

☑ ހިއްކަމަށް ނެތް ☐ ހިއްކަމަށް ދެއްވާ

ހިއްކަމަށް ދެއްވާ ސަބަބު

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10. ދަންނަވާ ދަށްވާ ހުއްދާ ގުޅިގެން ތިލައިގެ ކަންކަމުގެ ތެރެއިން ކޮބައި ހުރަސްކަމެއް ކަމަށް ކުންފުނި ކަށަވަރު ކުރަނީ ކޮބައި ކަންކަމަށް ހުއްދަ ދިނުމުގެ ކުރިން ކަށަވަރު ކުރަންވާ ކަންކަމަށް ކަމަށްވާ ކަންކަމަށް ކަށަވަރު ކުރަންވާ ކަންކަމަށް ކަށަވަރު ކުރަންވާ ކަންކަމަށް ކަށަވަރު ކުރަން

ނ. ފުޅަތަކު ކަނޑައެޅުމުގެ ގަވާއިދުގެ ދަށުން ތައްޔާރުކުރެވުނު

ތާއީދުގެ ފޯރުމުގެ ފާސްކޮށްދިނުމުގެ ސަރޓި

7 ނޮވެމްބަރ 2019

ތާއީދުކުރާ: ފަރާތުގެ ނަން ދިވެހިބަހުން ކެޕިޓަލް ލެޓާ ބޭނުންކޮށް ފުރިހަމަ ކުރައްވާ ނ. ފުޅަތަކު ކަނޑައެޅުމުގެ ގަވާއިދުގެ ދަށުން ތައްޔާރުކުރެވުނު ފުޅަތަކުގެ ތާއީދު ދިނުމަށް ތަކެއްޗަށް ލިޔެއްޓެވި ފަރާތުގެ ނަން ދިވެހިބަހުން ކެޕިޓަލް ލެޓާ ބޭނުންކޮށް ފުރިހަމަ ކުރައްވާ.

ފަރާތުގެ ID ކާޑު ނަންބަރު ދަށުގައި ލިޔެ ސޮއި ކުރައްވާ. ID ކާޑު ނެތް ފަރާތްތަކުގެ ނަންބަރު ލިޔުމުގައި ބަލައި ބަލައި ލިޔުއްވާ.

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1. ކާޑު ނަންބަރ: [illegible]

2. ކާޑުގެ ބަދަލު:

[3] ތާވަލުން [2] ވިއްކުން [3] ކާބޯފައި

3. ފާސްކުރާ ފަރާތުގެ ގުޅުން (ބައްޕަ / ފާޅުވެދާ / ކާބޯ ބަދަލުން)

ކާބޯ [1] ކާބޯ ކަމަށް

ކާބޯ [1] ކާބޯ ކަމަށް

4. ތާއީދު ކުރާ ފަރާތުގެ ގޮތުގައި ތާއީދު ދިނުމަށް ބޭނުންކުރާ ލިޔުން

ކާބޯ ..... [illegible]

.....

ކާބޯ ލިޔުން

[illegible] .....

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5. ކާބޯ ކުރާ ފަރާތުގެ ނަން ބަލައި ބަލައި

[✓] ބައްޕަ [ ] ދަރި

6. ނަން ބަލައި ބަލައި ކުރާ ފަރާތުގެ ގުޅުން ކާބޯ ކުރާ ފަރާތަށް

[ ] ކާބޯ [✓] ބައްޕަ [ ] ދަރި [ ] ބައްޕަ ( )

7. ބަލައި ބަލައި ކުރާ ގޮތް ކާބޯ ކުރާ ގޮތް

[ ] ބަލައި ބަލައި

[✓] ބަލައި ބަލައި ދ ބަލައި ބަލައި

8. ކުއްލި ހުއްދަކުރާ ކަމުގެ ތަފްޞީލް ތިރީ ފުރިހަމަ ކުރައްވާ ؟

☑ ހިއްކުމަށް ބޭނުންވާ ☐ ހިއްކުމަށް ބޭނުންނުވާ

ހިއްކުމަށް ބޭނުންވާ ނަމަ، ކިހާ ވަގުތަކަށް ( )

