

Request for proposal For Setting up of Water ATM for Safe Drinking Water including Designing, financing, constructing / installing, operating and maintaining of Water ATMs and vending of water from Water ATMs at Public Places through Public Private Partnership (PPP) at designated locations under “Smart City Mission” at Gandhinagar City.

## Volume II: Scope of Work



Gandhinagar Smart City Development Ltd,  
Gandhinagar, Gujarat

## 1. BACKGROUND

To meet the safe drinking water requirements at public places in Gandhinagar, potable water is proposed to be supplied to the consumer through his/her drinking bottle/ container or through paper cups (in selected public locations). This proposal will be essential for betterment of the urban environment as the usage of consumer's own bottle/ container would result in minimizing the high usage of plastic/ bottles for drinking water purposes. The water ATMs would also enable citizens/ visitors to access safe drinking water at various locations within Gandhinagar.

GSCDL hereby wishes to invite reputed firms (Applicants) to develop and install water ATMs for providing access to safe drinking water at public places including Operation and Maintenance of the ATMs for Ten Years.

**Locations of Water ATMs are at public places in Gandhinagar as per Annex-I.**

## 2. SCOPE OF WORK FOR BIDDER

The bidders will be responsible for:

- 2.1 Designing, financing, constructing / installing, operating and maintaining of Water ATMs and vending of water from Water ATMs at Public Places through Public Private Partnership (PPP) along with water storage tanks of Stainless Steel (minimum Grade 304) and submitting weekly test report of output water to the Engineer-in-Charge. The operation of the plant shall be with the Concessionaire for 10 years.
- 2.2. Making Power connection at Water ATMs and all electrical fittings up to the power meter; power connection & external electrification charges will be borne by the Concessionaire.
- 2.3. Quality control and monitoring systems to be incorporated at each ATM location as per the following:

EMBEDDED DEVICE FOR AUTOMATION FOR FOLLOWING PURPOSES

- a. **Quantitative Monitoring**
  - i. water dispensed in a day
  - ii. Water level in the tank
- b. **Water Quality Monitoring**
  - i. TDS level of water
  - ii. Temperature of water

- iii. Hardness
- iv. pH values of water
- c. Backend Wireless Communication**
  - i. GPRS Module for communication with backend web server
  - ii. GPS module for Kiosk Location information
- d. Data Logger**
  - i. Flash Memory bank for logging Sensor / dispensing data
  - ii. Relay Logged info to Server using communication channel
- e. Multi-Processor Integrated Control System with Interface cables/connectors for integration to provide for the following features:**
  - i. GPRS based TCP/IP connectivity with web based Server system
  - ii. GPS location system
  - iii. Flash based transaction data Logging
  - iv. Relay Unit for controlling water dispensing nozzles as per the location requirements
  - v. Interface for connecting coin-acceptors
  - vi. Interface for Card Reader
  - vii. Interface for Temperature Monitoring
  - viii. Interface for TDS Monitoring
  - ix. Interface for pH Monitoring
  - x. Interface for Ultra-Sonic Water Level Monitoring
  - xi. Controller for displaying water purity parameters on LCD/LED display monitor
  - xii. Media Controller For LFD 42" display Monitor
  - xiii. Built in power supply to connect with 48 v battery
- f. Sensors for**
  - i. Temperature Monitoring
  - ii. TDS Monitoring
  - iii. pH Monitoring
  - iv. Ultra-Sonic Water Level Monitoring
  - v. Water Dispensing from Three Nozzles through Coin Acceptor
  - vi. Support of 1 rupee coins
  - vii. Water Dispensing using NFC cards
  - viii. Cards to work for coin of Rs.1
  - ix. Support for Card 'Balance' Rechargeable
  - x. Sensors support for Monitoring Water Temperature, TDS, PH and Water Level in the tank

- xi. Display of Water purity parameters on LCD Display of 14" size
- xii. Display of Water rates on LCD Display of 14" size.
- xiii. Ability to backup data for 48 hours in-case of server/connectivity outage
- xiv. LED display on controller panel box to indicate System Status.
- xv. Uploading of Transactions and Water parameters data to Server over TCP/IP using GPRS
- xvi. Fall back to SMS in case GPRS connectivity to server is lost temporarily for reliability purpose, these sensors may be tested by GSCDL through an institution of repute like IIT.

