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Riskmap.in

Real-time Flood Reporting Platform

UrbanRISKLab

urbanrisklab.mit.edu | risk@mit.edu

User submitted image on riskmap.in - 2nd November 2017.

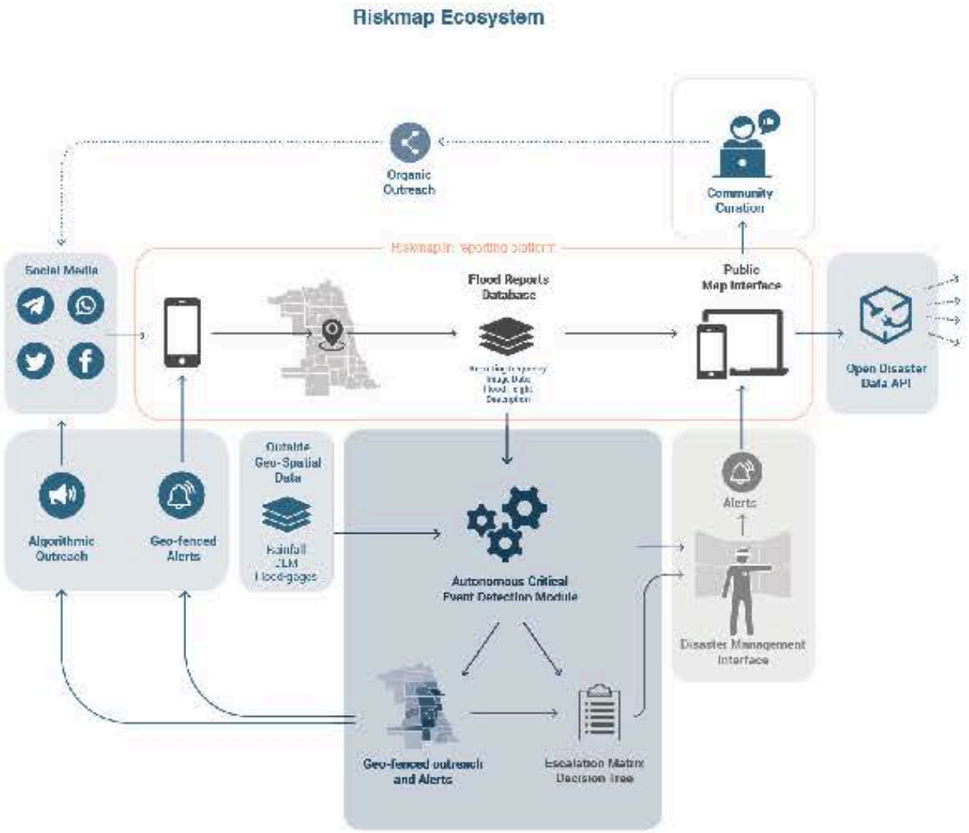
Hydro-meteorological events account for over 80% disaster-related deaths in India. In the past decade, all major cities have suffered severe urban flooding. These events, increasing with alarming frequency, have highlighted the high degree of uncertainty associated with forecasting based on historical data and dynamic urban environments.

On the other hand, deep penetration of Internet-connected mobile devices has enabled communities to self-organize, creating valuable sources of time-critical information.

Riskmap.in platform facilitates real-time citizen-led reporting addressing the urgent need for disaster management processes to be community centric. Using AI and machine learning, this proejct aims to develop a two-way alerting and outreach systems that, can forecast a critical flooding to trigger automated hyper-local outreach and alerting.

Information is the single most crucial asset for disaster management and mitigation. , by adopting a “people as sensors” paradigm, Riskmap.in gathers real-time crowd-sourced information and injects it into existing emergency warning, monitoring and response systems.

User submitted image on Riskmap.in
2nd November 2017.



Riskmap.in

Combining Machine learning, social media, and citizen engagement, to improve disaster response

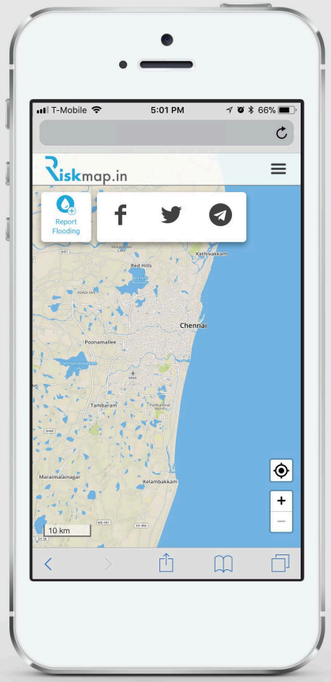
From the disaster management perspective, time-critical decisions (such as if there is a need to open shelters, how many people can be affected, are utilities intact) impinge upon knowing the changing nature of flooding.

