Greening Removals

Region 5
Emergency Response Branch

Climate Change

- EPA has many plans and tools in place
  - HQ, OSWER, Region 5 and R5 SFD
- ERB actions focus on:
  - reducing emissions
  - response to increased frequency and duration of flooding

Reducing Emissions

Green Removal Requirements

- Greener Cleanup Implementation Strategy requires:
  - GC training
  - GC language in all SFD contracts
  - GC Removal Requirements
    - Recycle consumables
    - Idle restrictions
    - Double-sided printing on recycled paper
    - Evaluate and document green activities

Green Activity Tracking

1. Complete Green BMP Planning Checklist before starting site
   - Submit to Green Coordinator

Appendix A continued Environmentally Preferred General Office Practices			
If a general category is not applicable, then check N/A for the category box, not for each subcategory.	N= Not Used	N/A= Not Applicable	Comments Section Justify in the comments when applicable BMPs are not used. Cost Analysis, when performed and applicable, is a reasonable justification.
Energy			Comments
Use of Energy Efficient Equipment			
Programmable Thermostats	X		Utilized in site trailers
CFL or LED lights on Equipment	X		CFL bulbs utilized in site light strings
Heating, Cooling, & Fans (FEMP/Energy Star)		N/A	
Computer Equipment (FEMP/Energy Star)	X		START and ERRS printers Energy Star rated
Reduce Carbon Emissions from Transportation			
Use Internet Based Meetings/Conferences	X		EPA, START, and ERRS all utilize
Maximize Carpooling/ Public Transportation	X		ERRS utilized carpooling
Use of Local Labor/Suppliers (50 mile radius)	X		ERRS utilized local equipment rental
Email Small Files (less than 8 MB)	X		EPA, START, and ERRS all utilize
Reusable Electronic Storage Media or the Cloud	X		EPA, START, and ERRS all utilize
Water			
Use of Eco Friendly Toilets and Faucets		N/A	
Waste			
Reusable/Recyclable Packaging	X		Reconditioned 55-gallon metal drums utilized for waste removal
Minimize Packaging Material	N		Must comply with DOT Shipping rules
Recycle CFL and LED lights	X		EPA, START, and ERRS all comply
Use of Local Recycling Programs	X		Site recyclables collected/dropped-off
Use of Rechargeable Batteries	X		EPA, START, and ERRS all comply
Materials			
Printing when Required			
Double-sided Printing		X	Epson 843 printer is compliant
100% post-consumer recycled paper		X	Paper is 100% PCP
Use of Bio-Based Materials			
Bio-Based Ink	N		Unavailable for site printers
Bio-Degradable Cleaning Products	X		Used for site trailers
Environmentally Preferred			
Green Procurement			
Environmentally Preferred Vendors		N/A	
Purchase Supplies in Bulk	X		PPE, drinking water, waste totes
Liquids in Concentrated Form	X		Vat cleaning product

Green Activity Tracking

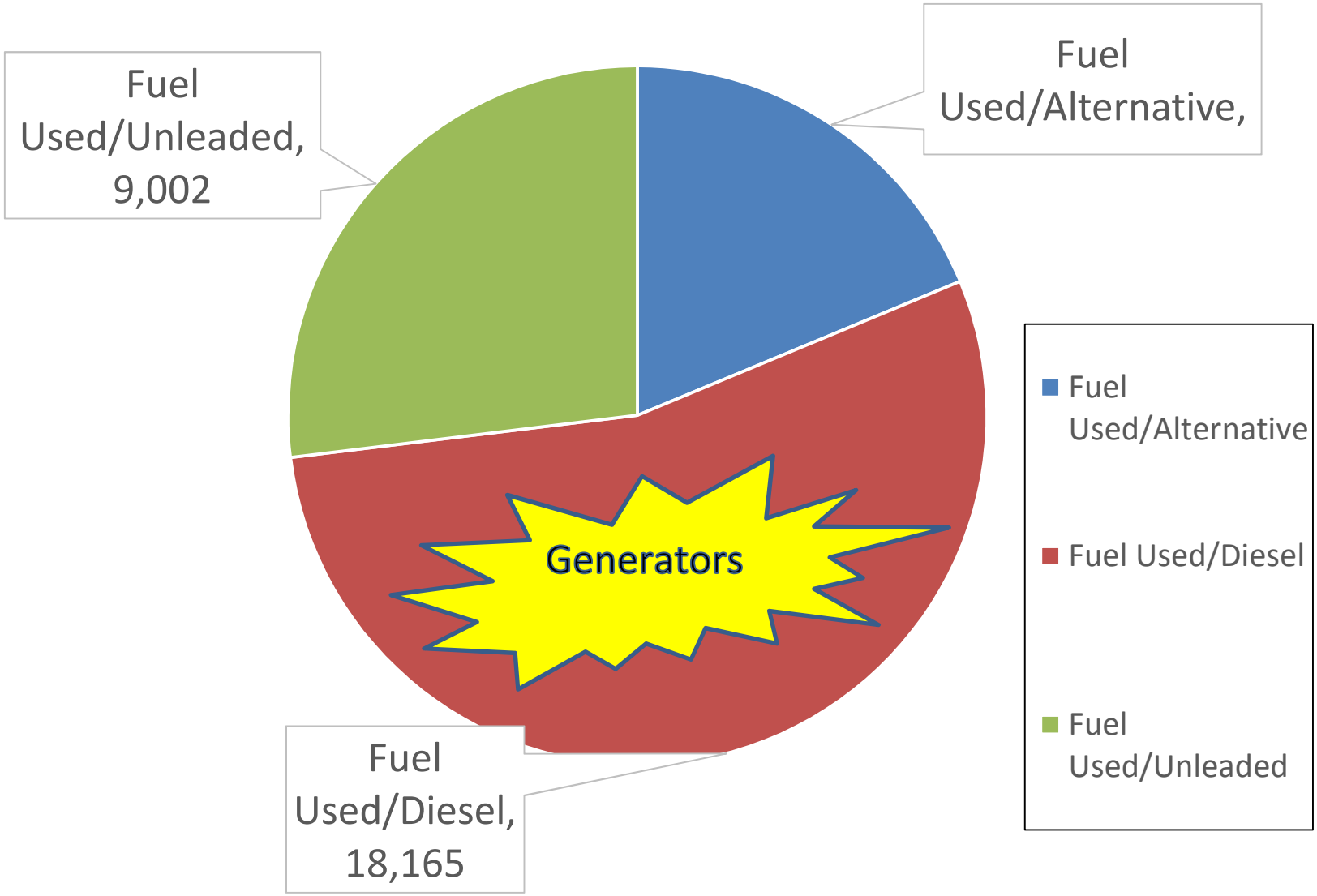
1. Complete Green BMP Planning Checklist before starting site
   - Submit to Green Coordinator

2. Track required metrics during removals
   - Include metric data in final POLREPs

Required Data Collection

Site	Metric	Amount used	Units
Greener Plating	Diesel Fuel Used		gallons
Greener Plating	Unleaded Fuel Used		gallons
Greener Plating	Alternative / E 85 Fuel Used		gallons
Greener Plating	Electricity from Electric Provider		kW
Greener Plating	Electricity from Other Sources		kW
Greener Plating	Solid waste reused		
Greener Plating	Soild waste recycled		
Greener Plating	Water Used		gallons

FY15 Metric Data-
Fuel Use at Removal Sites



Solar Powered Generator!