**g. Other Features**

- i. System operation can be enabled/disabled from server
  - ii. Dispense quantities re-configurable from server
  - iii. Operator Log-in, log-out feature
  - iv. System to operate after successful operator login only.
  - v. All card Recharge transactions to be uploaded to server
  - vi. All water dispensing transactions to be uploaded to server
  - vii. All Water refill transactions to be uploaded to server
  - viii. Each dispensing unit shall be independently manageable from the server for coin or card operation of any value
  - ix. The bidder may describe other features of their system for better evaluation.
- 2.4. Disposal of wastewater to GSCDL sewerage system.
- 2.5. Making own arrangement during non availability of piped water. GSCDL is not liable to supply water to ATMs during such period, and nothing is payable by GSCDL to the Concessionaire during such periods. However, GSCDL may make arrangement of raw water from its bulk water supply reservoir/bore well for which Concessionaire has to make its own transportation arrangements.
- 2.6. The water before being dispensed to the public shall be treated with suitable filtration process to meet **IS 10500 : 2012** specification at all times.
- 2.7. Any other related works/activities as may be necessary for its successful operation.
- 2.8. ATM will be constructed as per the layout approved by the GSCDL.
- 2.9. Water ATM should be equipped with provision for chilled water (water with temperature around 15 degrees Celsius during summers.
- 2.10. The treatment scheme shall be as per Annexure 3 of IS 14543 and no other parameters of IS 14543 will apply. Method of sampling and testing for drinking water

shall be as per IS 10500-2012. The parameters for Drinking water shall comply with the requirements of IS 10500-2012.

- 2.11. The successful bidder shall provide in-built litter spaces in each water ATM.
- 2.12. Commercial advertisements will be allowed at any Water ATM unit.
- 2.13. LED signage showing Authority's and Water ATM of appropriate size shall be installed at every Water ATM unit.
- 2.14. Water withdraw facility must be easily operated by disable people and young age children. All the necessary arrangement to be done by bidder to make the system disable friendly.
- 2.15. Sufficient shelter facility must be provided by bidder around water ATM.
- 2.16. Specifications:
  - I. Each ATM should be equipped to dispense water of 250ml, 500ml & 1 litre of water. Water will be taken by customers in their own containers. The bidder may provide additional capacity for water dispenses.
  - II. The contractor shall design the machine with appropriate filling speed. The speed for filling bottles shall be different than filling of glasses.
  - III. Operational Time – 6 AM to 10 PM every day, this may be amended in consultation with GSCDL.
  - IV. ATM Unit Dimension: Cubical/cylindrical in shape with base area minimum up to 30 sq feet & maximum up to 225 sq feet or as approved by GSCDL.
  - V. The ATM shall have the provisions for Float valve for overflow control.

### 3. GENERAL REQUIREMENTS

- 3.1. The Concessionaires advised to analyse the potable water of requisite sample size on their own before quoting their rates in **Financial Bid, Volume III**. No extra claim will be entertained after the allotment of the work on this account.
- 3.2. The output water quality characteristics shall be as per **IS 10500 : 2012 Specifications of Drinking Water**.
- 3.3. The Concessionaire has to design supply, install, commission, and maintain the Water ATMs for Ten Years. The Concessionaire will maintain a **safe, clean and hygienic environment in and around the Water ATM**.
- 3.4. The Concessionaire should have their own testing facilities for water testing process. The Concessionaire should analyse the water sample for all parameters **as per IS 10500 : 2012** norms in a weekly manner or as and when required, from the Lab as approved by Authority. Concessionaire shall maintain proper record in this regard.

