

Interagency 'Silver Jackets' State Teams: Life-Cycle Flood Risk Management

Presented by:

Jennifer Dunn, MS, CFM

National Silver Jackets Program Manager, USACE IWR

Jason F. Miller, P.E.

Chief, Flood Plain Management Services Branch &

Silver Jackets Program Manager

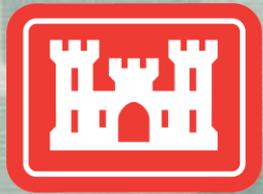
USACE, Philadelphia District

Brandon Brummett, P.E., PMP

Outreach Coordinator &

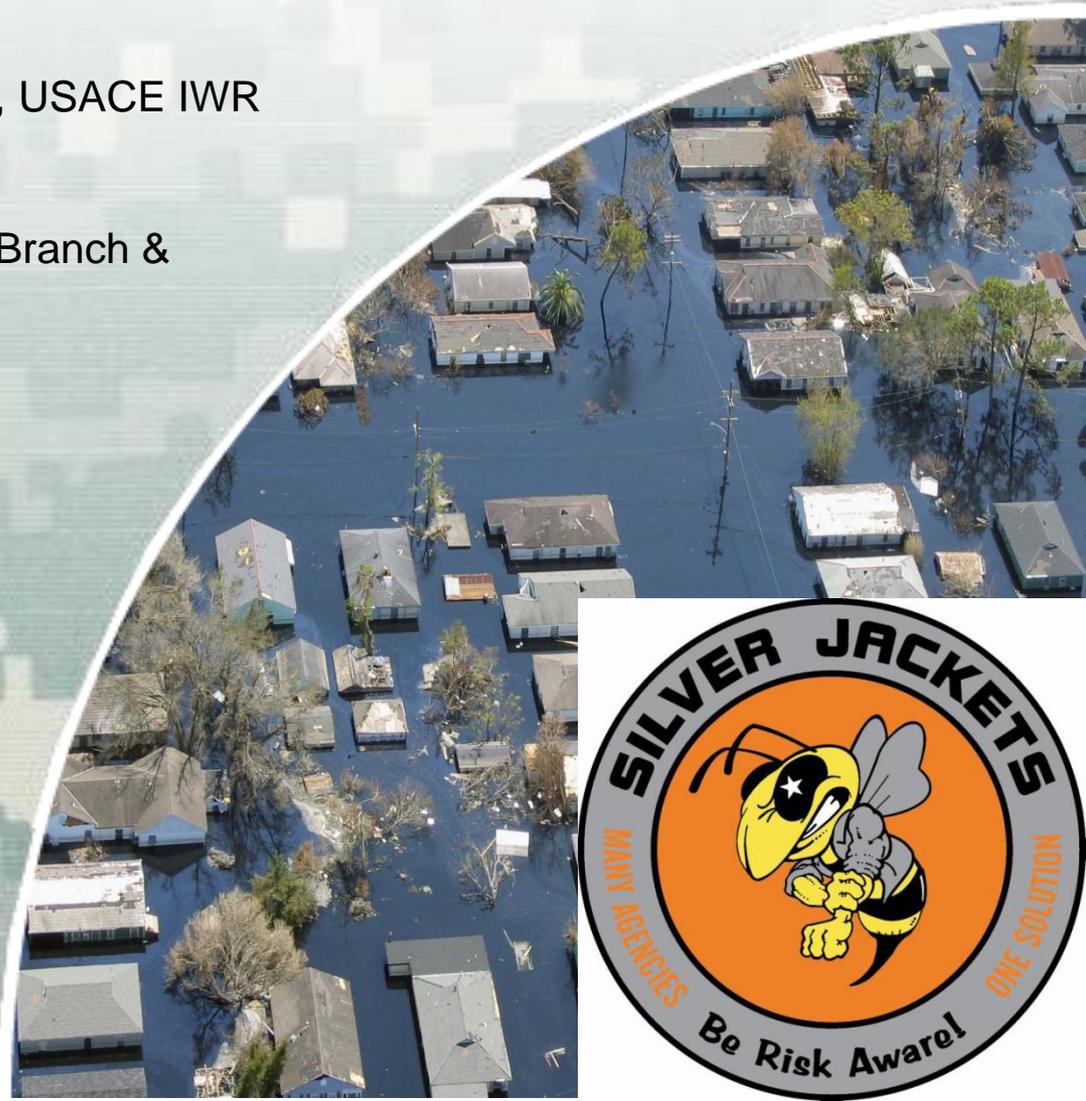
Silver Jackets Coordinator,

USACE Louisville District



May 8, 2013

EM Forum.org Webinar



Life-Cycle Flood Risk Management

“Getting Ready”

Actions taken **BEFORE** the event, including planning, training, and preparations

Flood Risk Management system assessment / inspections

Monitoring / forecasting threats

State and Local Coordination

Reservoir operations

Flood Fight Preparation

“Driving Down the Risks”

Activities that **PREVENT** a disaster, reduce its chance of happening, or reduce its damaging effects.

Modify mitigation plans

Identify future mitigation opportunities

Develop system improvements



“The Flood Fight”

Actions taken **DURING** the initial impact of a disaster, including those to save lives and prevent further property damage

Emergency system strengthening

Monitor and report flood impact

Monitor system performance

Support State / Local FF

“Getting back on our feet”

Actions taken **AFTER** the initial impact, including those directed toward a return to normalcy.

