APPENDIX 2

Planning Process

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A.2a: Participant Guidance for State Agencies

New York State Hazard Mitigation Plan Update
Guidance for Participants Providing Input

Thank you for your assistance and participation in the New York State Hazard Mitigation Plan Update. The final, updated New York State Hazard Mitigation Plan is due to FEMA in November 2013 for review and must be approved by January 3, 2014, in order for New York State and local applicants to maintain eligibility for federal disaster funding programs – which has meant more than $7.2 billion in funding for New York State applicants over the past three years.

To minimize the demands on your time, we are consolidating our requests for information into a series of questions, outlined below. We can gather your input/information in one of three ways:

1. via email (simply fill out your answers in the document below, using as much space as you need, and/or attach relevant information to your response and return it to pousley@aidrc.com)
2. via phone call (interview style – we'll take notes and provide a write-up for your approval)
3. via in-person meeting (also interview style – we'll take notes and provide a write-up for your approval)

We have broken our request into two main areas: Hazard & Risk Assessment and Mitigation Goals & Activities.

Hazard & Risk Assessment

As a partner in the Plan update process, your input is crucial to ensure that the Plan includes the most current and accurate information and data. The planning update process provides the opportunity to capture changes in hazard profiles and risk assessments based on hazard events that have occurred in the past three years.

FEMA requires that the plan address only **natural** hazards (not human-caused or technological). The hazards list proposed for the 2014 update includes the following:

- Flood
  - Riverine overbank flooding
  - Flash floods
  - Alluvial fan floods
  - Mudflows or debris floods
  - Ice-jam floods
  - Dam- and levee-break floods
  - Local drainage or high groundwater levels
  - Fluctuating lake levels
  - Coastal flooding
- Hurricane (including Tropical Storm and Coastal Storm)
- Coastal Erosion
- High Wind Events (Tornado and Straight-line Winds)

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- Severe Winter Storm (including snow, ice and Nor'easter)
- Hailstorm
- Wildfire
- Drought
- Extreme Temperatures
- Earthquake
- Landslide
- Land Subsidence and Expansive Soils
- Avalanche
- Tsunami
- Climate Change

This list reflects the following changes from the 2011 Plan:

- Flood hazard – the definition has been broadened to include sub-types such as riverine overbank flooding, flash floods, alluvial fan floods, mudflows or debris floods, ice-jam floods, dam- and levee-break floods, local drainage or high groundwater levels, fluctuating lake levels and coastal flooding.
- Hurricane hazard – the definition has been broadened to include Coastal Storms
- High Wind events – this category will address both tornado and straight-line winds
- New hazards to be assessed in the plan include: coastal erosion, avalanche, tsunami, and climate change

Each hazard will include:

- Hazard profile (characteristics, locations, previous occurrences, and potential for future events)
- Assessment of risk and vulnerabilities (by jurisdiction, and for state-owned and -operated facilities)
- Estimate of potential losses (by jurisdiction, and for state-owned and -operated facilities)
- Changes in development that could impact vulnerabilities related to the hazard

If you have any information or data that support any of the hazards, we welcome your comments.

New York State Hazard Mitigation Plan Update – Participant Input Guidance

Mitigation Goals & Activities

- **Mitigation projects** are brick-and-mortar projects that reduce or eliminate the vulnerability to a hazard. Capital investments and improvements fall under this category.
- **Mitigation activities, initiatives, and programs** are efforts that reduce or eliminate vulnerability to a hazard through outreach, public education, and other such programs. Also included are current laws, regulations, policies, and permitting intended to reduce a community's vulnerability to a hazard. For example, codes requiring construction activity in a flood zone to elevate structures above the Base Flood Elevation (BFE).

The current Plan update needs to capture all mitigation activities that have taken place over the past three years, and those planned (or that you would like to see happen) over the next three years (providing adequate resources are available).

Mitigation Projects

- **Current:** Please describe any physical (brick and mortar) projects in your jurisdiction that have been completed over the past three years or are currently underway to mitigate vulnerability and risk of damage to either buildings/facilities or your mission's target audience.