EPA United States Environmental Protection Agency

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Region 8

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EPA's Region 8 News and Events

Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations

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About EPA Region 8

Using the Sun to Power Environmental Cleanup at the Pennsylvania Mine

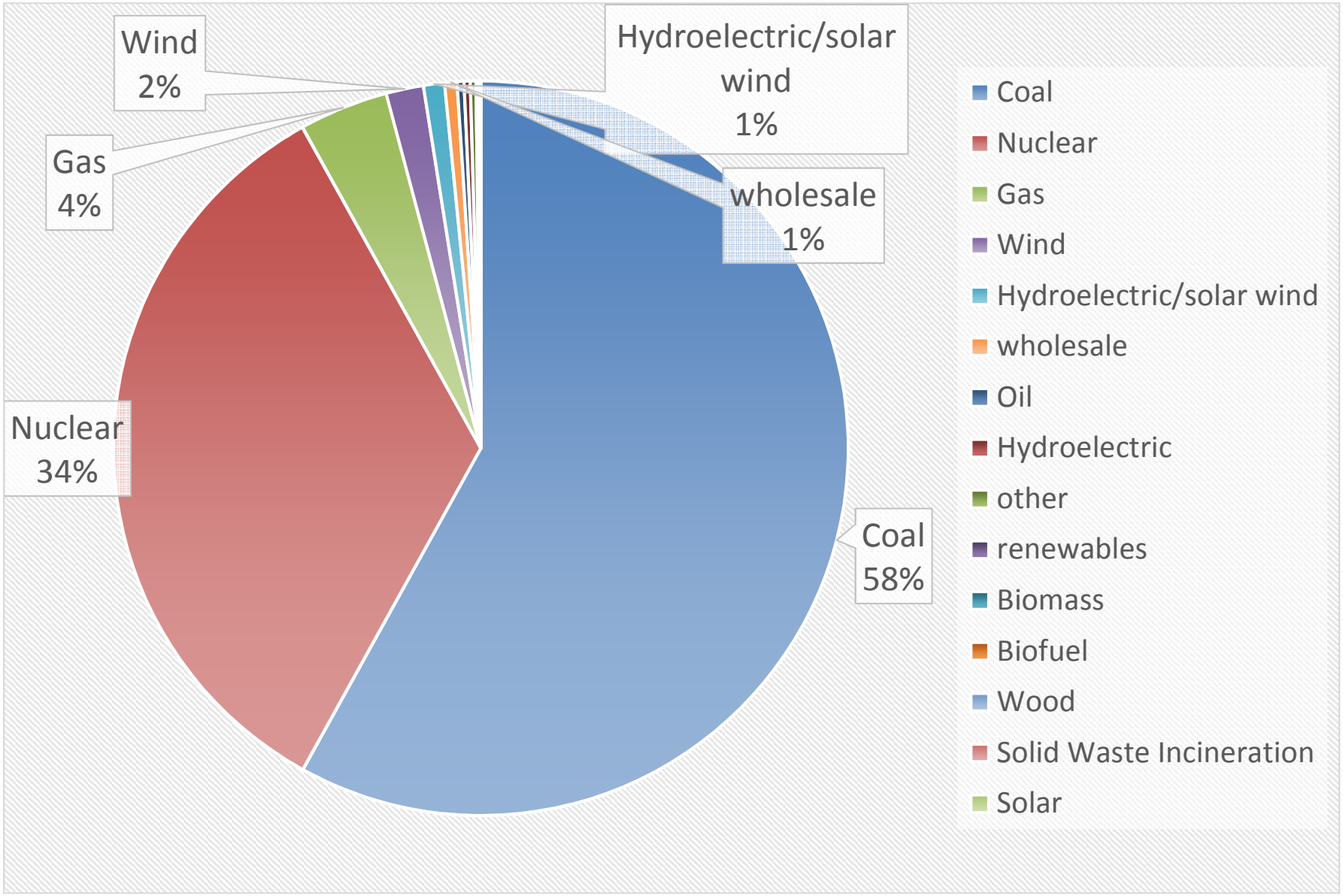
EPA is using the sun to power cleanup work at the Pennsylvania Mine above Keystone, Colorado. In an effort to reduce the amount of toxic metals flowing into Peru Creek, a tributary to the Snake River, EPA is performing work to stabilize and prevent erosion of mine waste at the mine as well as supporting the Colorado Division of Reclamation, Mining & Safety in plugging mine tunnels to decrease the flow of metals-contaminated water. Usually this type of field operation involves running a diesel generator continuously to power and recharge tools, sampling devices, communication equipment and computers. At the Penn Mine EPA is using a solar powered generator with battery backup.

More about EPA's strategy for greener cleanups »

