

Digital Project Management System for monitoring of schemes under JJM Mission for the State of Maharashtra

1. About Jal Jeevan Mission

Jal Jeevan Mission (JJM) is a flagship initiative launched by the **Government of India** under the **Ministry of Jal Shakti** in **August 2019**. The mission's primary objective is to ensure **universal access to safe and adequate drinking water** through **individual household tap connections (FHTCs)** to every rural household in India by the year **2024**.

Vision:

To provide **every rural household with potable water** in adequate quantity, of prescribed quality, and on a regular and long-term basis, thereby improving public health and enhancing the quality of life in rural areas.

Key Objectives:

- Provide **Functional Household Tap Connection (FHTC)** to every rural home.
- Ensure **55 litres per capita per day (LPCD)** of safe drinking water to each household.
- Maintain the **quality of water** as per **BIS 10500** standards.
- Promote **community participation** in water supply management through **Village Water & Sanitation Committees (VWSCs)**.
- Encourage **local infrastructure development**, source sustainability, and water resource management.
- Strengthen **institutional capacity** at state and district levels for implementation and monitoring.

Components of the Mission:

- Development of **water supply infrastructure**: source creation, storage, treatment, and distribution.
- **Capacity building** of stakeholders, including training and awareness programs.
- **Water quality monitoring and surveillance** at the local level.
- **Service delivery monitoring** using digital platforms and dashboards.
- Focus on **greywater management** and source sustainability.

Implementation Model:

JJM follows a **bottom-up approach**, encouraging active participation from Gram Panchayats and local communities. The mission promotes **community ownership**, transparency, and accountability through digital tools, capacity building, and convergence with other government programs.

2. About Digital Project Management System (DPMS)

The objective of Digital Project Management System (DPMS) is to provide a comprehensive, visual, and location-based project monitoring system that facilitates the efficient execution of complex and large-scale water distribution schemes. It has a centralized web-based platform for design and drawing repositories, allowing all project-related data, designs, and drawings to be easily accessed and managed in one place.

This system enhances the visibility of each scheme with a highly efficient platform for tracking the progress of water supply schemes, specifically monitoring Plan vs. Actual progress to ensure timely completion of the scheme.

DPMS has integrated complex data from multiple sources such as geo coordinated CAD drawings, satellite imagery, and field data. DPMS also ensures that all these source data are compatible and are

merged seamlessly into the GIS platform to encounter the challenges of inconsistent data or misalignment of coordinate which might lead to discrepancies or inaccuracies in project tracking and monitoring. GIS data conversion process allow to accurately map and visualize every component or asset of the schemes. DPMS is also integrated with MJP's existing application such EMB and CPMS.

DPMS application provides complete attribute information along with stagewise progress of the asset with the ability to capture photos of point features like ESRs, MBRs & GSRs, polygon features like WTPs, headworks and line features such as transmission and distribution pipeline. One of the standout features of the DPMS application is its dynamic reporting capability. It generates real-time reports showing both physical and financial progress of the scheme. These reports empowers MJP and SWSM officials to make informed and effective decisions.

The system offers real-time field data capture through its Field Management Application, which functions even in areas with no network connectivity. This ensures seamless data synchronization once connectivity is restored, maintaining consistent and up-to-date information. Data gathered is validated and uploaded to a Web GIS platform, which integrates it into a Common Data Environment, centralizing project data and enhancing accessibility.

The dynamic dashboard provides MJP and SWSM officials with real-time project progress updates and insightful analysis. Additionally, the Help Desk ensures that any operational issues are swiftly addressed, facilitating smooth project execution and efficient problem resolution.