Repair damaged systems

Assess and document system performance

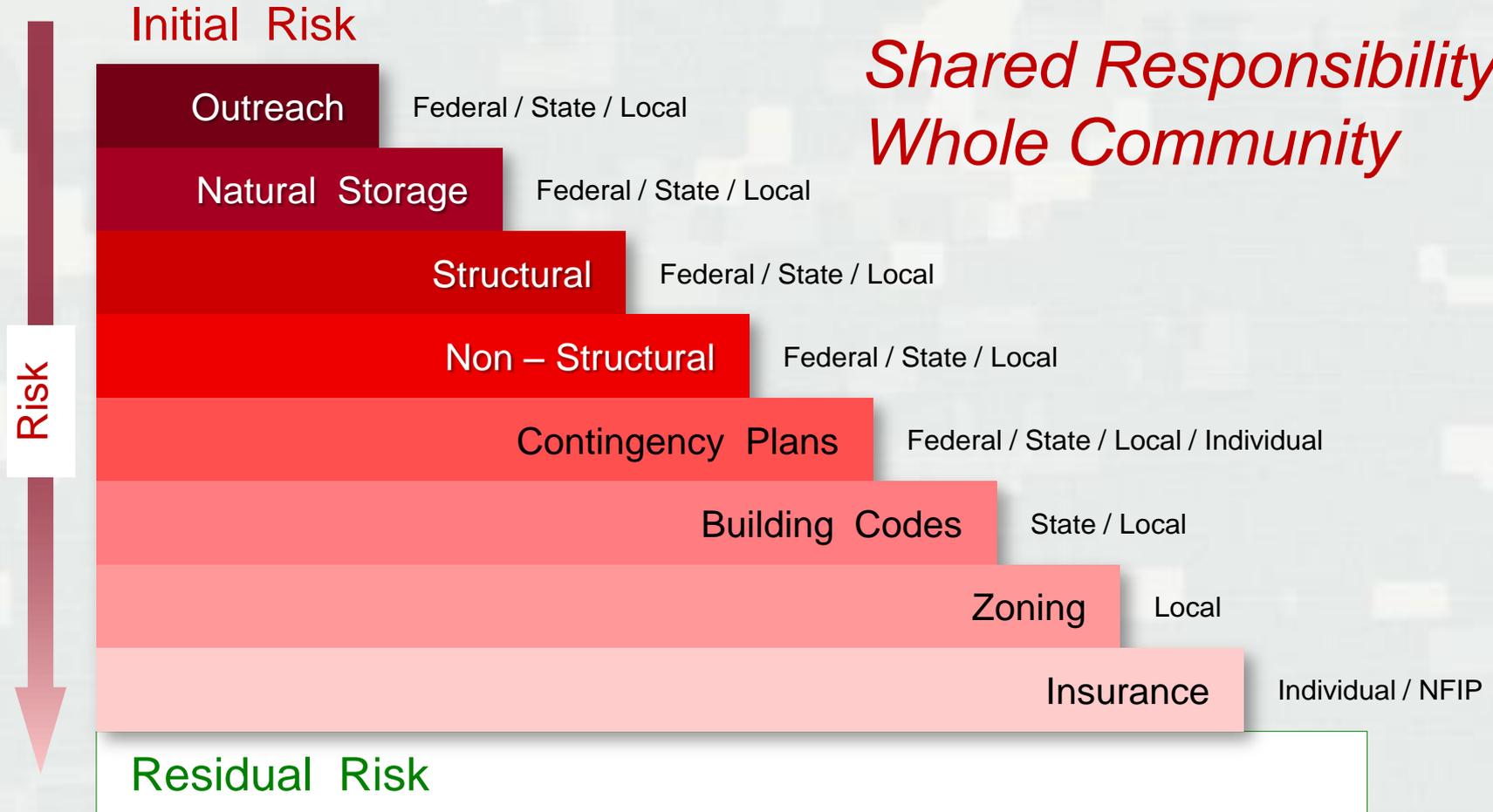
Implement mitigation measures / system improvements



Shared Disaster Risk Management

“ Driving Down the Risks with an Informed and Engaged Public “

*Shared Responsibility,
Whole Community*



All Stakeholders contribute to reducing risk !



Silver Jackets Principles

“Operationalizing” Inter-Agency Flood Risk Management

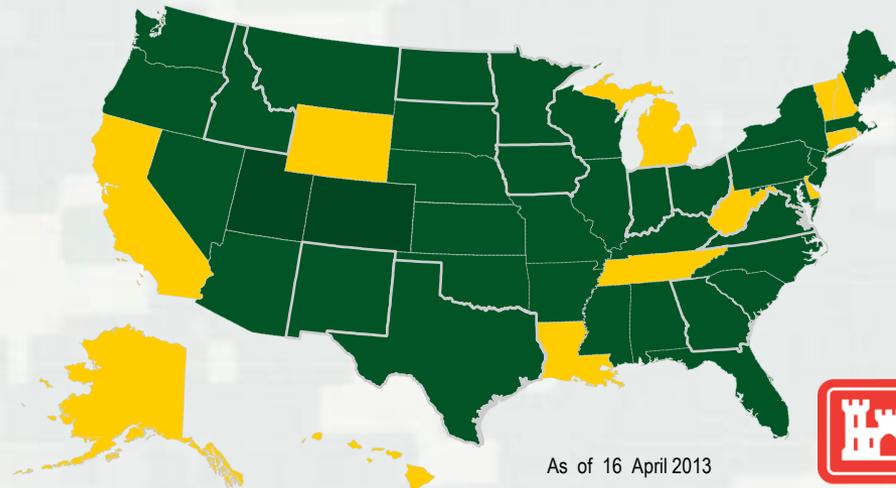
Partners

- State-Led (Voice of our ~~Customers~~)
 - States set priorities for Interagency Federal support
 - States can invite partners Feds cannot
- Interagency Method of Delivery (MOD)
 - Collaboration across agencies / levels of government
 - Leverage resources: talent, data, funding
- Continuous, not project-specific
- Life-Cycle Risk Management
- Watershed Perspective
 - State teams facilitate regional, state-to-state flood risk management



37 Active Intergovernmental FRM Team (Silver Jackets)

13 Ongoing Effort to Develop Team



As of 16 April 2013



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What Do Silver Jackets Teams Do?

Activities are as Diverse as the States

- Interagency focus on state priorities (problem-solving collaboration + SME support)
- Improve overall risk communication (joint messaging)
- Promote comprehensive flood risk mgmt strategies and policies (shared strategies)
- Share information (reduce duplication, fill data gaps)
- Inundation mapping, real-time inundation mapping, and inundation forecast mapping with USGS and NWS
- Inter-state basin coordination (state-to-state and regional task forces)
- Risk MAP support (Discovery and implementation)
- Gage installation
- Coastal and Estuarine Erosion – impacts on risk
- Storm Surge Modeling
- State Hazard Mitigation Plan (team assistance in updating)
- HAZUS data updates
- High Water Mark, HWM training for communities



What do Silver Jackets Teams Do?

Activities are Funded by Various Agency Programs

- *Post-Disaster Mitigation Planning*
- *Recovery (Lee/Irene HMGP and ESF; exploring RSF)*
- *NDRF IS RSF Coordination*
- *Levee Assessment*
- *Joint Levee communication*
- *Interagency Development of IRRMs for High Risk Levees*
- *Coordinating Levee Safety Programs*
- *Developing FIRMs for unmapped counties, releasing DFIRMs and results of FEMA Coastal Study*
- *Specific actions in SHMP: ex. Buy-outs*
- *Table Top Exercises*
- *Flood Warning*
- *Produce/Update EAPs for dams state-wide*
- *Emergency Warning Systems*
- *Gage data consolidation*
- *ID public works structures at risk, encourage mitigation*
- *CRS education and implementation*
- *ID & implement Nonstructural*
- *Community & Public Nonstructural workshops*
- *Watershed assessments and comprehensive planning*
- *FRM training and education at all levels*