Region 8 News Releases | Meetings and Events | EPA Jobs in Region 8

Connecting to the Grid

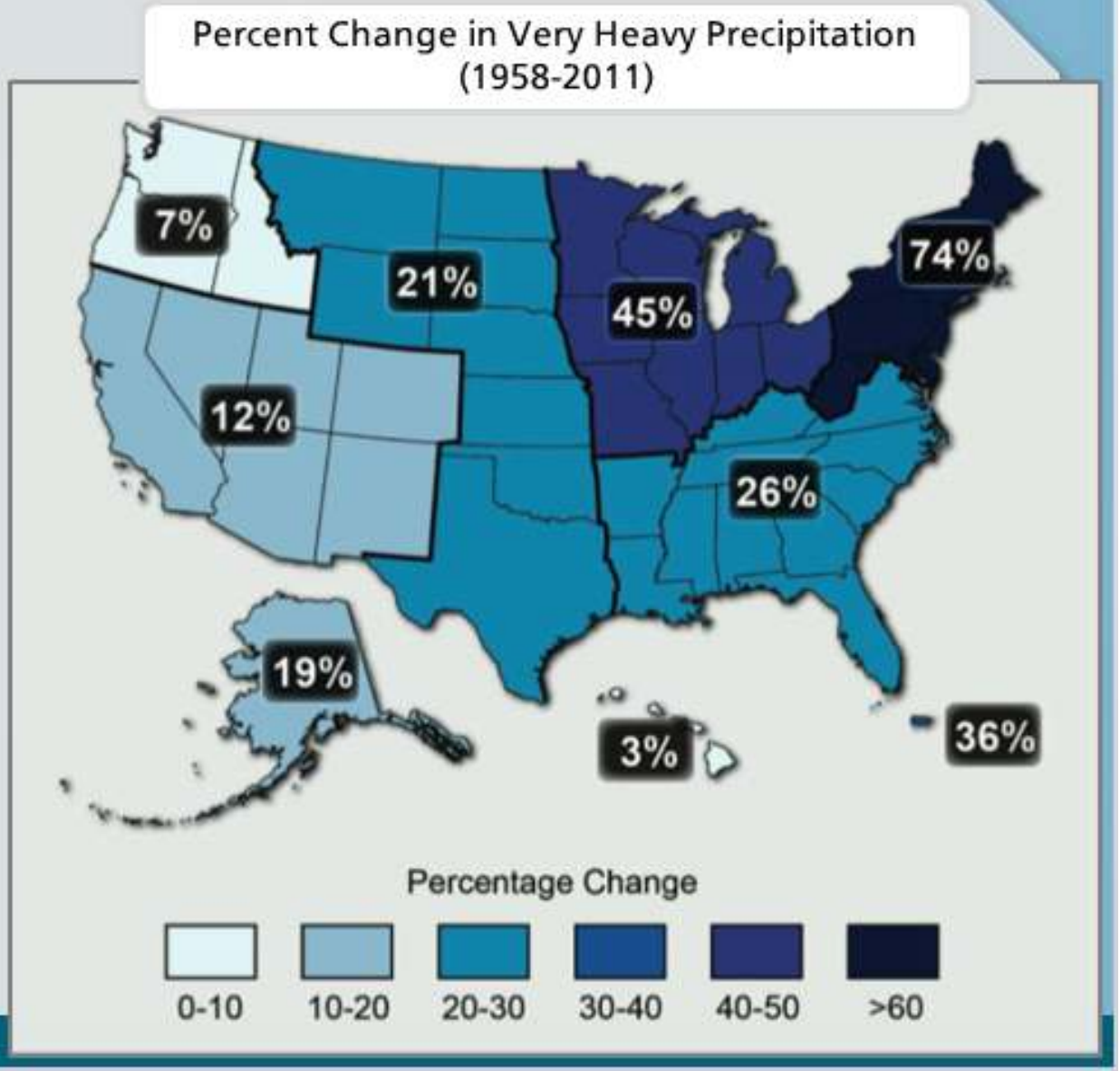
FY15 Electric Source R5 Removals




Climate Change
Preparing for Increased Frequency and Duration of Flooding
t unknown

Increases in Very Heavy Precipitation Events

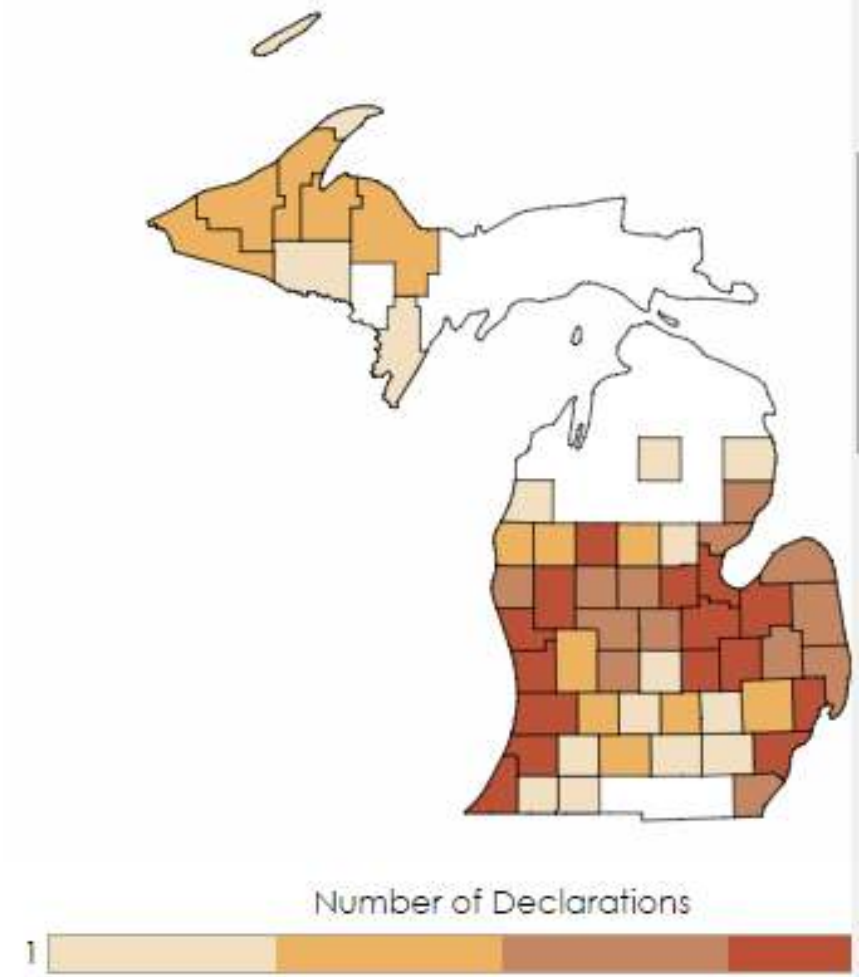
- Heavy rainfall events are expected to increase nationwide, and they're already increasing everywhere.
- The Northeast and Upper Midwest have experienced the most significant increases in extreme precipitation.



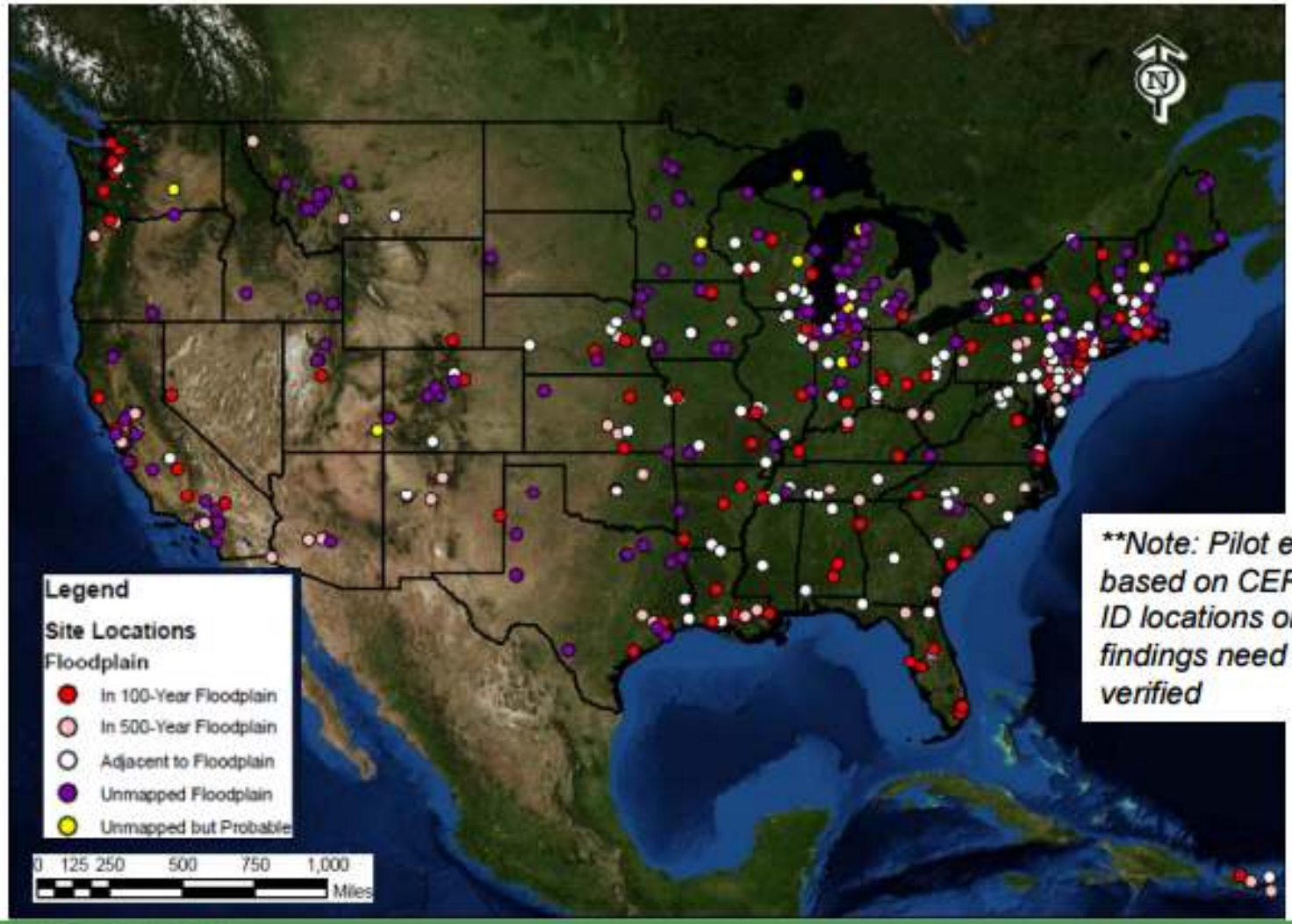
Total Declaration(s) **35**

Click on an incident type or year for more information.

