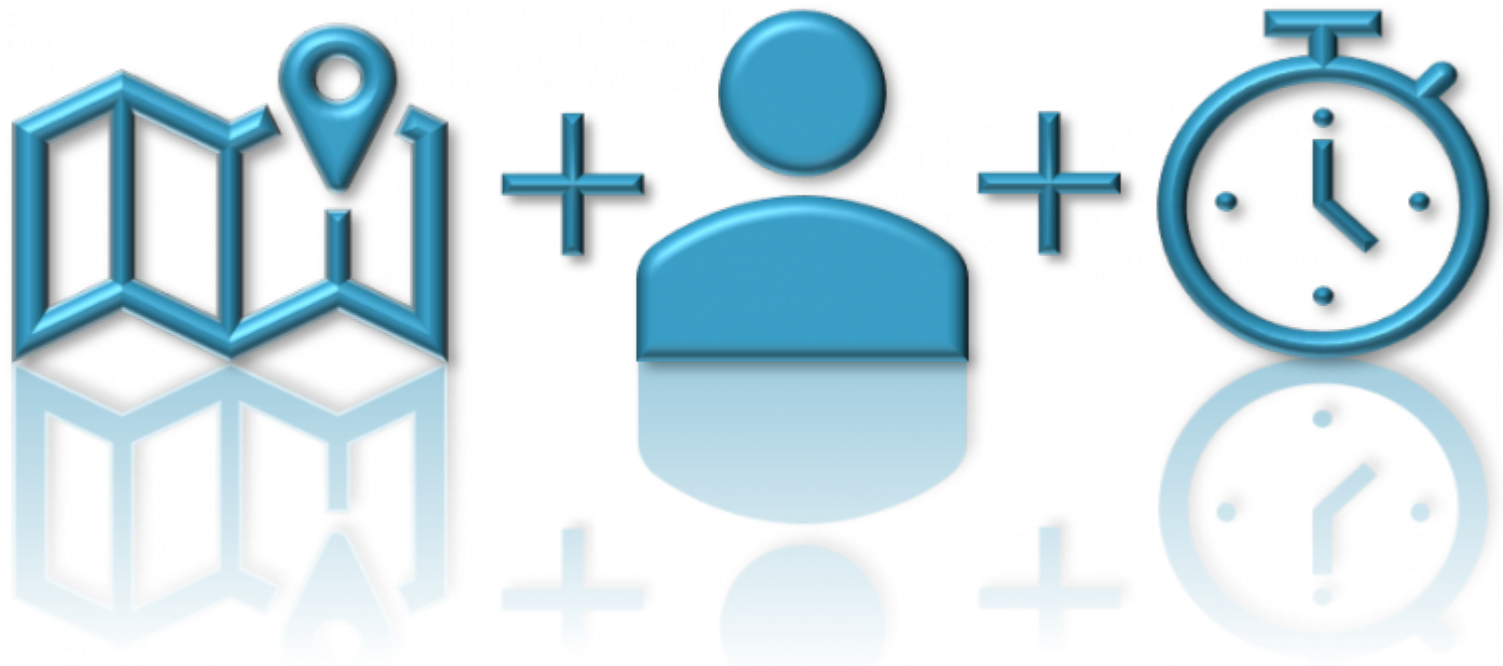


Disaster Privacy Privacy Disaster

Madelyn R. Sanfilippo, Yan Shvartzshnaider,
Irwin Reyes, Helen Nissenbaum, Serge Egelman

Right Information to the **Right Person** at the **Right Time**





FEMA SAV US!

ANTI-GOVERNMENT MILITIA HEADQUARTERS

STAY CALM!

MIKE LICKOVICH
© NLK.com 8-30-17

Technology and Disaster Response

“The issue of privacy vs. emergency is an interesting topic. In a disaster response environment, we believe victims may be willing to give up certain privacy information [sic], such as location. Similarly, existing members of the ad hoc disaster response team may also be willing to give up certain aspects of privacy to preserve their safety while attempting to rescue survivors and addressing the situation at hand.”

