Resilience and Renewal in Response to Extreme Even
Lessons Learned

2013 Annual Meeting
Association of Metropolitan Water Agencies

October 27, 2013

Kevin R. Gertig

City of Fort Collins

Objectives of Presentation

- Extreme Events
  - Strong partnership with OEM
- Emergency Preparedness
  - Stormwater Engineering and Planning
  - After Action Reviews from incidents
  - Training
  - NIMS / IMEC Training
  - Observations
  - High Park Fire
- Restoration Recovery Issues
  - Leverage Technology
  - Financial implications
- Lessons Learned

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History -- 1997 Flood

Photos – John Weaver PFA

Importance of Office of Emergency Management

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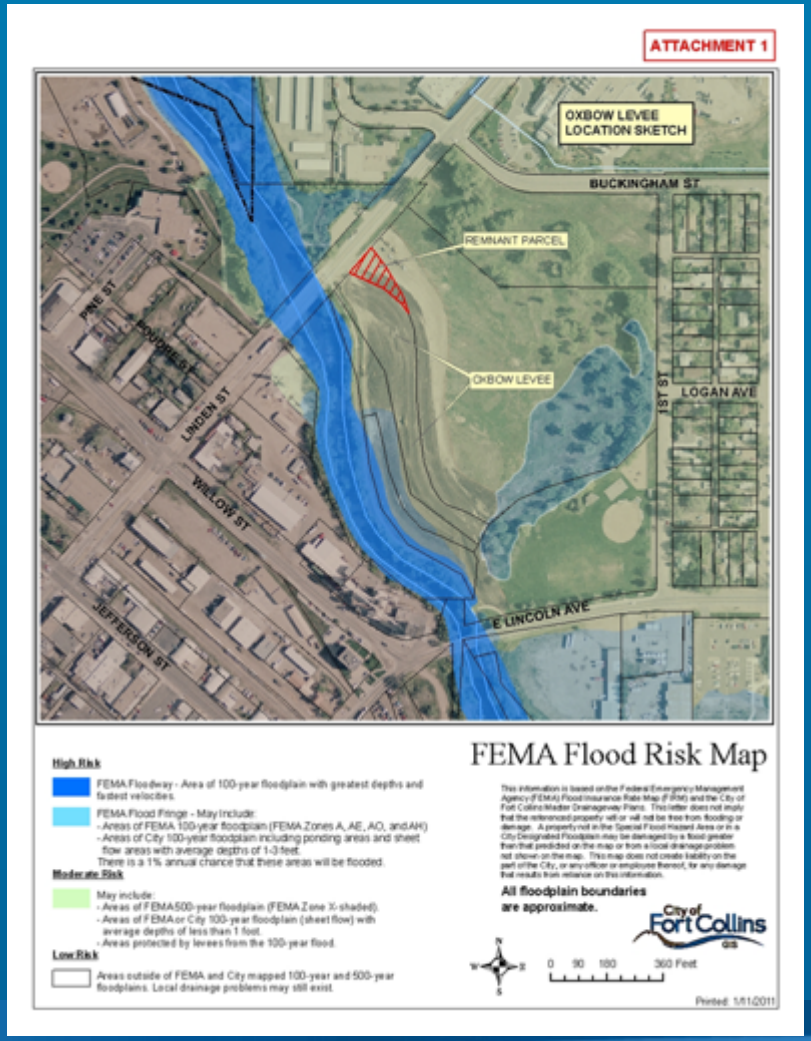
Stormwater Planning



Water Supply / HAZ MAT Response
Asphalt Tanker Spill

PFA --Kelly Close

PFA -- Kelly Close

2013 Flood

Training at IEMC Courses
FEMA – 3x Participant

- Custom design a course to fit your organization
- Plan one year ahead
- Involve a cross section of stakeholders and practice together in Emmitsburg , MD

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Implementation

Pre-Plans – City and County Reverse 911 and LETA

Reverse 911 -- Updating Emergency Contacts Challenging (Cell)

- Water Quality Issues
- Flooding
- Wild fire
- Police activity that would require you to evacuate or to take shelter
- Severe threatening weather (rotation in clouds, large hail with cloud rotation, tornado warnings)

- Challenge = Keeping users cell phones updated

Mutual Aid Agreements

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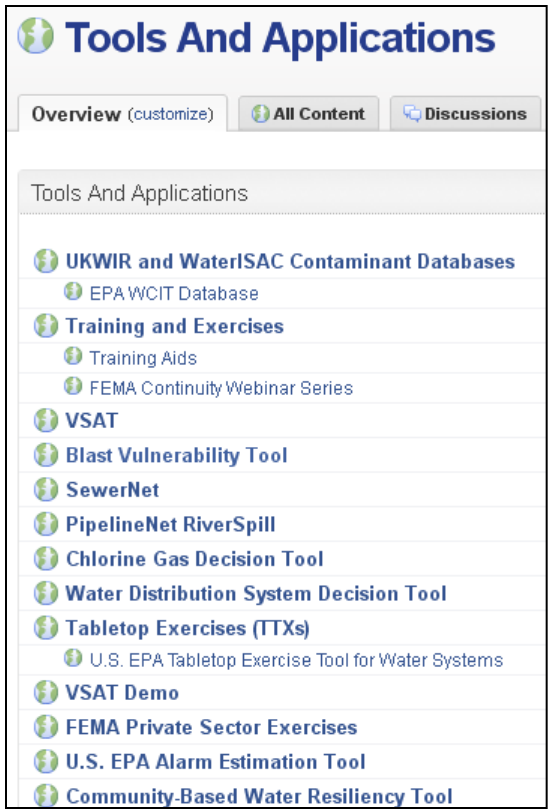
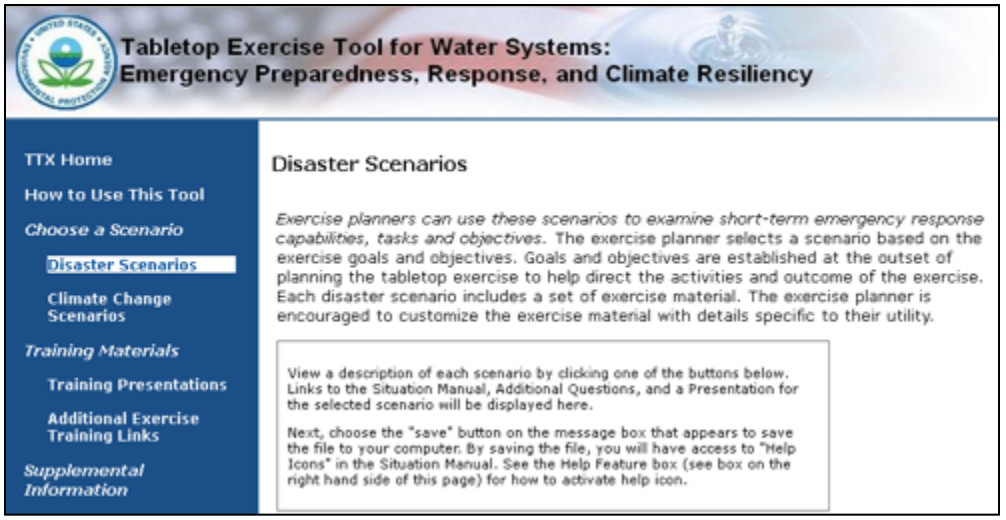
Assessment Tools





Problem: Your Emergency Response Plan lacks procedures for a power outage.