Declarations by Incident Type



Plotted Superfund Sites Near or Within 10 & 500 Year Floodplains



Flood Preparedness

Goals for R5 SFD Emergency Response

- Increase program flexibility
- Assess programmatic resources/needs
- Develop/ centralize outreach materials
- Outreach
- Increase preparedness for responding under the National Disaster Recovery Framework

Flood Preparedness

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National Response Framework

Flood Response- ESF 10 Tasks

- Respond to oil and hazardous materials (hazmat) releases and threats to the environment:
  - Detect and assess
  - Prevent, mitigate, minimize
  - Contain and stabilize
  - Collect, manage, and dispose
  - Clean up/decontaminate

    environment, structures, buildings

- Develop site safety plan for oil/hazmat sites

National Response Framework

ESF 10 Tasks

- Collect/manage household hazardous waste
- Collect/manage Freon from white goods (Often via ESF 3)

National Response Framework

ESF 10 Tasks

- Debris support to USACE/states – *ESF #10 or ESF #3 subtask*
  - Air monitoring of debris operations/landfills
  - Landfill monitors to assure compliance with environmental requirements
  - Technical advice to USACE/states/locals on proper debris management/disposal
  - Review USACE/state/local debris management plans
  - Check debris piles for oil/hazmat contamination

Flood Preparedness

Goals R5 Emergency Response

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Resources Compiled

Internal Use

- Examples Documents:
  - Databases for tracking regulated facilities & contacts
  - HASPs
  - FEMA Mission Assignments
  - State Requests for Assistance
  - Hazard inventory forms
  - FEMA Flood Briefings

- Regulations
- Presentations, reports and OSC websites for past responses

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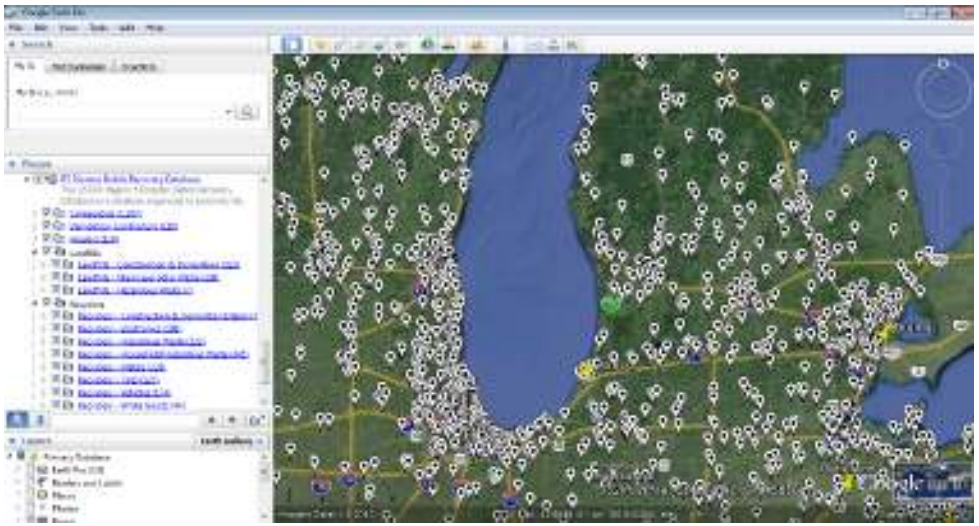
Resources Compiled/Actions Taken

Internal /External

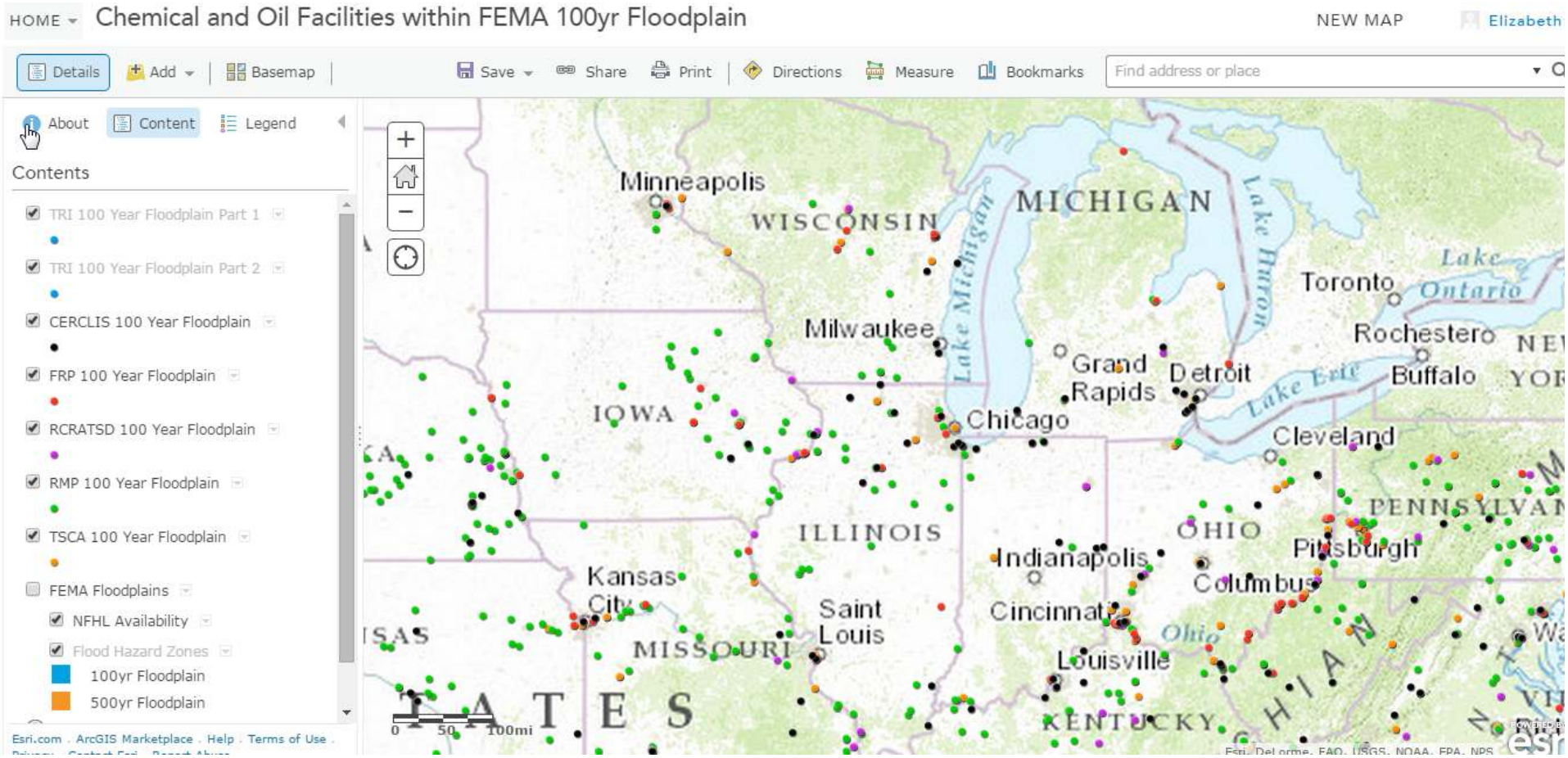
- Quarterly meetings with FEMA
- Nationwide ESF 10 Workgroup
- R5 disaster debris workgroup