(Luqman and Griss, 2010, p.81)



#Isaac tip: Phone lines may be congested after a storm, so update your social networks or text family/friends to say you're OK.



Safety Check has been activated in your area

Taylor, several people in your area have marked themselves safe during The Carr Fire. We wanted to make sure you're ok, too. Mark yourself safe to share a post with friends or [learn more about the incident.](#)

What Happened
Wildfire

When
July 23, 2018

DOESN'T APPLY TO ME

I'M SAFE



HOW TO

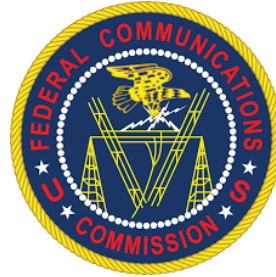
Stay Safe This Hurricane Season



Governance and Disaster Information Flows



FEMA



WIRELESS
EMERGENCY
ALERTS

The Stafford Act

Robert T. Stafford
Disaster Relief and Emergency
Assistance Act, as Amended

April 2013

U.S. Department of Justice
Office of Privacy and Civil Liberties

OVERVIEW OF THE PRIVACY ACT OF 1974

2015 Edition



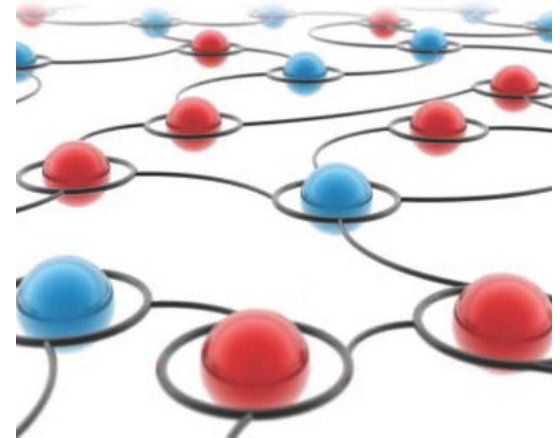
Contextual Integrity of Disaster Information Flows

- Much of federal disaster privacy governance focuses primarily on information types, rather than overall information flows.
- FEMA delimits what types of information, overall, may be collected and further lists specific actions and purposes for which these types of information may only be collected or shared.

PRIVACY IN CONTEXT

Technology, Policy, and the Integrity of Social Life

HELEN NISSENBAUM



FEMA: Actors (Recipients)

- **Group A:** Other Federal Agencies.
- **Group B:** State and Tribal Governments.
- **Group C:** Local governments and voluntary organizations
- **Group D:** Utility companies, hospitals, and health care providers
- **Group E:** Voluntary organizations able to provide durable medical equipment or assistive technology
- **Group F:** other entities able to provide durable medical equipment or assistive technology
- **Group G:** Private sector businesses that employ disaster survivors

FEMA: Information Types (Attributes)

- Names
- Applicant Date of Birth
- Last 4 digits of Applicant's Social Security Number
- Disaster Number
- Authorization for TSA
- Number of Occupants in Applicants Household
- Eligibility Start Date
- Eligibility End Date
- Global Name
- Export Sequence Number
- FEMA Registration Number
- Applicant Street Address*
- Applicant City Name*
- Applicant Zip Code*
- Applicant's Financial Institution Name*
- Applicant's Electronic Funds Transfer Number*
- Applicant's Bank Transit Number*

FEMA: Transmission principles

Information may only be collected or shared when necessary to conduct specific functions, as defined by the Privacy Act of 1974 and Department of Homeland Security Policies

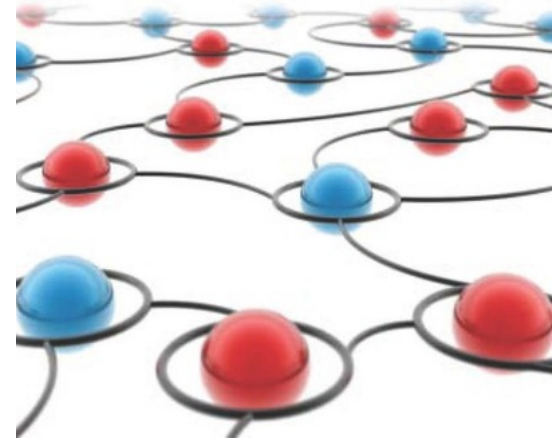
In “need to know” circumstance, such as directly assisting in aid provision or an in extremis situation

...