Solution: The U.S. EPA's Tabletop Exercise Tool for Water Systems contains multiple natural-hazard scenarios. Run the tool from the WaterISAC portal and gain valuable lessons to improve your emergency preparedness posture.

Staging and Base Camp Needs

Pandemic Flu Planning and Exercises

- Developed strong working relationships with other agencies
- Still applying lessons learned
- Consider staff coverage on long deployments

Plan, Do, Check, Act
Train & Repeat
All Year

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Event Planning

Photo – Sgt. Adam Smith CSU PD

What Utilities Can Learn?

Traffic Plans, evacuation routes, EMS support, cross training

Case Study -- High Park Fire, Larimer County, CO, 2012

Background High Park Fire
June 9, 2012

- Lightning strike in the High Park area
- Low humidity and winds
- Quickly grew in size – C shaped pattern
- Type I team began operations within 72 hours
- Unprecedented event for Larimer County, CO
- Not contained until July 10, 2012
- >87,000 acres – low, medium, and high severity

Total Acres Burned

• National Forest Service	42,634
• Other Federal	261
• State	5,022
• Private	39,570
Total Acres Burned	87,487

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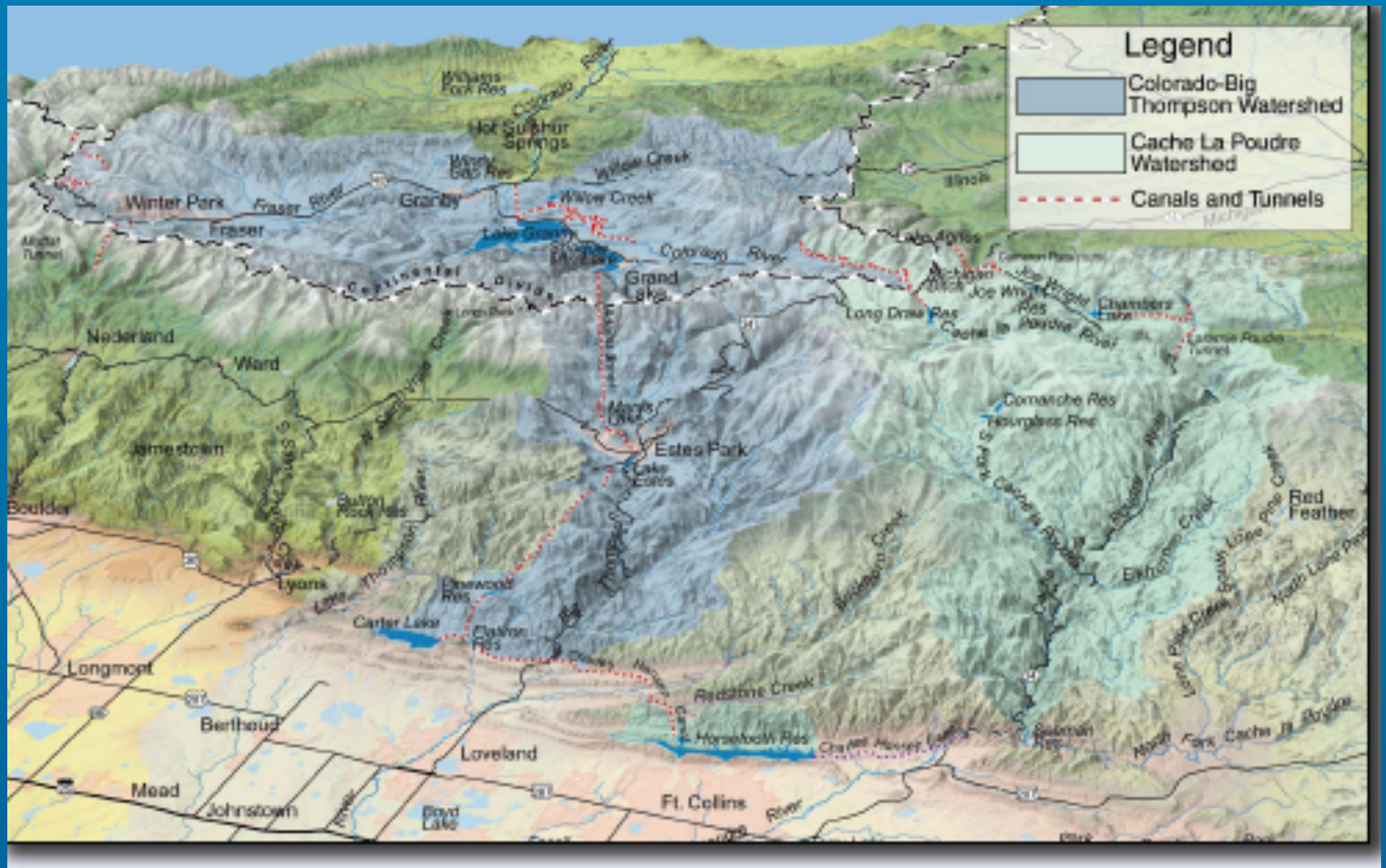

Fort Collins Drinking Water Sources

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CO Watersheds – High Quality Source

Gertig

Soil Characteristics

Chris Lochra 08.21.12

City of Fort Collins

Boyd Gulch

Lisa Voytko

City of Fort Collins

Resulting Water After Rain
Off water supply for > 100 days

Photo - Jill Oropeza

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Debris Management

- Knew Debris would be an issue
- Hosted a Table Top exercise on May 7, 2013
- This exercise proved to be beneficial during our September, 2013 Floods

Response w/ Railroads

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Tools Applied

- Over 40 storm water monitoring gages throughout the city & county – can be accessed by the public 24/7
- Water Quality sondes – sending alarm signals to control room
- WaterISAC – resources 24/7

