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| --- | --- | --- | --- | --- |
| Package Name | Sl no | Item Required | Implemented by | Estimated cost in million US dollars |
| Package-1 | 1 | Central IT Infrastructure (Active & Passive) | DWSNIP | 5 |
|  | 2 | Central Control Room with Bazel Less Video Wall | DWSNIP | 2 |
|  | 3 | 10 Zonal IT Infrastructure (Active & Passive) | DWSNIP | 2 |
|  | 4 | 10 Zonal Control Room with Bazel Less Video Wall | DWSNIP | 3 |
| Package-2 | 1 | Central Server and Virtualization, Storage and Backup, 10 Zonal Server (2) and Virtualization | DWSNIP | 3 |
| Package-3 | 1 | Network and Firewall (HQ & Zonal) | DWSNIP | 1 |
|  | 2 | Core Structured Cabling (HQ) | DWSNIP | 0.5 |
| Package-4 |  | Data and Internet Bandwidth (5 Yrs) | DWSNIP | 0.5 |
| Package-5 | 1 | Central Unified Distributed SCADA System and Implementation | DWSNIP | 4 |
|  | 2 | Web GIS Software, Customization & Reporting with data modeling. | DWSNIP | 1.5 |
| Package-6 | 1 | Billing software and interfacing with Financial management system (5Yrs) | DSIP | 5.1 |
|  | 2 | Financial Management software (5Yrs) (Modules: Accounts, General Ledger, Intercompany Transaction, Fixed Asset, Warehouse, Procurement, Payroll with facility management & HR) | DSIP | 5.1 |
| Package-7 | 1 | SCADS RTU/PLC, Field Devices (Smart flow Meter, Smart Pressure Sensors Sensor, Leveling switch and Sensor, Water Quality Sensor & Energy Meter) & Electrical Components. | EWSP, DWSNIP | 4.6 |
| Package-8 | 1 | Smart Digital Water Meter (4G) for Household | DWSNIP | 1 |
|  | 2 | MDM & Central Firmware Update Platform | DWSNIP | 1.2 |

SCADA development works planned for the future.

DSIP – Dhaka Sanitation Improvement Project

DWSNIP – Dhaka Water Supply Network Improvement Project

EWSP – Emergency Water Supply Project

Source of fund is – Asian Development Bank, Government of Bangladesh and Dhaka WASA.

Hardwire systems may also be supplemented with wireless systems on a per unit level as new operations come on-line. For cellular systems reliability and availability of service should be taken in to consideration.

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| --- | --- | --- |
| Hardwired | | |
|  | Advantages | Disadvantages |
| Telephone Line | May already exist to site(s). Very mature technology | May be monthly lease charge(s). Consider who is responsible for fixing problems on the line and If it is a third party, what is their track record for repair responses. Typically slow and limited data transmission. |
| Ethernet | Good application for local site, such as a water treatment plant. | Limited application range, Cannot be utilized over distances greater than 1000’ without boosting signal. Can be prone to lightning damage without significant protection measures. |
| Fiber Optic | Best direct connection with the fastest data transmission. Large bandwidth allows for video applications (i.e security cameras) to part of the SCADA system. | May be significant monthly lease charges(s). If the fiber does not already exist, the capital costs for the initial project could have a very high. Fiber is also typically very expensive to repair. |
| Coaxial Cable | May already exist to the site(s). Very mature technology. Better data bandwidth than a telephone line. | May be monthly lease charges(s). Depending on the setting, this type of hardwire is less common than a telephone line. |
| Wireless | | |
|  | Advantages | Disadvantages |
| UHF and VHF Voice Radio | Generally very low maintenance and can usually be repaired by a local radio shop. | FCC license required, along with periodic fees and renewals. |
| 900Mhz spread spectrum and 2.4Ghz Data Radio | No FCC license necessary and transmit data at a higher rate. | Requires line of sight for best application. Some 900Mhz require FCC License. |
| Wi-Fi | Potentially very good option for a local site application, Such as a water treatment plant. | Very limited ranges (typically 300 ft or less), and the signal can be significantly diminished by structures. Wi-Fi requires careful security assessment. |
| Microwave | Potentially very good option for linking sites with good elevation, such as water towers. | Requires expert assistance with installation. Some frequencies require FCC licensing. |
| Cellular | Quickly gaining in popularity, especially as pricing continues to decline and for areas that may not have strong radio signals or line-of-sight conditions. | The area for coverage should have good, consistent cellular coverage. |
| Satellite | Good application where there is no, or unreliable cell coverage, such as extreme terrains, very remote location, etc. | May become a viable option in the future, but is currently not cost-effective except in the most extreme cases. |

