



## **WATCHFIRE: *Neighborhood Watch 2.0***

### **Introduction**

This proposal introduces **Watchfire**, a novel method for providing shared safety and situational awareness during a public crisis. The core concept is the establishing of rapid and effective SMS-anchored information flow among currently enrolled volunteers in two national safety programs, Neighborhood Watch and CERT (Community Emergency Response Team), reducing event-based social isolation. It builds on an existing and highly regarded national safety framework within the US and is fully exportable internationally. Our expectation is that it can move to implementation within weeks of a US trial given adequate political, organizational, and technical support.

### **Problem Statement**

Residents in any public emergency - storm, fire, earthquake, epidemic - can find themselves under threat and unable to access help when Emergency Services are overwhelmed. The capacity to reach out locally, to friends and neighbors, has often been the most rapid and responsive resource for assistance when no professionals can be spared, yet having that social network, in modern America, is less common than it used to be.

*We propose that residents under threat could gain awareness, safety and security by having a small number of trusted neighbors and friends immediately available to them as a cell phone-based collaboration group for information, response, care, and support.*

### **Organizational Backgrounds**

*InSTEDD* is a 501c3 public charity registered in California, based in Palo Alto, that concentrates in collaborative humanitarian technology for situational awareness and decision support. We specialize in disease outbreaks, but our work crosses all topic domains and organizational boundaries. Our nonprofit was created in 2006 and most of our work is international, with full or part time staff, contractors, and volunteers in Argentina, Bangladesh, Kenya, Copenhagen, and Cambodia. We have done grant and contract work with the US Centers for Disease Control, Rockefeller Foundation, Google.org, UNICEF, Grameen Bank, Pangaea AIDS Foundation and others, and we serve as Senior Advisor to the World Health Organization's Health Metrics Network in Geneva.

*Neighborhood Watch* was formed in 1972, has tens of thousands of member neighborhoods throughout the nation and is managed within the US Citizen Corps through *USAonWatch* and the National Sheriff's Association. Current figures show that roughly 12% of the nation participates in Neighborhood Watch Groups. These Watch groups are a cadre of capable volunteers who have already agreed to help one another.

*Community Emergency Response (CERT) Teams* are closely related to Neighborhood Watch and a part of the US Citizen Corps. They are trained neighborhood volunteers working within a

community and closely aligned with local emergency response organizations. Formed as an organization in Los Angeles in 1985, there are thousands of trained CERTs within the continental US and the program is now directly supported by FEMA (Federal Emergency Management Agency).

## Proposal

In our experience, we've observed that, when a community faces a crisis, one of the most useful tools to have at hand is the capacity to keep track of each other. We propose to introduce a complementary service to the existing national citizen response groups *Neighborhood Watch* and *CERT*. The service, called "**Watchfire**", combines the long-standing capabilities of Neighborhood Watch with both state-of-the-art messaging over mobile phones, and Web-based map interaction. Watchfire acts much like a text-based radio network to help neighbors care for each other and stay aware of the events that affect them. Members can spot worrisome problems early, share them with each other, and coordinate an effective response just between themselves, with little or no assistance from outside resources.

In a large-scale emergency, particularly when social contact is impeded, reliable remote links to neighbors you trust, through a system like Watchfire, can provide a lifeline when normal medical, emergency and social services are overwhelmed.

## Watchfire

Watchfire is based on InSTEDD's experience in third world communities. In several areas of Southeast Asia InSTEDD has developed capabilities that permit responders to stay in touch using very basic cell phones during disease outbreaks in remote villages. We think the same is needed within the United States, but that the system should be designed to take full advantage of the resources and capabilities available within a highly developed country. Watchfire's core design allows SMS-based small-group collaboration, with additional web-based maps that allow event documentation, map annotation, and archiving. Such a system could make a significant difference in the resilience of a community under pressure.