- The Attendant of Concessionaire shall be available at the Water ATM during the operation time. A LED/LCD digital screen of at least 14 inch diagonal showing 3 key parameters namely pH, TDS & temperature on a real time basis in an interval of 2-5 minutes.
- 3.5. The maintenance of pipelines etc. from point of connection onwards to the Water ATMs shall be responsibility of Concessionaire during the Contract Period.
- 3.6. Making connection for raw water:-  
The Concessionaire shall be responsible for executing works for making connection for Water ATMs from the source (Nearby existing water supply line) provided by the GSCDL/ GMC including cost of all material and labour etc. The cost of filtration process at each ATM, to ensure quality of water as per **IS 10500 : 2012** shall be the responsibility of the Concessionaire.
- 3.7. Disposal of waste generated at each Water ATM:-  
The disposal of waste generated at each ATM shall be disposed by the Concessionaire at his own cost to the nearest GSCDL/GMC system. In case of faulty performance severe penalties would be levied on the Concessionaire by GSCDL as applicable under existing laws related to littering in public areas.
- 3.8. The Concessionaire shall install the required equipment and maintain the same for a period of Ten Years from the date of commissioning of water ATMs, as per the conditions prescribed in this document, and in the time frame prescribed at his own cost.
- 3.9. After completion of Contract period the water ATMs will become the property of the GSCDL.
- 3.10. The Concessionaire shall perform all routine maintenance to ensure that all water ATMs shall remain in working condition.
- 3.11. The Concessionaire will depute duly trained Operators at each water ATM. The Concessionaire shall ensure routine inspection of the equipment by the equipment supplier.
- 3.12. The output water shall be distributed daily between 6:00 am to 10:00 pm on all days from water ATMs. However, GSCDL may increase or decrease the working hours, if so desired, in order to provide adequate water to the public. The Concessionaire shall have to provide all the services during the extended hours.
- 3.13. The Concessionaire will be responsible for maintaining the service levels standards otherwise penalty will be levied as per penalty clause.

- 3.14. The Concessionaire shall provide trained manpower to maintain the water ATMs to ensure the provision of quality services.
- 3.15. The Concessionaire shall provide and maintain the electrical and plumbing fittings of all types at the Water ATM in good working condition.
- 3.16. The Concessionaire shall provide LED boards for display of water quality parameters including:
- I. pH
  - II. Temperature
  - III. Water Level
  - IV. TDS
- 3.17. Concessionaire should ensure that all the Water ATMs (in a pocket) are working all the time and annual repair/maintenance etc. shall be carried out periodically at his own cost.
- 3.18. All expenses shall be borne by the Concessionaire.
- 3.19. To maintain premises clean, safe hygienic and risk free in and around the Water ATM (approx. Two meter radii) is the responsibility of Concessionaire. The Attendant of the Concessionaire shall ensure that all the waste shall be disposed off by the user within litterbin kept at each ATM.
- 3.20. Water & Electric supplied through connection by the GSCDL (if any), will be charged from Concessionaire on Commercial rates applicable from time to time.
- 3.21. Online information of daily report to GSCDL.
- 3.22. GSCDL has reserve the right to inspect any ATM at any time during the working hours.
- 3.23. GSCDL has right to take sample of water at any time.
- 3.24. During the non-availability of piped water from GSCDL, Concessionaire shall make his own arrangement for which GSCDL may make available water from its bulk supply reservoir on payment basis for which transportation arrangements will be made by the Concessionaire.
- 3.25. The water storage capacity at each ATM should be as approved by GSCDL which can be increased as per the requirement.
- 3.26. The ATW machine shall have access for blind, physically challenged or disabled persons and also have voice prompting system for the blind. The ATW machine should have a mechanism to give feedback regarding functioning of ATW. The feedback system should have a star rating system with 5 star for excellent service. There should be a touch screen system for feedback. A toll free number for handling

complaints should also be provided. The feedback receiving mechanism shall have alerts for non performance such as non availability of water, poor quality of water or other such deficiencies. The ATW shall have a voice response system in Gujarati & Hindi.

#### **4. OTHER REQUIREMENTS**

- 4.1. All the successful Concessionaires will have to ensure collection of the samples from the respective sites and meeting of the design criteria.
- 4.2. Bidders would need to submit their O&M expenditure information to the Engineer-in-Charge on a quarterly basis for the records of GSCDL.
- 4.3. Any deviation from the proposed design needs to be approved by the GSCDL.

#### **5. TESTING AND INSPECTION**

##### **5.1. Third Party inspection**

The charges for third party inspection, if any, would initially be borne by the Concessionaire.

##### **5.2. Site tests**

After erection at site, all components, equipment as described shall be tested to prove satisfactory performance and /or fulfillment of functional requirements without showing any sign of defect as individual equipment and as well as a system.

