

DHS Science and Technology Directorate National Hurricane Program Technology Modernization Local Evacuation Alert Verification (LEAV) Portfolio

Local Evacuation Alert Verification

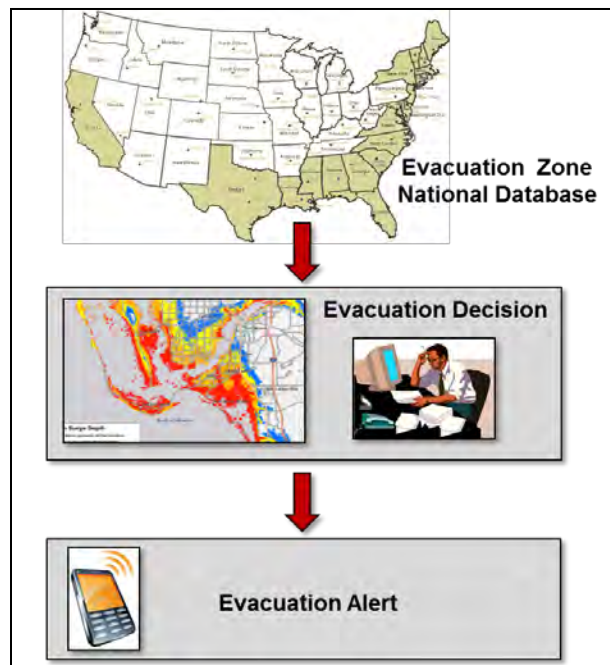
The National Hurricane Program (NHP) provides support to state, local, and tribal emergency managers (EMs) to support the planning, evaluation and execution of tropical storm evacuation decisions. Hurricane Evacuation Studies (HES) that are prepared long before a storm ever hits, define the regions where varying storm intensities present the greatest hazard to the public; these studies inform “evacuation zones.” EMs use these “evacuation zones,” identified by letters or numbers in the HES, to determine which zone needs to be evacuated for a particular storm. Once an evacuation decision is made, EMs have the responsibility of alerting the impacted public and overseeing the efficient evacuation of the affected zones. A well-known challenge in evacuations is that the public is often unaware of what the “letter” or “number” of their evacuation zone is. While local campaigns attempt to notify the public of their zone, the effectiveness is limited. Some members of the public that should evacuate do not and those that should not may opt to evacuate. In both cases the risk of injury or death is increased.

Wherever You Are, You’ll Know if You’re in an Active Evacuation Zone

As part of the NHP technology modernization, DHS S&T is exploring enhancements to the current evacuation alert strategy to improve public compliance. The Local Evacuation Alert Verification (LEAV) system is being designed to support a national system for standardized alert messages that are targeted to the public through cell phones and other mobile devices. Components of the system include:

- A standardized active database of local evacuation zones that will be maintained within the NHP.
- State, local and tribal agencies may choose to opt-in to this standardized active database for their local evacuation zones. Agencies would also be able to update zone information in real-time, including creating ad-hoc evacuation zones based on changing needs.
- Once in the system, emergency managers may utilize the system to trigger an evacuation alert, or other warnings based on their defined evacuation zones. User authentication will ensure that only locally identified EMs will be able to update alert status for their zones.

- A broadcast of the evacuation alert is sent to cell phones based on the active GPS in the phone. The user may also set multiple fixed locations where they want to be notified of evacuation alerts.
- Additional capabilities such as return notification by the person alerted, and their intended action, could also be enabled.



Architecture of Mobile Phone-based Evacuation Alert

LEAV Pilot

The LEAV system is being piloted within the NHP Technology Modernization program. The pilot effort is designed to explore the challenges of developing such a system. Evacuation zone data that varies in formatting from state-to-state is being collected and a prototype National Information Exchange Model (NIEM) standard will be created. The EM web-based evacuation alert mechanism will be managed via the HURREVAC-eXtended (HV-X) platform within the Modernization program. Currently, an Android smartphone app has been developed to notify users of alert status based on fixed and (with an opt-in) GPS locations. The pilot was developed using New York City evacuation zones, but is in the process of being extended to the entire U.S. evacuation zone database. A functional prototype is expected to be delivered in 2016.



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To learn more about National Hurricane Program Technology Modernization, contact Darren Wilson, Program Manager.