9. ކުއްލި ދަށްކޮށްގެން ދަތުރުގެ ފިޔަދު ހޯދަން ހަމަޖެހިފައި ހުންނަ ؟

☐ ހިއްކުމަށް ބޭނުން ☑ ހިއްކުމަށް ބޭނުން

ހިއްކުމަށް ބޭނުންވާ ސަބަބު

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10. ދަތުރުގެ ދަށްކޮށްގެންދާ ގޮތް ކަށަވަރުކުރުމަށް ކަނޑައެޅުނު ކަންތައް ކޮންކަންތައްތަކެއް ހަމަކުރަންވާ ހިނދު ކުއްލި ހުއްދަ ދިނުމަށް ބާރުވެރި ފަރާތަށް ދަންނަވާ ؟

☐ ފައިސާ ހުށަހެޅުން

☐ ގެންދާ ދަތުރުގެ ތަފްޞީލް ހުށަހެޅުން

☐ ތަކެއްޗަށް ބޭނުންވާ ފައިސާ ދެއްކުން

☑ ގަނެވިދާނެ ކުއްލި ތަނުން ބަލައިގަތުން

☐ ތަކެއްޗާ ބެހޭ ސާފުކަން ހުށަހެޅުން

ތަފްޞީލް.....

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ތާއީދުކުރާ

ދިވެހިރާއްޖެ ސަރުކާރުގެ ފައިސާ ދަށްކޮށްގެން ދަތުރުގައި ހުރި ވަގުތު ކުއްލި ހިއްކުމަށް ބޭނުންވާ ކަންތައްތަކަށް ހުއްދަ ދިނުމުގެ ގޮތުގައި ދަންނަވަމެވެ. ތަނަ ދިވެހިރާއްޖެ ސަރުކާރުގެ ފައިސާ ދަށްކޮށްގެންދާ ތަކެއްޗާ ބެހޭ ކަށަވަރުކުރުމަށް ބާރުވެރި ފަރާތަށް ދަންނަވަމެވެ.

ނަން: .....

ސޮއި: .....

APPENDIX J

Meeting Minutes of consultation with Waste Management Committee

2019 ތާރީ ތަނަވަސް ފާރާތް ކައުންސިލަށް ހިއްސާކުރެވުނު ވަޒީފާ:

#	ނަން
01	ތަކުލަށް ކަނޑައެޅި ތަނެއް ނެތުމުގެ، ކ.ގ.ކ.ތަ
02	ތަކުލަށް ކުރިއަށް ދާގޮތް ފެންނަ ގުޅުމުން، ކ.ގ.ކ.ތަ
03	ތަކުލަށް ތަކުލަށް ތަކުލަށް ތަކުލަށް ގުދަނުމަސް ، ކ.ގ.ކ.ތަ
04	ތަކުލަށް ތަކުލަށް ތަކުލަށް ތަކުލަށް ތަކުލަށް، ކ.ގ.ކ.ތަ
05	ތަކުލަށް ތަކުލަށް ތަކުލަށް ، ތަކުލަށް ތަކުލަށް ތަކުލަށް ކ.ފ.ތ
06	ތަކުލަށް ތަކުލަށް ، ތަކުލަށް ތަކުލަށް ކ.ތ.ތ.ތ
07	ތަކުލަށް ތަކުލަށް ތަކުލަށް ، ތަކުލަށް، ކ.ގ.ކ.ތަ
08	ތަކުލަށް ތަކުލަށް ، ކ.ގ.ކ.ތަ
09	ތަކުލަށް ތަކުލަށް ، ކ.ގ.ކ.ތަ
10	ތަކުލަށް ތަކުލަށް ، ކ.ގ.ކ.ތަ

بسم الله الرحمن الرحيم

ދާއިރާތަކުގެ ތަންކޮޅުތަކުގެ ގޮތުގައި ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ތަނުގެ
ގޮތުގައި، ތިރީގައިވާ ފަދައިން

ކަންތައްތަކުގެ 3 ވަނަ ދަނޑުގެ ކޮންފަރެންސް ކައުންސިލްގެ ތިންވަނަ ބައްދަލުގެ ތާރީޚާއި ގަޑި

