Recovery Requires Debris Removal

Sunday, March 17, 2013

Debris Removal

Session Overview

(A) **Importance** to Recovery

(B) Adopting a **Process**

(C) **Actions** to Execute

(D) **Conclusion**

Importance of Debris Plan

- Reduces time needed to identify debris management options.
- Reduces danger by identifying
  - hazards
  - who will mitigate
  - how to mitigate
- Saves money by avoiding rushed decisions that could result in costly mistakes.

http://www.epa.gov/osw/conserve/imr/cdm/debris.htm

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Template for Debris Removal

FEMA
Handout

SWANA
Handout

Seattle
Checklist Handout

Typically, the debris removal recovery phase begins after the emergency access routes are cleared and police, firefighters, and other first responders have the necessary access

Process

http://www.fema.gov/pdf/government/grant/pa/demagde.pdf

Priorities for Debris Removal

#1 priority: **Clear debris from key roads**

#2 priority: **access to critical facilities**

#3 priority: **Eliminate debris related threats to health and safety**

Process

http://www.epa.gov/osw/conserve/imr/cdm/debris.htm

Debris Types: Household

- Furniture
- White goods
- Food (Biohazards)

Actions

http://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf

Debris Types: Construction

- Concrete
- Asphalt
- Metal
- Brick
- Wood
- Drywall

Actions

http://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf

Review: Debris Types

Byproducts of Disaster Event

- Old Tires
- Old Appliances
- Vegetative
- Sediment
- Soil
- Biohazards

Actions

http://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf

Calculating Debris

Length x Width x S x 0.20 x VCM = CY

27

S = number of storeys

VCM = Vegetative Cover

FEMA conducted an empirical study following Hurricane Floyd in North Carolina in 1999, and developed a formula for estimating debris associated with demolished single family residences

Table for Single Family, Single Story Homes

Typical House (Square Feet)	Vegetative Cover Multiplier			
	None	Light (1.1)	Medium (1.3)	Heavy (1.5)
1000 SF	200 CY	220 CY	260 CY	300 CY
1200 SF	240 CY	264 CY	312 CY	360 CY
1400 SF	280 CY	308 CY	364 CY	420 CY
1600 SF	320 CY	352 CY	416 CY	480 CY
1800 SF	360 CY	396 CY	468 CY	540 CY
2000 SF	400 CY	440 CY	520 CY	600 CY
2200 SF	440 CY	484 CY	572 CY	660 CY
2400 SF	480 CY	528 CY	624 CY	720 CY
2600 SF	520 CY	572 CY	676 CY	780 CY