Silver Jackets **Interagency Projects**

Pilots Demonstrate Benefits of Interagency Approach

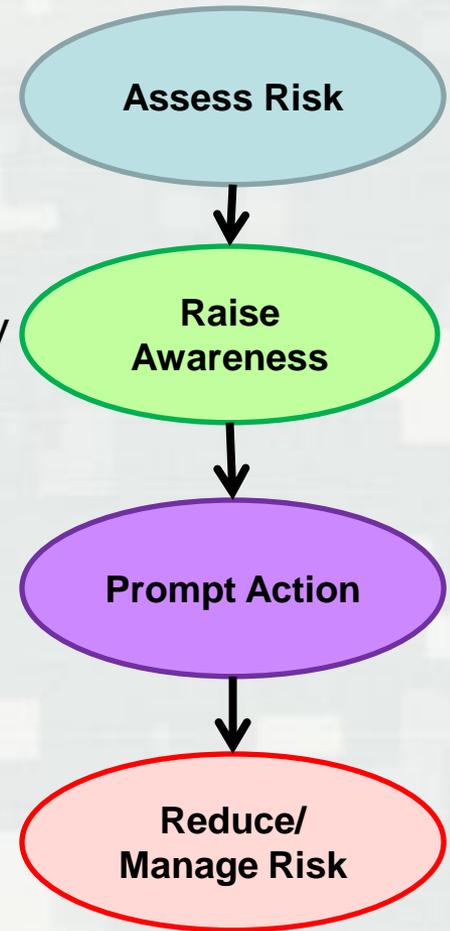
- Use existing authorities
- Leverage resources among Fed, State, Local, Tribal
- Evaluate Outcomes, Tell the story effectively, quantitatively *and* qualitatively

Thirty-three (33) Ongoing Interagency Pilot Projects

- Silver Jackets teams leveraging roughly \$1.9 for each \$1
- Twenty-four (24) States completing projects
- USACE investment in SJ interagency projects = \$2.8M

Ongoing Call for NS and LS Proposals

- 61 NS proposals received
- Anticipate increased demand for LS Communication



SJ Pilot Project Example: PA

- Pilot Project: Harrisburg Flood Inundation Mapping Tool**
 Silver Jackets Team development of library of inundation maps tied to an existing stream gage to inform the general public, local officials, and emergency managers of flood risks.
- Outcomes:** Critical, timely depth of flooding on the web will allow local officials, emergency managers, and the general public to make informed decisions. **Local officials are committed to using maps to help make decisions; used to revise EAPs** (City of Harrisburg requested draft maps during Hurricane Sandy before they were available on-line.)
- Budget / Leveraging:** **Proposal funded \$105k**; leveraged against additional monetary and in-kind investments provided by others

Agency	Investment
USACE	\$105K – develop hydraulic model, flood inundation layers, depth grid, report
USGS/THA	\$25K plus \$25K match – data collection, hydrologic data development, collaboration on model development
SRBC	\$30K In-kind – outreach/education (lead role), collaboration on data collection and model development
NWS	\$30K In-kind – outreach/education (lead role)
FEMA	\$10K In-kind – participate in outreach/education
PEMA	\$10K In-kind – participate in outreach/education



SJ Pilot Project Example: Maine

- **Project Summary**

- Maine SHMP: “the greatest amount of damage from flooding events occurs to the roadway system, both state and municipal roads, bridges, culverts and ditches”; **replacing priority undersized culverts before floods occur avoids significant impacts.**
- Project supported ongoing multi-agency program to complete hydraulic failure analysis for more than 600 stream crossing structures.
- Hydraulic analysis identifies the expected capacity of each structure for various extreme weather events, providing 21 communities with the information required to prioritize culvert and bridge replacements.

- **Leveraging**

- **\$40k USACE investment** leveraged \$80.8k from Maine agencies and the U.S. Department of Fish and Wildlife Service.

- **Outcomes**

- **Community officials were eager to obtain and make use of the data.**
- **Data integrated into FEMA RiskMAP “other points of mitigation interest.”**



Indiana Silver Jackets

Brandon Brummett, P.E., PMP

**Outreach Coordinator, US Army Corps of Engineers
Louisville District**

Manuela Johnson

Indiana Department of Homeland Security

08 May 2013



Indiana Silver Jackets

- Indiana SJ established in 2006

- Federal Membership

USACE

USGS

NOAA/NWS

NRCS/USDA

FEMA

EPA

HUD

- Non-Federal Membership

IDHS

IDNR

IDEM

INDOT

IU

Purdue

IUPUI /Polis

INASF

Indiana National Guard

Maumee River Basin Commission



Past Successes

- Response to May/June Flood 2008 Disasters
 - ▶ The Indiana Silver Jackets group assumed the role of the Interagency Levee Task Force in Indiana.
 - ▶ Sharing time critical information was one of the biggest efforts. Members of the Silver Jackets community had POC's in the other agencies that they could reach quickly for response.
 - ▶ Coordination of post flood responses by the agencies in Silver Jackets has been significantly sped up and streamlined by their cooperative efforts.

- Coloring & Activity Books



**"STAY AFLOAT"
FLOOD AWARENESS CAMPAIGN
CHILDREN'S ACTIVITY BOOK**

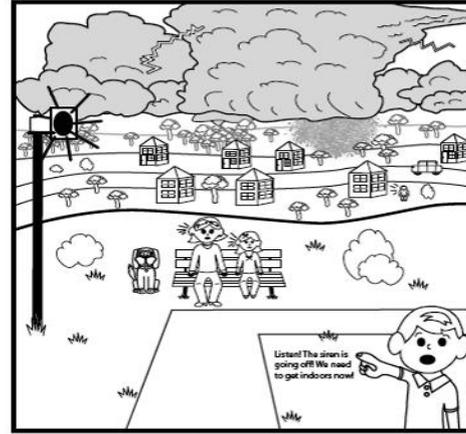


INDIANA DEPARTMENT
OF HOMELAND SECURITY

**SEVERE WEATHER
AWARENESS CAMPAIGN
CHILDREN'S ACTIVITY BOOK**



INDIANA DEPARTMENT
OF HOMELAND SECURITY



Outdoor Warning Sirens

Most communities have outdoor warning sirens. You may even hear them being tested on a regular basis to ensure they work properly. Outdoor warning sirens are meant to warn those who are outdoors and cannot see or hear important messages, such as warnings issued by the National Weather Service that may come across radios or televisions. If you are outdoors and hear a siren going off, you should seek shelter immediately and monitor conditions around you - turn on your radio or television, or check your NOAA all-hazard radio if you have one. Outdoor warning sirens are NOT meant to warn those indoors. Sometimes, you can hear them indoors if you are close enough, but do NOT rely on outdoor warning sirens as your primary method of getting warnings when you are inside. Be alert and monitor weather conditions regularly!



Help!!! The state animal has run off!

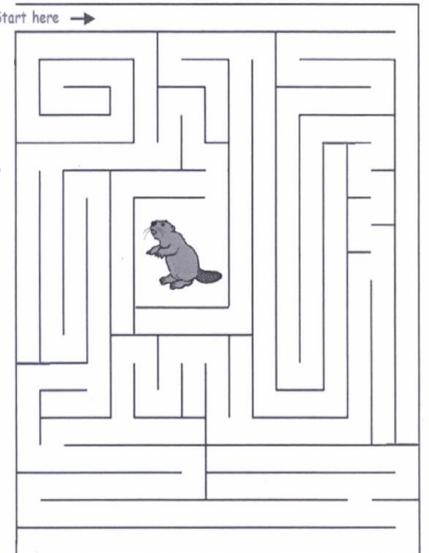
You can help... draw a path through the maze to help me find it.

Start here →

Use your mouse to trace the route or print this page and mark with a pencil.

Can't find it either?

Click here for the path.