@http://www.epa.gov/region5/waste/solidwaste/kmlgraphics/r5ddrd.kmz

Resources Compiled/Actions Taken

Internal /External



[Geoplatform Map location:](http://epa.maps.arcgis.com/home/webmap/viewer.html?webmap=cba75e6a3bee477dbe25aed6feba7401)

http://epa.maps.arcgis.com/home/webmap/viewer.html?webmap=cba75e6a3bee477dbe25aed6feba7401

Shapefiles @ epaosc.org/RCC

Other Available Resources

Internal /External

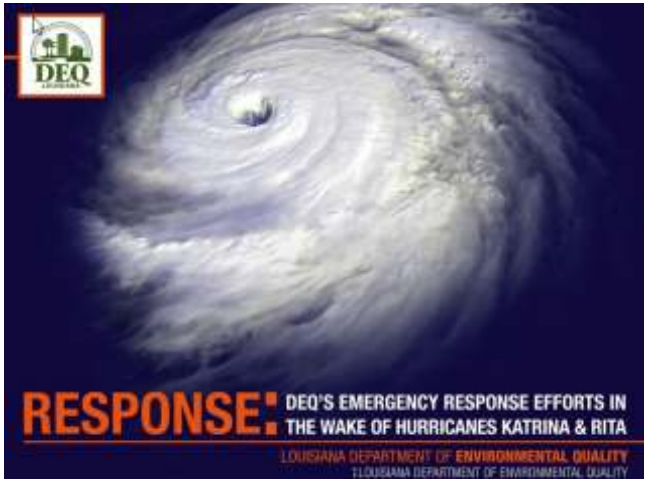
- GIS Data / Flexviewer Datasets
  - ISA (facilities, transportation)
  - State mapping projects (HSIP, CAMEO)
  - Hydroviewer (facilities, floodplain delineation)

Resources Compiled

Public/Local Agencies

Example Fact Sheets:

- Protecting children
- Cleanup (after flood, bleach, flood mud, mold, basement pumpout, HHW & HHW separation, waste disposal)
- Asbestos (and SOPs)
- Oil and oil contaminated soil
- Flooded USTs
- Debris Mgmt (example state SOP)



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Flood Preparedness

Goals R5 Emergency Response

- Increase program flexibility
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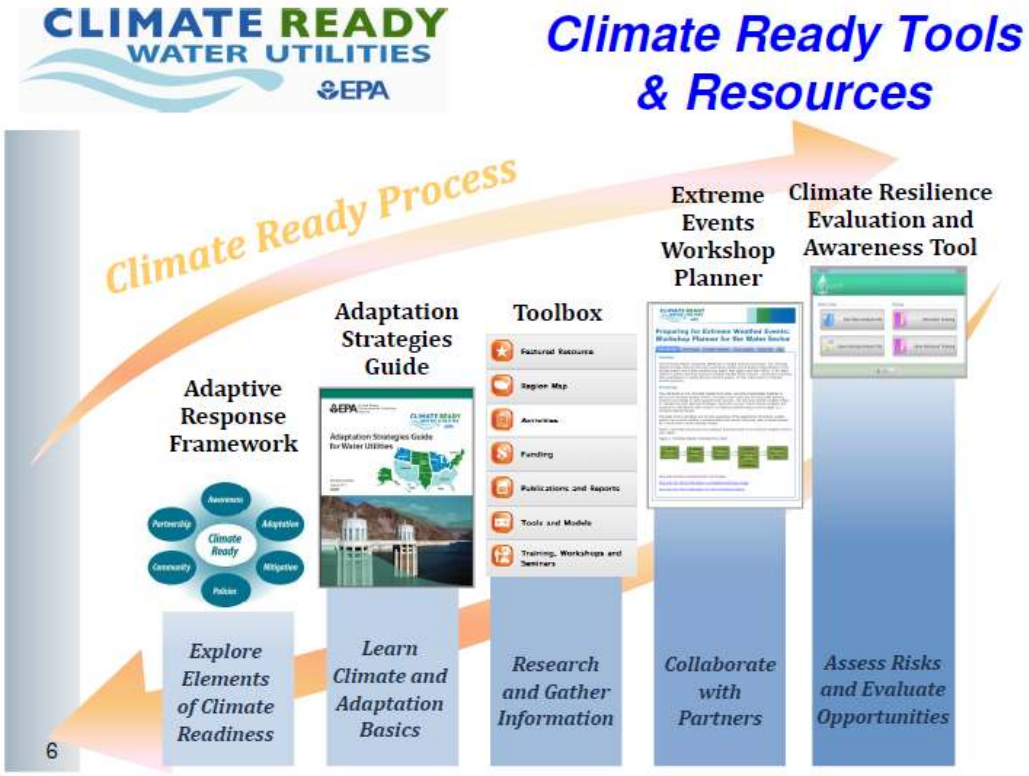
52 of 62 oil terminals in the path of Hurricane Sandy had to be entirely or partially shut down.
Flooded oil terminal in Linden, NJ

Resources Compiled

Public/Locals/Facilities

- Flood risk information
- Planning guidance

Great tools from WD



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Resources Compiled

Public/Locals/Facilities

FLOOD RESILIENCE: A Basic Guide for Water and Wastewater Utilities

EPA

Worksheet

STEP 1: Worksheet (page 1 of 2)

To better understand the threat of flooding, your utility should first examine historical flooding data and review Federal Emergency Management Agency (FEMA) *Flood Maps*. Below are instructions for evaluating the threat of flooding at your utility.

The tables below have sample data. Use the blank tables (double click icon) to input your utility's data.

1.1 Have you reviewed utility records of past flooding events? ☐ Yes ☐ No

If no, review how past flooding events have threatened your utility. Use various sources, including utility records, newspapers, websites and hazard mitigation experts, to collect previous flooding data. Enter your utility's past flooding information into Table 1.

EXAMPLE OF COMPLETED TABLE 1 – PAST FLOODING EVENTS

Event Information (e.g., Date, Name, Type*, Flood Elevation)	Description of Damage (Operational, Public Health and Economic Impacts)
April 2007, "Patriot's Day Storm," Nor'easter, 238.5 ft	Collapsed water storage tank and damage to pump stations and chemical storage. Operated on backup power generator. Boil water notice issued for several days. Financial impacts were roughly $100,000.