ތާރީޚް: 27 ފެލްގަމާދަ 1439، 09 ނޮވެމްބަރ 2018 (ހޯނާދިވެހި)
ބައްދަލު ފެށުނު ގަޑި: 11:06 (ހަނދާންކުރާ)
ބައްދަލުގައި ބައިވެރިވި ގޮތް: ކ. ގެނުގަތު ކަންތައްތަކުގެ ތަނުގެ ލީޑަރުގެ ގޮތުގައި

ބައްދަލު ފެށުނު: 11:06
ބައްދަލު ނިމުނު: 11:58

ބައްދަލުގައި:

1. ކަންތައްތަކުގެ ދަނޑިން ތަކެއްޗާ ބެހޭގޮތުގައި ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ކ. ގެނުގަތު،
2. ކަންތައްތަކުގެ ދަނޑިން ތަކެއްޗާ ބެހޭގޮތުގައި ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ކ.ގެނުގަތު
3. ގެނުގަތު ކަންތައްތަކުގެ ލިބުނުތަކާ ބެހޭގޮތުގައި ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ދަތުރުގެ ގޮތުގައި ކ.ގެނުގަތު
4. ގެނުގަތު ކަންތައްތަކުގެ ތަކެއްޗާ ބެހޭގޮތުގައި ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ކ.ގެނުގަތު
5. ކަނޑިތަކުގެ ތަކެއްޗާ ގުޅޭގޮތުގައި ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ، ކ.ގެނުގަތު
6. ގެނުގަތު ސްޓާފް ދަތުރުގައި ހުންނަ ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ، ކ.ހުޅުވަންގަ

ބައްދަލުގައި:

1. ކަންތައްތަކުގެ ދެވަނަ ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ، ކ. ގެނުގަތު
2. ގެނުގަތު ތަކެއްޗާ ދެކޮޅަށް ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ، ކ.ގެނުގަތު
3. ތިން ވަނަ ކަނޑުތަކުގެ ތަކެއްޗާ ދެކޮޅަށް ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ، ކ.ގެނުގަތު
4. ތިން ވަނަ ކަނޑުތަކުގެ ތަކެއްޗާ ދެކޮޅަށް ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ، ކ.ގެނުގަތު

ގޮތްތަކާ ބެހޭ ބަދަލުތައް:-

ދ ގޮތްތަކާ ބެހޭ ބަދަލުތަކެއް ކަންތައްތަކުގެ ދަނޑިން ތަކެއްޗާ ބެހޭގޮތުގައި ކަނޑުތަކުގެ ކަންތައް ބަލަހައްޓާ ނެތް.

- ކަންތައްތަކުގެ 3 ވަނަ ދަނޑުގެ 2018 ވަނަ ބަނދުގެ 1 ވަނަ ކޮންފަރެންސް ކައުންސިލްގެ ތިންވަނަ ބައްދަލު ކުށްވެރިވި.

ހުށަހެޅުނު ތަކެއްޗެވެ:

1. ކަންތައްތަކުގެ ދަނޑިން ތަކެއްޗާ ބެހޭ ދަތުރު ކުރާ ބައިތަކުގެ ކަންތައް ބަލަހައްޓާ ކ. ގެނުގަތު.

ކަންތައްތަކުގެ ދަނޑިން ތަކެއްޗާ ގުޅޭ ދަތުރު ކުރާ ބައިތަކުގެ ކަންތައް ބަލަހައްޓާ ކ. ގެނުގަތު.
ތާރީޚް ވަގުތުގައި ދަތުރުގައި ހުންނަ ކ. ގެނުގަތު ކަންތައްތަކުގެ ލީޑަރ ކ. ހުޅުވަންގަ.
ކަންތައްތަކުގެ ދަނޑިން ތަކެއްޗާ ގުޅޭ ދަތުރު ކުރާ ބައިތަކުގެ ކަންތައް ބަލަހައްޓާ ދަތުރުގައި ހުންނަ ކ. ގެނުގަތު ކަންތައްތަކުގެ ލީޑަރ ކ. ހުޅުވަންގަ ކަނޑިތަކުގެ ތަކެއްޗާ ގުޅޭ ދަތުރު ކުރާ ބައިތަކުގެ ކަންތައް ބަލަހައްޓާ ދަތުރުގައި ހުންނަ ކ. ގެނުގަތު ކަންތައްތަކުގެ ލީޑަރ ކ. ހުޅުވަންގަ
5 ސެކްޝަނުގެ ވަގުތު ދަތުރުގައި.