- **Future:** Please describe any physical (brick and mortar) projects in your jurisdiction that are planned to (or you would like to have) take place over the next three years to mitigate vulnerability and risk of damage to either buildings/facilities or your mission's target audience.

Mitigation Activities, Initiatives & Programs

- **Current:** Please describe any activities, programs, or initiatives that have been undertaken in the past three years or are currently underway to mitigate either your buildings/facilities or your mission's target audience.

- **Future:** Please describe any future activities, programs, and initiatives that are planned (or you would like to see happen) over the next three years to mitigate vulnerability and risk of damage to either buildings/facilities or your mission's target audience.

The following form has been provided for your convenience as a tool for summarizing your mitigation project information.

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MULTI-HAZARD MITIGATION ACTIONS

Instructions

General Overview

This project planning sheet will be the method by which New York State identifies new mitigation actions being considered throughout the state. The information presented can be used as the basis for the State to prioritize its mitigation actions in the immediate future, and to determine additional measures it should undertake to improve its ability to identify and address risks.

States with a FEMA-approved Standard State Mitigation Plan can use a variety of funds and programs to achieve mitigation goals, including the Flood Mitigation Assistance (FMA) program, the Hazard Mitigation Grant Program (HMGP), and the State Hazard Mitigation Assistance Initiative (HMAI).

Instructions for submission

- Project mitigation actions must be submitted by close of business **Friday, September 6, 2013,** to be included in the 2014 State Multi-Hazard Mitigation Plan.
- Email completed forms to Princess Ousley.

Considerations

- 2011 New York State Multi-Hazard Mitigation Plan
- 44 CFR 201.4 Standard Hazard Mitigation Plan Criteria

Project Priority Definition

The mitigation strategy should identify a range of specific mitigation actions and projects being considered to reduce risks to new and existing buildings and infrastructure. Identified mitigation activities should be prioritized using the high, moderate, and low criteria.

High Priority: An action that should be implemented in the near future or immediately because it reduces overall risk to life and property.

Moderate Priority: An action that should be implemented in the near future due to political or community support or ease of implementation.

Low Priority: An action that should be implemented over time, but does not have the same sense of urgency or impact on hazard vulnerability as other higher priority actions.

Please contact Princess Ousley at POusley@aidrc.com if you need technical assistance or have questions regarding mitigation activities.

Project Description

The primary hazard is the one that is most significantly and directly impacted by this project. The secondary hazard is the one that is directly impacted by the project, but to a lesser degree than the primary hazard.

Primary Hazard:	Click here to choose a hazard	Secondary Hazard:	Click here to choose a hazard
Project Prioritization:	Click here to choose a priority	Project Phase:	Click here to choose a project phase
Agency Department / Program:			
Project Title:			
Project Timeframe:	Click here to choose a timeframe		

5

Project Summary

Provide a brief project description to include risks, and/or vulnerabilities that this project is intended to reduce or mitigate.	

Please identify applicable federal, state or local laws, regulations and/or policies to which that this project adheres.

Funding Source (Choose all that apply):	HMGP: ☐ FMA: ☐ HMAI: ☐ Operational Budgets: ☐ Staff Time: ☐ Other grants: _____
Funding Amount (Actual or estimate):	

6

Geographic Information System

Does this project include an information technology (GIS) component, which includes data, mapping and/or modeling ("Yes" or "No")? Yes ☐ No ☐

If yes, please provide GIS point of contact information.