Water Quality Monitoring Sites

Photo: Chris Lochra

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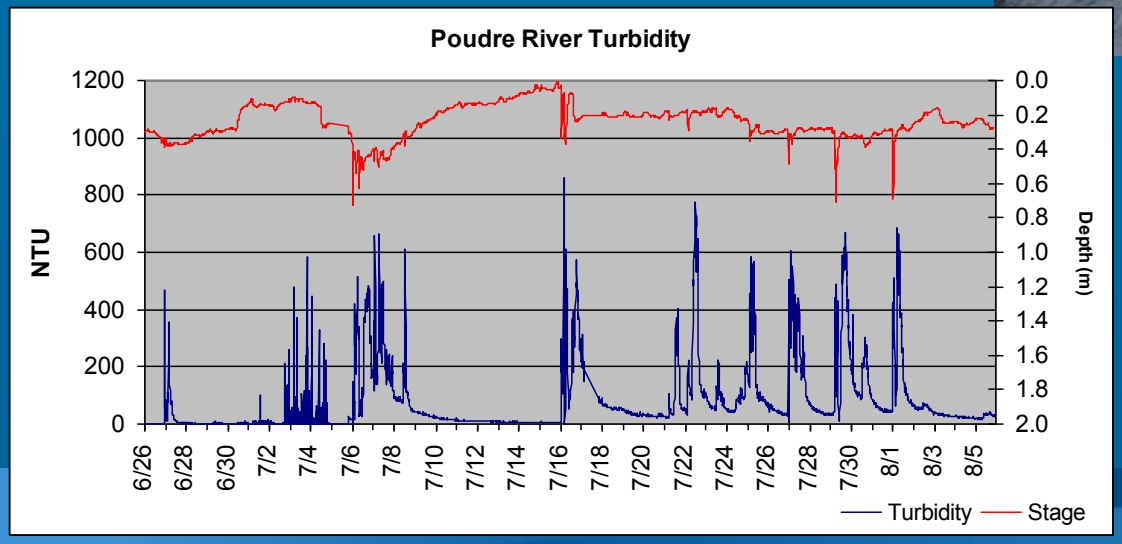
Water Quality Concerns

- Organic Carbon
- Nutrients
- Metals
- Turbidity (clarity)
- Others



Priorities Established

- Case studies and experts all agree: Stabilize the soil and reduce erosion – expect 5X sediment loads
- May need to re-apply if storms or wind move material
- Learned that straw mulch does not hold in place – determined wood mulch with tree felling was the answer for our watershed

Cooperation & Collaboration

- Treatment Methods were per NRCS[1] expertise
- A huge collaboration effort & found that not all stakeholders will agree on the methods + not all property owners will allow access
- Local First Responders and Office of Emergency Management for post fire support has been outstanding

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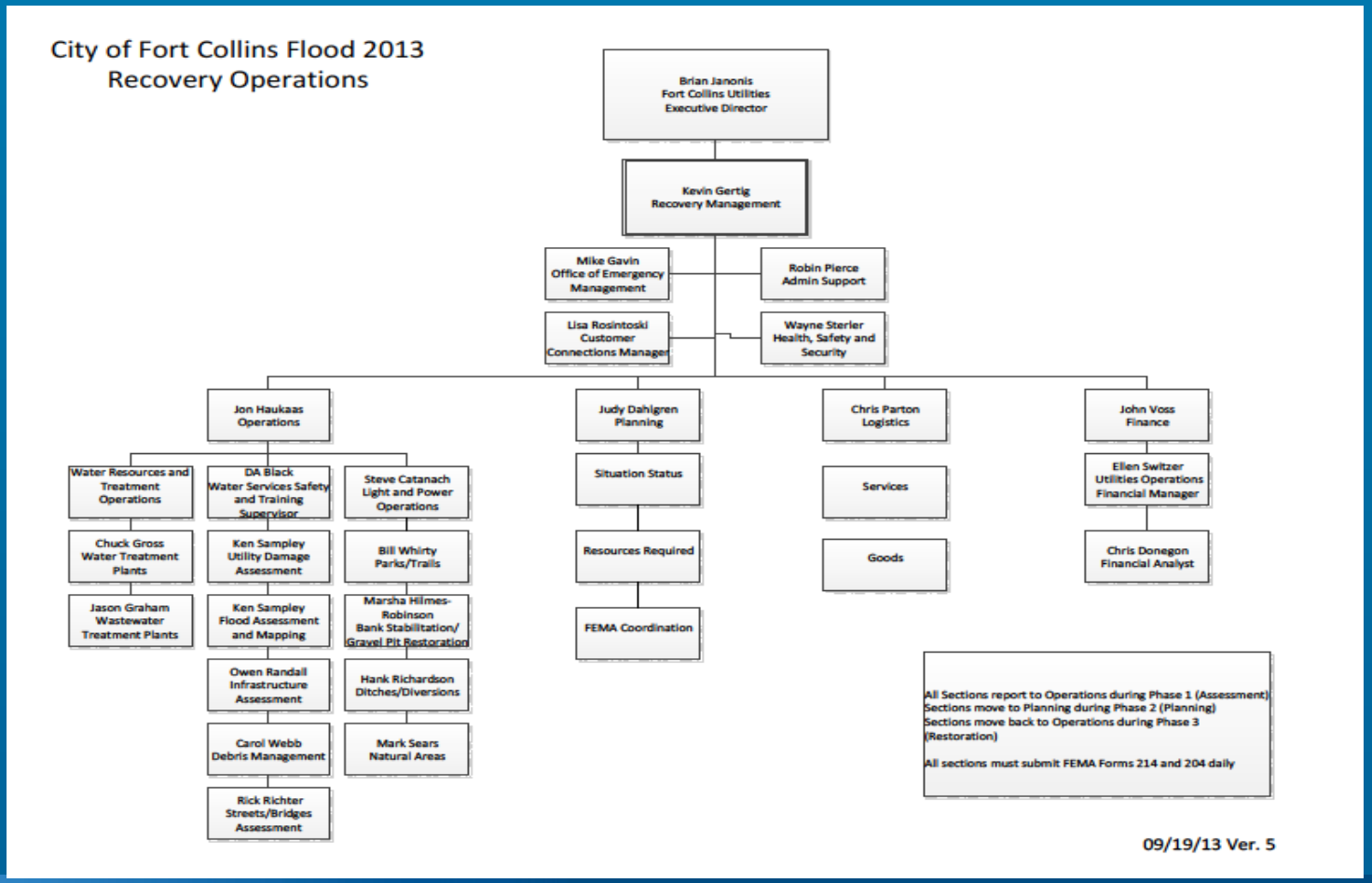
1- NRCS – Natural Resource Conservation Service

Lessons Learned

Importance of implementation of NIMS



Alternative Project Delivery System Process

- Problem: High Turbidity from our primary water source. Unable to settle > 100 ntu water for treatment
- Solution: Scope, Design, and Build a pre-sedimentation basin in < 5 months
- Delivered – on time, within budget, and met the objectives

Customer Rate Increase Required

Pleasant Valley Pipeline **Presedimentation Basin**

to address fire-related water quality issues








To remove sediment in the Poudre River caused by the 2012 forest fires, Fort Collins Utilities constructed a presedimentation basin. Located near the Pleasant Valley Pipeline next to the Munroe Canal (north of the mouth of the Poudre Canyon), the basin was built on Northern Colorado Water Conservancy District property.

