

Environmental Information



EN2017

EMERGENCY HOUND MOBILE APP

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Innovation and Partnership

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#EN2017

<http://www.exchangenetwork.net/en2017>

ABSTRACT

Emergency Hound is a free, open source mobile app that allows emergency responders to plan for and respond to emergencies in the field, even when disconnected from cellular networks. It is currently available for Oklahoma tribes via iTunes and the Google Play Store. This product was the result of a multi-tribal agency Exchange Network project. This presentation will provide an overview of the project and highlight some lessons learned for the development of mobile apps.

Project Background

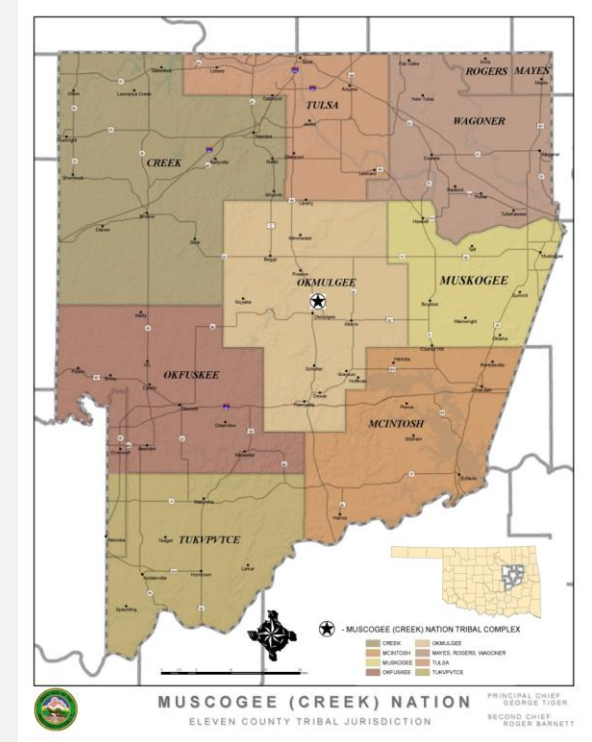
- Exchange Network Grant awarded to Muscogee (Creek) Nation to:
 1. Create a Tribal Emergency Management **data standard** that encompasses emergency management planning and response
 2. Develop an **application** to allow updates in the field and back to tribal partners via EN web services
 3. Include a **geospatial data viewer** to display available resources and incident information along with pertinent environmental data

Project Background

- Project Partners:
 - Muscogee (Creek) Nation - Lead
 - Seminole Nation
 - Citizen Potawatomi Nation
 - Kickapoo Tribe
- In coordination with:
 - Oklahoma - Office of Homeland Security
 - Inter-Tribal Emergency Management Coalition

Muscogee (Creek) Nation

- Tribal Complex in Okmulgee, OK
- Over 70,000 Tribal citizens
- Encompasses all or part of 11 counties / 4,867 sq. miles



Existing Problems

- Access to important information limited to emergency responders
- Lack of data standardization
- Need for a standards-based system to allow secure computer-to-computer interaction

How do we get information to help us answer questions and provide for better planning?

The Approach

1. Work together to develop a common tribal data standard
2. Develop an application that could:
 - Support emergency management planning and response
 - Be used in the office or in the field
(even when wifi or cellular access is not available)
 - Be available on a variety of devices (laptops, tablets)
 - Make it **free** and **open source** so anyone can use it
3. Allow Muscogee Creek Nation to serve as a regional tribal “Portal” host:
 - Building on the successful model used of Open Waters for WQX data hosting

Tribal EM Data Standard

Why:

- Tribes have traditionally had little input in emergency management standards development
- Majority of the conversation has been state/federal agencies
- Tribes need a mechanism to collaborate with a system that best fits their needs

Tribal EM Data Standard

Development Approach:

- Data Standard Development covers Incident Management & Resource Management
- Used input from existing standards (e.g. EN Environmental Incidents, FEMA ICS, DHS RTLT, OK-OHS Credentialing Standard)
- Help tribes understand that their existing data management system can still be used even if tribes capture more comprehensive information
- Contains 150+ data elements