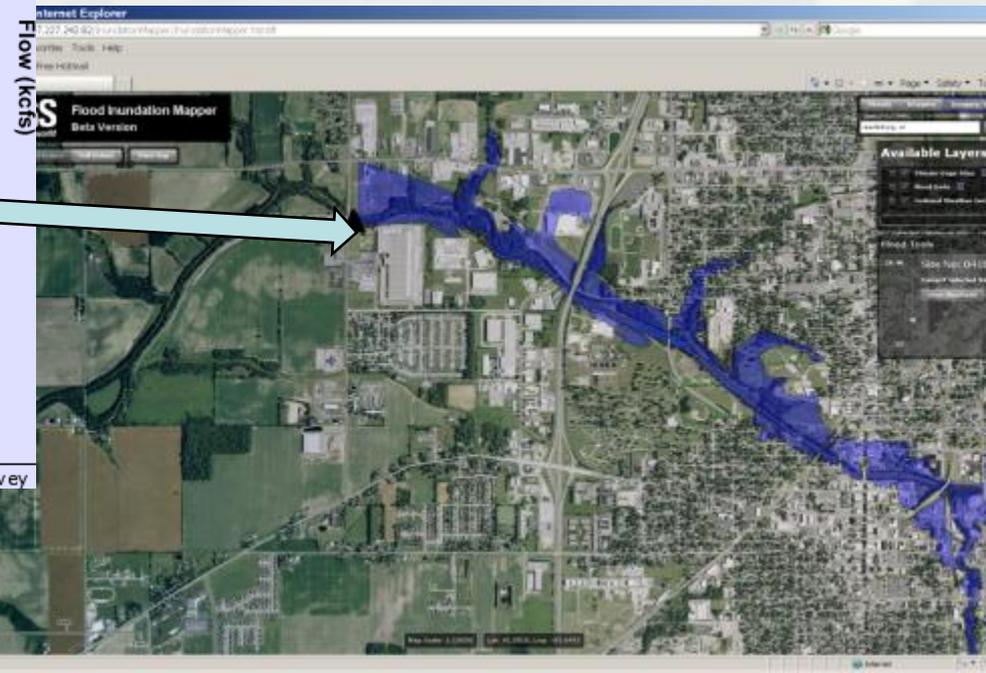
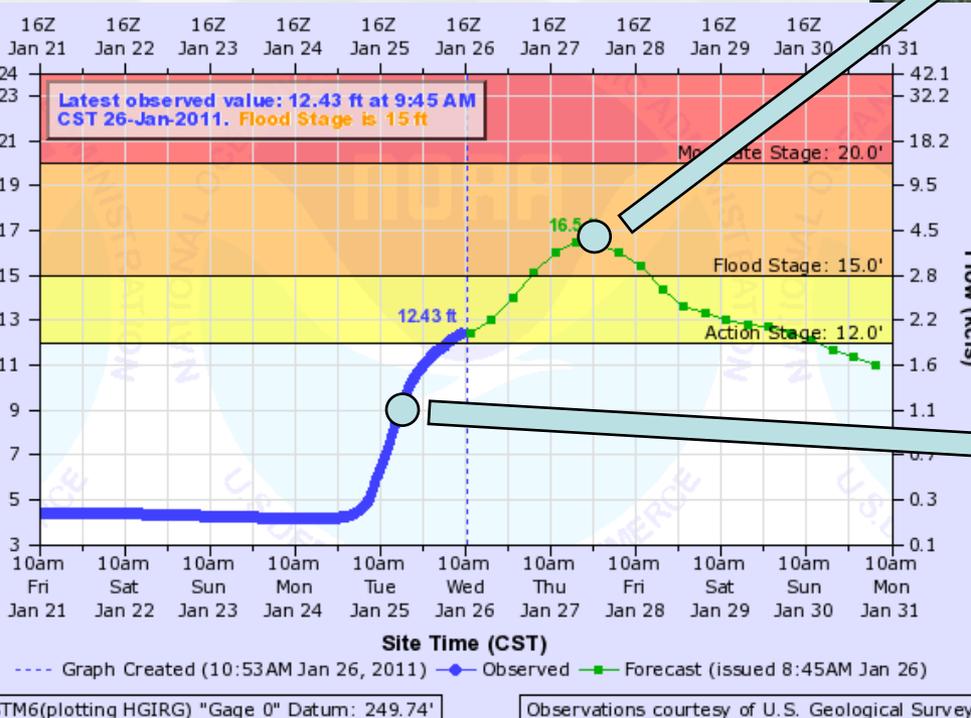
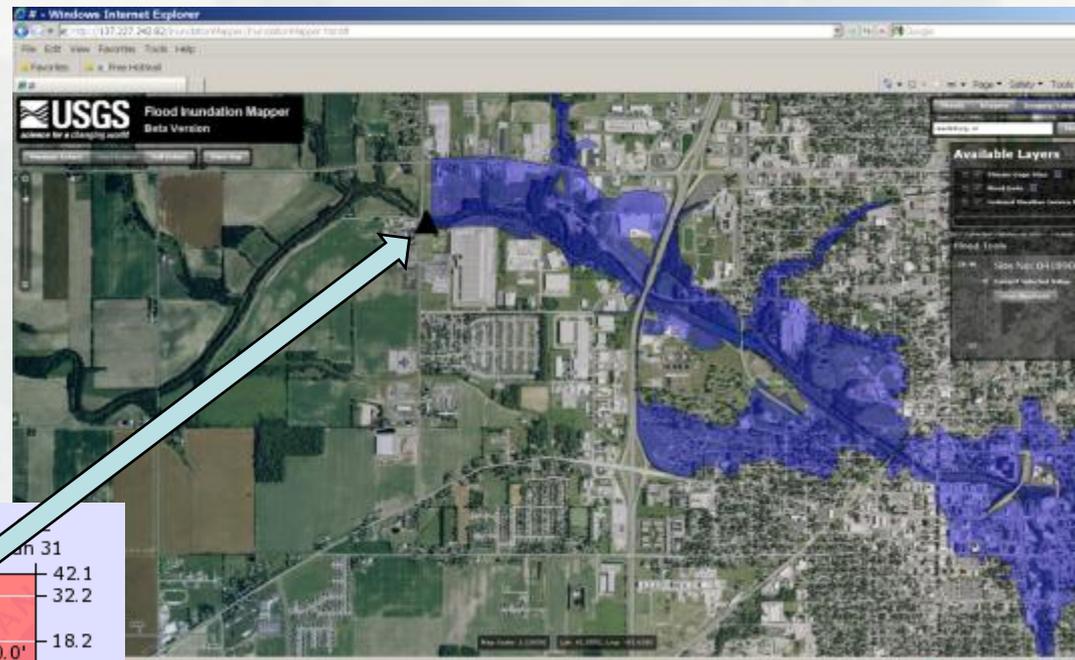
Past Successes

■ Indiana Inundation Pilot Study:

- ▶ Model paired up available technologies to identify flood areas and when those areas would be impacted through real time river gage data.
- ▶ Outputs can be integrated with HAZUS and other GIS based databases allowing local emergency managers to better determine where to focus flood fighting efforts and to quickly provide reliable post flood damage estimates.
- ▶ Promotes personal responsibility for safety as it allows citizens to monitor river conditions and plan accordingly.