The mechanical screening equipment currently used will not function when faced with large amounts of sediment expected in the raw river water. The basin will help remove the sediment before it gets into our pipelines and to the water treatment facility, which increases the efficiency of treatment processes and helps regulate water quality. The basin also will aid in the removal of debris during normal snow runoff in the spring, when pine needles and other debris accumulate quickly in the river.

Project Details
- Fast-track: 6 1/2 months from design to construction completion
- Initial work in Munroe Canal completed by April 1, in time for irrigation season
- Construction completed June 10, start-up began June 18

Capacity
- Treat 60 million gallons/day of raw water *includes capacity for City of Fort Collins and Soldier Canyon Filter Plant*
- Basin floor: 39,800 square feet
- Basin volume: 3 million gallons at operating level of 10 feet

Estimated Cost – $2.1 million (within budget)

Design Engineer: Ayres Associates
Contractors: Hydro Construction and Connell Resources, Inc.

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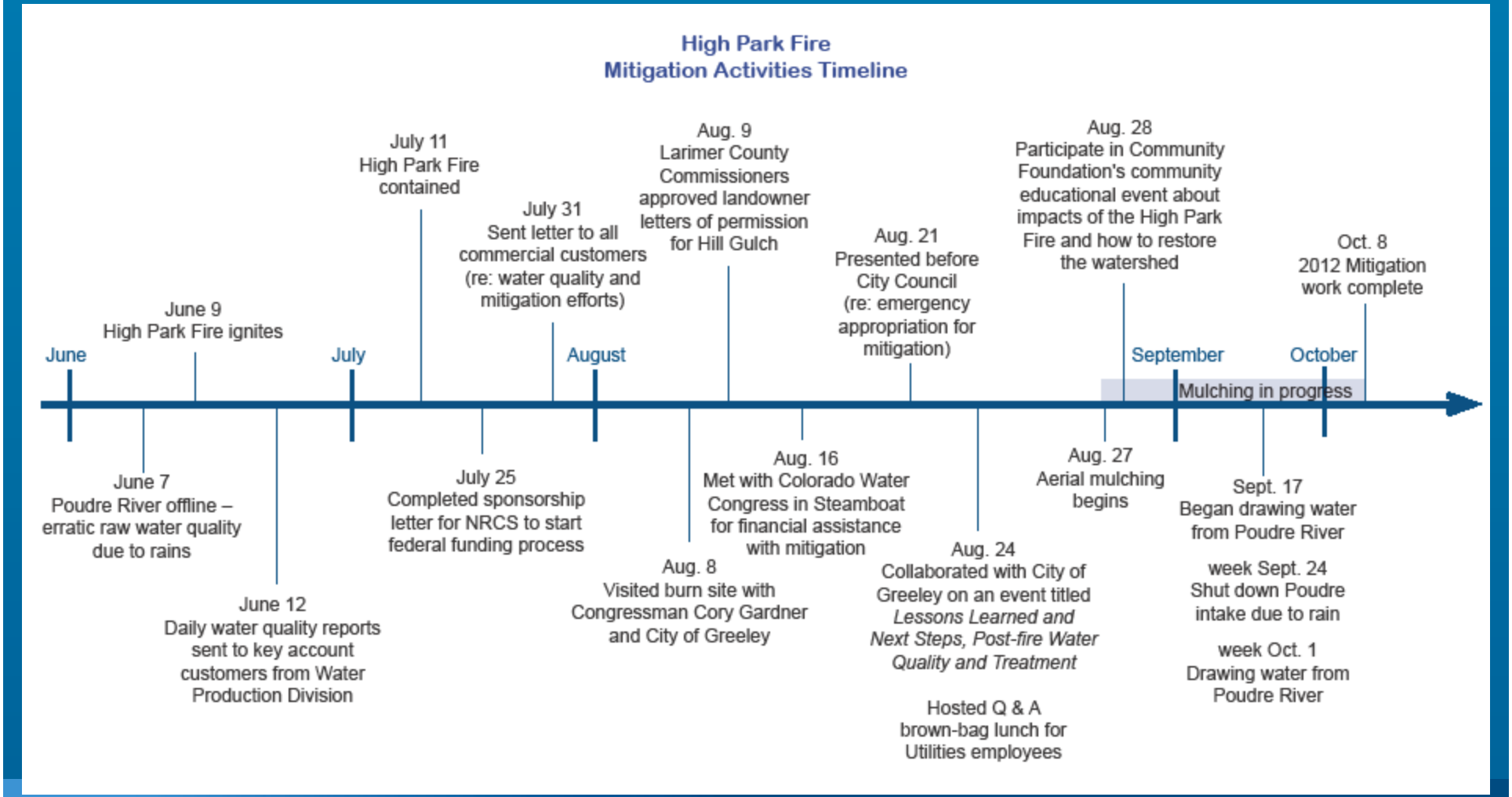
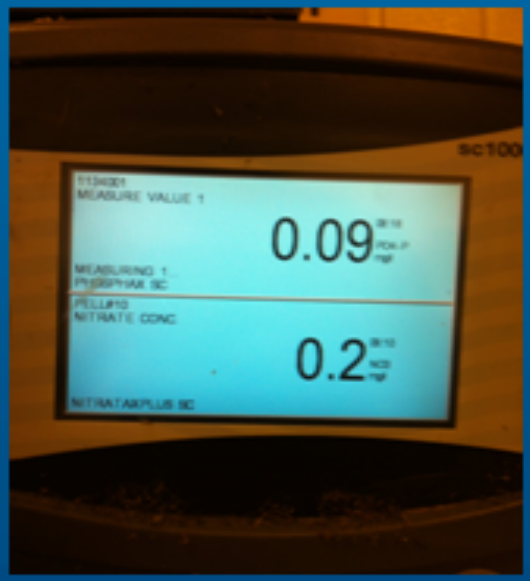
Design / Build = < 5 months