Tribal EM Data Standard

Resources

(Can be equipment or teams)

- Description
- Location
- Count
- Availability
- Ownership
- Verification History

Responders

- Responder Identification
- Certifications Held
- Certification Dates

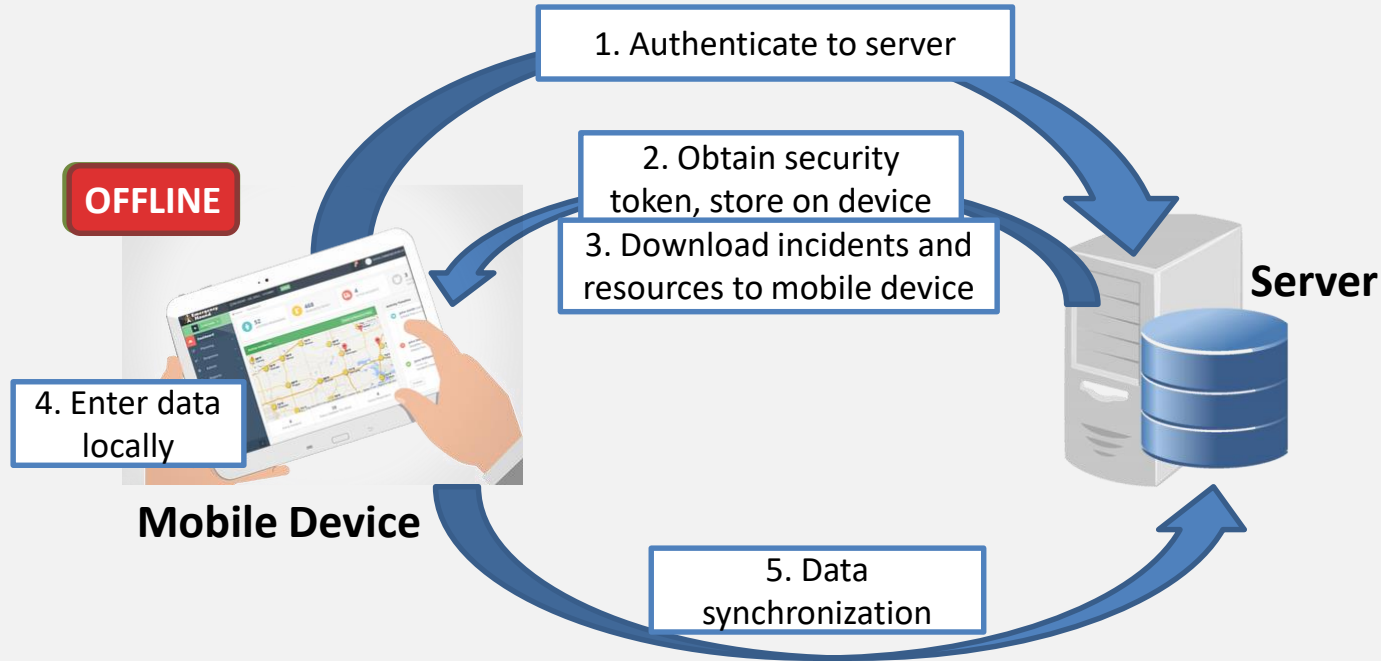
Incidents

- Description
- Key Dates / Status Updates
- Location (including impacted area, area of concern)
- Command Team (including chain of command)
- Resources (including allocation summary)
- Operational Periods
- Response Objectives
- Attachments (images, reports, etc)


Emergency Response Application

- Complete end-to-end Emergency Management Tracking solution that can be used in the field or at the office
- Provide emergency management professionals with tools to:
 - Plan for emergencies
 - Respond to emergencies
 - Communicate with emergency responders
- One solution that supports multiple tribal organizations
 - Each participating tribe has their own portal that they can administer
 - Each partner tribe manages and administers their users. Decides on which information is shared
 - Tribes have total control of their information