* *Tropical storm, hurricane, spring thaw/snowmelt, levee failure, etc.*

1.2 What potential sources of flooding could impact your utility?

☐ Swollen rivers/streams ☐ Flash floods ☐ Levee/dam failure

☐ Spring thaw ☐ Coastal flooding ☐ Non-natural causes (e.g., main breaks)

1.3 Have you obtained FEMA Flood Maps? ☐ Yes ☐ No

If no, go to the Map Service Center to find FEMA *Flood Maps*, categorized by community. *Flood Maps* show areas that will be affected by both 100-year and 500-year floods. A "100-year flood" is a flood event that has a one percent chance of occurring in a given year. A "500-year flood" is a flood event that has a two tenths percent chance of occurring in a given year. Click on the icon to learn more about interpreting a *Flood Map*. If your *Flood Map* is not up to date, talk with your local community planning department or floodplain manager.

Guide to Interpreting FEMA Flood Maps

1.4 Identify which floodplains your utility systems are located within.

Locate your utility systems, such as intake, treatment, distribution, storage tank and pump stations, on your community's *Flood Map* to determine which floodplains they are located within. Summarize your findings in Table 2.

- Flood Resilience Guide
- Excellent risk assessment and planning tool

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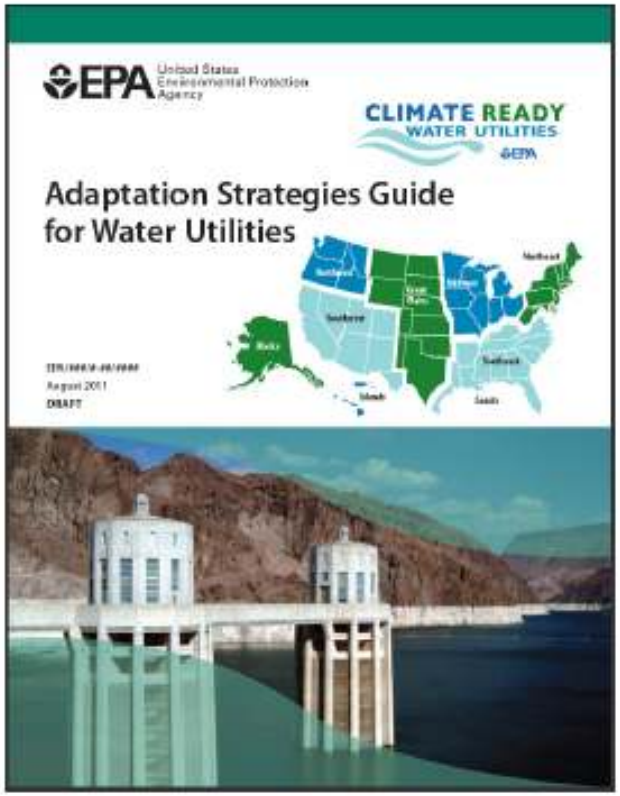
Resources Compiled

Public/Locals/Facilities

CLIMATE READY WATER UTILITIES
EPA

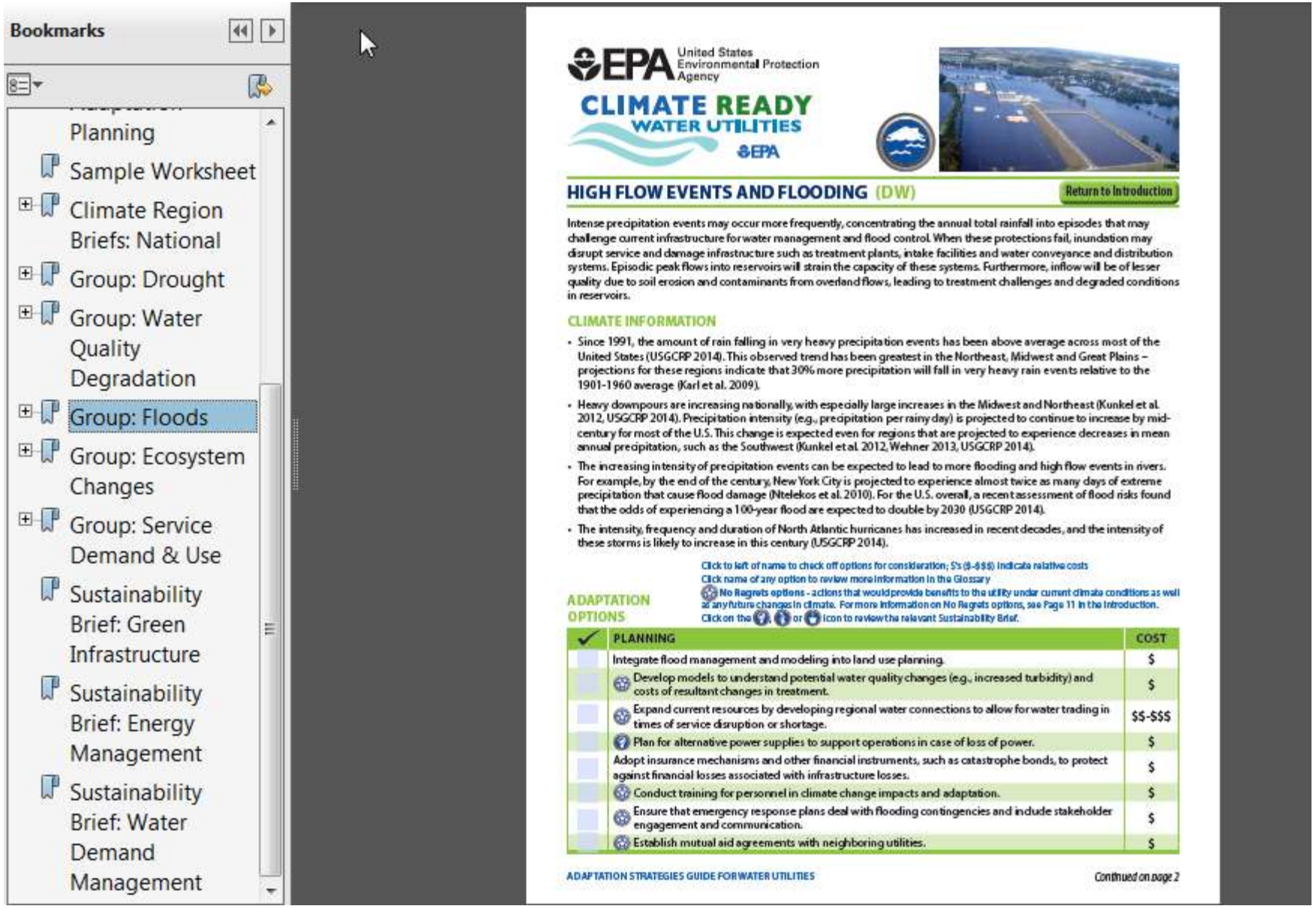
Overview

- Guide for drinking water and wastewater utilities that have not begun to consider climate change in utility planning
- Navigate guide like a website
- Goals:
  - Present easy-to-understand climate science
  - Translate science into impacts to utilities
  - List adaptation strategies related to impacts
  - Assist in the adaptation planning process