3. Scope of Work

The DPMS integrates a **Common Data Environment (CDE)** and a **Geographic Information System (GIS)** to facilitate efficient project tracking and coordination among all stakeholders. The key components of the system include:

- a) **Supply of Licenses** for GIS and CDE tools
- b) **Supply of Hardware Infrastructure** such as laptops, Workstation, TV and Printer with power backup
- c) **Design, Development and Implementation of Applications**

Landing Page

MAHARASHTRA JEEVAN PRADHIKARAN
Digital Project Management System

Home Enterprise Web Portal Common Data Environment Helpdesk Dashboard APM Validation Attribute Editing

Welcome to the Digital Project Management System

Jal Jeevan Mission (JJM)

JJM has been launched in August 2019 by the Ministry of Jal Shakti, Government of India. Jal Jeevan Mission aims to provide Functional Household Tap Connections (FHTCs) to every rural household by 2024. The mission ensures access to 55Ltrs per capita per day (LPCD) of safe, adequate, and regular drinking water.

Key Highlights:

- Universal rural tap water coverage
- Water quality as per BIS 10500 standards
- Community-led implementation through Village Water & Sanitation Committees (VWSCs)
- Focus on infrastructure development, source sustainability, and greywater management
- Real-time monitoring through digital platforms

JJM promotes community ownership, transparency, and long-term water security through a bottom-up approach integrated with other government programs.

About Digital Project Management System (DPMS)

DPMS is a centralized, GIS-based monitoring platform designed to track and manage large-scale rural water supply schemes under JJM.

Key Features:

- Integrated with geo-coordinated CAD drawings, satellite imagery, and field data
- Real-time tracking of physical and financial progress
- Stage-wise asset monitoring with field photo capture
- Offline field data collection with auto-sync on network restoration
- Dynamic dashboards and auto-generated progress reports
- Seamless integration with MJP's EMB and CPMS platforms
- Dedicated Help Desk for timely issue resolution
- DPMS empowers officials with data-driven insights to ensure on-time, efficient, and transparent execution of water supply schemes.

Region	Number of Schemes
Ahmedabad	104
Chhattisgarh	167
Kerala	74
Madhya Pradesh	58
Maharashtra	223
Punjab	281

Gallery

❖ Geographic Information System (GIS)

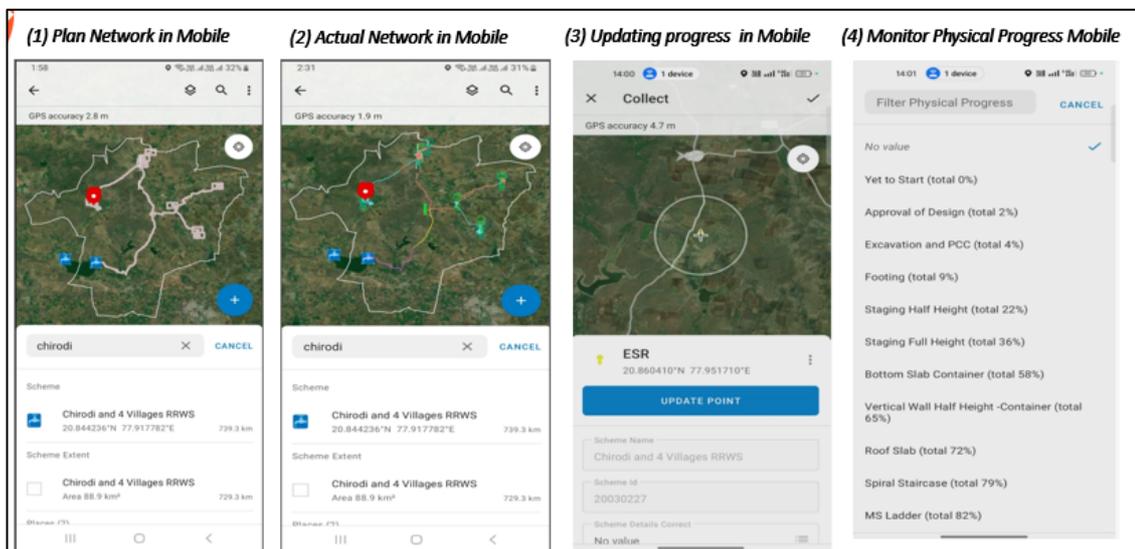
i. Field Mobile Application

To streamline on-site data collection and enhance real-time monitoring, the DPMS application includes a dedicated mobile application.