Old complain resolving steps

Consumers initiate a call

DWASA staff answers the phone call

Staff note down problem with relevant information on complain register book

Other problem

Advise &/or Terminate the call

Field staff or SAW/AE or EE checks complain register for unsolved problems

Action may be taken by appropriate person assigned to that task.

Organogram of Dhaka WASA

**Dhaka WASA Board**

**Managing Director**

Deputy Managing Director

(RP&D)

Deputy Managing Director

(Finance)

Deputy Managing Director

(Admin)

Deputy Managing Director

(O&M)

Secretary’s Office

Additional Chief Engineer

(RP&D)

Chief Engineer (O&M)

Commercial Manager

MIS & Billing Department

Planning & Development Circle

MODS Circle-I

Accounts Department

Training Center

MODS Circle-II

Revenue Department

Sewer Rehabilitation & Development Circle

Land Department

Drainage (O&M) Circle

Water Rehabilitation & Development Circle

RPE&M Circle

Drainage R&D Circle

Procurement & Const. (Civil) Circle

GIS Department

Water & Sewer T P Circle

International Audit Division

SMWC Circle

Planning, Monitoring &

Evaluation Dept.

Public Information Division

SMS Templates:

|  |  |
| --- | --- |
| **SMS to SAE** | **SMS to AE** |
| **Acknowledgment Alert SMS Template:** | **Acknowledgement Notify SMS Template:** |
| Plz ack tkt[\_\_tktnum\_\_] from  [\_\_callername\_\_]. C: [\_\_callernum\_\_]  Add: [\_\_calleraddress\_\_]  Summ: [\_\_ticketsummary\_\_]  Dial: [\_\_magic number\_\_] | Plz ack tkt[\_\_tktnum\_\_] from  [\_\_callername\_\_]. C: [\_\_callernum\_\_]  Add: [\_\_calleraddress\_\_]  Summ: [\_\_ticketsummary\_\_]  Assig: [\_\_magic number\_\_] |

|  |  |
| --- | --- |
| **SAE** | **AE** |
| **Res Alert SMS Template:** | **Res Notify SMS Template:** |
| Thnx for ack tkt[\_\_tktnum\_\_] for  [\_\_callername\_\_]  Summ: [\_\_ticketsummary\_\_]  Stg: [\_\_tktseq\_\_]  Nxt SMS: aftr 24hrs  Consult AE for update | Tkt[\_\_tktnum\_\_] was acknlgd for  [\_\_callername\_\_]  by [\_\_assignee\_\_]  Stg: [\_\_tktseq\_\_]  Nxt SMS: aftr 24hrs  Dial [\_\_magic number\_\_]  \_\_] if completted |

A Complaint Life of WATER & SEWRAGE Problem (Flow Chart)

Consumer Initiate a Call

Call Center agent answer the phone call

How can we help?

Other Problem

Problem with Water & Sewerage

The agent note down the problem into a computer system with brief description and then issue a ticket number assigning to it.

The computer system then send two alert SMS to the concern SAE and AE assigned to the location of the problem.

The SAE will have 2 hours to acknowledge by dialing the magic number in the SMS. The AE will receive the notify SMS containing the assigned SAE name.

Problem acknowledged in two hours

Yes No

The computer system will generate an alert SMS and Send to AE to acknowledge the problem. AE will get 30 minutes to acknowledge.

Problem acknowledged in one hour.

The Computer System will generate two resolution SMS, One to SAE Requesting to update AE after solving the problem. The other SMS will be sent to AE with a magic number which he requires to dial once SAE finish the work.

The computer system will generate another alert SMS and send to SAE to acknowledge the problem. This time SAE will get one hour to acknowledge the problem. This time SAE will get one hour to acknowledge. A notify SMS will go to AE.

Yes

NO

Yes

The time computer system will generate a notify SMS and sent EE.

Problem acknowledged in 30 minutes.

NO