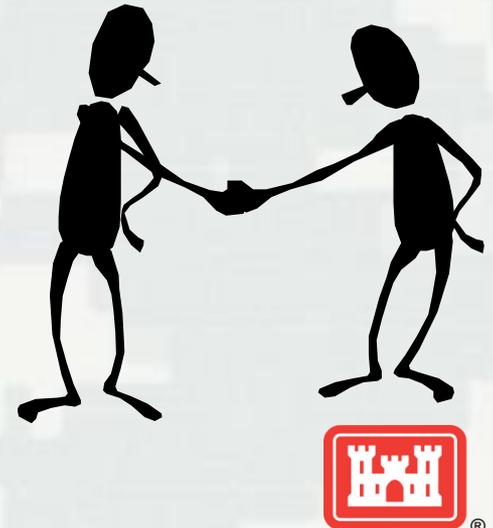


Flood Inundation Maps translate a hydrograph into operational maps that communicate risk and consequences



Past Successes

- Update to the Indiana Hazard Mitigation Plan
- Enhanced ***relationships*** between federal and state agencies
 - ▶ Better responses from agencies
 - ▶ Improved Cooperation
 - ▶ Better overall agency image
 - ▶ Unified voice



Past Successes

- Northern Elkhart River Project
 - ▶ Large Watershed with extensive history of flooding
 - ▶ Community wants a single solution to “fix” the problem (that does not exist!)
 - ▶ Each agency has provided work over last 10 years
 - ▶ Reviewed all reports (USACE, USGS, IDHS, IDNR, USDA) & developed one comprehensive report
 - ▶ Report completed in May 2010

- Statewide LiDAR



New Jersey Silver Jackets

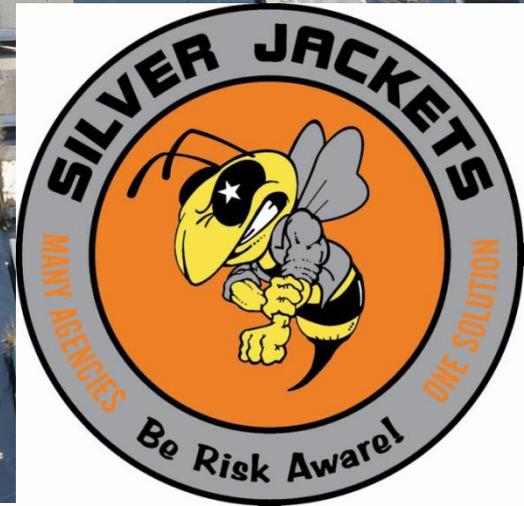
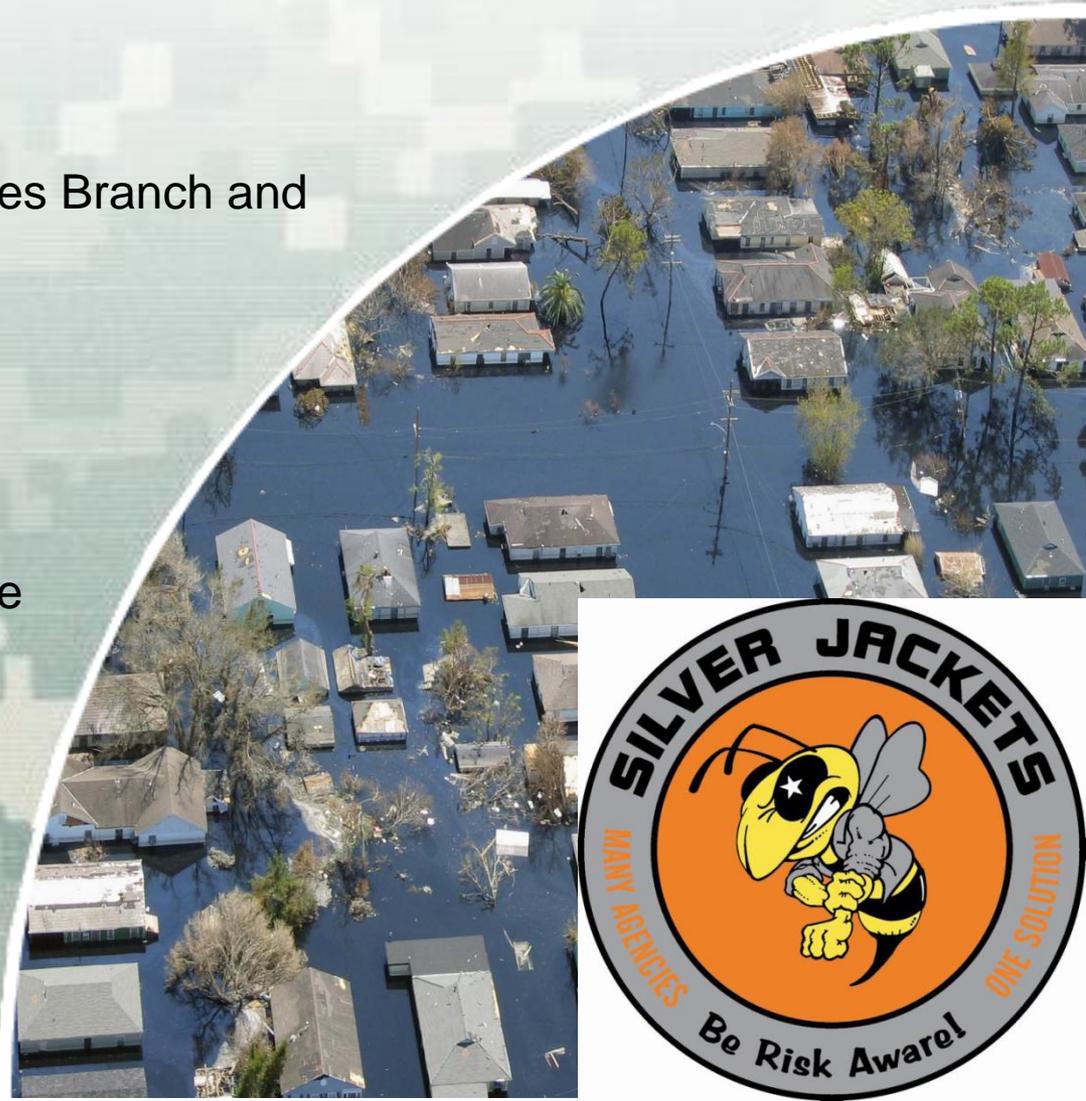
Presented by:

Jason F. Miller, P.E.