ދެއްވި ވަގުތުގައި 1 ވަނަ އާންމު ޖަލްސާގެ އެޖެންޑާ ހުށަހެޅުން އިސްލާހު ކޮށްލުމަށްފަހު ފާސްކުރުމަށް ފެންނަ ކަމަށް 6 މެމްބަރުން ވޯޓު ދެއްވިއެވެ.

ވޯޓު ދެއްވި :

1. ކައުންސިލްގެ ރައީސް އަލްފާޟިލް ހަސަން އަލީ ރިޔާއްބަވާ ރ. މާކުރަތު،
2. ކައުންސިލްގެ ނައިބު ރައީސް އަލްފާޟިލް ހުސައިން އިމާދު ފުލްފޫން ރ.މާކުރަތު
3. މާކުރަތު ކައުންސިލްގެ ޑިރެކްޓަރ އަލްފާޟިލް އަބްދުﷲ ނަޢީމް ، މަދަރިމާގެ ރ.މާކުރަތު
4. މާކުރަތު ސްކޫލްގެ ޕްރިންސިޕަލް އަލްފާޟިލް އަހްމަދު އަޝްފާޤު ، މާއާރު ރ.މާކުރަތު
5. ޖަމިއްޔާ އިސްލާހުގެ ފަރާތުން އަލްފާޟިލް މޫސާ ޝާމިލް ، ފެހިވިނަ ރ.މާކުރަތު
6. މާކުރަތު ސިއްޙީ މަރުކަޒު ހިންގުމުގައި ބަލަހައްޓާ ހުންނަވާ އަލްފާޟިލް އާދަމް ސަރާފީ ، ގުރިނިވާ ރ.ހުޅުދުއްފާރު

މިހެންކަމުން 6 މެމްބަރުން ފެންނަކަމަށް ވޯޓު ދެއްވާފައިވާތީ ތަރުތީބު ކުރެވުނު ޖަލްސާގެ އެޖެންޑާ ފާސްވެފައެވެ.

އެޖެންޑާ ނަންބަރު: 1

ރައްކާތެރި ގޮތުގައި ކުނި މެނޭޖު ކުރުމާއި ކުނި ނައްތާލުމާއި ބެހޭ އުސޫލަށް ޚިޔާލު ހޯދުން.

ރިޔާސަތުން ރައްކާތެރި ގޮތުގައި ކުނި މެނޭޖު ކުރުމާއި ކުނި ނައްތާލުމާއި ބެހޭ އުސޫލަށް ޚިޔާލު ހޯދުމާއި ގުޅޭ ގޮތުން މަޢުލޫމާތު ދެއްވުމަށް ޑިރެކްޓަރ އަލްފާޟިލް އަބްދުﷲ ނަޢީމް އަށް 20 މިނެޓުގެ ވަގުތު ދެއްވިއެވެ.

ޑިރެކްޓަރ އަލްފާޟިލް އަބްދުﷲ ނަޢީމް ދެންނެވީ މިހާރުވަނީ ކުނިނައްތާލުމާއި ބެހޭ އުސޫލަށް އާންމުގެ ފަރާތުން ޚިޔާލު ހޯދުމަށް އިޢުލާން ކުރެވި ގެޒެޓުގައި ޝާއިޢު ކުރެވިފައިވާ ކަމަށާއި ނަމަވެސް އެއްވެސް ޚިޔާލެއް އައިސް ނުވާ ކަމަށާއި ކުރިއަށްއޮތް ތަރުތީބުގެ މަސައްކަތް ކަމަށާއި މި އުސޫލު ތަޢާރަފު ކުރުމުގައި ޢަމަލުކުރާނެ ގޮތުގެ ތަފްސީލު ކަމުގައި ދެންނެވުމަށްފަހު އުސޫލު ކިޔައިދެއްވިއެވެ.

ރިޔާސަތުން ހުށަހެޅިފައިވާ އުސޫލަށް ގޮތް ހޯދުމަށް ބަހުސްކުރުމަށް ނަން ހުށަހެޅުމަށް 15 ސިކުންތުގެ ވަގުތު ދެއްވިއެވެ.