Event Time Line



Prepared by - Diana Royval FCU

On-line Warning Systems



59 Photo – Justin Compton

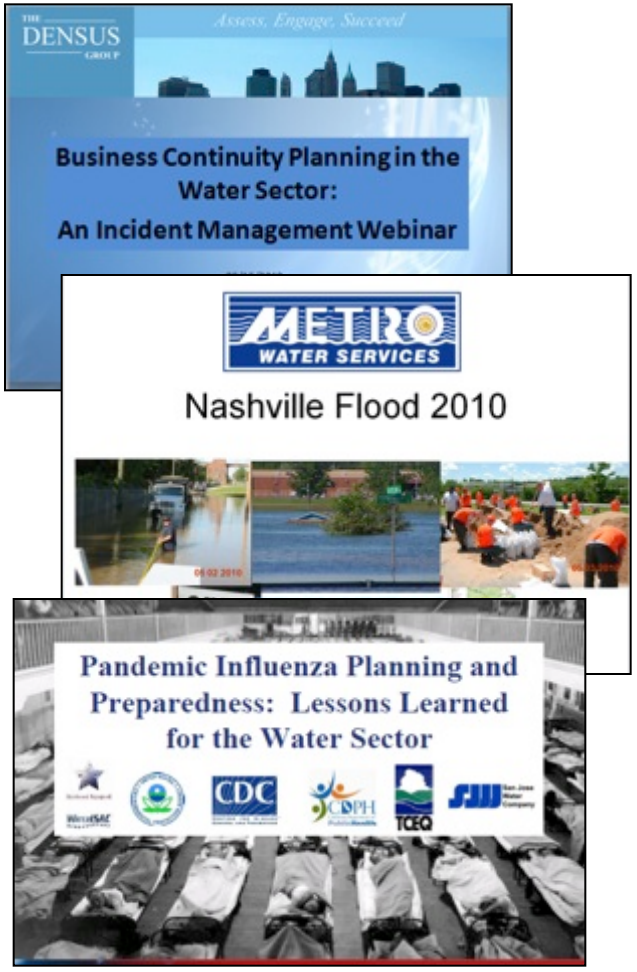
Value of Webcasts & Training

Problem: Staff need NIMS-certification for disaster recovery funding.

Solution: Review NIMS training webinar series to prepare for online examinations

Problem: Convince city manager of risks from malicious insiders

Solution: Listen to the recording of the Mesa, AZ webcast on attempted destruction of wastewater treatment plant

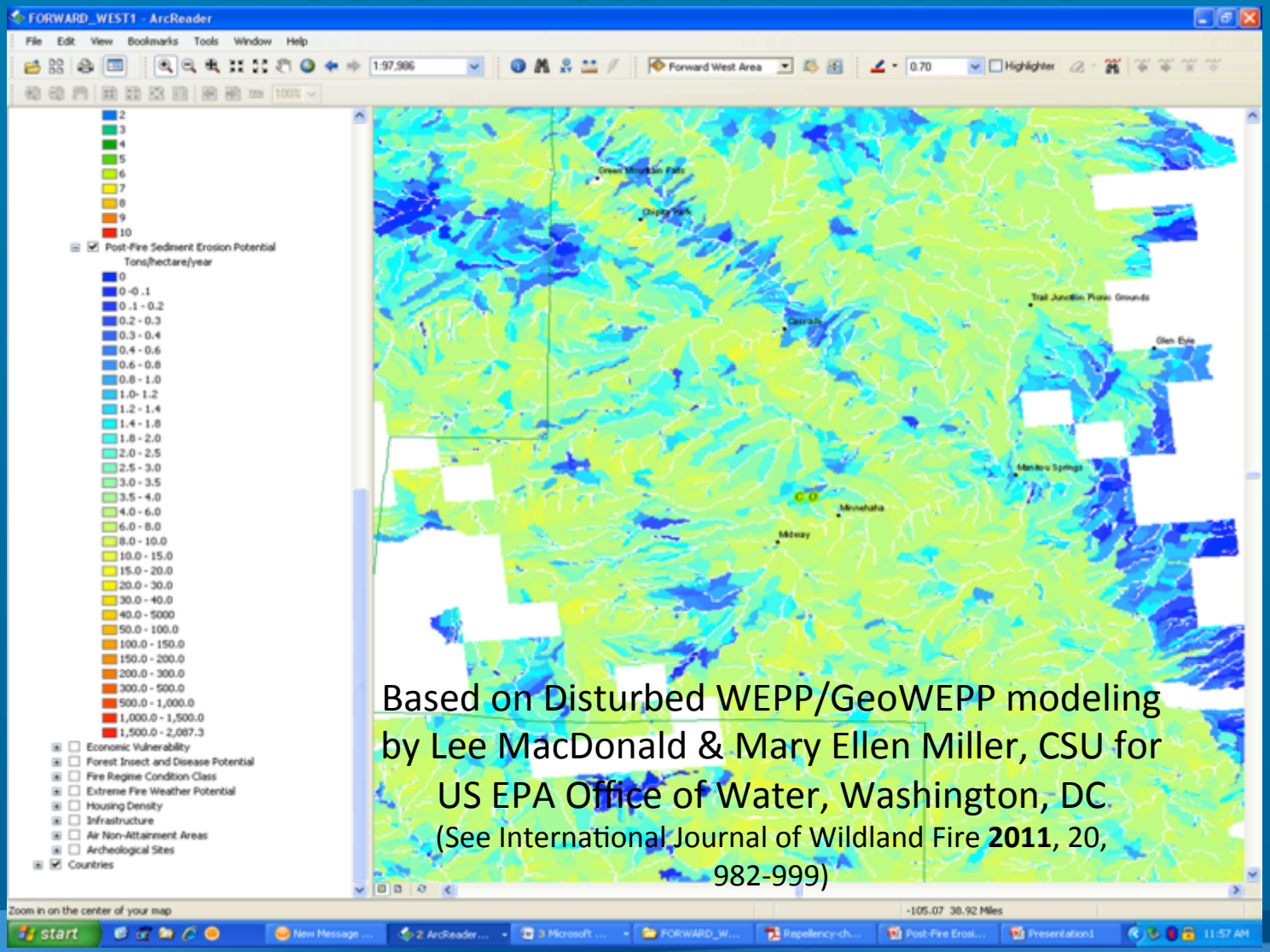


10 YEARS IN 2012

Private Property Notifications – Time Consuming

Leverage Technology

Erosion Potential Models



Based on Disturbed WEPP/GeoWEPP modeling by Lee MacDonald & Mary Ellen Miller, CSU for US EPA Office of Water, Washington, DC

(See International Journal of Wildland Fire **2011**, 20, 982-999)