Chief, Flood Plain Management Services Branch and
Silver Jackets Program Manager
USACE, Philadelphia District

Alicia Gould

Silver Jackets Program Manager
Currently on Detail to the
Hurricane Sandy Rebuilding Task Force
USACE, New York District



Silver Jackets Program

Cooperating Agencies

➤ State representatives from New Jersey Office of Emergency Management (NJOEM), New Jersey State Department of Environmental Protection (NJDEP), New Jersey Office of Homeland Security and Preparedness (NJOHSP)

➤ Federal representatives from USACE (New York & Philadelphia Districts) FEMA, NRCS, USGS, NOAA/NWS

➤ Other stakeholders: Delaware River Basin Commission (DRBC), New Jersey Assoc for Floodplain Management (NJAFM)



Primary Objectives & Goals

Passaic River Flood Advisory Commission Recommendations

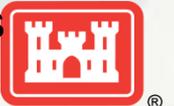
- Comprehensive plan unveiled in February 2011; 15 primary recommendations
- Recommendations include:
 - Acquisition, Elevation, Restrictions on Future Development, Expediting Permits aimed at Flood Risk Management

Flood Inundation Mapping

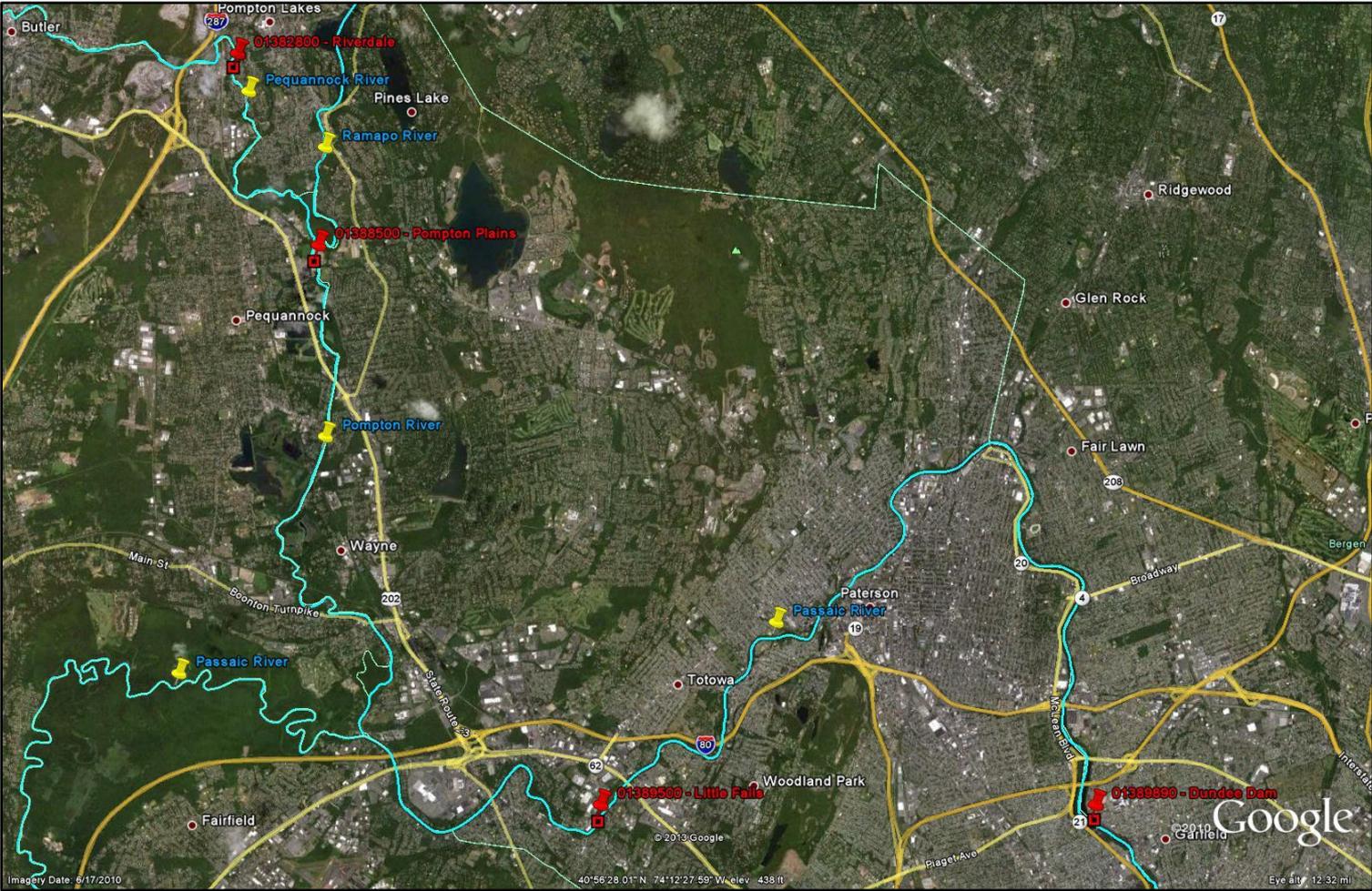
- Flood-prone communities can benefit from advanced predictions of flood stage. Forecasted flood stages become much more useful when understood in terms of the extent of areas that will be inundated by flood waters.
- SJ Pilot Project: FIM for 4 forecast points in the Passaic River Basin

Outreach & Coordination

- There is a recognized need for better outreach and coordination among Federal, State, County and Local governments; as well as between those agencies and the general public and stakeholders