Offline Mobile Data Synchronization



Mobile Application: Incident Preparation

**Emergency Hound**

Okmulgee Tornadoonline


doug.timms@open-environment.org


Home / Resources / Edit Resource


+

Dashboard


Planning







Basic Resource Info

| | | |
|--|------------------------|----------------------------------|
| Resource Type | Count | Unit |
| Canine Search and Rescue Team – Disaster Response ? | 1 | team |
| Description | | |
| Member of East Oklahoma Canine Search and Rescue Dogs. | | |
| Status | Jurisdiction | Data Sharing |
| Available ▼ | Muscogee Creek Natic ▼ | All Jurisdictions ▼ |
| Latitude | Longitude | Last Verified |
|  40.02459 | -74.76565 | 08/26/2015 09:10 PM Doug Timms |
| | | Verify Show Verification History |

Detailed Info

| | | |
|------------------------|-----------------|---|
| Personnel - (Dog Team) | Personnel - (-) | Team - (Knowledge and Equipment) |
| 3 handlers | 13 dogs | Tailing, Cadaver (Land and Water) and Air Scent |


CloseSave

Mobile Application – Incident Preparation

- Develop and maintain inventory of resources
 - Integrated with FEMA web services for standardized resource types
- Maintain listing of emergency responders & updated credentials
 - In coordination with OK Department of Homeland Security NIMS Credentialing Standards




Mobile Application– Incident Response

 **Emergency Hound**

Okmulgee Tornado

online

2

 doug.timms@open-environment.org

+ Quick Links

Dashboard

Planning

Response

Incident Search

Incident Details

Basic Info

Location

Command Team

Status/Timeline

Attachments

Admin

Reports

Home / Response / Map

1 Basic Info

2 Location

3 Team

4 Resources

5 Status

6 Operational Periods

Incident Location

Map

Satellite

Click map to edit:

Location

Impacted Area

Threatened Area

Save Impacted Area

Display:

Impacted Area

W 111th St

Turner Turnpike

Walmart Supercenter

Map Data

Terms of Use

Report a map error

Location Description

Southwest of city, smoke impacting roads south of Rt. 33 and west of Rt 75.

City

County

State

Okmulgee

Okmulgee

OK

Latitude

Longitude

35.95716

-96.16521

Impacted Area

Area = 1009.38 acres

(lat: 35.973333333333, lng: -96.16779327392578), (lat:

Threatened Area

Save

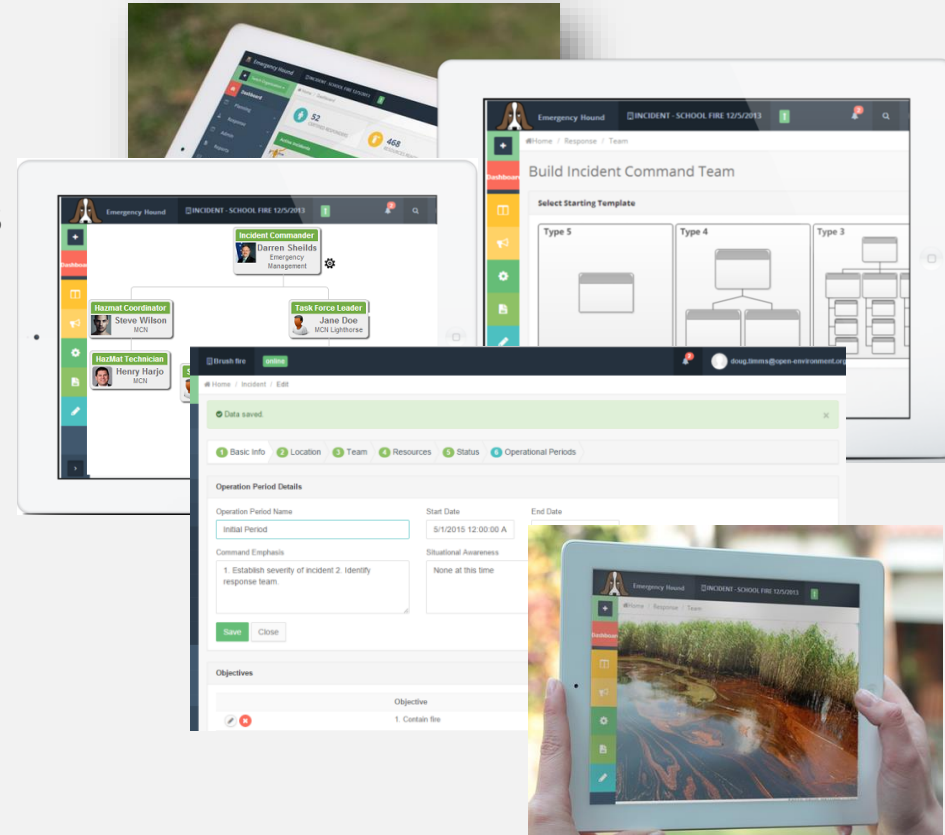
Save and Continue to Team

Tribal
Emergency
Response
Project


15 of 21

Mobile Application– Incident Response

- Log initial incident info
- Map out incident:
 - Identify nearby environmental concerns (integration with EN web services)
 - Plot impacted & affected areas
- Organize Incident Command Team
- Notify nearby responders through app (phone / text message)
- Manage incident objectives, planned actions, operational periods, status updates
- Onsite picture/video logging



