Climate and Disaster Resilience at the City Level: Kolkata Early Warning System

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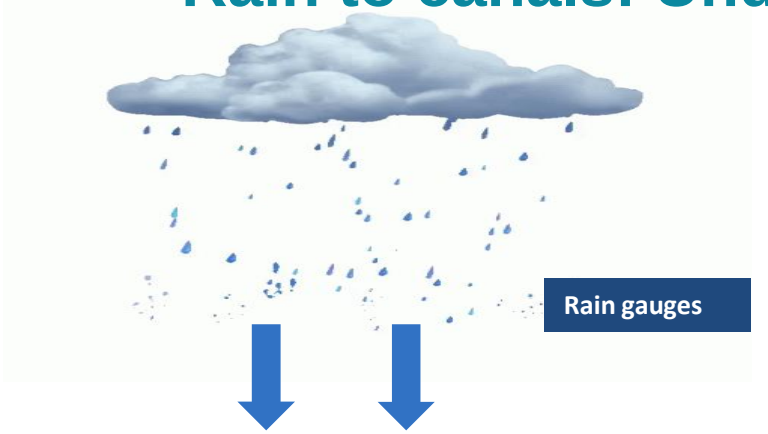
Kolkata Context

- Delta in Monsoon Region, Cyclones, Storm surge
- “Tabletop” flat terrain> “***Sleeping water***”> Pluvial floods
- Vintage, under-designed S&D system
- Dense & Old settlements, S&D augmentation challenges
- Climate change
  - Shifting/increasing peak rainfall
  - Cyclone intensification, SLR, Storm surge
  - “Urban rain island” effects

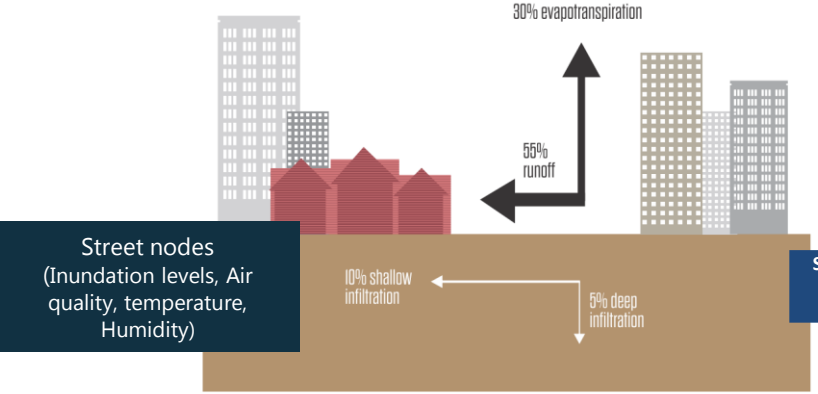
Why Early warning System

- Four to six floods every year, once in a decade devastating floods
- Traffic jams get worsened by Floods-impacting livelihoods and property, Poor worst affected
- Early warning can enable rescheduling activities, re-routing traffic-work from home
- Integrating urban environmental monitoring possible:
    - air quality, heatwave monitoring, noise etc

Rain to canals: Understanding Flood routing



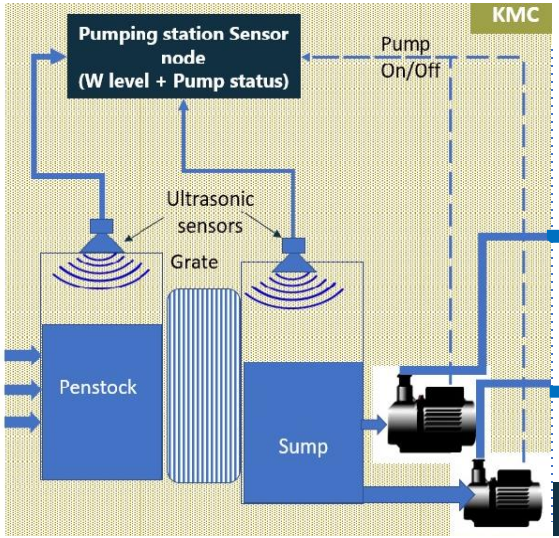
Rain gauges



Street nodes (Inundation levels, Air quality, temperature, Humidity)