This mobile solution enables field personnel to:

- Capture actual progress instantly using their mobile devices.
- Upload photos, remarks, and GPS-tagged data for accurate field reporting.
- Synchronize updates with the central DPMS system for seamless project tracking.
- Work offline with auto-sync capability when internet connectivity is restored.

This advancement significantly improves the accuracy, timeliness, and efficiency of progress reporting, reducing the lag between on-site activity and managerial oversight.



ii. GIS Web Application

Once field personnel capture actual progress using the DPMS mobile application, the data is automatically synchronized and reflected in the Web GIS application.

This integration allows MJP to:

- Visualize real-time progress on a geospatial map.
- Track the location of completed and ongoing work.
- Overlay progress data with other project layers (e.g., planned vs. actual).
- Enable data-driven decisions by combining spatial and performance insights.

This seamless flow of information from the field to the GIS platform enhances situational awareness, improves project transparency, and supports effective decision-making.

Field Management Application – Web (Plan vs Actual)

Planned Scheme Data -- Lakhpuri Scheme-



Actual Scheme Data – Lakhpuri Scheme-



Planned Scheme Data --- Wakadi WSS tal. Rahata



Actual Scheme Data – Wakadi WSS tal. Rahata

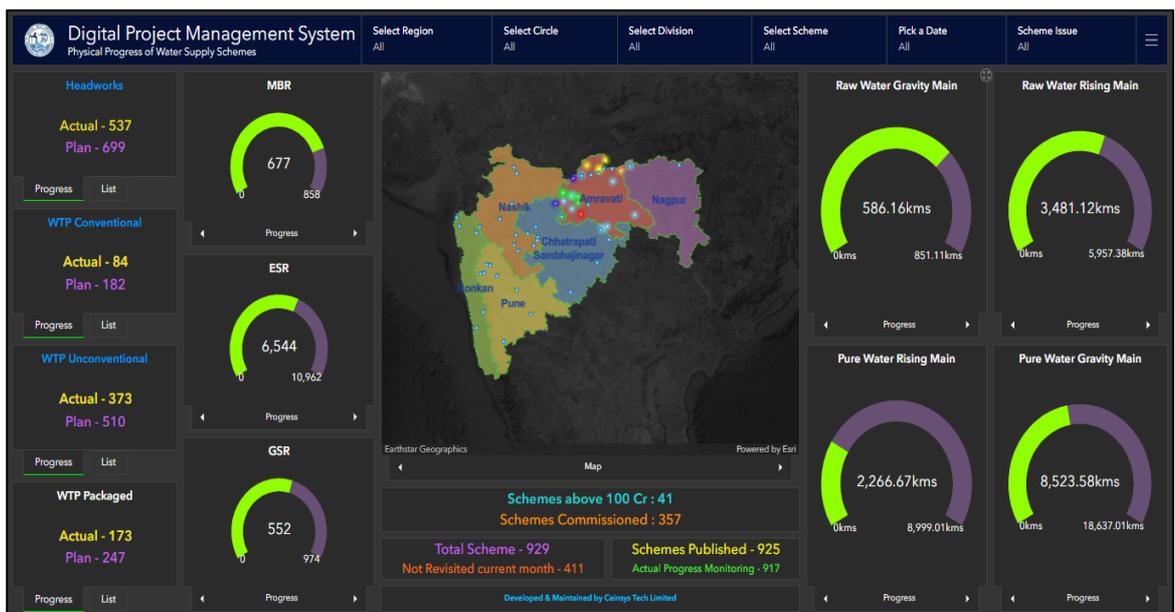
iii. Dashboard

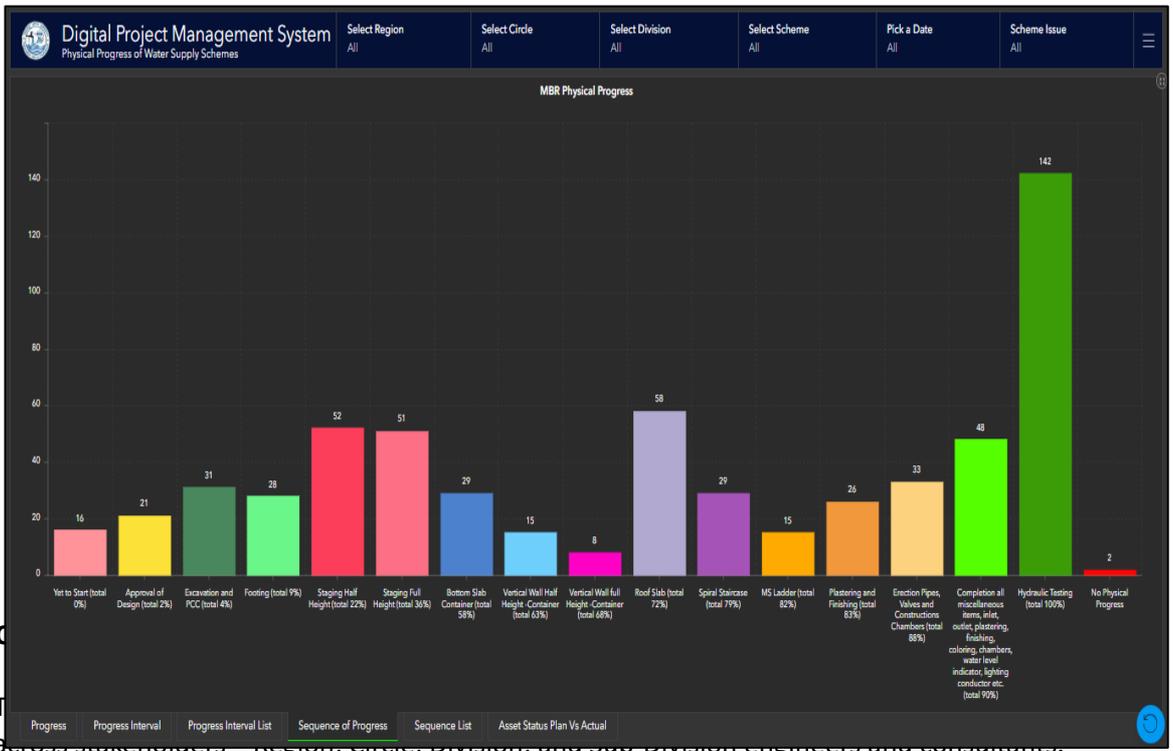
To support strategic oversight and informed decision-making, the DPMS platform provides a dedicated dashboard for senior officials. This dashboard offers a consolidated view of project performance and field progress, including:

- Real-time updates from the field (captured via the mobile app).
- Visual progress tracking through integrated Web GIS maps.
- Key performance indicators (KPIs) such as work completed

This centralized dashboard empowers senior officials to:

- Monitor multiple projects at a glance.
- Identify bottlenecks quickly.
- Make proactive, data-driven decisions.
- Ensure accountability and transparency across stakeholders.