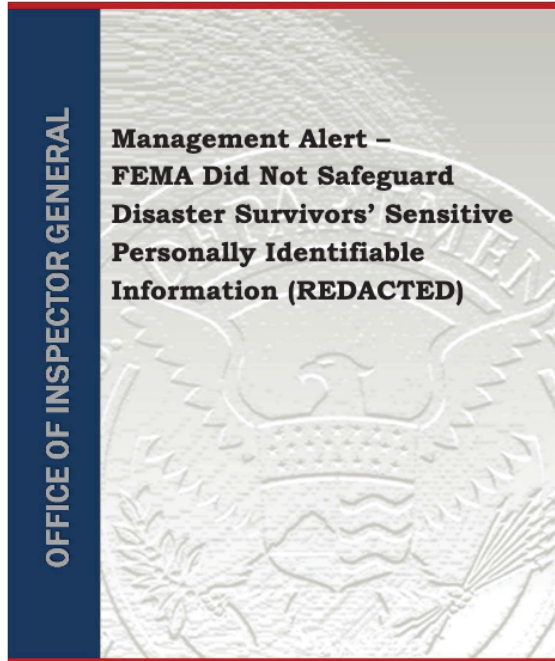
PRIVACY IN CONTEXT

Technology, Policy, and the Integrity of Social Life

HELEN NISSENBAUM



FEMA Information Leak Incident



“During our ongoing audit of the Federal Emergency Management Agency’s (FEMA) Transitional Sheltering Assistance (TSA) program, we determined that FEMA violated the Privacy Act of 1974 and Department of Homeland Security policy by releasing to [REDACTED] the PII and SPII of 2.3 million survivors of hurricanes Harvey, Irma, and Maria and the California wildfires in 2017. FEMA should only provide [REDACTED] with limited information needed to verify disaster survivors’ eligibility for the TSA program. The privacy incident occurred because FEMA did not take steps to ensure it provided only required data elements to [REDACTED]. Without corrective action, the disaster survivors involved in the privacy incident are at increased risk of identity theft and fraud.”

CI Analysis

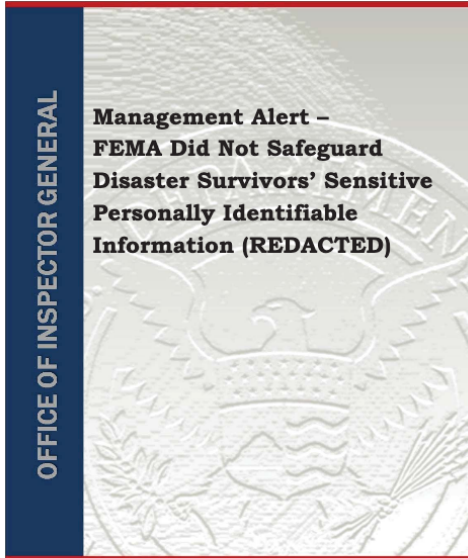
Sender: FEMA

Information subjects: survivors who applied for FEMA's transitioning shelter assistance (TSA) program