ދެއްވި ވަގުތުގައި ނަން ހުށަހެޅުއްވީ މާކުރަތު ސްކޫލްގެ ޕްރިންސިޕަލް އަލްފާޟިލް އަހްމަދު އަޝްފާޤު އެވެ.

މާކުރަތު ސްކޫލްގެ ޕްރިންސިޕަލް އަލްފާޟިލް އަހްމަދު އަޝްފާޤު ދެންނެވީ ސަރުކާރު ކުންފުނިތަކާ ދީ ، ގޭގޭގެ ބަދަލުގައި ބިލުކަރުދާސް ހުރުމާއި ރަށުގައި ހިނގާ ޕްރޮޖެކްޓުތައް ބަލާއިރު ދަރަނި ކައުންސިލްގެ ޕިކަޕުގައި ކުނި ދޫކުރާ ބޮޑު ވެއްޓާނެ ގޭބިސީގައި -/50 ރުފިޔާ ނަގާގޮތަށް ބިލުކުރާއި 8 ވަނަ ނަންބަރުގެ (ހ) ގައިވާ ސްކޫލްތަކާއި ކުރުމުގެ ބަދަލުގައި ސްކޫލްތަކުން ޚިދުމަތަށް ބިލުކުރުން ނަސޭހަތު ދެވޭނެ ކަމަށް ޚިދުމަތް ކުރުމުގައި (ށ) ގައިވާ ފައިސާ އަދި ގޭބިސީ ފައިސާގެ ޚިދުމަތަށް ފައިސާ ގޭގޭ ފައިސާއެއް ކަމަށް ބިލުކުރުމުގައި 9 ވަނަ ނަންބަރުގައިވާ ސަރުކާރު ތަންތަނާއި ކުލަބު ޖަމިއްޔާ އަދި ފުރާވާ ބިލްތައް އެކިކަހަލަ 4 ގައި ހިމެނުނުއިރު ގެސްޓްހައުސް ފަދަ 6 މަސްދުވަހުގައި ރަޖިސްޓްރީ ކޮންމެހެނަކަށް -/75 ރުފިޔާ ނެގުމާއި އޭގެ ފަހުން -/100 ރުފިޔާގެ ފީއެއް ނެގުމަށް އުސޫލުގައި ހިމެނުމާއި ދިރާގު އަދި އޫރީދޫގެ ޓަވަރު -/800 ރުފިޔާ އަށް ބަދަލު ކުރުމަށް ފެންނަ ކަމުގައި ހުށަހެޅުއްވުމަކަށް މަޝްވަރާ ހުށަހެޅުއްވިއެވެ.

އެއަށްފަހު އިތުރު ކުރުމަށް ބޭނުންވާ މެމްބަރުން ނަން ހުށަހެޅުއްވުމަށް 15 ސިކުންތުގެ ވަގުތު ދެއްވިއެވެ.

ދެއްވި ވަގުތުގައި ނަން ހުށަހެޅުއްވީ ޑިރެކްޓަރ އަލްފާޟިލް އަބްދުﷲ ނަޢީމް އެވެ.

ރިޔާސަތުން ޑިރެކްޓަރ އަލްފާޟިލް އަބްދުﷲ ނަޢީމް އަށް ވާހަކަ ދެއްކެވުމަށް 5 މިނެޓުގެ ވަގުތު ދެއްވިއެވެ.

ދެއްވި ވަގުތުގައި ޑިރެކްޓަރ އަލްފާޟިލް އަބްދުﷲ ނަޢީމް ދެންނެވީ މިކަމުގައި ވަރަށް ގިނަ ވަގުތުތަކެއް ހިނގައްޖެ ކަމަށާއި އަންނަ ހަފްތާގައި ފާސްކުރުމަށް ހުށަހަޅާނެ ކަމަށާއި އިތުރު ފުރުސަތު ރަޖިސްޓްރީ ކުރުމަށް ހުޅުވާލާނެ ކަމަށާއި 1 ޖަނަވަރީ 2018 ގައި މަސައްކަތް ފެށުމަށް ފާސް ކަމުގައި ދެންނެވުމަށްފަހު ވާހަކަ ނިންމަވާ ލެއްވިއެވެ.