#### **6. DELIVERY/COMMISSIONING**

The commissioning of all the water ATMs is 3 months (90 days) from the date of the confirmed Letter of intent or handing over of site whichever is later.

#### **7. PENALTY IN CASE OF NON-PERFORMANCE**

In case of non-performance of more than 3 hours in a particular day between the operating hours, 1 day non-operation will be considered and penalty will be levied as per the table below.

In case the quality of water is not as per **IS 10500 : 2012** specification the ATM operation of dispensing water should be stopped immediately. GSCDL will impose a penalty of Rs 1000 for each such event at the Water ATM concerned.

Penalty in case of Non-operational beyond 3 hours in a day with respect to ATM shall be as follows:



- a) up to 4 days – Rs.2000/- per day/per ATM
- b) 4-7 days – Rs.3000/- per day/per ATM
- c) Above 7 days – Rs.5000/- per day/per ATM

Failure to report any information pertaining to non-operational/not desired quality of the ATM would invite additional penalty of Rs. 1,000/- per such case per day of delayed information.

In case of non-compliance of water quality with IS 10500 : 2012 standard and / or non-operation of ATM's beyond the stipulated days (maximum 30 days) or as approved by GSCDL the contract is liable for termination.

## 8. SCOPE OF GSCDL

GSCDL shall be responsible to provide:

- 8.1. GSCDL will provide nearest source of water (up to 30m); further arrangement including required plumbing works from source to Water ATMs shall be borne by the Concessionaire.
- 8.2. GSCDL will supply water for two hours in one day, Concessionaire shall make necessary store to supply minimum 2500 litres of treated water in one day, as per requirement underground storage facility shall be constructed by concessionaire.
- 8.3. For Mobile ATM's (Total 4 No's) GSCDL will make arrangement for RAW water.
- 8.4. GSCDL will charge for raw water supplied either for Fixed Water ATM or for Mobile ATM's. Raw water will be charged as 10 Rs per 1000 litres of water.
- 8.5. Single phase or three phase power supply as required at one point, further distribution including installation of electric meters for Water ATM's shall be in scope of Concessionaire. The Concessionaire must conduct site survey and consider that cost in the financial analysis.
- 8.6. The power consumption charges shall be charged on commercial rates basis.
- 8.7. Whenever GSCDL/GMC is not able to supply source of water, the successful bidder shall be able to make the arrangement for water through private supplies or from bulk supply from GMC reservoir/bore well on a payment basis for which transport arrangements will be made by the Concessionaire. GMC will provide necessary help for approval procedures.
- 8.8. GSCDL will not be responsible for any payments of raw water either piped water supply or from bulk water supply from private water suppliers or from GMC reservoir/bore well.

- 8.9. Payment against raw water to private water suppliers or to GMC piped water supply/reservoir/bore well shall be made directly to the concerned party/organisation by the concessionaire.