## Watchfire Technology

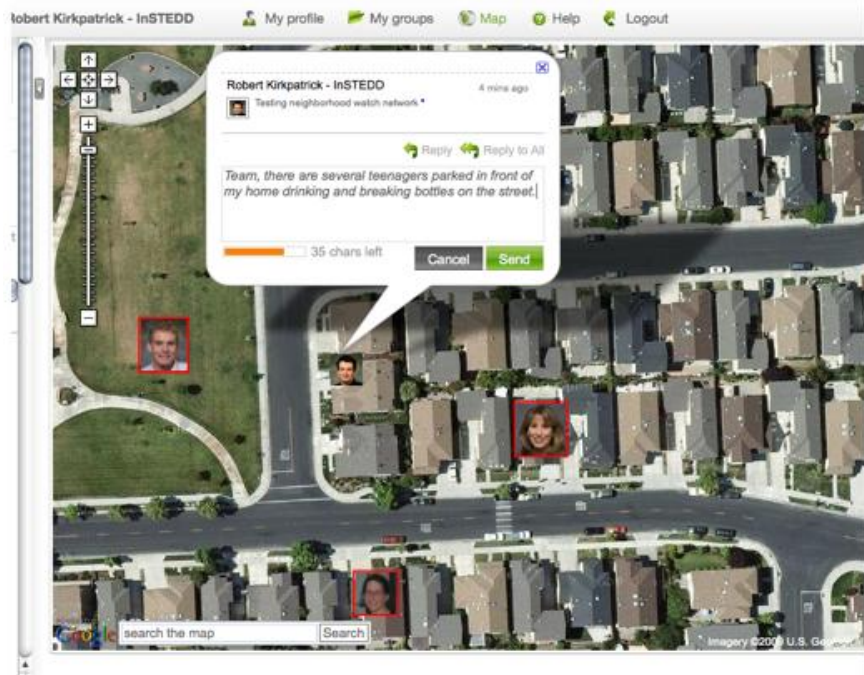
The idea for Watchfire is based on InSTEDD's tools and technology originally built for Southeast Asia (<http://instedd.org>). The new US design we're considering optimizes simplicity in signing up and in daily use. Users, through Neighborhood Watch or CERT, opt-in to the service and complete their emergency profile information through their existing Watch Captain. Watchfire then adds the user to a virtual Watch Group for their immediate neighborhood.

Upon completing registration, the user sees that their photo now appears at the correct location on a map of the neighborhood, surrounded by those neighbors who are already members. From this point users can log on and chat with other group members on the surface of a map or send and receive messages with each other via email, via Twitter or by texting SMS messages to the dedicated **Watchfire shortcode 44911**.

## InSTEDD's Approach

Rather than create an entirely new effort, the proposed mechanism for introduction will be through the existing channels of Neighborhood Watch and CERT. Between them, those two encompass a majority part of the federal government's long-recognized protocol for empowering citizens. By building on this existing system, Watchfire can achieve a critical mass of adoption much sooner than it might otherwise.

The true strength of the Watchfire system will be the focus on self-reliance and information sharing for local situational awareness. However, it can also integrate smoothly with health professionals, emergency responders, and law enforcement through Neighborhood Watch and CERT links. Additionally, healthcare, police, and EMS will have the ability (if invited) to join these groups to monitor activity, and perhaps respond, but the main focus will be on empowering citizens to coordinate between themselves, and if appropriate, to act on their own.



## Watchfire Features

1. Watchfire is ideal for bridging and breaking down social isolation during an emergency. It provides mass notification to a small, trusted group, much like a radio network, and it is not limited to medical or emergency topics. Group members can address any topic important to them.
2. Watchfire uses the same methods, a mobile phone or the web, used by each of the members all day for routine communications. It's simply another speed-dial button, another email address, or another website. It's familiar, ordinary to use and extremely powerful.
3. Watchfire will be able to leverage GeoChat's Twitter integration, allowing members to interact with one another and the Watchfire service via Twitter. Twitter has already proven its worth in several large-scale emergencies (e.g. the San Diego wildfires in 2007) and GeoChat integration with Twitter is extensive.

4. Watchfire will be able to leverage GeoChat's global SMS messaging infrastructure. This infrastructure includes GeoChat's international coverage and its easily-remembered "44911" domestic US short code.
5. Watchfire, in addition to supporting pure SMS-based interaction, will have clients for Smartphones (iPhone, Android) that provide rich, map-based reporting, annotation, and interaction. If users choose, it will use the devices' built-in GPS capabilities to share position updates with the WatchGroup automatically.
6. Watchfire will have a Facebook tool that allows integration directly into members' social networks; Facebook has already proven useful in a number of emergencies, including the Virginia Tech shootings.

