Rural Development & Panchayat Raj Department

Rural Drinking Water and Sanitation Department

OPERATION & MAINTENANCE POLICY

FOR RURAL WATER SUPPLY SECTOR IN KARNATAKA

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Abbreviations

Abbreviation	Explanation
A/A	Administrative Approval
ACD	Actual Completion Date
AE	Assistant Engineer
AEE	Assistant Executive Engineer
ASHA	Accredited Social Health Activist
BCC	Behaviour Change Communication
BIS	Bureau of Indian Standards
BOD	Biological Oxygen Demand
BOQ	Bill of Quantities
BWM	Bulk Water Meter
BWSSB	Bangalore Water Supply & Sewerage Board
CE	Chief Engineer
CEO	Chief Executive Officer
CD	Date of Commencement or Commencement Date
CM	Chief Minister
COD	Commercial Operation Date
COD	Chemical Oxygen Demand
CSS	Civil Standard Specification
CTC	Commercial Tap Connections
CWR	Clear Water Reservoir
DBOT	Design, Build, Operate and Transfer
DBT	Design, Build and Transfer
DCB	Demand Collection Balance
DD	Delay Damages
DDT	Dichlorodiphenyltrichloroethane
DLP	Defect Liability Period
DOC	Date of Commissioning
DOW	Description of Work
DPR	Detailed Project Report
E. Coli	Escherichia Coli
EE	Executive Engineer
EIRL	Extra Item Rate List
EIS	Executive Information System
EOI	Expression of Interest
EOT	Extension of Time
EOT	Electric Overhead Traveling Crane
EPC	Engineering, Procurement and Construction
ESCOM	Electricity Supply Company
ELSR	Elevated Level Service / Storage Reservoir
FD	Finance Department
FHTC	Functional Household Tap Connection
FTK	Field Test Kits
GIS	Geographic Information System

GLSR	Ground Level Service / Storage Reservoir
GO	Government Order
GP	Gram Panchayat
GRM	Grievance Redressal Mechanism
HCH	Hexachlorocyclohexane
HH/HHs	Household/Households
HMI	Human Machine Interface
HQ	Head Quarters
HR	Human Resource
HSW	Health, Safety and Welfare
HTC	Household Tap Connections
ICD	Intended Completion Date
IEC	Information Education Communication
ITT	Invitation to Tender
IMIS	Integrated Management Information System
INR	Indian Rupee
IPS	Intermediate Pumping Station
IR	Impounding Reservoir
IS	Indian Standards
ISA	Implementation Support Agency
ITC	Industrial Tap Connections
IVDN	In-Village Distribution Network
JE	Junior Engineer
JJM	Jal Jeevan Mission
JV	Joint Venture
KL	Kilo Litre
KPI	Key performance indicator
KGSPRA	Karnataka Gram Swaraj and Panchayat Raj Act 1993
KSWP	Karnataka State Water Policy, 2002, 2019 (Draft)
KUIDFC	Karnataka Urban Infrastructure Development & Finance Corporation
KUWS&DB	Karnataka Urban Water Supply & Drainage Board
L	Litre
LD	Liquidated Damage
LPCD	Liters Per Capita per Day
LS	Lifting Station
M.Sc.	Master of Science
MBR	Master Balancing Reservoir
MCC	Motor Control Centre
mg/l	Milligram per liter
µg/l	Microgram per liter
MIS	Management Information System
MLD	Million Liters per Day
MVS	Multi Village Scheme
MWS	Mini Water supply Scheme

NABL	National Accreditation Board for Testing and Calibration Laboratories
NRDWP	National Rural Drinking Water Programme
NREGS	National Rural Employment Guarantee Scheme
NRW	Non-Revenue Water
NTU	Nephelometric Turbidity Units
NWP	National Water Policy
O&M	Operation and Maintenance
OHT	Over Head Tank
PAC	Powdered Activated Carbon
PD	Planning Department
PDO	Panchayat Development Officer
pH	Potential of Hydrogen/ Power of Hydrogen
PLC	Programmable Logic Controller
PMC	Project Management Consultant
PMU	Project Management Unit
POW	Programme of Work
PQQ	Pre-Qualification Questionnaire
PRI	Panchayat Raj Institutions
PSP	Public Stand Post
RDPRD	Rural Development and Panchayat Raj Department
RDWSD	Rural Drinking Water and Sanitation Department
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Quotation
RFQ	Request for Qualification
Rs.	Rupee
RWSS	Rural Water Supply Scheme
SC	Scheduled Caste
SCADA	Supervisory Control and Data Acquisition
SHG	Self Help Groups in rural areas comprising women under National Literacy Mission
SOP	Standard Operating Procedures
SOR	Schedule of Rates
SSLC	Secondary School Leaving Certificate
ST	Scheduled Tribe
SVS	Single Village Scheme
TP	Taluk Panchayat
T/S	Technical Sanction
ToT	Training of Trainers
TPI	Third Party Inspection
TP	Tender Premium
ULB	Urban Local Body
UPS	Uninterrupted Power Supply
UWU	Urban Water Utility

VO	Variation Order
VT	Vertical Turbine
VWSC	Village Water and Sanitation Committee
WPP	Water Purification Plant
WQT	Water Quality Testing
WTP	Water Treatment Plant
WO	Water Operator
ZBR	Zonal Balancing Reservoir
ZP	Zilla Panchayat

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DEFINITION OF TERMS[1] USED IN THE O&M POLICY

1 **Actual Completion Date:** The calendar date on which work actually ended.

2 **Administrative Approval:** Formal approval by the competent administrative authority in a department to execute certain specified works or project or scheme at a stated amount.

3 **Bill of Quantities:** Bill of Quantities is a detailed statement of different items of work, labour and materials, required for a proposed work and included in the tender document.

4 **Bulk Water Meter (BWM):** A bulk water meter is a scientific instrument for accurate measurement of quantity of water.

5 **"Capex** "refers to capital expenditure, and is the cost of developing or providing non-consumable parts for the water supply system.

6 **"Commencement Date"** means the date notified by the Owner after successful verification and approval of a trial run of a water supply scheme.

7 **Consumer Tap Connection (CTC):** CTC means consumer tap connection within the Gram Panchayat limits other than household tap connections, and includes water supply connections to institutions, commercial and industrial units.

8 **Date of Commissioning "DOC"** means the date specified by the contractor as the date on which a Plant / Water supply scheme is ready to commence commercial operations after successful completion of the trial run.

9 **Defect Liability Period (DLP):** A defect liability period is a set period of time after the construction of a project during which a contractor is obliged to rectify all defects of construction or implementation at his own cost.

10 **District Coordination Committee (DCC):** DCC is a district-level committee chaired by the Deputy Commissioner, consisting of CEO of ZP and EE of RDWSD. The CEO is the convenor of the committee. The key function of the committee is to resolve issues relating to operation and maintenance of MVS in the district. The DCC will be constituted after the notification of O&M Policy.

11 **Down time in operations:** Down time in operations refers to the lack of pumping and distribution of water, due to reasons such as lack of power supply, low yield of water in the source, defunct pumping machinery, operator error, poor maintenance and lack of finances for operation and maintenance.

12 **Expression of Interest (EOI):** EOI is a notification issued by an agency seeking participation from contractors or service providers to carry out a specific project and will include preliminary information regarding project details and eligibility criteria.

13 **Extension of Time (EOT):** Extension of Time is granting of additional time to the contractor for completing a project or work.

14 **Extra Items Rate List (EIRL):** The list of items and rates not originally included in the tender but required to be executed as per actual requirements at the site. This term is referred to as variations in a Standard Tender Document.

[1]Terms defined here explains the usage in context of water supply. For detailed explanations, terms shall be appropriately referred.

15 **Financial Sustainability:** Financial sustainability refers to the capacity of a Gram Panchayat to raise income from the distribution of water to cover expenses and generate a surplus to meet contingencies.

16 **Functional Household Tap Connection (FHTC):** Functional Household Tap Connection means a household-level tap connection through which 55 lpcd of treated water is provided regularly at the household level.

17 **Governance:** Governance is the way rules, norms, and actions are structured, sustained, and regulated for operating and maintaining a rural water supply scheme.

18 **Incremental Block Tariff:** Increasing block tariffs (IBTs), refers to a method of water pricing in which higher rates are charged with increasing water consumption.

19 **Information, Education Communication (IEC):** Information, Education and Communication, abbreviated as IEC, is a strategy to spread awareness through communication channels to a target audience to achieve a desired positive result. The desired positive results in the context of O&M policy may be summarized as 100% FHTCs, habitual payment of O&M tariff and disciplined use of treated water together with metered water consumption at the consumer levels.

20 **Institutional arrangements:** Institutional arrangements are generally understood as a set of agreements on the division of respective responsibilities of agencies, departments, and or project teams.

21 **Intermediate Payment:** This is a term applied to a disbursement of any kind on a running account, not being the final payment. It includes an "Advance Payment", a "Secured advance" and an "on account payment" (Other than the final payment on a running account), or a combination of these.

22 **Inter-personal Communication** is an exchange of information between two or more people. It is used as part of the IEC method with the purpose of raising awareness, and bringing about social or behavioral change.

23 **In-Village Distribution Network (IVDN):** IVDN refers to the In-Village Distribution Network for water supply within a GP/Village receiving potable water supply from a MVS.

24 **Intended Completion Date:** The date on which a project will be completed, as agreed in a formal agreement.

25 **Invitation to Tender (IIT):** A tender notice is an invitation extended to contractors for making offers. An invitation for tender shall be clear, specific and contain all the details of the terms, conditions, nature of the work required to be done, the location, drawings, specifications and other documents related to the work.

26 **Jal Jeevan Mission:** Jal Jeevan Mission is a Government of India program, envisioned to provide safe and adequate drinking water through individual household tap connections to all households in rural India.

27 **Joint Venture (JV):** A joint venture is a business arrangement in which two or more firms /parties agree to pool their resources for the purpose of accomplishing a specific task.

28 **Lifeline water** refers to the quantity of water that is sufficient to cover the basic water needs of a household.

29 **Liquidated Damages:** It is a sum stated and agreed to be paid as damages between the parties to a contract, in the event of default by either.

30 **Maintenance:** Maintenance is the planned technical activity, taken either in response to a breakdown, or periodical activities in a preventive mode to keep the water supply system operational.

31 **Management Information System (MIS)** is a computer-based information system that processes data into information and is used for making decisions and planning.

32 **Mini Water supply Scheme (MWS):** Mini Water Schemes are rural drinking water supply schemes, drawing water from a local source, either groundwater or surface source, and supplying water to a village community, through a cistern with a specific number of public stand posts.

33 **Mobilization advance:** An advance payment made to the contractor upfront of project execution.

34 **Multi Village Scheme (MVS):** Multi Village Schemes are rural drinking water supply schemes, drawing water from sustainable sources and supplying potable water to a large community distributed in multiple villages, appropriately employing simple to complex water supply infrastructure, including treatment systems.

35 **OHT - Village level Over Head Tank** is a small storage reservoir for supplying water to the village community

36 **Operation:** Operation refers to the routine activities and procedures that are implemented to ensure that the water supply system is working efficiently.

37 **"Operation and Maintenance Contract"** refers to the clauses and provisions contained in the Agreement that relate to Operation and Maintenance of the Water Supply System.

38 **Operation and Maintenance Pentagon:** 'Operation and Maintenance Pentagon' is a term similar to Asset Pentagon (natural, physical, human, finance and social capitals). O&M Pentagon thus refers to the essential capital base required to operate and maintain a rural water supply scheme and will include natural (Water), physical (Infrastructure built for the water supply scheme), finance, human and governance cum institutional capitals. The current O&M Policy is developed around the O&M Pentagon.

39 **"Opex"** refers to operational expenditure and is an ongoing cost for running a water supply service or system.

40 **"Owner"** means the owner of assets with regard to the Rural Water Supply Schemes which in the case of Multi Village Schemes is the RDWSD and in the case of Single Village Schemes; the owner is the Gram Panchayat.

41 **Panchayati Raj Institution (PRI):** Panchayati Raj is a system of rural local self-government in India, established across states of India by the acts of the state legislature to build democracy at the grassroots level. PRIs have a constitutional mandate through the 73rd Constitutional Amendment Act of 1992. Karnataka has enacted Gram Swaraj and Panchayat Raj Act 1993 and PRIs in the context of the policy means Panchayat Raj Institutions established in the State of Karnataka by GSPRA 1993.

42 **Grievance Redressal Mechanism** introduced at the State level in Karnataka at the RDWSD, where Gram Panchayats or Individual Consumers of water connections can raise a complaint/ grievance about the functioning of the water supply scheme or service.

43 **Policy:** A policy is a statement of intent and is implemented as a procedure or protocol by the Government of Karnataka.

44 **Potability:** Potable water is defined as water that is suitable for human consumption, meeting physical, chemical, and bacteriological standards for drinking or cooking as per BIS 10500 (2012) in the context of India.

45 **Program of Work:** Program of work is a work plan prepared by the contractor in the execution of a project.

46 **Punch List:** Punch List is a list of items/activities/work which are incomplete, prepared in connection with the inspection of the Project by the Owner's Representative or Architect in connection with Substantial Completion of the Work or a portion of the Work, which the Owner's Representative or Architect has designated as remaining to be performed, completed or corrected before the Work will be accepted by the Owner.

47 **Schedule of Rates:** Is the rate fixed by the Department for each item duly approved by the competent authority. These rates form the basis for the preparation of detailed project reports and estimates.

48 **Single Village Schemes (SVS):** Single Village Schemes are rural drinking water supply schemes, drawing water from a local source, either groundwater or surface source, and supplying water to a village community, appropriately establishing and employing simple water supply infrastructure.

49 **Social Capital:** Social capital is the total of trust, cooperation, interpersonal relationships in a society and a shared sense of identity, understanding, norms, values and reciprocity.

50 **Self-Help Group (SHG):** is a community-based organizations with 10-25 members formed by local residents, often with support from NGOs or government agencies. These groups are usually formed in communities to empower members, especially women, economically and socially. Some SHGs work to advocate for social change, environmental causes or support the need of the community. VWSC is also has a one representation from an active SHG there by playing the role in integrated rural water management.

51 **Specification:** Specification means a particular and detailed list or account of an item or of work to be done or of goods to be supplied in carrying out a contract. 'Specification' is provided in a document, which is, as a rule, prepared to accompany a set of drawings, to explain, the materials to be used and the method of construction to be carried out.

52 **Strategy:** Strategy is a perspective plan consisting of vision and direction. Strategy in the context of the O&M policy means a clear understanding of the rural water supply sector, a clear sense of where the sector should reach, an assessment of obstacles and risks standing between the present and the vision, a plan about how to approach the challenge and risks and a specific course of action to follow to achieve the vision.

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[2]Sustainability is the capacity to endure in a relatively ongoing way across various domains of life. In the 21st century, it refers generally to the capacity for Earth's biosphere and human civilization to co-exist. (https://en.wikipedia.org/wiki/Sustainability). Sustainable development is defined as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs. (Our Common Future)

[3]KTPP act amended ref. December 2020

53 Sustainability : Sustainability is a condition where a resource, a service, or an institution is kept at a certain level, capable of being continued. From a resource perspective, sustainability is a condition that "meets the needs of the present without compromising the ability of future generations to meet their own needs. From an institutional perspective, sustainability denotes the continued and steady sustenance of an institution, while from a service perspective, sustainable service is a level of service that is steady and continues over a design period, which holds good in the case of a water supply service.

54 Technical support by RDWSD: Technical support refers to the professional and technical support and advice provided by RDWSD to PRIs in Karnataka with regard to the operation and maintenance of rural water supply schemes.

55 Technical Sanction: It is the order of the competent authority sanctioning an estimate of the cost of a work of construction or repair proposed to be carried out, as per delegation of powers. Technical Sanction follows Administrative Approval or Administrative Sanction.

56 Tender: 'Tender' means the formal offer made for the supply of goods or services or construction works in response to an invitation for tender published in the Karnataka Public Procurement Portal .

57 Tender Document: 'Tender Document' means a set of documents including in electronic form detailing the schedule of works, calendar of events, requirement of goods and services, technical specifications, procurement criteria and such other particulars, as may be prescribed for evaluation and comparison of tenders.

58 Timing of water supply; Timing of water supply refers to the time of distribution of water at the household level in Gram Panchayats.

59 Village Water and Sanitation Committee (VWSC): VWSC is a village-level committee, constituted by the Gram Panchayat at the Village level or GP level to coordinate, manage, operate and maintain rural water supply schemes and sanitation.

60 Variation: Variation is an instruction given by the Employer which varies the scope of Work either due to EIRL or Work slip.

61 Variation Order: A variation order is issued by the Employer to Contractor, as an instruction to vary the scope of the contracted work. Variations may be changes – either increases or reductions – in the amount, type, quality, execution or schedule of the work.

62 Water operator: A water operator is a local person appointed by Gram Panchayats in Karnataka to operate, maintain and support the management of water supply systems in villages/habitations. Water operator is also commonly referred as neeruganti. In a few villages, women operate, maintain, and support the management of water supply systems and they are known as Water-woman.

63 Water Tariff: Water tariff is a price assigned to water supplied by a public utility, a PRI or a community water supply institution, measured in lump sum or units such as kilo litre which when notified needs to be collected.

64 "Water Supply System" means the piped water supply system in the water supply area from the intake and up to the household level, including the meters installed at the individual customer end.

65 **Work slip:** Work slip is required to be prepared for submission to the Superintending Engineer or Chief Engineer when the excess over the sanctioned estimate due to a change in design or other cause is beyond the powers of the Divisional officer to pass finally. The Divisional officer is bound to report in the form of a work slip to the above officers describing the nature and cause of probable excess for seeking their approval before executing such excess quantity or in case of excess expenditure. Work slips should be prepared when 50% of the expenditure is incurred and there is a likelihood of excess beyond the approval of respective officers.

66 **Billing Month:** Billing month refers to the month in which water has been consumed for which a demand bill would be raised against water consumption.

67 **Payment month:** Payment month refers to the immediate subsequent month to the billing month, in which the consumer has to pay water charges as per bills raised.

68 **Reconciliation month:** Reconciliation month refers to the immediate subsequent month to the payment month, in which information regarding payment made by the consumer has to be intimated to the RDWSD/ operator by GP/ULB.

69 **Viability Gap Funding (VGF):** Viability Gap Funding means a grant to support projects that are economically justified but not financially viable.

Preamble

Operation and Maintenance Policy for assets created under water supply schemes including JJM in rural Karnataka provides policy statements, under five components collectively referred to as the O&M pentagon:

(a) water source,
(b) water infrastructure,
(c) finance,
(d) human resources and
(e) governance cum institutional components

This document summarizes the operation and maintenance policy statements, strategic actions to operationalize the policies, besides providing formats, notes and narrations to elaborate the strategic operationalization.

'Part A' of the document deals with Multi Village Water Supply Schemes (MVS),

'Part B' deals with Single Village Schemes (SVS) and In-Village Distribution Network (IVDN) including WPPs.

A comprehensive bylaw has been annexed to the policy and will govern the management and governance of O&M at the GP level for SVS and IVDN including WPPs. Detailed narrations supplement the O&M policy in an Operation and Maintenance Manual. (will published separately). The goal of the O&M policy is, 'sustainable and inclusive service delivery in rural drinking water supply for every household in rural Karnataka'.

The objective of the policy is to improve institutional capacity and human resources of RDWSD, GPs and VWSCs to provide efficient, effective and sustainable drinking water supply services and to clarify institutional roles and responsibilities of key sector stakeholders.

CHAPTER I – INTRODUCTION

Rural water supply sector is of paramount importance to the State of Karnataka, as the rural population accounts for approximately 60% of the State's population. The rural water sector assumes enhanced significance in the context of recurring droughts, floods, climate change, decline in groundwater table and lowering per capita availability of water. A paradigm shift has become inevitable to move from an infrastructure-based water supply approach to improving service levels, strengthening decentralized institutions, governance, policy initiatives, and regulatory mechanisms. Groundwater-based small rural water supply schemes are becoming defunct or seasonal due to insufficient yield. The Government of Karnataka therefore has taken a policy decision to opt for reliable surface water source-based schemes, serving multiple villages. The launch of Jal Jeevan Mission by Government of India provides an opportunity to cover all households of rural Karnataka with Functional Household Tap Connection (FHTC) by 2024. As the investment in Multi Village Schemes has increased manifold in the last 6 years, it has also become imperative to introduce sectoral reforms, policies focused on cost-recovery, and strengthening PRIs to move into professional rural water supply management. Yet another significant sectoral intervention by GoK was the formation of the Rural Drinking Water and Sanitation Department (RDWSD) in 2014, with an exclusive focus on rural water supply and sanitation sector.

The Government of Karnataka through Rural Drinking Water and Sanitation Department (RDWSD) has taken several initiatives in planning and implementing multi-village schemes across the state, with substantial investment towards creating assets for bulk water supply. Such investments in MVSs are towards the drawing of water from distant perennial surface sources, treating it to make potable and delivering the treated water to village-level OHTs. In addition to the capital investment, Government of Karnataka incurs recurring costs towards the operation and maintenance of MVSs. To run multi-Village water supply schemes and facilitate effective service levels for the end consumers, an efficient O&M arrangement is required. Currently, GPs do not share the cost of water supplied from MVSs and the entire O&M cost is met by RDWSD, despite the O&M policy of 2013 and subsequent GO issued in 2014 towards cost recovery. Further, operational guidelines for part cost recovery for the supply of bulk water from MVSs have been issued vide Government Order No: RDW&SD/121/CE/Technical/2020, dated 30.12.2020. It is important to implement the O&M policy comprehensively and recover O&M cost on account of bulk water supply for sustainable operations of these schemes in the long run. MVSs completed and ongoing are required to install bulk water meters to measure the volume of water supplied to each village/ULB. RDWSD, GoK is bringing out a modified O&M policy in an attempt to improve service delivery, sectoral governance and cost recovery. This O&M policy will apply to the entire rural water sector of Karnataka including Multi Village Schemes, Single Village Schemes and In-Village Distribution Networks including WPPs, that are under planning, implementation and operations.

1.1 GOAL OF THE POLICY

Create enduring Operation and Maintenance (O&M) policy for Karnataka's rural water supply sector, securing sustainable water resources, optimizing wear and tear management, ensuring constant and fair water access for all communities, outlining transparent O&M procedures, and assigning clear responsibilities to individuals and organizations and to safeguarding the assets so that it continuously provides reliable services through its expected lifespan. The overall goal is to enhance the functionality, reliability, and sustainability of rural water supply systems, fostering a resilient and inclusive water infrastructure for Karnataka's rural communities.

1.2 OBJECTIVES OF O&M POLICY

a. To provide guidance on sustainable water supply services in terms of availability, accessibility, and affordability, adopting a decentralized approach involving PRIs and VWSCs.

b. To improve institutional capacity and human resources of RDWSD, GPs and VWSCs to provide efficient, effective and sustainable drinking water supply services and to clarify institutional, technical, financial roles and responsibilities of RDWSD, GP, VWSC and Operators for operation, maintenance and management of rural water supply schemes and assets in the State.

c. To provide guidance on technical, institutional, and financial sustainability of rural water supply schemes and to facilitate cost recovery at the GP and community level from operations of MVS, SVS and IVDN including WPPs in the State.

1.3 SCOPE OF THE POLICY

The Operation and Maintenance Policy will apply to the entire rural areas of the State of Karnataka in terms of geographical area. The policy will govern water supply arrangements at the bulk supply level/IVDN including WPPS; from RDWSD to GPs, UWU to GPs, consumers to PRIs, between the RDWSD and ULBs and RDWSD to Contractor (Operator). The policy will include various aspects of operation and maintenance, with regard to water resources, infrastructural assets and equipment including water purification plants, institutional arrangements, human resource management, capacity building, IEC, financial systems and cost recovery.

1.4 NEED FOR O&M POLICY

Problems experienced by the rural water supply sector include financial difficulties, institutional problems, inadequate human resources, lack of sector coordination, insufficient community involvement, improper operation and maintenance, lack of hygiene education, poor water quality, and insufficient information and communication (Tripathi & Lal, 2001). The State also has an insight that infrastructure and asset-based approach to provide drinking water supply is not sufficient to achieve sustainable services. Infrastructure in the rural water supply sector should be accompanied by a comprehensive policy on operation and maintenance. The aim of O&M policy is to facilitate in improving efficiency and sustainability of rural water supply systems in the State. With increasing demand for freshwater on one side and the resource base being finite on the other hand, there is an urgent need for 'water discipline 'by all stakeholders. Operation & Maintenance measures have to be taken along with legal, policy and regulatory mechanisms as well as institutional architecture in the rural water supply sector. The O&M policy is a long-felt need and will enhance the capacity of sector stakeholders for sustainable operation and maintenance.

1.5 COMPONENTS OF OPERATION AND MAINTENANCE

Operation and Maintenance of Rural Water Supply Schemes is based on five components:

1. Water Resource: Water Source, Sustainability, Quantity and Quality aspects.

2. Water Supply Infrastructure: Built Assets such as intake structure, transmission, treatment systems, storage and distribution network including borewells, OHTs, IVDN and WPPs at village level.

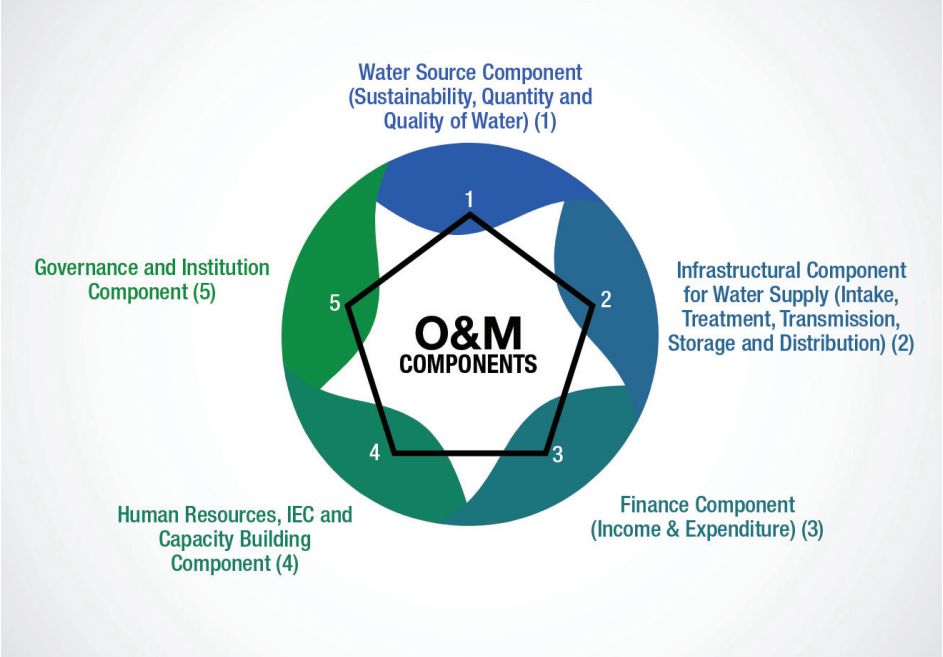
3. Finance Capital: Income and sufficient cash flow to manage the expenditure and contingencies, besides O&M budget, tariff setting, billing, collection, accounting, and auditing.

4. Human Resource Management, Capacity Building and IEC: Staffing, Capacity Building, IEC and Social Aspects, including leadership, staff, knowledge, skills and experience to operate and maintain the drinking water supply scheme.

5. Institutional & Governance Component: Legal, Policy, Institutional & Governance aspects including legislations on water, government orders and the institutional network engaged with the management of O&M.

Policy on Operation and Maintenance in Rural Water Supply Sector is prepared, based on the above five components, collectively referred to as the O&M Pentagon.

Figure 1: Components of Operation & Maintenance



1.6 CATEGORY OF RURAL WATER SUPPLY SCHEMES

The rural drinking water supply schemes in Karnataka are grouped into two categories:

a. Multi Village Schemes
b. Single Village Schemes;

In-Village Distribution Network is associated with both MVS and SVS. RDWSD mostly manages Multi Village Schemes through Operators/Contractors and provides bulk water to Gram Panchayats. On the other hand, Gram Panchayats manage SVS and IVDN directly by themselves, for which it is supported by a Village Water and Sanitation Committee at the Village level and local level staff who are generally known as Water operators or Pump valve.

The Operation and Maintenance Policy for the rural drinking water sector of Karnataka is broadly grouped into 'Part A' and 'Part B'.

Part A provides details of the O&M Policy for Multi Village Schemes for the rural drinking water supply sector.

Part B provides details of the O&M Policy for SVS and IVDN (In-Village Distribution Network including WPPs) managed by Gram Panchayats/PRIs.

Under each part, details concerning Water Sources, Infrastructure, Governance and institutional aspects, Finance, and Human resource management including training, IEC, and Community mobilization are included.

Part 'C' consists of all Annexures and explanatory notes, advisories, Oms, SoPs concerning O&M.A comprehensive GP-level bylaw has also been included as an Annexure in part 'C'.

1.7 GOVERNANCE AND INSTITUTIONAL ASPECTS

Following initiatives were taken for management of rural water supply schemes,

1. Government of Karnataka issued Policy for operation and maintenance of Rural Water Supply Schemes through a Government Order vide GO No: RDP 12 RWS (4) 2011(p) dt: 12.03.2013.

2. Government Circular No: RDP 128 RDWS (4)13 dt: 29.08.2013 was issued whereby Gram Panchayats are empowered to fix water tariffs, collect and revise rates from domestic and commercial users.

3. In order to ensure that schemes are effectively operated and maintained, GoK decided to outsource O&M of MVSs for bulk supply vide GO issued on 12.03.2013.

4. Government Order No: RDP 215-RWS (5) 2013 Bengaluru, dt: 22.07.2014 and Government Circular No: RDP/14 RWS (5) 2016 Dated 18.03.2016 notified RDWSD to fix Bulk Water Meters and collect bulk water tariff from GPs towards the supply of water from MVSs and further empowered GPs to collect tariff from various users as per rates fixed.

5. Over and above the previous Government Orders and Circulars issued by RDWSD, a fresh GO has been notified about charging bulk water tariff from GPs for the bulk water supply GPs are receiving from Multi Village Schemes.

6. Circular No. RDWSD/260/CE/TECH/2022-23/751 dated 08-08-2022 issued for proper handing over of the assets at village level from AE/AEE of RDWSD to PDO of GP (Annexure 24)

7. Captain Rajarao (Former Secretary of MI department) committee was constituted in 2017-18 to assess the functionality and technical feasibility of Water Purification Plants at the village level. These plants are set up based on requests from elected representatives and district authorities. In the report's conclusion part, there is a reference to the monitoring mechanism of the Water Purification Plants, indicating the action for transferring ownership of WPPs to Gram Panchayats for better maintenance.

1.8 WATER POLICIES

1.8.1 NATIONAL WATER POLICY (1987-2019):

Water Policies have been prepared and notified at the National and State level. The first National Water Policy (NWP) became effective in September 1987. NWP-1987 provided first priority to drinking water. The policy also emphasized that 'distribution of water should be with due regarded to equity and social justice; water rates should cover maintenance and operational charges and part of the fixed cost. Though the NWP-1987 was made, there was not much progress in operationalizing the policy. The second NWP was notified in 2002. The third NWP was notified in 2012. NWP-2012 observes that "pricing of water should ensure its efficient use and reward conservation" . Ministry of Jal Shakti, GoI has appointed a drafting committee to prepare an updated NWP in 2019.

1.8.2 KARNATAKA STATE WATER POLICY 2020

The first State Water Policy (SWP) in Karnataka was brought out in 2002. SWP-2002 provides the highest priority to drinking water needs among the competing water requirements. The SWP-2002 proposed to provide drinking water at the rate of 55 liters per person per day in the rural areas, 70 liters per person per day in towns, 100 liters per person per day in the city municipal council areas and 135 liters per person per day in city corporation areas. Karnataka Knowledge Commission on behalf of Government of Karnataka set up a Task Group (TG) to prepare an updated SWP. The TG submitted its report to GoK in August 2019 and Karnataka state policy has been finalized and notified in 2020

1.8.3 CAPTAIN RAJARAO COMMITTEE REPORT

The committee was established to assess the functionality and technical feasibility of Water Purification Plants at the village level. These plants are set up based on requests from elected representatives and district authorities. In the report's conclusion, there is a reference to the monitoring mechanism of the Water Purification Plants, highlighting the need to transfer ownership to Gram Panchayats for improved maintenance.

PART A:
OPERATION AND MAINTENANCE OF MULTI VILLAGE SCHEMES (MVS)

CHAPTER II:
POLICY STATEMENTS FOR OPERATION AND MAINTENANCE OF MULTI VILLAGE SCHEMES

2.1 WATER SOURCE (SUSTAINABILITY, QUANTITY AND QUALITY OF WATER)

2.1.1 Supply of safe drinking water: RDWSD shall draw water from sustainable sources, preferably surface sources, and, after appropriate treatment, supply safe drinking water equivalent to 55 LPCD (liters per capita per day) to overhead tanks (OHTs) in villages and to eligible enroute urban local bodies (ULBs) at designated collection points. RDWSD shall specify water sources that are sustainable, long-term, sufficient, and of high quality, and identify alternative sources to ensure continuity and reliability, with the objective of progressively covering the entire rural areas of Karnataka.

2.1.2 Priority for water use: Drinking water needs of the people will have the highest priority among competing uses of water. (Ref Karnataka State Water Policy-2002 and 2019).

2.1.3 Quality of Water Supplied by RDWSD: RDWSD directly or through the Operator shall supply water complying with BIS 10500:2012 specifications (Annexure 2). Gram Panchayat shall also ensure that safe drinking water is distributed to the consumer community through schemes managed within the GP. The Contractor/ Operator will be bound by provisions of O&M policy to maintain water quality standards distributed from MVS. RDWSD shall test water samples for potable quality parameters as a measure of check of the results produced by the Operator, periodically once in a month and the result thereof will be considered for releasing payment to the Operator/ Contractor. Also, the tests of potable water quality require to be done when complaints are received or when the non-compliance of quality observed.

2.1.4 Climate change resilience and capacity building: RDWSD shall support Gram Panchayats and other sector stakeholders in building their capacity,

- For management of water infrastructure
- The quantity of supply
- Water quality management
- Recharging Borewells and other water bodies
- Rainwater harvesting

The following sub-set of policies shall also be applied to build resilience to climate change:

(a) Gram Panchayats shall recharge all bore wells, within the GP area, whether of private or public ownership, provisioning funds from MGNREGS or other watershed development programs as part of the climate change resilience and preparedness;

(b) GP shall undertake monitoring of groundwater table, using appropriate techno-social methods, devices, and tools in the GP limits to understand and analyze the results of groundwater recharging;

(c) All sector stakeholders including government departments, three-tier PRIs, other sectoral institutions, organizations, industrial and commercial consumer units and individual households shall encourage, disseminate, demonstrate and scale up conjunctive use of water, including surface water, groundwater and rainwater sources as an immediate response to climate change impact in the State.

[5]All of this will be part of the integrated and participatory groundwater-tank-watershed management system proposed in section 3.5, in which the first priority is drinking water and domestic water security. (Page 117- Draft Karnataka State Water Policy)

2.2 INFRASTRUCTURE FOR WATER SUPPLY (INTAKE, TREATMENT, TRANSMISSION, STORAGE, DISTRIBUTION)

2.2.1 Multi Village Schemes (MVS): RDWSD shall manage MVS either directly or through Operators/ Contractors selected through a transparent tender process and provide bulk water to Gram Panchayats/ UWU.

2.2.2 Measuring water supply through metering: Bulk Water Meters (Electro-magnetic flow meters) shall be installed at Village level OHTs or other appropriate locations to measure water supplied to GPs to calculate volumetric tariff and charge GPs and other bulk water consumers such as ULBs, educational institutions, industries. Bulk Water Meters will be installed at the inlet and outlet of WTP, MBR, and ZBR, besides at the inlet of Village OHTs and other supply points to GPs and ULBs for the same purpose. Three-tier PRIs, especially Gram Panchayats shall take the initiative for installing consumer-level water meters of appropriate quality and specifications. The cost of Consumer Meters shall be borne under a project, if projects/programs such as JJM are available. If such projects/programs are not available, the consumer shall bear the cost of the water meter.

2.2.3 Operation and Maintenance of MVS: Multi Village Schemes shall be operated and maintained to achieve prescribed results and efficiency, following best practices of the water supply sector. RDWSD shall plan and install SCADA, IoT, and web-based service level monitoring systems to all MVSs, piloting with large multi-taluk MVSs for controlling, maintaining and managing Operation and Maintenance. Information generated by SCADA and IoT shall also be used for conducting water and energy audits.

2.2.4 Preparation of Annual O&M Plan: RDWSD with the cooperation of DBOT contractors/ Operators shall prepare Operation and Maintenance Plan for each MVS, along with the scheme-specific O&M Manual. This manual shall be used as a guidance document/basis for the subsequent O&M contract. Routine O&M including preventive maintenance shall be included in the O&M manual.

2.2.5 Service Delivery: RDWSD shall ensure that Operators, Gram Panchayats, and VWSCs supply recommended potable quality water to the GP population (HHs) with the following service conditions:

(a) Duration of supply: GPs connected to MVS shall receive water for a minimum duration of not less than four hours per day, ensuring adequate quantity of minimum 55LPCD.

(b) Timing of water supply: Drinking water at Village level may be supplied between 6.00 am & 9.00 am (morning) and 5.00 pm & 8.00 pm(evening)/ or any specified timings appropriately fixed by the GP/VWSC.

(c) Quantity of supply: Per capita supply of 55 Liters per day shall be assured by MVS. If the demand for potable water in rural areas is less than 55 LPCD on a monthly average, the GP may officially inform the RDWSD regarding quantity of water demand for the GP and RDWSD shall inform the Operator to suitably adjust quantity of supply as per the request of GP;

(d) Reduced Pumping Hours: If the aggregate water demand is lesser than 55 LPCD, RDWSD may direct the Operator accordingly to operate the water supply scheme (MVS) to optimize the pumping and treatment operations.

2.2.6 Upgradation into 24x7 service delivery: RDWSD shall take initiative for Upgradation of selected MVS into 24x7, subject to satisfactory fulfillment of conditions such as:

(1) All Village level OHTs or entry points to village water distribution system are fixed with Bulk Water Meter;

(2) All households in GPs covered by the selected MVS are given metered HTCs;

(3) Capacity building of RDWSD Operator/staff, GP level stakeholders for operating, maintaining and managing 24x7 water supply scheme is undertaken;

(4) Scaling up of 24x7 shall be carefully done, selecting one pilot MVS in each of the physiographic regions of the State, subject to availability of water, readiness of stakeholders to enter into a multi-stakeholder MoU regarding demand, supply, tariff levels, and other service conditions.

2.2.7 Technical support by RDWSD: RDWSD shall provide advice & technical support to resolve issues related to rural water supply schemes owned and operated by the three-tier PRIs. PDO of the GP or the authorized person of VWSC may request for technical support from the concerned AE/AEE/EE of RDWSD.

2.2.8 Damage to water distribution and pumping network: Damages caused to components of existing water supply system such as raw water rising main, clear water transmission mains, major distribution network, etc. during construction works carried out by other departments, contractors/ agencies shall be compensated for restoration of infrastructure and water supply service, for which the cost shall be borne by the damage causing institution/party/department/contractor. The EE of RDWSD shall use his good offices to resolve the issue, failing which; he/she shall take up the matter with the District Coordination Committee Chaired by the DC of the District.

2.2.9 Unauthorized tapping of water: In cases of unauthorized water tapping, the Operator/Contractor is obligated to inform concerned authorities like EE/AEE/AE/PDO. Subsequently a formal complaint as per law shall be filed. This complaint should address instances of unauthorized water tapping, illegal connections, and acts of vandalism that disrupt the seamless drinking water supply. In instances where resolution of complaints is not achieved, the Executive Engineer (EE) of RDWSD will escalate the matter to the District Coordination Committee for further needful action.

2.2.10 Resolving issues in the express feeder line of ESCOM. RDWSD shall clearly define the roles and responsibilities of KPTCL or such other power distribution company or agency with regard to the power supply arrangements for proper operation and maintenance in the contract documents. Mutually accountable provisions on the part of the Operator/contractor and KPTCL shall be included and defined in the O&M contract, including clauses regarding remedial measures. District Coordination Committee shall be an institutional mechanism at the district level to resolve issues relating to the uninterrupted power supply.

2.3 FINANCIAL MANAGEMENT (INCOME & EXPENDITURE)

2.3.1 Water Tariff & Tariff Rate: GPs, villages, ULBs and other consumers as the case may be, will be charged by RDWSD for water supplied at specified rates. RDWSD will fix, recover, and annually revise the water tariff for bulk water supply at a rate not less than 5% so as to recover partly or fully the cost of operation and maintenance.

RDWSD shall implement an 'Incremental Block Tariff' for GPs/ULBs and other bulk consumers (if any). Gram Panchayats also shall implement 'Incremental Block Tariff' for its consumers. The bulk water consumer shall pay to the RDWSD, such tariff that is fixed by RDWSD, based on volumetric consumption and cost recovery principles. (Refer Para3.3.1 of Chapter-3)

2.3.2 Billing and Collection: RDWSD and GP will follow a monthly cycle for billing and collection under MVS. GP shall pay the water tariff into the specified account within 30 days of receiving the monthly water bill and demand. (Refer Para3.3.2 of Chapter-3)

2.3.3 Tariff Rate: RDWSD shall implement an 'Incremental Block Tariff' for GPs/ULBs and other bulk consumers (if any). Gram Panchayats also shall implement 'Incremental Block Tariff' for its consumers. The bulk water consumer shall pay to the RDWSD, such tariff that is fixed by RDWSD, based on volumetric consumption and cost recovery principles. Bulk water tariff may be fixed by RDWSD based on the population and water supply per month

2.3.4 Asset replacement and Life Cycle Cost Approach: Until RDWSD/Government of Karnataka fully graduates into life cycle cost approach and O&M cost recovery, the following arrangement shall be followed for asset replacement, operation and maintenance. For MVS, the replacement cost of assets is met by RDWSD for all assets up to the Bulk Water Meter at the Village level OHT. If any asset renewal or replacement or repair is required, such requirement shall be included in the annual O&M plan and budget. (Refer Para3.3.3 of Chapter-3)

2.3.5 O&M Plan including budget: EE at Division level shall facilitate the preparation of an annual O&M Plan along with the estimate for each MVS. The annual O&M Plan shall be submitted to CE-RDWSD through CEO-ZP. CE-RDWSD shall review as per departmental norms, approve the O&M plan and inform EE of the respective division of RDWSD. When the MVS falls in the jurisdiction of two or more EEs, the EE of the jurisdiction where the scheme's head work and WTP are located will be responsible to prepare the estimate and the annual plan. Similarly, the respective CEO will have the authority to recommend the plan for approval. (Refer Para3.3.4 of Chapter-3)

2.3.6 Packaging of district level O&M Contracts for MVSs: To the extent possible and unless there is justification otherwise, all O&M contracts for the smaller MVS (multiple MVS in one district) may be merged and managed under a single contract/contractor/operator at the district level in order to ensure service levels and monitor the quality-of-service delivery. O&M contracts shall be for a period of five (5) years, renewable on a yearly basis, based on satisfactory performance by the 0&M operator/contractor based on mutual agreement with 5% increment yearly. (Refer Para3.3.5 of Chapter-3)

2.3.7 Vendor Management, Tender Process & Execution Agency Clauses:

a) Engage vendors for the preparation of the DPR and RDWSD shall conduct an internal departmental analysis to assess its capacity and feasibility.

b) RDWSD shall Implement a tender process to select capable contractors (stakeholders) for effective project implementation.

c) RDWSD shall develop and enforce comprehensive guidelines to validate tenders within the department. If required, establish a Project Management Unit to take on specific responsibilities for project implementation.

d) RDWSD shall ensure that selected contractors implement the water supply system according to DPR requirements and establish alternative water supply systems to ensure water sustainability

2.3.8 Extension of O&M Contracts: All costs associated with the repair, refurbishment and replacement of bulk water supply infrastructure shall be evaluated in the last year of the O&M contract and may be taken up as part of the upcoming O&M contract. O&M Contracts extended on a yearly basis, based on satisfactory performance by the O&M operator/contractor based on mutual agreement at 5% annual increment of O&M contract value from the second year of the five-year contract for O&M. (Refer Para3.3.6 of Chapter-3)

2.3.9 Volumetric Tariff for Operators and Key Performance Indicators: Contractors/ Operators shall be paid on a volumetric basis, subject to achieving Key Performance Indicators (KPIs). Amount payable to the Operator shall exclude cost towards electricity which shall be borne by the RDWSD. The Operators/Contractors will get 50% of the O&M contract amount as fixed cost and 50% payment as variable cost against achievement of key performance indicators. Key Performance Indicators for the O&M Contract of MVS shall be as under:

(a) Total Quantity of Treated Water to be supplied to each habitation/village covered under the scheme at minimum of 55 LPCD for the planned population (Weightage - 25 (50% of the total score of 50);

(b) All water samples tested daily in the previous month at WTP/Village OHT to meet quality standards as defined in the contract. (Weightage-25 (50% of the total score of 50);

(c) Exemption from penal provisions: Penal provisions on the O&M Contractor may not be applied on account of supplying quantity of water lesser than 55 LPCD or as per the contract provisions, provided there is a clear indication of lesser demand for water from the rural community, supported with evidence, justification by data and written instruction by the VWSC to GP;

(d) Similarly, if water is not pumped, treated and supplied due to interrupted power supply, which is not under the control of the Operator, the penal provision may not be applied. This provision applies to such MVS which does not have a standby DG set. To administer these exemption provisions, evidence in the form of clear and justifiable data shall be presented;

(e) O&M Cell of RDWSD shall undertake periodic reviews of O&M contracts. However, this provision is a temporary measure till such MVS completes the present O&M contract. In the subsequent O&M contract necessary measure by the concerned EE shall be taken to include DG set in the estimate for the O&M tender. (Refer Para3.3.7 of Chapter-3)

2.3.10 Data on bulk water supply: O&M contractor shall assist in capturing the volume of water supplied to each village consolidated at GP level and generate bills for the bulk water supply to GPs as per the tariff set out in the policy. Such data on bulk water supply shall be taken from the MIS/ SCADA or records maintained regularly and updated by the Operator/RDWSD. (Refer Para3.3.8 of Chapter-3)

2.3.11 Software for billing and collection: RDWSD shall prepare and introduce software(dashboard) to support billing, collection, accounting, and build capacities of Operators/Contractors and GPs in using the software. (Refer Para3.3.9 of Chapter-3)

2.3.12 Supply of water by other Utilities/Departments: GPs/villages getting water from any other agency/utility such as BWSSB, KUWS&DB and KUIDFC shall pay for the water on a volumetric basis to RDWSD at a tariff rate as fixed under this policy. RDWSD shall pay to the agency/utility the cost of water supplied on a per KL basis, which is equivalent to the rate applicable/charged for urban local bodies. O&M activities of such schemes supplying water to enroute GPs, shall be carried out by the parent agency and shall charge O&M tariff to RDWSD for the volume of water supplied and recorded by bulk water meters at the same rate that is applicable for urban local bodies or otherwise agreed at the time of project implementation. RDWSD in turn will raise demand on GPs supplied with water from the scheme at a tariff as defined in the current policy and as amended from time to time. (Refer Para3.3.10 of Chapter-3)

2.3.13 Supply of water to Urban Local Body (ULB)/GP by RDWSD: RDWSD shall supply water to selected Urban Local Bodies located enroute or adjacent to the GPs/Villages included under the scope of Multi Village Schemes (MVS), subject to demand from the ULB, concurrence from the Urban Development Department, based on signed MoU and subject to payment of water tariff for bulk water supply made to ULB. (Refer Para3.3.11 of Chapter-3)

2.3.14 Penalty Charges for delayed payment from GPs: RDWSD shall impose a penal charge on GP if the latter does not remit the O&M charges by the stipulated date. (Refer Para3.3.12 of Chapter-3)

2.3.15 CAPEX & OPEX - O&M Maintenance Components: The RDWSD shall approve projects with an inbuilt mechanism ensuring a minimum of 5 years of Operation & Maintenance. The O&M costs should be up to 15-20% of the CAPEX.