Time saved in knowing location and severity of the event directly affects the chances of saving lives and optimizing resources logistics.

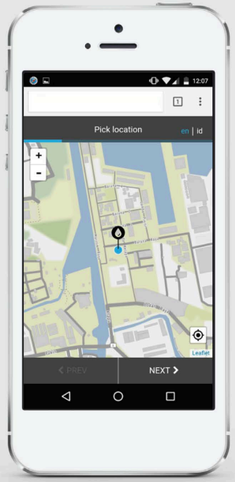
With automated events detection, Riskmap can alert disaster managers of critical flooding events, and target the social media based civic engagement to a sub-kilometer resolution to get timely information of changing flood conditions.

Powered by CogniCity Open Source Software, Riskmap collects flood data using information report cards, which people can access through their preferred social networks. Cards are served via social messaging chat-bots (e.g. Twitter, Facebook, Telegram). For example, on Twitter the 'RiskMapBot' listens to specific keywords and sends messages to users, inviting them to submit a confirmed flood report.

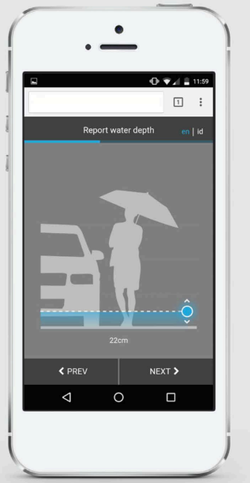
Reports are instantly added to the public map, allowing the residents to quickly and efficiently share critical information.



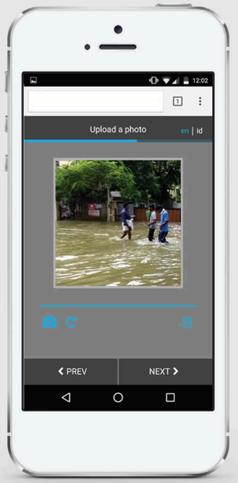
Deep-links on website to social media chat-bots