Runoff monitoring

Storm water drainage network



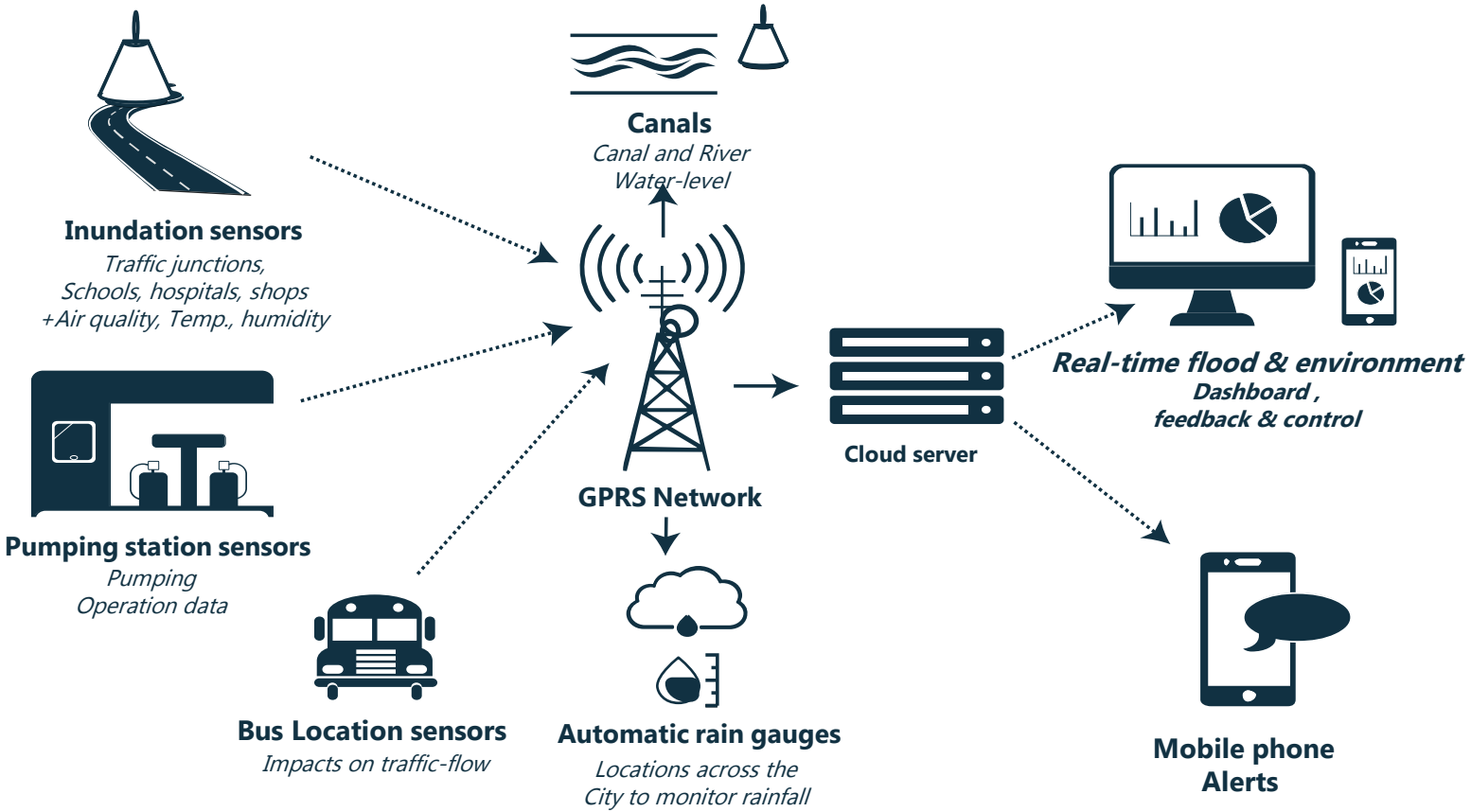
River/Canal nodes

(Upstream/ Downstream WL)

Canal/River

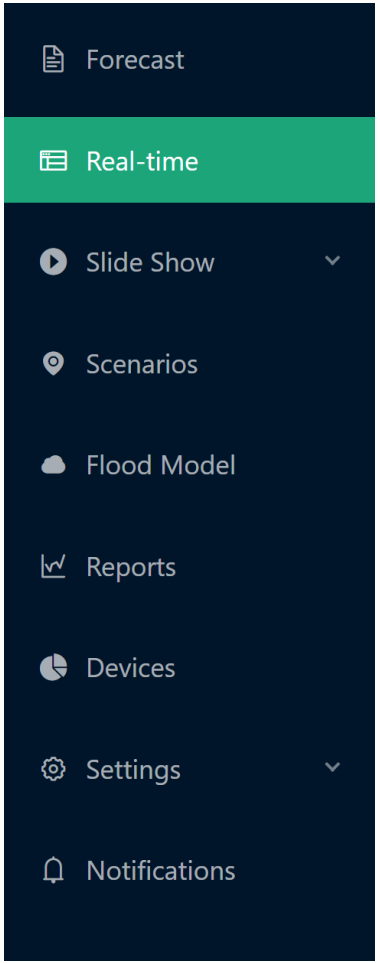
I&W D

System Architecture



How FFEWS can strengthen urban resilience in Kolkata

Data	Potential Uses
Multi-parameter data (Rain, water levels, pump status, Air quality, Temperature, Humidity)	Understand risks better
	Enable Informed action to address existing and emerging Climate Change challenges
Forecasts	Line departments, Commuters and other users can get advance warning and avoid risks
	Prepositioning of pumps, evacuating lakes and other equipment possible
Flood scenarios	Training staff about risks to improve response
	Climate informed Land use and Infrastructure planning
Flood warnings	Enable quick evacuation and save assets
	Flood status informed traffic control
Granular time series flood data	Develop Flood risk knowledge among citizens
	Design Risk insurance & claim validation
	Research & Development
	Informed Climate Change resilience building



Together, Let us make Kolkata safer
Thank You

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