2.4 HUMAN RESOURCES MANAGEMENT AND CAPACITY BUILDING

2.4.1 Training: The RDWSD shall organize necessary training programs for officers, staff, and other sector stakeholders to facilitate the implementation of the project. This includes preparing at least five training modules and arranging training programs for all working staff. RDWSD will also support capacity building for engineers, contractors, consultants, NGOs/ISAs, people's representatives at the three-tier PRIs, officials of PRIs, GP-based water operators/pump operators, and selected representatives of SHGs. This will involve scheduling training events and providing resource persons and knowledge to support these programs.

2.5 GOVERNANCE AND INSTITUTION

2.5.1 O&M Cell: RDWSD will set up an O&M Cell at the HQ to monitor O&M activities, guide operation & maintenance, and develop data and knowledge based on O&M

2.5.2 Grievance Redressal Mechanism: The established comprehensive call centre (GRM- Grievance Redressal Mechanism) under RDPR will address complaints from the consumer households and other institutional stakeholders with escalation complaints in the event of non-resolution.

2.5.3 Management Information System: RDWSD in consultation with RDPR department shall develop a Management Information System (MIS) for rural water supply sector.

2.5.4 Roles and Responsibilities regarding Monitoring and Regulation of Operation and Maintenance: Roles and responsibilities with regard to monitoring and regulatory functions under O&M for MVS are elaborated under implementation strategy.

CHAPTER III: IMPLEMENTATION STRATEGIES FOR OPERATION AND MAINTENANCE OF MULTI VILLAGE SCHEMES

3.1 WATER SOURCE (SUSTAINABILITY, QUANTITY AND QUALITY OF WATER)

Table 1: Implementation strategy - Water source for MVS

Policy Statement	Strategy for Implementation
3.1.1. Supply of safe drinking water: RDWSD shall draw water from sustainable sources (preferably surface sources) and after appropriate treatment, supply safe drinking water equivalent to 55 LPCD to Gram Panchayats and eligible enroute ULBs on priority need basis, with an objective of covering the entire rural areas of Karnataka progressively.	a. The proposed O&M Policy will be notified and brought into effect through a Government Order. b. Develop a statewide comprehensive plan for covering the entire rural areas of Karnataka to provide safe drinking water to habitations not covered under existing schemes. c. RDWSD will develop and implement water supply schemes including MVSs as and when required so as to cover the uncovered villages of rural Karnataka and ensure availability of safe drinking water to all water-stressed villages in the State, subject to availability of financial resources and availability and sustainability of water sources.
3.1.1. Priority for water use: Drinking water needs of the people will have highest priority among competing uses of water.	d. Karnataka State Water Policy 2019 and National Water Policy-2002 and 2012 have accorded topmost priority to drinking water in the State .

[9]All of this will be part of the integrated and participatory groundwater- tank-watershed management system proposed in section 3.5, in which the first priority is drinking water and domestic water security. (Page 117- Draft Karnataka State Water Policy - 2019)

[10]"Nevertheless, with 60% of its current population still living in rural areas, the provision of safe and adequate drinking water and water for other domestic uses, must rank as the single most important duty of the Government of Karnataka. Page 10 & 113 of Draft State Water Policy for Karnataka-2019". National Water Policy (NWP) has been prepared in 1987, revised in 2002 and 2012. NWP prioritises water allocations for drinking, irrigation, hydropower, ecology, industries, navigation, and other uses in order. NWP 2012 prioritises water for drinking and domestic needs, irrigation and "minimum ecological needs" on an equal and 'high priority' while introducing the concept of minimum ecological needs and that these need to be given a "high priority" allocation

3.1.3. Quality of Water Supplied by RDWSD: RDWSD directly or through Operator shall supply water complying with BIS 10500 specifications or as specified.	a. Water quality standards will be part of the scope of O&M contractor and will be made one of the key performance indicators for all O&M contracts in the state. For details on water quality testing protocols, see Annexure-1 and 2. b. Contractor shall ensure that all 17 drinking water quality parameters are within acceptable limits on a daily basis at the outlet of WTP. The water quality parameters at WTP shall be checked continuously using SCADA and or manual arrangements by O&M staff of the contractor and suitable process changes are made in the WTP to keep the parameters within acceptable limits. The contractor also shall check recommended water quality parameters on a daily basis at the entry of all village OHTs as per details given vide Table-30 of Annexure 17. c. RDWSD shall cross-check water quality parameters d. The Operator/Contractor shall recheck residual chlorine at MBT/ZBTs and carry out re-chlorination if necessary. e. The WQMS cell on behalf of RDWSD shall train the VWSC/Water operator in using Field Test Kits as and when there is replacement of member in VWSC or human resource. f. EE- RDWSD shall get water samples tested in departmental labs or in NABL accredited labs for all quality parameters parallel to the Operator, monthly and whenever there is an issue with the quality of water and the result thereof will be considered for improving the quality of water & for releasing payment to the Operator/ Contractor. g. Establish and strengthen water testing labs at State, district and sub-division level and secure NABL accreditation.. h. Strengthen the WQMS vertical throughout the state by addressing human resource requirement.

	i. Capture and integrate water quality data for monitoring purposes. j. Karnataka State Water Policy 2019 (Page 120 – State Water Policy) k. Annexure 1: Note/ Protocol for Water Quality Monitoring i. Annexure 2: Format for Water Quality Monitoring.
3.1.4. Climate change resilience and capacity building: RDWSD shall support Gram Panchayats and other sector stakeholders in building their capacity for management of water infrastructure, quantity of supply, water quality management and recharging Borewells and other water bodies. The following sub-set of policies shall also be applied to build resilience to climate change: (a) Gram Panchayats shall recharge all bore wells, within the GP area, whether of private or public ownership, provisioning funds from MGNREGS or other watershed development programs as part of the climate change resilience and preparedness; (b) GP shall undertake monitoring of groundwater table, using appropriate techno-social methods, devices and tools to understand and analyze the results of groundwater recharging; (c) All sector stakeholders including government departments, three-tier PRIs, other sectoral institutions, organizations, industrial and commercial consumer units and individual households shall encourage, disseminate, demonstrate, and scale up conjunctive use of water, including surface water, groundwater, and rainwater sources as an immediate response to climate change impact in the State.	a. Note groundwater recharge and format on monitoring effect on groundwater recharge Annexure 23 in GP level Bylaws b. Format for monitoring the effect of groundwater recharge. (Annexures in GP level Bylaws – 23) c. For details on Capacity Building Plan with Training Modules, refer to Annexure 18 of the O&M Policy and Annexure 18.1 Reporting Format for Training Achievement.

3.2 INFRASTRUCTURE FOR WATER SUPPLY (INTAKE, TREATMENT, TRANSMISSION, STORAGE, DISTRIBUTION)

Table 2: Implementation strategy - Water Supply Infrastructure for MVS

Policy Statement	Strategy for Implementation
3.2.1 Multi Village Schemes (MVS): RDWSD shall manage MVS either directly or through Operators/Contractors selected through KTPP process and provide bulk water to Gram Panchayats..	a. This policy statement shall be read along with O&M Policy GO No: RDP 12 RWS (4) 2011(p) dt: 12.03.2013, deciding to outsource O&M of MVSs, until the decision is modified. b. Annexure 3: (Copy of Government Order No. RDP/12/RWS (4) 2011(P) Bangalore, dated 12.03.2013)
3.2.2 Measuring bulk water supply through metering: Bulk Water Meters (Electro-magnetic flow meters) shall be installed at Village level OHTs or such other appropriate locations to measure water supplied to GPs/ULBs so as to calculate volumetric tariff and charge GPs/ULBs and other bulk water consumers. Bulk Water Meters will also be installed at the inlet and outlet of WTP, MBR and ZBR.	a. All bulk water meters wherever necessary and presently not installed, shall be installed on priority, appropriately including the cost of the same in the O&M contract, or through provisions in the appropriate budget head b. Annexure 4: Government Order on Bulk Water Tariff and Metering along with the Note on Metering. (Government Order No: RDW&SD/ 121/CE/ Technical / 2020, dated 30.12.2020) c. Annexure 20: Note on Bulk Water Meters and Consumer Level Metering
3.2.3 Operation and Maintenance of MVS: Multi Village Schemes shall be operated and maintained to achieve prescribed results and efficiency, following best practices of the water supply sector. RDWSD shall plan and install SCADA, IoT and web-based service level monitoring systems for all MVSs, piloting with large MVSs supplying water to villages in two or more than two taluks for controlling, maintaining and managing Operation and Maintenance. Information generated by SCADA and IoT shall also be used for conducting water and energy audits.	a. Refer to the O&M manual as a guidance document including: (1) Schedule for Operations of various assets are illustrated for efficient functioning and (2) Schedule for Maintenance of various assets are illustrated for regular as well as periodic maintenance. b. Design and implement SCADA for all MVSs, beginning with mega MVSs and subsequently introducing in remaining MVSs. c. MIS proposed to be developed by RDWSD shall have features including IoT (Internet of Things) and Web-based monitoring facilities. d. Annexure 5: Operation, Maintenance and Management Manual for Rural Water Supply Schemes and content of O&M Manual Annexure 21: Note on MIS

3.2.4 Preparation of Annual O&M Plan: Respective EE of RDWSD with the data collected from DBOT contractors/ Operators shall prepare Operation and Maintenance Plan for each MVS, along with scheme specific O&M Manual. When the MVS falls in the jurisdiction of two or more EEs, the EE of the jurisdiction where the scheme's head work and WTP are located will be responsible to prepare the estimate and the annual plan. Similarly, the respective CEO will have the authority to recommend the plan for approval. This manual shall be used as a guidance document for the subsequent O&M contract. Routine O&M including preventive maintenance shall be included in the O&M plan.	a. EE of RDWSD shall directly or through the Contractor prepare an Operation and Maintenance Manual for each of the MVS. The scheme-specific O&M manual shall be used as a basis for the subsequent O&M contract. b. Executive Engineer shall be responsible for getting the scheme-specific O&M Manual prepared for the district in cognizance with the O&M policy. c. After the commissioning of the MVS, or while awarding the O&M contract, the EE shall get an annual O&M plan prepared for each MVS. d. EE of RDWSD shall enter into an MoU with GPs/ULBs for the supply of water and payment of bulk water charges as per the tariff fixed by RDWSD. e. Duration of pumping and water treatment shall be decided on the basis of cumulative, spatial, and temporal water demand, reflected in the annual O&M plan. f. Annexure 6: Tripartite MoU; g. Annexure 7: Biparty MoU.
3.2.5 Service Delivery: AE/AEE/EE of RDWSD shall ensure through Operators, Gram Panchayats and VWSCs, that safe drinking water is supplied to the GP population	Supply of safe drinking water to the GP population is ensured with the following service conditions: (a) Duration of supply: GPs connected to MVS shall receive water for a minimum duration of not less than four hours per day, with two hours each in the morning and evening; (b) Timing of water supply: Drinking water at Village level may be supplied between 6.00 am & 9.00 am and 5.00 pm & 8.00 pm; or any specified timings appropriately fixed by the GP/VWSC (c) Quantity of supply. Per capita supply of 55 Litres per day shall be assured by MVS. If the demand for potable water in rural areas is less than 55 LPCD on a monthly average, the GP may officially inform the Operator and RDWSD regarding quantity of water demand

	for the GP and RDWSD shall inform the Operator to suitably adjust quantity of supply as per the request of GP; (d) Reduced Pumping Hours: If the aggregate water demand is lesser than 55 LPCD, EE of RDWSD may direct the Operator to operate the water supply scheme (MVS) with reduced hours of pumping and treatment operations to optimize the scheme.
3.2.7 Upgradation into 24x7 service delivery: CE of RDWSD shall take initiative for the upgradation of selected MVS into 24x7, subject to satisfactory fulfillment of conditions.	a. CE of RDWSD shall assess pre-determined conditions for converting an MVS into a 24x7 service level such as, • All Village level OHTs or entry points to village water distribution system are fixed with Bulk Water Meter; • All households in GPs covered by the selected MVS are given metered FHTCs; • Capacity building of all verticals in RDWSD, Operator's/O&M contractor's staff, and GP /VWSC level stakeholders for operating, maintaining and managing 24x7 water supply scheme is undertaken; • Scaling up of 24x7 shall be carefully done, selecting one pilot MVS in each of the physiographic regions of the State, subject to availability of water, readiness of stakeholders to enter into a multi-stakeholder MoU regarding demand, supply, tariff levels, and other service conditions.
3.2.8 Technical support by RDWSD: RDWSD shall provide technical support & advice to resolve issues related to rural water supply schemes owned and operated by the three-tier PRIs. The PDO of the GP or the concerned officer may request for technical support from the concerned officer of RDWSD.	a. GP may request for technical support with regard to water supply schemes including SVS, IVDN and WPPs.

3.2.9 Damage to water distribution and pumping network: Damages caused to components of existing water supply system such as raw water rising main, clear water transmission mains, major distribution network etc. while construction works carried out by other departments, contractors/ agencies damage causing institution/ party/ department/ contractor shall compensate for restoration of infrastructure and water supply service at his/their cost	a. The O& M Operator/ Contractor shall collect details of damage and inform the respective Executive Engineer of RDWSD for MVS works. b. Executive Engineer of RDWSD shall immediately take up the matter with the damage-causing institution/ party/ department/ contractor. c. If the issue cannot be sorted out at the level of EE-RDWSD, he/she shall take up the matter with the District Coordination Committee for appropriate remedial measures. d. However, immediate action shall be initiated by the EE for the rectification work to prevent any interruption in the water supply with intimation to the higher authorities.
3.2.10 Unauthorized tapping of water: The Operator/Contractor shall inform the respective EE and facilitate to lodge a complaint with the legal authorities against unauthorized tapping of water, illegal connections and vandalism, which affect uninterrupted supply to villages covered under the scheme.	a. The Operator/ Contractor shall collect details of damage and inform the Executive Engineer of RDWSD about those responsible for the act. b. The respective EE of RDWSD shall use his good offices to settle the issue, failing which; he/she shall take up the matter with the District Coordination Committee Chaired by the DC of the district.
3.2.11 Resolving issues in the express feeder line of ESCOM. RDWSD shall clearly define the roles and responsibilities of KPTCL or such other power distribution company or agency with regard to the power supply arrangements in the O&M contract documents. Mutually accountable provisions from the part of the Operator and KPTCL shall be included and defined in the contract and clauses regarding remedial measures shall be included.	a. There shall be a district coordination committee headed by the Deputy Commissioner to resolve issues relating to water supply arrangements. CEO- ZP and EE- RDWSD shall be members of the district coordination committee. b. Issues relating to power supply arrangements that are not resolved in a bilateral discussion shall be referred to the DCC. c. The jurisdictional EE of the respective MVS shall act as the convenor of the DCC. d. The concerned parties shall be invited to the meeting of the DCC and the Deputy Commissioner shall use his good offices to facilitate resolution of the issue or refer the matter to appropriate forums /authorities.

3.3 FINANCIAL MANAGEMENT (INCOME & EXPENDITURE)

Safe and sustainable operation of MVS is dependent on the availability of robust technical infrastructure, sufficient and competent human resources, and financial resources [1]. In order to address the issues related to financial resources, it is important to set appropriate tariffs, mechanisms for collection and policy guidelines regarding cost recovery in the short, medium and long term. The following tenets are proposed with regard to finance management in Operation and Maintenance.

Government of Karnataka will continue to implement a subsidy regime in operation and maintenance for Multi Village Schemes (MVS). The subsidy regime for MVS will be with regard to power (energy) charges. The Energy charges for MVSs will be met by the Government of Karnataka. The subsidy for energy costs will be withdrawn progressively over a period for all MVSs. Additionally, necessary measures will be taken to formulate strategies for long-term financial sustainability, including identifying sources of funds, financial planning, cost analysis, and project planning.

Table 3: Implementation strategy - Finance Management for MVS

<table>
<tr><th colspan="2">Policy Statement</th><th colspan="2">Strategy for Implementation</th></tr>
<tr><td colspan="2"></td><td>Proposed Incremental Water Tariff - Illustration</td><td>Proposed Tariff First Year Rs /kL</td></tr>
<tr><td rowspan="9">3.3.1 Water Tariff:
GPs, ULBs and other consumers as the case may be, will be charged for water supplied at specified rates. RDWSD will fix, recover and annually revise the water tariff for bulk water supply at a rate not less than 5% so as to recover partly or fully the cost of operation and maintenance.</td><td colspan="2">Up to 7 kL/Month/HH for entire GP</td><td>05</td></tr>
<tr><td colspan="2">7.1 kL to 10 kL/Month/ HH /for entire GP</td><td>08</td></tr>
<tr><td colspan="2">10.1 kL to 15 kL/ Month/HH for entire GP</td><td>10</td></tr>
<tr><td colspan="2">15.1 kL to 20 kL/ Month/HH for entire GP</td><td>12</td></tr>
<tr><td colspan="2">Consumption Slab</td><td>Tariff in 2nd year/ kL</td></tr>
<tr><td colspan="2">Up to 7 kL/Month/HH for entire GP</td><td>05 x 5% =5.25</td></tr>
<tr><td colspan="2">7.1 kL to 10 kL/Month/ HH /for entire GP</td><td>08 x 5% =8.40</td></tr>
<tr><td colspan="2">10.1 kL to 15 kL/Month/ HH for entire GP</td><td>10 x 5% =10.50</td></tr>
<tr><td colspan="2">15.1 kL to 20 kL/ Month/HH for entire GP</td><td>12 x 5% =12.60</td></tr>
<tr><td>3.3.2 Billing and Collection:
EE of RDWSD and GP will follow a monthly cycle for billing and collection under MVS. GP shall remit the water tariff in the specified account within 20 days of receiving the monthly water bill raised by the respective EE.</td><td colspan="3">a. The consolidated sheet on monthly bulk consumption shall be endorsed by the PDO/ Commissioner (ULB) or his authorized representative of the ULB by the fourth working day of the payment (immediately subsequent month to the billing month) month.</td></tr>
</table>

	b. Monthly Bills on Bulk Water Consumption shall be prepared and submitted to GPs/ULBs by or on the tenth working day of the payment (immediate subsequent month to the billing month) month. c. Payment for bulk water consumed by the GP/ ULB for the billing month shall be remitted in the specified account by the end of the payment (immediate subsequent month to the billing month) month. d. Intimation on payment of water tariff shall be given to the respective EE of the RDWSD by the 10th day of the reconciliation (immediate subsequent month to the payment month) month. e. Data on the consumption of water will be taken on a daily basis from Bulk Water Meters, by the representative of the bill collector in the presence of the GP level O&M contractor and will be consolidated on a monthly basis by the O&M contractor. The O&M contractor shall submit the consolidated monthly data on water consumption to the respective EE of RDWSD after due vetting by the PDO/Commissioner of ULB for payment along with the bill in prescribed format. The EE of the concerned division of RDWSD will raise a bill and submit the same to the GPs/ULBs. PDO (GP) and Commissioner (ULB) will remit the amount in the respective head of account against the Demand Collection Bill submitted by EE-RDWSD and send an intimation to the EE. Late payment of water tariff shall attract a penalty of one 1% /month or as decided by CE, RDWSD for bulk supplies f. Annexure 8: Log book format for Bulk Water Consumption g. Annexure 9: Monthly consolidated data on Bulk Water Consumption h. Annexure 10: Format for generating Monthly Bills i. Annexure 11: Guidelines for Billing and Collection of Water Tariff.

<table>
<tr><td></td><td colspan="3">j. Annexure 12: Roles & Responsibilities of Officials of RDWSD/Other Depts and Contractor.

k. A high-level review of the functioning of O&M Policy may be undertaken annually under the chairpersonship of the Additional Chief Secretary, RDPR department.</td></tr>
<tr><td>3.3.3 Tariff Rate[8] :
RDWSD shall implement ‘Incremental Block Tariff’ for GPs/ULBs and other bulk consumers (if any). The bulk water consumer shall pay to the RDWSD, such tariff that is fixed by RDWSD, based on volumetric consumption and cost recovery principles.</td><td>Proposed Tariff for Bulk water supply from RDWSD to GPs</td><td>Rs /kL</td><td>Paise / L</td></tr>
<tr><td></td><td>Up to 7 kL/Month/HH for entire GP</td><td>05</td><td>0.5</td></tr>
<tr><td></td><td>7.1 to 10 kL/Month/ HH / for entire GP.</td><td>08</td><td>0.8</td></tr>
<tr><td></td><td>10.1 to 15 kL/Month/HH for entire GP</td><td>10</td><td>1.0</td></tr>
<tr><td></td><td>15.1to 20 kL/Month/HH for entire GP</td><td>12</td><td>1.2</td></tr>
<tr><td></td><td>Proposed Tariff for Bulk water supply from RDWSD to ULBs, Commercial & Industrial Establishments.</td><td colspan="2"></td></tr>
<tr><td></td><td>up to 60 kL/Month/Bulk Consumer</td><td>15</td><td>1.5</td></tr>
<tr><td></td><td>60.1 kL to 120 kL/ Month/Bulk Consumer</td><td>17</td><td>1.7</td></tr>
<tr><td></td><td>120.1 kL to 180 kL/ Month/Bulk Consumer</td><td>19</td><td>1.9</td></tr>
<tr><td></td><td>180.1 kL to 240 kL/ Month/Bulk Consumer</td><td>21</td><td>2.1</td></tr>
<tr><td></td><td colspan="3">Annexure-13 Water Tariff Calculation at MVS level</td></tr>
</table>

3.3.4 Asset replacement and Life Cycle Cost Approach: Until RDWSD/Government of Karnataka fully graduate into life cycle cost approach and O&M cost recovery, the arrangement listed in column 2 of 3.3.4 shall be followed for asset replacement, operation and maintenance.	a. For MVS, the replacement cost of assets is met by RDWSD for all assets up to the Bulk Water Meter at the Village level OHT. If any asset renewal or replacement or repair is required, such requirement shall be included in the annual O&M plan / budget. b. Refer to Annual O&M Plan Format (Annexure-14)
3.3.5 O&M Plan including budget: EE of respective Division shall prepare an annual O&M plan including a budget for each MVS with due concurrence from the CEO, ZP. The O&M budget shall be presented to CE- RDWSD or the O&M Cell for approval.	a. At the Office of EE-RDWSD a consolidated O&M budget for MVSs at the division level for entire district shall be prepared. b. EE-RDWSD shall share the approved O&M plan of respective MVS with GPs/ULBs that are supplied with safe drinking water from MVS.
3.3.5 O&M Plan including budget: EE of respective Division shall prepare an annual O&M plan including a budget for each MVS with due concurrence from the CEO, ZP. The O&M budget shall be presented to CE- RDWSD or the O&M Cell for approval.	a. At the Office of EE-RDWSD a consolidated O&M budget for MVSs at the division level for entire district shall be prepared. b. EE-RDWSD shall share the approved O&M plan of respective MVS with GPs/ULBs that are supplied with safe drinking water from MVS.
3.3.6 Packaging of district level O&M \ Contracts for MVSs: To the extent possible and unless there is justification otherwise, all O&M contracts for the smaller multi-village schemes may be merged and managed under a single contract/contractor/ operator at district level in order to ensure service levels and monitor the quality-of-service delivery. O&M contracts shall be for a period of five (5) years, further extended on a yearly basis, based on satisfactory performance by the O&M Operator/Contractor and, on mutual agreement	a. Executive Engineers of RDWSD at the division level shall be responsible for recommending the packaging of the O&M contracts of all MVSs at district level with the notification of O&M policy. The recommendation with concurrence from CEO-ZP shall be submitted to the CE, RDWSD for approval. b. Sample O&M contract is included in the O&M Manual

3.3.7 Renewal of O&M Contracts: All costs associated with the repair, refurbishment and replacement of bulk water supply infrastructure shall be evaluated in the last year of the O&M contract and may be taken up as part of the upcoming O&M contract. O&M Contracts may be extended with a 5% annual increment of O&M contract value from the second year of the five-year contract for O&M.	a. Performance appraisal of the O&M contractor shall be undertaken within 3 months of extending the O&M contract. b. Six to Twelve months before the expiry of the existing O&M contract, EE, RDWSD shall invite a fresh O&M contract tender such that the knowledge and the asset management are smoothly transferred to the new O&M contractor. c. In case of delay in the appointment of the O&M contractor, the current O&M contract shall be given extension until the new O&M operator is in place. with the mutually agreed contract amount as approved by the competent authority.
3.3.8 Volumetric Tariff for Operators and Key Performance Indicators: Contractors/ Operators shall be paid on a volumetric basis, subject to achieving Key Performance Indicators (KPIs). Amount payable to Operator shall exclude cost towards electricity which shall be borne by the Government/RDWSD. The Operators will get 50% of the O&M contract amount as fixed cost and 50% payment against achievement of key performance indicators. Key Performance Indicators for the O&M Contract of MVS shall be as given in column 2 of 3.3.8.	Key Performance Indicators a. Quantity-Total Quantity of Treated Water to be supplied to each habitation/village covered under the scheme at a minimum of 55 LPCD for the design population {Eligible for 25% of the contract amount (Annexure 17: Detailed Note on implementation of KPIs with worked-out example. b. Quality- water samples tested in the previous month at WTP, and at entry point of Village OHT as specified in Annexure 17 to meet quality standards as defined in the contract. (Eligible for 5% & 20% of the contract amount for complying to quality at WTP & OHTs respectively. -Annexure 17: Detailed Note on implementation of KPIs with worked-out example
3.3.9 Data on bulk water supply: O&M contractor shall assist respective EE, RDWSD in capturing data on the volume of water supplied to each village and consolidate the same at GP level and generate bills for the bulk water supply to GPs/ULBs as per the tariff set out in the policy.	a. Government Order No: RDW&SD/121/CE/ Technical/2020, dated 30.12.2020. (Annexure 4)

3.3.10 Software for billing and collection: RDWSD shall prepare and introduce software to support billing, collection and accounting and build capacities of technical staff /Accounts staff of RDWSD, Operators/Contractors and GPs in using the software.	a. Read the policy statement 3.10 together with policy statement 5.2
3.3.11 Supply of water by other Utilities/ Departments: GPs/villages receiving potable water from any other agency/utility such as BWSSB, KUWS&DB and KUIDFC shall pay for the water on a volumetric basis to RDWSD at a tariff rate as fixed under this policy or by the authorities supplying the potable water. RDWSD shall pay to the agency/utility the cost of water supplied on volumetric basis, which is equivalent to rate applicable/ charged for urban local bodies by the RDWSD. O&M activities of such schemes supplying water to enroute GPs, shall be carried out by the parent agency and shall charge O&M tariff to RDWSD for the volume of water supplied and recorded by bulk water meters at the same rate that is applicable for urban local bodies or otherwise agreed at the time of project implementation. RDWSD in turn will raise demand on GPs supplied with water from the scheme at a tariff as defined above and as amended from time to time	RDWSD shall enter into a tripartite agreement with Utilities/Agencies/Departments supplying water to enroute GPs/Villages and the Agreement shall include the following key points a. Volume of water supplied shall be measured with a Bulk Water Meter b. Bulk Water Meter shall be installed at the inlet of Village level OHTs receiving bulk water supply from Utilities as mentioned under 3.12. The cost of bulk water meter and its installation shall be borne by RDWSD. c. Volume of water supplied to the GP and measured with bulk water meter shall be consolidated on a monthly basis and provided to the respective EE of RDWSD. d. EE of RDWSD in turn shall raise the demand on the respective GPs and GPs shall remit the tariff amount to the specified account. e. The tripartite agreement envisaged between the authorized official of the Utility, EE, RDWSD and the PDO, GP shall provide provisions for dealing with grievances and conflicts. f. Refer to Annexures 6 and 7 g. Formats referred under Annexure 6, 7, 8, 9, 10 and 11 shall be used for administering the policy statement -3.12.

3.3.12 Supply of water to Urban Local Body (ULB)/GP by RDWSD: RDWSD shall supply water to selected Urban Local Bodies located enroute or adjacent to the GPs/Villages included under the scope of Multi Village Schemes (MVS), subject to demand from the ULB, concurrence from the Urban Development Department, based on signed MoU and subject to payment of water tariff towards bulk water supply	EE, RDWSD shall enter into a Bi-party agreement for implementing policy statement 3.3.12. Refer to Annexure 7: Bi-party Agreement between RDWSD and Urban Local Body/GP for operation and maintenance of rural water supply services
3.3.13 Penalty Charges for delayed payment from GPs/ ULBs: RDWSD shall impose a penalty charge on GP if the latter does not remit the O&M charges by the stipulated date.	a. GPs/ULBs shall pay penalty charges to RDWSD at the rate of 1% per month (12% per year) of the bill amount delayed on a simple interest rate.

3.4 HUMAN RESOURCES AND CAPACITY BUILDING

Table 4: Implementation strategy - Human resources and Capacity Building for MVS

Policy Statement	Strategy for Implementation
3.4.1 Training: RDWSD shall facilitate yearly capacity building of RDWSD Engineers, contractors, consultants and other stakeholders together with public representatives at the three tier PRIs, officials of PRIs and GP based Water operator/Pump Operators, selected representatives from SHG by preparing appropriate training modules, scheduling training events, supporting training programs with resource persons and knowledge.	a. RDWSD shall undertake a comprehensive Training Need Assessment (TNA) to prepare training modules. b. Prepare customized training modules for stakeholder categories c. Support implementation of training events with resource persons and knowledge. d. Training in web-based monitoring and management system, SCADA, Arc-GIS and IOT. e. RDWSD shall develop a Team of Master Trainers; A State level series of ToTs proposed with a strength of 100 to 120 Trainers. f. Regular capacity-building programs shall be undertaken for RDWSD, GPs and Operators. Water Operators/Pump Operators shall be trained with multi skills like plumbing, electrical and masonry. The training shall be extended to selected persons from GP/VWSC members/ GPLF/SHG/existing pump operator/ water operator. g. Pre & post monsoon water quality testing of all the water sources as a mandate & training will be provided on field testing of chemical & microbiological parameters for water sample collectors, Pump operators, GPLF, VWSC as well as GP members. h. Online training will be made available on a regular basis for all stakeholder categories. i. Train engineers of RDWSD and all Operators with whom the RDWSD has entered into an O&M contract; j. Annexure 18: Note on Training and Reporting format for achievement under Training.

3.5 GOVERNANCE AND INSTITUTION

Table 5: Implementation strategy - Governance and Institution for MVS/SVS/IVDN/WPPs

Policy Statement	Strategy for Implementation
3.5.1 O&M Cell: RDWSD will set up an O&M Cell at the office of the CE, RDWSD to continuously monitor O&M activities	a. Roles and responsibilities of the key sector stakeholders with regard to O&M are provided in detail in Annexure 12. b. After the notification of the O&M policy, RDWSD will constitute the O&M cell at the office of the CE, RDWSD. c. The O&M Cell shall facilitate the divisions of RDWSD to carry out a Sustainability Evaluation Exercise with regard to the operation and maintenance of MVSs, once in two years. d. Annexure 19: Note on the constitution of O&M Cell
3.5.2 Management Information System: RDWSD in consultation with RDPR Department shall develop a Management Information System (MIS) for rural water supply sector.	a. Information on MVS will be filled in and updated by EE of RDWSD or by a subordinate officer of RDWSD under guidance of EE. b. The MIS software shall have a module on operation and maintenance for MVS and SVS. c. All schemes that are commissioned shall get reflected in the O&M module, with updated information. d. Office of the CE, RDWSD as an interim measure shall make a Spread Sheet format for the baseline and O&M as mentioned above, so that developing and updating the information on schemes will commence immediately. e. Refer to Annexure 21: Note and Formats on MIS. Note on MIS process (a) Baseline data on all MVSs in the State of Karnataka, (b) Provisions to collect data on Operation and Maintenance of all MVSs, (c) Efficiency assessment of all MVSs including renewable energy options, (d) Monitoring of Key Performance Indicators for O&M in MVSs, (e) Develop Executive Information System (EIS) for decision makers under MIS.)

3.5.3 Grievance Redressal Mechanism: There shall be a Grievance Redressal Mechanism to address complaints from public at GP/Taluk/District/State level.	A Comprehensive combined call centre under RDPR at state level will 'address complaints from the consumers and other institutional stakeholders with possibilities of escalating complaints in the event of non-resolution. Annexure 21 – Note on Grievance Redressal System.
3.5.4 Roles and Responsibilities regarding Monitoring and Regulation of Operation and Maintenance:	As provided in the table at Annexure 23;

PART B:

OPERATION AND MAINTENANCE (O&M) OF SINGLE VILLAGE SCHEMES (SVS) AND IN-VILLAGE DISTRIBUTION NETWORK (IVDN) INCLUDING WPPS

CHAPTER IV:
POLICY STATEMENTS FOR OPERATION AND MAINTENANCE OF SINGLE VILLAGES SCHEMES AND IN-VILLAGE DISTRIBUTION NETWORK

4.1. WATER SOURCE

4.1.1 Source of Water Supply Schemes: GP shall supply safe drinking water, equivalent to 55 LPCD to Consumer Households, drawing water from OHTs filled with safe drinking water supplied through MVS or SVS.

4.1.2 Priority for water use: Safe Drinking water needs of rural population will have highest priority among competing uses of water.

4.1.3 Quality of Water Supplied by GP: GP shall distribute water which is under acceptable limits of water quality standards complying with BIS code 10500:2012 (Annexure 23.4) or as notified from time to time. GP shall also see that further contamination of treated water is avoided by all means while managing distribution from the Village OHT to consumer connections. GP is permitted to supply safe drinking water with quality parameters complying to permissible limits if water with acceptable quality parameters is not available or achievable.

4.1.4 Developing sustainable water sources at GP level: GP shall develop plans to recharge all traditional water bodies, public and private bore wells, using provisions under MGNREGS or other appropriate schemes/funding sources. Rainwater harvesting at GP level shall be encouraged.

4.2. WATER SUPPLY INFRASTRUCTURE

4.2.1 Single Village Schemes (SVS) and In-Village Distribution Network (IVDN) including WPPs: Gram Panchayats shall manage operation and maintenance of SVS and IVDN including WPPs on its own with the support from Village Water and Sanitation Committee at the Village level.

4.2.2 Measuring local water supply through consumer meters: GPs shall measure the quantity of water extracted at all source points (if from borewells & local water bodies) including bulk supply points such as OHTs. Woman representatives from GPLF/Self Help groups (SHG) shall be trained as master trainers and their services utilized in training other members of the SHG & water operator in measurement of water quantities at source, storage and delivery points.

4.2.3 Operation and Maintenance of Water Purification Plants: GP will operate, maintain and manage water purification plants through Operators/Gram Panchayats/Other Institutional Partners or Cooperative Societies. Selected representatives from GPLF/Self Help Groups (SHG) shall be trained in monitoring the functionality of the WPPs.

4.2.4 Asset replacement in SVS and IVDN including WPPs: With regard to SVS and IVDN, all replacement cost of assets is met by the GP water budget. Regarding WPPs, the agreement entered into while establishing the WPP governs the replacement of assets.

4.2.5 Measuring water consumption and losses: GPs in coordination with trained GPLF/SHG representatives shall measure the receipt of water from MVS as well as own source of water at the village level and the net water distribution at consumer ends/delivery points so as to estimate Non-Revenue Water and thus identify the water losses from the water supply system.

4.2.6 Service Delivery: The service delivery conditions/standards for rural water supply shall be as provided in 5.2.6.

4.3. FINANCIAL MANAGEMENT IN O&M

4.3.1 Water tariff: GP shall pay to RDWSD, such tariff that is fixed by RDWSD, based on volumetric consumption and cost recovery principles and will follow IBT (Incremental Block Tariff) model. GPs shall implement water tariff on its consumer categories, proposing 7 kL/Household/month at a basic price of Rs10/- per kL and thereafter, introduce incremental block tariff as indicated at Annexure 23.6. GP may fix the tariff in such a way to recover cost of operation and maintenance, considering whether the schemes are metered or non-metered. Water sales rates of WPPs are to be as per the VGF considered in agreement document entered into while establishing the WPP .

4.3.2 Payment of Water Tariff to GP. RDWSD/GP bye laws shall fix the water tariff for consumers at GP level initially. GP shall raise water tariff at consumer level at the rate of 5% per annum as indicated at Annexure 23. 6. GP will not reduce the consumer tariff without the prior permission of RDWSD in view of the sustenance of the safe drinking water.

4.3.3 Billing and Collection: GP will follow a monthly cycle for billing and collection under SVS and IVDN.

4.3.4 O&M Plan and Budget: GP shall prepare an annual O&M plan including a budget appropriately including the prospective income from the supply of safe drinking water and expenditure from the access and distribution of water. This O&M plan shall also be made part of the Annual Action Plan and GPDP. Information derived from the GP level O&M budget shall be used to make Water supply systems financially sustainable by achieving cost recovery at GP level.

4.3.5 Disconnection of power connections from ESCOM: All GP level electric connection for Borewell/Open Well/water bodies based local water supply schemes, which are non-functional for one monsoon season, shall be disconnected by following appropriate procedures.

4.3.6 Penal Charge on Consumers: Gram Panchayat shall impose a penal charge of 1% per month with simple interest or as decided by the committee on consumers within the GP if the consumer delays payment of water charges beyond the stipulated date. GPs are empowered to initiate action on disconnection to the default consumer.

4.3.7 Software for billing and collection: RDWSD shall facilitate the software initially and GP shall introduce software to support billing, collection and accounting, focusing on operation and maintenance of SVS and IVDN including WPPs. The software developed shall be suitable to be integrated with Panchatantra 2.O.

4.3.8 Water budget and yearly audit: ZP, CAO/CA shall be the statutory auditors

4.4. STAFFING, CAPACITY BUILDING, IEC AND COMMUNITY MOBILIZATION

4.4.1 GP level Training programs: RDWSD shall facilitate training of all local level staff and Water operators in operation and maintenance of rural water supply schemes with the support PR/ NRLM-SIRD Department. Selected representative from GPLF/SHG shall be the master trainers.

4.4.2 IEC and Community Mobilization: GP shall take up drive through local culture to mobilize the community for achieving 100% FHTCs, habitual payment of O&M tariff, disciplined use of treated water and metered consumption of water at the consumer levels. SHG/GPLF may be encouraged to be part of these IEC

4.5. GOVERNANCE AND INSTITUTION

4.5.1 Decentralized service delivery and O&M: GP is primarily responsible for distribution of water to households and other local level consumers through FHTCs/ CTC drawing water from OHTs filled with potable water through MVS or SVS. Already established WPPs are also to be properly managed or monitored by GPs.

4.5.2 VWSCs: GP will form VWSCs in every village of the GP. One VWSC may cover one village and adjacent habitations and the GP is empowered to decide on the number of VWSCs. A representative from GPLF/SHG (Self Help Group) shall be a member invitee of VWSC.

4.5.3 Gram Sabha Meetings and Community Consultations: Community consultations shall be held at Gram Sabha meetings at least annually and feedback received from Gram Sabha shall be considered by the GP and VWSC in the operation, maintenance and management of rural water supply schemes especially SVS and IVDN including WPP.

4.5.4 Grievance Redressal Mechanism (GRM): Combined call centre setup under RDPR will address grievance and complaints.

4.5.5 Management Information System: GP shall implement MIS with regard to SVS and IVDN including WPPs through Panchatantra-2. O. RDWSD, with the necessary data shall initially coordinate with the hardware & software providers of Panchatantra-2

4.5.6 Technical support by RDWSD: GPs may request for support from RDWSD for resolving technical, operational and managerial issues.

4.5.7 Roles and Responsibilities of GP regarding Operation and Maintenance: Roles and responsibilities of GP with regard to monitoring and regulatory functions in O&M are mentioned in 5.5.8.