Pilot Project – Flood Inundation Mapping



Pequannock River at Riverdale, NJ

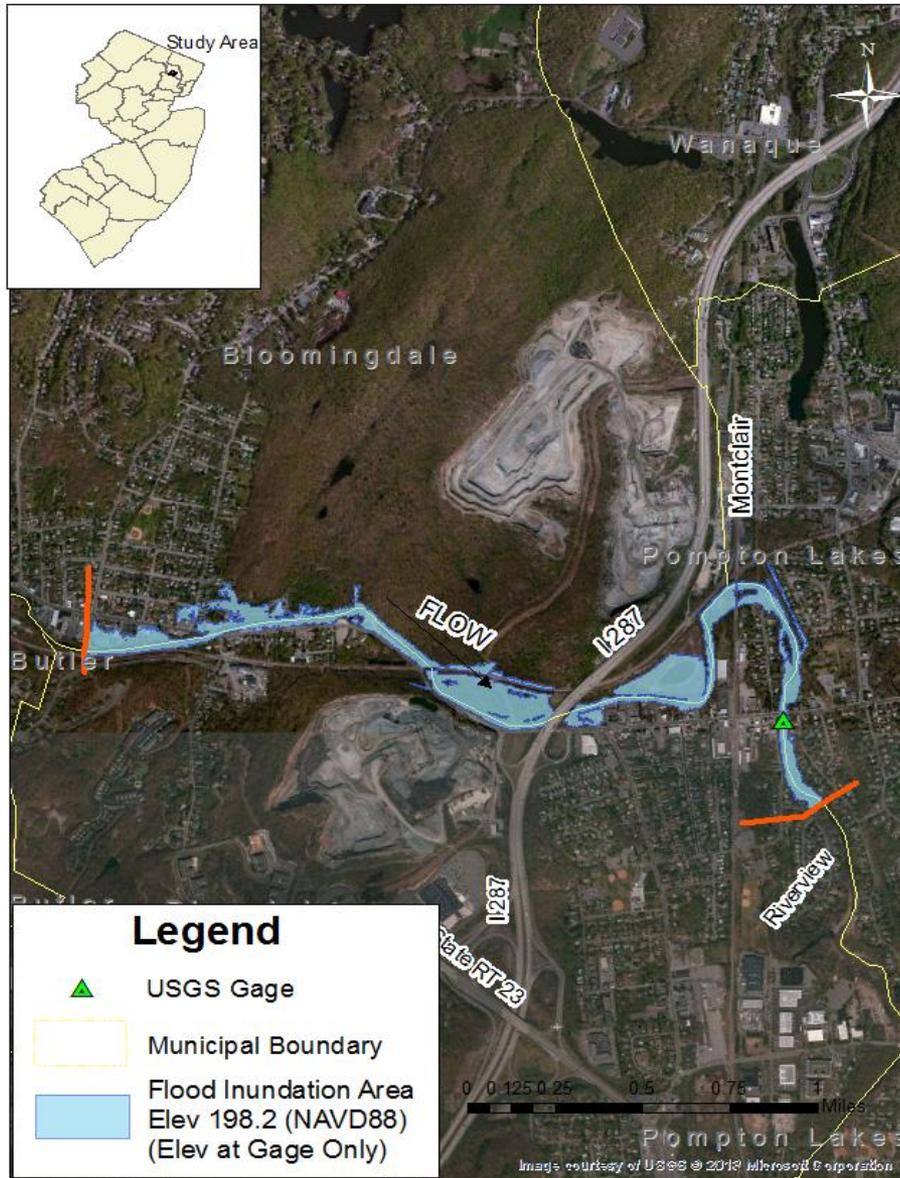


Table 13: Stage and Water Surface Elevation for the Pequannock River at Riverdale, NJ

Map Sheet No.	Stage at Gage	Actual River Elevation ¹	Estimated Discharge (cfs)
R-1	3.85	190.90	790
R-2	5.04	192.09	1,287
R-3	6.15	193.20	1,847
R-4	6.25	194.15	2,408
R-5	7.85*	194.90	2,909
R-6	9.08	196.13	3,836
R-7	10.16	197.21	4,750
R-8	11.17	198.22	5,893
R-9	12.38	199.43	7,401

¹ - Elevations are in NAVD88

* - Near to Flood Stage elevation (5' at Riverdale Gage).

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Pompton River at Pompton Plains, NJ



Table 14: Stage and Water Surface Elevation for the Pompton River at Pompton Plains, NJ

Map Sheet No.	Stage at Gage	Actual River Elevation ¹	Estimated Discharge (cfs)
P-1	16.03*	175.12	5,990
P-2	17.30	176.39	7,650
P-3	18.61	177.70	9,546
P-4	19.69	178.78	11,376
P-5	21.01	180.10	13,900
P-6	21.90	180.99	15,693
P-7	22.83	181.92	17,964
P-8	24.18	183.27	26,744
P-9	24.95	184.04	31,496
P-10	25.91	185.00	39,997
P-11	26.78	185.87	46,628

¹ - Elevations are in NAVD88

* - Near to Flood Stage elevation (16' at Pompton Plains Gage) and 2-year water surface elevation.

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Passaic River at Little Falls, NJ

Table 15: Stage and Water Surface Elevation for the Passaic River at Little Falls, NJ

Map Sheet No.	Stage at Gage	Actual River Elevation ¹	Estimated Discharge (cfs)
L-1	6.30*	125.35	5,740
L-2	7.50	126.55	7,340
L-3	8.56	127.61	8,950
L-4	9.54	128.60	10,575
L-5	10.44	129.49	12,193
L-6	11.51	130.56	14,274
L-7	12.52	131.57	16,358
L-8	13.52	132.57	18,500
L-9	14.66	133.71	21,256
L-10	15.51	134.56	23,966
L-11	16.51	135.56	26,724
L-12	17.88	136.93	30,580
L-13	18.79	137.84	33,887
L-14	20.06	139.11	39,532

¹ - Elevations are in NAVD88

* - Near to Flood Stage elevation (7' at Little Falls Gage).

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Passaic River at Clifton, NJ

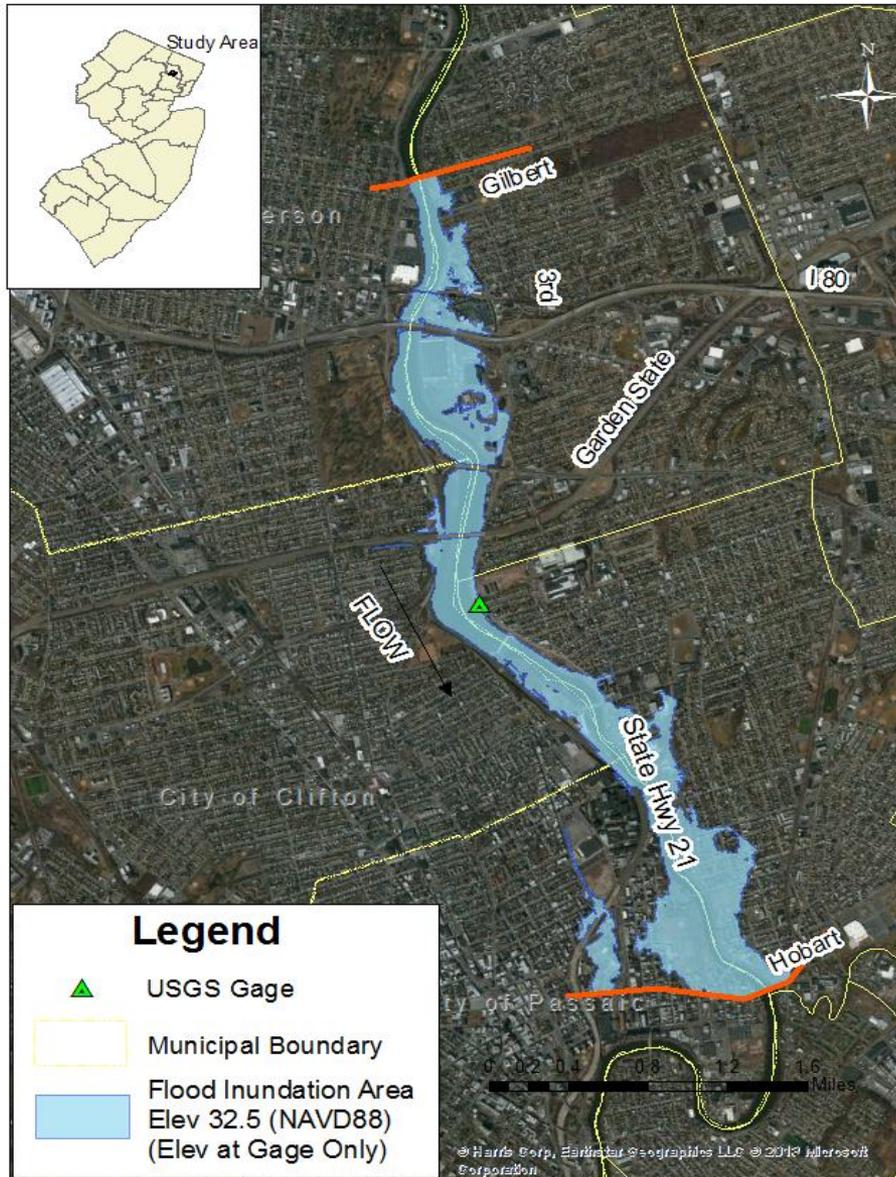


Table 16: Stage and Water Surface Elevations for the Passaic River at Clifton, NJ

Map Sheet No.	Stage at Gage	Actual River Elevation ¹	Estimated Discharge (cfs)
D-1	4.37*	27.90	11,384
D-2	4.88	28.41	13,750
D-3	5.88	29.41	18,705
D-4	7.06	30.59	25,316
D-5	7.78	31.31	29,616
D-6	8.96	32.49	37,332

¹ - Elevations are in NAVD88

* - Near to Flood Stage elevation (4.5' at Dundee Dam Gage) and 2-year water surface elevation.