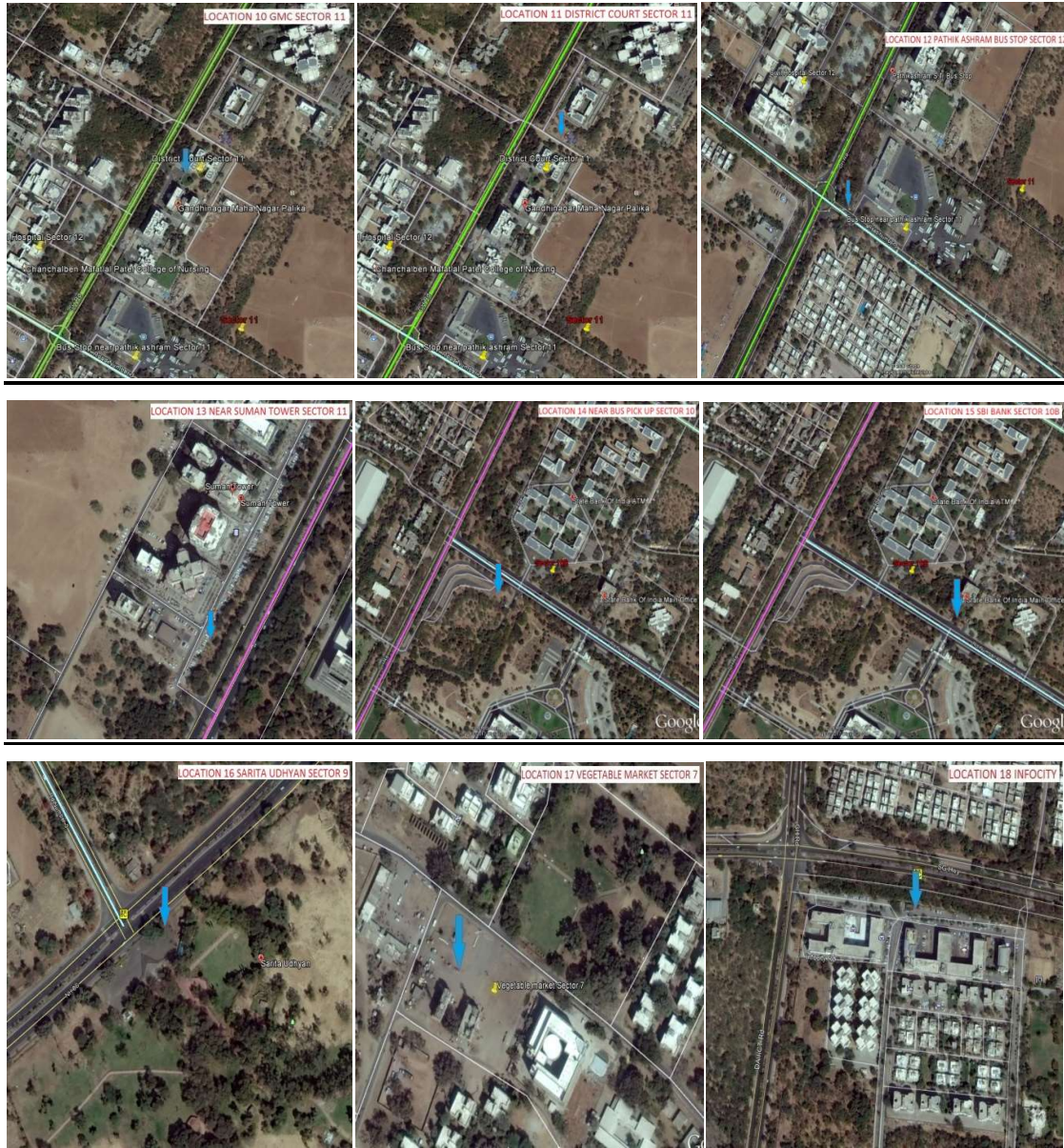
## 9. CONSTRUCTION REQUIREMENTS FOR WATER ATMs.

### 9.1. General

- I. The Concessionaire shall design ATM's in such a way that material considered or design and construction should only be of Stainless Steel (minimum Grade304) including storage.
- II. The Concessionaire shall design ATM's in such a way that, in case quality of incoming Water is not as per required standards, then plant/ ATM should be automatically shut down. The Concessionaire should bring matter to the knowledge of the Engineer-in-charge immediately and it should be sorted out within a day itself to make ATM back in operation and use.
- III. Specifications, Capacity, Shape and design of the ATM shall be provided by the Concessionaire for each and every location identified (Please refer to **Annex III** for illustrative design) before start of work and only after obtaining clearance from GSCDL, ATM's should be installed at respective 14 locations. Total 4 no's of Water ATM's shall be installed as mobile ATM's. The locations can be changed based on the land availability but it should be within 100 m of radius with identified locations. Mobile ATM location shall be decided as per the requirement with consultation with GSCDL.
- IV. Concessionaire shall design ATM's in such a way that, sufficient quantity for storage of water should be made at each and every ATM but not less than the minimum quantity as specified in Financial Bid, to avoid shut down of ATM's on account of no water situation, since present water supply in GSCDL area is intermittent.  
Provided that the Concessionaire shall ensure that the technology chosen is
  - a) Appropriate to the site and ground situation
  - b) Has a precedent for use in a project of similar nature and size
  - c) Is supported by the technology/service provider for design, supply, implementation and on-going maintenance
  - d) Addresses all issues of safety, including fire safety, operational safety, and environmental safety.