CHAPTER V:
IMPLEMENTATION STRATEGIES FOR OPERATION AND MAINTENANCE OF SINGLE VILLAGE SCHEMES (SVS), IN VILLAGE DISTRIBUTION NETWORK(IVDN) AND WPPs

5.1 WATER SOURCE

Table 6: Implementation strategy - Water source for SVS and IVDN

Policy Statement	Strategy for Implementation
5.1.1 Source of Water Supply Schemes: GP shall supply safe drinking water, equivalent to 55 LPCD to Consumer Households, drawing water from OHTs filled with safe drinking water through MVS or SVS, with acceptable water quality parameters.	a. O&M Policy will be notified and brought into effect through a Government Order.
5.1.2 Priority for water use: Safe Drinking water needs of rural population will have highest priority among competing uses of water.	a. Karnataka State Water Policy-2002, Karnataka State Water Policy 2019 and National Water Policy-2002 and 2012 have accorded topmost priority to drinking water in the State .
5.1.3 Quality of Water Supplied by GP: GP shall distribute safe drinking water which is under acceptable or permissible limits of water quality standards complying with BIS code 10500:2012 or as notified from time to time.	a. GPs shall use the Field Test Kits to monitor quality of water from OHTs filled with SVS source on daily basis. The drinking water sample shall be collected at the last delivery point (FHTC) in the IVDN. Raw Water and the treated water from. shall be tested as per the mandate in the signed agreement. b. If serious water quality issues are identified in the FTK Tests, GPs shall immediately discontinue use of such source and inform the same to AE/ AEE/EE of RDWSD, requesting for 'Technical support in further referring the water sample for quality check & remedial measure. c. Note/ Protocol for Water Quality Monitoring and Format for Water Quality Monitoring related to MVS at district level water quality labs Refer to Annexure 1 and Annexure 2. d. Annexure 23: Operation, Maintenance and Management of Rural Water Supply Schemes-SVS and IVDN- Model Bylaws, 2021 for the State of Karnataka (See Annexure 23.4 & 23.5)

5.1.4 Developing sustainable water sources at GP level: GP shall recharge all traditional water bodies, public and private bore wells, using provisions under MGNREGS or other appropriate schemes/funding sources so as to address drought and flood as well as climate change related issues.	a. GP shall with the support of RDWSD/RDPR department and other sector stakeholders including VWSC & GPLF/SHG; build capacity in the local community for management of water infrastructure, quantity of supply, water quality management and in recharging Borewells and other water bodies. b. GPs shall plan and implement recharging of all traditional water bodies such as Kalyani, lakes, open wells and Borewells which are under the ownership and management of GP, as well as those water bodies within the GP under private ownership, as an activity under MGNREGS and include it in the Annual Action Plan of GP. This activity shall also include desilting and cleaning of surface water bodies, on need basis. c. GP shall undertake monitoring of groundwater table, using appropriate techno-social methods, devices and tools in the GP limits to understand and analyze the results of groundwater recharging. d. GP shall preserve Borewells, from which pumping is stopped or suspended and shall keep these in good condition, so as to use them for recharging as well as commence pumping operations during drought, and other natural disasters. e. Convergence with other departments, programs and projects shall be attempted towards sustainable maintenance of water resources at GP level, as well as conjunctive use of water sources, including rain water/roof-water harvesting which shall be undertaken wherever there is relevance. References: • Annexure 23: Operation, Maintenance and Management of Rural Water Supply Schemes-SVS and IVDN- Model Bylaws, 2021 for the State of Karnataka. • Note groundwater recharge and format on monitoring effect on groundwater recharge (Annexure – 23.5)

	• Format for monitoring effect of groundwater recharge. (Annexure – 23.5) f. SHG/GPLF shall be considered for Master trainer position to train the identified beneficiaries and proceed further for IEC activities.

5.2 WATER SUPPLY INFRASTRUCTURE

Table 7: Implementation strategy - Water supply infrastructure for SVS and IVDN including WPPs

Policy Statement	Strategy for Implementation
5.2.1 Single Village Schemes (SVS) and In- Village Distribution Network (IVDN) including WPPs: Gram Panchayat shall manage operation and maintenance of SVS and IVDN including WPPs directly or through contract management with the assistance of a Village Water and Sanitation Committee at the Village level and local level staff.	a. GP shall prepare a status list of water sources and water infrastructure within the GP limits, with immediate effect from the Notification of Policy through a G.O either manually or on the MIS as and when it is made available. b. GP shall with the support of VWSC/s operate and maintain SVS/IVDN including WPPs within the GP limits calculating the quantum as required by the community and ensuring the adequate water availability in the sources.
5.2.2 Measuring local water supply through consumer meters: GPs shall measure the quantity of water extracted at all source points including bulk supply points such as OHTs and Borewells.	a. GPs shall introduce consumer level water meters of appropriate quality and specifications on saturation mode. b. All consumer connections, including domestic, institutional and commercial water connections shall be fixed with a water meter. c. The cost of water meters along with fixtures thereof shall be borne by the consumer or by the GP or under any scheme if applicable. d. Bulk Water meters shall be installed at inlet & outlet of all OHTs (where they are not provided) and measure the volume of water on a daily basis. In case of habitations far off from the GP, a separate meter may be installed at the entry point of the habitation to ascertain and measure the quantity of water supply received by the habitation. This will enable in checking any unauthorized tapping or leakage due to damage in the pipeline/pipe network.

	e. ZP may consider setting up a Meter Repairing Unit at the district level, by identifying and training appropriate persons (including GPLF/ SHG members), which will act like a one stop solution to repair and replace domestic water meters. Reference: • Annexure 4: Government Order on Bulk Water Tariff and Metering. (GO No: RDW&SD/121/ CE/ Technical/2020, dated 30.12.2020) c. Annexure 20: Note on Metering and Metering policy.
5.2.3 Measuring local water supply through consumer meters: GPs shall measure the quantity of water extracted at all source points including bulk supply points such as OHTs and Borewells. Reference: • Annexure 4: Government Order on Bulk Water Tariff and Metering. (GO No: RDW&SD/121/CE/ Technical/2020, dated 30.12.2020) • Annexure 20: Note on Metering and Metering policy.	f. GPs shall introduce consumer level water meters of appropriate quality and specifications on saturation mode. g. All consumer connections, including domestic, institutional and commercial water connections shall be fixed with a water meter. h. The cost of water meters along with fixtures thereof shall be borne by the consumer or by the GP or under any scheme if applicable. i. Bulk Water meters shall be installed at inlet & outlet of all OHTs (where they are not provided) and measure the volume of water on a daily basis. In case of habitations far off from the GP, a separate meter may be installed at the entry point of the habitation to ascertain and measure the quantity of water supply received by the habitation. This will enable in checking any unauthorized tapping or leakage due to damage in the pipeline/pipe network. j. ZP may consider setting up a Meter Repairing Unit at the district level, by identifying and training appropriate persons (including GPLF/ SHG members), which will act like a one stop solution to repair and replace domestic water meters.

	Reference: • Annexure 4: Government Order on Bulk Water Tariff and Metering. (GO No: RDW&SD/121/ CE/ Technical/2020, dated 30.12.2020) • Annexure 20: Note on Metering and Metering policy.
5.2.4 Operation and Maintenance of Water Purification Plants: RDWSD will operate, maintain and manage water purification plants through Operators/ Gram Panchayats/ Other Institutional Partners or Cooperative Societies.	a. Proposals for any new WPP in rural areas shall be forwarded to Commissioner/ Director, RDWSD through CEOs. There after ascertaining the need through the procedures laid down in the department and following process of KTPP act to establish of WPPs and for O&M shall be handed over to Executive Officers of Taluk Panchayats who in turn with the assistance of PDOs will be for managing the assets and directly reporting to the CEOs. Also, the WPPs under the O&M of other departments including the ones established from the grants of RDPR /RDWSD/GP and handed over to societies in the jurisdiction of the respective EOs shall be monitored for functionality by PDOs. Regarding establishing of WPPs either under CSR or sponsored, the CEO of ZP will have the authority and for O&M mechanism similar to government funded WPPs shall be adopted. b. RDWSD will prepare detailed guidelines on operation & maintenance of WPPs, including Standard Bidding Documents and shall make these available to CEOs. Also, technical guidance will be provided by RDWSD as and when sought. c. GPs along with VWSC will decide the mode of O&M of the WPPs, with the following options: (1) Operation and Maintenance by a Contractor; (2) Operation and Maintenance by Gram Panchayat and (3) Operation and Maintenance by an Institutional/Organizational Partner such as a Cooperative Society.

5.2.5 Asset replacement in SVS and IVDN including WPPs: GP shall be responsible for replacement of all common assets with regard to SVS and IVDN including WPPs at its cost.	a. Asset replacement cost for SVS and IVDN including WPPs shall be included in the annual O&M plan and the Annual Action Plan/GPDP of the GP. b. Consumer level replacement, renewal and repair of assets shall be the sole responsibility of the consumer, irrespective of the category, whether domestic, institutional, commercial, industrial or any other. Consumer level assets will include pipeline from the nearest common network point (tapping point) ferrule, taps, consumer meters, meter chamber and all other appurtenant of the consumer connection. As for as WPPs, the procedure is governed by the agreement document. Reference: Annual O&M Plan Format (Annexure 14)
5.2.6 Measuring water consumption and losses: GPs shall measure the receipt of water from MVS as well as own production of water and the net water distribution at consumer ends so as to estimate Non-Revenue Water and thus identify the water losses from the water supply system.	a. GP shall take action to install water meters for each consumer water connection in the GP, the cost of which shall be borne by the Consumer if funding for the same is not available under a state/ central government project or programme. b. GPs shall measure the losses in safe drinking water supply on a monthly basis and maintain records, However, GPLF/ Self Help Group (SHG) member shall be associated through VWSC in this activity. c. GPs shall undertake a drive towards minimizing NRW so as to keep the losses at the bare minimum. d. GP shall file a legal case against those using water sucking pumps from the water distribution network and those with unauthorized water connections. Those tampering with water supply infrastructure and those abetting in the action for cause of NRW shall be lawfully punished.

5.2.7 Service Delivery: The service delivery conditions / standards for rural water supply at GP level	a. RDWSD (through the Operators for MVS) and GP (for SVS and IVDN including WPPs) shall ensure that safe drinking water (Potable) is supplied to all the villages in the GP for scheme designed population. GPLF/Self Help Group (SHG) member shall be associated through VWSC in this activity. b. Duration of supply: GPs connected to MVS shall receive water for a minimum duration of not less than four hours per day, with two hours each in the morning and evening; c. Timing of water supply: Drinking water at Village level preferably be supplied between 6.00 am & 9.00 am and 5.00 pm & 8.00 pm; However, VWSC shall be consulted for any change in the timings for the benefit of the villagers. d. Quantity of supply. MVS (if supplying safe drinking water) shall ensure 55 LPCD. If the demand for potable water in rural areas is lesser than 55 LPCD on a monthly average, the GP may officially inform in writing the AE/AEE/ EE of RDWSD regarding quantity of water demand for the GP and RDWSD shall inform the Operator to suitably adjust quantity of supply as per the request of GP, which will cut down on the maintenance cost. If the GP has a demand for more than 55 LPCD, it may draw and distribute water from SVS or adopt to conjunctive use by other sources if any. However, GP has to ensure that it is distributing only water with acceptable or permissible quality as per BIS 10500:2012. Quantity of water demand in the GP shall be reflected in the Annual O&M Plan of the GP. e. GP shall enter into a MoU with RDWSD for supply of water and payment of bulk water charges as per tariff fixed by RDWSD. (Annexure 7– Biparty MoU.) f. Service delivery conditions shall be printed on the consumer card to be made available for the GP and FHTC, so as to make a transparent public commitment regarding service standards.

5.3 FINANCIAL MANAGEMENT IN O&M

Table 8: Implementation strategy - Finance Management for SVS and IVDN including WPPs

Policy Statement	Strategy for Implementation
5.3.1 Water Tariff: GP shall pay to the RDWSD, such tariff that is fixed by RDWSD, based on volumetric consumption and cost recovery principles and will follow IBT (Incremental Block Tariff) model. GPs shall implement water tariff on its consumer categories, offering 7 kL/Household/month at a basic price and thereafter, introduce incremental block tariff. The GP shall charge a minimum tariff of Rs. 70/household/month and shall offer a maximum of 7 kL of water against the minimum tariff amount. GPs may fix the tariff in such a way to recover cost of operation and maintenance, whether schemes are metered or non-metered.	a. Consumer level water tariff in GP shall be derived from bulk water cost + cost of human resource deployed in GP + cost of consumables + cost of energy for own local water supply schemes in GPs. b. Details of increase in population shall be provided by GP to AE/AEE/EE of RDWSD and EE, RDWSD shall inform the MVS Operator for GP-wise treated water requirement. c. Refer to Government Order No: RDW&SD/121/ CE/Technical/ 2020, dated 30.12.2020 for implementing the bulk water tariff. d. The revised water tariff for GPs/ULBs/Bulk Consumers with regard to supply from MVS and for local level water consumer connections within the GP limits, will come into immediate effect with the notification of O&M policy. Sale rate for water from WPPs will be as per Viable Gap Funding (VGF) governed by the agreement document. Reference: Government Order No: RDW&SD/121/ CE/Technical/ 2020, dated 30.12.2020 for implementing the bulk water tariff.
5.3.2 Payment of Water Tariff to GP. CE, RDWSD shall fix the water tariff for consumers at GP level initially and thereafter, the GP will have the authority to revise the tariff in an upward increment. GP may reduce water tariff for consumers, only with the prior approval from CE, RDWSD in writing.	a. All Domestic, institutional, industrial, and commercial shall pay water tariff fixed by the CE, RDWSD with regard to initial rates as per this O&M Policy.

5.3.3 Billing and Collection: GP will follow a monthly cycle for billing and collection under SVS and IVDN	a. PDO shall facilitate measurement of water consumption at the domestic and non-domestic water connections through Water operator and issue demand notice to consumers. GPLF/Self Help Group (SHG) member shall be associated through VWSC in this activity. Reference: PDO shall follow processes suggested vide Government Order No: RDW&SD/121/CE/ Technical/2020, dated 30.12.2020 for managing water supply received from MVSs. Annexure 23: Operation, Maintenance and Management of Rural Water Supply Schemes-SVS and IVDN including WPPs - Model Bylaws, 2021 for the State of Karnataka
5.3.4 O&M Plan and Budget: GP shall prepare an annual O&M plan including a budget appropriately including the prospective income from the supply of water and expenditure from the access and distribution of water. This O&M plan shall also be made part of the Annual Action Plan and GPDP. Information derived from the GP level O&M budget shall be used to make Water supply systems financially sustainable by achieving cost recovery at GP level	a. PDO shall be responsible for preparing the annual O&M plan and budget for SVS/IVDN including WPPs at GP level. The GP level O&M plan and budget shall be appropriately integrated into the Annual Action Plan of the GP. The O&M plan and budget will stand in good stead for the GP, as appropriate provisions can be made in their respective annual budgets for paying O&M demands from RDWSD as well as meet the cost of operation and maintenance with regard to SVS and IVDN including WPPs. Reference: Annexure 14 Note and Format on O&M Plan Annexures at 23: Operation, Maintenance and Management of Rural Water Supply Schemes-SVS and IVDN including WPPs - Model Bylaws, 2021 for the State of Karnataka
5.3.5 Disconnection of power connections from ESCOM: All GP level electric connections for Borewell/ Open Well based local water supply schemes, which are is declared as defunct, shall be disconnected by following appropriate procedures.	a. If an energized public water source (Borewell/ open well/WPP) is declared as defunct for more than 3-4 months continuously, the GP shall submit an application to the respective ESCOM for disconnection and the dues, if any, shall be paid.

5.3.6 Penal Charges for Consumers: Gram Panchayat shall impose a penal charge on consumers within the GP if the consumer delays payment of water charges by the stipulated date.	a. Gram Panchayat shall impose a penal charge on consumers if the latter delays payment of water charges. b. The penalty charges will be as follows b.i. 20% of the due amount for one month of delay after the due date. b.ii. 50% of the due amount for two months of delay after the due date. b.iii. 100% of the due amount for three months of delay after the due date. c. Disconnection water connection after three months of delayed payment without prior notice.
5.3.7 Software for billing and collection: GP shall adopt software to support billing, collection and accounting, focusing on operation and maintenance of SVS and IVDN	a. RDWSD will initially facilitate the preparation and uploading of a software and MIS to address needs of GPs and Operators with regard to O&M of water supply schemes. Reference: Annexure 23.17

Table 9: Water Tariff at GP Level

Domestic Water Tariff at GP level						
Tariff for water supply from GPs to Consumer Households	**Total Water in Litres / month**	**Tariff rate Rs. / kL**	**Tariff rate Paise / L**	**Cumulative Amount of Tariff / month in Year One**	**Cumulative Amount of Tariff / month @ 5% increase in Year Two**	**Cumulative Amount of Tariff / month @ 5% increase in Year Three**
Upto 7 kL/ Month/HH	7000	10	1.0	70	74	77
7.1 kL to 08 kL/Month	8000	12	1.2	82	86	90
8.1 kL to 09 kL/ Month	9000			94	99	104
9.1 kL to 10 kL/ Month	10000				111	117
10.1 kL to 11 kL/Month	11000	14	1.4	120	126	132
11.1 kL to 12 kL/Month	12000			134	141	148
12.1 kL to 13 kL/Month	13000			148	155	163
13.1 kL to 14 kL/Month	14000			162	170	179
14.1 kL to 15 kL/Month	15000			176	185	194
15.1 kL to 16 kL/Month	16000	16	1.6	192	202	212
16.1 kL to 17 kL/Month	17000			208	218	229
17.1 kL to 18 kL/Month	18000			224	235	247
18.1 kL to 19 kL/Month	19000			240	252	265
19.1 kL to 20 kL/Month	20000				269	282

Non-Domestic Water Tariff		
Consumer Category	**Tariff Rs. / kL / Month**	**Tariff / L in Paise / Month**
Non-Domestic public institutions (such as (1) Orphanages, (2) Old age homes, (3) Physically Challenged Residence, (4) Raitha Samparka Kendra, (5) Government schools, (6) Government Hospitals (PHCs and sub-centres) and including Private sector Institutions from (1) to (3) as above	INR – 10 per kL	1.0
Non-Domestic Commercial Enterprises* (Private Hospitals including Clinics, Private schools & Institutes using metered Bulk Water)	INR – 30 per kL	3.0
Industrial Enterprises	INR – 40 per kL	4.0

Non-Domestic Commercial Enterprises - *RDWSD may examine the category of unit on a case-by-case basis*

5.4 STAFFING, CAPACITY BUILDING, IEC AND COMMUNITY MOBILIZATION

Table 10: Implementation strategy - Staffing, Capacity Building, IEC and Community Mobilization for SVS and IVDN

Policy Statement	Strategy for Implementation
a. GP level Training programmes: b. GP shall facilitate training of all local level staff and Water operator in operation and maintenance of rural water supply schemes with the support of RDWSD and RDPR.	a) Local-level staff and Water operators/Plumbers participate in capacity building training organized by RDPR annually/ quarterly or as nominated by the G. b) GP-level training and IEC campaign shall focus on elected members of GP, former members of GP, all officials of GP and other related departments, opinion makers and selected volunteers. GPLF/Self Help Group (SHG) members shall be associated through VWSC in this activity c) Training shall also be extended to: (1) Lab technicians, (2) Operation and maintenance staff (Operator); (3) Staff of ISA, ASHA and Anganwadi workers; (4) Technicians such as plumbers, electricians, mechanics and (5) VWSC members wherein a representative from SHG/GPLF is also to be trained as Master Trainer to train the persons mentioned above. Reference: Annexure 23.14 Note and Modules on GP level Training
a) IEC and Community Mobilization: b) GP shall do the needful to mobilize the community for achieving 100% FHTCs, habitual payment of O&M (water) tariff, disciplined use of treated water and metered consumption of water at the consumer levels	a) Implement an IEC campaign in partnership with PRIs, RDWSD, ISAs and GPLF/ Self-Help Group (SHG) members after providing adequate training. b) Plan and implement a saturation campaign for FHTCs, metered consumption of water and regular payment of water tariff through Household visits, baseline data collection, communication of key messages and getting the household to agree on judicious and disciplined use of water.

	c) Objective of IEC campaign is also to achieve: (1) local level ownership of the community over SVS, IVDN including WPPs and MVS; (2) build awareness on rainwater harvesting and conjunctive use of water sources; (3) mobilize communities for participatory management of operation and maintenance. Reference: Chapter VI of Bylaws in Annexure 23 for Note on Community Mobilization and IEC and Annexure 23.16 for Reporting and Monitoring Format for IEC campaign.

5.5 GOVERNANCE AND INSTITUTION

Table 11: Implementation strategy - Governance and Institution for SVS and IVDN

Policy Statement	Strategy for Implementation
5.5.1 Decentralized service delivery and O&M: GP is primarily responsible for distribution of safe drinking water to households and other local level consumers through FHTCs/ CTC drawing water from MVSs or SVS.	a. A Bylaw for Operation and Maintenance of SVS and IVDN including WPPs at the GP level is included as Annexures at 23.
5.5.2 VWSCs: GP will form VWSCs in every village of the GP. One VWSC may cover one village and adjacent habitations and the GP is empowered to decide on the number of VWSCs	Reference: GO on VWSC (Number: RDP 507 GPD2019 Dated: 09-09-2020) Annexures at 23: Operation, Maintenance and Management of Rural Water Supply Schemes-SVS and IVDN including WPPs - Model Bylaws, 2021 for the State of Karnataka
5.5.3 Staffing Pattern: GP may implement the staffing pattern as recommended in the O&M Policy	a. GP shall not recruit new staff and make use of existing GP staff/GPLF members for O&M b. Staff at GP level operating and maintaining SVS and IVDN including WPPs shall report to respective PDOs of GPs.

	c. PDO shall maintain attendance details, preferably biometric based, for water supply staff with relevant rules for supervising and managing Water operators. d. PDO shall insist on work reports from the staff engaged in water supply sector Reference: Annexures at 23: Operation, Maintenance and Management of Rural Water Supply Schemes-SVS and IVDN including WPPs - Model Bylaws, 2021 for the State of Karnataka Annexure 23.10: Criteria for determining the staffing Pattern at GP Level
5.5.4 Gram Sabha Meetings and Community Consultations: Community consultations shall be held at Gram Sabha meetings at least annually and feedback received from Gram Sabha shall be considered by the GP and VWSC in the operation, maintenance and management of rural water supply schemes of SVS including IVDN, & WPPs.	a. Water Supply shall be included as an Agenda item in all Gram Sabha Meetings. Minutes/ Report of Gram Sabha Meeting shall be sent to GP and the VWSCs. Reference: Annexure 23: Operation, Maintenance and Management of Rural Water Supply Schemes-SVS and IVDN- Model Bylaws, 2021 for the State of Karnataka.
5.5.5 Grievance Redressal Mechanism (GRM): GP shall partner with RDWSD in implementing 'GRM', for addressing grievances and complaints.	a. GP shall publicly exhibit 'GRM' contact call centre contact number at prominent public locations in the GP with appropriate messages. Reference: Annexure 22: Flow Process for GRM under GRM Annexures at 23: Operation, Maintenance and Management of Rural Water Supply Schemes-SVS and IVDN including WPPs - Model Bylaws, 2021 for the State of Karnataka.
5.5.6 Management Information System: GP shall adopt to MIS with regard to SVS and IVDN including WPPs	a. Information on SVS and IVDN including WPPs shall be filled and updated by PDO, including baseline and operation and maintenance with regard to IVDN/SVS/WPPs

	b. CE, RDWSD as an interim measure shall make a Spread Sheet format for the baseline and O&M as mentioned above, so that developing and updating the information on schemes will commence immediately. Reference: Annexure 23.17: Baseline for SVS and IVDN; Format for monitoring SVS and IVDN including WPPs. Note on MIS process at GP level;
5.5.7 Technical support by RDWSD: GPs may request for support from RDWSD for resolving technical, operational and managerial issues.	a. GP shall request in writing for technical support with regard to water supply schemes including SVS and IVDN including WPPs. Reference: Chapter 5 (5.11) in Annexure 23 for technical support.
5.5.8 Roles and Responsibilities of GP regarding Operation and Maintenance: Roles and Responsibilities of GP with regard to Operation and Maintenance shall include the following.	a. Operate and maintain SVS and IVDN including WPPs b. Fix and revise consumer level water tariff; c. Operation of SVS and IVDN including WPPs based on cost recovery principles; d. PDO shall prepare O&M Plan; e. GP shall approve O&M Plans of SVS and IVDN including WPPs; f. Billing, collection and finance management; g. Monitoring service delivery and regulatory oversight for SVS; h. Monitor the functioning of VWSCs; i. Selection, training, placement, supervision and monitoring the performance of staff including water operator; j. Monitoring Operation of SVS/IVDN including WPPs k. Coordination with RDPR, PR, RDWSD, ZP and TP; l. Consult the Gram Sabha proposal to raise the tariff; m. Provide cross subsidy benefits in water tariff to a deserving destitute family with the recommendation of Gram Sabha; n. Conflict Resolution at GP level.

PART C:
ANNEXURES

CHAPTER VI:
ANNEXURES FOR O&M OF MVS

ANNEXURE 1 PROTOCOL FOR WATER QUALITY MONITORING

Table 12: Parameters for assessing water quality at village OHT

No	Parame-ters	Description
1	Potable Water quality standards	At Village OHTs or at end users: 100% samples should conform to the acceptable limit of BIS 10500: 2012, or as specified by RDWSD and as amended for basic water quality parameters: pH value, TDS, Turbidity, Chloride, Total alkalinity, Total hardness, Sulphate, Iron, Total arsenic, Fluoride, Nitrate, Residual chlorine Total coliform bacteria and E. Coli or thermos tolerant coliform bacteria, other than where the Emergency Response Plan is triggered.
2	Measured By	Frequency of testing as defined in CPHEEO Manual on Water Supply and Treatment, III Edition, Ministry of Urban Development, New Delhi, May 1999, Appendix 15.9, for minimum tests to be performed or as defined in the Operation and Maintenance Service Agreement or the DBOT contract
3	Monitored By	An electronic registry is to be maintained by the Contractor; the registry shall include detailed database and summary tables to be maintained as part of the water quality surveillance protocols. The water quality testing database shall include: • Time and date • Sample location (with Geo-coordinates and Source ID) • Sample number • Results of tests conducted along with acceptable and permissible limits of BIS 10500 and inference Details of remedial actions taken or suggested in case of water contamination/ quality issues.
4	Allowable exclusions	Pollution event covered by Emergency Procedures
5	Penalty	Refer to “Annexure 17 Note on calculation of O&M contract amount based on Key Performance Indicators (MVS)”
6	Water Quality Testing Protocol	1. There shall be a lab attached to all WTPs of MVSs and parameters shall be tested as per recommended frequency. 2. The contractor/ Operator shall test water on a daily basis at the WTP lab or the nearest water quality testing lab for all 17 water quality parameters. 3. Water sample from the WTP outlet shall be tested as specified in Annexure 17

		4. Gram Panchayat shall test water quality using Field Test Kits on a regular basis. If any discrepancy is found in the FTK tests, such matter shall be referred to RDWSD as well as water samples shall be sent for testing to NABL accredited Water Quality Testing Lab. 4. The Contractor/Operator shall attach reports. whether report of each day or one sample report for particular month has to be specified. Water Quality Tests done at NABL accredited labs along with the monthly bills for payment.

Table 13: Tests for water quality monitoring

No.	Parameter to be Tested	Raw Water (at Raw Water Sump)		Treated Water (at outlet of CWR)		Village OHT	
		To be Tested (Y/N)	Frequency	To be Tested (Y/N)	Frequency	To be Tested (Y/N)	Frequency
Organoleptic & physical parameter							
1.	Colour (Hazen units)	Y	Daily	Y	Daily	Y	As specified in Annexure 17
2.	Taste	Y	Daily	Y	Daily	Y	
3.	Odour	Y	Daily	Y	Daily	Y	
4.	pH value	Y	Daily	Y	Daily	Y	
5.	Turbidity (NTU)	Y	Daily	Y	Daily	Y	
6.	Total dissolved solids (TDS), mg/l	Y	Daily	Y	Daily	Y	
General parameters concerning substances undesirable in excessive amounts							
7.	Chloride (as Cl), mg/l, Max	Y	Daily	Y	Daily	Y	As specified in Annexure 17
8.	Total alkalinity (as CaCO3), mg/l, Max	Y	Daily	Y	Daily	Y	
9.	Total hardness (as CaCO3) mg/l	Y	Daily	Y	Daily	Y	
10.	Sulphate (as SO4), mg/l, Max	Y	Daily	Y	Daily	Y	
11.	Iron (as Fe), mg/l, Max	Y	Weekly	Y	Weekly	Y	
12.	Total arsenic (as as), mg/l, Max (in hot spots)	Y	Yearly twice	Y	Yearly twice	Y	
13.	Fluoride (as F), mg/l, Max	Y	Daily	Y	Daily	Y	
14.	Nitrate (as NO3) mg/l, Max	Y	Daily	Y	Daily	Y	
15.	Residual free chlorine, mg/l, Max	N	-	Y	Daily	Y	
16.	Total coliform	Y	Weekly	Y	Weekly	Y	
17.	E. coli	Y	Weekly	Y	Weekly	Y	

Note:

1. Refer to the Manual on Water Supply and Treatment, III Edition, Ministry of Urban Development, New Delhi, May 1999, Appendix 15.9, for minimum tests to be performed. Parameters and frequency are general in nature and in case of special situations; they can be altered according to the local conditions by the local authority (http://cpheeo.gov.in/upload/uploadfiles/files/38_0.pdf) (http://cpheeo.gov.in/upload/uploadfiles/files/Chapter%206-9.pdf)

2. Above, listed physical, chemical and bacteriological parameters are basic essential parameters

3. If any additional parameters are detected at the source of supply, those shall be included in the monitoring plan.

ANNEXURE 2 FORMAT FOR WATER QUALITY MONITORING AT DISTRICT LEVEL WATER QUALITY LABS (MVS)

Format for Water Quality Monitoring at District level water quality labs (MVS) as per IS: 10500:2012

Table 14: Water Quality Monitoring at District level water quality labs (MVS) as per IS: 10500:2012

Sl. No.	Characteristic	Requirement (Acceptable limit)	Permissible Limit in the Absence of Alternate Source	Test Result
1.	Colour Hazen units, Max	5	15	
2.	Odour, (Test cold and when heated and at several dilutions)	Agreeable	Agreeable	
3.	Taste (Test only after safety is established)	Agreeable	Agreeable	
4.	pH, value	6.5-8.5	No relaxation	
5.	Turbidity, NTU, Max	1	5	
6.	Total dissolved solids, mg/l	500	2000	
7.	Chloride (as Cl), mg/l, Max	250	1 000	
8.	Total alkalinity (as CaCO3), mg/l, Max	200	600	
9.	Total hardness (as CaCO3), mg/l, Max	200	600	
10.	Sulphate (as SO4), mg/l, Max	200	400	
11.	Iron (as Fe), mg/l, Max	1.0	No relaxation	
12.	Total arsenic (as As), mg/l, Max (in hot spots)	0.01	0.05	
13.	Fluoride (as F), mg/l, Max	1.0	1.5	
14.	Nitrate (as NO3) mg/l, Max	45	No relaxation	
15.	Free Residual chlorine*, mg/l, Min.	0.2	1	
16.	Total coliform bacteria	Shall not be detectable in any 100 ml sample	Shall not be detectable in 100 ml sample	
17.	E. coli or thermotolerant coliform bacteria	Shall not be detectable in any 100 ml sample	Shall not be detectable in 100 ml sample	

Note:

* To be applied only when water is chlorinated and tested at consumer end. When protection against bacterial/viral infection is required, it should be minimum 0.5 mg/l.

1) Immediate investigative action shall be taken if either E. coli or total coliform bacteria are detected. The minimum action in the case of total coliform bacteria is repeat sampling; if these bacteria are detected in the repeat sample, the cause shall be determined by immediate further investigation.

2) Although, E. coli is the more precise indicator of fecal contamination, the count of thermotolerant coliform bacteria is an acceptable alternative, provided confirmatory test are carried out by referral labs.

ANNEXURE 3 G.O. ON IMPLEMENTATION OF O&M POLICY FOR RURAL WATER SUPPLY SCHEMES

Government Order No. RDP/12/RWS (4) 2011(P) Bangalore, dated 12.03.2013
(MVS/Policy) Proceedings of the Government of Karnataka

Subject: Policy for O&M of Rural Water Supply schemes – implementation regarding

Read:
1) Decision taken in the Cabinet meeting vide subject no. C/629/2011 dated 03.01.2012.
2) Proceedings of the meeting held under the chairpersonship of honorable CM on 04.10.2012.

Preamble: The government is implementing several schemes for supply of drinking water in the rural areas in the state with state, central and foreign assistance. Most rural supply schemes (90%) depend on ground water as source. Major portion of the funds are being appropriated to implement and establish drinking water supply schemes. It will be more fruitful if adequate O&M are carried and schemes are implemented on scientific base for their continuance. In particular O&M of multi village schemes and regional water supply schemes is a matter of importance. Since mega projects with surface water source are implemented with huge investment to provide permanent solution for the benefit of multi villages, it is imperative that O&M shall be adequate/satisfactory. Because these schemes (MVS) include more than 1-2 villages, GPs and cluster of villages. Hence, it is required to formulate a suitable O&M policy for strategic management, operation, and time to time repairs, water quality monitoring, operation and maintenance of these schemes, payment of electric bill, collection of water tariff from user community, etc.

The subject was placed in the Cabinet meeting on 08.02.2010 and the Cabinet, considering the importance of the subject, authorized the Honorable CM to review, constitute cabinet sub-committee for formulation of the policy. Accordingly, a cabinet sub committee was formed under the chairpersonship of minister for higher education. In this direction, based on the O&M related nitty – gritty in the neighboring states, expert advisory committee report, and decisions of the cabinet sub- committee, it was reviewed in consultation with the Finance and Planning department for formulation of an easy and functionally capable O&M policy for multi village water supply schemes to implement by the Panchayat raj institutions for providing sufficient water supply in the rural areas of the state for public benefit. Later implementation of the new O&M policy was discussed in the Cabinet on 03.01.2012. Further, in the background expression of opinions as appropriate to hand over the responsibility of O&M to TP/outsourcing, the Cabinet took decision to entrust the honorable CM to take a final decision in the matter. In the meeting under the chairpersonship of Honorable CM on 04.10.2012 it was brought to the notice of the honorable CM that a final decision is entrusted with him to give final shape to the policy. In the said meeting this was discussed in detail and decisions with few other were taken to entrust the responsibility of O&M to outsourced agencies through tendering process by the concerned ZP engineering divisions. Hence, this order.

Government Order No. RDP/12/RWS (4) 2011(P) Bangalore, dated: 12.03.2013.

Salient Features of Government Policy dated 12.3.2013 on O&M of Rural Water Supply schemes. Government is pleased to grant powers to ZP and other Panchayat raj institutions to take necessary administrative actions for O&M of all rural drinking water supply in the state as per the policy given below and the MVS on outsourced basis engaged by RDWSD following tender procedure. Except MVS, the GPs are responsible for O&M of drinking water supply scheme.

i. O&M of MVS shall be carried by the out-sourced agency appointed by RDWSD following tendering procedure.

ii. Under this arrangement (MVS) water supply and O&M responsibility shall be fixed from the source up to the entry point of the village. Concerned GP/PRE-Division shall install bulk water meter at the entry point. In the beginning at least 30% household should have household connection. This number should reach 100% in next 8 years. To this effect the GP shall give an undertaking.

iii. Concerned GP shall pay 25% of the O&M cost including electricity charges in the first year. Within next 8 years GP shall pay 100%.

iv. The GP shall pay the necessary O&M charges agreed under the contract arrangement to the concerned PRED/GP/Agency based on the bulk water system.

v. State Government shall release grants to GP amounting to its share towards O&M as per the guidelines of NRDWP and encourage gradually composite water supply schemes to rural and urban and ULBs.

vi. In case there is fund shortage for the O&M, the state government shall pay additional grant to cover the shortage.

vii. The present O&M grants of Rs. 10,000 for PWS, Rs.5000 for MWS and Rs. 1,000 for Hand Pump shall be revised every three-year based on reality.

ix. Chief Engineer shall provide GPs/O&M Agencies a simple manual prepared both in English and Kannada language.

x. All defunct and not in use source of supply shall be removed from electrical connection at the earliest. The precious water source shall be protected from pollution and wastage. Workshops shall be arranged, periodical orientation/awareness training for officers and staff involved in the water supply sector. And the community awareness shall be created to protect the water supply and sanitation resources.

xi. This new rural water supply O&M policy has come into effect from 01.04.2013.

xii. This order is issued with concurrence from FD and PD vide nos. FD 1008 Ex [6,2006 dtd. 10.11.2006 and PD 8 DPD 08 dated 13.03.2008 and Cabinet decision No. C/29/2011 dated 03.01.2012.

ANNEXURE 4 G.O. ON TARIFF FOR BULK WATER SUPPLY FROM MULTI VILLAGE SCHEMES IN THE STATE

Government Order No: RDW&SD/121/CE/Technical/2020, dated 30.12.2020 for installation of bulk water meter besides the tariff, along with the Note on Metering. (MVS)

Subject: Tariff for bulk water supply from Multi Village Schemes in the State

Read:

1. Government Order No: RDP 12 RWS (4) 2011(p) dt: 12.03.2013
2. Government Circular No: RDP 128 RDWS (4)13 dt: 29.08.2013
3. Government Order No: RDP 215-RWS (5) 2013 Bengaluru, dt: 22.07.2014
4. Government Circular No: RDP/14 RWS (5) 2016 Dated 18.03.2016

1. Government of Karnataka issued Policy for operation and maintenance of Rural Water Supply Schemes through a Government Order vide reference No–1. Subsequently, a Government Circular vide reference No-2 above, was issued whereby Gram Panchayats are empowered to fix water tariff, collect and revise rates from domestic and commercial users. In order to ensure that schemes are effectively operated and maintained, GoK decided to outsource O&M of MVSs for bulk supply vide reference No -1. Further, GoK vide reference -3 and 4 cited above, notified RDWSD to fix Bulk Water Meters and collect bulk water tariff from GPs towards the supply of water from MVSs and further empowered GPs to collect tariff from various users as per rates fixed. Over and above, Gram Swaraj and Panchayati Raj Act - 1993 in accordance with section 199 (2) and rules made subsequently to the Act, has provisions for GPs to operate and maintain water supply works, fix tariff, collect and revise tariff rates from end consumers. Government of India has launched Jal Jeevan Mission in 2019 with an objective of providing Functional House Tap Connection (FHTC) to every rural household of the country by 2024.

2. Government of Karnataka through Rural Drinking Water and Sanitation Department (RDWSD) has taken several initiatives in planning and implementing multi-village schemes across the state, with substantial investment towards creating assets for bulk water supply. Such investments in MVSs are towards drawal of water from distant perennial surface sources, treatment to make water potable and reach treated water to village level OHTs. MVSs operated by RDWSD are also supplying bulk water to selected Urban Local Bodies lying adjacent or enroute to the GPs.

3. In addition to the capital investment costs, Government of Karnataka incurs recurring cost towards operation and maintenance of MVSs, on account of electricity charges, salaries, consumables, repair and maintenance. To run multi-village water supply schemes and facilitate effective service level for the end consumers, an efficient O&M arrangement is required. Currently, GPs do not share the cost of water supplied from MVSs and the entire O&M cost is met by RDWSD, despite O&M policy of 2013 and GO issued in 2014 towards cost recovery. In the current circumstances of financial crunch, it is important to recover O&M cost on account of bulk water supply. It is also noted that as per the previous GO, all ongoing and completed MVSs are required to install bulk water meters to measure volume of water supplied to each village/habitation covered under the MVS. This activity is the first step towards capturing the actual volume of water supplied at village level under MVS and will form the basis for raising the bills to the GPs/ULBs receiving water from MVS.

4. The RDWSD also needs to work on preparing an extensive and holistic O&M policy supplementing to build on the present measures taken in O&M cost recovery.

5. It is therefore imperative to bring clarity on the operational aspects of O&M cost recovery for bulk water supply to GPs/ULBs from MVSs. While there have been decisions taken by the Government towards recovery of O&M costs, the implementation of GOs has become a challenge owing to the Operational Guidelines which are yet to be issued. Hence this order.

Government Order No: RDW&SD/121/CE/Technical/2020, dated 30.12.2020

1. Arrangements shall be made for measuring water supplied to a GP/ULB through a bulk flow meter. The measurement of water supplied shall be recorded on a daily basis. The Operator of MVS shall get the quantum of water supplied on a daily basis confirmed from the PDO/Commissioner of the concerned GP/ULB on a monthly basis. Roles, responsibilities, procedures and the reports to be maintained by RDWSD for measurement of water supplied are annexed to this GO.

2. Assistant Executive Engineer (AEE) of Rural Drinking Water and Sanitation Department shall raise monthly water bills to the concerned Gram Panchayats/ULBs, for water supplied from MVSs on a volumetric basis. The tariff for bulk water supplied per unit of one Kilo Litre shall be Rs. 5/kL as stated in the earlier GO (reference – 3). This rate of Rs.5/kL of water will remain in force until a revised rate is notified.

3. The payment for O&M against bills raised by RDWSD shall be paid by GPs/ULB to the specified receipt head of account in the Treasury. GPs/ULBs are required to submit a copy of the Treasury Remittance to the office of the Assistant Executive Engineer on monthly basis.

4. Gram Panchayats/ULBs are required to prepare their Annual Action Plans, keeping a provision for payment of bulk water tariff as per demands raised by RDWSD, for the operation and maintenance of in-village distribution network under MVSs and SVSs directly operated by the GP. Funds so allocated for the water supply provision shall be used to pay for the bulk water tariff, besides meeting the O&M expenses of SVSs and in-village distribution network directly operated/maintained by GPs.

5. The Bulk Water Tariff and the enforcement of the billing and collection arrangements will be reviewed within six months from the date of issue of the current Government order and if necessary, the tariff rate will be revised.

6. The Executive Engineer of the concerned division of RDWSD will have to regularly monitor and place the details of demand under operation and maintenance, at the meetings of DWSM and pursue release of payment. AEE will have to work along with Implementation Support Agencies (ISA), Commissioners of Urban Local Bodies, Panchayat Development Officers (PDO) and Village Water and Sanitation Committees (VWSC) for the tariff collection, pursuing the matter through GP/ULB visits, monitoring meetings and facilitation. Chief Executive Officer (CEO) of the concerned district will closely monitor and facilitate the payment for bulk water supply with the help of Executive Engineer.

7. All Urban Local Bodies (ULBs) that are supplied water from MVSs operated by RDWSD also will pay for bulk water supply as per volumetric tariff proposed vide para ‘2’ in the GO. EEs and AEEs as mentioned in para ‘6’ above, will also do the needful to record water supplied to ULBs through the Operator, issue monthly bills for bulk water supplied and ensure payment as per para ‘2’ above.

8. Annexures of “G.O. on Tariff for bulk water supply from MVS in the state”

ANNEXURE 5 MANUAL FOR OPERATION, MAINTENANCE AND MANAGEMENT OF RURAL WATER SUPPLY SCHEMES

Operation and maintenance Operating and maintaining rural water systems in working condition is perhaps even more important than building them. Operation and maintenance of a water supply system refers to all the activities needed to run the system continuously to provide the necessary service. The overall aim of operation and maintenance is to ensure an efficient, effective and sustainable system (Castro et al., 2009). O&M include information on the technology, key O&M activities, stakeholders with their roles, O&M technical requirements – activity & frequency, materials & spare parts, tools & equipment, potential problems and how these can be sorted out.

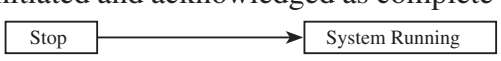
Operation refers to routine activities and procedures that are implemented to ensure that the water supply system is working efficiently. Operation of the plant/system is defined as "Carrying out all activities as per scheme to source raw water, treat it as necessary, and deliver it to storage reservoirs in the network as per required quality". Process is the sequence of activities in the operation of the plant/systems. Activities that contribute to the operation of a water utility are undertaken by technicians and engineers who have responsibility for controlling functions of the system. Assets in a water supply system include jack well, pump house, treatment plant, storage reservoirs and distribution tanks. For each asset there will be operating guidelines to follow.

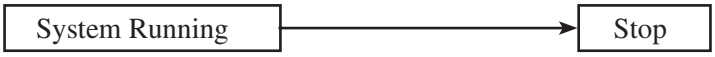
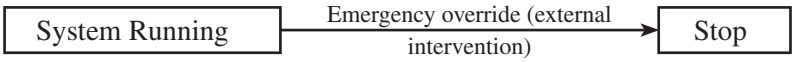
Maintenance refers to technical activities to keep the water supply system functional. A good maintenance strategy will detail: (1) how the maintenance activities will be organized (area basis); (2) how maintenance will be carried out (by own technicians, or outsourcing to skilled technicians, or both); (3) clear descriptions of how the assets are expected to function with proper maintenance; (4) information and documentation requirements, for example a log of parts replaced, inspections made, recording of any incidents (unexpected events) and (5) prioritization of assets for routine inspection and maintenance. One technique that can assist in making objective decisions with regard to maintenance uses the concept of life-cycle cost .