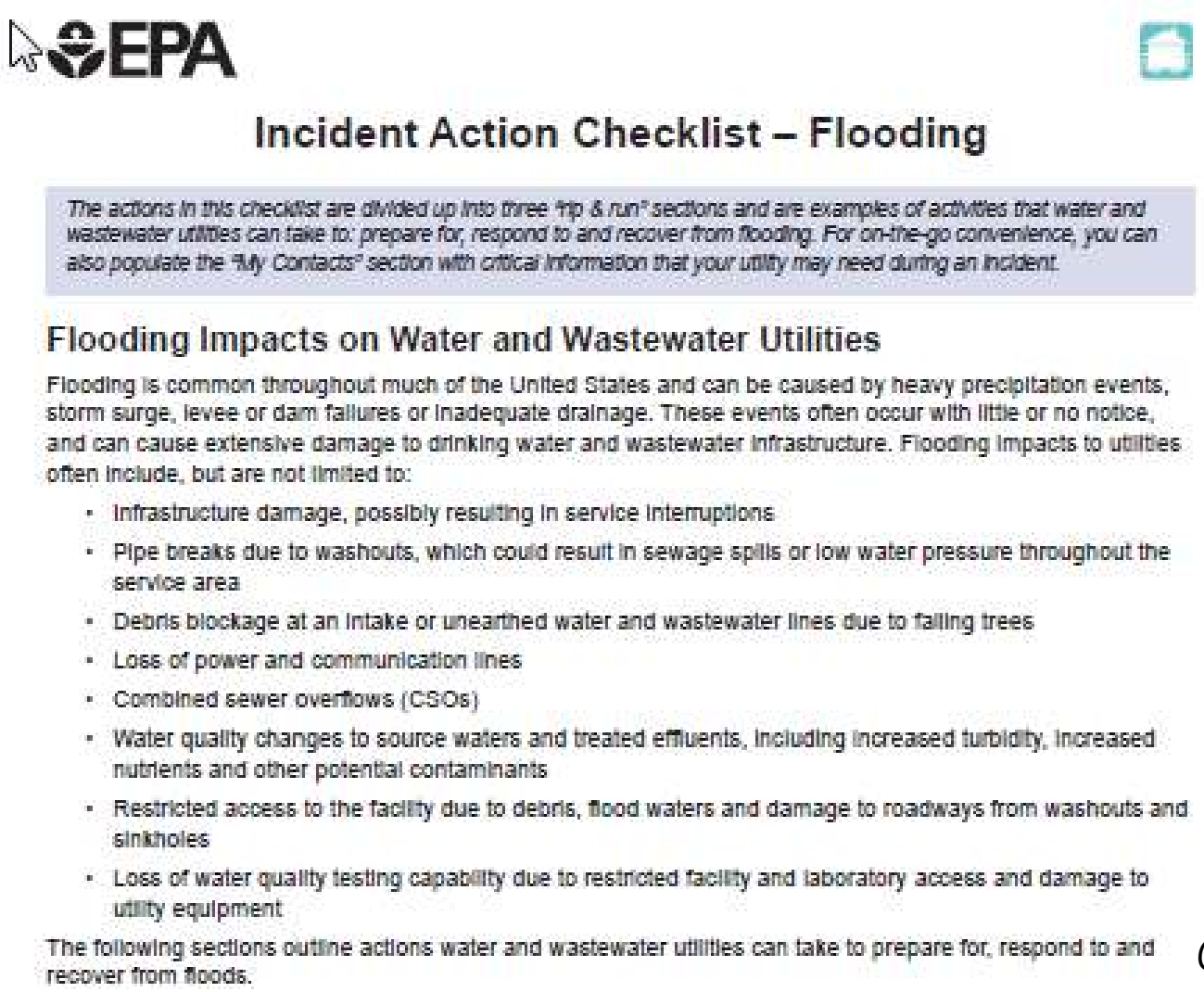
Resources Compiled

Public/Locals/Facilities



Resources Compiled

Public/Locals/Facilities



EPA

Incident Action Checklist – Flooding

The actions in this checklist are divided up into three "rip & run" sections and are examples of activities that water and wastewater utilities can take to: prepare for, respond to and recover from flooding. For on-the-go convenience, you can also populate the "My Contacts" section with critical information that your utility may need during an incident.

Flooding Impacts on Water and Wastewater Utilities

Flooding is common throughout much of the United States and can be caused by heavy precipitation events, storm surge, levee or dam failures or inadequate drainage. These events often occur with little or no notice, and can cause extensive damage to drinking water and wastewater infrastructure. Flooding impacts to utilities often include, but are not limited to:

- Infrastructure damage, possibly resulting in service interruptions
- Pipe breaks due to washouts, which could result in sewage spills or low water pressure throughout the service area
- Debris blockage at an intake or unearthed water and wastewater lines due to falling trees
- Loss of power and communication lines
- Combined sewer overflows (CSOs)
- Water quality changes to source waters and treated effluents, including increased turbidity, increased nutrients and other potential contaminants
- Restricted access to the facility due to debris, flood waters and damage to roadways from washouts and sinkholes
- Loss of water quality testing capability due to restricted facility and laboratory access and damage to utility equipment

The following sections outline actions water and wastewater utilities can take to prepare for, respond to and recover from floods.

- Flood is Predicted
- By stage
- Planning
- Coordination
- Communication
- Personnel
- Power, energy, fuel subsections

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Flood Preparedness

Goals R5 Emergency Response

- Increase program flexibility
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Additional Outreach Ideas/Next Steps

Public/Locals/Facilities

- Define high priority geographic focus areas – outreach to state/local EMAs
- Direct outreach to FRP facilities at highest risk
- Outreach to planning areas
- Continue internal planning
  - actions to take in advance of floods
  - additional staff, training, equipment and communication channels needed
  - remediation technique changes that may be needed
  - Continue to review lessons learned
- Continue coordination with other agencies
- Continue core mission training

Flood Preparedness

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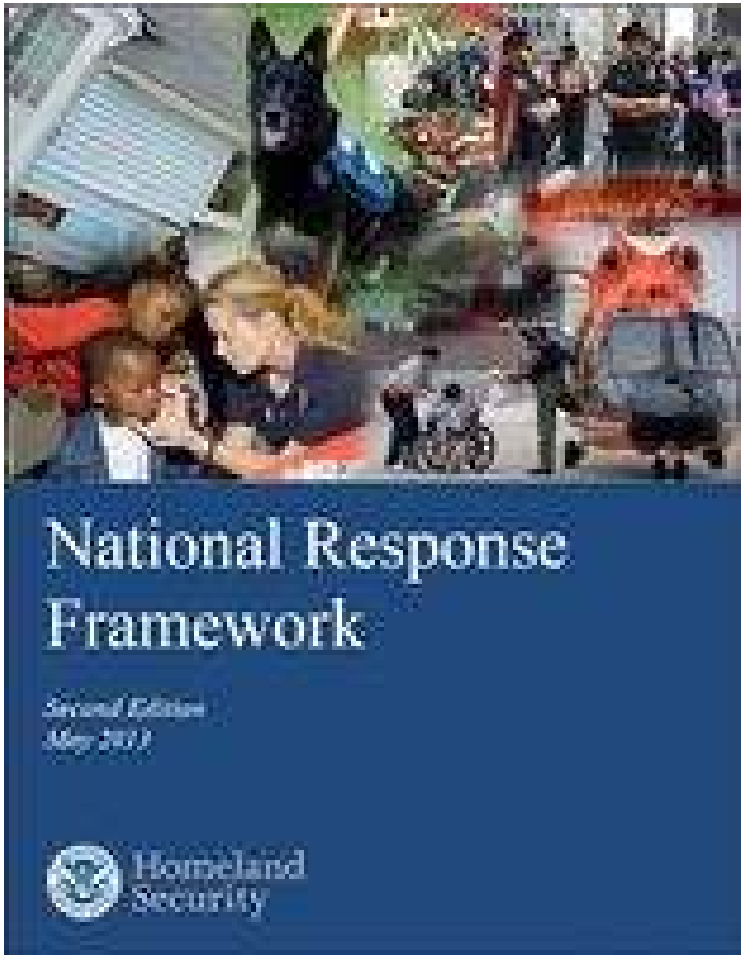