އިތުރު ކަމެއް ނެތުމާއެކު ޖަލްސާ ނިންމަވާލެއްވިއެވެ. ޖަލްސާ ނިމުނީ 11:58 ގައެވެ.

ބައިވެރިވި ފަންނާނުން:

#	ނަން	މަޤާމް
01	އަލްފާޟިލް ހަސަން އަލީ، ރިޔާޟްބަހާ ރ.މާކުރަތު	ކައުންސިލްގެ ރައީސް
02	އަލްފާޟިލް ހުސައިން އިމާދު ، ފުލްވޫން ރ.މާކުރަތު	ކައުންސިލްގެ ނައިބު ރައީސް
03	އަލްފާޟިލް އަބްދުﷲ ނައީމް، މަދޯރިމާގެ، ރ.މާކުރަތު	ޑިރެކްޓަރ
04	އަލްފާޟިލް އާދަމް ސުހައިލް ، ގެރިންވިލާ ރ.ހުޅުދުއްފާރު	މާކުރަތު ސިއްޙީމަރުކަޒު
05	އަލްފާޟިލް އަޙްމަދު އަޝްފާޤް ، މާއޯދު ރ.މާކުރަތު	މާކުރަތު ސްކޫލްގެ ޕްރިންސިޕަލް
06	އަލްފާޟިލް މޫސާ ޝާމިލް ، ފެހިވިނަ ރ.މާކުރަތު	މާކުރަތު ސްކޫލްގެ ޓީޗަރ

ހައުދިއްޔާ ވިދުސި: 12 އޮގަސްޓް 2018

ކޮމިޓީގައި ހިމެނިގެންވާ ފަންނާނުން:

#	ނަން
01	އަލްފާޟިލް ހަސަން އަލީ ރިޔާޟްބަހާ، ރ.މާކުރަތު
02	އަލްފާޟިލް ހުސައިން އިމާދު ފުލްވޫން، ރ.މާކުރަތު
03	އަލްފާޟިލް އަޙްމަދު އަބްދުއްރަޙީމް ފެންބޮކުރާ ،ރ.މާކުރަތު
04	އަލްފާޟިލް އަބްދުﷲ ނައީމް، މަދޯރިމާގެ، ރ.މާކުރަތު
05	އަލްފާޟިލް އަޙްމަދު އަޝްފާޤް ، މާއޯދު ރ.މާކުރަތު
06	އަލްފާޟިލް އާދަމް ސުހައިލް ، ގެރިންވިލާ ރ.ހުޅުދުއްފާރު
07	އަލްފާޟިލް އަޙްމަދު ޝިފާން ، އަންދަލީބުގެ ރ.މާކުރަތު
08	އަލްފާޟިލާ މަރްޔަމް ސަޢީދާ ، ކަރަންކާގެ ރ.މާކުރަތު
09	އަލްފާޟިލް އިބްރާހީމް ރަޝީދު ، މާލިމަ ރ.މާކުރަތު
10	އަލްފާޟިލް މޫސާ ޝާމިލް ، ފެހިވިނަ ރ.މާކުރަތު

APPENDIX K

Meeting Minutes of Consultation with the General Public

بسم الله الرحمن الرحيم

މާޅޮސްމަޑުލު އުތުރުބުރީ ކައުންސިލްގެ އިދާރާ
ކުޅުދުއްފުށި، ދިވެހިރާއްޖެ

3 ރަބީޢުލްއައްވަލް 1440
12 ނޮވެމްބަރ 2018 (ހުކުރު)