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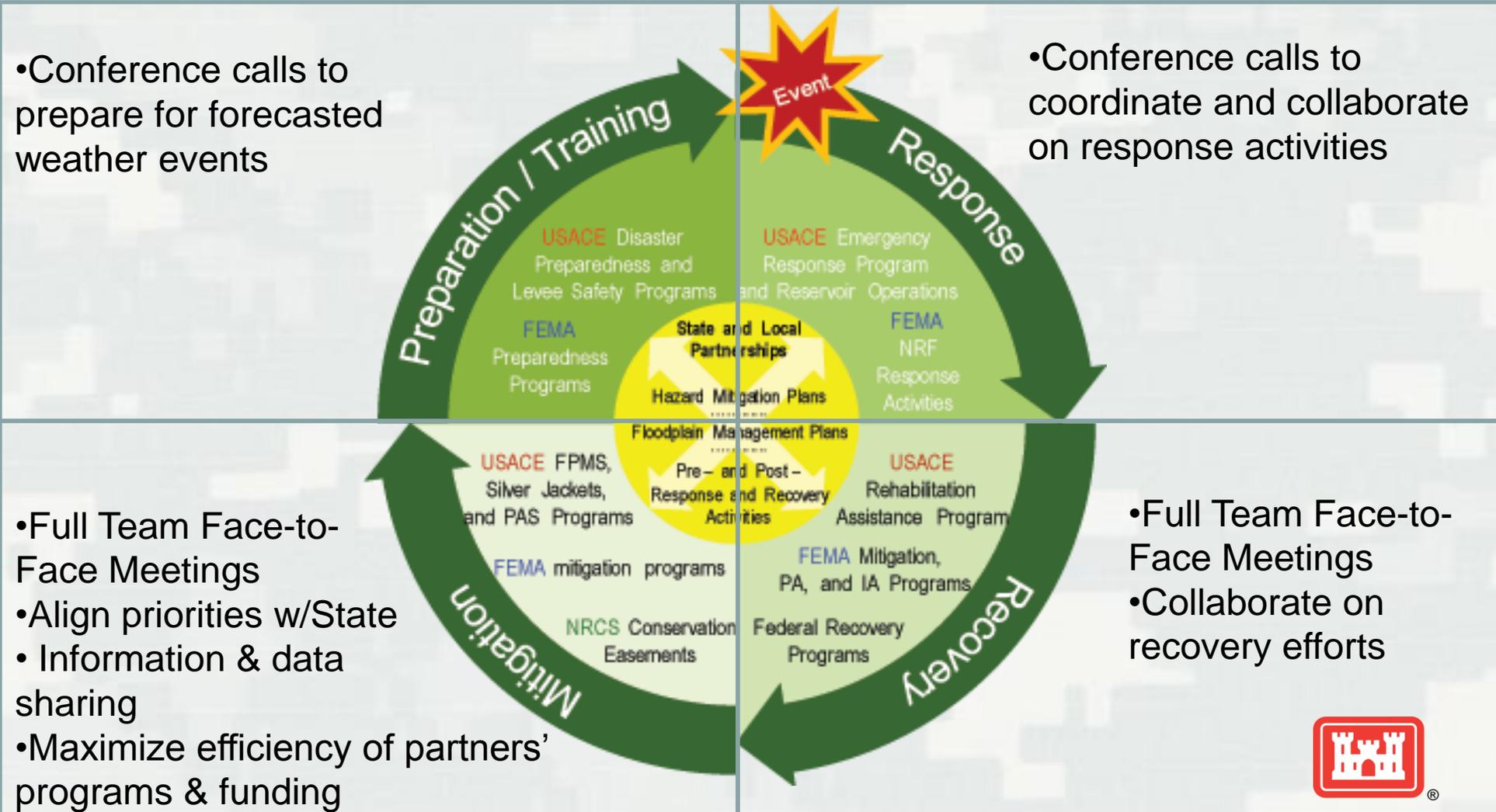
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Flood Risk Management Cycle



Sandy Timeline



- October 25th: Middle Atlantic River Forecast Center Briefings begin
- Email distribution lists used to make sure all partners have information they need to “do their jobs” as Sandy approaches

➤ October 29, 2012: Sandy makes landfall near Atlantic City, NJ



- November 6th: NJ Silver Jackets post-event conference call; coordination of activities and collaboration on data collection
- November 11th: NJ Joint Field Office (JFO) established
- November 12th: Alicia Gould, NJ Silver Jackets Program Manager for USACE-New York, and NJ SJ Co-Coordinator, deployed to JFO as Infrastructure Systems Recovery Support Function (IS RSF) Field Coordinator under FEMA’s National Disaster Recovery Framework (NDRF)



Sandy Timeline



- December 4th: NJ SJ Quarterly Meeting at the NJ JFO; NDRF briefing and coordination with other RSFs
- December 2012: NJ and NY JFOs released the first draft of their Mission Scoping Assessments (MSAs)
- December 2012: President Obama creates the Hurricane Sandy Rebuilding Task Force by Executive Order.
- Subsequent quarterly meeting in February; coordination of activities and collaboration on recovery initiatives
- Existing relationships allow team to focus on the mission of recovery. Many of the members of the SJ team also support the Infrastructure Systems Recovery Support Function.
- Next deliverable: Recovery Support Strategies (RSSs)
- February 2, 2013: Hurricane Sandy Rebuilding Task Force kicks off. USACE Principle: ASACW Jo-Ellen Darcy.



Recovery Support Functions – Sandy Overview

■ Infrastructure Systems – Department of Defense, USACE

■ Goal: Facilitate the capabilities of the Federal Government to support local, State and Tribal governments and other infrastructure owners and operators in their efforts to achieve recovery goals.

Federal Partners

Department of Homeland Security
Federal Emergency Management
Agency
National Protection and Programs
Directorate
Department of Defense
Department of Energy
Department of Transportation
Department of Health and Human Services
Department of Agriculture
Environmental Protection Agency
Department of Housing and Urban
Development

State Partners

Office of Homeland Security and Protection
Department of Transportation
Department of Environmental Protection
State Police
Board of Public Utilities
Department of Community Affairs
Department of Health
New Jersey Transit
Port Authority of New York and New Jersey



Questions?