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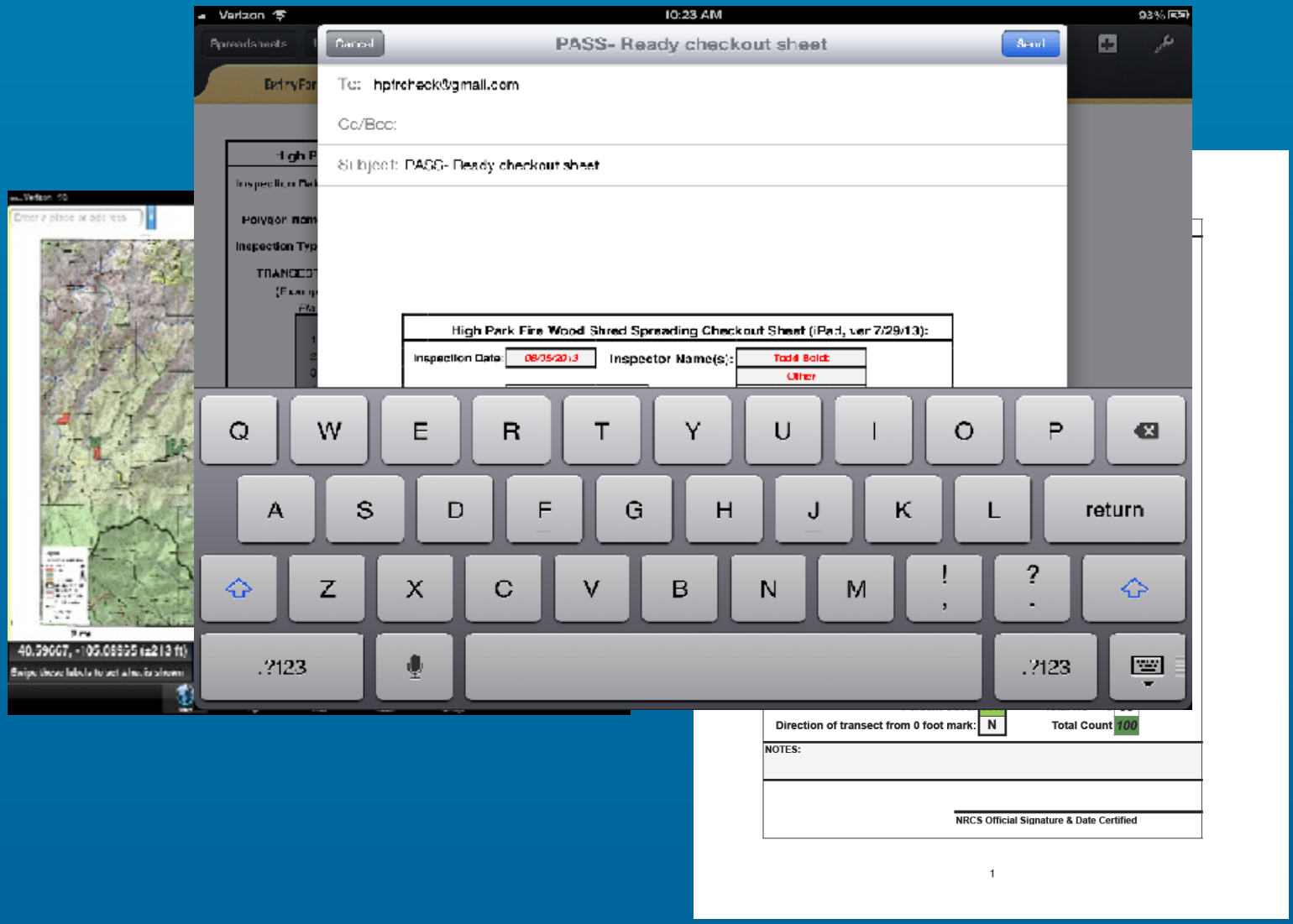
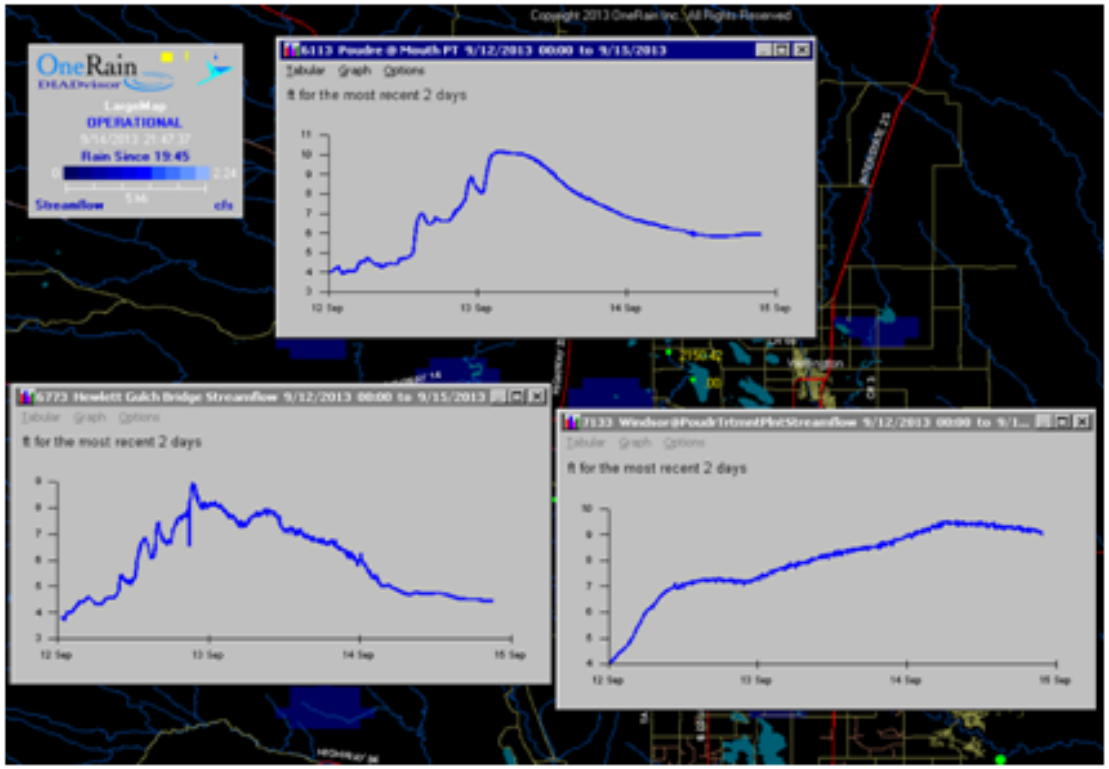

Verizon
10:23 AM
93%
Cancel
PASS- Ready checkout sheet
Send
To: hptrcheck@gmail.com
Cc/Bcc:
Subject: PASS- Ready checkout sheet
High Park Fire Wood Shred Spreading Checkout Sheet (iPad, ver 7/29/13):
Inspection Date: 08/05/2013
Inspector Name(s):
Todd Boldt
Other
Direction of transect from 0 foot mark: N
Total Count 100
NOTES:
NRCS Official Signature & Date Certified
1

Data + Pre Plans



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Field Assessment Tools via I pads

RunMobile | Damage Assessment Reporting Solution

Mobile App Speeds and Improves Damage Assessment Reporting

When disaster strikes, representatives of insurance companies and government agencies are often first on the scene to assess the damage and collect intelligence. Speed and accuracy in damage reporting are critical requiring a mobile solution for data gathering, photo and video documentation and precise geo-tagging of damage areas.

RunMobile DARS (Damage Assessment Reporting Solution) is a mobile emergency management application that enables users to collect, store and perform analytics on information collected after natural and man-made damages. The app is easily downloaded and deployed to any iOS, Android, Blackberry or Windows 8 device. The intuitive user interface features a form-driven data collection process to ensure fast, consistent and detailed damage reporting.

RunMobile DARS Enables Real-Time Access to Damage Reporting from Any Internet-Connected Device

Damage reports are uploaded in real-time to a secure database and can be viewed immediately through a browser on any internet-connected device. The RunMobile DARS dashboard shows aggregate damage assessment data across an entire region and is ideal for analysis and real-time decision making in a Command Center environment.