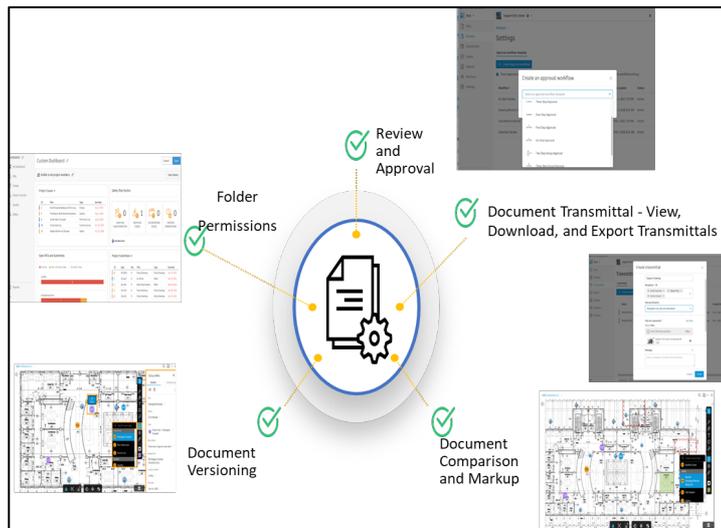


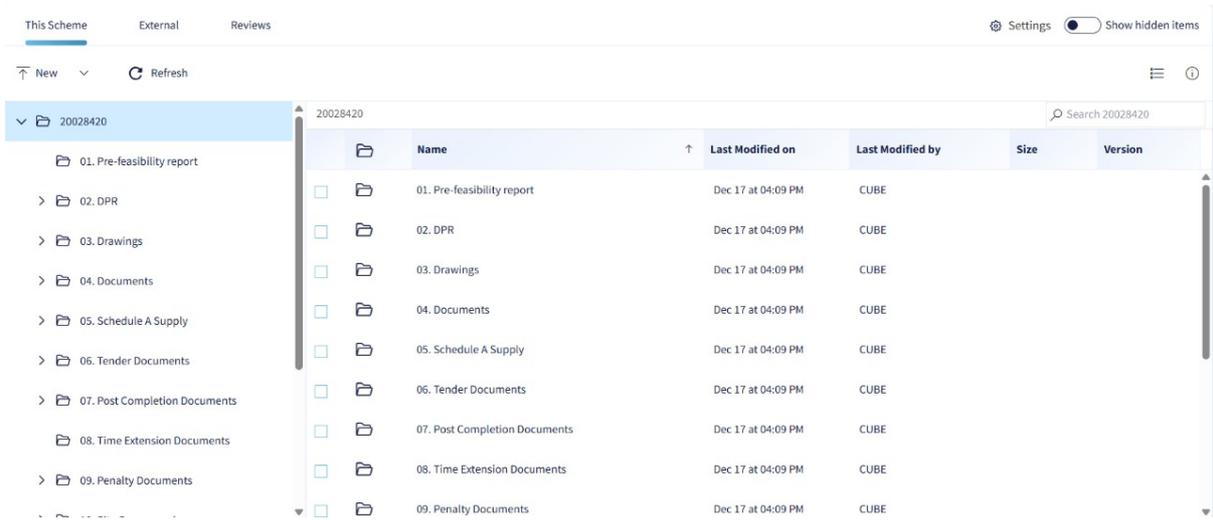


It also enables review workflow digitizes the approval process for key documents like DPRs, work orders, bills, and QA/QC reports

Key Features:

- Structured folder system based on project phases (DPR, tender, execution, billing etc.)
- Role-based access to ensure secure, controlled file management
- Version control & audit trails to maintain document history and integrity
- Supports multiple file types with search, filters, and tagging
- Automated routing through hierarchy (Sub-Division → Division → Circle → HQ)
- Real-time status tracking (Pending, Approved, Rejected)
- Inline comments and approvals within the system
- Audit logs for transparency and accountability





❖ Helpdesk Management System

The Helpdesk Management System serves as a centralized support platform to manage technical issues, user queries, and service requests across the DPMS ecosystem.

