



Environment Agency England flood warning systems

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Context

In England around 5 million homes are at risk of flooding. We invest significantly in flood prevention and management schemes but we can never prevent all flooding. Early alerting systems are fundamental to helping us reduce the impacts of flooding.

The Environment Agency has had the responsibility for flood warning since 1996. In 2006 we invested in a new dissemination system that would send direct messages to pre-identified recipients via a range of channels. Since then we have continuously improved the system and service we offer. In 2010 we introduced an 'opt-out' service where we pre-registered landline numbers in flood risk areas, significantly increasing the customer base.

The service has performed exceptionally well under intense flood conditions. Over a period of 3 days in December 2013, when England was experiencing an east coast storm surge, the system sent nearly 350,000 telephone messages, 85,000 emails and 70,000 text messages, with a peak call rate of around 37,000 per hour and 100% availability.

The Floodline Warnings Direct (FWD) System

FWD provides warnings in advance of flooding so that people at risk and responders can take action to minimise the impact of the flood. Warnings are sent via telephone, fax, text message, pager or e-mail to over 1.1 million properties located within flood risk areas in England.

Triggers for issuing alerts and warnings include attained and forecast river levels and rainfall in some rapidly responding locations. There are three levels of warning: Flood Alert, Flood Warning and Severe Flood Warning, and a stand down message. The warnings can be updated to include relevant information to help inform those at risk.

Working with our current provider Fujitsu, the system is under a programme of continuous improvement including expanding the 'opt-out' service to mobile phone numbers registered to at risk addresses, allowing mobile registration to the system for people 'on the move' and providing access to registration via third parties.

The 'Future Flood Warning System'

Our research shows that people want more choice on how they access and receive warnings. Many want a service tailored to their own risk, rather than that of their community. They also want more information about the forecast and the situation to that they can make decisions personal to their circumstances. Our future flood warning system will build upon the success of our existing service and will aim to:

- provide our customers with a more flexible and personalised self-service approach which caters for the diverse range of user needs
- alert people wherever they are, not just in properties
- be flexible enough to respond to user feedback to make improvements and utilise new technology as it becomes available
- provide real-time visualisation of system performance, to assist our flood response
- capture greater levels of information from the recipients of our warnings
- be efficient for operators of the system and utilise automation where relevant
- take a risk based approach to resilience to provide the highest level of reliability when needed at a reduced cost