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Smart Cities Manhole Cover Management System Based on IOT Edge-Computing

Abstract: A smart city is the future goal to have cleaner and better amenities for the society. Smart underground infrastructure is an important feature to be considered while implementing a smart city. Drainage system monitoring plays a vital role in keeping the city clean and healthy. Since manual monitoring is incompetent, this leads to slow handling of problems in drainage and consumes more time to solve. To mitigate all these issues, the system using a wireless sensor network, consisting of sensor nodes is designed. The system also provides a real-time alert to the relevant authorities, enabling them to take immediate action The proposed system is low cost, low maintenance Internet of Things (IoT) devices, and artificial intelligence algorithms based real time which alerts the managing station through an email when any manhole crosses its threshold values. This system reduces the death risk of manual scavengers who clean the underground drainage and also benefits the public.

Keywords: Arduino, Manhole management, Smart cities, IOT.

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APPLICATION(S):

1. Real-time monitoring: With IoT sensors embedded in manhole covers
2. Improved safety: By using sensors in manhole covers,
3. Predictive maintenance: By collecting data on the condition of manhole covers over time, System can be used to monitor environmental factors
4. Flood management: During heavy rainfall, water can seep into manholes and cause flooding.

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