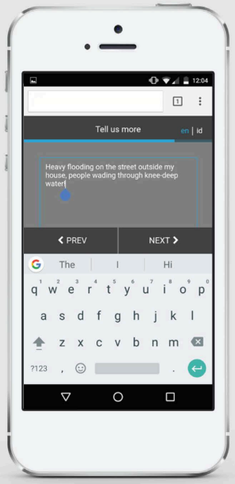
Location



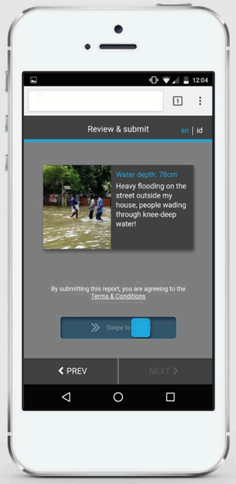
Flood Height



Photo



Description



Confirmation and Review of Card

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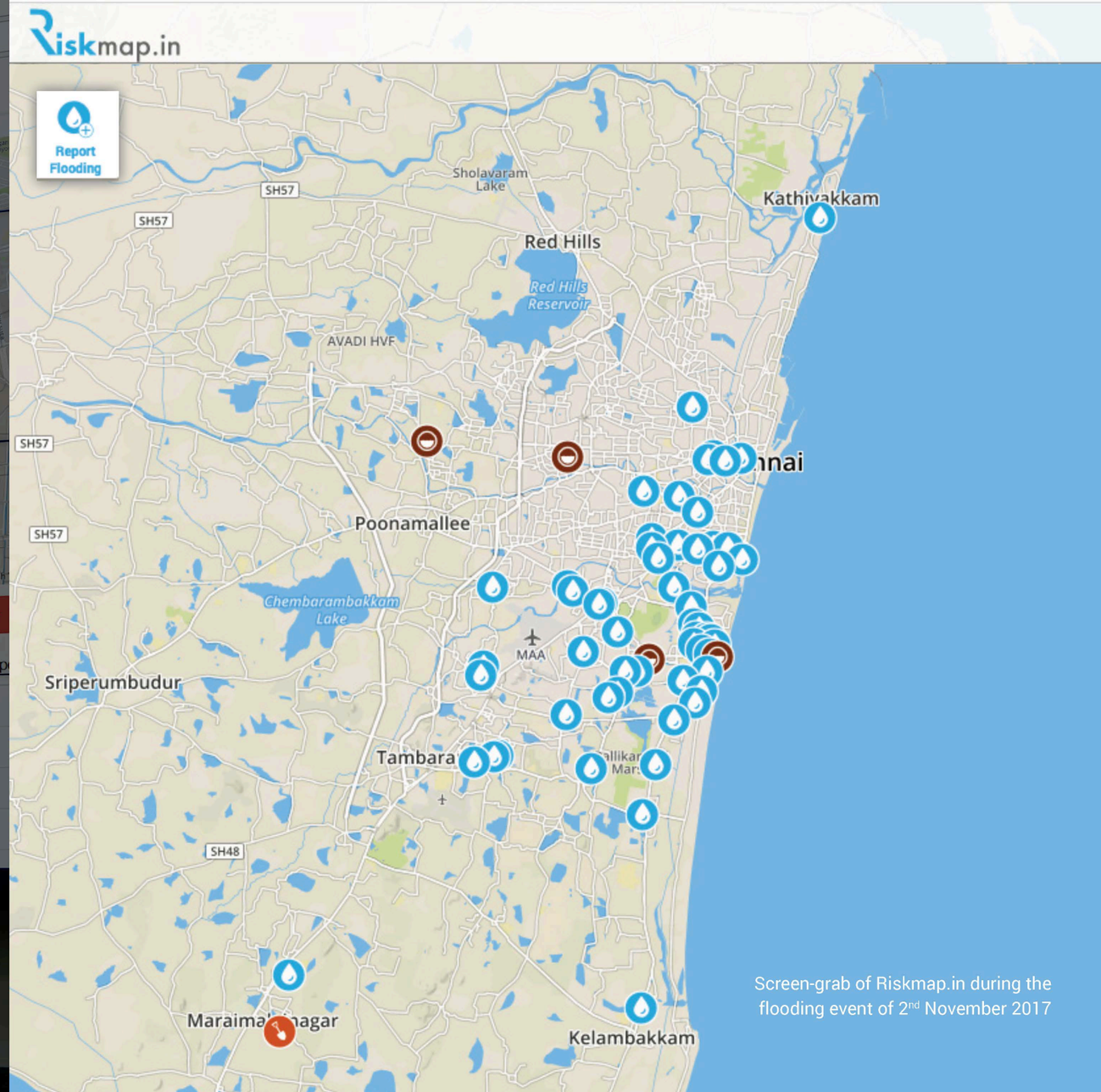
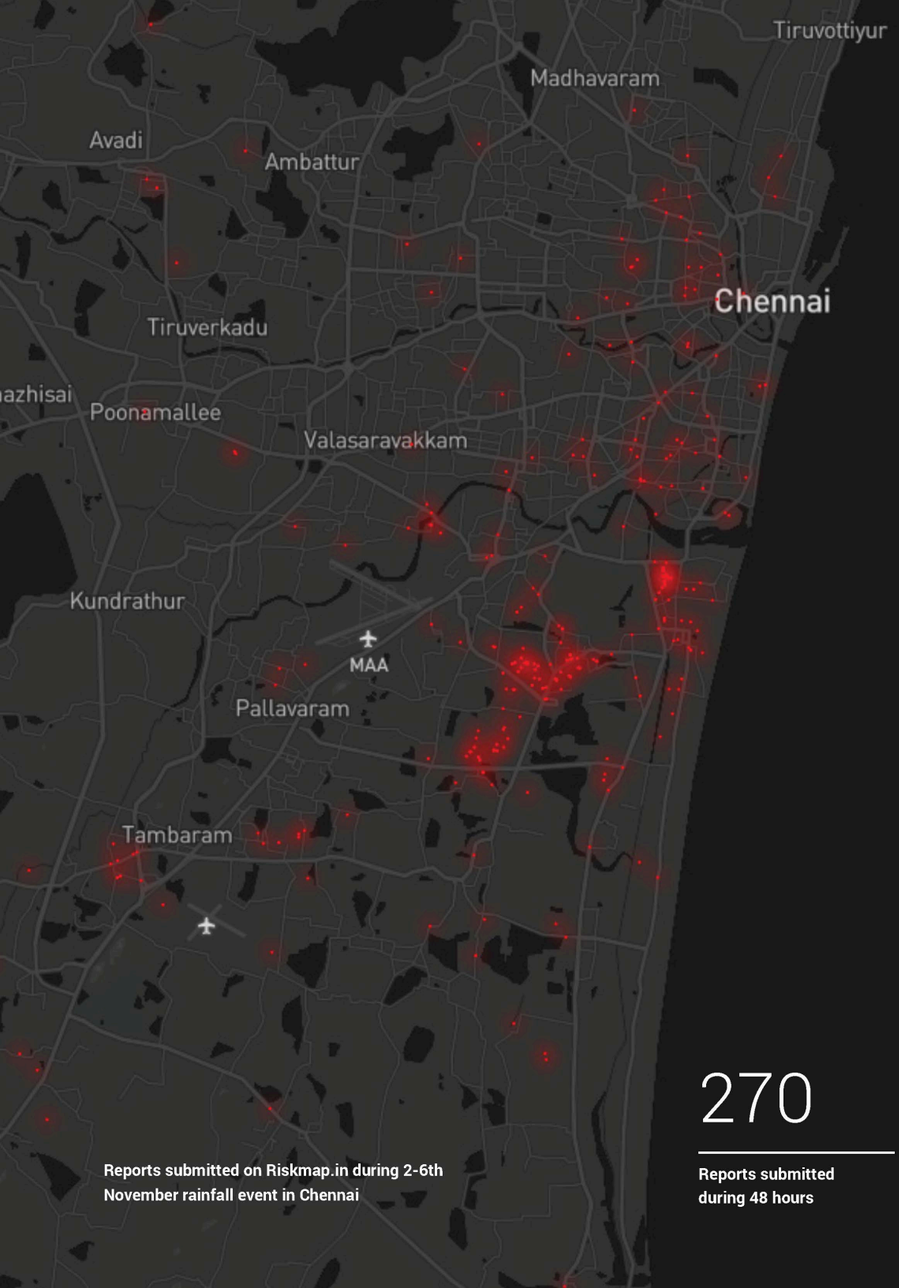
Supporting the public map, we work with the government to create a custom-built Risk Evaluation Dashboard (RED). Designed especially for emergency responders and government agencies, here reports are shown along with any other time-critical data. The dashboard interface allows control-room operators to issue flood alerts based on data from residents and ancillary information. Alerts can also be used to coordinate rescue and response efforts, and are also shared on the public map, helping inform citizens of government's response in real time.