Actions

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Calculating Debris

To estimate the amount of debris generated by a building in cubic yards

Length x Width x Height x 0.33 = CY

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Actions

http://www.sepa.ca/planning-tools.html

Damage Assessment

- Situational Awareness
- Establish Priorities
- Efficient Resource Use

Actions

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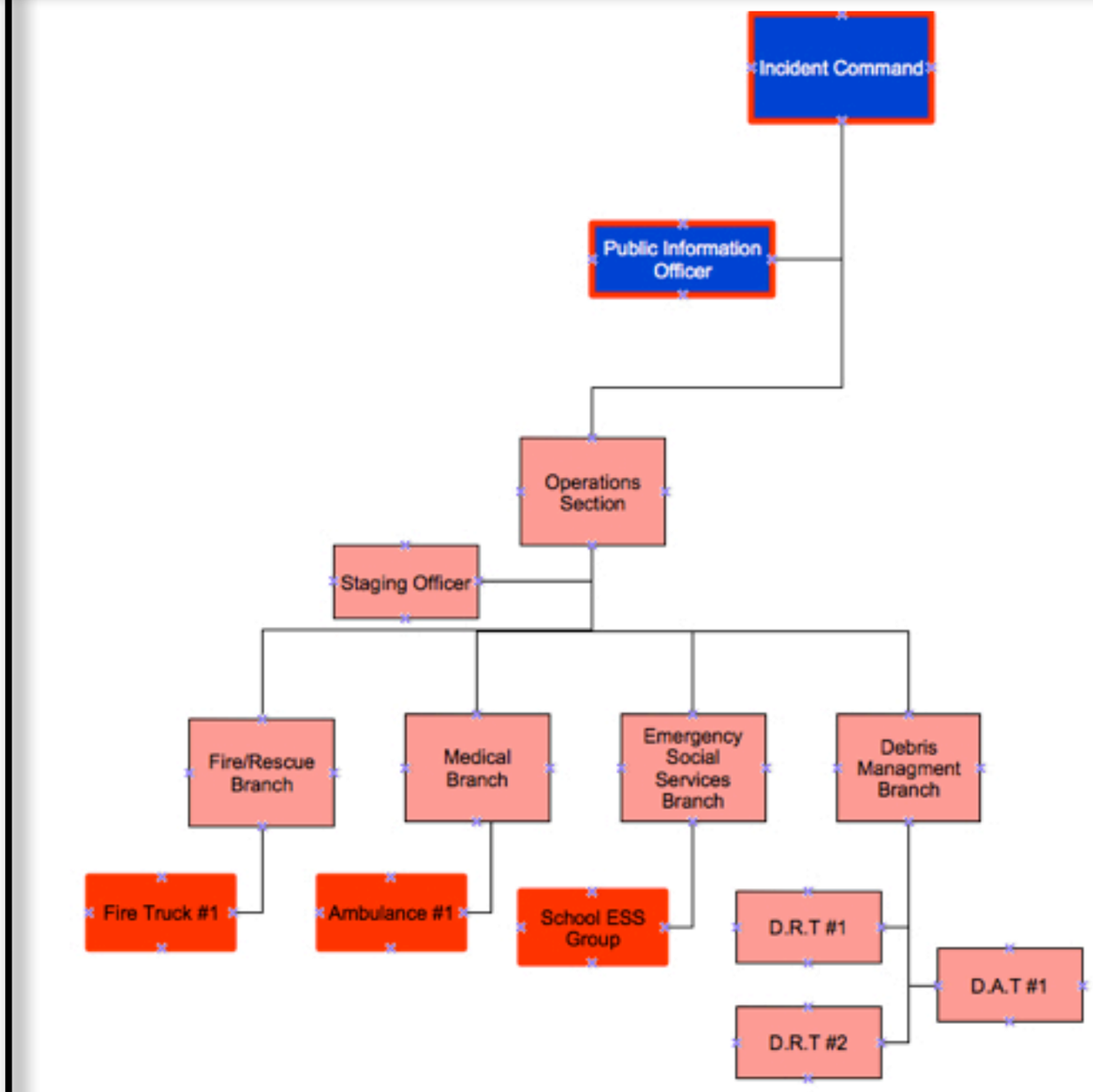


