FLOOD WATCH

Empowering the local community by monitoring the rivers around

Natalie Mclaren, Dharius Robinson, Daniel Beauchamp

FLOODING IN THE UK



- Estimated £1 billion in damages per year
- 2016 had the most severe floods in 100 years
- · Canterbury is in Flood Zone 3 (High risk area)
- Growing government investment into flood damage reduction projects



Usage

- API could be used to create clear visual representations to monitor levels
- Can be used to predict flooding in future



Database

- InfluxDB stores time series based readings from sensor
- MySQL stores device and area information
- Redis caches the latest reading for performance



The Things Network

 A community based distributed network of gateways allowing us to send data quickly and power efficiently



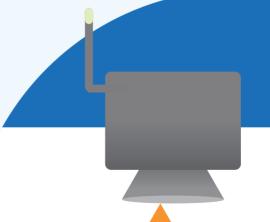
API

- JSON API provides a RESTful interface
- Allows for querying data on:
- 1. Devices & their areas
- 2. Time series data & statistics



SCALABLE

- Grouped by area, devices can be setup and attached in various environments
- Data gathered from each device, builds a widespread picture of the rivers in the area



30cm

Device

- Ultrasonic sound waves to measure river depth
- Wireless **LoRaWan** to send data periodically
- · Long life rechargeable battery
- Engineering menu for configuration & debugging



5m