PROJECT SMART WATER MANAGEMENT SYSTEM

A. Objectives

1. The proposed smart water management system under the Drinking Water Sector Improvement Project has two main objectives:

(i) The first objective is to facilitate the management of customer service at a local level, thereby greatly increasing customer and community engagement with the new system, which will lead to greater sustainability of the system through: (a) increased ownership and valuing of the new piped water supply system;
   (b) better revenue collection;
   (c) responsible use of water;
   (d) efficient operations and maintenance (O&M); and
   (e) skilling and employment of local people—a minimum of whom will be 33% women—in basic maintenance of small diameter pipelines, property service plumbing, basic accounting such as bookkeeping, meter reading, and information technology.

(ii) The second objective of the smart water management system is to increase the resilience and efficiency of the O&M of the entire system, which will also lead to greater sustainability of the system through:
   (a) reduced risk of system failure;
   (b) improved compliance with social and environmental requirements;
   (c) the development of new and necessary skills within the Public Health Engineering Department (PHED);
   (d) improved planning, forecasting, and proactive asset management;
   (e) improved response to incidents and emergencies, thereby minimizing their impacts;
   (f) improved efficient use of energy; and
   (g) improved resilience of the water supply system in countering climate change and disaster-related risks.

B. Approach and Methodology

(i) Project planning for the new drinking water systems has adopted the strategy of comprehensive district-wise approach, connecting the systems on a grid basis where feasible. Where the coverage of the distribution network is limited due to funding constraints, the bulk systems have been sized to allow wider bulk supply to the extent required by the district-wide planning and future expansion. Figure 1 shows an example of such a district-wide system design and planning under the project carried out for Purba Medinipur. This approach will increase system resilience and sustainability;

(ii) The new water supply systems are specifically designed to accommodate appropriate technology that will allow smart water manageme