The Operation and Maintenance Manual: Operation and Maintenance Manual is a comprehensive document that provides details of physical assets including equipment and machinery to serve as a guide to operate and maintain water supply services. This manual is prepared prior to commissioning of the scheme and forms the basis for the day-to-day running of the system. The Operation and Maintenance Manual shall contain: (1) a detailed description of the system, with drawings; (2) health and safety advice for all aspects of the water treatment and supply; (3) instructions for starting up and operating each of the water treatment processes and the system for delivery of water. These instructions are often referred to as Standard Operating Procedures (SOP). Essentially, a SOP is an established procedure to be followed in carrying out a given operation; (4) procedure to adopt in emergencies that can occur during the water treatment and supply process. Plant operators should be trained in emergency procedures such as how to overcome the emergency and whom to contact and mock emergencies should be enacted to allow staff to practice emergency procedures and be thoroughly familiar with what to do when a real emergency happens; (5) lists of tasks to be undertaken and at what frequency. There should be separate lists for daily tasks and weekly, monthly and annual tasks

Procedures and Formats to be used for O&M of MVS/SVS schemes including WPPs are outlined here. These are divided into the following sections. Each Section to contain formats and/or checklists to capture relevant information for records and further assessment.

Table 15: Operation and Maintenance Procedures to be used for MV/SV including WPPs schemes

Section	Objective
Commissioning	To capture all information related to systems/equipment up to the stage it is put to service. This comprises of: 1. **Data sheets:** Covering equipment details such as make/model, year of manufacture, baseline performance parameters, etc. 2. **Manufacturer's Data Record:** Including all in-process and final tests and inspection records during manufacture. 3. **As built records:** Covering all as-built information, including any deviation from approved construction drawings / documents. 4. **Site Record:** Including reports of all inspections during Installation and tests during Commissioning. 5. **Punch Lists:** Including all outstanding items of work post commissioning.
Process	To list out procedures to be followed during each start/monitor/stop sequence of the operation. Guiding documents are: 1. **Signal List:** All analogue and digital signals from all instruments required to control and monitor the process parameters, as well as system / equipment health status. 2. **Operating Sequence or Start/Stop Logic:** This includes status definition of each state in the process and mode change from one to another state (Stop --> Start, etc.). Conditions of each system/equipment at the start/end of the process and sequence of steps in the process are described along with the status of each equipment for acknowledging completion and monitoring process sustenance. • **Stop:** The Process is in a "Stop" state and all equipment/systems that are part of the Process are in "idle/inactive" state and are not working. However, auxiliary systems that are necessary to start the process are kept in "ready" state, and all activities/processes that are necessary to achieve this "readiness' are performed as necessary. (Batteries kept charged, transformers energized, rising mains filled). • **System Running:** The Process is in "ON" state with all equipment/ systems in "active" state to sustain the process in run mode. All auxiliary systems are maintained in a facilitating state to sustain the process in run mode. • **Start:** The Process is initiated from STOP state and taken to System Running state through the sequence of operation from Intake/Jack well to the last OHTs. All steps are initiated and acknowledged as complete before moving to the next step. 

	• **Normal Stop:** The system is brought to STOP state from SYSTEM RUNNING state by following all steps as per stop sequence. Each step is initiated and recorded as complete before moving to the next step.  • **Emergency Stop**: The system is brought from System Running to Stop state by external intervention. In this case, extreme action is taken to protect the system/equipment from damage or to prevent a safety hazard. Some of the steps in the Normal Stop sequence may be bypassed but need to follow established procedure for envisaged condition. Every Emergency Stop event is recorded and must be followed by a detailed health check before declaring the system as available for next operation.  • **Failure Stop:** The system is brought from System Running to Stop state due to process failure. The event is not initiated by human/any external intervention but is triggered by unforeseen occurrence such as power failure, equipment breakdown (during operation), etc. Every Failure Stop event is to be recorded and must be followed by a detailed health check, before declaring the system as available for operation. .
Operational History	To collect historical data in order to facilitate trouble shooting of operational problems as well as condition monitoring of the system and components. Guiding documents are: 1. **Event Log/Fault Signal List:** As part of operation, all signals that appear as faults need to be investigated. A list of such event logs/faulty signals is to be drawn from the SCADA / PLC and carefully scrutinized each time the system is put into service. 2. **Historian data** of equipment operating conditions (bearing temperatures, vibrations, etc.)
Performance Monitoring	To outline protocols in measurement of process performance and flag deviation from acceptable limits. Guiding documents are: **1. Baseline performance parameters** (such as pump duty points, power requirements, residual chlorine, tank filling time, residual pressures, quantity of flow, etc.) **2. Measured performance parameters** (as measured and recorded for each equipment and systems)

Maintenance	To establish procedures to carry out preventive, scheduled and unscheduled maintenance activities. **1. Periodic Checks:** Daily, Weekly, fortnightly, monthly, quarterly, half-yearly and yearly checks to ensure "availability" of every equipment critically required for the operation of the process. **2. Preventive Maintenance:** As a consequence of periodic checks, any deviation in the process/ system/equipment parameters from baseline performance is investigated. Trouble shooting is done to assess the deviation and corrective action is undertaken to prevent any further failure / breakdown. This may (or may not) require taking the equipment offline from the process for a short term. **3. Scheduled Maintenance:** This will require taking the equipment offline from the process for making small adjustments or for scheduled replacements of parts like gaskets, bearings, etc. Usually, time required to carry out the process is known and the activity itself can be planned well in advance. **4. Un-scheduled Maintenance:** This will force the equipment offline from the process due to failure or breakdown. This may involve replacement of parts, some of which may or may not be ready in spares inventory. Usually, time required to carry out the process is not known, and the activity is forced upon the plant. **5. WORK PERMIT** system can be employed to ensure that the system cannot be operated when one of its components is under a maintenance schedule and people are working on it. Records of all work permits issued and closed are to be maintained. Failures/Faults or malfunction in operation and Maintenance history (as per below) to be recorded for all items.

DRAFT TABLE OF CONTENTS FOR O&M MANUAL:

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c. Maintenance Aspects of Water Source MVS/SVS/WPPs

d. Water Quality Aspects/Standards/Rules and Regulations; Disinfection of Water, how to monitor water quality, protocols for water quality surveillance and Maintenance

6 Infrastructural Component of Water Supply and its Operation & Maintenance in terms of Civil Structures, Electrical and Mechanical

a. MVS (1) Intake Structure; (2) Jack well; (3) Transmission; (5) WTP/Treatment; (6) MBR/Storage; (7) ZBR/Storage; (8) Intermediate pumping Station and (9) Village OHT/Storage for distribution

b. SVS/IVDN (1) Distribution Network; (2) Consumer Connections; (3) Metering

c. WPP; (1) M/c components (2) Civil structures including cabins, raw & treated water storage, plumbing, source water (3) Electrical items including ESCOM connection, meter, pumps & coin dispensers/smart cards/sensor

d. Environmental Safeguards/EDS Including hygiene at water source/distribution/collection locations and waste water management.

e. Health and Safety advice in water abstraction, transmission, treatment, storage and supply

f. Standard Operating Procedures (SOP); List of tasks to be undertaken along with the frequency of tasks/activities. Separate lists for daily, weekly, monthly and annual tasks to be provided.

7 Finance Component in O&M

a. Financial Management of Water Scheme; (b) Source of Income; (c) Water Tariff; (d) What is O & M Cost? Identifying operation and maintenance costs: (e) O&M Cost Recovery and Subsidies: (f) Billing and Collection; (g) Payment Method/Options for Collection of O&M Fund: (h) Formulation of User Households List; (i) Bank Account Opening; (j) Management of Daily Cash Movement; (k) Basic Financial Records

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9 Human Resources, Capacity Building of Stakeholders & IEC

10 Institutional and Governance aspects

a. Roles and Responsibilities of Stakeholders of Water Supply Scheme; (b) GRM; (c) MIS (d) Bylaws

11 Conclusion

12 Annexures

ANNEXURE 6 TRIPARTITE AGREEMENT BETWEEN RDWSD, WATER UTILITY AGENCY AND GP FOR O&M (AGREEMENT FOR SAFE DRINKING WATER TO BE SUPPLIED FROM KUWS&DB/KUIDFC/BWSSB)

This deed in the form of agreement is made and entered on the _____ (Date) day of _____ (Month) _____ (Year)

Between

RDWSD (Rural Drinking Water and Sanitation Department, Government of Karnataka), represented by _____of the first part,

And

Urban Water Utility (UWU) (Karnataka Urban Water Supply & Drainage Board "KUWS&DB", Bangalore Water Supply & Sewerage Board BWSSB), Karnataka Urban Infrastructure Development & Finance Corporation -KUIDFC) hereinafter known and referred to as the Water Utilities and represented by _____ of the second part,

And

_____ Grama Panchayat (hereinafter referred to as GP) and represented by Panchayat Development Officer of_____ (Name of District) of the third part,

Where as

1. The Government of Karnataka has taken a policy decision to saturate the entire rural Karnataka with Functional Household Tap Connection (FHTC), using own resources as well as that of the Government of India under programs such as Jal Jeevan Mission and provide potable drinking water to all rural households. Gram Panchayat (KGSPRA-1993) is mandated to be responsible for developing, implementing, operating and maintaining water supply within its geographical limits. A Gram Panchayat may develop water sources and water supply schemes using water resources available within its geographical limits or may access water from Multi Village Schemes owned and operated by RDWSD either directly or through an operator or from either of the Urban Water Utilities mentioned under part two above. Gram Panchayats, receiving water from RDWSD or Urban Water Utilities shall enter into a Tripartite Agreement for drawal and distribution of water. This agreement is for administering and managing water supply and distribution at the level of GPs drawing water from stakeholders mentioned as part -1 and 2.

Now therefore the parties hereby agree as follows:

URBAN WATER UTILITIES (UWU) (KUWS&DB/BWSSB/KUIDFC)

1. _____ UWU shall supply potable water to _____ GP (Name of GP) enroute its _____ water supply scheme (Name of Water Supply Scheme) at the rate of _____ Kilo Liters per day.

2. _____ UWU shall ensure that the water supplied to _____ GPs is of potable quality and maintains quality standards prescribed by BIS 10500.

3. O&M activities of such water supply schemes from which water is supplied to _____ GPs shall be carried out by _____ UWUs and shall take care to ensure supply at agreed volume regularly.

4. Volume of water supplied by the _____ UWU shall be confirmed by the _____ GP either on daily or monthly basis.

5. _____ UWU shall raise a bill for water supplied for _____ GPs to RDWSD as per this agreement, on the basis of tariff rate applicable for urban local bodies or otherwise agreed at the time of project implementation.

6. _____ UWU agrees to notify RDWSD and partner _____ GPs in advance in case there is likely to be any disruption of water supply or down time due to any reason.

7. _____ UWU agrees to a district level conflict resolution cell, consisting of CEO- ZP, EE- RDWSD and EE- UWU. Deputy Commissioner (District Collector) shall act as the district level Arbitrator in the event the district level conflict resolution cell is not able to resolve conflicts among parties of the agreement.

8. _____ UWU shall facilitate measurement of bulk water consumption for each GP/Village under the MVS/ Water Supply Scheme through Operator/DBOT Contractor/O&M Contractor through an authorized staff or representative, whose name shall be officially intimated to the PDO of the GP.

RURAL DRINKING WATER AND SANITATION DEPARTMENT (RDWSD)

1. RDWSD shall pay to _____ UWU the water tariff fixed on per kL basis, which is equivalent to rate applicable for urban local bodies or as agreed during planning and implementation of the scheme.

2. RDWSD shall coordinate water supply arrangements between the _____ UWU and the _____ GP.

3. RDWSD shall raise demand on GPs supplied with water from the urban water supply scheme at tariff rate defined in the Operation and Maintenance policy-2021 or GO notified by Government of Karnataka on 30th December 2020. (Government Order No: RDW&SD/121/CE/Technical/2020, dated 30.12.2020)

4. Bulk Water Meter shall be installed at the inlet of Village level OHTs receiving bulk water supply from Utilities or MVSs owned by RDWSD. The cost of bulk water meter and its installation shall be borne by RDWSD if the same is not covered under the cost of the scheme.

5. Volume of water supplied to the GP and measured with bulk water meter shall be consolidated on a monthly basis and provided to the AEE of RDWSD of the concerned sub-division by the Operator through the UWU.

6. RDWSD shall raise the demand on the respective GPs and GPs shall remit the tariff amount to the specified account.

7. RDWSD shall ensure regular maintenance and functioning of Bulk Water Meters installed at the Village level OHTs that receive water from MVSs or from UWUs.

8. RDWSD in consultation with UWUs shall devise and prepare formats for collection of data on consumption of water.

GRAM PANCHAYATS

1. _____ GP getting water from Urban Water Utility i.e. BWSSB/KUWS&DB/KUIDFC agrees to pay for the water on a volumetric basis to RDWSD at a tariff rate as fixed vide the O&M policy 2021 or as per provisions of Government Order No: RDW&SD/121/CE/Technical/2020, dated 30.12.2020.

2. _____ GP agrees to depute its representative for confirming the measurement of water consumed at Bulk Water Meter point.

3. _____ GP shall operate and manage the distribution system at intra-GP level. All complaints and grievances within the GP shall be taken care of by the GP.

4. Ensure the presence of GP level Water operator while recording the Bulk Water Consumption in kL (OHT/BWM Level) in the Log Book Format

Witness

Signature 1) Name _____ / Signature
Name
Representative of **First Party (Urban Water Utility)**

Signature 2) Name _____ / Signature
Name
Representative of **Second Party (RDWSD)**

Signature 3) Name _____ / Signature
Name
Representative of **Third Party (PDO- GP)**

ANNEXURE 7 BI-PARTY AGREEMENT BETWEEN RDWSD AND URBAN LOCAL BODY / GP FOR O&M (SAFE DRINKING WATER TO BE SUPPLIED FROM RDWSD)

This deed in the form of agreement is made and entered on the _____ (Date) day of _____(Month) _____(Year)

Between

RDWSD (Rural Drinking Water and Sanitation Department, Government of Karnataka), represented by _____of the first part,

And

----------Urban Local Body (ULB) hereinafter known and referred to as the ULB and represented by _____of the second part,

Whereas

1. The Government of Karnataka has taken a policy decision to saturate the entire rural Karnataka with Functional Household Tap Connection (FHTC), using own resources as well as that of the Government of India under programs such as Jal Jeevan Mission and provide potable drinking water to all rural households. Government of Karnataka through Rural Drinking Water and Sanitation Department (RDWSD) has taken several initiatives in planning and implementing multi-village schemes across the state, with substantial investment towards creating assets for bulk water supply. Such investments in MVSs are towards drawal of water from distant perennial surface sources, treatment to make water potable and reach treated water to village level OHTs. MVSs operated by RDWSD are also supplying bulk water to selected Urban Local Bodies lying adjacent or enroute to the GPs. This agreement is for administering and managing water supply and distribution between RDWSD and ULB

Now therefore the parties hereby agree as follows:

RURAL DRINKING WATER AND SANITATION DEPARTMENT (RDWSD)

1. RDWSD shall supply potable water to _____ULB (Name of ULB) enroute its _____ water supply scheme (Name of Water Supply Scheme) at the rate of _____Kilo Liters per day.

2. RDWSD shall ensure that the water supplied to _____ULB is of potable quality and maintains quality standards prescribed by BIS 10500.

3. O&M activities of such water supply schemes from which water is supplied to _____ULB shall be carried out by RDWSD or the Operator/ Contractor appointed by RDWSD and agree to ensure supply at agreed volume regularly.

4. Volume of water supplied by the RDWSD or the Operator/ Contractor shall be confirmed by the _____ULB on monthly basis.

5. RDWSD shall raise a bill for water supplied to _____ULB as per this agreement, on the basis of tariff rate applicable for urban local bodies or otherwise agreed at the time of project implementation.

6. RDWSD or the Operator/ Contractor agrees to notify _____ULB in advance incase there is likely to be any disruption of water supply or down time due to any reason.

7. RDWSD and ---------ULB agrees to a district level conflict resolution cell, consisting of CEO- ZP, EE-RDWSD and Municipal Commissioner ----------ULB. Deputy Commissioner (District Collector) shall act as the district level Arbitrator in the event the district level conflict resolution cell is not able to resolve conflicts among parties of the agreement.

8. RDWSD or the Operator/ Contractor shall facilitate measurement of bulk water consumption for ----------ULB under the MVS/ Water Supply Scheme through an authorized staff or representative, whose name shall be officially intimated to the ULB.

9. RDWSD shall raise demand on ULB supplied with water from the MVS at tariff rate defined in the operation and maintenance policy-2021 or GO notified by Government of Karnataka on 30th December 2020. (Government Order No: RDW&SD/121/CE/Technical/2020, dated 30.12.2020) or as agreed through the MoU.

10. RDWSD shall consolidate the Volume of water supplied to the ULB and measured with bulk water meter on a monthly basis and provide it to the Commissioner of the ULB.

11. RDWSD shall device and prepare formats for collection of data on consumption of water and provide the same to the ULB.

URBAN LOCAL BODY

1. _____ULB getting water from the ----------MVS owned by RDWSD agrees to pay for the water on a volumetric basis to RDWSD at a tariff rate as fixed vide the O&M policy 2021 or as per provisions of Government Order No: RDW&SD/121/CE/Technical/2020, dated 30.12.2020.

2. _____ULB agree to depute its representative for confirming the measurement of water consumed at Bulk Water Meter point.

3. _____ULB shall operate and manage the distribution system at intra-ULB level. All complaints and grievances within the ULB shall be taken care of by the ULB.

4. Ensure the presence of ULB representative while recording the Bulk Water Consumption in KL in the Log Book Format.

5. Bulk Water Meter shall be installed at the inlet of Village level OHTs receiving bulk water supply from Utilities, or MVSs owned by RDWSD. The cost of bulk water meter and its installation shall be borne by RDWSD if the same is not covered under the cost of the scheme.

6. ----------ULB shall ensure regular maintenance and functioning of Bulk Water Meters installed at the level OHTs that receive water from MVS.

Witness

Signature 1) Name _____ / Signature
Name
Representative of **First Party (RDWSD)**

Signature 2) Name _____ / Signature
Name
Representative of **Second Party (ULB)**

ANNEXURE 8 LOG BOOK FORMAT FOR RECORDING BULK WATER CONSUMPTION FROM OHT IN KL (OHT/BWM LEVEL) – MVS/SV

Table 16: Log Book Format for recording Bulk Water Consumption in kL

Year		**Month**	**Name of Taluk**		
Name of GP / ULB			**Location of BWM (Record Location using Geo Tracker App).**		
Name of Village/ULB Location –			**BWM- Number**		
Name of Habitation/ ULB Ward				**Signature / Initials of**	
1	**2**	**3**	**4**	**5**	**6**
Date	**Time of Reading**	**Bulk Water Meter Reading (kl)**	**Total Volume (kl)**	**Meter Reader**	**GP Water operator/ ULB Representative**
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
=sum(above)					

Signatures of Water operator/AE/authorized VWSC member. The quantity of water delivered to every OHT in rural and urban areas must be monitored daily and maintained as per prescribed format (See Annexure 8). The bulk water meter reading will be recorded daily by Operator Representative with date, time and volume supplied to OHT. The meter reading data shall be authenticated with the signature of Meter Reader and Water operator

ANNEXURE 9 MONTHLY CONSOLIDATED DATA ON BULK WATER CONSUMPTION FROM OHT (GP/ULB LEVEL) FOR MVS/SVS

Table 17: Monthly Consolidated Data on Bulk Water Consumption (GP/ULB Level- MVS)

Year:		**Month:**			**Name of Taluk:**		
Name of GP/ULB:							
		Location of OHT/BWM (Bulk water consumption in Kilo Litres)					
Date	**Village/ ULB Location**	**Village / ULB Location**	**Village / ULB Location**	**Village / ULB Location**	**Village / ULB Location**	**Village / ULB Location**	**Village / ULB Location**
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Total							
Signature of AEE/PDO/Commissioner- ULB							

ANNEXURE 10 FORMAT FOR GENERATING MONTHLY BILLS ON BULK WATER CONSUMPTION, AND DEMAND (MVS)

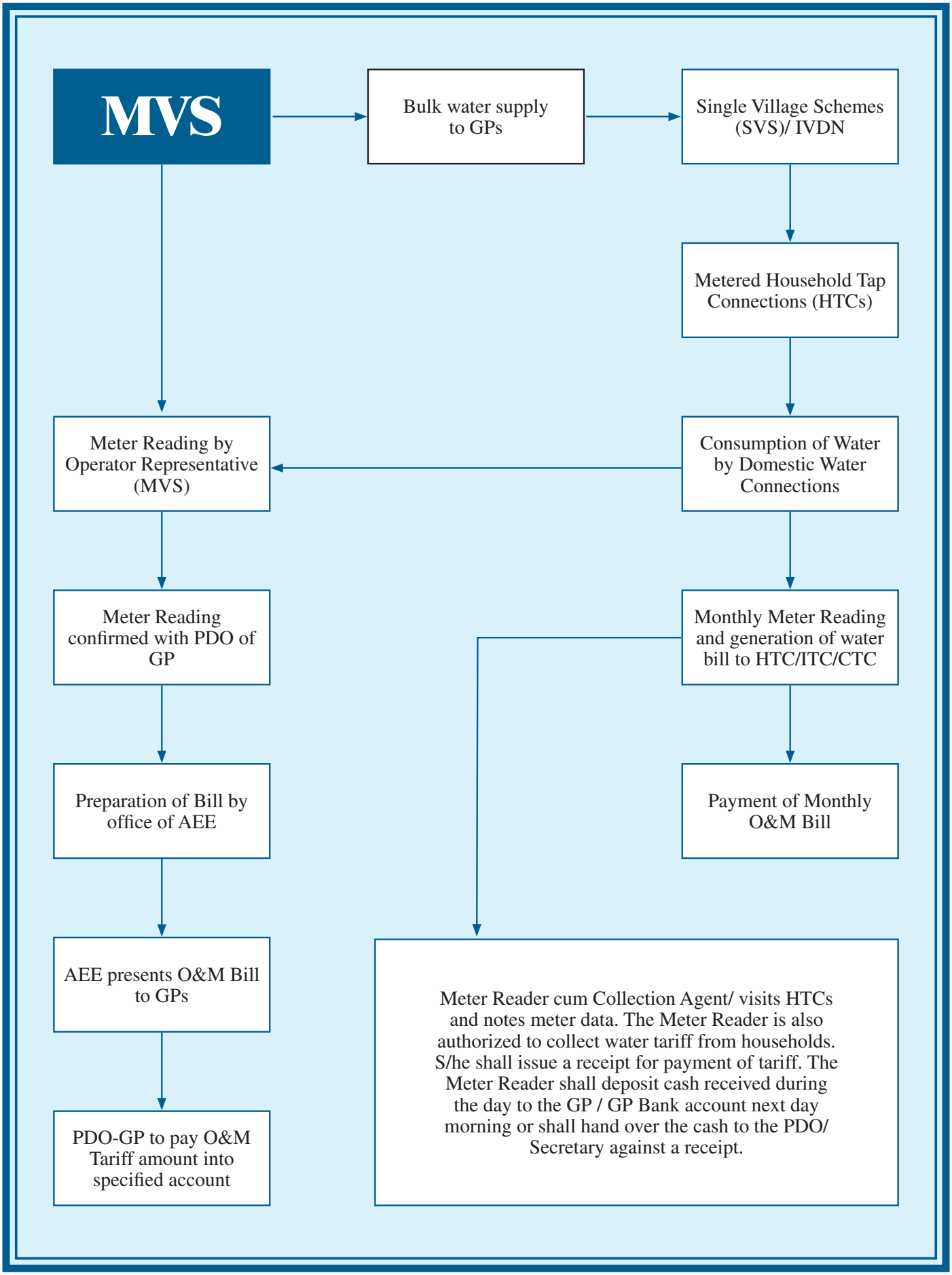
The monthly bill will be generated for each GP/ULBs based on the consolidated data on water delivered for each OHT in their respective GP/ULBs. The bill (i.e. demand notice) will be prepared and signed by AEE. Thus, the bill serves as the Demand Notice for each GP/ULBs for drinking water supplied to GP/ULBs.

Table 18: Format for generating Monthly Bills on Bulk Water Consumption and Demand

Name of GP/ ULB			
Name of MVS/Scheme			
Month			
Meter Number/s or Meter IDs			
Name of the Village/ Habitation	Consumption in kl for the month	Water Tariff Rate @ Rs…../ kl	Amount (Demand Collection) in Rs
Current month Total (Rs) – A			
Previous Month outstanding Bill (Rs) – B			
Total Bill (Rs) C= A+B			
Bill Prepared by			
Bill Approved by			
Date			
Signature of AEE/EE			

ANNEXURE 11 BILLING AND COLLECTION OF WATER TARIFF / PROCESS FLOW – MVS

Figure 2: Process Flow for Billing and Collection of Water Tariff in MVS



ANNEXURE 12 ROLES & RESPONSIBILITIES OF RDWSD OFFICIALS, O&M CONTRACTOR AND OTHER DEPARTMENTS (FOR MVS/SVS/IVDN/WPPS)

Table 19: Roles & Responsibilities of RDWSD Officials, Other Departments and O&M Contractor

AE- RDWSD	**Act as the first contact under technical support for SVS and IVDN including WPPs**
AEE- RDWSD	1. Manage O&M activities of all MVS in the sub-division through the Contractor / Operator. 2. Ensure regular maintenance and functioning of Bulk Water Meters installed in MVS 3. Monitor daily volume of water supplied to GPs/ ULBs from MVSs 4. Raise bills to GPs/ULBs based on the quantum of water supplied on monthly basis 5. Report to EE and SE on the status of functioning of MVSs, actual volume of water supplied and monthly Demand Collection Balance (DCB) raised. 6. Maintain Asset Registers for MVSs. 7. Maintain records of bills raised and payments made by GPs/ULBs
Executive Engineer, RDWSD	1. Review the billing activities undertaken by AEE for all MVSs in the district. 2. Review the monthly reports shared by AEE on the O&M activities of MVS 3. To liaise with the CEO of ZP and facilitate payment for the bulk water supplied to GPs 4. To liaise with the Commissioner, ULB and facilitate payment for bulk water supplied to ULBs.
SE- RDWSD	Quarterly review of bills generated and raised with the GPs/ULBs for bulk water supplied.
RDPR Department	1. Coordinate with the three tier PRIs for the smooth operation and maintenance of rural water supply schemes. 2. Ensure capacity building of different stakeholders on their roles and responsibilities with regard to operation and maintenance. When elections are held to the three tier PRIs every five years, the RDPRD and RDWSD shall jointly train, equip ansd build capacity of the newly elected GP/ VWSC to operate and manage the SVS/IVDN. 3. RDPRD and RDWSD shall jointly prepare and revise the tariff structure of rural water supply schemes

PDO	Complete Management of SVS/IVDN/WPPs.
CEO - ZP	1. Facilitate discussion on bulk water tariff and payment thereof at the meeting of DWSM 2. Closely monitor payment for bulk water supply from Gram Panchayats 3. Facilitate provisioning for payment of bulk water tariff in the Gram Panchayat Development Plan/Annual Action Plan. 4. Chairperson of Coordination Committee
Commissioner – Urban Local Body	1. Ensure the presence of ULB level Water operator while recording the Bulk Water Consumption in kL (OHT/BWM Level) in the Log Book Format (to be maintained at OHTs/ Bulk Water Meter Points). 2. Confirm the total water supplied from the MVS to the ULB (for all wards/villages and habitations), under his/her signature and seal vide the Format 3. Include provision for payment of bulk water tariff in the Annual Action Plan of the ULB 4. Release payment for bulk water tariff through Treasury remittance on a monthly basis.
Deputy Commissioner	Facilitate arbitration process
O&M Contractor	Roles and Responsibilities shall be carried out as per O&M contract's terms and conditions

ANNEXURE 13 WATER TARIFF CALCULATION - MVS

Table 20: Water Tariff Calculation at MVS level

	Tariff for water supply from RDWSD to GPs Rs /kL	Volume of Water in Block (kL)	Cumulative Water Consumption in kL/Month	Block Tariff Amount	Cumulative Amount of Tariff
1	2	3	4	5 (=2*3)	6
Assuming a GP with 1500 Households					
Upto 7 kL/ Month/HH for entire GP	05	9000	9000	45000	45000
7.1 to 10 kL/ Month/ HH /for entire GP	08	6000	15000	48000	93000
10.1 to 15 kL/ Month/HH for entire GP	10	7500	22500	75000	168000
15.1to 20 kL/ Month/HH for entire GP	12	7500	30000	90000	258000
Tariff for Bulk water supply (non-PRI)					
Upto 60 kL/ Month/Bulk Consumer	15	60	60	900	900
60.1 kL+ Upto 120 kL/Month	17	60	120	1020	1920
120.1 kL+ Upto 180kL/Month	19	60	180	1140	3060
180.1 kL+Upto 240 kL/Month	21	60	240	1260	4320
The GP shall inform RDWSD the updated figures of population and number of households (based on 2021 census or 2011 census) in the GP limits before 31st March of each year. The total requirement of lifeline water for a GP will be calculated based on the population figures.					

ANNEXURE 14 ANNUAL O&M PLAN FOR MVS/SVS/IVDN/WPPS

The Major objective of operation and maintenance of water supply system is to provide sustainable, equitable, consistent, economic, safe and adequate water. Operation of system in general means ensuring effective routine running of the water supply system. Maintenance in general means up keep of structures/system including planned, preventive or corrective maintenance and repairs.

Operation and Maintenance Plan for Water Supply[18] Scheme.

An operation and maintenance (O&M) plan is a must for water supply schemes. A proper O&M plan is one step that will surely lead to the sustainability of the water supply scheme. An O&M Plan shall be made at the time of commissioning of the water supply scheme. Thereafter, the O&M plan shall be for the scheme every year. The O&M Plan shall be based on the O&M pentagon.

The O&M Plan is a dynamic and all-inclusive document that covers critical aspects of properly running a water system. Research for this article from EPA guidance tools and various state primacy templates has demonstrated that there is a wide variance in plan requirements and complexity. Standardization of O&M Plan would be of benefit by easing plan preparation, providing better comprehension by new system operators and improving emergency response in large multi-state disaster events. The RCAP national network of field technical assistance providers can help small systems prepare an O&M Plan and often at no cost to the system.[19]

Table 21: Contents of O&M Plan

Contents of O&M Plan
1. General Information on Water Supply Scheme
1. O&M plan for Water Source and Water Quality Monitoring
3. O&M Plan for Water Infrastructure 3.1 Asset Inventory and Inventory of Spares/materials/consumables 3.2 Operation and Maintenance (Preventive-routine-breakdown maintenance 3.3 Management of Emergencies/Shutdowns 3.4 Equipment Repair/Supply Contact Information
4. Finance Management Plan 4.1 Tariff plans /Cost recovery 4.2 Billing and Collection plan 4.3 Budgeting and Accounting System plan 4.4 Plan for replacement & rehabilitation costs
5. Institutions& Governance 5.1 Institutional arrangements – MoUs/ Roles and Responsibilities of stakeholders/ Interface between GP-VWSC-RDWSD-Operator/ Technical support to GPs 5.2 Grievance Redressal Mechanism 5.3 Record Maintenance and documentation plan (computerized database of consumers, Logbooks, Billing, Collection, maintenance history, Inventories, Inspection reports etc.) 5.4 Plan for MIS and Monitoring of Services
6. Staffing & Training Plan

Table 22: General Information on Water Supply Scheme

General Information on MVS								
No	**Scheme details**			**Basic Scheme Data**			**Supporting Details/ Documents**	
1	Name of Water Supply Scheme							
2	Type of Scheme			MVS/SVS/IVDN/WPP				
3	Water Supply Scheme identification number (if any)							
4	Location details of the scheme/ Service Area details 1. District in which the scheme is located 2. Taluks covered by the scheme (drop down list) 3. No. of GPs covered by the scheme 4. Name of GPs covered by the scheme (drop down list) 5. No. of Villages covered by the scheme 6. Name of Villages covered by the scheme (drop down list) 7. No. of Habitations covered by the scheme Name of Habitations covered by the scheme (drop down list)							
5	**Population covered by the scheme**			**Population**			**Households**	
				Current	Mid Term	Ultimate design year	Current	Mid Term	Ultimate design year
5.1	Population								
5.2	Households								
5.3	Demand Forecast in kL								
6	Address and contact information 1. EE- RDWSD; Name and contact number 2. AEE- RDWSD; Name/s and contact numbers 3. AE- RDWSD; Name/s and contact number 4. PDO-GP; Name and Contact Number 5. O&M agency (Contractor)						Name Phone Number Email Id WhatsApp contact		
7	Name and designation of the officer/ individual preparing the O&M plan								
8	Date of O&M plan								
9	Details of subsequent revision or updates on the O&M plan								

10	System ownership (RDWSD/GP)	Drop down Options
11	Listing various operator certifications	Drop down Options
12	Scheme Component Details	
12.1	Source Type- Groundwater/ Surface Water	Drop down Options
12.2	If Groundwater, details of Borewells	
12.3	If Surface Water, a) Open Well; b) Springs; (c) River (d) Reservoir; (e) Other	Drop down Options
12.4	Source related additional structures: (infiltration wells/galleries--)	Drop down Options
12.5	Location of source (Name/Lat//Long/Alt)	
12.6	Source details (a) date and age of structure; (b) yield BW/ OW); (c) depth (BW/OW), (d) Static and pumped water levels ((BW/OW), (e) Pipe diameter – (Rising Main/ Major Distribution Network) (f) Type of Pipes used; (g) Other if any	Drop down Options
12.7	Water quality details on the basis of water quality test reports; (a) Date of testing; (b) Lab in which tested: (c) Observations on Lab Test Results with regard to Quality	Format for recording water quality test data
12.8	Operations Plan for Source	
12.9	Water Source Protection and Maintenance Plan	

Annual O&M Budget for Common Facilities and Major Distribution under MVS

Table 23: O&M Budget for MVS under Annual O&M Plan

No.	Particulars	Financial Year _____ (Figures in Lakhs)	Remarks if any
A	**Expenditure**		
A.1	**Salaries/Incentives**		
1	Source / (Staff Cost)		
2	WTP (Staff Cost)		
3	IPS /LS (Staff Cost)		
4	Others if any (Add more rows if needed)		
	Sub Total A.1		
A.2	**Electricity Payments**		
1	Source / (Power Units &Cost)		
2	WTP (Power Units &Cost)		
3	IPS /LS (Power Units &Cost)		

4	MBR (Power Units &Cost)		
5	ZBR (Power Units &Cost)		
6	Others if any (Add more rows if needed)		
	Sub Total A.2		
A.3	**Purchases**		
1	Pipe and related materials for repairs		
2	Bleaching Powder and Consumables		
3	Machinery		
4	Tools		
5	Stationery		
6	Water Testing Charges		
7	Diesel Generator/Diesel Charges		
8	Other		
	Sub Total A.3		
A.4	**Labour/Vendor charges for Repairs, Maintenance/ New Works**		
1	Repair of Pipes/ Leaks (INR)		
2	Repair of Valves (INR)		
3	Repairs of Chlorinator (INR)		
4	Electrical Repairs (INR)		
5	Repairs of Machinery (INR)		
6	Cleaning of MBT/ZBT (INR)		
7	Civil Works (Source/OHT/WTP/Other)		
8	Other		
	Sub Total A.4		
A.5	**Administrative & Miscellaneous Expenses**		
1	Travel & Conveyance		
2	Food & Refreshments		
3	Stationery & Other Consumables		
4	Meetings		
5	Local Trainings		
6	Other incidental expenses		
7	Miscellaneous		
	Sub Total for A.5		
	Total Expenditure A.1 to A.5		

	Annual estimated Income				
1	Name of GP (Drop Down List)				
2	Total Demand				
3	Total Supply in kL				
	Total Income				
	Total				
B	**Income**	**Unit income**	**Total Units**	**Annual Income**	**Remarks**
1	Fees for New House Tap Connections No. of HTC applications @ Rs. ---------- x No. of connections=				
2	Total Number of Households in the GP Village-1 (----------) x No. of HTCs x @ INR Village-2 (----------) x No. of HTCs x @ INR Village-N (----------) x No. of HTCs x @ INR Total Income anticipated from House-hold connections Total Number of Other connections • Institutions x Number x @ INR • Commercial units x Number x @ INR • Industrial units x Number x @ INR				
	Total income anticipated from Institutional and other connections				
3	Grand Total income from all sources for the year				
4	Difference between A and B				
5	Difference between A and B = Surplus or Deficit				

ANNEXURE 15 NOTE ON PACKAGING OF O&M CONTRACTS OF MVS AT DISTRICT LEVEL

It is proposed to put all MVS contracts in a district into a single package of O&M contract, so as to attract experienced and professional operators/ contractors into management of MVSs. This exercise shall be done at the division level. Following steps are proposed to package all MVS contracts into a single contract.

- Executive Engineers at the division level in RDWSD shall prepare a list of O&M Contracts under MVS in the chronological order of the expiry of current contract.
- An interim contract shall be provided while renewing the current O&M contract so as to close all O&M contracts at a common date. Financial year may be followed to calculate common closure of O&M Contracts. An example, following financial year model is provided below.

Table 24: Packaging of MVS contract financial year model

No	Name of MVS/ Contract	Closing date of the O&M Contract (2021)	No. of Months left for Calendar Year Closure*	
1	MVS Contract 1	30 October	05	A provisional contract for the number of months left till the end of the financial year may be entered into with the existing contractor. All existing contracts shall be closed on 31st March of the financial year. Fresh package of district wide O&M contracts shall be entered into with effect from April.
2	MVS Contract 2	30 January	02	
3	MVS Contract 3	28 February	01	
4	MVS Contract 4	31 March	00	
5	MVS Contract 5	30 April	01	
6	MVS Contract 6	30 June	09	
7	MVS Contract 7	31 May	10	
8	MVS Contract 8	30 June	09	
9	MVS Contract 9	30 September	06	
10	MVS Contract 10	30 October	05	
11	MVS Contract 11	31 December	03	
12	MVS Contract 12	30 January	02	
13	MVS Contract 13	30 January	02	
14	MVS Contract 14	30 November	04	
15	MVS Contract 15	30 November	04	
16	MVS Contract 16	31 December	03	

ANNEXURE 16 NOTE ON RENEWAL OF O&M CONTRACTS AND HANDING OVER FROM OLD TO NEW CONTRACTOR

Governments of Karnataka, vide Government Order No. RDP/12/RWS (4) 2011(P) Bangalore, dated 12.03.2013) has decided to entrust the operation and maintenance of MVSs to Operators/ Contractors selected through open competitive tender process. Before the expiry of the existing O&M contract, the contractor along with Executive Engineer shall list out all assets with geo-tagging including all equipment such as meters, pumps, motors, valves etc along with the status of their functionality in a punch list format. Punch list can be prepared in the following methods.

Method 1: Contractor prepares the punch list and then gets it certified by Executive Engineer

1. **Step 1:** One year before the expiry of the existing O&M contract, the Contractor shall prepare the detailed punch list of all assets and equipment indicating the status of functionality and requirement of repairs/ replacement.

2. **Step 2:** Subsequent to preparing the Punch list by the contractor, the same will be submitted to Executive Engineer for verification and certification.

3. **Step 3:** The Contractor and the Executive Engineer shall jointly carryout the site verification for ascertaining the status, quantity and quality of assets and equipment in terms of usage, repair works, replacement, working condition etc.

4. **Step 4:** Based on the site visit observations, each of the assets and equipment that are mapped need to be updated by the contractor and submitted to Executive Engineer.

5. **Step 5:** The final punch list would be verified and approved by the Executive Engineer which shall indicate the repair, replacement and any other works that has to be carried out by the contractor before the contract tenure is completed against all components and assets in the punch list.

6. **Step 6**: In addition to the above the Executive Engineer shall have to identify the additional infrastructure required to be included in the next contract.

Method 2: preparation of punch list after Joint inspection survey by Contractor and Executive Engineer

1. **Step 1:** One year before the expiry of the existing O&M contract, the contractor shall discuss with the Executive Engineer and schedule the dates for visiting the site for preparation of punch list.

2. **Step 2:** Before proceeding to the site visit, the contractor shall prepare the format for punch list and discuss the same, and if there are any suggestion or observations by the Executive Engineer, the same shall be incorporated by the Contractor.

3. **Step 3:** Joint inspection by Contractor and Executive Engineer shall be carried out for the project components, assets and equipment. In case any additional infrastructure or additional investment is required, the same shall also be captured.

4. **Step 4:** After the joint inspection survey, the contactor shall prepare the draft punch list and submit the same to Executive Engineer for observations.

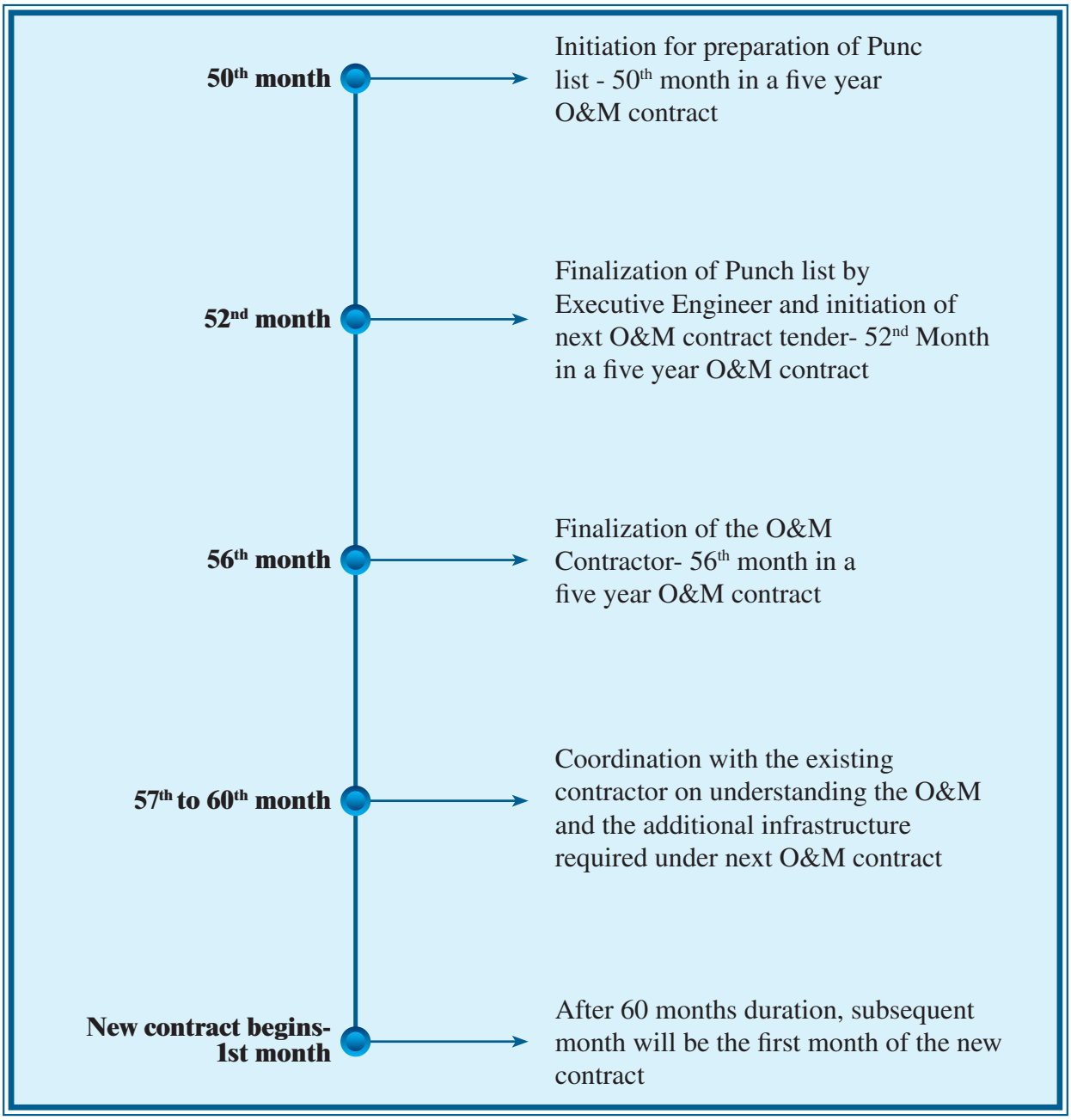
5. **Step 5:** In case of any observations or changes by the Executive Engineer, the same shall be incorporated by the contractor and submitted for final verification and approval.

The punch list has to be prepared in the final year of the existing O&M contract, to ensure that the tender document for the next O&M contract can include the punch list and additional infrastructure requirement in the scope of work so that the new contractor is aware of the punch list and activities to be carried out.

The Executive Engineer shall have to invite the tender for next O&M contract, not later than 8 months prior to expiry of the existing O&M contract, so that enough time is provided for the entire bidding process, approval process and issue of work order to the prospective O&M contractor. It may be noted that before expiry of the existing contract, the new contractor shall visit the site and get familiar with the project assets, equipment and O&M activities that are being carried out by the existing contractor. During the last 4 months the existing O&M contractor shall brief and clearly indicate all the process, human resource, control points, and other aspects of operation and maintenance to the new contractor.