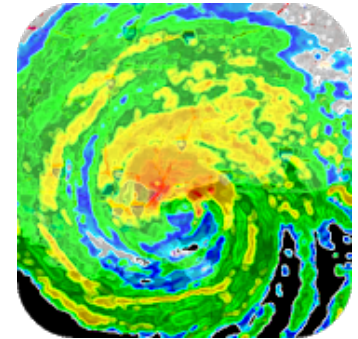
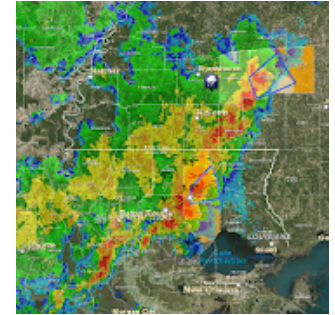
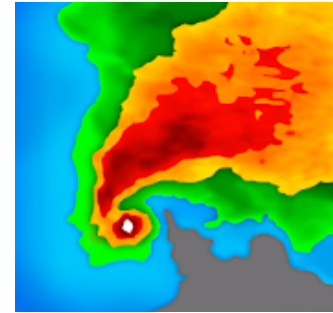
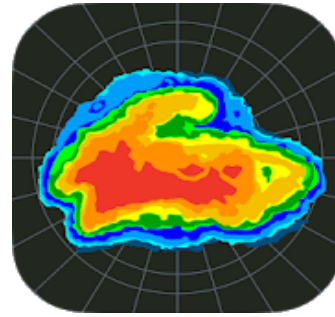
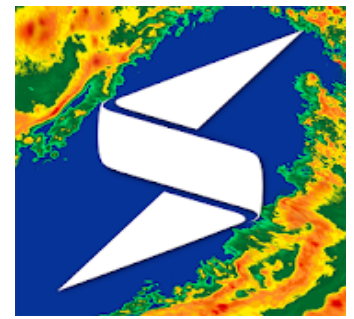
Recipients: contractors

Information type: Street Address*, Applicant City Name*, Applicant Zip Code*, Applicant's Financial Institution Name*, Applicant's Electronic Funds Transfer Number*, Applicant's Bank Transit Number*

Transmission principles: Information may only be collected or shared when necessary to conduct specific functions, as defined by the Privacy Act of 1974 and Department of Homeland Security Policies



Disaster Apps



CI Annotation of Apps' Privacy Policies

When you create an account in some of our services, you provide us with your login credentials, such as email address, name and password.