Figure 1: Schematic of Smart Water Management under project

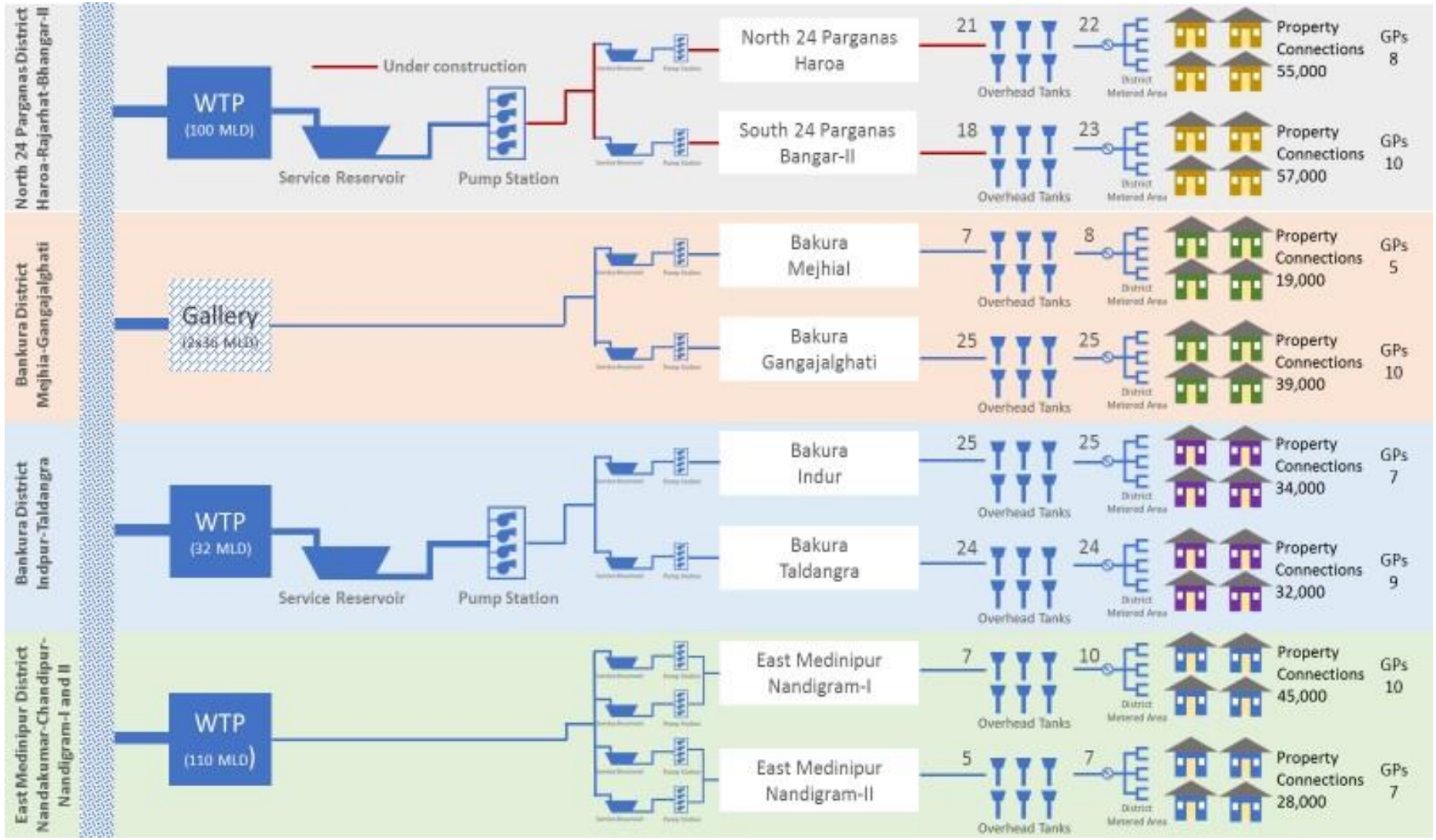


Figure 2: Data Integration under the Project's Smart Water Management

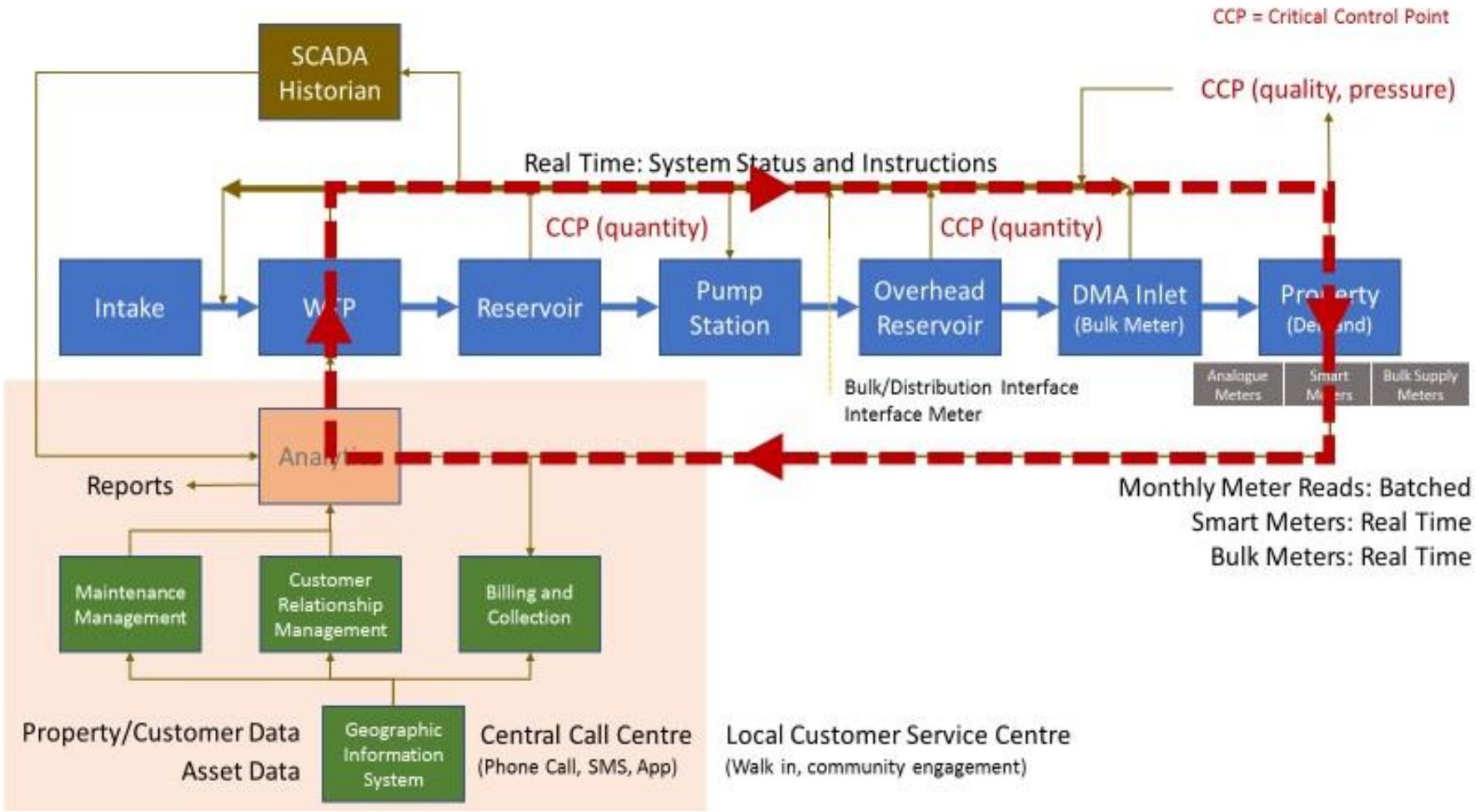


Figure 3: Smart Water Management Functions under the Project

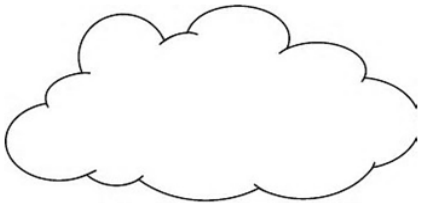
Focus: Short Term (Within Year)

Gram Panchyat

Retail Function
Customer Focus
Community Engagement
Works Within Defined Local Areas

Customer
- Customer enquiries
- Resolve customer complaints
- Meter reading
- Billing and collection
- New connections
- Hardship schemes
- Water-wise programs
- Health and hygiene programs
- Local school programs

Asset
- Leak repairs
- Minor maintenance
- Minor works
- Meter replacement
- Property service repair
- Pipeline surveillance
- Other authorities works



Focus: Long Term (Across Years)

PHED

Wholesale Function
Resource and Asset Focus
Quantity and Quality
Works Across Entire Area

Resources and Systems
- Water production and transfer
- Water quality
- System wide management and reporting
- SCADA and GIS system
- Optimisation and efficiency
- Analytics
- Demand forecasting
- Flood warning

Asset
- WTP operations
- Network operations
- Major asset maintenance
- System wide analysis and reporting
- Asset management program
- Asset renewals
- Design and Construction
- Emergency response
- Incident management