The new contract will come into effect only after the termination of the old O&M Contract.

Figure 3: Renewal of O&M Contracts- Flow Process



ANNEXURE 17 NOTE ON CALCULATION OF O&M CONTRACT AMOUNT BASED ON KEY PERFORMANCE INDICATORS (MVS)

O&M contract for a MVS will be awarded for a five-year term with year-on-year renewal of contract. The O&M contract for MVS shall be assessed, on the basis of Key Performance Indicators (KPI). Remuneration for O&M contractor, applying KPIs is worked out as below. The Operators will get 50% of the O&M contract amount as fixed pay-out and 50% payment against achievement of key performance indicators as Variable pay-out. Key Performance Indicators for the O&M Contract of MVS shall be as under: Key Performance Indicators shall consist of (1) Quantity, (2) Quality (3) Turn Around Time (TAT) for GRM and (4) Power consumption. The following table provides details of breakup of O&M payment to the contractor under fixed and variable pay category.

Table 25: O&M Contract Payment based on KPIs

O&M Contract Payment (100%)					
					Key Performance Indicators "Variable Pay-out"
Fixed Pay-out	Quantity	Quality		TAT for GRM	Power consumption
		WTP	WTP		
50%	20%	5%	20%	5%	Excess energy amount is deducted from the monthly bill

Definition of KPIs:

Table 26: Definition of KPIs

No	Key Performance Indicator	Definition of KPI
1	Quantity of treated water	• Total Quantity of Treated Water to be supplied to each OHT covered under the scheme at minimum of 55 LPCD for the design population • Weightage is 20% from O&M Contract Payment of 100%
2	Quality of treated water	• All water samples tested in the previous month at WTP and OHTs to meet quality standards as defined and summarized in the contract and O&M Policy • Weightage is 25% from O&M Contract Payment of 100%
3	Turn Around Time for GRM	• All Minor & Major complaints shall be addressed based on the stipulated timeline given by the department • Weightage is 5% from O&M Contract Payment of 100%
4	Power consumption	• Maintaining optimum power consumption in the pumping and treatment functions of the water supply scheme • No Weightage. However, Excess energy charges is deducted from the monthly bills

Operationalization of O&M Contract Payment:

Contractor shall submit the data for KPIs monthly to the EE, RDWSD. Payment to the contractor shall be made on a quarterly basis.

Illustration of implementing KPIs

1. Quantity of treated water:

The volume of water supplied by the operator will be measured and captured daily and this will be compared with the required quantity of water to be supplied by the operator. Penalty will be levied for the shortfall of water supply i.e., if the quantity of water supplied to the sum total of village OHTs individually and collectively is less than the required quantity, then penalty will be levied.

20% Weightage against achievement of performance indicator - 1 will be considered under this head. Separate considerations are provided for the New MVS and Existing (commissioned and functional) MVS. Following Table provides the assumptions for calculation of payment under the variable payment for Quantity factor.

Table 27: KPI - Quantity of Treated Water

Basis for assumptions	New MVS	Existing MVS/Legacy MVS
Calculation of Water consumption for an OHT	(1) Take readings from Bulk Water Meters installed at Village level OHT. (2) Bulk Water Meter Readings will be taken by the representative of the Contractor and the GP Water operator. (3) Readings will be taken on a Village OHT based Log Book and will be confirmed by the PDO with his signature on a daily basis. (4) Format given vide Annexures 8 will be used for recording readings/ data. (5) Format given vide Annexures 9 will be used for consolidating water consumption data on a Monthly basis. (6) If SCADA is implemented, SCADA readings will be captured by the Operator. Irrespective of SCADA implementation, manual meter readings have to be carried out by Water operator at same time point every day.	(1) Take readings from Bulk Water Meters installed at Village level OHT. (2) Bulk Water Meter Readings will be taken by the representative of the Contractor and the GP Water operator. (3) Readings will be taken on a Village OHT based Log Book and will be confirmed by the PDO with his signature on a daily basis; i.e., frequency of data collection will be on daily basis. (4) Format given vide Annexures 8 will be used for recording readings/ data. (5) Format given vide Annexures 9 will be used for consolidating water consumption data on a Monthly basis. (6) If/when SCADA is implemented, SCADA readings will be captured by the Operator. Irrespective of SCADA implementation, manual meter readings have to be carried out by Water operator at same time point every day.

	(7) SCADA readings and manual readings of water consumption shall have to be taken at same time point every day. (8) Manual readings from Water operator shall be used as backup for verification of payment in case of SCADA downtime. In case of difference between SCADA and manual readings, SCADA readings shall supersede.	(7) SCADA readings and manual readings of water consumption shall have to be taken at same time point every day. (8) RDWSD will issue detailed guidelines for the administration of KPIs after the notification of O&M policy for O&M of legacy MVS. There shall be no difference on the basis for calculating variable payment under KPIs, when Legacy schemes are provided with instrumentation/ automation like New Schemes.

Water consumption data at Village level OHT will be recorded on a daily basis. If there are no Village level OHTs, readings from the Bulk Water Meter at the entry of the Village will be recorded. Basis of calculation of variable payment will be daily supply of water against required quantity of supply as per design or agreement. Calculation of Penalty for shortfall in water supply at individual Village level OHT is as follows:

a. If 100% quantity of water is supplied - No penalty is levied

b. If quantity of water supplied is between 70% to 100% of required supply any day, proportionate (pro-rata) linear penalty shall be applicable for such OHTs where there is a shortfall on a daily basis. For example, if there is 1% drop in water supply then 1% amount assigned for that OHT will be penalized.

c. If quantity of water supplied is below 70% of full supply any day - Zero payment will be made for the quantity component of that OHT for that day.

d. If quantity of water supplied is below 70% of full supply consecutively for 3 days - 20% of contract amount component of that OHT in the entire monthly bill will be deducted.

Calculation of Collective Penalty for shortfall in water supply considering all the OHTs in the particular contract is as follows:

a. If monthly volume of water supplied is below 70% of required volume of supply for all OHTs collectively - Zero payment will be made to the contractor for that month 20%. of O&M Contract Payment for that month will not be paid.

Operationalization:

A. Format for assessment of KPIs for making payment to the contractor is provided in the O&M policy/ O&M manual.

B. The format shall be used by the O&M contractor for submission of invoices to the department. JE/AE shall use the same format for verification. The invoices / bill shall be authorized by AEE at Taluk Level or EE at Divisional level.

C. Water operator shall fill details of water supply/ consumption in the logbook daily and shall be verified and confirmed by PDO daily, subsequently approved by AEE at Taluk Level or EE at Divisional level every month.

2. Quality of treated water:

Quality related KPI shall be administered, and incentive payouts shall be done for New MVS. In case of existing MVS / Legacy MVS, Quality KPIs shall be administered from the commencement of the fresh contract after notification of O&M policy

Table 28: KPI - Quality of Treated Water

Basis for assumptions	MVS WTP	Village level OHT
Weightage for payment under KPI	5%	20%
Parameters for water quality testing	Water supplied to the scheme should be tested at Water Treatment plant (WTP) with all the 17 water quality parameters. (See Annexures 1 and 2 for details).	Four water quality parameters will be tested daily at Village level OHT: (i) Colour (Hazen units, Max); (ii) pH-value, (iii) Turbidity in NTU, and (iv) Free Residual chlorine- mg/l, Min.
Testing of water quality	1. 17 parameters will be tested at WTP lab by Contractor daily. The tests shall be deemed compliant if all 17 parameters are within acceptable limits. Even if one parameter does not comply the acceptable limits, the contractor shall be deemed to be non-compliant and shall be penalized.	1. OHT testing by Water operator (PDO) using FTKs in the presence of the representative of the contractor at OHT. The tests shall be deemed compliant of all 4 parameters are within permissible limits. Even if one parameter does not comply the permissible limits, the contractor shall be deemed to be non-compliant and shall be penalized.
Testing of water quality by RDWSD and Penalty imposed for non-compliance	1. Random counter checks to be carried out by AE/ AEE/ EE twice a month. Two sampling shall be collected during each counter check. 2. First sampling set shall be taken in the first fortnight of the month. In the first sampling set, two samples namely 'sample A' and 'sample B' are collected with a gap of 7 days between the sample collection. Second sampling set shall be taken in the second fortnight of the month. In the second sampling set, two samples namely 'sample C' and 'sample D' are collected with a gap of 7 days between the sample collection.	1. Random sampling shall be carried out at 5% of OHTs or minimum of 5 OHTs in a scheme, during a month. 2. Sample selection shall be at the discretion of EE. Prioritization shall be made to sample OHTs that receive higher number of complaints through GRM. No Village OHT based water sample shall be tested consecutively unless specifically asked by EE. 3. The sampled results shall be extrapolated to represent the total number of OHTs in the scheme.

<table>
<tr>
<td></td>
<td>3. In the first sampling (i.e., during first fortnight of the month),

a. If test results of ‘sample A’ is found to be within acceptable limits, ‘sample B’ shall be discarded and payment shall be contingent on results of second sampling check (carried out in the second fortnight of the month).

b. If test results on ‘sample A’ is not in compliance, ‘sample B’ shall be tested. If ‘sample B’ is also not in compliance, entire 50% of the O&M contract payment for the month (i.e., fixed plus variable) shall be penalized.

4. In the second sampling (i.e., during second fortnight of the month),

a. If test results on ‘sample C’ is found to be within acceptable limits, ‘sample D’ shall be discarded, and no penalty is imposed on WTP’s 5% Weightage.

b. If test result on sample C’ is not in compliance, ‘sample D’ shall be tested. If ‘sample D’ is also not in compliance, 50% of O&M contract payment for the entire month (variable) shall be penalized.

Note: Tests of samples C&D are necessary only when sample A&B qualifies the parameters.</td>
<td>4. No. of OHTs to be tested,

a. For a MVS scheme which has less than 100 Nos. of OHTs, then minimum 5 OHTs shall be tested.

b. For a MVS scheme which has more than 100 Nos. of OHTs, 5% of the OHTs shall be tested.

<table>
<tr><th colspan="3">OHTs</th></tr>
<tr><th>Sl. no</th><th>Min 5 OHTs</th><th>Penalty Imposed</th></tr>
<tr><td>1</td><td>Quality Compliant</td><td>No Penalty</td></tr>
<tr><td>2</td><td>Quality Affected</td><td>Penalize quality variable amount for 100% of quantity of water supplied from total OHTs in proportion to the quality affected sample</td></tr>
</table>

5. Samples (of the OHTs) needs to be taken and tested uniformly every week over the month. The objective of taking 5% samples every week is to ensure that at the month end, 20% of the samples have been tested and found compliant., If not, it is possible that the contractor can completely ignore the OHT water quality standards for the rest of the month, as he is aware that he will be penalized for the full OHT quality Weightage.</td>
</tr>
<tr>
<td>Cost towards testing by RDWSD</td>
<td>Cost of all tests are to be paid by the department and charged to the contractor.</td>
<td>Testing is carried out by using FTKs available in Village / GP level. Cost is not to be borne by the operator.</td>
</tr>
</table>

3. KPI on Turn Around Time(TAT) for GRM

By defining clear KPIs for TAT for resolving minor and major complaints received through GRM, RDWSD aims to ensure efficient issue handling, enhance user satisfaction, prevent escalation, and enable effective performance monitoring of MVS.

Grievance Redressal Mechanism (GRM)

The GRM categorizes complaints received through the GRM cell as either Minor or Major, each with designated resolution timelines:

- Minor Complaints: Typically resolved within 24 to 48 hours. Quick resolution is essential for maintaining service quality and ensuring user satisfaction.
- Major Complaints: Generally addressed within 3 to 7 days. More complex issues, particularly those related to pipeline networking/pumping machinery repairs/electro mechanical repairs, may require 10 to 15 days for resolution due to their intricate nature.

Responsibilities and Accountability

- The AEE and sectional officers are responsible for coordinating with maintenance operators, ensuring compliance with timelines for addressing complaints, and immediately reporting grievance status to the state office.
- The Contractor/Operator and the AEE will collaborate to define the types of complaints and the associated timelines (decided in table 28.a : KPI – TAT for GRM) , and both parties are expected to adhere strictly to these agreements.
- The AEE shall maintains an electronic register for the GRM process, monitoring monthly activities to ensure timely resolution. Additionally, a comprehensive report is submitted to the state office before quarterly payments, detailing unresolved complaints and fostering accountability. .

Penalties for Non-Compliance

Minor Complaint

- Resolution Timeline: If a minor complaint is not addressed within the agreed timeline, the following steps will be taken:
- Notification: The Assistant Executive Engineer (AEE) of the concerned district will issue a formal letter.
- Demand for Redressal: The letter will demand immediate action to resolve the complaint.

Major Complaint

- Penalty Structure: In the case of a major complaint where the resolution timeline is breached, the contractor will face financial penalties. The penalty will be calculated as follows:
- Daily Penalty Rate: 10% of the 5% of the total Operations and Maintenance (O&M) payment per day of delay.
- Maximum Limit: The total penalty will not exceed 5% of the total O&M payment.

Table 28.a – KPI – TAT for GRM

Sl. No		Complaints	Timeline for completion
1	**Minor Complaints**	Log book not being maintaining	1-2 days
2		Painting to all the tanks and buildings-Every season as required	
3		Name boards of WTP components are not being done	
4		Not maintaining the Cleanliness of WTP premises.	
5		Non functionality of Valves	
6		Oil lubrication and proper cooling of pumps are not being done	
1	**Minor Complaints**	Irregular supply of electricity/tapping points leading to additional electricity bill.	2-3days
2		Pump/motor service issues are not attended on time, no proper maintenance and not maintaining oil levels in transformers.	5days
3		Frequent damages of pipes due to improper depth of pipe laying	15days
4		Frequent cleaning of OHTs, clear water storage reservoir.	5days
5		Clogging of filter media due to lack of backwash of filter media. Changing filter media every year.	2days
6		Contamination of water due to presence of dead animals in the storage structures	3days
7		Theft of Motors/Pumps/Batteries/solar panels	5days
8		Theft of water or extra tapping in the outlet of OHTs.	15days
9		Rusting of the metal components which come in to contact with water in the water retaining structures	3days
10		Non checking of water quality as per specification and non-recording of the report	5days
11		Internet network issues for SCADA system is not getting resolved.	3days
12		Dosage of alum quantity is not as per specification and also to ensure that chlorine residue is maintained at the tail end.	2days
13		Opened Electrical connections	3days
14		Operating staff are not as per the required numbers	5days
15		Local issues like differential quantity of water supply to one area to another hence water man to be capacitated.	15days
16		Calibration of Flow meter & lab equipment not being done regularly.	5days
17		In electrical system, not checking & recording temperature and vibration of the equipment	5days
18		Bulk flow meter to be installed at all the outlet points	2-3days

4. Power Consumption

Key Performance Indicator (KPI) for Power Consumption shall be administered and incentive payouts shall be done for New MVS. In case of Existing MVS / Legacy MVS, KPI on power consumption shall be administered from the start of a new contract after notification of O&M policy.

No Weightage for the KPI on power consumption. However, excess energy charges will be deducted from the monthly O&M contract amount.

Maximum Power Guarantee: - The Contractor has to provide power guarantee for all the equipment to ensure optimal power consumption throughout the contract period. It is also the responsibility of the contractor to ensure all motors and pumps function to their maximum power factor. Any reduction in the efficiency of the motor will lead to reduced power factor and levy of penalty by ESCOM. The operator shall be liable to bear the expenses of any charges towards additional power consumption beyond the maximum power guarantee provided by the operator and all penalties levied by ESCOM towards reduction in power factor on monthly basis. The following norms will appear in administering the KPI on power consumption:

1. The Contractor/Operator and EE will agree on the optimum power consumption (based on the DPR/ assessment from the trail run period) of the scheme as Maximum Power Guarantee either during the signing of contract or subsequent to the beginning of O&M period.

2. In case of excess power consumption (i.e. more than the Maximum Power Guarantee) the operator shall be liable for deductions from monthly O&M contract payment amount (fixed plus variable).

ANNEXURE 18 NOTE ON TRAININGS AT STATE AND DIVISION LEVEL

Capacity building of officials and Engineering staff of RDWSD and RDPR Department are critical for the sustainability of rural water supply schemes. RDWSD shall facilitate training of all officials of RDWSD and RDPR, focusing on water supply scheme management and O&M. Given below is a tentative training module at district and state level.

Table 29: Tentative training module at district and state level.

No	Training Event & For Whom	Duration	Training Content
1	Training of Master Trainers (ToT) (State level)	6 Days	1. Water Literacy 2. Rural Water Supply and Sanitation Programs in India- 1950-2020- A historical perspective 3. Water Resources Situation in Karnataka- Rural Water Supply Projects in Karnataka -1956-2020. 4. Experience of Water Supply Schemes focusing on MVS in Karnataka- technical, institutional, governance, finance aspects. 5. Water Quality Parameters- Physical/ Chemical and Bacteriological-Testing selected parameters using FTK- Theory and practical 6. Practical Project Management in the context of Rural Water Supply Programmes in Karnataka 7. Monitoring, Evaluation, Governance & Accountability; Baselines, Reporting and Documentation 8. Operation and Maintenance of MVS- Technical (Source and Infrastructure), Institutional, Finance, Staffing, Governance, Stakeholder Roles 9. Operation and Maintenance of SVS/IVDN including WPPs Institutional, Finance, Staffing, Governance, Stakeholder Roles 10. Finance Management with regard to Operation and Maintenance Role of Operator/ DBOT Contractor
2	Training in O&M and Scheme Management of MVS for RDWSD Engineers – District and State level	4 Days	1. Water Literacy- Water- Health Sanitation Linkages 2. Operation and Maintenance of RWSS- (Technical) 3. Role of District and GP level Stakeholders 4. O&M Budgeting 5. Metering 6. Billing and Collection Arrangements

			8. Monitoring Performance of MVS and SVS 9. Contract Management 10. Identify and document water supply schemes and arrangements at GP level 11. GRM Role of GP level Stakeholders in Operation and Maintenance of RWSS
3	Training in local level water resource management and recharging sources (ToT for PRD Engineers and other officials)	3 Days	1. Water Literacy- Water- Health Sanitation Linkages 2. Seasonality water shortage and crisis 3. Mapping of public and private water sources in the GP 4. Preparation of micro level water recharge plan-source-wise 5. Participatory Monitoring of water levels 6. Judicious use of water resources by community Community participation in water resource management.
4	Inter-State Exposure Visit for RDWSD Engineers (District and State level) / GP Presidents/ PDOs	3 Days	Exposure visits to an operational MVS; The team of participants will prepare a case study and present technical details, assessment of the performance of the MVS and suggest improvements in O&M, including technical, institutional, governance, finance aspects

In addition to the above specified training events, there may be certain modules which will be introduced for supplementing and complementing the above training activities

ANNEXURE 18.1 REPORTING FORMAT FOR TRAINING ACHIEVEMENT

Table 30: Reporting Format for Achievement under Training

No	Name of Training Event	Start Date	End Date	No. of Participants			Person Days Trained
				Male	Female	Total	

ANNEXURE 19 OPERATION AND MAINTENANCE (O&M) CELL UNDER RDWSD

Introduction

Rural Drinking Water and Sanitation department, Government of Karnataka has made a major paradigm shift by adopting surface water source based Multi Village Schemes to supply water to rural Karnataka since 2014. About 500 MVS have been commissioned till date. These MVS along with few SVS serve a total population of 1.1 crores in the State. Planning and implementation of Multi Village Schemes are getting greater focus with the launch of National Jal Jeevan Mission. Karnataka has also sourced funds from NABARD to implement several Multi Village Schemes, with a greater objective of covering entire rural population of the State with FHTC and potable water supply.

RDWSD brought out Government Order in December 2020, defining water tariff for Gram Panchayats, which are supplied with potable water from MVS. Subsequent to the GO of December 2020, a comprehensive Operation and Maintenance Policy, based on an O&M Pentagon consisting of water source, infrastructure, finance, capacity building and IEC as well as governance cum Institutional components, has been prepared and notified Also, as per the suggestions made in the Capt. Rajarao Committee Report, the RDWSD role must be limited to technical support to ZP/TP/GP for establishing and in O&M of WPPs. The O&M policy proposes to establish a dedicated cell for monitoring and managing Operation and Maintenance of MVS, at the RDWSD HQ

Objectives of the O&M Cell

The general and broader objective of O&M Cell is to support the RDWSD in managing Operation and Maintenance of Multi Village Schemes and to guide Gram Panchayats in operating and managing SVS and IVDN including WPPs.

Specific objectives of the O&M Cell are illustrative and include the following:

1. To manage O&M tendering process, management and administration of O&M contracts

2. To assess maintenance and rehabilitation requirements in MVS across the state

3. To facilitate Divisions of RDWSD to procure and install Bulk Water Meters (Electro-Magnetic Meters) in legacy and new MVS

4. To undertake Training Need Assessment (TNA) of RDWSD divisions and facilitate capacity building programs of RDWSD officials as well as that of other sector stakeholders

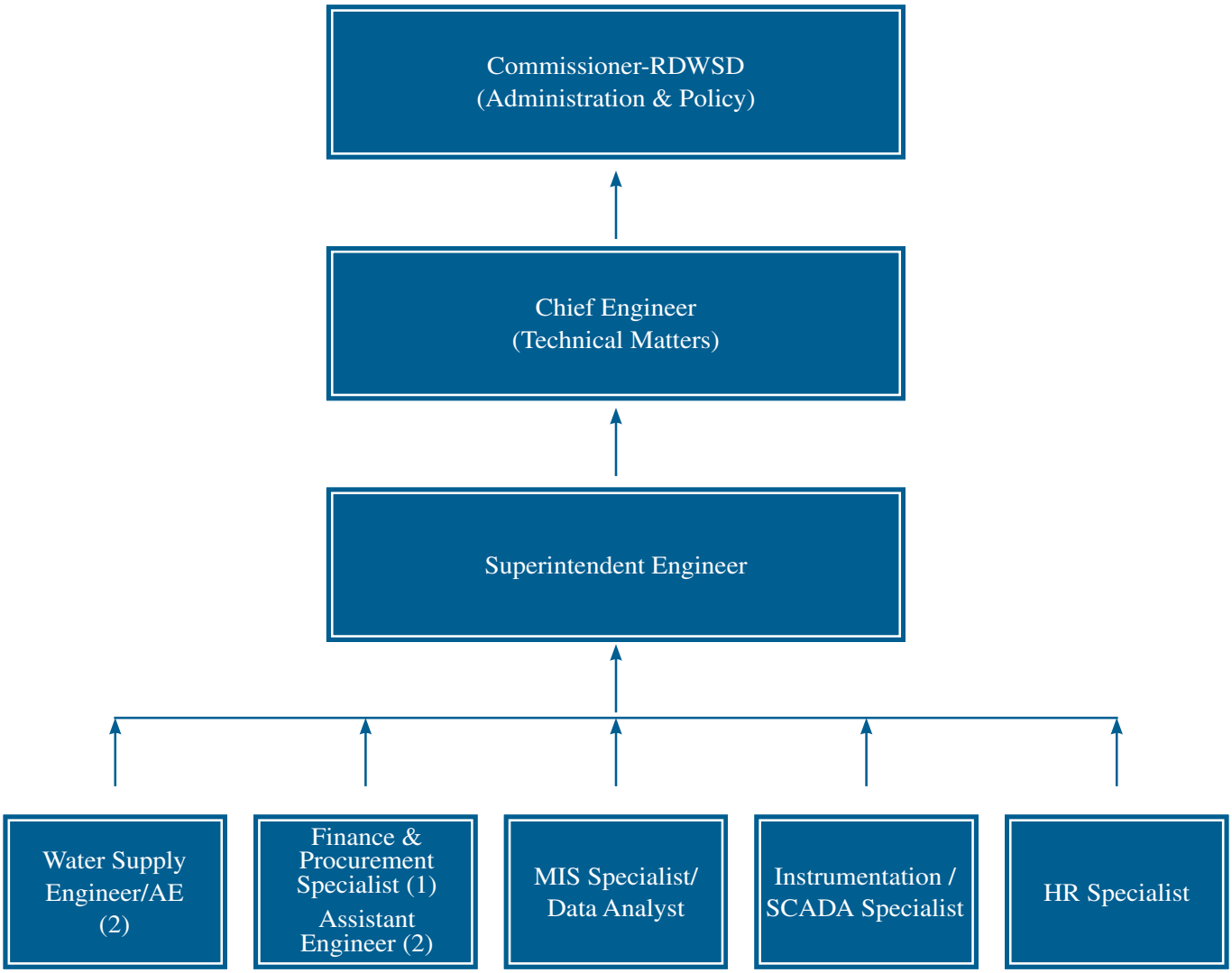
5. To plan, develop and implement a comprehensive Management Information System (MIS) with Application of Programme Interface with SCADA, IoT and other Web based software systems to monitor and manage MVS in the State of Karnataka.

6. To support RDWSD and GPs in sustainable operation and maintenance of MVS, and SVS/IVDN and WPPs.

Constitution of O&M Cell: The O&M Cell shall be headed by a Superintendent Engineer (SE) of RDWSD either on a full-time basis or holding additional responsibility for O&M related management activities. The SE will be supported by: (1) Water Supply Engineer (Two Positions); (2) Finance and Procurement Specialist; (3) MIS cum Data Analyst; (4) Instrumentation / SCADA Specialist and (5) HR Specialist; (6) Team Assistant /Office Coordinator. Depending on the quantum of work and justified requirement, there may be an increase in the number of persons after following due procedures and due permissions.

Organogram of O&M Cell: The O&M Cell will have the following organizational structure.

Figure 4: Organogram for O&M Cell



Reporting: The O&M Cell shall report to Chief Engineer (CE) and Commissioner of RDWSD.

Table 31: Scope of Functions of O&M Cell

No	Objectives	Tasks/Activities
1	To manage O&M tendering process, management and administration of O&M contracts	1. Prepare a Baseline of all MVS /SVS/WPPs O&M Contracts (date of contract, duration, closure of O&M contract, name of scheme, service area etc.), 2. Notify Circle and Divisional offices regarding renewal of O&M contracts, six to ten months ahead of the expiry of existing contract 3. Guide Circle and Divisional Offices with Tender and Contract Documents, standardized in compliance with the O&M Policy. 4. Facilitating administrative approval for O&M of schemes

		5. Review functioning of all O&M contracts on a periodic basis (undertake field visits, data collection, review meetings at field level) 6. Customization of the contracts as required for specific schemes. Review and standardization of the O&M contracts for large MVSs
2	To assess maintenance and rehabilitation requirements in MVS/SVS/WPP across the state	1. Operation and Maintenance Baseline on MVS/SVS/WPP 2. Review of Operational requirements for the upcoming O&M contract 3. Review of Maintenance and Rehabilitation requirements for the upcoming O&M Contract. 4. Prepare Action Plan for maintenance, rehabilitation/ repair works 5. Facilitate release of funds for carrying out repair and maintenance activities 6. Facilitating technical approvals/sanctions for repair/ rehabilitation and maintenance of MVS/SVS/WPP
3	To facilitate Divisions of RDWSD to procure and install Bulk Water Meters (Electro-Magnetic Meters) in legacy and new MVS	1. Listing of MVS including Asset details such as Intake, Treatment, Transmission, Storage (MBR and ZBR) and Distribution level Storage at Villages/GPs 2. Listing of Village OHTs and other Village level distribution entry points with metering requirement 3. Facilitating installation of Bulk Flow Meters at Village OHTs/ entry points. 4. Collection of Data regarding treatment and transmission and assessment of Non-Revenue Water (NRW) 5. Review of the electricity consumption and monitoring payment to ESCOMs
4	To undertake Training Need Assessment (TNA) of RDWSD divisions and facilitate capacity building programs of RDWSD officials as well as that of other sector stakeholders	1. Training Need Assessment of RDWSD and other sector stakeholders with regard to O&M of rural MVSs/SVSs/ WPPs 2. Preparation of Training Modules 3. ToT for Trainers—Circle wise (4 ToTs) 4. Management / Implementation of Trainings 5. Evaluation of Training programs 6. Planning and implementing refresher trainings 7. Planning and implementing exposure visits

5	To plan, develop and implement a comprehensive Management Information System (MIS) with Application of Programme Interface with SCADA, IoT and other Web based software systems to monitor and manage MVS in the State of Karnataka.	1. Preparation of ToR for MIS 2. Procurement of Consultant to develop MIS 3. Facilitate preparation of SRS and FRS 4. Review of SRS and FRS 5. Periodic review of Software system/ 6. Collection of data from field and testing of data 7. Review of the functioning of the software-based MIS 8. Review of data on O&M of MVS 9. Integration of data and use of information system to review efficiency of O&M contracts 10. Review reports generated by SCADA, IoT and other devices and systems under MIS and review of reports and data generated by stakeholders periodically. 11. Upload data in Excel format on the department's portal for expedited project supervision
6	To support RDWSD and GPs in sustainable operation and maintenance of MVS and SVS IVDN including WPPs.	1. To guide GPs in sustainable water supply service management 2. To steer MVS in rural Karnataka into cost recovery and sustainable operations and maintenance

Table 32: Team Composition and Qualifications of Staff/ Specialists at O&M Cell:

No	Name of Position	Qualifications and Experience
1	Water Supply Engineer/AE (2)	1. Should have worked as an AE in RDWSD for a period of 5 including Two years of field assignment 2. Must have working knowledge of Operation and Maintenance 3. B. Tech in Civil Engineering / M. Tech in Water Resources Engineering.
2	Finance & Procurement Specialist (1)	1. Graduate in Civil Engineering / Mechanical Engineering, with MBA in Finance Specialization 2. Five years of work experience in Finance and Procurement.
3	MIS Specialist/ Data Analyst	1. Graduate in Computer Science and Engineering with MBA in Information Management/ Operations/ or M.Sc. in Statistics or MCA Finance Specialization 2. Five years of work experience in MIS and Project Monitoring, Software development and application
4	Instrumentation / SCADA Specialist	1. Graduate in Instrumentation/ Electrical Engineering 2. Five years of work experience in SCADA and Water Supply Instrumentation
5	HR Specialist	1. Masters in Sociology, Social Work, Human Resource Management 2. Five years of experience in Community or Rural Development Projects; Experience in Water Supply and Sanitation Sector will be desirable.

ANNEXURE 20 NOTE ON METERING

1 Introduction:

Management of water distribution system requires metering to measure quantity of water used. Flow meters are used to measure the quantity of water and therefore, metering fulfils the need to get accurate data on the quantity of water produced and distributed. A well-placed metering system in the water distribution network shall also assist in identifying water loss and leakage. A tariff policy cannot be implemented without a well-established metering system, which will modify consumer behaviors with regard to judicious use of water. Several types of water meters are currently available in the market. However, the choice of the type of meter depends on the accuracy requirements, the required flow rates, the end-user, and the flow measurement method. In the context of the O&M policy, it is recommended that multi-jet water meters are used at the domestic consumer level.

2 Water Meter Reading:

A standard water meter uses two common types of registers - straight and circular - to read the flow of water in cubic meter or litres. The registers can be observed on the surface of the meter. The straight registers can be read like an odometer in a car. On some larger meters, a multiplier will be present on the register face, which can be noted as 10X, 100X, or 1000X based on the size of the meter. Circular registers, on the other hand, are more complex to calculate water usage. They employ a series of dials marked with divisions of ten. There are several ways of reading the water meter, which includes: (1) Direct reading; (2) Remote reading, which is accomplished via an electronic signal using a wire where one can either directly read or touch read; (3) Touch read or plug-in reading that employs a handheld device that acquires the electronic signal by touching the remote station or plugging-in. The signal is then translated into the readings that are stored in the handheld device; (4) Automatic meter reading, in which the meter reader obtains readings through radio transmission. In the context of the current O&M policy, this note is prepared on the assumption that direct meter reading shall be the method used for meter readings at domestic consumer end.

3 Relevance of Metering:

Metering is relevant on the grounds of: (a) to reduce water loss; (b) to facilitate judicious use of water and (c) to enhance revenue for the Water Utility. Advantages of installing domestic consumer level water meters include: (a) improved willingness to pay for water consumed; (b) improves the revenue of the Water Utility; (c) enhances equity in water distribution; (d) enhances consumer accountability; (e) enhances accountability of the water service provider and (f) enhances knowledge on the impact of the water supply system.

4 Guidelines on Domestic Water Metering:

Domestic water meters are installed to measure water consumption at the level of households or other consumers.

Table 33: Guidelines on Domestic and Bulk Water Metering

No	Criteria	Description
Domestic Water Metering		
1	Location of Domestic Water Meters	a. Domestic water meters shall be installed at a suitable location in the consumer premises, which can be accessed by the Meter Reader to take measurements of water consumption

2	Cost sharing for Domestic Water Meters- purchase and installation	a. Price of Meter, installation charges including cost of accessories shall be borne by the Consumer if project or scheme finances are not available. Repair and replacement of meters shall be the responsibility of the consumer.
3	Procurement and specification of Domestic Water Meters	a. The specifications and guidelines for the quality of consumer water meters shall be as per BIS guidelines. b. Domestic Water Meters shall be installed with a proper protection chamber / encasing of connection joints crossing the gutters. c. Technical specifications of domestic water meters are provided in the O&M Manual.
Roles and Responsibilities with regard to meter management and capacity building		
1	RDWSD	a. Initial capacity building of GP officials, members, volunteers and consumers. Services of WSSO, ISA, Trained Technicians etc may be used for providing training. b. Consumer community also needs to be oriented on use and management of water meters, including meter reading, tariff rates and volumetric consumption of water, preparation of water bills and payment of water bills.
2	Gram Panchayat	a. GP shall introduce metering for SVS and IVDN on a saturation mode. b. GP shall follow a monthly billing cycle in which meter readings shall be taken and water charge bills shall be presented to consumers. c. Meter reading shall commence from the second month of installation of water meters and the PDO shall engage water operator or other suitable persons for taking meter reading. d. GP shall seek a written signed legal undertaking from all consumer entities to the effect they shall not tamper with the meters and shall pay monthly water bills, as decided by the GP for provision of water supply service. e. The written and signed undertaking also shall have a provision that consumer households are not allowed to install Tulu pumps or bypass the water meters in any manner. Unauthorized water tapping and tampering with the water meter shall attract heavy penalty, besides disconnection of water supply. f. Information on defective water meters shall be given to the GP as soon as it comes to the notice of the consumer or meter reader.

		g. The consumer is responsible for repair and replacement of a defective water meter and calibration of the water meter. h. The GP shall get the data on water consumption recorded and upload the relevant consumption data on the MIS developed by RDWSD. i. The GP shall partner with the GRM – the Grievance Redressal Mechanism and upload the information on the MIS developed by RDWSD. j. Community should be informed regarding types of water meters, advantages and disadvantages of meters & their costing. Information regarding the implementation of the water supply scheme and installation of water meters through IEC shall be given to the Consumer community. k. GP will get the meters repaired/reinstalled, as required, within a month of any meter becoming non-functional and the costs for the same shall be borne by the consumer. l. Capacity of the concerned employees and consumers with regard to metering should be built through training and IEC.
3	Consumers	a. The Consumer shall get the water meters installed at a suitable location which is accessible to the Meter Reader. b. Meter Reading as far as possible shall be taken in the presence of the consumer or his/her representative. c. The consumer shall report to the PDO/ GP member if there are any misbehaviors from the part of the Meter Reader including asking for considerations or favors d. The consumer shall maintain and upkeep the meter in good working condition and shall not tamper with the meter or its accessories in any manner. e. The consumer shall pay penal charges as decided by the GP in case there is any incidence of meter tampering. GP can decide to disconnect water supply, if the consumer has made serious violations with regard to water use, mismanagement of meter, unauthorized tapping, using illegal devices such as water sucking pumps at the pipe network, theft of water, or any action that will disturb equity and equilibrium of water distribution. f. The consumer has a right to get official printed receipts or signed receipts (in case of manual billing) for water charges paid to the meter reader or the GP

		g. The consumer shall pay additional amount as cash handling charges if he/she is making spot payment to the Meter Reader. which is to encourage digital payment & avoid cash transaction. The consumer shall pay additional amount as fixed by the GP h. The consumer shall safekeep the water charge receipts
4	Grievance Redressal Mechanism-Metering	a. The owner of the scheme (GP) shall facilitate the consumer to join the Grievance Redressal Mechanism facilitated by RDWSD. RDWSD shall introduce a dedicated telephone number for raising complaints. GP will have to widely publicize the number so that the public can use the number to raise the complaint. The consumers shall be educated and informed on grievance redressal system. The consumers should be informed about the penal provision for tampering of meters. Consumers may be allowed to raise complaints through telephone, SMS, social media such as WhatsApp, direct oral complaint to the GP or record the complaint with contact details in a complaint book available at the office of the VWSC or the GP.
5	Meter reading – responsibilities	b. The GP shall identify existing GP staff/pump operator/ GPLF member to undertake meter reading. Such meter readers shall be trained in reading the meter, inspection of meter, installation and repair of meter. In the context of GP in Karnataka, the water operator also may be trained in meter reading and given the task of visiting consumer connections and taking readings. Collation of meter reading, invoicing and collection are accordingly the responsibility of the GP for the domestic and non-domestic category of consumers, while it shall be the responsibility of the contractor or the department for bulk water meter reading.
6	Meter Reading, Billing Cycle and Spot Collection.	a. Authorized and duly trained Meter Readers alone shall be allowed to read water meters and record data on water consumption. b. Meter reading shall be done in the presence of the household representative to the extent possible. c. Meter Reading shall commence on the 1st of every month for the previous month. d. The Meter Reader shall close Meter Reading by 20th of every month for the previous month.

		e. Online Tariff Collection and Tracking System shall be in place so that no. of consumer units visited, number of meter readings taken, number of consumer units from which water charges are collected, total amount of water charges pending etc. can all be monitored online by the GP or the VWSC. f. If there are more than one water supply zone, (identified by regulating valves installed) such zones shall be rotated among the meter readers every month; This makes all water meter readers familiar with the entire village/GP area as well as avoid any likely nexus and untoward alliances. g. There shall be a Zone Sequence for meter reading so that the Meter Reader is able to cover a consumer unit once in 30 days. h. Meter Readers shall be paid on a per household meter reading basis. The total number of meters reading for billing for each meter reader can be decided by the GP i. Meter Readers shall visit consumer households /consumer units with a handheld mobile device in which data from water meter shall be recorded. The handheld device will have the entire consumer database of the village/GP pre-recorded and on entering the consumer number, such consumer details and data shall be visible on the screen. On entering the consumption data, a SMS or a Social Media Message such as that of WhatsApp or Telegram shall be sent to the registered mobile number of the Consumer. j. The consumer is allowed to make spot payment to the meter reader. If the consumer is making spot payment, he/she shall pay additional cash handling charges per household in addition to the monthly water charges towards cash handling incentive to be paid to the meter reader. k. The Meter Reader shall issue a printed receipt from the handheld printer device. l. Cash handling charges will be additional as decided by the GP, If the consumer is making spot payment, (Digital payment should be encouraged) m. The Meter Reader shall without fail pay all cash collected by way of water charges to the PDO on the same day or before 10.30 am on the next working day. The Meter Reader shall not visit consumer households with the cash collected on the previous day. If bank account facilities are available, the meter reader may deposit the amount into the specified bank account of the VWSC and shall submit the counterfoil receipt, duly signed and sealed from the Bank to the PDO.

		n. During the period from 20th to 30th of every month, the Meter Reader shall enter details of water consumption, water charges paid or outstanding and any other observations on the Meter in the consumer ledger, without any additional payment. It is assumed that the meter reading charges paid to the Meter Reader is inclusive of clerical services which are part of meter reading and documentation. o. If the water meter is not functional on the date of meter reading, the meter reader shall provide a bill equivalent to the amount of the previous month and the consumer shall take necessary action to make the water meter functional. The Meter Reader shall raise a complaint at the GRM with regard to the defunct water meter, including details on the consumer. Additionally, if the meter is defunct for more than 2 months then the bill equivalent to twice the amount of previous month has to be provided
Bulk Water Metering		
1	Cost sharing of Meter installation- Bulk Water Meters	a. RDWSD shall bear the cost of Meter and its installation through the O&M budget if such procurement and installation are not part of scheme implementation. If it is under a new project, cost of bulk water meters shall be part of the project cost.
2	Purpose of Bulk Water Meters	a. Bulk Water Meters measure quantity of water supplied to villages/GPs/ habitations, and other bulk water consumers.
3	Location of Bulk Water Meter installation.	a. Raw water withdrawal points -Intakes (Head works) b. Water Treatment Plan (WTP) At the inflow and outflow of the WTP/ Clean water production (on each distribution main going out from the WTP) c. At the inlet of ZBR/MBR/IPS in the pressure/gravity main d. At the outlet of each line going out of ZBR/MBR/IPS/LS e. At the inlet & outlet of each village OHT or bulk water supply points to a village - intermediate points in the transmission system where it is important to know how much water is distributed, to different zones / areas.
4	Type of Bulk Water Meter to be installed	a. Electro-magnetic flow meters or AMR type of water meters shall be installed for bulk water measurement. Water meter operates within a specific range for water flows, water pressure and ensuring that pipe runs full. The meter must be able to give an alarm if the flow exceeds or is less than a certain percentage of the design flow. The alarm signal must be transmitted to a remote monitoring station through telemetry. Details of technical specifications of bulk water meter are provided in the chapter on metering in the O&M Manual.

5	Costs of new meters and repairs/ replacements of existing meters	a. For existing schemes, new bulk meters will be procured and installed by RDWSD itself or through a nominated contractor. For new schemes, bulk water meters shall be part of the project cost estimate.
6	Installation, Maintenance and Inspections	a. Meters shall be installed with GI or MDPE or other pipes of standard quality and specification. b. Meters shall not be installed with fragile material.
7	Approval of suppliers and enlistment	a. RDWSD/ Operator shall provide a list of approved suppliers along with specifications on output.
8	Repairs and recalibration	a. Repairs and replacements of meters in the bulk supply network will be done by the Contractors if the scheme is under a O&M Contract and otherwise by the department for existing schemes without an O&M Contract.
9	Meter reading – responsibilities	a. Where a scheme is covered under a O&M Contract, the Contractor shall read the meters in the bulk supply network. Where no such contracts exist, RDWSD shall carryout the meter reading either by jurisdictional engineer or through respective GPs. Collation of meter reading, invoicing and collection are accordingly the responsibility of the Contractor or department considering existence of a O&M contract for the scheme. If the Operator by virtue of an O&M contract is supplying water to a GP, bulk water meter reading shall be taken in the presence of GP water operator/VWSC.
10	Meter tampering – penalty provisions	a. The Operator/ Contractor shall ensure that there shall be no tampering of the Bulk Water Meter. EE-of RDWSD division is authorized to determine the penalty to be imposed in case of tampering of BWM.
11	Approval of suppliers and enlistment	a. Bulk Water Meters procured as per procurement rules of the State from approved vendors/suppliers alone are to be used for installation. Meters of any new suppliers proposed need to be approved by the department before being used on a new/existing scheme. b. Bulk Water Meters shall be procured, subject to requirement and specification suggested/ approved by RDWSD. c. Schedule of Rates (SoR) developed by Government of Karnataka shall be used for procuring water meters.

12	Domestic Water Meter Calibration / Repairing (Test Bench)	a. "To ensure that the water meter is performing as designed and that it meets the necessary performance requirements as per the IS I4046, calibration or periodic repairing is necessary for a water meter. A water meter is subject to wear and deterioration and, over a period of time, loses its peak efficiency. Calibration consists of comparing the meter reading with the reading obtained from a standard of higher accuracy than the test meter. The standard may be a reference master meter or a complete test stand which themselves are traceable back to more fundamental measures of mass, time and volume. Calibration is typically performed in a laboratory with Test Bench at several different flow rates and sometimes at different densities or temperature. When a calibration is performed, the meter's calibration factors are determined and get corrected. After correction the meter can be installed again in the system. b. Meter Repairing Unit (Test Bench): Meter repairing unit could be established at Taluk level with 5 Members and EO could take the responsibility, GPLF members could be trained for the same. The unit may consist of 15 to 20 individuals who shall have a basic qualification of ITI along with SSLC/PUC ITI. Amongst these individuals 2 to 3 are to be the certified Naljal Mitra certified technicians. The ZP may include this activity in their annual plan, providing budget for establishing the unit, basic facilities, equipment and a minimum of 1000 units of domestic water meters, which can be used to replace faulty meters, while the unit repairs the faulty ones.