Transmission Principle

Sender

Recipient

Subject

Attribute

Attribute

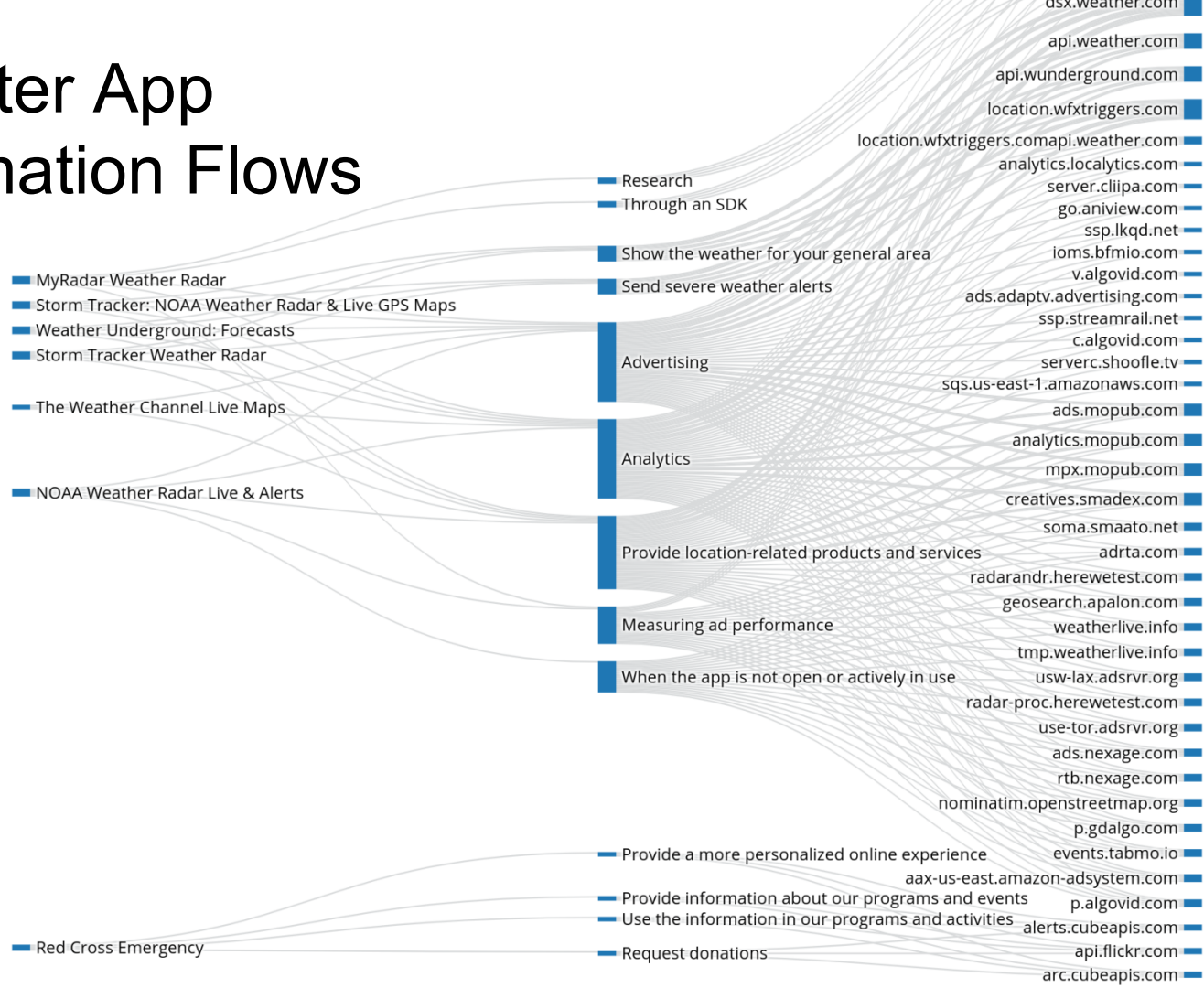
Attribute

Attribute

Dynamic Analysis



Disaster App Information Flows



App	Location Permissions			User options		
	Fine	Coarse	Mock	Location-services	In versus out of app tracking	Other
MyRadar Weather Radar	✓	✓	✓	✓		
Red Cross Hurricane	✓	✓				✓
Red Cross Emergency	✓	✓				✓
My Earthquake Alerts	✓	✓		✓	✓	
My Hurricane Tracker	✓	✓		✓	✓	
Storm Tracker Weather Radar	✓			✓		
NOAA UHD Radar & NWS Alerts	✓	✓				
Storm Tracker: NOAA Weather Radar & Live GPS Maps	✓	✓		✓		
The Weather Channel Live Maps	✓	✓		✓	✓	
Weather Underground: Forecasts	✓	✓		✓	✓	
FEMA	✓	✓				✓
Dark Sky		✓		✓	✓	
National Weather Service No Ad						
NOAA Weather Radar Live & Alerts						✓

Analysis

- Information flows are consistent with all governance
 - Apps that did not engage in any sensitive transmissions during dynamic testing
 - e.g., NOAA UHD Radar & NWS Alerts and National Weather and FEMA
- Information flows are not entirely consistent with app privacy policies and not governed by FEMA or the Privacy Act
 - e.g., Ruston apps (com.jrustonapps.myhurricanetracker and com.jrustonapps.myeearthquakealerts)

Analysis

- Information flows are consistent with app privacy policies and violate user expectations because pose as government services, while sharing with 3rd parties
 - Storm Tracker: NOAA Weather Radar & Live GPS Maps
- Information flows are NOT consistent with all governance
 - The American Red Cross applications included in this study—Red Cross Emergency (com.cube.arc.hzd) and Red Cross Hurricane (com.cube.arc.hfa)

Summary

- There are more third parties with more access to personal information flows than current governance models account for
- We do not currently govern all parameters of disaster information flows
- We do not have clear understanding of the boundaries of disasters as contexts for information flows

Questions?