System Demo



Ice Storm 2015online

+ Quick Links

Dashboard

Planning

Response

Admin

Documents

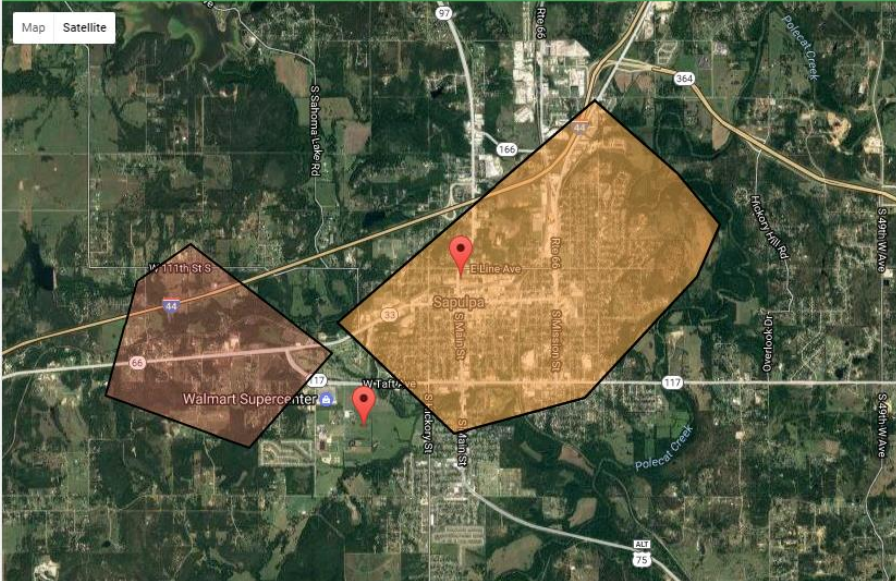
52RESPONDERS

413AVAILABLE RESOURCES

4ACTIVE INCIDENTS

Active Incidents

MapSatellite



You have 4 notifications

Welcome to Emergency Hound
12 days ago


Someone has requested access to your Jurisdiction
6 days ago

Added to Jurisdiction
2 days ago

Request Approved
5 hours ago

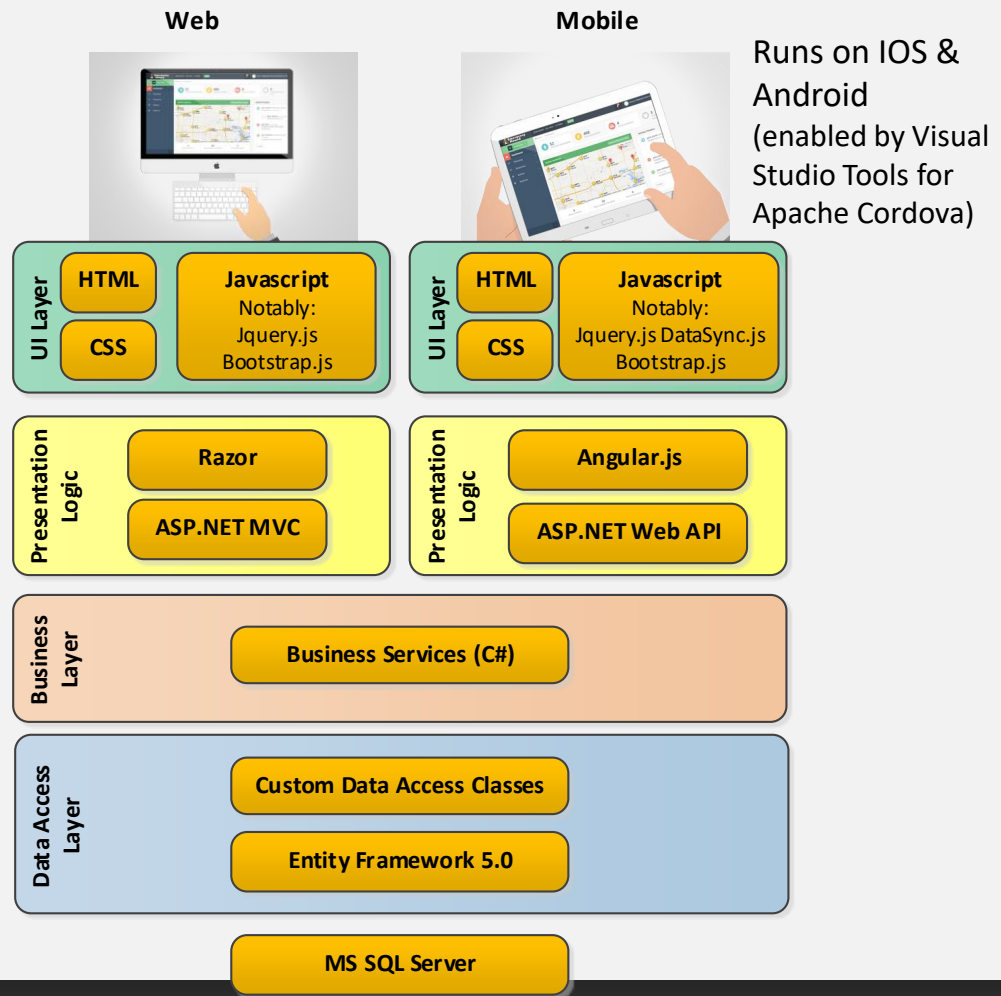
View all notifications

Switch to Resource View



Feedback

Technology Stack



Open Source Solution

- **Source code**: source code available via GitHub:
 - <https://github.com/open-environment/emergency-hound>
- **Free redistribution**: no restrictions for others to give away or sell the software
- **Derived works**: allowed but must remain open source
- **No discrimination**: license available to all (e.g. no restrictions for gov't agencies or commercial vendors)

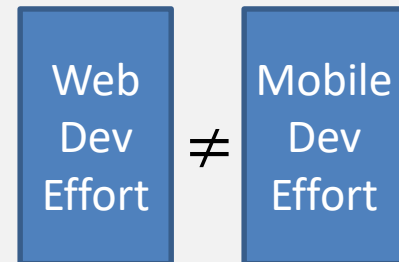


open source

Mobile Development Challenges

- **Web development not equivalent to mobile dev effort**

- Some features require the same effort...
- ...BUT some require much more effort in mobile
- It's not always obvious which requirements your customers have will translate into



- **Aspects to Consider:**

- **Cross Platform Compatibility:**

- Tools available that bridge the gap between Apple/Android, but they don't solve 100% of compatibility issues
- Platforms must be tested separately
- May find yourself having to deal with device-level support issues

- **Offline data access:**

- Requires offline data storage (need to design/build/support both server and client storage mechanism)
- Data synchronization complexity

- **User Notification:**

- In web, commonly handled with simple emailing module
- In mobile, need to decide: email or in-app notifications. Both require additional effort and possibly 3rd party (paid) integrations plus custom coding for each platform (since Apple and Android handle notifications separately)

- **Distribution Mechanism:**

- Google Play Store / iTunes publishing introduces another player to the development effort
- Ongoing Maintenance to keep compatible with standards

For More Information

- Newsletter:

<http://www.emergencyhound.com>

**Sign up to mailing list
for project updates**

- Contact:

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