**Early Warning System to Detect Sewage Blocks & Hazardous Gases Using IoT**

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Sewer flooding incidents are increasingly associated with the presence of blockages. Blockages are difficult to deal with as although there are locations where they are more likely to occur, they do occur intermittently. In order to manage sewer blockage pro-actively sewer managers need to be able to identify the location of blockages promptly. Drainage cleaning people are not aware of risk by sudden attack of poisonous gas since the gases are odorless, if exposed for long time which may cause serious health problems. Due to lack of Toxic gas leakage detection system, a number of dangerous accidents occurred during the last few last decades.

The main objective of the proposed system is to monitor the sewage blocks in sewer pipelines frequentlyand senses the hazardous gas using IoT.The proposed system identifies the blocks immediately after its occurrence using ultrasonic sensors and to alert the concerned maintenance in-charge at once using Wireless GSM module. Moreover, the entire system is taken care by a Centralized Monitoring System based on IoT Technology.

The proposed System consists of Arduino UNO Board, Power supply,LCD display, Ultrasonic Sensor,Toxic gas detector, Wireless GSM Module,Buzzer. Ultrasonic sensors are used to detect the blockage frequently in the sewage tunnel.Ultrasonic sensors detect objects regardless of the color, surface, or material (unless the material is very soft like wool, as it would absorb sound).Various Gas Sensors(MQ3, MQ6 etc.)are used to detect the toxic gases of water. The presence of sewage block and toxic gas related information from these sensors is received and processed in the Arduino UNO board and push notification is sent to the mobile in case of Blockage or Overflow. When these values reach a threshold value,then Arduino sends alert signalto the concerned department and it also sends location of the sewage vent using Wireless GSM and GPS module.

