



CONTENT FOR CONCEPT DESIGN OF WATER SUPPLY SYSTEM

1. Introduction

- 1.1. Island description
- 1.2. Project background
- 1.3. Maldives design standards and requirements
- 1.4. Project lifecycle
- 1.5. Scope of work
- 2. Existing water supply infrastructure and facilities
- 3. Protected areas, zones, and reserves (if applicable)
- 4. Design Population
- 5. Drinking water usage (conceptual data)
 - 5.1. Island demographics and population projections
 - 5.2. Design parameters
 - 5.3. Water and demand assessments
 - 5.4. Emergency Water storage
 - 5.5. Design horizons

6. Surveys

- 6.1. Socio-economical
- 6.2. Physical survey
- 6.3. Groundwater assessments and Geotechnical surveys

7. Stakeholder consultation with attached meeting minutes

8. Water supply and distribution system

- 8.1. Overview
- 8.2. Design approach
 - a) Water Distribution systems
 - 1. Grid Pattern
 - 2. Grid Pattern with loop
 - 3. Radial system
 - 4. Ring System
 - b) Number of Cut-off Zones
 - c) Number of Washout
 - d) Water storage and Tank capacity
 - e) Degassifier Capacity

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- 8.3. Methods of Water Distribution
 - a) Distribution by Gravity
 - b) Pumping without storage
 - c) Pumping with storage
- 8.4. Source of water

- 8.5. Sea water intake options
- 8.6. Pre-treatment of raw water
- 8.7. Rainwater harvesting, collection and storage
- 8.8. Desalination plant
- 8.9. Post treatment and water storage
- 8.10. Distribution network
- 8.11. Water Sampling points
- 8.12. Water connection arrangements
- 8.13. Water meter details
- 8.14. Brine outfall and anchoring details
- 8.15. Power requirements for System Operations
- 8.16. Water quality control strategy

9. Material standards (building and construction materials)

10. Power supply

- 10.1. Existing infrastructure
- 10.2. Backup power source
- 10.3. Power supply upgrade requirements (if applicable)
- 10.4. Power requirements for the water supply system
- 10.5. Renewable energy integration (100% of energy required for RO plant operations)

11. Land approvals for Water supply system

- 11.1. Land for Approval for Desalination Plant House, Storage
- 11.2. Land approval for Rainwater harvesting roof and collection systems
- 11.3. Land approvals for Material and equipment
- 11.4. Land approvals for Staff quarter (if applicable)

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12. Environment Friendly design considerations

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13. System Expansion options

- 13.1. Network expansion
- 13.2. Capacity expansion
- 13.3. Area of Expansion
- 14. Estimated operation and maintenance cost
- 15. Expected design deviations
- 16. Conclusions

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