

DETAILED PROJECT REPORT AND ESTIMATED COST

Ministry of Jal Shakti, Department of Water Resources and Ganga Rejuvenation, Govt of India has a nation wide plan to install Automatic Data Acquisition & Real Time Data Transmission System (Telemetry stations) for flood moderation and forecasting activities.

The Scheme "Development of Water Resources Information System (DWRIS)" is a Central Sector Scheme of the Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation (MOWR, RD & GR), Govt. of India being implemented by Central Water Commission (CWC). The rationale of such an ambitious scheme has coherence with the National Water Policy-2012, which states that "appropriate institutional arrangements for each river basin should be developed to collect and collate all data on regular basis with regard to rainfall, river flows, area irrigated by crops and by source, utilizations for various uses by both surface and ground water and to publish water accounts on ten daily basis every year for each river basin with appropriate water budgets and water accounts based on the hydrologic balances". Under this national scheme, the flood forecasting by Central Water Commission (CWC) has been identified a core activity for flood related disaster management.

Further, CWC is a premier Technical Organization of India in the field of Water Resources and is presently functioning as an attached office of the Ministry of Jal Shakti, Department of Water Resources, RD & GR, Government of India. The Commission is entrusted with the general responsibilities of initiating, coordinating and furthering in consultation of the State Governments concerned, schemes for control, conservation and utilization of water resources throughout the country, for purpose of Flood Control, Irrigation, Navigation, Drinking Water Supply and Water Power Development. It also undertakes the investigations, construction and execution of any such schemes as required.

Presently, Sikkim Investigation Division, CWC, Gangtok is entrusted with the work of flood forecasting activity by installation of Automatic data Acquisition & Real Time Data Transmission System (for water level, rainfall & snow telemetry stations) at 45 locations in the state of Sikkim. Till date 37 nos. of Automatic data Acquisition & Real Time Data Transmission System (for water level & rainfall) are installed and remaining 13 nos. are to be installed for water level, rainfall & snow measurement.

It is to be noted that the system is flexible to shift / relocate within 200-300 m or maximum of 500 m if any flora and fauna is being disturbed. Further, these stations can also be established on any forest office building if available in these areas.

The data which will be collected is to be used in a Model, for studying the flow of river in Himalayan Geology for forecasting of water level at our established flood forecasting sites in the Sikkim state. In addition to the present forecasting methods, this real time data through telemetry will strengthen the food-forecasting network of Sikkim State.

Telemetry is the collection of measurements or other data at remote points and their automatic transmission to receiving equipment for monitoring. In this 21st century, weather monitoring and forecasting have great importance and is used in several areas such as keeping track of agricultural field weather conditions to that of industrial conditions monitoring. Water level monitoring in rivers / tributaries would help in keeping track of flow which will be used in flood forecasting along with Weather monitoring which would help in keeping record of different climatic behaviors which includes precipitation (solid i.e snow or liquid i.e rain), wind, temperature and humidity. Weather Monitoring System can either be wired or wireless one. Just in case of wireless communication, the connectivity will be more user friendly and weather monitoring would not require physical presence of the person at the remote location. There are total 3 types of sensors are to installed to record water level, Rain & Snow :

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