

Control Center is equipped with hardware and software to carryout following functions

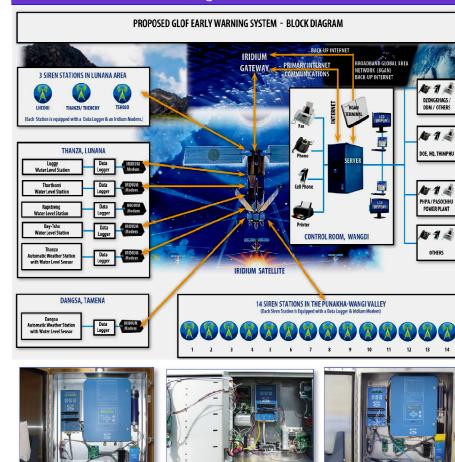
- Retrieving Environmental Data for all Flood Warning and Siren Sites,Decoding and Storing Data in database for all Flood Warning and Siren Sites,
- Ringing Sirens in alarm conditions,
- Remote Monitoring of Flood Warning and Siren Sites,
- Remote Control of Flood Warning and Siren Sites,
- Displaying map of Flood Warning Sites and Sirens,
- Displaying Environmental Data in graphical, tabular and MS Excel format.
- Displaying Alarms Assertions from Flood Warning Sites
- Providing Data Accessibility to Weather Forecasting Center through download links
- Displaying Heath System of SystemDisplaying warnings to the operator.

Alert and Alarm Level				
Station	Alert (Stage)	Alarm (Stage)	Alarm (Rate of Change)	
Luggy (channel)	Above 7.8 meters	Above 8.8 meters	Above 1.0 meters in a15 min interval	
Thorthormi (channel)	Above 7.3meters	Above 8.3 meters	Above 1.0 meters in a15 min interval	
Rapstreng (lake)	Above 7.4 meters	Below 5.0 meters	Above 1.0 meters in a15 min interval	
Bay Tsho (lake)	Above 7.05meters	Below 5.0 meters	Above 1.0 meters in a15 min interval	
Thanza (channel)	Above 7.7 meters	Above 8.7 meters	Above 1.0 meters in a15 min interval	
Dangsa (channel)	Above 6.5 meters	Above 7.5 meters	Above 2.0 meters in a15 min interval	

Alert Level: When water level reaches alert level there will be a alert <u>Alert Level</u>: When water level reaches alert level there will be a alert message at Control Room and the water level is updated on GUI and turns yellow. The Icon on the Website map turns yellow. No sirens are activated, but puts HMSD staff in state of readiness.

Alarm Level : When water level reaches alarm level in four lakes in Lunana then the 3 sirens in the upper regions will be activated automatically, but the sirens in the lower Region can be activated automatically as well as manually from the Control Room. When the Water level reaches alarm level in Thangza and Dangsa Station, sirens in the lower regions only can be activated either automatically or manually. When water level from any of the stations reaches Alarm Level, the water level is updated on Control GUI, turns red gives audible sound, pop-up appears for decision making and the icons on website map turns red.

Block Diagram of GLOF EWS





Automatic Weather Statio

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Siren Station

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Glacier Lake Outburst Flood (GLOF) Early Warning System in the Punakha-Wangdi Valley





Austrian	
Development C	(





Project funded by:



Cooperation

PHPA-I and PHPA-II