Let's Get Started

RunMobile DARS is available for use through an enterprise license agreement. To view a demo and discuss pricing, contact us at **info@runmobile.com** or call **678-533-5151**.

DARS AT A GLANCE

RunMobile DARS (Damage Assessment Reporting Solution) combines a mobile application for damage assessment capture with a backend database and browser-based dashboard to analyze aggregate report data.

MOBILE APP

Operates on current iOS, Android, Blackberry and Windows 8 devices.

FEATURES AND BENEFITS

- Automates and speeds damage assessment reporting
- Conforms to FEMA damage assessment template
- Utilizes wi-fi to send real-time reports; stores data to device if no signal is present
- Captures photos, videos and the geo-location of damages
- Offers dashboard view of aggregate data for Command Center analysis

RUN MOBILE
www.runmobile.com

RunMobile helps leading companies build, deploy and manage mobile software solutions to power the enterprise. We offer full-lifecycle, multi-platform mobile app development, mobile device management (MDM) and mobile strategy consulting services.

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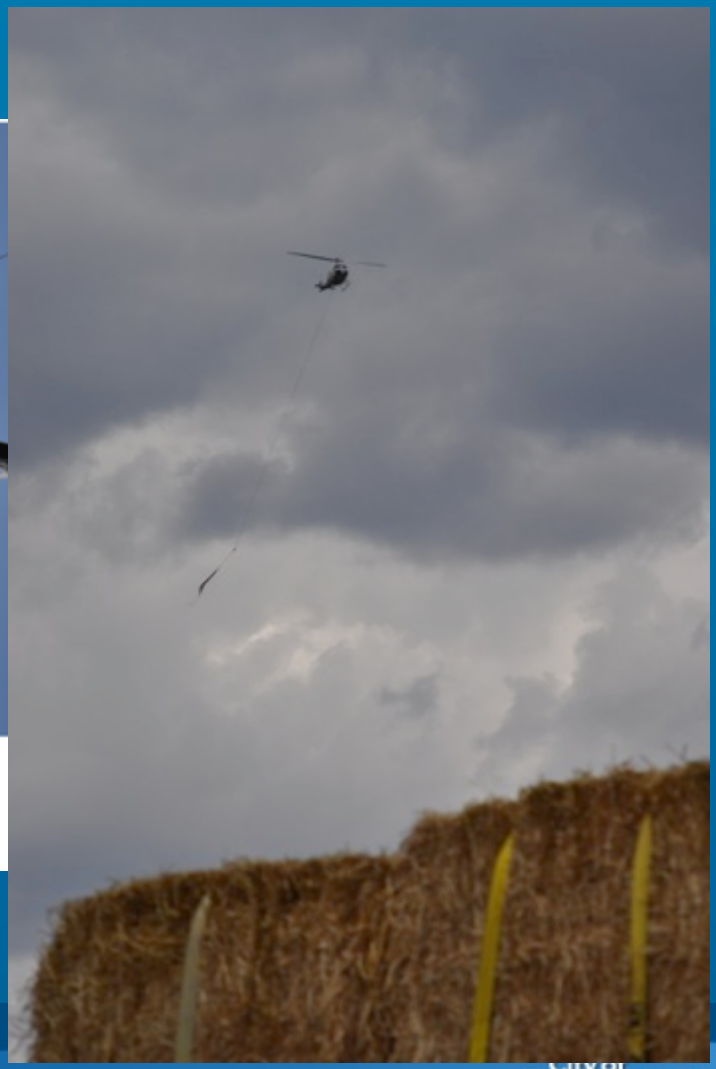
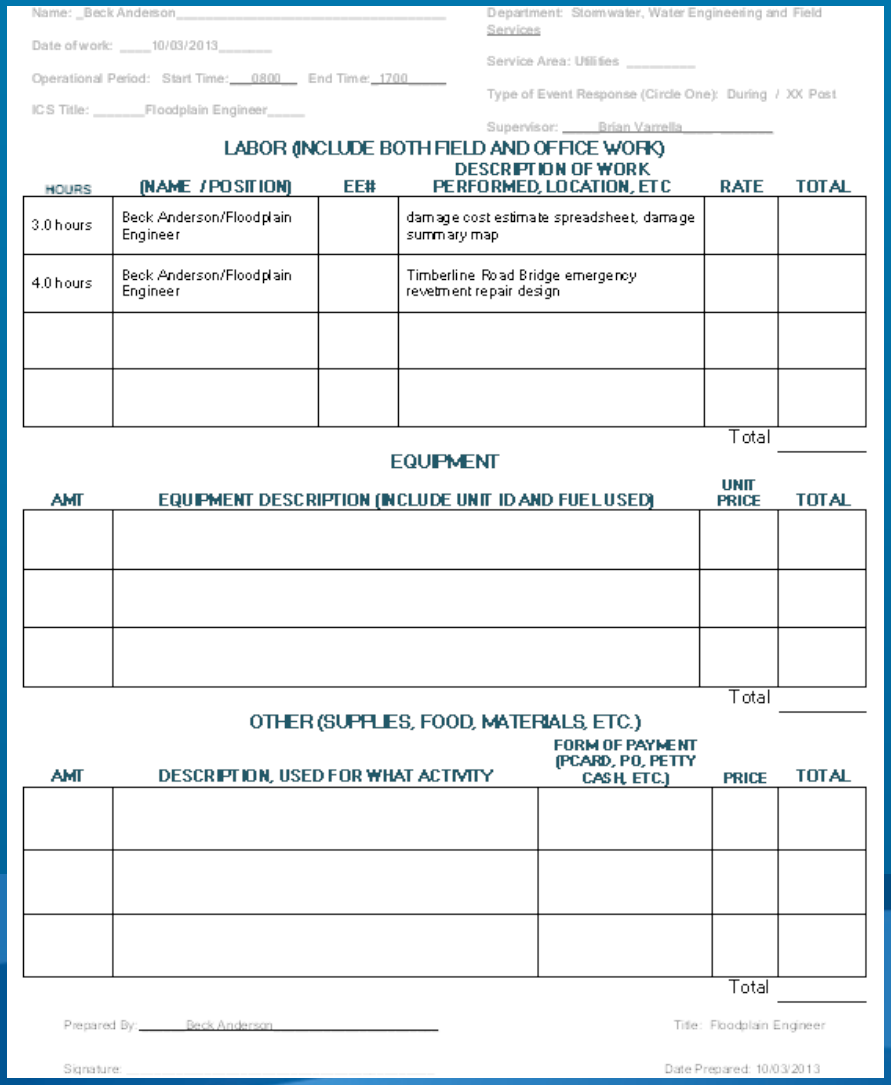
Be Flexible & Adapt Methods