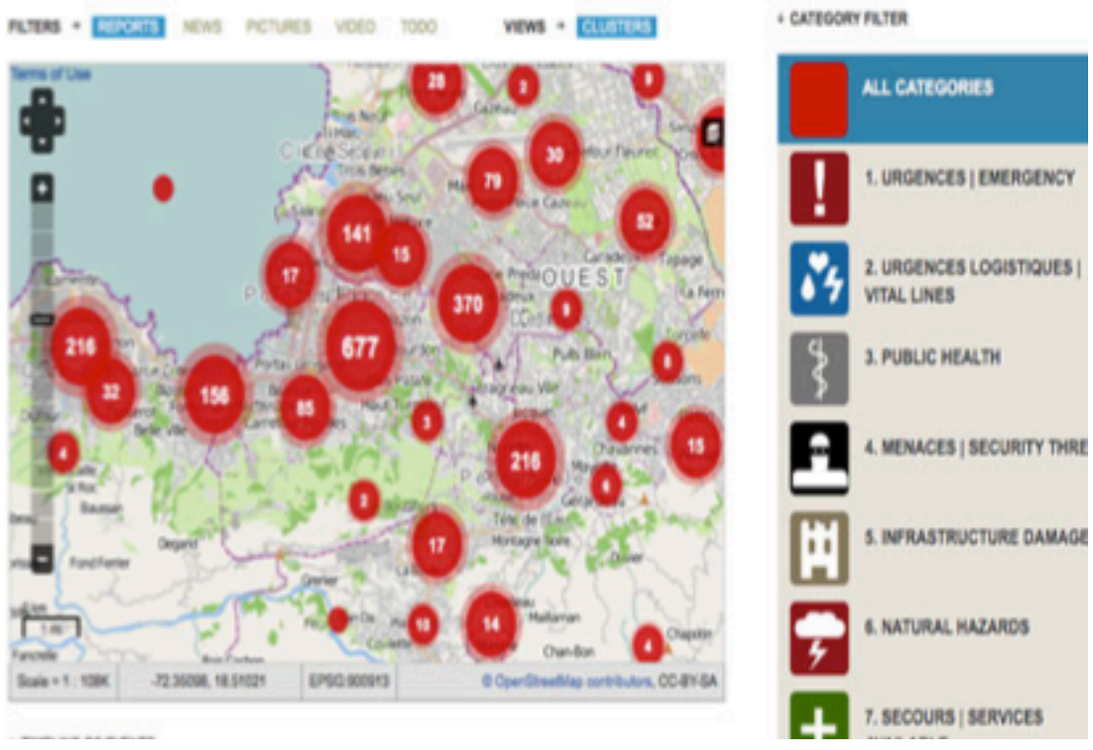
Actions

Ushahidi: Situational Awareness

- Haiti Earthquake

the most common use was in support of situational awareness for strategic, operational and tactical organizations.

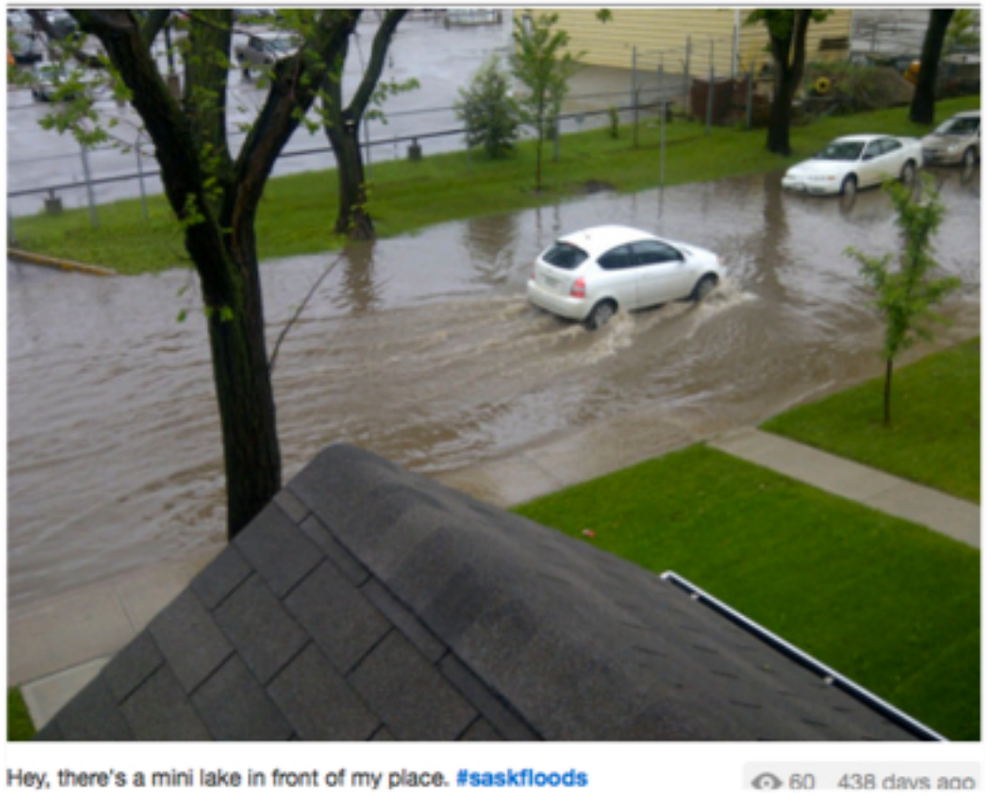
- 20,000 reports in first hours
- 25,000 per day