The Riskmap harnesses the power of social media with human-led intelligence to develop processes of civic co-management between citizens and government during flooding, helping to improve decision-making at local and municipal scales.



Screen-grab of Riskmap.in during the flooding event of 2nd November 2017



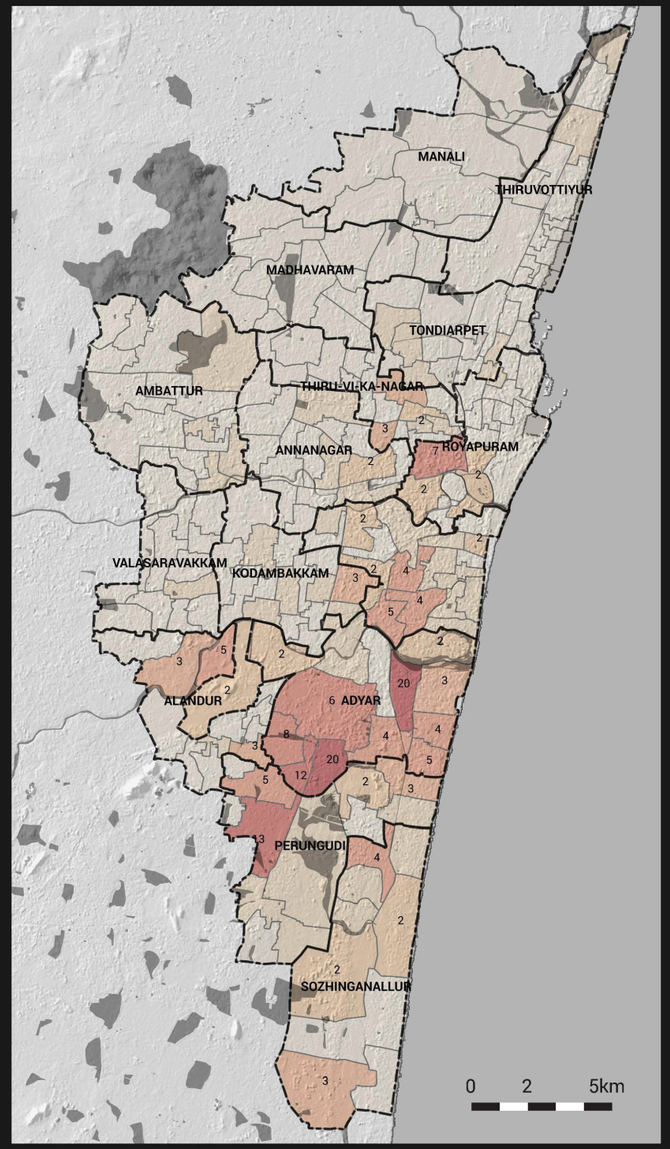
Reports submitted on Riskmap.in during 2-6th November rainfall event in Chennai