Mulch Drop Hill Gulch 9-1-12 Gertig

Boyd Gulch Treatment

FEMA Cost Tracking



Name: _Beck Anderson_____ Department: Stormwater, Water Engineering and Field Services

Date of work: ____10/03/2013_____ Service Area: Utilities _____

Operational Period: Start Time:___0800___ End Time:_1700_____ Type of Event Response (Circle One): During / XX Post

ICS Title: _____Floodplain Engineer_____ Supervisor: ____Brian Varrella_____

LABOR (INCLUDE BOTH FIELD AND OFFICE WORK)

HOURS	(NAME / POSITION)	EE#	DESCRIPTION OF WORK PERFORMED, LOCATION, ETC	RATE	TOTAL
3.0 hours	Beck Anderson/Floodplain Engineer		damage cost estimate spreadsheet, damage summary map		
4.0 hours	Beck Anderson/Floodplain Engineer		Timberline Road Bridge emergency revetment repair design		

Total _____

EQUIPMENT

AMT	EQUIPMENT DESCRIPTION (INCLUDE UNIT ID AND FUEL USED)	UNIT PRICE	TOTAL

Total _____

OTHER (SUPPLIES, FOOD, MATERIALS, ETC.)

AMT	DESCRIPTION, USED FOR WHAT ACTIVITY	FORM OF PAYMENT (PCARD, PO, PETTY CASH, ETC.)	PRICE	TOTAL

Total _____

Prepared By: _____Beck Anderson_____ Title: Floodplain Engineer

Signature: _____ Date Prepared: 10/03/2013

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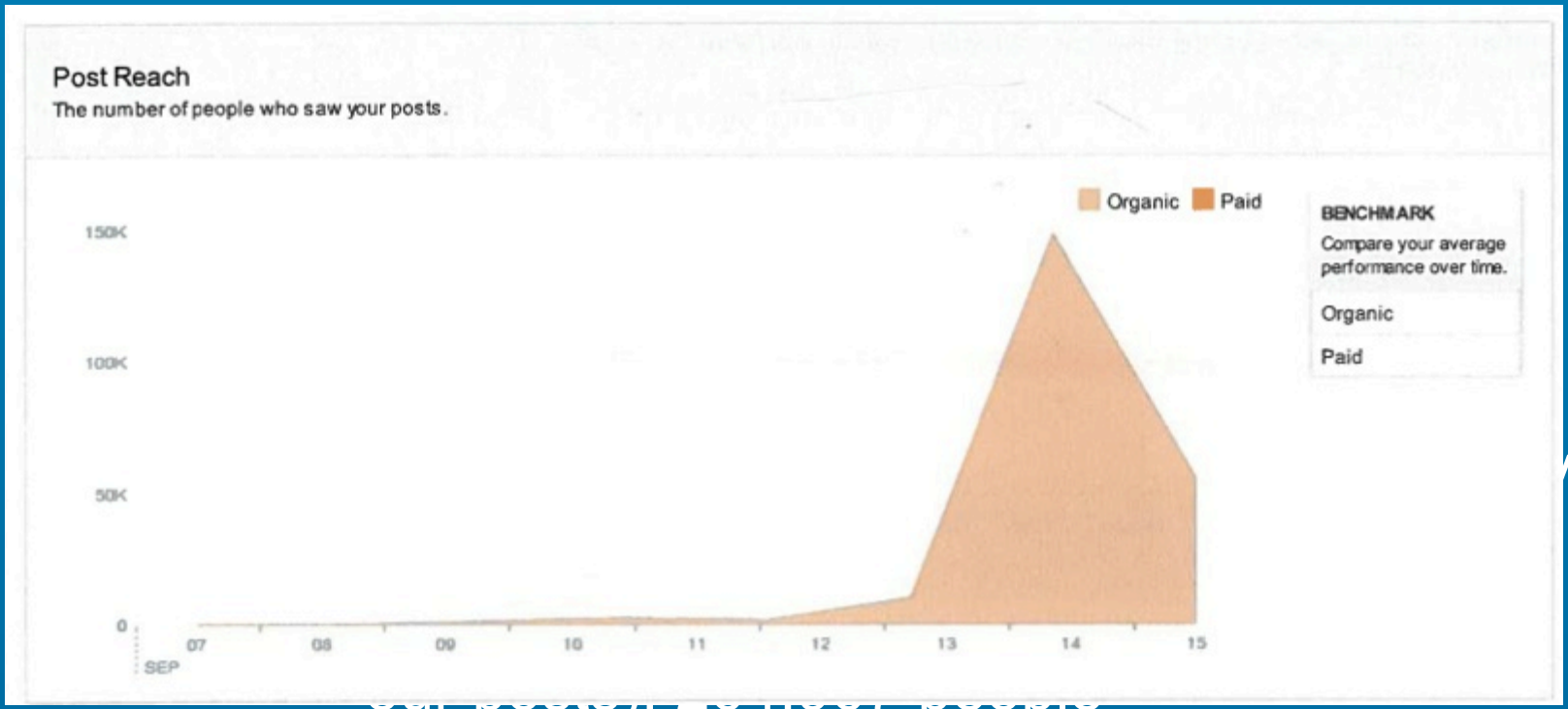

- 6,684 people that “like” our page, meaning anything we do shows up on their personal pages when they log in and scroll through their news feed
- Gained 1,875 new pages “likes”
- Directly engaged 28,470 people

Lessons Learned Financial Reporting and Tracking

- Set up documentation process during and after the fire
- Consider process for emergency appropriations – requires timely ordinance processing and legal support
- Governmental record reporting – FEMA forms
- Meeting Federal Financial and Contractual Compliance

Lessons Learned - Recovery

- Update Comprehensive Recovery Plans
- Update of FEMA/State required plans*
  - Emergency Operation Plan
  - Continuity of Operations Plan
  - Debris Management Plan
  - Damage Assessment Plan
  - Hazard Mitigation Plan

Future Challenges

- Integration of systematic approach to recovery (Use NIMS Methods)
- Understanding of community vulnerabilities – Climate Change
- Vulnerability of future fires in our watersheds

Lessons Learned

- Climate change – three different events in one year
- Plan for worst case scenarios
- Documentation requirements
- Federal documentation training gaps
- How to balance day – day operations with long term response

Cooperation / Collaboration - Ongoing

Photo – City of Greeley

Recovery is Challenging

- Resource intensive
- Often filled with emotion
- Documentation is time intensive
- Funding sources & learning FEMA classifications
- Predicting cost of service (drought, post fire, then flood)

Post Fire Events

Summary

- WaterISAC benefits all of us!
- Update Mutual aid agreements
- Communication issues
- Table Top exercises – all agencies
- Importance of After Action Reviews (AARs)

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Contact Information

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City of Fort Collins, CO
kgertig@fcgov.com

More Information on the
2013 Flood for Fort Collins:
http://www.fcgov.com/utilities/safety-and-security/2013-flood/