Project Design Phase
Proposed Solution Template

Date	16 February 2026
Team ID	LTVIP2026TMIDS48526
Project Name	Rising Waters – A Machine Learning Approach to Flood Prediction
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Flood-prone regions suffer from delayed warnings, inaccurate predictions, and lack of real-time monitoring, leading to loss of life, infrastructure damage, and inefficient disaster response. Existing systems rely on traditional forecasting methods without predictive analytics integration.
2.	Idea / Solution description	Develop a Machine Learning-based flood prediction system that integrates historical data and real-time inputs (rainfall, river levels, weather forecasts) to predict flood risk levels (Low/Medium/High). The system provides automated alerts, visual dashboards, and district-level risk assessments to support early warning and disaster response planning.
3.	Novelty / Uniqueness	Combines real-time environmental data with predictive ML models (e.g., Random Forest, XGBoost, LSTM). Provides automated flood risk classification and actionable insights instead of reactive monitoring. Integrates alert systems (SMS/App) with analytical dashboards for authorities.
4.	Social Impact / Customer Satisfaction	Reduces loss of life and property damage through early warnings. Improves disaster preparedness and decision-making for authorities. Enhances community trust by providing timely, accurate, and transparent risk alerts.
5.	Business Model (Revenue Model)	Government partnerships and disaster management department subscriptions. SaaS-based model for municipalities. Data analytics services for urban planners and infrastructure agencies. Potential collaboration with insurance companies for risk assessment insights.
6.	Scalability of the Solution	Scalable across districts, states, and countries. Can integrate additional environmental datasets and IoT sensors.