Figure 1: Organization of the NRF

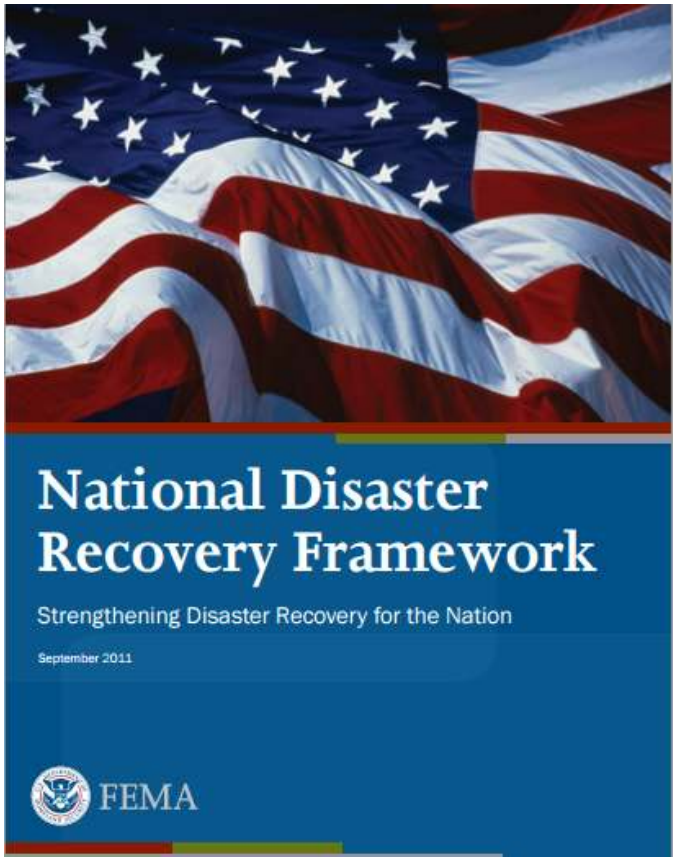
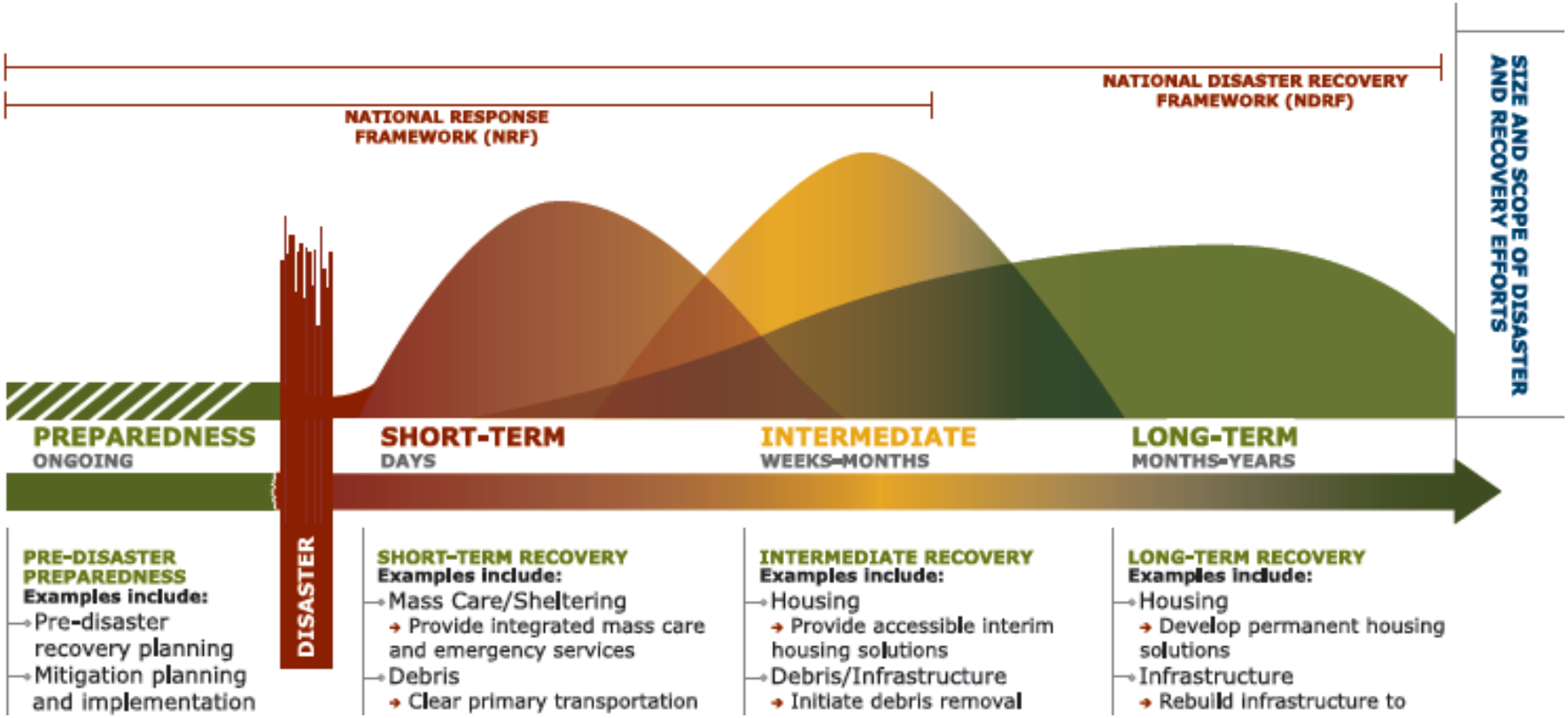


FIGURE 1. RECOVERY CONTINUUM – DESCRIPTION OF ACTIVITIES BY PHASE



NDRF

EPA's Roles in Recovery

Draft EPA NDRF Organizational Chart

Recovery Support Function Leaders Group

Lead for EPA HQ
OHS, John Ferris
OCFO, Hamilton Humes

- Community Planning FEMA
  - Lead for EPA HQ
    Office of Policy
    Contact: Cathy Allen
    Office of Sustainable Communities
- Housing HUD
  - Chris Choi
    Becky Geyer
    Jon Grosshans
- Infra-structure USACE
  - Lead for EPA HQ
    Office of Water
    Contact: David Goldbloom Helzner
- Health HHS
  - Lead For EPA HQ
    Sharon White
    OHS
  - Bev Kush
    Mike Ribordy
- Natural Resources DOI
  - Lead for EPA HQ
    TBD
- Economic Recovery DOC
  - Lead for EPA HQ
    OSWER
    Charlie Bartsch

NDRF

EPA's Roles in Recovery

- not a COORDINATING Agency for any of the functions
- EPA is a PRIMARY Agency for 2 Functions
  - Health/Social Services
  - Natural and Cultural Resources
- EPA is a SUPPORTING Organization for the other four
- EPA provides assistance when requested by the Coordinating Agency, consistent with their own authorities and resources, or as directed by FEMA.

Flood Preparedness

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Betsy Nightingale

734-770-8402

Nightingale.Elizabeth@epa.gov