ANNEXURE 21 MANAGEMENT INFORMATION SYSTEM FOR MVS

Ref: Government Order No: RDW&SD/ 121/ CE/Technical/2020, dated 30.12.2020 (MVS)

There shall be a software-based Management Information System to monitor MVSs across Karnataka State. The objective of MIS will be to establish a scientific data base on MVS, SVS and IVDN so as to monitor operation and maintenance for improved sustainable service. Following will be key features of the proposed MIS.

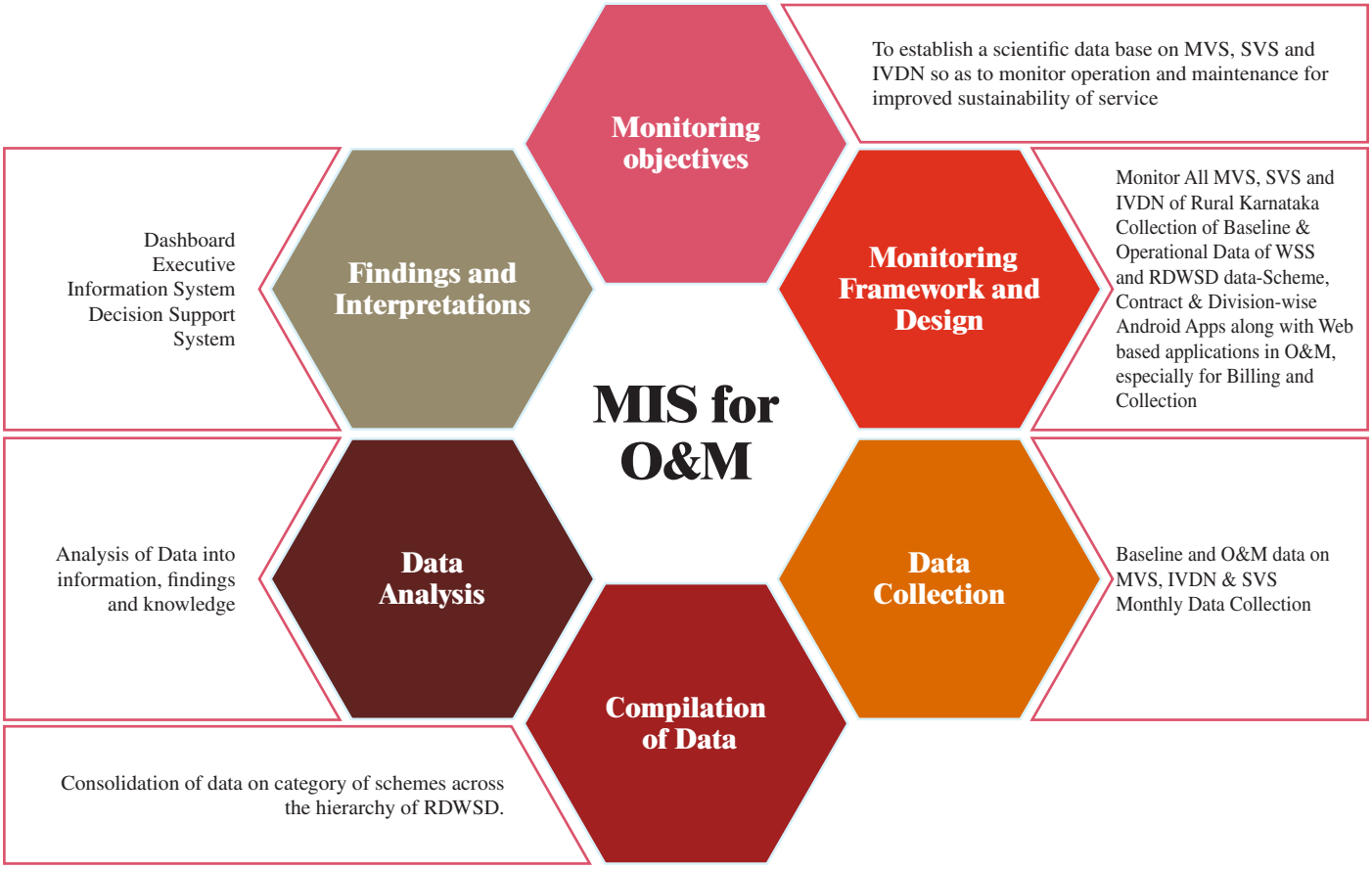
Software to support MIS: Android Apps along with Web based applications for creating baseline, operation and maintenance activities as well as for Billing and Collection will be established.

Data Collection: Collection of Baseline & Operational Data of Water Supply Schemes along with data on Contracts and the hierarchy of RDWSD will be available. Operational data will be collected as per protocols on a monthly basis.

Geo-coordinated data on schemes and assets and real time data on operations to be made available.

Data Analysis and Interpretation: Dashboard, EIS and Data Analysis will form part of the MIS.

Figure 5: Overview of MIS

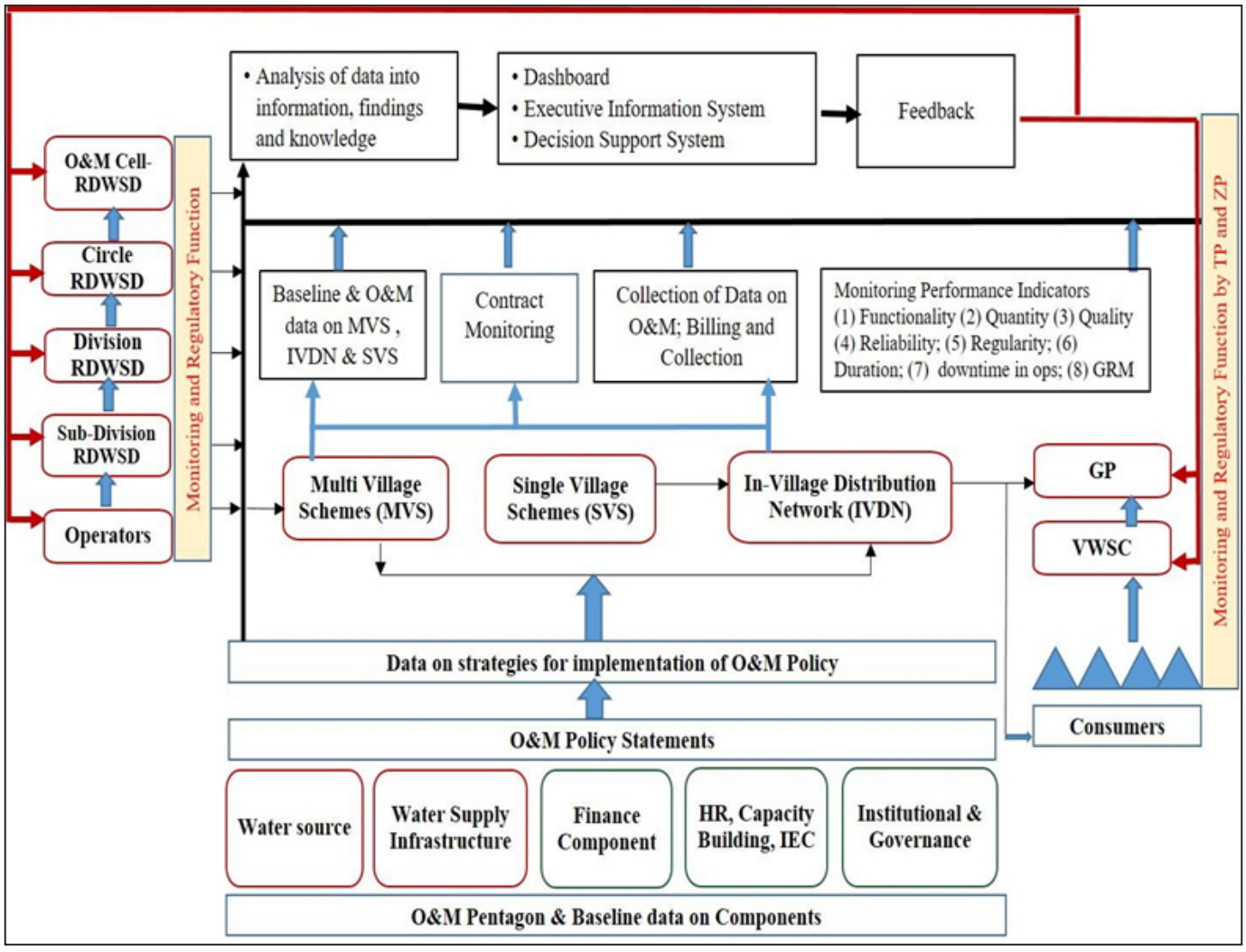


The following formats are developed and introduced:

Table 34: MIS formats

No	Name of Format	Description
1	Baseline information Format	Format for capturing baseline information on MVS (See Annexure-21.1)
2	Module on Operation and Maintenance	Format for capturing O&M related data on MVSs (Efficiency assessment of all MVSs/ Monitoring of Key Performance Indicators for O&M in MVS) (See Annexure-21.2)
3	Evaluation of KPI for monitoring O&M performance	Key Performance Indicators are assessed, captured, summarized and monitored on monthly basis. (See Annexure-17)

Figure 6: Monitoring Framework and Data flow



ANNEXURE 21.1 FORMAT FOR CAPTURING BASELINE INFORMATION ON MVS

Table 35: Format for capturing baseline information on MVS

No	Baseline Details	Data/Information
1	Name of the Scheme	
2	Location Details of Assets (District/Taluk/GP/Village/ Habitation)	
3	Number of GPs/Villages fully covered by Scheme	
4	Number of GPs/Villages partially covered by Scheme	
5	Name of GPs& Villages fully covered by the scheme (Drop Down List)	
	Name of GPs& Villages partially covered by the scheme (Drop Down List)	
6	Number of Habitations fully covered by Scheme	
7	Number of Habitations partially covered by Scheme	
8	Name of Habitations fully covered by the scheme (Drop Down List)	
9	Name of Habitations partially covered by the scheme (Drop Down List)	
	Details of MVS	
10	Asset Locations- geo-tagged location details for assets under the scheme	
A	Source (Lat/Long/Altitude)/ Category of Source (Groundwater/ Surface Water)	
B	Intake Structure / Jack Well (Lat/Long/Altitude)	
C	Pump House / Assets in the Pump House/ Specifications and Details of Pumps and other machineries (Lat/Long/Altitude)	
D	Pumping Main (Material/Size and Length) (Route to be shown in Map/ Lat/Long/Altitude)	
E	WTP (Lat/Long/Altitude)	
F	Assets at the WTP (Number/Name of Asset/ Specifications/ Date of Installation/ Functional Status as on date)	
G	MBR (Lat/Long/Altitude/Length/Breadth/Depth (height)/Volume in kL	
H	ZBR ((Lat/Long/Altitude/Length/Breadth/Depth (height)/Volume in kL	

I	Intermediate Pumping Stations (Lat/Long/Altitude/Assets in the Pump House/ Specifications and Details of Pumps and other machineries	
J	Village Level OHTs (Lat/Long/Altitude/Length/Breadth/Height (Depth if GLSR)/Volume in kL/ Number of OHTs in the GP/ Total Volume/ Installation details of Bulk Water Meters	
K	Energization Details at B/C/E/G/H/I/J (Installed Capacity/ RR Details)/ Type of Energy – Grid Power / Solar / Date of Energization if available	
L	SCADA/ details of parameters that can be measured/ Functional Status/ Location Details of Components	
M	Date of Commissioning (Calculate Age in Years and Months)	
N	Name of Executive Engineers/AEEs/ AEs who were involved in supervision of the Project during implementation	
O	Name of Contractor/ Contracting Firm	
P	Type of Contract (EPC/DBOT/DBT)	
Q	Total Estimated Cost as per DPR	
R	Total Actual Cost	
S	Defect Liability Period (Give details)	
T	Is information on the MVS available in IMIS (Yes/No)	

ANNEXURE 21.2 FORMAT FOR CAPTURING O&M RELATED DATA ON MVS

Table 36: Format for capturing O&M related data on MVS

No	O&M details	Data
1	Number of GPs/Villages partially covered by Scheme	
2	Name of GPs& Villages fully covered by the scheme (Drop Down List)	
3	Name of GPs& Villages partially covered by the scheme (Drop Down List)	
4	Number of Habitations fully covered by Scheme	
5	Number of Habitations partially covered by Scheme	
6	Name of Habitations fully covered by the scheme (Drop Down List)	
7	Details of Contract for Operation and Maintenance	
8	Name of O&M Contractor/ Operator	

9	Name of Habitations fully covered by the scheme (Drop Down List)	
10	Details of Contract for Operation and Maintenance	
11	Name of O&M Contractor/ Operator	
12	Duration of Contract (Date of contract signing/ Date of commencement of contract/ Date of conclusion of contract)	
13	Contract Amount	
14	Performance of MVS- Water Output	
15	WTP – Input and Output	
16	MBR Input and Output	
17	ZBR Input and Output (drop down list for all ZBRs with option to capture data)	
18	Intermediate Pumping Stations - Details	
19	Village OHT-1 to ---N Input in Litres (KPI-1 : Quantity of water supplied): Compare with Total Quantity of Treated Water to be supplied as per MLD Capacity of Scheme; Total Quantity of Treated Water to be supplied @55 LPCD for the design population	
20	Energy Consumption in Units (Capture from Log Books/SCADA) / RR Number of Energy Consumption Point/s Capture details of energy consumption points from Baseline /Opening and Closing Energy Meter reading and auto calculate units of energy consumed)	
21	Human resource Details-(a) Human resource proposed as per O&M Contract; (b) Human resource actually deployed against O&M Contract and authenticated by bio-metric attendance.	
22	Water Quality Details Ref Format for Water Quality- Collect data from critical locations (KPI-2: Quality of water supplied)	
23	Satisfactorily addressing 90% of the complaints in the previous quarter within 3 days of registration	
24	Total water tariff to be recovered from GPs/ ULBs/ Other Bulk Consumers for the calendar month. Work out a table to capture details for the calendar year	
25	Total water tariff recovered from GPs/ ULBs/ Other Bulk Consumers for the calendar month. Work out a table to capture details for the calendar year	
26	Name of officials in RDWSD concerned with the MVS (1) EE; (2) AEE; (3) AE	

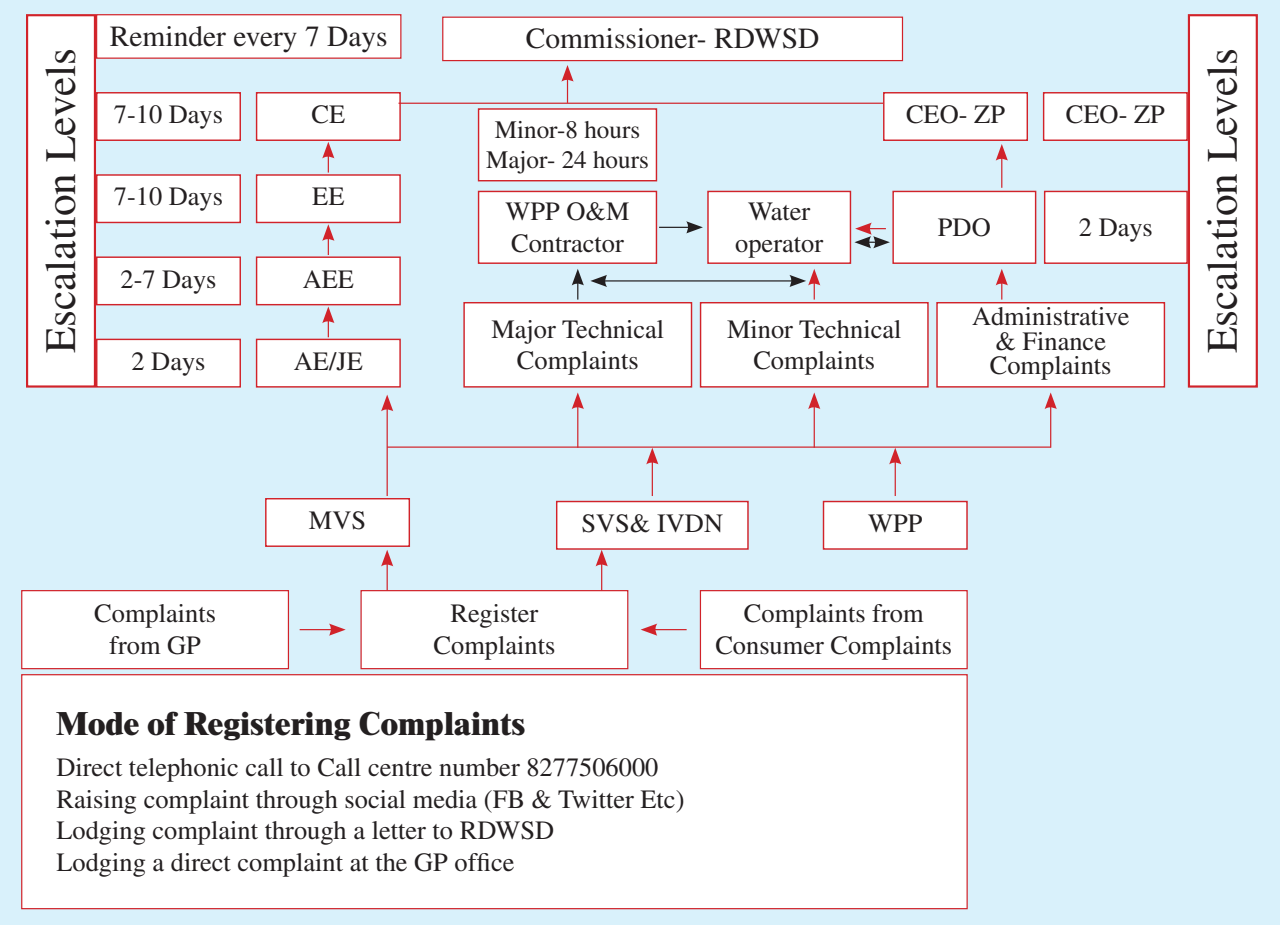
ANNEXURE 22 GRIEVANCE REDRESSAL MECHANISM (GRM) FOR MVS

Grievance Redressal Mechanism (GRM), A Call Centre is an IT based system existent and functioning under the purview of Combined Centre of RDPR. The system will monitor complaints and their resolution of each department under RDPR. This GRM is a dedicated call centre for capturing the complaints regarding water supply and sanitation issues in the rural areas of Karnataka. Provisions are available for lodging complaints to multiple channels along with a toll-free telephone no.

Complaints can be broadly classified into two major categories namely minor and major complaints. Minor complains shall be resolved within 24- 48 hours and major complaints shall be resolved within 3 days -7 days, sometimes 15-30 days when complaints relating to pipeline networking is raised. An electronic registry is maintained to track complaints. Once a complaint is made, a message is sent to the concerned officer and the complainant. The concerned officer is given customer contact details for follow up actions. There are two ways of closing a complaint: (a) Closing Complaint on Resolution (when the complaint is resolved and closed positively) and (b) Escalating the Complaint– when the complaint can't be resolved at the first level, it will be escalated to the next higher level. Once the complaint is resolved, feedback is obtained from the customer through the call centre and a satisfaction rating is taken for the resolved complaint.

Executive Engineer and the Operator shall discuss and decide the category of complaints in case there is any difference of approach on defining the category of complaints. If more time is required for resolving the complaint than is provided for in this policy document, the operator/contractor shall approach the Executive Engineer of RDWSD division and make a request in writing with regard to the time needed to resolve the complaint. The Executive Engineer may waive off the time/periodicity requirement for resolving the complaint, if there is a genuine ground. A flow process for the GRM call centre for MVS/SVS/IVDN/WPP is illustrated below.

Figure7: Information Flow Process in GRM



FORMAT FOR CAPTURING INFORMATION ON COMPLAINTS UNDER (GRM) FOR MVS AND SVS/ IVDN INCLUDING WPPS

Table 37: Format for capturing information on complaints under (GRM OF RDWSD/RDPR) for MVS

No	Details of Complaints MVS	Data
1	Name of the Scheme	
2	Location Details (District; Taluk)	
3	Number of GPs covered by Scheme (Full coverage/ Partial Coverage)	
4	Name of GPs covered by the scheme (Drop Down List)	
5	Number of Villages covered by Scheme (Full coverage/ Partial Coverage)	
6	Name of Villages covered by the scheme (Drop Down List)	
7	Number of Habitations covered by Scheme (Full coverage/ Partial Coverage)	
8	Name of Habitations covered by the scheme (Drop Down List)	

	Details of Complaints (MVS)	Details of Complaints (SVS/IVDN/WPP)
9	**Complaints from Gram Panchayats** 1. Source (Lat/Long/Altitude)/ Category of Source (Groundwater/ Surface Water) 2. Intake Structure / Jack Well (Lat/Long/ Altitude) 3. Pump House / Assets in the Pump House/ Specifications and Details of Pumps and other machineries (Lat/Long/Altitude) 4. Pumping Main (Material/Size and Length) 5. Village Level OHTs (Lat/Long/Altitude 6. Complaints regarding quantity of water supplied 7. Complaints regarding quality of water supplied 8. Complaints regarding Bulk Water Meter 9. Complaints regarding excess bills and over consumption of Water (GP level) 10. Other Complaints	**Complaints from Consumers** 1) Source (Lat/Long/Altitude)/ (Groundwater/ Surface Water) 2) Pump House / Assets in the Pump House/ Specifications and Details of Pumps and other machineries (Lat/Long/Altitude) 3) IVDN- Distribution Network 4) Village Level OHTs (Lat/Long/Altitude 5) Complaints regarding quantity of water supplied 6) Complaints regarding quality of water supplied 7) Complaints regarding Domestic Water Meter 8) Complaints regarding excess bills and over consumption of Water (Consumer level) 9) Other Complaints including that of WPPs

CHAPTER VII:
ANNEXURES FOR O&M OF SVS AND IVDN INCLUDING WPPS

OPERATION, MAINTENANCE AND MANAGEMENT OF RURAL WATER SUPPLY SCHEMES-SVS AND IVDN- MODEL BYLAWS, 2021 FOR THE STATE OF KARNATAKA

CHAPTER I – GENERAL
PARA 1 - GENERAL

1. Short title, commencement and application

These are the Karnataka Panchayat Raj Model Bylaws for operation, maintenance and management of rural water supply schemes (SVS and IVDN), and shall come into operation from the date of their publication in the Official Gazette. These Bylaws shall come into force in accordance with the procedure laid down under the Karnataka Gram Swaraj and Panchayat Raj Act, 1993. This bylaw shall also be read together with the Operation and Maintenance Policy for rural water supply sector, notified along with the O&M policy. GP shall enforce the bylaw in operating, maintaining and managing single village schemes and In-village distribution network including WPPs.

1.1 Definitions

In these Bylaws, unless the context otherwise requires –

1. **Act** means the Karnataka Gram Swaraj and Panchayat Raj Act, 1993, as may be amended from time to time.
2. **Bhujal App** is an Android application for monitoring water level in a Borewell.
3. Bhungroo is a techno-social method of recharging the underground aquifer.
4. **Billing and Collection** refers to billing domestic and non-domestic water supply connections for the consumption of water and collection refers to the collection of bill amount from the water connections/ consumers
5. **Bylaw for Operation and Maintenance** is a set of rules and regulations made by Rural Drinking Water and Sanitation Department under Government of Karnataka to govern the operation and maintenance of GP based water supply schemes. Bylaws shall mean the model bylaws for Operation, Maintenance and Management of Rural Water Supply Schemes such as SVS and IVDN including WPPs as amended from time to time.
6. **Capex** refers to capital expenditure, and is the cost of developing or providing non-consumable parts for the water supply system.
7. **Chief Executive Officer** shall have the same meaning as set out in the Act.
8. **Commencement Date** means the date as specified in the contract document, after successful completion of trial run of a water supply scheme.
9. **Committee** means the Village Water and Sanitation Committee formed under Section 61-A of the Act.
10. **Community Mobilization** in the context of the rural water supply sector is a process of organizing and mobilizing members of the community to achieve a pre-defined objective

11. **Decentralized service** delivery in water supply means delegation, and devolution of the function of providing water supply service delivery to the rural population of Karnataka, whereby the Gram Panchayats are made responsible for water supply service delivery.

12. **Domestic Consumers** means households that have been provided with functional household tap connection for water supply.

13. **Down time in operations** refers to the lack of pumping, treatment and/or distribution of water, due to reasons such as lack of power supply, low yield of water in the source, defunct pumping machinery, operator error, poor maintenance and or lack of finances for operation and maintenance.

14. **Financial Sustainability** refers to the capacity of a Gram Panchayat to raise income from the distribution of water to cover expenses and generate a surplus to meet contingencies.

15. **Field Test Kit (FTK)** is a water quality testing device/kit for testing indicative physical, chemical and biological parameters in water supplied.

16. **Functional Household Tap Connection (FHTC):** Functional Household Tap Connection means a household tap connection through which 55 lpcd of potable / safe drinking water is provided regularly at the outside of the house.

17. **Governance** is the way rules, norms and actions are structured, sustained and regulated for operating and maintaining a rural water supply scheme.

18. **Government** shall have the same meaning as set out in the Act.

19. **Gram Panchayat** shall have the same meaning as set out in the Act.

20. **Gram Panchayat Development Plan (GPDP)** means the development plan formulated by the Gram Panchayat in accordance with Section 309 and other applicable provisions of the Act.

21. **Gram Sabha** means Village Assembly of all adults of a Village, whose names are on the Electoral Roles.

22. **Grievance Redressal Mechanism (GRM)** is a governance-related process by which complaints are received from water supply consumers/ connections and the processing of such complaints so as to resolve the issues.

23. **Incremental Block Tariff (IBT),** refers to method of water pricing in which higher rates are charged with increasing water consumption.

24. **Indent** is an order for goods and services to a supplier or service provider, with all relevant information regarding the volume, price, and nature of the goods/service.

25. **Information, Education and Communication (IEC):** IEC is a strategy to spread awareness through communication channels to a target audience to achieve a desired positive result. The desired positive results in the context of O&M of rural water supply sector in Karnataka may be summarized as 100% FHTCs, habitual payment of O&M (water) tariff, disciplined use of safe drinking water together with metered consumption of water at the consumer locations.

26. **Institutional arrangements** are generally understood as a set of agreements on the division of respective responsibilities of agencies, departments, and or project teams.

27. **Inter-personal Communication** is an exchange of information between two or more people. It is used as part of IEC method with a purpose of raising awareness, bringing about social or behavioral change.

28. **In-Village Distribution Network (IVDN)** refers to the In-Village Distribution Network for water supply within a GP/Village receiving safe drinking water from a MVS/SVS.

29. **Lifeline water** refers to the quantity of water which is sufficient to cover basic water needs of a household.

30. **Log Book** is a record of data and events in the operation of rural water supply scheme

31. **LPCD** means Litres per capita per day and as such refers to water availability per person per day in litres.

32. **Maintenance** is the planned technical activity, taken either in response to a breakdown, or periodical activities in a preventive mode to keep the water supply system operational.

33. **Management Information System (MIS)** is a system of computer-based information system, which processes fed data into information and is then used for taking decisions.

34. **MGNREGA/S** stands for Mahatma Gandhi National Rural Employment Guarantee Act (2005), is an Indian labour law and social security measure that aims to guarantee the 'right to work' in the form of assured work for 100 days per annum.

35. **Multi Village Scheme (MVS)** is a rural drinking water supply scheme, drawing water from perennial and sustainable sources and supply safe drinking water to communities distributed in multiple habitations/ villages, appropriately employing water supply infrastructure, including treatment systems.

36. **Non-Domestic Consumers** means water tap connection given to institutions, industrial units and commercial units

37. **O&M Budget** is a statement of anticipated income and expenditure from the operation of a rural water supply scheme

38. **Operation and Maintenance Pentagon** is a term similar to Asset Pentagon (natural, physical, human, finance and social capitals). O&M Pentagon thus refers to essential capital base required to operate and maintain a rural water supply scheme and will include natural (Water), physical (Infrastructure built for the water supply scheme), finance, human and governance cum institutional capitals. The current O&M Policy is developed around these above O&M Pentagon elements.

39. **Operations refer** to the routine activities and procedures that are implemented to ensure that the water supply system is working efficiently.

40. **Operation and Maintenance Contract** means the clauses and provisions contained in the Agreement that relate to Operation and Maintenance of the Water Supply System.

41. **Opex** refers to operational expenditure and is an ongoing cost for running water supply service or system.

42. **Owner** means owner of assets with regard to the Rural Water Supply Schemes, which in the case of Multi Village Schemes is the RDWSD, and in the case of Single Village Schemes, IVDN & WPPs the owner is the Gram Panchayat.

43. **Panchayat Development Officer** shall have the same meaning as set out in the Act.

44. **Panchayati Raj** is a system of rural local self-government in India, established across states of India by the acts of the state legislature to build democracy at the grass root level. PRIs have a constitutional mandate through the 73rd Constitutional Amendment Act of 1992. Karnataka has enacted Gram Swaraj and Panchayat Raj Act 1993 and PRIs in the context of the policy means Panchayat Raj Institutions established in the State of Karnataka by GSPRA 1993.

45. **Grievance Redressal Mechanism Grievance Redressal Mechanism (GRM),** A Call Centre is an IT based system existent and functioning under the purview of Combined Centre of RDPR. The system will monitor complaints and their resolution of each department under RDPR. This GRM is a dedicated call centre for capturing the complaints regarding water supply and sanitation issues in the rural areas of Karnataka. Provisions are available for lodging complaints to multiple channels along with a toll-free telephone no.

46. **Policy** is a statement of intent and is implemented as a procedure by Government of Karnataka.

47. **Potable water** is defined as safe drinking water that is suitable for human consumption, meeting physical, chemical and bacteriological standards for drinking or cooking as per BIS 10500: 2012.

48. **Public Stand Post (PSP)** A public stand post is a water tap connected to a cistern for water distribution and which is located at a public site, and from which water may be drawn for domestic uses.

49. **Single Village Schemes (SVS)** are rural drinking water supply schemes, drawing water from a local source, either groundwater or surface source, and supply water to a village community, appropriately establishing and employing simple water supply infrastructure.

50. **Social audit** is a process to measure, understand, assess and ultimately improve the performance of the department, government, programme or a project as well as that of an organization. It is based on the principle of democratic governance and citizen participation in governance.

51. **Social capital** is the sum total of trust, cooperation, interpersonal relationships in a society and a shared sense of identity, understanding, norms, values and reciprocity.

52. **Strategy** is a perspective plan aimed at achieving a long-term goal. Strategy in the context of the O&M policy means a clear understanding of the rural water supply sector, a clear sense of where the sector should reach, an assessment of obstacles and risks standing between the present and the vision, a plan about how to approach the challenges and risks and a specific course of action to follow to achieve the vision.

53. **Technical support** refers to the professional and technical support and advice provided by RDWSD to PRIs in Karnataka with regard to the operation and maintenance of rural water supply schemes, especially of SVS and IVDN including WPPs.

54. **Timing of water supply** refers to the time of distribution of water at the locations of functional household tap connections in Gram Panchayats.

55. **Tripartite Memorandum of Understanding (TMoU)** is an agreement proposed between RWSD, Urban Water Utility and Gram Panchayat for supply of potable water

56. **Village Level OHT:** Village level Over Head Tank is a storage reservoir for supplying water to the village community

57. **Village Water and Sanitation Committee (VWSC)** is a village level committee, constituted by the Gram Panchayat at level to coordinate, manage, operate and maintain rural water supply schemes and overseeing sanitation aspects.

58. **Water Supply System** means the piped water supply system in the water supply area from the intake and up to functional household tap connections, including the meters installed at every household consumer in the Gram Panchayats covered in the scheme;

59. **Water tariff** is a price assigned to safe drinking water supplied by a public utility, a PRI or a community water supply institution, measured in lump sum or units such as lts/kilo Litre.

60. **Water operator/** is a person authorized by Gram Panchayats in Karnataka to operate, maintain and support the management of water supply systems in villages.

61. **Water purification plant (WPP)** is a system for the process of removing undesirable Physical, chemicals & biological contaminants, suspended solids, and gases from source water so as to make water potable for human consumption.

Roles and Responsibilities of Stakeholders								
Roles and Responsibilities	**Stakeholders**							
	CE, RD-WSD	**CEO - ZP**	**EE, RD-WSD**	**DCC**	**GP / TP**	**Operator**	**PDO/ EO Staff**	**Consumers**
Fixing and revising bulk water tariff	X (1)							
Fixing initial consumer level water tariff	X (1)	X (2)					X (1)	
Upward revision of consumer level water tariff		X (2)			X (3)		X (1)	
Awarding Contracts and Management of Contracts of O& M for MVS	X (1)	X (2)	X (1)					
Preparation of O&M Plans for MVS/SVS/ IVDN		X (2)	X (1)			X (3)	X (1)	
Preparation of O&M Plans for WPP		X (3)			X (2)	X (1)	X (1)	
Approval of O&M Plans MVS	X (1)	X (2)	X (3)					
Approval of O&M Plans SVS/IVDN	X (1)	X (2)	X (3)		X (1)		X (1)	
Approval of O&M Plans of WPPs		X (3)			X (2)		X (1)	
Monitoring Operations of MVS	X (2)	X (1)	X (1)					
Monitoring Operations of SVS/IVDN including WPPs		X (3)			X (2)		X (1)	
Operation and Maintenance of MVS	X (3)	X (3)	X (2)			X (1)		
Operation and Maintenance of SVS	X (3) #	X (3)	X (3)		X (2)		X (1)	
Operations of WPPs	X (3) #	X (3)			X (2)	X (1)	X (1)	
Monitoring Operations of WPPs	X (3) #	X (3)			X (2)	X (1)	X (1)	

Monitoring Service Delivery and regulatory oversight – MVS	X (2)	X (3)	X (1)					
Monitoring Service Delivery and regulatory oversight – SVS	X (3) #	X (3)			X (2)		X (1)	
Cost recovery – MVS	X (2)		X (1)					
Cost recovery – SVS including WPPs	X (3) #				X (2)	X (1)	X (1)	X (1)
Conflict Resolution	X (3) #	X (2)	X (1)	X (3)				

Note:
X (1) signifies Primary Responsibility
X (2) signifies Secondary Responsibility
X (3) signifies Tertiary Responsibility
Technical support

CHAPTER II – POWERS, FUNCTIONS, ROLES AND RESPONSIBILITIES OF KEY STAKEHOLDERS RELATED TO OPERATION AND MAINTENANCE OF RURAL WATER SUPPLY SCHEMES

PARA-2

2.1 Gram Panchayat: The Gram Panchayat shall be primarily responsible for the abstraction, storage and distribution of safe drinking water to the entire population coming under its purview in accordance with these bylaws.

2.2 Gram Panchayat

1. GP is responsible for operation and maintenance of SVS/IVDN/WPPs and distribution of water to the population of the GP.

2. GP shall approve applications for new consumer connections and provide water supply connection to new member households or other consumer applicants on payment of a fee decided by the GP. GP shall have the power to disconnect any water supply connections with GP for violating the provisions of the O&M policy or the bylaw for O&M at the GP level or for failure to pay the water charges.

3. GP shall prepare producers rules regarding new connections, fees to be paid and application process for new connections. The scope of this clause will also apply to non-domestic connections such as that of institutions, commercial and industrial units and such other establishments.

4. Fix and revise water tariff for water supply for all types of consumer connections and service levels with regard to SVS and IVDN. Water sale rate from WPPs are governed by the viable gap funding (VGF) which is reflected in the agreement document.

5. The GP may consider recommendations made by the Gram Sabha with regard to any improvement in the operation, maintenance and management of rural water supply schemes.

6. GP shall authorize a person as Water operator and other staff, train them as well as fix and pay remuneration other admissible allowances. Guidelines issued by RDPR with regard to this shall be strictly adhered to by GPs.

7. The GP shall constitute a the VWSC to support the GP in operating, maintaining and managing all water and sanitation services in the village by amending the existing Order to include a representative from SHG (Self Help Groups) as a member as per JJM guidelines.

8. Assign specific responsibilities to VWSC or members of VWSC for specific tasks by forming sub-committees such as for distribution network, for collection of water tariff, for maintenance of stand-posts, disinfection, accounting and book-keeping. The GP shall have the authority to audit the functioning of the VWSC and dissolve it if serious irregularities are found. GP shall, if it so desires, take the support of VWSC for operation and maintenance of SVS and IVDN including WPPs

9. GP shall prepare an O&M Plan including a Budget, considering annual income and expenditure of SVS/IVDN including WPPs. The GP shall review the budget for the operation and maintenance of water supply schemes in the GP. The budget shall be prepared, considering bulk water supply from MVSs and IVDN, If the GP is operating and maintaining SVS including WPPs, such expenses shall also be considered and appropriately included in the O&M budget.

10. GP through its PDO shall be the first point of contact for management of SVSs and IVDN including WPPs with regard to GRM (Grievance Redressal Mechanism), which is available for the use of consumers.

11. GP is responsible for coordination of operation of SVS and IVDN including WPPs as well as with RDWSD, O&M contractor. Operator, VWSCs, other government agencies and authorities, to ensure compliance of these bylaws within areas under its jurisdiction.

12. GP shall act as a forum for conflict resolution and hold discussions with the conflicting parties related to water supply and sanitation activities.

13. GP shall ensure testing of water quality in terms of physical, chemical and bacteriological parameters for safe drinking water supplied by SVS and IVDN including WPPs during pre-monsoon and post monsoon periods. GP shall avail FTKs from RDWSD/ and conduct safe drinking water quality tests daily with FTKs, engaging trained volunteers including trained SHG members or qualified and trained water operator. If the volunteers are not able to interpret the results of the water quality test, the PDO shall take the help of RDWSD in interpreting the results and consequent advice on follow up steps. Such support from RDWSD shall form part of 'Technical support'.

14. GP shall make arrangements and be responsible for monitoring the O&M of SVS and IVDN including WPPs and shall raise resolutions, observations, grievances and issues to the O&M contractor through RDWSD.

15. GP is responsible for keeping water supply infrastructures like water treatment or purification structures, plants, machinery, equipment and other facilities in an optimum working order and proper functioning without any interruption and will mean to include preventive, periodical and breakdown maintenance and repair.

16. GP is responsible for bulk water / domestic meter reading, serve demand cum notice to the consumers, collection of monthly charges and issuing receipt for payment received.

17. GP shall make arrangements and be responsible for accounting, book keeping and annual auditing of accounts of income and expenditure of the GP.

18. Facilitate social audit of the O&M Plan for water supply schemes developed by the Gram Panchayat in accordance with the guidelines issued by the state by involving all primary stakeholders, beneficiaries, vulnerable communities and other members of the Gram Panchayat.

19. The Gram Panchayat shall publicize the provisions of the Bylaws through interpersonal communication by Water operator, community-based organizations, and through posters, leaflets, public announcements, newspaper reports and any other appropriate means, so that all citizens are made aware of the duties of all in relation to operation, maintenance and management of rural water supply schemes.

20. The Gram Panchayat may, by itself or through practicing experts in the field undertake awareness and outreach programs about O&M and management of rural water supply schemes.

21. The Gram Panchayat shall review the implementation of these Bylaws at least twice a year, and shall take appropriate remedial steps to ensure the effective implementation of the operation and maintenance of water supply schemes and the service delivery thereof.

22. Where it is expedient to do so, the Gram Panchayat may, by following the relevant procedure(s) in the Act, add to, or amend the Bylaws with the prior permission of the Government of Karnataka.

Gram Sabha: The Gram Sabha shall discuss the status of the SVS/IVDN/WPPs, water supply service level, operation and maintenance, finance management and various other aspects relating to the water supply service. Annual statement of accounts of the SVS/IVDN/WPPs shall be maintained by PDO and presented to the Gram Sabha. The Gram Sabha will elect such members of VWSC as per GO. Gram Sabha may recommend revision of water tariff to the GP.

2.3 Panchayat Development Officer: Panchayat Development Officer (PDO) is considered the authorized official, representing the GP in all official transactions. Therefore, all functions of the GP are deemed to belong to the PDO for implementation. PDO shall be responsible for the following functions and responsibilities related to Operation and Maintenance of rural water supply schemes:

1. Assist the Gram Panchayat and Village Water and Sanitation Committee in preparation of the budget for O&M of water supply schemes including WPPs as a part of the Gram Panchayat Development Plan. connections
2. Provide information to the Gram Panchayat members/GP on O&M of water supply schemes including WPPs. And shall approve applications for new consumer
3. Supervise implementation, operation and maintenance of rural water supply schemes including WPPs within the purview of the GP.
4. Financial management and maintenance of records of the operation and maintenance of water supply schemes including WPPs, including review of accounts, resources, assets and systems. Water sale rate from WPPs is to be governed by the agreement entered with the GP
5. Assisting the GP and its committees in preparing reports and other documents evidencing status and progress of O&M of water supply schemes including WPPs.
6. Guidelines issued by RDPR with regard to appointment of staff shall be strictly adhered by GPS.
7. Prepare and update duties and responsibilities of Water operator/Pump Operator and to direct Water operator, valve operators and other water related workers.
8. Direct Water operator to remove unauthorized and illegal consumer connections and to recommend for penalty provisions for misuse and unauthorized supply of water including unauthorized tapping of safe drinking water. Develop regulatory measures for preventing unauthorized connections and water rationing as and when needed. Facilitate disconnection of FHTCs due to violation of the provisions of the bylaw, unauthorized tapping of safe drinking water, illegal connections and failure to pay water tariff.
9. Facilitate collection of safe drinking water tariff, maintenance of books of accounts, depositing cash in the Bank, presenting accounts at the GP and Gram Sabha,
10. Facilitate testing of water samples from sources of the GP in Pre-monsoon and post-monsoon using FTKs.
11. Facilitate new water supply connections after completing application procedures
12. Develop a detailed Operation and Maintenance plan for each SVS and IVDN including WPPs.
13. Monitor performance of Operation and Maintenance staff.
14. Maintain regularly, accounts and records of operation and maintenance expenditure as well as prepare the income and expenditure statement of Operation and Maintenance and to inform the GP and Gram Sabha through reports.

15. Plan and implement training for members of the committee, Water operator, other staff and including GP members involved in water supply and in operation and maintenance of the water supply and sanitation facilities in the village.

16. Facilitate and ensure insurance of the motor and other assets of the SVS/IVDN/WPPs.

17. Confirm the water consumption data at the Village Level OHTs in the GP and counter sign the monthly consolidated data sheet.

18. Release payment for consumption of bulk water to the specified account.

19. Any other role and/or responsibility as may be directed as per applicable laws by the Gram Panchayat, district and state authorities.

20. Recommend for disconnection of electricity connection of defunct infrastructure at sources for SVS & WPP.

2.4 Village Water and Sanitation Committee: There shall be a Village Water and Sanitation Committee (VWSC) for each village under the GP and it is constituted as per JJM guidelines (Annexure 7). The VWSC shall consist of 10 members, of which 50% shall be women. There shall also be a representative of the SC/ST community in the VWSC. The VWSC shall have a chairperson and a member secretary, who shall be elected from among the members of the VWSC. The chairperson shall be elected from among the GP members of the village. The tenure of VWSC shall be for 30 months. Roles and responsibilities of office bearers of VWSC shall be as per the Act and subsequent GOs relating to VWSC. Following are the powers, functions and responsibilities of the VWSC.

1. Assist the GP in supplying treated and required quantity of water to the public. VWSC shall provide support to GP in keeping drinking water sources clean and in hygienic condition. Help the GP, as and when required for repairs and drawing water from water tanks, wells, other water ways and facilities within the GP jurisdiction. VWSC shall further support the GP to prevent pollution of water from bathing, washing of clothes, washing of animals in front of water facilities created and at common water sources.

2. Provide assistance to GP in the maintenance of safe drinking water supply works, protecting plants and machinery. Provide requisite support to a person or agency with whom contract/agreement is made for supply of water, with prior approval from the GP.

3. VWSC shall assist the GP for motivating and entering into an agreement with such persons, institutions and owners of private water sources like borewells and WPPs for supplying/ safe drinking water to the village from these borewells & WPPs in case of scarcity of safe drinking water.

4. Create awareness among the people on water and sanitation, especially on health- hygiene-water-sanitation linkages as well as on judicious use of water.

5. Support GP and PDO in collecting monthly water charges.

6. Help GP in conducting water quality tests using FTK.

7. Support GP in the preparation of operation and maintenance plan for SVS & IVDN including WPPs.

8. Ensure every household/ward is getting adequate supply of water.

9. VWSC is responsible for meter reading, serve demand cum disconnection notice to the consumers, collection of monthly charges and issuing receipt for payment received.