<u>ރައްޔިތުންގެ ބައްދަލުވުން</u>

މިއަދު 20:38 ގައި ބައްދަލުވުމެއް ބާއްވައިފި. ކައުންސިލްގެ ރައީސް އަލްފާޟިލް ޙުސައިން ޢަލީ އާއި ކައުންސިލްގެ ނައިބު ރައީސް އަލްފާޟިލް ޙުސައިން އިމާދު އާއި ޖެނެރަލް ކައުންސިލަރ އަލްފާޟިލް ޢަބްދުﷲ ނަޢީމް އާއި އިސްލާމިކް ޑިވެލޮޕްމަންޓް އޮފިސަރ އަލްފާޟިލާ އާމިނަތު ޝަރީފް އާއި އެޑްމިނިސްޓްރޭޓިވް އޮފިސަރ ފާޠިމަތު ޙަލީމާ އަދި އޮފީސް އާއި އެޑްމިނިސްޓްރޭޓިވް އޮފިސަރ އާމިނަތު ވަޙީދާ އެވެ. މިބައްދަލުވުމުގައި ބައިވެރިވެއްޖެ 10 އަންހެނުންނާއި 25 ފިރިހެނުންނެވެ.

ކައުންސިލްގެ ރައީސް އަލްފާޟިލް ޙުސައިން ޢަލީ ދެންނެވީ މިބައްދަލުވުމަކީ 2 މަހުން އެއްމަރު ބާއްވަން ހަމަ ޖެހިފައިވާ ބައްދަލު ވުމެއް ކަމަށާއި މިފަދަ ބައްދަލުވުން ނުބާއްވާ ވަގުތުވެފައިވާ ކަމަށާއި ބައްދަލުވުން ބާއްވަން ވަގުތުވެފައިވާ ބައެއް ކަންކަން ނުކުރެވި ވަގުތުވެފައިވާ ކަމަށެވެ. މިހާރު ކުރިއަށް ދާ ނަރުދަމާ އެޅުމުގެ މަސައްކަތް ކުރުމުގައި ދިމާވާ ކަންކަން ހުށަހެޅުމާއި އަދި އިސްލާހީ ބޭނުންތެރިކަމުގެ ގޮތުން ކައުންސިލްގެ މަޝްވަރާ ނުކުރާ ކަމުގައި ދެންނެވިއެވެ. މިކައުންސިލް ފުރިހަމަ ކަމެއް އިނދެ ބައެއް ފަރާތްތަކުން ފާޅުކުރި ޝަކުވާތަކާއި ކަންކަން ކުރަމުންދާ ކަމަށާއި ނަގަފައިވާ އެކަން މިހާރު ކުރިމަތިވެފައިވާ ވަރަށް ބޮޑު ކުށްތަކެއް ކަމަށް ދެކޭކަމަށް ދެންނެވިއެވެ.

ޖެނެރަލް ކައުންސިލަރ ޢަބްދުﷲ ނަޢީމް ދެންނެވީ ނަރުދަމާގެ މަސައްކަތް ފެށުމަށް ކުރީ ފޮނު ހުށަހެޅުމަށް މަސްދުވަހުގެ މުއްދަތު ދިނުމަށް ފޮނުވުނު ކަމަށާއި ކާކު ގޮތަކަށްތޯ ވާހަކަ ދައްކައިދިނުމުގެ ގޮތުން މަޢުލޫމާތު ދެވިފައިވާ ކަމަށާއި އެގޮތުން ފުރުޞަތު ހުރި ގޮތަކުން ނަރުދަމާގެ ކަންތައް ބަލައިދޭނެ ގޮތެއް ހަމަޖެހިފައިވާ ކަމަށާއި އެކަމަށް މިހާރު ވެސް ދުވަސް އެއް 20 ދުވަސް ފަހު ހަރަކާތްތައް ނިމޭނެ ކަމަށް ދެންނެވިއެވެ. އަދި ބައެއް ފަރާތްތަކުން ނަރުދަމާގެ މަސައްކަތް ނިމުމަށް ލަސްވާ ކައުންސިލުން އެއްބާރުލުން ނުދޭކަމަށް ބަޔަކު ފާޅުކުރާ ހިޔާލު ކުރިމަތިވާ ކަމަށާއި މަސައްކަތް ނިމުމުގެ ކުރިން ބިނާކުރާ ގޮތުގެ ހުރިހާ ކަމެއް ކުރަން ދެންނެވިއެވެ. ބައެއް ފަރާތްތަކުން ހަމަޖެހުނު ކޮންޓްރެކްޓަރު ވަގުތަށް ކަން ނުކުރާ ކަމަށާއި މިހާރު މަސައްކަތް ފެށުން ލަސްވުމަށް ފަސްކުރި ކަމަށާއި ކުރިއަށް ކައުންސިލުން ހަދާ މަސައްކަތުގެ ކުރިން ހަމަޖެހިފައިވާ އެއްބަސްވުމުގެ ކަންތައް ކައުންސިލުން ވެސް މަސައްކަތް ކުރާނެ ކަމަށާއި މަސައްކަތް ކުރިއަށް ނުދާން ކަމަށާއި ކުރިއަށް ނުގެންދާނެ ކަމަށް ފަރާތްތަކުން އެއްބާރުލުން ދިނުމަށް ދެންނެވިއެވެ.

