# Flood Monitoring and Early Warning System:

## Project objectives:

Floods are one of the most devastating natural disasters, causing widespread damage to infrastructure, loss of life, and economic hardship. Effective flood monitoring and early warning systems are essential for mitigating these impacts. This abstract introduces a comprehensive flood monitoring and early warning system designed to provide timely and accurate information to both authorities and the public.Eliminate or minimize disruption of local government operations caused by flood hazard events. Maintain a regionally coordinated warning and emergency response program that can detect the flood threat and provide timely warning

### Iot Devices Designs:

Temperature and Humidity Sensor :
A temperature and humidity sensor are low cost-sensitive electronic devices that detects, measures and reports both dampness and air temperature. The proportion of moisture noticeable all around to the highest amount of moisture at a specific air temperature.

Water flow sensor
Water flow sensor consists of a plastic valve from which water can pass. A water rotor along with a hall effect sensor is present the sense and measure the water flow. When water flows through the valve it rotates the rotor. By this, the change can be observed in the speed of the motor.

Ultrasonic Sensor
An ultrasonic sensor is an instrument that measures the distance to an object using ultrasonic sound waves. An ultrasonic sensor uses a transducer to send and receive ultrasonic pulses that relay back information about an object's proximity.

Water level sensor
The power and sense traces form a variable resistor (much like a potentiometer) whose resistance varies based on how much they are exposed to water. The more water the sensor is immersed in, the better the conductivity and the lower the resistance.

Wifi module
The Arduino Uno WiFi is an Arduino Uno with an integrated WiFi module. The board is based on the ATmega328P with an ESP8266WiFi Module integrated. The ESP8266WiFi Module is a self contained SoC with integrated TCP/IP protocol stack that can give access to your WiFi network.

### Integration Approach

A well-implemented flood monitoring and early warning system is a vital tool in reducing the impact of floods on both human lives and infrastructure. By combining data acquisition, risk assessment, early warnings, and community engagement, this system empowers communities to better prepare for and respond to flooding events, ultimately saving lives and reducing the economic burden associated with floods.