Key Features:

- Ticket-based system for logging and tracking issues
- Categorization & prioritization of requests (e.g., technical, functional, access-related)
- Role-based assignment to relevant support teams
- Real-time status tracking (Open, In Progress, Resolved, Closed)
- SLA monitoring to ensure timely resolution
- User notifications via email/SMS for updates
- Analytics dashboard for issue trends and performance tracking

The screenshot displays the DPMS HELPDESK interface. At the top, there is a navigation bar with 'ProjectManager' and 'Logout' links. Below this is a sidebar menu with options like 'Master Data', 'Status List', 'Ticket Category', 'Issue Type', 'Severity List', 'SLA', 'Support Ticket', 'All Ticket', 'Assigned Ticket', and 'My Tickets'. The main dashboard area features six status cards: 'UnAssigned' (0), 'Assigned' (0), 'Re-Assigned' (0), 'Escalated' (0), 'Closed' (103), and 'Total' (103). Below these cards is a search and filter section for 'Total Ticket' with a search box and a dropdown menu. The main content is a table of tickets with the following data:

Ticket No	Caller Name	Region	Status	Created Date	Closed Date
20064062_4_560	Ajay salunkhe	Konkan	Closed	25-07-2025 03:18:43 PM	25-07-2025 06:11:01 PM
20064062_4_559	Ajay salunkhe	Konkan	Closed	24-07-2025 04:48:21 PM	24-07-2025 06:08:07 PM
20027573_4_558	EEDivWashim	Amravati	Closed	24-07-2025 02:19:29 PM	24-07-2025 04:39:33 PM
0_6_557	JEDivJalgaon	Nashik	Closed	24-07-2025 12:58:21 PM	25-07-2025 05:29:56 PM
0_4_556	JEDivJalgaon	Nashik	Closed	24-07-2025 12:52:30 PM	25-07-2025 05:36:29 PM
20014225_4_554	JEDivBuldhana	Amravati	Closed	24-07-2025 12:50:24 PM	24-07-2025 05:38:16 PM
20027797_3_552	Kamble	Konkan	Closed	24-07-2025 12:33:09 PM	24-07-2025 03:44:42 PM
20017262_3_550	Aditya Gawade	Pune	Closed	24-07-2025 11:22:03 AM	24-07-2025 04:44:40 PM

d) Helpdesk Establishment –

A centralized Helpdesk has been established to support smooth implementation and operation of the DPMS platform across all levels of the organization. To ensure quick resolution of user issues, minimize downtime, and enhance user experience across Regions, Circles, Divisions, and Sub-Divisions.

Key Features -

- Dedicated support team for addressing technical and functional queries
- Multi-channel access: Users can raise tickets via web, email, or phone
- Structured escalation matrix for timely resolution
- Issue tracking system with unique ticket IDs and real-time status updates

e) Integration with MJP's existing Applications

DPMS has been integrated with MJP's existing application i.e. EMB & CPMS

f) Deployment of Technical Resources at the Head Office and Regional Offices

4. Challenges faced by department prior DPMS

- Delayed approvals of designs and drawings
- Inefficient revision tracking for project documentation
- Limited visibility across different phases of the project lifecycle

- Lack of network pipe visualization
- Absence of evidence-based monitoring
- Difficulty in tracking project timelines and budgets for complex infrastructure projects
- Lack of an effective issue resolution mechanism
- Scattered and uncentralized project documentation

5. Advantages of DPMS Application

- Seamless execution, monitoring, and tracking of schemes within timelines and budget
- Early detection and mitigation of cost overruns
- Improved collaboration among multiple stakeholders
- Centralized platform providing a single source of truth for project data
- Standardization of workflows and project management practices
- Access to pre-configured templates and best practices
- Streamlined contract management and communication workflows
- Reduced process turnaround times and administrative delays

6. Conclusion

DPMS has played a pivotal role in monitoring MJP's 929 water supply schemes, reaching over 3.6 million households across Maharashtra. Looking to the future, DPMS plans to leverage AI and IoT technologies to enhance predictive maintenance and enable smart water management, ultimately ensuring that every citizen has reliable access to clean water.

This initiative is a step toward realizing the vision of *Har Ghar Jal*—providing every household with potable water, promoting health, and contributing to sustainable development.