ބަނދަރު ސަރަޙައްދު ބޮޑުކުރުމުގެ ކުރުމުގެ މަސައްކަތުން މިހާރު ވަރަށް ބޮޑު ތަރައްޤީ ކަމަށާއި ހިނގާ ބޭނުންތަކަށް އެއްބާރުލުންދީ މަސައްކަތް ކުރުމުގެ ކުރިން ބަނދަރުގައި އެއްޗެހި ބަހައްޓާފައި އޮންނަ ކަމަށާއި ނުހުންނަ ކަމަށާއި ހުރަސްއެޅުމުގައި ގިނަ ޝަކުވާ ބަލައިގަންނަ ކަމަށާއި އެކަށީގެންވާ ފިޔަވަޅު އަޅާނެ ކަމަށް ވާހަކަ ދެއްކުމުގެ ގޮތުން ފާހަގަކުރައްވައިފިއެވެ.

ކުނިމަސައްކަތް ކުރުމުގެ ފަހުގެ އެންމެ ފަހުގެ ތަރައްޤީއަށް ވުޒާރާ އެންމެ ކަމަކީ 1 ޑިސެމްބަރ 2018 އިން ފެށިގެން ރަށުގެ ކުނި ނަގާނެ ޒޯން ކުރުމަށް ކަމަށާއި އޭގެ ފުރުޞަތު ކުނި ކޮންމެ ގޭގައި ބަލައިގަންނާނެ ކަމަށާއި އެގޮތުން ރައްޔިތުންގެ އެއްބާރުލުން ބޭނުންވާ ކަމަށް ދެންނެވިއެވެ. މިހާރު ރަށު ކުނި ނަގާ ޝަކުވާ ދީފައިވާ މައްސަލަތަކުގެ ސަބަބުން ބައެއް ފަރާތްތަކުން އުނދަގޫވާކަން ހަމަޖެހިފައިވާ ކަމަށާއި އެކަން ނިމުމަށް ފަހު އެކަން ކުރާނެ ކަމަށް ދެންނެވިއެވެ.

ކައުންސިލްގެ ފަރާތުން ރިޕޯޓް ފަރާތްތަކަށް ހުށަހެޅުމާ ގުޅޭގޮތުން މިފަހަރު ބިލްޑިންގެ ކަންކަމަށް ޒަރޫރީ ކުރިމަތިވާ ދިމާވެ ކަންތައްތައް ހުރި ގޮތުން ކުރިމަތިވާ ރިޕޯޓް ހުށަހެޅުމަށް ކުރެވޭނީ މިދުވަސްތަކުގައި ދިރާސާ ދިނުމަށް ބޭނުންވާ

ފަރާތްތަކުން ކައުންސިލް މެދުވެރިކޮށްގެން އެދީ ދެވޭން ކަމަށާއި ބޭނުންނަމަ ވަކިސާ ޖަމާވެސް ކުރެވޭން ކަމުގައި ދެންނެވިއެވެ. މިބައްދަލުވުމުގައި އާންމުންނަށް ސުވާލުކުރުމަށް ފުރުސަތު ދެއްވިއެވެ. މިބައްދަލުވުން ނިމުނީ 21:16 ގައެވެ.

ޔައުމިއްޔާ ލިޔުއްވީ:	އެޑްމިނިސްޓްރޭޓިވް އޮފިސަރ އާމިނަތު ވަފިއްޔާ	
ޔައުމިއްޔާ ޗެކްކުރެއްވީ	ޑިރެކްޓަރ ޢަބްދުﷲ ނަޢީމް	

ޙަސަން ޒަކީ
ކައުންސިލްގެ ރައީސް