### Watchfire Benefits

1. Watchfire is an interactive social messaging service that lets small communities build grassroots security networks - a critical resource during a pandemic when social services may be exceptionally fragile. Unlike other websites that merely allow users to report problems and receive alerts, Watchfire enables its members to collaboratively plan their course of action and coordinate their response without exposing outsiders to risk.
2. Watchfire addresses a critical shortcoming of nearly every technology designed for disaster response: ***The technology most useful in a crisis is the one you are already using.*** Unless users are actively using a technology on a regular basis, they are likely to forget how to operate it when an emergency actually occurs. By contrast, Watchfire creates thriving networks of concerned citizens accustomed to regular communications, and does it all on devices used naturally all day long. In an emergency, communities using Watchfire will be safer, more agile, more resilient, and able to recover sooner.
3. Watchfire, when later taken to scale, has the potential to integrate with local, state, and federal disaster communications networks. Alerts from agencies could be broadcast to all members within a target area automatically. Certain keywords, such as "help911" could automatically notify 911 services, pass along user identification and location information, and trigger a callback to the user's phone.

### Pilot Project

An initial pilot would run for 60 days after the completion of user training, iterating constantly based on user feedback and expanding as requests appear and resources allow. Within 60 days of the completion of the 60-day pilot InSTEDD will standardize on the final toolset and prepare it for wider dissemination. In that process we'll develop a method to scale Watchfire nationally, and then internationally, including the design of a transition to a sustainable business model.

A further deliverable will be an assessment at the one-year mark of the impact of the initiative. While quantitative assessments of things that did NOT happen can be problematic (“the dog that did not bark in the night”), qualitative metrics will be defined based on participant adoption and self-reported behavioral change.

## **Impact**

In our opinion, giving people a reason to meet their neighbors, as well as reliable, collaborative, direct communication with them, may be beneficial even if the system is never used. But if it is used, we think the increased situational awareness, community self-reliance, and reduction on the emergency services workload will reduce casualties, improve civilian relationships with civil authorities, and reduce overall costs. Indicators and metrics will be designed to test those hypotheses.

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## Opinions on Watchfire

*"Watchfire is a low cost, easily implementable and readily reproducible way to mobilize the citizens we are pledged to protect"*

**Peter Carpenter**

*Past CEO, Stanford University Medical Center, and  
CERT Member, Palo Alto, California*

*"The significant increase in large scale natural disasters and disease transmission has been matched recently by our ability to connect affected populations through enhanced networking and tools. Perhaps the best in this regard is the work of InSTEDD and their development of Watchfire."*

**Richard O'Neill**

*Director, The Highlands Group and  
Co-Chair, The Gov2.0 Summit*

*"The Watchfire proposal grasps three basic facts: (1) A pandemic that infects as many as a hundred million Americans will vastly outstrip the resources of hospitals and health professionals; (2) mutual support networks among laymen can greatly alleviate resulting problems; (3) properly designed pre-positioned technologies can sustain and multiply these human interactions."*

**Richard Danzig**

*Chair, Center for New American Security and  
Secretary of the Navy, 1998-2001*

*"In an austere setting, when resources are scarce, people are frightened - or worse yet - disabled, and the situation is dynamic, no single function for rescue and recovery is more essential than communication. It has been shown repeatedly that many-to-many is more effective than one-to-one. Watchfire is social networking with true value - saving lives and preserving law and order during a crisis."*

**Paul S. Auerbach, MD**

*Professor of Surgery, Division of Emergency Medicine  
Stanford University School of Medicine*

*"I am eager to see more of these proofs-of-concept establish everyday practices that improve health safety and security by leveraging advances in technology through practical and, for the user, simple tools. Best of luck to you in this endeavor."*

**Dan Sosin, MD, MPH, FACP**

*Captain, US Public Health Service  
Acting Director, Terrorism Preparedness and Emergency Response  
US Centers for Disease Control and Prevention  
(NOT AN ENDORSEMENT, AND CAPT SOSIN DOES NOT SPEAK FOR THE CDC)*