Actions

Independent Evaluation of the Ushahidi Haiti Project(Morrow:2011)

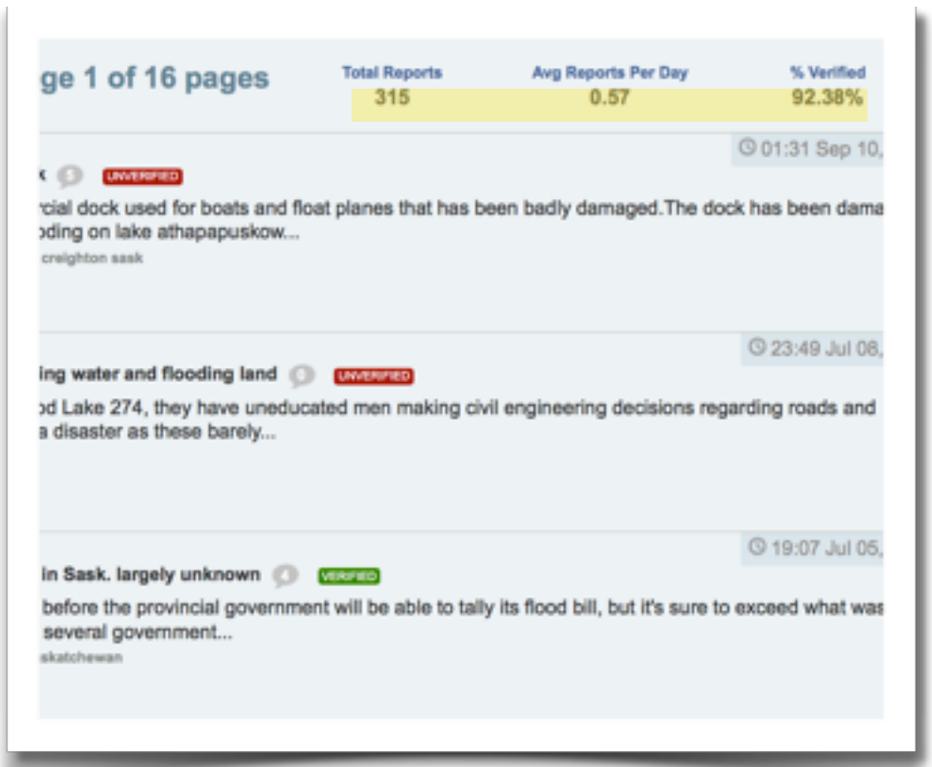
Ushahidi: Local Experience



Hey, there's a mini lake in front of my place. #saskfloods

60 438 days ago

=



Actions

Summary

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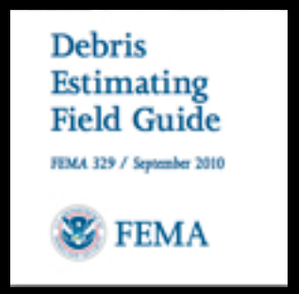

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http://www.kingcounty.gov/safety/prepare/EmergencyManagementProfessionals/Plans/~/media/safety/prepare/documents/Debris/DebrisPlanReviewChecklist.ashx

http://www.swananorthernlights.org/

http://www.sepa.ca/planning-tools.html

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