### Annex-1 PROPOSED 18 LOCATIONS OF WATER ATM'S





**LIST OF PUBLIC PLACES WHERE WATER ATMS ARE TO BE INSTALLED**

<b>LOCATION IDENTIFICATION FOR WATER ATM'S IN GANDHINAGAR</b>					
<b>Sr No</b>	<b>Location</b>	<b>Sector</b>	<b>Landmark</b>	<b>Tentative Coordinates</b>	
				<b>Easting</b>	<b>Northing</b>
1	Garden	28	Cape town Parlour	72°39'36.85"	23°14'58.27"
2	GIDC	28	GIDC Gate No 2 opp. Hyundai Showroom	72°39'07.38"	23°15'21.18"
3	Vegetable Market	24	Opp. Arya samaj building	72°38'47.02"	23°14'34.02"
4	City Square	22	Opp. Proposed City Square	72°39'28.79"	23°14'06.50"
5	Vegetable Market	21	Besides District Shopping Centre	72°39'59.46"	23°13'48.48"
6	Swaminarayan Aksardham	20	Parking Opp. To Temple	72°40'24.26"	23°13'59.96"
7	Food Court	16	Near Food Court	72°38'59.53"	23°13'56.57"
8	Patnagar Yogna Bhavan	16	Garden in front of Patnagar Yogna Bhavan	72°38'50.49"	23°13'39.14"
9	Civil Hospital	12	Sitting area opp. To sardar patel sahar bhavan	72°38'28.49"	23°13'10.24"
10	GMC	11	Sitting area near 2 Wheeler parking	72°38'37.58"	23°13'10.86"
11	District Court	11	Parking opp. To gate no 2 of District court	72°38'40.15"	23°13'13.39"
12	Pathik Asharam Bus stop	11	Near Entry Gate of Bus Stop	72°38'29.92"	23°12'58.59"
13	Near Suman Towers	11	Opp. To HP Petrol Pump	72°38'56.82"	23°12'54.44"
14	Vidhan Sabha North Gate	10	Near Bus Pickup	72°39'25.89"	23°13'26.48"
15	SBI Bank	10B	Outside of SBI bank opp. To Vidhan Sabha North Gate	72°39'34.74"	23°13'24.70"
16	Sarita Udhyan	9	Near Bore well	72°39'32.50"	23°12'12.89"
17	Vegetable Market	7	Opp. To Siddhivinayak Shop	72°38'31.25"	23°12'36.95"
18	Infocity	-	Near sulabh Infocity	72°38'00.13"	23°11'47.87"

**The concessioner can alter the location depend on the consumption and feasibility of construction within 100 m radius of proposed locations.**

## **ANNEX-II: SPECIFICATIONS FOR THE ATM UNIT AND DEVELOPMENT OF SITE**

### **1. General requirements**

- 1.1. General requirements and specifications for ATM Unit space requirement for accommodating system.
- 1.2. Maximum covered area of ATM Unit shall be 225 sq. Ft or as approved by the Authority
- 1.3. Indicative design for each Water ATM are annexed at however the final drawing design submitted by Concessionaire shall be as approved by the Authority
- 1.4. It is mandatory for every bidder to submit layout plan showing the above maximum area requirement along with their bids. Bids of the bidders not complying with this are liable to be rejected.
- 1.5. Water Storage Tank shall be placed inside the ATM Structure.

### **2. Units of ATMs:**

- 2.1. ATM Housing structure shall be of Stainless Steel (minimum Grade 304) with puffin between.
- 2.2. Thickness of Stainless Steel (Inner & Outer) should be minimum 0.5 mm duly filled with puff of 40 to 50 mm thickness. The outer design should aesthetically gel with the surroundings.
- 2.3. Ensure the structural stability and safety of the ATMs.
- 2.4. The structure should be appropriate to protect the whole ATM system, including its equipment and accessories in all weather conditions and it should withstand the extreme climatic variations
- 2.5. The roof material of canopy should be PP reinforced UV stabilized Poly Vinyl/FRP covering.
- 2.6. The total floor area and canopy area of the ATM should be covered with Good quality vitrified/anti-skid tiles as approved by Authority.
- 2.7. The ATM should be provided with a LED sign board indicating the Authority's logo and Water ATM as per the design approved by Authority.

**ANNEX-III: INDICATIVE DESIGN OF WATER ATMs**