10. PDOs has to place records about functioning of VWSC in Gramsabhas

2.5 Water operator: Specific prior written permission shall be obtained from RDPR for engaging additional Water operator. Qualifications of Water operator shall be: (a) should have completed School Education up to Class X on a minimum; (b) should be qualified/ trained/ skilled in plumbing; (c) should have attended orientation and other training events in Operation and Maintenance. If any of the existing Water operator does not have the above-mentioned qualifications, they shall be trained in operation and maintenance and subjected to a test (written or oral) and should have passed the test to be retained in the post of Water operator.

Following are the functions of Water operator:

1. Operate Pump/s of Single Village Schemes, subject to area of operation in GP allotted to Water operator. None other than the authorized Water operator/pump operator shall operate the pump/s.
2. Maintain Logbook at the Pump House, updating the entries on an everyday basis.
3. Operate valves in the distribution network and distribute water. None other than the authorized Water operator/pump operator/ valve operator shall operate valves.
4. Water operator/pump operator Shall chlorinate water and distribute only chlorinated water. Check residual chlorine in the water supplied from MVS and SVS and take action for re-chlorination if necessary. This should be done through VWSC.
5. Maintain Pump house, Bore Well and OHT premises clean and tidy. Clean Village Level OHTs once in three months with the permission from GP under prior intimation to the public.
6. Retain the key of the pump house and be responsible for safe custody of all assets and equipment related to the water supply scheme.
7. Provide new FHTCs/ Other Tap Connections and remove unauthorized and illegal FHTCs if there is any specific orders from the PDO.
8. Visit consumer households/FHTCs and undertake water meter reading, appropriately recording it in the Consumer Ledger or on the software app.
9. Collect monthly water charges from consumer connections/Households/ Institutions/Commercial Units.
10. Cash collected from consumer connections/ Households/ Institutions/ Commercial Units should be deposited to VWSC account.
11. Overseeing of Operation and maintenance of Water Purification Plants.
12. The Water operator shall report to PDO for all administrative matters. If summoned by the GP, Water operator shall personally present themselves to answer water related questions. Water operator shall also communicate with the VWSC as per directions of the PDO.
13. Maintaining of logbook, maintenance records, stock book, etc. If the Logbook is not maintained as required, commensurate reduction of emoluments salary will be imposed.
14. Attend to leakages and other repairs immediately.
15. Any other responsibility as directed by PDO/ GP or VWSC from time to time.
16. GP shall ensure testing of water quality in terms of physical, chemical and bacteriological parameters for water supplied by SVS and IVDN including every month instead of pre-monsoon and post monsoon periods.

17. GP shall avail FTKs from RDWSD and conduct water quality test with FTKs, engaging trained volunteer including GPLF member or qualified and trained water operator.

18. Water samples have to be tested every month and the result has to be placed in GP meetings and should be displayed during meeting. WQMS could be integrated with Pancha Mitra for showing water quality test results.

19. Help GP in conducting water quality tests using FTK every month.

2.6 Domestic and Non-Domestic Consumers

a) Water supplied from GP to the FHTC shall be used only for domestic purposes. Misuse of water will be sufficient ground for disconnection of the FHTC. If additional water is required for the consumer for any special functions, permission may be obtained to access additional quantity of safe drinking water and such additional quantity of water shall have an additional charge, as per tariff slabs in the O&M Policy. Water will not be used for commercial purposes, sale to non-consumer members, irrigation/ agriculture, washing animals etc.

b) Pay charges for volumetric consumption before the 5th of every month. as per direction of the GP.

c) Disciplined use of water, which among other things mean no unauthorized tapping stealing of water, use of water as per allotted LPCD, using water only for domestic purposes.

d) Minor repair of tap and pipes at house premises will have to be carried by concerned consumer after informing the Water operator/authorized Plumber. Repairs within the household premises will be considered minor repair and is primarily the responsibility of the consumer, taking professional support of a qualified plumber or technician. A repair related to the domestic water meter is also the responsibility of the consumer including the cost of repair or replacement of consumer water meter.

1. New Consumer Connections:

a) Prospective consumers (Households/ Institutions/ Commercial Units) shall apply for a new connection in the prescribed format to the PDO.

b) The PDO will decide the application and later submit for ratification in GP meeting for new consumer connection

c) PDO shall direct Water operator / Plumber to take an estimate in the prescribed format for the new connection and submit the same to the PDO.

d) On receiving approval from the GP, the PDO will inform the applicant regarding date of connection and the preparations the applicant has to make to avail the connection. In exceptional circumstances, the PDO can approve water supply connections and get the decision to provide water connections ratified in the next GP meeting. The applicant will be given the connection only after paying the connection fees at the office of the GP. There shall be a fee for new consumer connection, as decided by the GP The consumer shall pay for the cost of the domestic water meter, unless it is covered as part of a project or scheme or otherwise subsidized by some agency or institution or grant funds. The connection fees do

e) es not include the cost of water meter.

f) The applicant shall bear all material and labour cost towards new connection.

g) Trained Water operator or a plumber duly authorized by the PDO shall alone give new consumer connection.

2. **Disconnection of consumer connections or imposing penalty:** Unauthorized supply of water to non-consumers, illegal connections, use of pumps to suck water from the pipeline of the distribution network, tampering with the consumer water meter, using safe drinking water for non-domestic purposes such as irrigation, gardening and washing animals, selling water to other domestic users, etc. shall be grounds for disconnection of a consumer connection or imposing penalty.

3. **Reconnection Fees:** Reconnection fees shall be minimum of Rs.1,000 or as decided by GP

CHAPTER III – OPERATION AND MAINTENANCE OF SINGLE VILLAGE SCHEMES (SVS) AND IN-VILLAGE DISTRIBUTION NETWORK (IVDN-WPPS)

PARA-3

Gram Panchayat, the third tier of local self-government in the State of Karnataka is responsible for sourcing and distribution of safe drinking water to the population within its geographical limits. (Chapter IV of the GSPRA-1993). Para 58, clause (iii) of chapter IV mentions that the GP has the responsibility of "maintaining water supply works either on its own or by annual contract by generating adequate resources". Clause iv under para 58 further mentions that "revising and collecting taxes, rates and fees periodically which are leviable under the Act" is the responsibility of GP. KGSPRA 1993 provides powers and responsibilities to Gram Panchayats to supply pure and sufficient water for public and private purposes . The Act provides powers under para 78, chapter-IV, to make bylaws regarding provision of water supply to the GP. Besides the GSPRA-1993, there are Government Orders and Water Policy documents that elaborate on the duties and powers of Gram Panchayat with regard to drinking water supply.

There are two categories of water supply schemes in the State of Karnataka in terms of the population and geographical coverage: (1) Multi Village Schemes (MVS) and Single Village Schemes (SVS). Of these, the RDWSD, Government of Karnataka plans, implements and manages MVS, which are operated through contractors selected through KTPP act. On the other hand, SVS is planned and implemented by Gram Panchayats and operated directly employing the services of Water operator. If a GP is receiving water from a MVS, such water from the MVS as well as own SVS of the GP is distributed to the local population through the IVDN. To supplement SVS/MVS, in identified habitations WPPs are established and being maintained either through contract are through societies/ NGOs

3.1 Technical Operation and Maintenance: The GP is required to manage the supply of safe drinking water irrespective of its source with due diligence. The following tenets govern the technical operation and maintenance of SVS and IVDN including WPPs in a GP.

1. The GP shall ensure 55 LPCD of safe drinking water to all the households.

2. The GP shall conduct bi-annual water quality tests with FTK of all sources used for drinking water purposes and ensure that only non-contaminant source is used for potable water and is distributed to the community.

3. GP shall send the water sample for testing to NABL accredited lab, if any parameter found non complying the permissible limit and shall report the same to RDWSD for suitable advice.

4. GP may operate local source based SVS if the water supplied by MVS is not sufficient to cover the domestic water needs. The GP shall ensure that a log book is maintained at all Borewells from which water is pumped to distribute through the IVDN. Annexure 23.1 provides a format for the log book of SVS Pump House.

5. Safe Drinking Water from a MVS shall be supplied to Village OHT, measured with an (Electro-magnetic) Bulk Flow Meter.

6. GP shall ensure that all domestic water connections such as that of households, institutions, commercial and industrial establishments are metered and charged a volumetric tariff, following principles and practices of Incremental Block Tariff.

7. Water operator authorized by GP shall be responsible for operation of pumps, valves and manage distribution of water. Water operator shall report to PDO for all administrative and technical matters in SVS & IVDN including that of WPPs.

8. Water operator shall maintain all records and documents related to operation and maintenance and these which include Log Books, Maintenance Registers, Spares and Stock Register. In the event of a software-based MIS is made available by RDWSD, the GP shall ensure that data/ information is fed regularly and update the MIS.

3.2 Maintenance of Village OHTs: It is required to clean and maintain the Village level OHTs/GLSR/ Sumps, preferably once in a quarter. Annexure 23.2 provides a format which shall be to record maintenance schedules and maintenance activities actually carried out for a Village level OHT.

3.3 Indent and Purchase of Spares and Consumables: Annexure 23.3 provides a format which shall be used for the indenting spares and consumables required for the operation and maintenance of SVS/IVDN/ WPPs.

3.4 Water Quality Monitoring: GP has to ensure that it supplies safe drinking water to the consumers through schemes owned, operated and maintained by it. Since there are no laboratories available at the GP level to test and monitor water samples, it is proposed to use Field Test Kits for water quality testing and monitoring, drawing samples from sources and consumer ends. If any serious and non-permissible level of quality issues are noticed in the samples tested, proper water quality tests shall be referred to taluk/district labs. The PDO shall be responsible for getting water samples tested at approved laboratories and take appropriate follow-up measures to safeguard the health of inhabitants in the GP. Annexure 23.4 provides illustrative details of FTK based water quality testing

3.5 Recharging of traditional water sources and borewells, using provisions of NREGS: Water source for SVS is mostly groundwater / borewells in the arid and water-stressed region of Karnataka. Water supply schemes with groundwater source in arid regions of the state are not perennial and hence not sustainable to support long term operations. Sources dry up in the short term and investments become unfruitful. Therefore, recharging defunct and dried up groundwater sources is imperative to address water source sustainability issues. Recharging dry borewells can be taken up under the MGNREGS. A note on recharging of traditional water sources and borewells is provided in Annexure 23.5.

3.6 Guidelines on operation and maintenance of WPPs: Reverse Osmosis Water Purification Plants have been installed across the state of Karnataka with the objective of providing safe potable water to rural population. These plants and other associated infrastructure are established by the RDPR/RDWSD/Other departments. A WPP includes raw water collection, storage & treatment of raw water along with storage & distribution arrangements for treated water. The wastewater generated by WPP also needs to be safely dispensed with

3.6.1 Ownership of WPP: The Water Purification Plants are established by various Department and are being maintained through to the Contractor to operate &maintain on behalf of the RDPR. The ownership of the assets including land, building, plant & machinery and other associated infrastructure like bore well, storage tanks and electricity connection etc. belongs to the ZP. At the end of present O&M contract period, the WPPs along with other assets have to be handed over to the Gram Panchayats / in complete working condition under the supervision of EO of TP. Subsequently, the WPPs which are in the jurisdiction of EO can be packaged for further O&M tenders.

3.6.2 Staff requirement for O&M of WPP: Operators, Technicians, Supervisors and Management staff are necessary for the unhindered functioning and efficient operation of the Water Purification Plants.

3.6.3 Operation and Maintenance of WPP: The O&M contractors shall also carry out preventive maintenance, attending to breakdown services, replacement of parts & consumables and periodic testing of water for compliance to stipulated standards as per the terms and conditions laid down in the agreement of contract.

3.6.4 User Fees: Consumers collecting water from WPP shall pay to the O&M Contractor a user fee calculated based on viable gap funding (VGF) as specified by the government per litre of treated water dispensed and this will form part of the compensation for the Operator. The O&M Contractor should factor the user charge collected while submitting their quote in the bids for the operation &maintenance of Water Purification Plants.

3.6.5 Payment to the Contractor: The Contractor shall quote rates in the bids for the first year of operation &maintenance considering various cost aspects of operation and maintenance. For subsequent years, an escalation of 5% on every year on the first-year rate will be paid. i.e., for second year105% of quoted rate, for third year 110% of quoted rate, 115% of quoted rate for fourth year and 120% of quoted rate for fifth year

3.6.6 Payment Frequency: Payment to the Operator will be made on a quarterly basis. The O&M Contractor must submit the bill with supporting documents / reports by the 10th of subsequent month to PDO so as to enable the GP to process payment. CEO, ZP shall make the payment to the contractor within 15 working days, subject to satisfactory submission of reports and documents by PDO certified by the EO of TP.

3.6.7 Energy Charges will be paid by the contractor every month as per the actual billing / consumption charged by the ESCOM.

3.6.8 Health and Safety Precautions to be followed by the Contractor: The Contractor shall comply with all applicable health and safety regulations in all its activities under the contract. The Contractor shall ensure that his staff and labour are free of communicable diseases or any other diseases, which would make them unsuitable for employment at a water treatment plant. The Contractor will be responsible for ensuring the health and safety of their personnel, and will take necessary steps for prevention of accidents and epidemics. The Contractor shall carry out a review to identify hazards to staff, to the facilities and to the environment and provide suitable and adequate training and necessary safety equipment to its personnel to mitigate the risks.

3.6.9 Protection of the Environment: The Contractor shall take all reasonable steps to protect the environment, and to limit damage and nuisance to people and property as a result of their operations. The contractor will comply with all environmental laws and local regulations.

3.6.10 Obligations of the custodian: At the commencement of the contract, the custodian shall hand over possession of building, Water Purification Plant, power transmitting system &storage units, dispensing unit and other components of the WPP to the Contractor. The custodian shall also ensure that all previous electricity dues are cleared up to the date of handing over the possession of the WPP.

CHAPTER IV
WATER TARIFF AND FINANCE MANAGEMENT FOR O&M OF SVS AND IVDN INCLUDING WPPS

PARA-4

Safe and sustainable operation of water supplies is dependent on the availability of robust technical infrastructure, sufficient financial resources and competent human resources . In order to address the issues related to the financial resources, it is important to set appropriate tariff, mechanisms for collection and policy guidelines regarding cost recovery in the short, medium and long term.

Safe drinking water supply from MVS to GP will be filled in Village OHT will be metered with Electro-magnetic bulk flow meters. Readings of consumption of water will be taken on a monthly basis by Meter Readers/Water operator, recorded in the meter data will have to be entered in the consumption Journal / Ledger. The following tenets will apply to the finance management and water tariff relating to the operation and maintenance of SVS/IVDN at the GP level.

4.1 Finance Management in O&M: GP shall pay to the RDWSD, such tariff that is fixed by RDWSD at cost recovery principle based on volumetric consumption and will follow Incremental Block Tariff model.

4.2 Payment of Water Tariff to GP. All consumers like domestic, institutional, industrial, commercial and PSPs shall pay water tariff fixed by the GP. Refer to (KGSPRA-1993). Para 58, 'c' clause iv further mentions that "revising and collecting taxes, rates and fees periodically which are leviable under the Act". KGSPRA 1993.

4.3 Billing and Collection: GP will follow a monthly cycle for billing and collection under SVS and IVDN.

4.4 Measurement of Water Consumption: PDO shall facilitate measurement of water consumption at the domestic and non-domestic water connections through Water operator and issue demand notice to consumers.

4.5 O&M Budget: GP shall prepare an O&M budget on an annual basis, appropriately including the estimated income from the supply of safe drinking water and expenditure on the accesses and distribution of water in its GPDP. Information derived from the GP is O&M budget shall be used to make water supply systems financially sustainable by achieving cost recovery at GP level. Format for O&M Budget for SVS and IVDN is provided at annexure 23.9.

4.6 Water Tariff and Increasing Block Tariff: GPs shall implement water tariff on its consumer categories, offering 7kL/Household/month at a basic price for the lifeline safe drinking water and thereafter, introduce Incremental Block Tariff (IBT). GPs may fix the tariff in such a way to recover cost of operation and maintenance, irrespective of the fact that the schemes are metered or not. Consumer level water tariff in GP shall be sum total of bulk water cost (if applicable) + cost of human resource deployed in GPs for water supply related works + cost of consumables + cost of energy for own local water supply schemes in GPs. Annexure 23.6 illustrates and example of Incremental Block Tariff in rural water supply at domestic consumer level. Annexure 23.6 provides a Tariff for Bulk water supply (Non-Domestic Connections-NDC).

4.7 Tariff for Bulk water supply (Non-Domestic Connections- NDC): Non-domestic water supply connections consist of all connections given to industrial units (Industrial Tap Connections-ITC), commercial units (commercial tap connection-CTC) and institutions running a business venture. Annexure 23.6 provides details of Tariff for Bulk water supply (Non-Domestic Connections- NDC)

4.8 Consumer Bill Model- GP Level: A format for raising the Consumer Bill is given vide Annexure 23.7. The Meter Reader/ Water operator will visit the consumer connections of all categories, inspect the functioning and reading on the Meter. He/she will record the meter reading and calculate the tariff amount.

4.9 Consumer Ledger: Consumer Ledger which will have a consolidated version at the GP level requires to be maintained for each SVS in the GP. A format for the Consumer Ledger is provided vide Annexure 23 .8

4.10 O&M budget at GP level: Each GP has to prepare an annual O&M Budget for SVS and IVDN and make it part of the GPDP. A format for O&M budget at GP level is provided vide Annexure 23.9.

CHAPTER V
GOVERNANCE AND INSTITUTIONAL ARRANGEMENTS FOR O&M OF SVS AND IVDN INCLUDING WPPS

PARA-5

Governance in the context of the bylaw is the way rules, norms and actions are structured, sustained and regulated for operating and maintaining a rural water supply scheme. Institutional arrangements are generally understood as a set of agreements on the division of respective responsibilities of agencies, departments, and or project teams. The following statement of principles will govern the operation and maintenance of water supply schemes in the context of a Gram Panchayat in Karnataka.

5.1 Decentralized service delivery and O&M: GP is primarily responsible for distribution of safe drinking water to households through FHTCs, drawing water from OHTs filled with safe drinking water of MVSs or SVS . Monitoring the functionality of WPPs is also the responsibility of PDO of GP.

5.2 Bylaw for Operation and Maintenance: Bylaw for Operation and Maintenance of SVS and IVDN at the GP level, which defines roles, responsibilities, powers and functions of various stakeholders with regard to rural water supply will facilitate the management of rural water supply sector.

5.3 Tripartite Memorandum of Understanding (TMoU): A Tripartite MoU between Urban Water Utility (UWU), RDWSD and GP is to be entered into for supply of safe drinking water, payment of water tariff and to define roles and responsibilities. The TMoU is attached vide Annexure-6 of the O&M Policy for rural water supply sector.

5.4 Village Water and Sanitation Committee (VWSC): GP will form VWSCs in every village of the GP. One VWSC may cover one village and adjacent habitations and the GP is empowered to decide on the number of VWSCs; GO on VWSC (Number: RDP 507 GPD2019 Dated: 09-09-2020) will guide the GP in the formation and management of VWSC.

5.5 Staffing Pattern: GP shall decide on the staffing pattern as per the requirement. GP will deploy staff to operate, maintain and manage SVSs and IVDN including WPPs (if maintained by GP), subject to the staffing pattern as per the guidelines in the O&M Policy. Annexure 23.10 provides a guideline for determining the staffing Pattern at GP Level

5.6 Monitoring functioning of Staff: PDO shall maintain attendance register for all staff of water supply scheme and apply service rules in administering Water operator. PDO shall insist on work reports from the staff engaged in water supply sector.

5.7 Co**mmunity Consultations:** Community consultations shall be held at Gram Sabha meetings at least annually and feedback received from Gram Sabha shall be considered by the GP and VWSC in the operation, maintenance and management of rural water supply schemes including WPPs, IVDN and SVS. Water Supply shall be included as an Agenda item in all Gram Sabha Meetings. Minutes/ Report of Gram Sabha Meeting shall be sent to GP and the VWSCs.

5.8 Management Information System: GP shall implement MIS with regard to SVS and IVDN Including WPPs. Information on SVS and IVDN including WPPs shall be filled and updated by PDO. The information shall include baseline and operation and maintenance details.

5.9 Monitoring and reporting: In addition to the responsibilities as specified in these Bylaws, the PDO shall periodically report the status, progress, operations of SVS and IVDN including WPPs within his/

her jurisdiction to the Chief Executive Officer- ZP and state authorities in such formats and in accordance with the directions as may be issued by the Karnataka Rural Drinking Water & Sanitation Department from time to time or when necessitated. The Gram Panchayat and /or the Government shall regularly review the management of the O&M of rural water supply schemes in the GP to ensure that they are in compliance with the provisions of KGSPRA-1993 and these Bylaws and other applicable regulations. In the event of any non-compliance, the Gram Panchayat and/or the Government may take action against those responsible including notice of remedial action, imposition of fines and penalties as set out in these Bylaws. The Panchayat Development Officer, Gram Panchayat members and other officers authorized by the Gram Panchayat shall conduct regular checks with regard to the SVS and IVDN including WPPs within his/her jurisdiction to ensure compliance of various provisions of these Bylaws.

5.10 Grievance Redressal Mechanism GP Level: Grievance Redressal Mechanism (GRM) an IT based system is setup in RDPR department. The system will receive r complaints and monitor their resolution. 'GRM maintains a dedicated call-centre for capturing the complaints regarding water supply in the rural areas of Karnataka. Provisions are available for lodging complaints through multiple channels. GP shall partner with RDWSD in implementing 'GRM, for addressing grievances and complaints. GP shall publicly exhibit 'GRM' contact number at prominent public locations in the GP with appropriate messages. In case of any complaint regarding water supply and related matters, the consumer can also register their complaint in the complaint register available at the GP office. The complaint will be verified by the PDO or by the Water operator on the direction of the PDO. Complaints can be broadly classified in two major categories namely minor and major complaints. Minor complains shall be resolved within 24 hours and major complaints shall be resolved within 3 days. An electronic registry shall be maintained to keep track of the complaints. A brief protocol for addressing complaints is attached vide Annexure 23.11. A Flow diagram on the process of GRM is provided in Annexure 23.12. A format for uploading complaints on the GRM is provided vide Annexure 23.13. GRM will maintain an electronic registry to track complaints. Once a complaint is registered, a message is sent to the concerned officer and the complainant. The concerned officer is given customer contact details for follow up actions. There are two ways of closing a complaint: (a) Closing complaint on resolution of the issue; and (b) Escalating the complaint– when the complaint can't be resolved at the first level, it will be escalated to the next higher level and so on.

5.11 Technical support by RDWSD

Gram Panchayats are mandated with the responsibility of rural water supply in the State of Karnataka, as per provisions of the GSPRA-1993. Continuity in operations and maintaining service level are keys to sustainability. Technical support refers to the professional and technical support and advice provided by RDWSD to PRIs in Karnataka with regard to the operation and maintenance of rural water supply schemes. GPs or other PRIs may request in writing for technical support with regard to water supply schemes owned and operated by GPs and with regard to the IVDN including WPPs. RDWSD shall respond to such requests and provide technical support with professionally technical advice in writing. RDWSD shall function as the official support agency to support rural water supply sector in the State of Karnataka. GPs may request for support from RDWSD for resolving technical, operational and managerial issues. RDPR Department will coordinate with the three tier PRIs for the smooth operation and maintenance of rural water supply schemes.

Technical support is envisaged in the following contexts:

- Technical support in the event of a major breakdown in the water supply system, especially those that are operational/ functional and belong to the category of SVS and IVDN including WPPs.

- Technical support to plan, design and facilitation of contracting process and reconstruction of the scheme, in the event of a damage due to natural disaster.
- Technical support to resolve water quality issues. GP shall bring to the notice of RDWSD if serious water quality issues are identified in the FTK Tests. RDWSD shall then provide technical and managerial advice to overcome the issue.
- Technical support to GPs in recharging defunct water sources
- Technical support to resolve managerial issues arising from time to time.
- Capacity building of the GP and VWSC from time to time including up gradation of skills and knowledge. Master Trainer from SHG shall be well utilized in capacity building.
- Technical Training to Water operator and other GP level staff and volunteers in management, operation and maintenance of SVS and IVDN including WPPs.

CHAPTER VI
CAPACITY BUILDING, IEC AND COMMUNITY MOBILIZATION COMPONENT FOR O&M OF SVS AND IVDN INCLUDING WPPS

PARA-6

6.1 Capacity Building: To make a water supply scheme sustainable; perennial water source, state of the art infrastructure and technology are required. However, unless these are backed by skilled competent staff, the O&M of water supply schemes will become unsustainable. The purpose of capacity building in general at the local level is to prepare local stakeholders such as Gram Panchayat, Village Water and Sanitation Committee (VWSC), Self Help Groups (SHGs) and local polity for planning, implementing, operating, maintaining and managing rural water supply schemes which will supply adequate quantity of safe drinking water, metered FHTCs, volumetric tariff and cost recovery. The following tenets are included in the chapter on capacity building, IEC and community mobilization.

Objective of Capacity Building: To impart skills, attitude and knowledge to PRI members, community organizers, volunteers and local level staff on decentralized water supply management. It is also necessary to improve the awareness of Zilla Panchayats and Taluk Panchayats on management of decentralized rural water supply projects.

- RDPR Department will ensure capacity building of different stakeholders on their roles and responsibilities with regard to operation and maintenance. When elections are held to the three tier PRIs every five years and GPWSCs/VWSCs, the RDPR Department and RDWSD shall jointly train, equip and build capacity of the newly elected GP/VWSC to operate and manage the SVS/IVDN including WPPs.
- GP shall facilitate training of all local level staff and Water operator in operation and maintenance of rural water supply schemes with the support of RDWSD and Master Trainer from SHG.
- Local level staff and Water operator will participate in training events organized by RDPR Department/ RDWSD /ZP.
- GP level trainings and IEC campaign shall focus on the local polity, elected members of GP, former members of GP, local political leaders, all officials of GP, other related departments, local leaders and opinion makers.

  A tentative list of training events at the GP level is proposed vide Annexures 23.14. The list of training is illustrative and more training events can be added as and when there is an exigency for the same. GP shall facilitate training of all local level staff and water operator in operation and maintenance of rural water supply schemes with the support of RDWSD and RDPR Department. Reporting format for Achievement under Training is provided vide Annexures 23.15.

6.2 Information, Education and Communication (IEC)

IEC is a strategy to spread awareness through communication channels to a target audience to achieve a desired positive result. The desired positive results in the context of O&M of rural water supply sector in Karnataka may be summarized as 100% FHTCs, habitual payment of O&M tariff, disciplined use of treated water together with metered consumption of water at the consumer levels. Information useful to the public is shared through IEC, employing print and electronic media, mid media and interpersonal communication. IEC shall convey positive knowledge for appropriate behavior relating to the theme of IEC. The ultimate objective of IEC is to bring about behavioral and social change. Household visits, baseline data collection, communication of key messages and getting the household to agree on lawful and disciplined use of water etc. are important activities under the IEC campaign. Stakeholders to IEC campaign may be identified at the district, taluk and GP level so as to muster sufficient socio-political support achieving the objectives

of IEC. Following table provides a summary of IEC tools and methods that may be employed in the IEC campaign in the rural water supply sector of Karnataka. Annexures 23.16 provides a summary of IEC tools and methods that may be employed in the IEC campaign in the rural water supply sector of Karnataka along with a reporting/ monitoring Format for IEC campaign. SHG member shall be involved in the IEC activity.

6.3 Community Mobilization for O&M:

Community Mobilization in the context of the rural water supply sector is a process of organizing and mobilizing members of the community for a pre-defined objective. A first step for mobilizing the community is to initiate a dialogue among members of the community. This will require an intermediary institution. In the case of Karnataka, Implementation Support Agency (ISA) under the Jal Jeevan Mission or a NGO or a CBO can perform the function of mobilizing community. If such NGOs and CBOs are not available in a local context, the GP itself can take on this responsibility. The VWSC also is another potential intermediary to organize and empower the community. The purpose of community mobilization is to bring together the members of the community, organize them and facilitate the community to work around a development objective such as improved delivery of services, planning development interventions and raise awareness on a chosen theme. In the context of the rural water supply sector, some of the desired immediate objectives of community mobilization can be: (1) saturation of all households and educational institutions with FHTCs; (2) introduce O&M tariff and inculcate a habit of regular and habitual payment of water tariff; (3) judicious and disciplined use of treated water and (4) metered consumption of water at the consumer levels. Achievement of these immediate sectoral objectives will ensure equity in distribution of water, sustainability of water supply scheme and service delivery and an ultimate improvement of health. The following tenets can support community mobilization. SHG member shall be involved in the IEC activity.

a) Identify all key stakeholders of the sector at the local and other higher influential level

b) Appoint an intermediary agency or institution to support and facilitate the process of community mobilization

c) Use IEC/ BCC tools in the task of mobilizing people

d) Identify opinion makers, community leaders and women representatives who can take over from the intermediary agency

e) Open dialogue platforms between the GP and the local community such as the Gram Sabha, the Ward Sabha, local level Self Help Groups etc.

f) Subsequent organization of youth, children, women for more specific micro level objectives will add to the social capital. These social platforms can gradually emerge as change agents.

g) The local level institutions need to be accountable to the polity and formal institutions such as the GP.

h) Expand space for civil society engagement in decision making with regard to water and sanitation.

i) Institutions such as the GP can initiate local policy preparation to conserve water resources, reduce generation of waste, recycle water and help the local community see water from a broader perspective.

j) Use Media platforms such as the print, electronic and social media to engage with a wider population on decision-making processes related to water and sanitation.

The community can also be organized for participatory action research (PAR) on issues and problems that affect their day-to-day life. Water and sanitation are two relevant themes around which such PAR can be organized.

6.4 Operation & Maintenance (O&M)

Operation & maintenance is important for ensuring functionality of household tap connections O&M would involve recurring costs like electricity charges, chemical costs, expenditure on preventive and breakdown maintenance, remuneration of pump operator, etc. The community therefore has a key role to play in aspects such as:

i) using the revolving fund received from government judiciously;

ii) funds received as part of Finance Commission recommendation;

iii) arranging operation of the system through a bare foot technician.

iv) carrying out minor repairs,

v) chlorination;

vi) water quality testing / surveillance.

vii) ensuring proper use of infrastructure, cleanliness near sources, etc.

Gram Panchayat and/ or its sub-committee, like VWSC/ Paani Samiti/ User Group, etc. will open an account to receive funds for O&M from different sources such as incentive fund from JJM, Finance Commission-grants and community contribution to meet the recurring charges

Management and O&M of the water supply scheme by the Gram Panchayat and/ or its sub-committee, like. VWSC/ Paani Samiti/ User Group, etc., recovery of user charges and full O&M recovery will form the cornerstone of the long-term sustainability of the scheme.

ANNEXURE 23 TO THE GP LEVEL BYLAW

Table 38: List of Annexures to the GP level Bylaw

Annexure No.	Annexure Title
Annexure 23.1	Logbook Format for Pump House- SVS
Annexure 23.2	Village level OHT Quarter-wise Cleaning Schedule
Annexure 23.3	Indent and Purchase of Spares and Consumables
Annexure 23.4	Water Quality Testing with Field Test Kits (FTK)
Annexure 23.5	Note on Recharging of traditional water sources and borewells, using provisions of NREGS
Annexure 23.6	Incremental Block Tariff in rural water supply at domestic consumer level
Annexure 23.7	Consumer Bill Model- GP Level
Annexure 23.8	Consumer Ledger
Annexure 23.9	Annual O&M Plan and Budget for SVS and IVDN including WPPs
Annexure 23.10	Criteria for determining the staffing Pattern at GP Level
Annexure 23.11	Protocol for Grievance Redressal Mechanism at GP Level
Annexure 23.12	Format for uploading complaints on the GRM portal by GPs with regard to SVS/ IVDN including WPPs
Annexure 23.13	Draft Content of GP level Trainings for rural water supply sector
Annexure 23.14	Reporting Format for Achievement under Training
Annexure 23.15	Reporting/ Monitoring Format for IEC campaign
Annexure 23.16	Management Information System for SVS and IVDN including WPPs

ANNEXURE 23.1 LOG BOOK FORMAT FOR PUMP HOUSE- SVS

Table 39: Log Book Format for Pump House- SVS

Date	Voltage			Opening Meter Reading	Closing Meter Reading	Starting Time	Closing Time	Pressure Gauge Reading	Flow Meter Reading	Name of Pump Operator	Remarks	Signature of Pump Operator
	Phase-1	Phase-2	Phase-3									
1												
2												
3												
4												
5												
6												
7												
8												
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31												

ANNEXURE 23.2 VILLAGE LEVEL OHT QUARTER-WISE CLEANING SCHEDULE

Table 40: OHT Maintenance Format

Location	OHT Capacity	Jan		Apr		Jul		Oct	
		SD	CD	SD	CD	SD	CD	SD	CD
AAA									
BBB									
CCC									
DDD									
EEE									
XXX									
SD- Scheduled Date; CD- Cleaned Date									
Name of Water operator/ _____who cleaned					Signature of Water operator/ _____who cleaned				
Name of Authorizing Officer					Signature of Authorizing Officer				

ANNEXURE 23.3 INDENT AND PURCHASE OF SPARES AND CONSUMABLES

Table 41: Format for indent Purchase of Spares and Consumables

Format for Indenting Spares and Consumables							
No	Indented Item (Spares and Consumables)	Unit	Total Quantity/ Units	Price per Unit	Total Price	Date of Indent	Date of Receiving
Signature of PDO/Authorizing Official Name of PDO			Signature of Indenter Name of Indenter		Signature of Purchase Officer Name of Purchase Officer		

ANNEXURE 23.4 WATER QUALITY TESTING WITH FIELD TEST KITS (FTK)

Table 42: Water Quality Testing with Field Test Kits (FTK)

No	Water Quality Parameter	Permissible limit	Acceptable limit in the absence of alternate source	Method of Quality Testing	Description of Results		
1	Turbidity, NTU, Maxx	1	5	Visual comparison method	Not Turbid	Moderately Turbid	Highly Turbid
2	pH value	6.5-8.5	No relaxation	pH strips colour comparison method	1. Red: Very Strongly Acid (pH 2.0) 2. Orange: Strongly Acid(pH4.0) 3. Yellow: Weakly Acid (pH 6.0) 4. Green Weakly Alkaline (pH 8.0) 5. Blue: Strongly Alkaline		
3	Total Hardness mg/l, Max	200	600	Titrimetric method	At the end point colour of water changes in to bluish colour. Record the number of divisions for which H3 liquid has been consumed to reach the end point		
4	Total Alkalinity, mg/l, Max	200	600	Titrimetric method	At the end point Colour of water changes in to yellow or orange. Record the number of divisions for which A2 liquid has been consumed to reach the end point. Alkalinity mg/L= No of divisions of A2 addedx10		
5	Chloride, mg/l, Max	250	1000	Titrimetric method	At the end point colour of water changes to slight reddish in colour. Record the number of divisions for which C2 liquid has been consumed to reach the end point. Chloride mg/L= No of divisions of C2 addedx10		
6	Ammonia (As total ammonia-N), mg/l, Max	0.5	No relaxation	Visual comparison method	If there is no ammonia colour of water will not change. If there is ammonia the water turns Yellow. Compare the yellow colour developed with the ammonia chart and record the value. 1. No colour:0 mg/L; 2. Dark yellow :0.25mg/l; 3. Greenish Yellow: 0.5 mg/L; 4. Green: 1.0 mg/L		

7	Phos-phate*, mg/l, Max	0.1	No relaxation	Visual comparison method	If there is no phosphate colour of water will not change. If phosphate is present the colour of the water changes in to blue. Compare the blue colour developed with the Phosphate chart and record the value.
					1. Lemon yellow:0.25 mg/L; 2. Dark lemon yellow: 0.3 mg/L; 3. Lemon green-1.0 mg/L 4. Blue: 2.0 mg/L
8	Residual Chlorine, mg/l, Min	0.2	1	Visual colour comparison method	If there is no chlorine colour will not change. If chlorine is present the colour of the water changes in to yellow. Compare the yellow colour developed with the Chlorine chart and record the value. 1. Light yellow: 0.1 mg/L 2. Yellow: 0.25mg/L The most common test is the dpd (diethyl paraphenylene diamine) indicator test, using a comparator. This test is the quickest and simplest method for testing chlorine residual. With this test, a tablet reagent is added to a sample of water, colouring it red. The strength of colour is measured against standard colours on a chart to determine the chlorine concentration. The stronger the colour, the higher the concentration of chlorine in the water.
9	Iron, mg/l, Max.	1	No relaxation	Visual colour comparison method	If there is no iron colour will not change. If iron is present the colour of the water changes in to orange red. Compare the orange red colour developed with the Iron chart and record the value. 1. No Iron- No change in colour of water 2. Orange colour- Iron present in _____values 3. Red colour- Iron present in _____values

10	Nitrate, mg/l, Max	45	No relaxation	Visual colour comparison method	If there is no nitrate colour will not change. If nitrate is present the colour of the water changes in to pink. Compare the pink colour developed with the Nitrate chart and record the value. 1. No Nitrate - No change in colour of water 2. Pink colour- Nitrate present in _____values
11	Fluoride, mg/l, Max	1.0	1.5	Visual colour comparison method	Compare the colour with fluoride chart
12	TDS, mg/l, Max	500	2000	-	Use TDS Meter; • Less than 300 mg/litre- (Excellent) • Between 300 and 600 mg/litre (Good) • Between 600 and 900 mg/litre (Fair) • Between 900 and 1200 mg/litre (Poor) • Greater than 1200 mg/litre (Unacceptable)
13	Coliform Count, per 100 ml sample	zero	No relaxation	H2S vial test for 24 hours	1. Black Colour: High level of fecal contamination 2. Turbid and Brownish: Moderate level of fecal contamination 3. No change in the honey brown colour: Absence of E Coli & Fecal Coliform
While doing water quality testing with FTKs, care and diligence must be exercised in recording values (test results). Test result values are indicative and are usually mentioned in a range. Different vendor products follow different ranges and values. Therefore, those using the FTK shall follow test result values as specified by the manufacturer of FTKs. What is given above is only for illustration					
No standard for phosphate in IS 10500. WHO standard of 0.1 mg./l considered.					

ANNEXURE 23.5 NOTE ON RECHARGING OF TRADITIONAL WATER SOURCES AND BOREWELLS, USING PROVISIONS OF NREGS

6.5 The following steps may be followed for preparing a plan on recharging traditional water sources and Bore Wells.

1. Prepare a list of Water Sources in the GP.
2. Categorize water sources into private and public.
3. Take consent of the owner / custodian for recharging interventions.
4. Enter into a dialogue with the owner / custodian of the water source on the socially desired intervention and desirable results.
5. Prepare a Technical Plan and Estimate for each site after a due process of prioritization of interventions in consultation with the neighborhood community and Gram Sabha.
6. Obtain approval from GP/ Rural Development and Panchayat Raj Department / MGNREGS division for the plan.
7. Get funds allocated for works.
8. Finalize pre-intervention baseline data and post-intervention monitoring protocols and entrust officials or local community for monitoring.
9. To begin with, interventions may focus on borewells, both those of public and private ownership.
10. A short descriptive note on recharging borewells is provided below. More scientific methods such as those of Bhungroo (an innovative water harvesting technique which uses excess water from flood prone and waterlogged farmland by recharging and storing excess water underground) and Bhujal App (Borewell Monitoring App, for tracking water levels in borewells) may be used additionally to improve groundwater and regulate the use of the same. It is obligatory on the part of the GP to prepare a groundwater recharge plan in the fashion mentioned above.

Borewell Recharging Methodology (Karnataka) for rainfed areas[25]

Single ring method

- A 10×10 feet percolation pit is dug around the bore well.
- Stone pitching is provided around the walls of the percolation pit.
- A 3-inch layer of sand is deposited at the bottom of the pit. Holes or slits are made in the bore well casing pipe which is then covered with a mesh – to ensure nothing but water goes into the bore well.
- Cement rings are placed around the bore well pipe and that area is left open. The cement rings are concreted together.
- The remaining area of the pit outside the cement rings is filled with sand, stone and gravel.
- Rainwater from the catchment area gets transferred to the percolation pit. This then seeps in through the sand and gravel outside the Cement rings. This water gets filtered through the sand in the base of the cement rings and fills the area around the pipe casing. And then enters the bore well through the protective mesh and the holes thereby recharging the underlying aquifer with clean, filtered rainwater.

Two ring Method

- A pond – approx. 20 feet x 15 feet and 8 feet deep – is constructed nearby the borewell site – in a position to gather the runoff water from the rains
- A pit is dug around the actual borewell casing – 6 feet x 4 feet size and 8 feet deep.
- The bottom of this pit is lined with filtration material to a depth of 2 feet – layers of 40 mm stones, 20 mm and 6 mm size.
- The borewell casing pipe is perforated using a drilling machine, and the casing is then wrapped with nylon mesh so that solids do not enter the casing pipe
- At this stage, 6 x 3-foot diameter cement rings are placed around the borewell casing and the spaces between them are filled with cement to seal them. This “false well" is then filled with 20mm stones
- A second false well-constructed of 6 x 3-foot diameter cement rings are placed next to the first false well and the gaps between are filled with cement. This well is left empty and a cement cover is placed on it to stop rubbish falling in.
- A 3-inch feeder pipe is fitted coming from the rainwater collection area to a hole in the first cement ring of this empty well. During rainy season the rainwater flows into the first empty well where it percolates down through the filtration material and subsequently up into the second well around the borewell casing. It then enters through the slits and filters down into the underlying aquifer where it is stored for the following dry season. Even completely dried bore-wells can also be revived by proper management and utilization of rainwater. Recharging filtered rainwater into the bore well results in improving groundwater table and contributes to a decrease in the proportion of impurities in the water. The bore-well water thus gets diluted, bringing down hardness, and other chemical components such as fluoride.

Water level monitoring in Bore wells: The below table provides a format for monitoring water level in Bore Wells, so as to gather data on water levels in the borewells and understand the impact of recharging.

