Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	31 January 2026
Team ID	LTVIP2026TMIDS24126
Project Name	Rising Waters – A Machine Learning Approach to Flood Prediction
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Login & Authentication	Login using Email & Password
FR-4	Real-Time Data Collection	Collect rainfall data from rain gauges
FR-5	Data Processing & ML Prediction	Data preprocessing and cleaning
FR-6	Alert & Notification System	Send SMS alerts to users in high-risk areas

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The system should provide a simple and intuitive dashboard for authorities and community users, with clear visualization of flood risk levels (Low/Medium/High) and easy-to-understand alerts.
NFR-2	**Security**	User data (location, contact details) must be securely stored using encryption. The system should implement secure authentication, role-based access control, and protection against unauthorized access.
NFR-3	**Reliability**	The flood prediction model should maintain consistent accuracy and function without failure during critical weather conditions. The system must ensure accurate data processing and minimal prediction errors.
NFR-4	**Performance**	The system should process real-time rainfall and river data quickly and generate predictions within a

		few seconds to ensure timely alerts during emergency situations.
NFR-5	**Availability**	The application should be available 24/7, especially during monsoon seasons, with minimal downtime and backup mechanisms for uninterrupted service.
NFR-6	**Scalability**	The system should support increasing data volume (multiple districts, sensors, satellite feeds) and a growing number of users without degradation in performance.