270

Reports submitted during 48 hours

76,000

Users accessed the website during 48 hours



Riskmap.in Pilot - Chennai

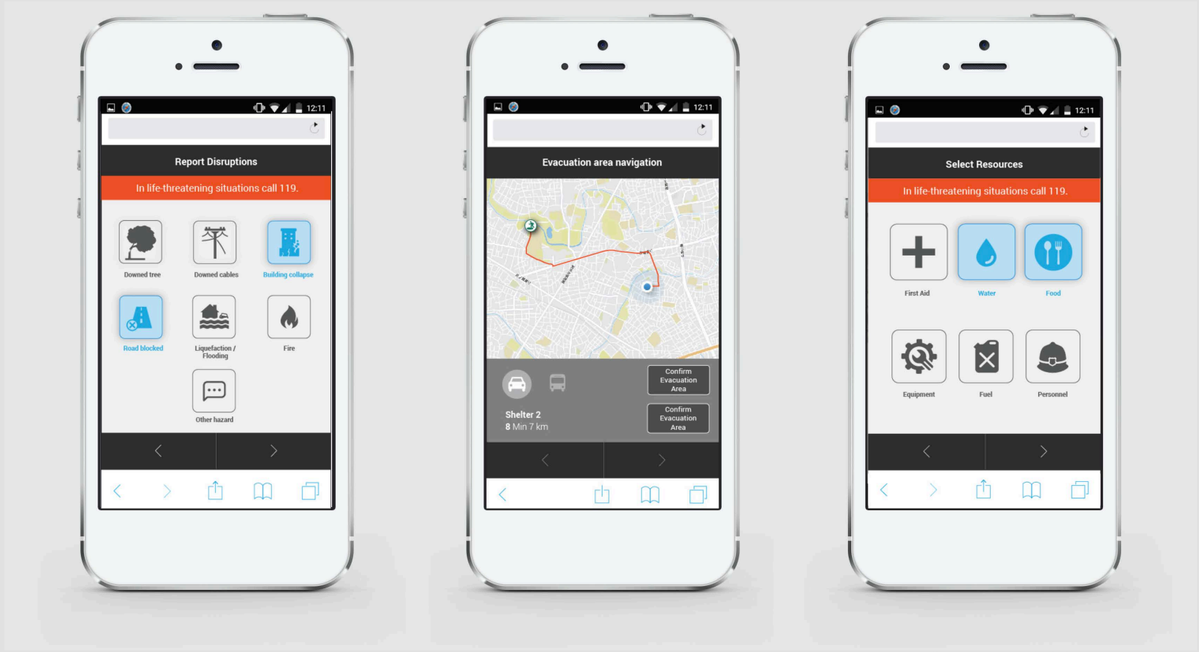
2-6 November 2017

Riskmap.in is currently being piloted in Chennai for the duration of the NE-monsoon of 2017 and has proven that the community-led data collection, sharing, and coordination reduces flood risk - helping to connect individual residents with city and state - scale response efforts. Deployed in partnership with Chennai-based not-for-profit organization Citizen Consumer and Civic Action Group (CAG), this browser-based platform aims at sharing information on flooding between fellow residents and help with monsoon preparedness.

During a high-intensity rainfall event on 2-4th November 2017, the map had over 76000 users, over 250 reports were submitted in the short span of 48 hours The platform and information on it were carried prominently on the news and was shared extensively online.

Media information - The Hindu, The Times of India

Modularity of the platform allows for ways to gather different type time-critical information



Situational Awareness

Shelter Navigation

Post-disaster Resource logistics

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