Table 43: Format for monitoring water level in Bore Wells

Name of District GP			**Location of Bore Well (Use Geo Tracker App).**		
Name of Taluk			**Year**	**Month**	
Name of GP			**Name of Village**	**Name of Habitation**	
Date	**Time of Reading**	**Depth of Bore Well**	**Water level in the Borewell**		**Remarks if any**
			Before Pumping	**After Pumping**	

ANNEXURE 23.6 INCREMENTAL BLOCK TARIFF IN RURAL WATER SUPPLY AT DOMESTIC CONSUMER LEVEL

Table 44: Indicative Water Tariff at Domestic and Non-domestic level

Tariff for water supply from GPs to Consumer Households	Total Water in Litres /month	Block Tariff Amount in INR / Unit of kL	Block Tariff Amount in Paise / Unit of L	Cumulative Amount
Upto 7kL/Month/Hh	7000	INR 70 for 7 kL @ INR 10/kL	1.0	70
7.1 kL to 08 kL/ Month	8000	12	1.2	82
8.1 kL to 09 kL/ Month	9000			94
9 kL to 10 kL/ Month	10000			106
10.1 kL to 11 kL/ Month	11000	14	1.4	120
11.1 kL to 12 kL/ Month	12000			134
12.1 kL to 13 kL/ Month	13000			148
13.1 kL to 14 kL/ Month	14000			162
14.1 kL to 15 kL/ Month	15000			176
15.1 kL to 16 kL/ Month	16000	16	1.6	190
16.1 kL to 17 kL/ Month	17000			206
17.1 kL to 18 kL/ Month	18000			222
18.1 kL to 19 kL/ Month	19000			238
19.1 kL to 20 kL/ Month	20000			252

Non-Domestic Water Tariff		
Consumer Category	**Tariff / Kilo Litre per Month**	**Tariff / Litre in Paise**
Non-Domestic public institutions (such as (1) Orphanages, (2) Old age homes, (3) Physically Challenged Residence, (4) Raitha Sampar-ka Kendra, (5) Government educational institutions, (6) Government offices, (7) Government Hospitals (PHCs and sub-centres) and including Private sector Institutions from (1) to (3) as above	INR – 10 per kL	1.0
Non-Domestic Commercial Enterprises*	INR – 30 per kL	3.0
Industrial Enterprises	INR – 40 per kL	4.0

**RDWSD may examine the category of unit on a case-by-case basis*

ANNEXURE 23.7 CONSUMER BILL MODEL- GP LEVEL

Table 45: Consumer Bill Format

Bill Number	Date	Consumer Number			
Name and address of Consumer					
Consumer ID	Meter Number	Category of Consumer (Drop down list- Domestic/ Institutional/ Industrial)			
	Status	Reading taken/ Not taken			
Current	Date	Meter reading	Consumption in kL	Monthly water charge	
Previous				Additional amount	
Details of additional amount	Total amount				
Previous adjustment		Due date without Fine		----------	
Fine/ Penalty		Due date for disconnection			
Surcharge		Remarks			
Dues					
Meter rent		Signature of Meter Reader Name of Meter Reader			
Inspection charge					
Total additional amount					

ANNEXURE 23.8 CONSUMER LEDGER

Table 46: Consumer Ledger

No	Name of Consumer	Payment Status of Monthly Water Tariff in Rs.											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

ANNEXURE 23.9 ANNUAL O&M PLAN AND BUDGET FOR SVS AND IVDN INCLUDING WPPS

Table 47: Annual O&M Plan for SVS and IVDN including WPPs

NO	O&M Pentagon and Contents of O&M Plan
1	**General Information on Water Supply Scheme**
2	**O&M plan for Water Source and Water Quality Monitoring**
3	**O&M Plan for Water Infrastructure** 3.1 Asset Inventory and Inventory of Spares/materials/consumables 3.2 Operation and Maintenance (Preventive-routine-breakdown maintenance 3.3 Management of Emergencies/Shutdowns 3.4 Equipment Repair/Supply Contact Information
4	**Finance Management Plan** 4.1 Tariff plans /Cost recovery 4.2 Billing and Collection plan 4.3 Budgeting and Accounting System plan 4.4 Plan for replacement & rehabilitation costs
5	**Institutions & Governance** 5.1 Institutional arrangements – MoUs/ Roles and Responsibilities of stakeholders/ Interface between GP-VWSC-RDWSD-Operator/ Technical support to GPs 5.2 Grievance Redressal Mechanism 5.3 Record Maintenance and documentation plan (computerized database of consumers, Logbooks, Billing, Collection, maintenance history, Inventories, Inspection reports etc.) 5.4 Plan for MIS and Monitoring of Services
6	**Staffing & Training Plan**

ANNEXURE 23.9.1 FORMAT FOR ANNUAL BUDGET ON SVS AND IVDN INCLUDING WPPS

Table 48: Format for O&M budget at GP level and its approval

Annual Budget for Single Village Schemes/IVDN/WPPs for_____Year					
Name of GP		Name of Taluk		Name of District	
No.	**Budget Heads**	**Unit Cost/ Month**	**Total Units**	**Total Annual Cost**	**Remarks**
A	Expenditure				
A.1	Salaries/Incentives				
1	Pump Operators/Water operator/ Valve Operators/ Bill Collector (Use a separate sheet to provide details)				
	Sub Total A.1				
A.2	Electricity Payments				

1	Energy in Units (KWs) 1. Source -1 (RR Number/ connection) 2. Source-2 3. Source—N 4. Other Energy Consumption-Units				
2	Total Electricity Units for all sources/SVSs/ WPPs				
3	Electricity Bills-for all sources including WPPs & Other				
	Sub Total A.2				
A.3	Purchases				
1	Pipe and related materials for repairs including other spares				
2	Bleaching Powder and Consumables				
3	Machinery				
4	Tools				
5	Stationery				
6	Water Testing Charges				
7	Diesel Charges				
8	Other				
	Sub Total A.3				
A.4	Labour/Vendor charges for Repairs, Maintenance/ New Works				
1	Repair of Pipes/ Leaks (INR)				
2	Repair of Valves (INR)				
3	Repairs of Chlorinator (INR)				
4	Electrical Repairs (INR)				
5	Repairs of Machinery (INR)				
6	Cleaning of Village OHT (INR)				
7	Civil Works (Source/OHT/Other)				
8	Other				
	Sub Total A.4				
A.5	Administrative & Miscellaneous Expenses				
1	Travel & Conveyance				
2	Food & Refreshments				
3	Stationery & Other Consumables				
4	Meetings				
5	Local Trainings				
6	Other incidental expenses				
7	Miscellaneous				
	Sub Total for A.5				
	Total Expenditure A.1 to A.5				

ANNEXURE 23.10 CRITERIA FOR DETERMINING THE STAFFING PATTERN AT GP LEVEL

Table 49: Criteria for appointment of Water operator / Staffing Pattern

No	Criteria for number of Water operator	Indicative value	Number of Water operator
1	Minimum Population to be covered by a Water operator	1500 to 2000	There shall be one Water operator subject to satisfying all the three criteria or any two of the three criteria. Prior permission of RDPRD/ RDWSD shall be taken by PDO for waiving the criteria regarding the number of Water operator in a GP.
2	Minimum Households to be covered by a Water operator	400 to 500	
3	Minimum House Tap Connections (HTCs/FHTCs) by a Water operator	400 to 500	
	Supplementary Criteria		
4	No. of Villages/ No. of Habitations	Provide actual data on Villages/ Habitations	The PDO in consultation with the GP may decide on the number of Water operator to be in service, subject to additional criteria such as those from 4 to 7.
5	No. of Borewells to be operated	Provide actual data on Borewells to be operated	
6	No. of Streets/ Street Valves to be operated	Provide actual data on Number of Streets and Street Valves to be operated	
7	No. of WPPs to be operated	Provide actual data on number of WPPs to be operated	

ANNEXURE 23.11 PROTOCOL FOR GRIEVANCE REDRESSAL MECHANISM AT GP LEVEL

Table 50: Protocol for Grievance Redressal Mechanism at GP level

Complaint related to	Responsibility	Timeline/ how it will be addressed
In-Village Distribution Network (IVDN) except that of pipeline network in the consumer premises 1. Leakage of Mains 2. Leakage of Valves 3. Defunct Air Valves	GP (cost will be borne by GP)	Within 8 hours by Water operator / registered plumber, under the guidance of PDO & AE of RDWSD
Pump related faults and complaints 1. Pump House 2. Pumps and Motor	GP (cost will be borne by GP)	Within 8 hours of complaint registration, under the guidance of AE of RDWSD &PDO

Meters: Bulk Flow Meters attached to the Village level OHT or other locations	RDWSD/ GP (cost will be borne by RDWSD or GP)	Within 7 days of complaint registration, under the guidance of AE of RDWSD &PDO
House connection related problems A. 1. Leakage of pipeline 2. Leakage of Valves 3. Defunct Air Valves 4. Defunct Consumer Water Meter 5. Tampering Consumer Water Meter 6. Defaulting Tariff Payment 7. Change of HTC location 8. Malpractices and stealing of water 9. WPP related issues 1. Minor complaints 2. Major complaints	Consumer (cost will be borne by consumer), under guidance of Water operator WPP O&M contractor/Owner of WPP	Within 8 hours by Water operator or registered Plumber on the direction of the PDO. Within 8 hours for minor and within 24 hours for major complaints, WPP O&M contractor/owner. PDO shall escalate to higher authorities after 24 hours.

ANNEXURE 23.12 FORMAT FOR UPLOADING COMPLAINTS ON THE GRM PORTAL BY GPS WITH REGARD TO SVS/IVDN INCLUDING WPPS

Table 51: Format for uploading complaints on the GRM portal by GPs with regard to SVS/IVDN including WPPs

No	Details of Complaints Single Village Schemes /IVDN	Data
1	Name of the Scheme	
2	Location Details (District; Taluk)	
3	Category of Scheme (MVS/IVDN/SVS)	
4	Number of GPs covered by Scheme (Full coverage/ Partial Coverage)	
5	Name of GPs covered by the scheme (Drop Down List)	
6	Number of Villages covered by Scheme (Full coverage/ Partial Coverage)	
7	Name of Villages covered by the scheme (Drop Down List)	
8	Number of Habitations covered by Scheme (Full coverage/ Partial Coverage)	
9	Name of Habitations covered by the scheme (Drop Down List)	
	Details of Complaints MVS	
10	Source and intake (Lat/Long/Altitude)/ Category of Source (Groundwater/ Surface Water)/ Statement of problem (Drop down list)	

11	Pump House / Assets in the Pump House/ Specifications and details of pumps and other machineries (Lat/Long/Altitude), Statement of problem (Drop down list:- Pump House/Pumps and Motor/Electrical installation)	
12	Pumping Main (Material/Size and Length), Statement of problem (Drop down list: Leakage of Mains/Leakage of Valves/Defunct Air Valves)	
13	Village Level OHTs (Lat/Long/Altitude; Statement of problem (Drop down list:- Meters: Bulk Flow Meters attached to the Village level OHT or other locations)	
14	Complaints regarding quantity of water supplied	
15	Complaints regarding quality of water supplied	
16	Household level complaints regarding: - Leakage of pipeline/Leakage of Valves/ Defunct Air Valves/ /Defaulting tariff payment/change of HTC location/malpractices and stealing of water	
17	Complaints regarding Household Water Meter: - Defunct Consumer Water Meter	
18	Complaints regarding excess bills and over consumption of Water	
19	Other Complaints: - including that of WPPs.	

ANNEXURE 23.13 DRAFT CONTENT OF GP LEVEL TRAININGS FOR RURAL WATER SUPPLY SECTOR.

Table 52: GP level trainings

No	Training Event & For Whom	Duration	Training Content
1	Orientation to GP on O&M	One Day	1. Water literacy- Water-Health-Sanitation linkages 2. Know our water supply arrangements- An introduction to the water supply schemes including SVS and IVDN under MVS 3. Operation and maintenance of RWSS 4. GRM 5. Role of GP level stakeholders in O&M of RWSS
2	General Training on Financial Systems and bookkeeping for PDO, GP Secretary	One Day	1. O&M Budget- How to prepare O&M Budget. 2. Meter Reading 3. Billing and collection arrangements 4. Accounting and auditing

3	Training on Water Quality Monitoring and Surveillance (2/ GP) Selected Water operator/ WQ Surveillance Volunteers from VWSCs (Five women where in Krishi Sakhi/Pashu Sakhi who are members of SHG are preferred. The Frequency of testing using FTK shall be pre-monsoon and post-monsoon. The testing should be at 8 locations preferably at source point, at OHT, at schools, at Anganawadi's and at an identified household. The remuneration for each test may be at rates fixed from time to time).	Two Days	1. Water literacy 2. Water quality parameters- physical/ chemical and bacteriological 3. Testing selected parameters using FTK- theory 5. Testing selected parameters of water quality using FTK- practical
4	Comprehensive training in O&M for pump operators and Water operator (to be held at Taluk level) including SHG member.	Three Days	1. Components of SVS/ IVDN 2. Pump House operations along with Log Book maintenance 3. Valve operations 4. Meter reading 5. Billing and collection 6. Plumbing and other repair works-practical
5	Sensitization of the community at habitation/village level – convene Gram Sabha	Half Day	1. Water literacy- Water-Health-Sanitation sinkages 2. Know our water supply arrangements- An introduction to the water supply schemes including SVS and IVDN under MVS 3. Operations and maintenance of RWSS 4. GRM 5. Role of GP level stakeholders' operation and maintenance of RWSS
6	Sensitization training / orientation on local level ownership and management of Rural Water Supply – SVS and IVDN including WPPs; participants may include GP members, former members of GP, all officials of GP and other departments, retired officials, local leaders and opinion makers including SHG members.	One Day	1. Water literacy- Water-Health-Sanitation linkages 2. Operations and maintenance of RWSS 3. GRM 4. Role of GP level stakeholders in operation and maintenance of RWSS 5. Orientation on billing and collection 6. Bylaw on GP level operation and maintenance

7	Training in O&M and scheme management of SVS including WPPs for RDWSD Engineers – District level	2 Days	1. Water literacy- Water-Health Sanitation linkages 2. Operation and maintenance of RWSS-(Technical) 3. Role of District and GP level stakeholders 4. O&M budgeting 5. Metering 6. Billing and collection arrangements 7. Accounting and auditing 8. Monitoring performance of MVS and SVS 9. Contract Management
8	Training in local level water resource management and recharging sources (PRD Engineers and selected GP level volunteers). Also, to SHG members.	3	1. Water literacy- Water-Health Sanitation linkages 2. Seasonality water shortage and crisis 3. Mapping of public and private water sources in the GP 4. Preparation of micro level water recharge plan-source-wise 5. Participatory monitoring of water levels 6. Judicious use of water resources by community 7. Community participation in water resource management.
9	Training in O&M and scheme management of WPPs, SVS and MVS for RDWSD Engineers- State level	2 Days	1. Water literacy- Water-Health Sanitation linkages 2. Operation and maintenance of RWSS-SVS and MVS 3. Role of State/ District and GP level stakeholders 4. O&M Budget 5. Metering 6. Billing and collection arrangements 7. Accounting and auditing 8. Monitoring performance of MVS and SVS including WPPs 9. Contract Management

10	Inter-State exposure visit for RDWSD Engineers (District and State level) / GP Presidents/ PDOs	2-3 Days	1. Exposure visits to an operational MVS; The team of participants will prepare a case study and present technical details, assessment of the performance of the MVS and suggest improvements in O&M, including technical, institutional, governance, finance aspects.
11	Training of Master Trainers (ToT) (State level) including the LCRPs.	5 Days	1. Water literacy 2. Rural Water Supply and Sanitation Programs in India- 1950-2020- A historical perspective 3. Water resources situation in Karnataka- Rural Water Supply Projects in Karnataka -1956-2020. 4. Experience of water supply schemes focusing on SVS including WPPs in Karnataka- technical, institutional, governance, finance aspects. 5. Experience of rural water supply schemes in Karnataka- MVS - technical, institutional, governance, finance aspects.
			6. Social mobilization- use of IEC/ BCC in social mobilization 7. Project Management in the context of Rural Water Supply programs in Karnataka 8. Monitoring, evaluation, Governance &accountability baselines, reporting and documentation 9. Operation and maintenance of SVS/ IVDN /WPPs institutional, finance, staffing, Governance, stakeholder roles 10. Operation and maintenance of MVS- Technical (source and infrastructure), institutional, finance, staffing, Governance, stakeholder roles 11. Finance Management with regard to operation and maintenance 12. Role of Operator/ DBOT Contractor

ANNEXURE 23.14 REPORTING FORMAT FOR ACHIEVEMENT UNDER TRAINING

Table 53: Reporting Format for Achievement under Training

No	Name of Training Event	Start Date	End Date	No. of Participants			Person Days Trained
				Male	Female	Total	

ANNEXURE 23.15 REPORTING/ MONITORING FORMAT FOR IEC CAMPAIGN

Table 54: Reporting/ Monitoring Format for IEC campaign

NO	Name of IEC Event	Variables	Quantitative Achievement
1	**Inter-personal communication**		
	Household visits by Volunteers and Community Organizers	No. of volunteers /COs No. of house visits	
	Print materials- brochures-leaflets	No. of brochures distributed List of brochures and leaflets used	
	Cadre of Water Campaigners in the GP	ASHA workers (Number) Anganwadi workers (Number) Water operator (Number) ANMs (Number) Retired officials &Teachers (Number) Pump and valve Operators (Number) Plumbers (Number) Meter Readers (Number)	
2	**Mid Media-outdoor publicity**		
	Wall writing/ wall paintings	Number of wall writings Messages used in the wall writings	
	Flex boards/ banners	Number of flex boards Messages used in the wall writings	
	Hoardings	Number of hoardings Messages used in the hoardings	
	Posters	Number of posters printed and used Messages used on the posters	
	Street theatre	Number of street theatre performances Theme of street theatre	
	Campaign vans	No. of campaign vans in operation / date/ location	
	Films &documentaries	No. of films projected / date/ location No. of documentaries project/ date/ location	
	Exhibitions	No. of exhibitions organized/ date/ location	
	Melas / group meetings, Song &drama activities	No. of melas organized/ date/ location No. of Group Meetings organized/ date/ location No. of Song and Drama activities /location	

3	**Mass Media**		
	• Print Media-Newspaper reports & advertisements • Electronic Media • Television advertisements • Radio Jingles and events	No. of Newspaper reports/ advertisements/ date/ location No. of TV events telecasted/ date/ location No. of Radio events broadcasted / date/ location	
4	**Social Media**		
	• Facebook • YouTube • WhatsApp • Messenger • Instagram • Twitter	Number of groups Facebook Number of groups YouTube Number of groups WhatsApp Number of groups Messenger Number of groups Instagram Number of groups Twitter	

ANNEXURE 23.16 MANAGEMENT INFORMATION SYSTEM FOR SVS AND IVDN

GP shall implement MIS with regard to SVS and IVDN including WPPs. Information on SVS and IVDN including WPPs shall be filled and updated by PDO, including baseline, operation and maintenance with regard to WPPs/IVDN/SVS. RDWSD shall make a Spread Sheet format for the baseline and O&M as mentioned above, so that developing and updating the information on schemes will commence immediately..

ANNEXURE 23.17 FORMAT FOR CAPTURING BASELINE DATA ON SVS AND IVDN INCLUDING WPPS, SHG SHALL BE CONSIDERED FOR TRAINING IN IEC, QUANTIFICATION WATER QUALITY TESTING, GROUND WATER RECHARGE ACTIVITIES.

Table 55: Format for capturing Baseline data on SVS and IVDN including WPPs

No	Baseline Details	Data
1	Location Details (District; Taluk)	
2	Name of the GP	
3	Number of Villages covered by Scheme (Full coverage/ Partial Coverage)	
4	Name of Villages covered by the scheme (Drop Down List)	
5	Number of Habitations covered by Scheme (Full coverage/ Partial Coverage)	
6	Name of Habitations covered by the scheme (Drop Down List)	
	Details of SVS/WPPs	

7	Asset Location	
8	Sources (Ground water/ Surface water); Total Number of Sources in the GP (--); With location details (Lat/Long/Altitude) (Fill up details for each source) / Water availability (Perennial or Seasonal)/ Depth of Source/ (Get details of yield/age of scheme/whether the source is functional now). Take details of Hand Pumps that are yielding water	
9	Water Quality Details of Public and Functional Sources in the GP (See Format in VAP for collecting information)	
10	Pump House / (Number of PH/ Building Number/ Assets in the Pump House/ Specifications and Details of Pumps and other machineries (HP of Pump/ Installation Year/ Whether functional now-yes/no) (Lat/Long/Altitude)	
11	Pumping Main (Material/Size and Length) (Route to be shown in Map if appropriate/ Lat/Long/Altitude)	
12	Village Level Storage Details /OHTs (Lat/Long/Altitude/Length/Breadth/ Height (Depth if GLSR)/Volume in kL/ Year of Construction/ Whether Functional now -Y/N; Structural Condition now) Number of OHTs in the GP/ Total Volume/ Installation details of Bulk Water Meters; Take details for each OHT	
13	No. of Cisterns/ PSPs in the GP with location details/ Number of Households dependent on the Cisterns/PSPs)	
14	Number of Zonal Valves and their locations (Lat/Long/ Altitude)	
15	Energization Details at (Installed Capacity/ RR Details)/ Location of the nearest Transformer with identification number	
16	Commissioning History /Year/ Month/ Date (Calculate Age in Years and Months)	
17	Is information on the SVS available in IMIS (Yes/No)	
18	No. of WPP Plants available in the GP (Location of WPP/Price charged for a can of 20 litres capacity)	
19	Social and Demographic Details of GP	
20	Village Census Code	
21	Number of VWSCs in the GP/ Number/Name/ Designation/ Gender/ Age/ Social Category of Members	
22	Total Population of the GP (As per 2011 Census and as per Anganwadi Records)	
23	Total Households of the GP (As per 2011 Census and as per Anganwadi Records)	

24	Staff/ Water operator engaged by GP (Number of Staff/ Category of Staff/Name/ Designation/ Gender/ Age/ Social Category of Staff/ Salary drawn by each staff/ Whether Permanent or Temporary)	

ANNEXURE 23.18 FORMAT FOR CAPTURING O&M INFORMATION ON SVS AND IVDN INCLUDING WPPS

Table 56: Format for capturing O&M information on SVS and IVDN including WPPs

No	O&M details for Single Village Schemes	Data
1	Name of the Scheme	Capture details from Baseline
2	Location Details (District; Taluk)	
3	Category of Scheme (SVS)	
4	Number of Villages covered by Scheme (Full coverage/ Partial Coverage)	
5	Name of Villages covered by the scheme (Drop Down List)	
6	Number of Habitations covered by Scheme (Full coverage/ Partial Coverage)	
7	Name of Habitations covered by the scheme (Drop Down List)	
8	Number of HTCs in the GP (Give Village wise break-up)/ Metered and Not Metered	
9	Water Tariff charged per HTC	
10	Number of Institutional Tap Connections (ITCs) in the GP (Give Village wise break-up)/Metered and Not Metered	
11	Water Tariff charged per ITC	
12	Number of Commercial Tap Connections (CTCs) in the GP (Give Village wise break-up)/Metered and Not Metered	
13	Water Tariff charged per CTC	
14	Log Book Details for SVS (Do it for each Bore Well)	
15	Electricity Meter Reading Before pumping	
16	Electricity Meter Reading After pumping	
17	Total units of Electricity Consumed	
18	Pumping Start Time	
19	Pumping End Time	
20	Total Pumping time	
21	Voltmeter reading	
22	Amp Meter reading	

23	Down time in Pumping (No. of Days in which Pumping was disrupted) Fully—Partially--	
24	Water Quality Details of Public and Functional Sources in the GP (See Format Water Quality Test Format)	
25	Human Resources Details	
26	Human resource employed by GP for operating, maintaining and managing SVS and IVDN in GP	
27	Name of Water operator (Age/ Date of Birth/ Education/ Whether trained in O&M/ Year/ Month and Date of Joining service/ Number of Years completed in service/ Salary drawn at joining/ Present salary)	
28	Name of Pump Operator (Age/ Date of Birth/ Education/ Whether trained in O&M/ Year/ Month and Date of Joining service/ Number of Years completed in service/ Salary drawn at joining/ Present salary)	
29	Name of Valve Operator (Age/ Date of Birth/ Education/ Whether trained in O&M/ Year/ Month and Date of Joining service/ Number of Years completed in service/ Salary drawn at joining/ Present salary)	
30	Name of Bill Collector (Age/ Date of Birth/ Education/ Whether trained in O&M/ Year/ Month and Date of Joining service/ Number of Years completed in service/ Salary drawn at joining/ Present salary)	
31	Total Quantity of Water Received from MVS into the IVDN (Collect data from Bulk Water Meter Reading) in kL or MLD	
32	Total Quantity of Water pumped from SVS into the IVDN (Collect data from Log Book) in kL or MLD	
33	Name of WPP O&M Contractor	
34	Date of agreement entered in to for the contract	
35	Date of completion of the contract	
36	Functionality status of WPP	
37	Number of break downs in each month	
38	Reasons for the breakdown of WPP	
39	Date of replacements of parts	
40	Expenditure towards replacement of parts	
41	Expenditure details on electrical charges	
42	Expenditure on contract amount	
43	Expenditure on consumables	
44	Remarks on overall performance of the O&M contractor	

ANNEXURE 24 CIRCULAR ON HANDING OVER THE ASSET TO GPS

ಕರ್ನಾಟಕ ಸರ್ಕಾರ

ಗ್ರಾಮೀಣ ಕುಡಿಯುವ ನೀರು ಮತ್ತು ನೈರ್ಮಲ್ಯ ಇಲಾಖೆ

ಆಯುಕ್ತರ ಕಚೇರಿ, 2ನೇ ಮಹಡಿ, ಕೆ.ಹೆಚ್.ಬಿ. ಬಿಲ್ಡಿಂಗ್, ಕಾವೇರಿಭವನ, ಬೆಂಗಳೂರು – 560 009.
ದೂರವಾಣಿ ಸಂ.22221861 : - ಫ್ಯಾಕ್ಸ್ :-22221862 E-mail : krwssd@gmail.com

ಗ್ರಾಕುನೀ&ನೈ/260/ಮುಇ/ತಾಂತ್ರಿಕ/2022-23/1751 ದಿನಾಂಕ: 17 .08.2022

-:ಸುತ್ತೋಲೆ:-

ವಿಷಯ: ಜಲ ಜೀವನ್ ಮಿಷನ್ ಯೋಜನೆಯ ಕಾರ್ಯಾತ್ಮಕ ನಳ ನೀರು ಸಂಪರ್ಕಕ್ಕಾಗಿ ಕಾಮಗಾರಿಗಳಿಂದ ಸೃಜಿತ ಕಟ್ಟಡ / ಆಸ್ತಿಗಳ ಹಸ್ತಾಂತರ ಪ್ರಕ್ರಿಯೆ ಕುರಿತು.

****

ಜಲ ಜೀವನ್ ಮಿಷನ್ ಯೋಜನೆಯ ಕಾರ್ಯಾತ್ಮಕ ನಳ ನೀರು ಸಂಪರ್ಕಕ್ಕಾಗಿ ಗ್ರಾಮಗಳಲ್ಲಿನ ಕಾಮಗಾರಿಗಳಿಂದ ಸೃಜಿತ ಕಟ್ಟಡ / ಆಸ್ತಿಗಳ ಮಾಲೀಕತ್ವ ಮತ್ತು ಸಮರ್ಪಕ ನಿರ್ವಹಣೆಗಾಗಿ ಇಲಾಖೆಯ ಸಕ್ಷಮ ಪ್ರಾಧಿಕಾರಗಳಿಂದ ವಹಿಸಿಕೊಳ್ಳುವಾಗ ಈ ಕೆಳಗಿನ ವಿಧಾನವನ್ನು ಅನುಸರಿಸುವುದು.

1. ಹಸ್ತಾಂತರಿಸುವ/ಹಸ್ತಾಂತರಿಸಿಕೊಳ್ಳುವ ನಮೂನೆಯನ್ನು ಲಗತ್ತಿಸಲಾದ ಮಾದರಿಯ ಪ್ರಕಾರ ಮೂರು ಪ್ರತಿಗಳಲ್ಲಿ ಸಿದ್ಧಪಡಿಸಬೇಕು. ಮೊದಲ ಪ್ರತಿಯನ್ನು ಇಲಾಖೆಯು ಉಳಿಸಿಕೊಳ್ಳುತ್ತದೆ, ಎರಡನೇ ಪ್ರತಿಯನ್ನು ಹಸ್ತಾಂತರಿಸುವ ಸಂಸ್ಥೆಗೆ ನೀಡಲಾಗುವುದು ಮತ್ತು ಮೂರನೇ ಪ್ರತಿಯನ್ನು ಗ್ರಾಮೀಣ ಕುಡಿಯುವ ನೀರು ಮತ್ತು ನೈರ್ಮಲ್ಯ ಇಲಾಖೆ ವಿಭಾಗೀಯ ಕಚೇರಿಗೆ ಸಲ್ಲಿಸಲಾಗುವುದು.
2. ಸದರಿ ಆಸ್ತಿಗಳ ಸ್ಥಳದ ಅಳತೆಗಳು ಮತ್ತು ಗಡಿಗಳನ್ನು ಸರಿಯಾಗಿ ಪರಿಶೀಲಿಸಬೇಕು ಮತ್ತು ಅವುಗಳ ಸ್ಥಳದ ನಕ್ಷೆ/ಲೇಔಟ್ ನಕ್ಷೆಯಲ್ಲಿ ಸಮರ್ಪಕವಾಗಿ ಗುರುತಿಸಿ/ತೋರಿಸುವ ಜೊತೆಗೆ ನಕ್ಷೆಯಲ್ಲಿ ಉತ್ತರ ದಿಕ್ಕನ್ನು ಗುರುತಿಸುವುದು.
3. ಯೋಜನೆಯ ನಕ್ಷೆಯಲ್ಲಿ ನಮೂದಿಸಿದ ಅಂಶಗಳು ಹಾಗೂ GPS ನಲ್ಲಿ ದಾಖಲಿಸಿದ ಅಂಶಗಳಗಳನ್ನು ಸಮನ್ವಯಗೊಳಿಸುವುದು.
4. ಅನುಷ್ಠಾನಗೊಳಿಸಿದಂತೆ ಯೋಜನೆಯ ನಕ್ಷೆಯನ್ನು ಮೂರು ಪ್ರತಿಗಳಲ್ಲಿ ಸಲ್ಲಿಸಬೇಕು.
5. ಆಸ್ತಿ ಸ್ಥಳವನ್ನು ಹಸ್ತಾಂತರಿಸುವ ಮತ್ತು ಹಸ್ತಾಂತರಿಸಿಕೊಳ್ಳುವ ದಿನಾಂಕವನ್ನು ನಮೂದಿಸಬೇಕು. ಇಲಾಖೆಯಿಂದ ಆಸ್ತಿ ಸ್ಥಳವನ್ನು ಹಸ್ತಾಂತರಿಸಿಕೊಳ್ಳುವಾಗ ಮೇಲಿನ ಸೂಚನೆಗಳನ್ನು ಕಟ್ಟುನಿಟ್ಟಾಗಿ ಪಾಲಿಸಬೇಕು.

ಲಗತ್ತಿಸಿದೆ: ಹಸ್ತಾಂತರಿಸುವ/ಹಸ್ತಾಂತರಿಸಿಕೊಳ್ಳುವ ನಮೂನೆ

ತಮ್ಮ ವಿಶ್ವಾಸಿ

ನಿರ್ದೇಶಕರು
ಗ್ರಾ.ಕು.ನೀ ಮತ್ತು ನೈ ಇಲಾಖೆ, ಬೆಂಗಳೂರು

ಗೆ,

1. ರಾಜ್ಯದ ಎಲ್ಲಾ ಜಿಲ್ಲೆಗಳ ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಧಿಕಾರಿಗಳಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಹಾಗೂ ಅದರಂತೆ ಗ್ರಾಮ ಪಂಚಾಯಿತಿ ಅಭಿವೃದ್ಧಿ ಅಧಿಕಾರಿಗಳಿಗೆ(ಪಿಡಿಒ) ನಿರ್ದೇಶನ ನೀಡುವುದು
2. ಗ್ರಾಮೀಣ ಕುಡಿಯುವ ನೀರು ಮತ್ತು ನೈರ್ಮಲ್ಯ ಇಲಾಖೆಯ ಎಲ್ಲಾ ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು, ಆದ್ಯತೆಯ ಮೇರೆಗೆ ಅಗತ್ಯ ಕ್ರಮ ವಹಿಸುವುದು.
3. ಗ್ರಾಮೀಣ ಕುಡಿಯುವ ನೀರು ಮತ್ತು ನೈರ್ಮಲ್ಯ ಇಲಾಖೆಯ ಎಲ್ಲಾ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು, ಆದ್ಯತೆಯ ಮೇರೆಗೆ ಅಗತ್ಯ ಕ್ರಮ ವಹಿಸುವುದು.
4. ಗ್ರಾಮೀಣ ಕುಡಿಯುವ ನೀರು ಮತ್ತು ನೈರ್ಮಲ್ಯ ಇಲಾಖೆಯ ಎಲ್ಲಾ ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು, ಆದ್ಯತೆಯ ಮೇರೆಗೆ ಅಗತ್ಯ ಕ್ರಮ ವಹಿಸುವುದು.

ವಿಭಾಗ
ಉಪವಿಭಾಗ

ಲೋಕೋಪಯೋಗಿ, ಬಂದರುಗಳು ಮತ್ತು I.W.T.ಇಲಾಖೆ (ಪ್ಯಾರಾ298) ಉಸ್ತುವಾರಿಯಲ್ಲಿ ಸ್ಥಿರ ಸರ್ಕಾರಿ ಆಸ್ತಿಗಳ ನೋಂದಣಿ

ನೋಂದಣಿ ಸಂಖ್ಯೆ ಉಪ ಸಂಖ್ಯೆಯೊಂದಿಗೆ	ಆಸ್ತಿಯ ವಿವರಗಳು		ನಿರ್ಮಾಣ ಅಥವಾ ಖರೀದಿ ಮತ್ತು ನಂತರದ ಸೇರ್ಪಡೆ, ಇತ್ಯಾದಿಗಳನ್ನು ಮಾಡಿದ ವರ್ಷ.	ದಾಖಲಿಸಲಾದ ಮೌಲ್ಯ			ಯಾವ ಅನುದಾನದಿಂದ		ನಿರ್ಮಾಣದ ಉದ್ದೇಶ		ಯೋಜನೆ ನಿರ್ವಹಣೆ ದಾಖಲೆಗಳ		ಅಧಿಕಾರಿಯ ಹೆಸರು ಮತ್ತು ಹುದ್ದೆ, ಯಾರಿಂದ ಮತ್ತು ಯಾವಾಗ			
	ಲಗತ್ತಿಸಲಾದ ಪ್ರತಿ ನಿರ್ಮಾಣದ ವಿವರಗಳೊಂದಿಗೆ ವಿವರಣೆ (•)	ಪ್ರತಿ ರಚನೆಯ ವಿಭಿನ್ನ ಅಂಗ ಭಾಗಗಳ ಸ್ವರೂಪ ಮತ್ತು ವಿವರಣೆಗಳು (••)		ಮೂಲ ಕಾಗದ ಪತ್ರಗಳು (ಭೂಮಿಗೆ ಪ್ರತ್ಯೇಕವಾಗಿ)	ನಂತರದ ಸೇರ್ಪಡೆಗಳು ಅಥವಾ ಕಡಿತಗಳು	ಎಲ್ಲಾ ಒಟ್ಟು	ನಿರ್ಮಿಸಿದ್ದು ಅಥವಾ ಖರೀದಿಸಿದ್ದು	ನಿರ್ವಹಣೆ ಮಾಡಿದ್ದು	ಮೂಲ	ಪ್ರಸ್ತುತ ಹೇಗೆ ಬಳಸಲಾಗುತ್ತಿದೆ	ಮತ್ತು ಇಳಿಕೆಗಳೊಂದಿಗೆ (ಡ್ರಾಯಿಂಗ್ ಮೌಂಟೆಡ್, ಇತ್ಯಾದಿ. ಅಥವಾ ಟ್ರೇಸಿಂಗ್)	ರೇಖಾಚಿತ್ರದ ಸ್ವರೂಪ, ಸ್ಕೆಚ್ ಎಲಿವೇಷನ್, ವಿಭಾಗ ಇತ್ಯಾದಿ.	ಇಳಿಕೆ ಮಾಡಿದ (ಸ್ಕೇಲ್)	ಬಿಡಿಸಿದವರು	ಸಹಿ ಮಾಡಿದವರು	ಚರ್ಚೆಗಳ ಸಂದರ್ಭದಲ್ಲಿ, ಆಸನಗಳ ಸಂಖ್ಯೆಯನ್ನು ಇಲ್ಲಿ ದಾಖಲಿಸಬೇಕು
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
													ಅನ್ವಯಿಸುವುದಿಲ್ಲ	ಅನ್ವಯಿಸುವುದಿಲ್ಲ	ಅನ್ವಯಿಸುವುದಿಲ್ಲ	ಅನ್ವಯಿಸುವುದಿಲ್ಲ

(•)ಅಧೀನ ರಚನೆಗಳು. ಉದಾ., ಬೋರ್ ವೆಲ್‌ಗಳು, ಸಂಗ್ರಹಣಾ ಟ್ಯಾಂಕ್‌ಗಳು, ಪೈಪ್‌ಗಳು, ನಳಸಂಪರ್ಕಗಳು

(••) ಉದಾ: ಸಂಗ್ರಹಣಾ ಟ್ಯಾಂಕ್‌ಗಳು: ಇಳಿಕೆಗಳು, ಸಾಮರ್ಥ್ಯ, ಹಂತ, ಇತ್ಯಾದಿ: ಪಂಪ್‌ಗಳು: HP, ಹಂತ: ಪೈಪ್‌ಗಳು: ಪೈಪ್ ವ್ಯಾಸ ಮತ್ತು ವರ್ಗ.

ಹಸ್ತಾಂತರಿಸಿಕೊಳ್ಳುವವರ ವಿವರ

ಹೆಸರು :.....

ಹುದ್ದೆ :.....

ಸಹಿ :.....

ದಿನಾಂಕ :.....

ಹಸ್ತಾಂತರಿಸುವವರ ವಿವರ

ಹೆಸರು :..... (ಸ್ಪಷ್ಟವಾಗಿ ಬರೆಯಿರಿ)

ಹುದ್ದೆ :.....

ಸಹಿ :.....

ದಿನಾಂಕ :.....

ಪಿಡಬ್ಲ್ಯು ಎಫ್ –23 (ಗ್ರಾಮೀಣ ಕುಡಿಯುವ ನೀರು ಮತ್ತು ನೈರ್ಮಲ್ಯ ಇಲಾಖೆಯ ಜೆಜೆಎಂ ಕಾಮಗಾರಿಗಳಿಗಾಗಿ ಮಾರ್ಪಡಿಸಲಾಗಿದೆ)

ಲೋಕೋಪಯೋಗಿ, ಬಂದರುಗಳು ಮತ್ತು I.W.T.ಇಲಾಖೆಯ (ಪ್ಯಾರಾ 298)
ಸ್ವಾಧೀನದಲ್ಲಿರುವ ಎಲ್ಲಾ ಜಮೀನುಗಳ ನೋಂದಣಿ ಪುಸ್ತಕ

ನೋಂದಣಿ ಸಂಖ್ಯೆ	ರಸ್ತೆ, ಪಟ್ಟಣ, ಗ್ರಾಮ ಅಥವಾ ಇತರ ಪ್ರದೇಶದ ಹೆಸರು	ಸ್ವಾಧೀನಪಡಿಸಿದ ದಾಖಲೆಗಳ ಉಲ್ಲೇಖ					ನಿಖರವಾಗಿ ಪಾವತಿಸಿದ ಪರಿಹಾರದ ಮೊತ್ತ	ವಿಸ್ತೀರ್ಣ ಎಕರೆಗಳಲ್ಲಿ ಇತ್ಯಾದಿ.	ಹೇಗೆ ಬಳಸಲಾಗಿದೆ	ವಸ್ತುಗಳು ಅಳತೆಗಳೊಂದಿಗೆ (ರೇಖಾಚಿತ್ರಗಳು, ಮೌಂಟೆಡ್ ಅಥವಾ ಅನ್–ಮೌಂಟೆಡ್ ಅಥವಾ ಟ್ರೇಸಿಂಗ್)	ಅಳತೆ ಮಾಪ (ಸ್ಕೇಲ್)	ಅಧಿಕಾರಿಯ ಹೆಸರು ಮತ್ತು ಹುದ್ದೆ ಯಾರಿಂದ ಮತ್ತು ಯಾವಾಗ		ಇದಾ (ಯಾವುದೇ ಭಾಗವನ್ನು ತ್ಯಜಿಸುವುದು ಇತ್ಯಾದಿ)
		ಸೈಟ್ ಅಥವಾ ಜಾಗ	ಅಧಿಸೂಚನೆ ಸಂಖ್ಯೆ ಮತ್ತು ದಿನಾಂಕ	ಸ್ವಾಧೀನದ ಹೇಳಿಕೆ ಸಂಖ್ಯೆ ಮತ್ತು ದಿನಾಂಕ	ಪಾವತಿಸಿದ ವೋಚರ್ ಸಂಖ್ಯೆ ಮತ್ತು ದಿನಾಂಕ	ಯಾವ ವಿಭಾಗೀಯ ಖಾತೆಗಳಿಗೆ ಹೊಂದಿಸಲಾಗಿದೆ (ತಿಂಗಳು)						ಬಿಡಿಸಿದವರು	ಸಹಿ	

ಹಸ್ತಾಂತರಿಸಿಕೊಳ್ಳುವವರ ವಿವರ

ಹೆಸರು :.....

ಹುದ್ದೆ :.....

ಸಹಿ :.....

ದಿನಾಂಕ :.....

ಹಸ್ತಾಂತರಿಸುವವರ ವಿವರ

ಹೆಸರು :..... (ಸ್ಪಷ್ಟವಾಗಿ ಬರೆಯಿರಿ)

ಹುದ್ದೆ :.....

ಸಹಿ :.....

ದಿನಾಂಕ :.....

GOVERNMENT OF KARNATAKA

Rural Drinking Water & Sanitation Department

Office of the Commissioner, RDW&SD, 2nd Floor, "E" Block, KHB Complex, Cauvery Bhavan, K.G. Road, Bengaluru-560 009 Phone: 080-22240508 e-mail: krwssd@gmail.com

No. RDW&SD/ 260 /CE/TECH/2022-23./ 751 Date: ~~31/08/2022~~ 08/08/2022

CIRCULAR

Subject : Handing Over / Taking over of In-village Infrastructure works of JJM.

The following procedure will be followed up while taking over of works from department authority for the ownership and maintenance of In-village infrastructure.

1) Handing Over / Taking over form as per specimen attached will be prepared in triplicate. The first copy will be retained by the Department, the second copy to be handed over to the handing over agency, and third copy to be sent to the divisional Headquarters of RDW&SD.
2) The site dimensions and boundaries should be checked up properly and marked out on the plan along with North line marked /shown in the site plan / layout plan.
3) The location of the works should be checked with reference to the site plan and GPS co-ordinates should be recorded.
4) As built drawing should be submitted in triplicate.
5) The date of handing over and taking over of site should be noted on the plan.

The above instructions to be adhered strictly while taking over the site from the department.

Encl: Handing Over / Taking Over Format

8/8/22
Director,
RDW & SD, Bengaluru

To,

1. All Chief Executive Officers, Zilla Panchayat sent for information and to direct Panchayat Development Officers accordingly
2. All Superintendent Engineers,
3. All Executive Engineers,
4. All Assistant Executive Engineers,
   Rural Drinking Water & Sanitation Department.

Rural Drinking Water & Sanitation Department
1st Floor, E Block, Cauvery Bhavan, KG Road, Bengaluru 560009

HANDING OVER / TAKING OVER OF WORKS

The work as per description given below has been handed over / taken over between___

_____and Assistant Executive Engineer / Subdivision, RDW & SD on _____,for the purpose of ownership and Operation & Maintenance of the scheme,

1. Name of the water supply scheme (Title) .....
2. (a) GP ..... (b) village ..... (c)Habitation.....
   (d) Population as on (current year)..... (e) Hobli ..... (f) Taluk..... (g) District..... (h) IMIS Scheme ID .....
   (i) LGD Code.....

3. Dimensional Sketch with immovable assets like trees / plots, buildings etc., attached with North Marked

4. All As built drawings of the schemes .....

5. O&M manual for pumping machinery, Valves, meters etc.

6. Bounded by Survey Numbers / Landmarks for permanent structures:

   a) East..... b) West..... c) North..... d)South .....

7. Estimates cost of scheme (in Rs.) ..... Total executed cost of the scheme.....

8. Scheme completion certificate date:

9. Source of water: .....

10. List of villages / Habitations under the schemes: .....

11. Jack wells& WTP's (if applicable).....

12. CWPH's, IPS's, ZBR's& MBR's (if applicable) .....

13. No of OHT's under the scheme:.....Capacity.....Staging.....

14. Total number of FHTC's: .....

15. Water is being supplied to all planned households --- Yes / No

If No Reasons for the same.....

16. Karnataka Public works Departmental code, PWF-21 and 23 (Modified for Rural Drinking Water and Sanitation Department JJM works)

Remarks:

HANDEDOVER BY	TAKEN OVER BY
Signature:	Signature : .....
Name :	Name : .....
(in capitals)	(in capitals)
Designation:	Designation: .....
Date :	Date : .....

Note : Three copies will be prepared. One copy handed over to the authority handing over the site. One copy will be retained by the Assistant Executive Engineer, concerned, third copy to divisional Headquarters.

PWF-21(Modified for Rural Drinking Water and Sanitation Department JJM works)

Division.....

Sub division .....

REGISTER OF IMMOVABLE GOVERNMENT PROPERTIES IN CHARGE OF THE PUBLIC WORKS, PORTS & I.W.T. DEPARTMENT (Para 298)

Register No. with Sub No.	Particulars of property		Year of construction or purchase and of subsequent additions etc.	Recorded value			Funds from which		Object of construction		Record plans maintained		Name & designation of officer by whom and when			
	Description with details of every attached structure (*)	Nature and descriptions of the different component parts of each structure (**)		Original (separately for land)	Subsequent additions or reductions	Progressive total	Constructed or purchased	Maintained	Original	How used at pre-sent	Material with dimensions (drawing mounted, etc., or tracing)	Nature of drawing, site elevatio, section etc.,	Scale	Drawn	Signed	In the case of churches, the No.of seats will be recorded here
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
													NA	NA	NA	NA

(*) Subsidiary structures e.g., Bore wells, Storage tanks, Pipes, FHTCs

(**) Eg: Storage tanks: Dimensions, Capacity, staging, etc : Pumps: HP, Staging; Pipes: Diameter and class of pipe.

HANDEDOVER BY

Signature: .....

Name : .....

(in capitals)

Designation: .....

Date : .....

TAKEN OVER BY

Signature : .....

Name : .....

(in capitals)

Designation: .....

Date : .....

RURAL DRINKING WATER AND SANITATION DEPARTMENT

2nd Floor, E Block, KHB Building,
Cauvery Bhavan, Bengaluru – 560009

Har Ghar Jal
Jal Jeevan Mission