Name:	
Title:	
Email Address:	
Phone Number:	

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A.2b: Participant Guidance for Non-State Agencies

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Guidance for Participants Providing Input

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A.2c: Meeting Notes

Department of State (DOS); August 22, 2013

Attendees:

Barry Pendergass (DOS)	Princess Ousley	Kyrie Wagner
Fred Nuffer (OEM)	Courtney Shorter	Judy Wolf
Nancy Freeman	Tracy Smith	

General Introductory Discussion

- BP explained that DOS is a collection of functions; an arm of the executive office originally, still connected. Regarding Mitigation, DOS manages State building and fire code; supports local government planning functions. There was a statewide regional planning initiative several decades ago that didn't continue as a state umbrella due to NY being a home rule state with local governments having authority over regulation of land use, but regional planning initiatives did continue; now focused on economic development and sustainability. This creates cohesiveness, reducing hodge-podge funding.
- DOS provides training for local planning boards, town, village, city (not NYC); zoning boards, administrative programs.
- Has a Coastal Zone management program. Prior to last Oct, working on a framework to work with local communities, but then Sandy hit. Federal funding from HUD required a standardized framework statewide. Used local initiative to meet standardized framework. Local waterfront revitalization plans including saltwater communities as well as Hudson, Niagara, Finger Lakes, Canal waterfronts, etc.
- GIS products that show area of authority are on DOS web site.

Guidance for NY Rising Community Reconstruction Plans

- Working on "Guidance for NY Rising Community Reconstruction Plans" – using guidance for assessment; simplified guidance available on www.nysandyhelp.ny.gov
- HUD money to pay for communities to do this plan. Communities impacted by Irene, Lee, Mohawk Valley floods. Future flood disasters, anticipate more communities will come into program.
- Hire consultants to work with local communities to identify priorities assets and make recommendations for mitigation.
- $400 million in HUD/Sandy appropriation to pay for economic development and support for disadvantaged communities, but plans also looking at a variety of assets and recommending appropriate funding source for assets not necessarily suitable for HUD funding (e.g., DOT funding, USACE, etc).
- FN: Have actual applications come in? Or is it still in the planning stage?
    - BP: Just in past week, consultants selected. 102 separate communities currently, anticipate will be less than 50 in the end once combined.
- Dept of Housing and Community Renewal formally administers HUD funds
- Nine (9) consulting teams – group of consulting teams working together with diverse skills; all tentatively assigned communities, but not yet announced – all happening this week
- Not necessarily just coastal anymore. Anyone who met FEMA thresholds.

Other programs

- Building Code Office
- Brownfields reclamation planning and usage

Additional Discussion

- FN: DEC Coastal programs, how do DOS programs dovetail with that?
  - BP: For federal coastal area – Great Lakes, saltwater below Troy; have to be consistent with State Coastal. Trying to consolidate the current 44 policies to 13-14. Direct actions, funding or permit approvals (e.g., USACE permit gets reviewed by DOS). For example: USACE actions intended to reduce storm action.
  - DEC/Al Fuchs, etc – have contractual authority with USACE for coastal projects
  - DOS works with local governments – advocate for local planning involvement. Any USACE project has to include a local floodplain management plan. This has been interpreted liberally in the past, e.g., participation in NFIP is sufficient. DOS advocating for more thorough planning process/involvement.

Community Reconstruction Program

- Risk assessment each participating community.
- Community team plus consulting firms generate management ideas.
- First source for ideas is local HM Plan for recommendations [NOTE: This came from a suggestion made by Fred Nuffer in a Working Group meeting. State involvement in Working Group led to incorporation of local HM Plan into reconstruction initiative.]
- Management ideas sifted for practicality, beneficial outcome.
- Surviving ideas go through RA process again to assess benefit
- Ones that survive second round to be advanced for implementation go through a BCA. Memo in process on this. Ones that are capital projects will use FEMA BCA tool.
  - FN: That's been simplified for home elevations/acquisitions in past week. Will forward.
- BP: Would be interested in a B-C tool for non-capital projects (e.g., community changes to policy)
  - FN: NYSERDA is working on this. Maybe HM Plan Update team can research other states
  - NF: Actually, there's a new tool for social value we've run acress (includes social, environmental, other factors). Will check and send.

Local Building Codes

- Local building officials are often affected by elections, which means frequent change over; often need training to understand how building codes apply, other regulations for which the locality has assumed enforcement.
  - E.g., may not understand floodplain regulations; Bill Nechamen provides a lot of education
- Coastal Erosion Hazard Area Act – can be delegated to local government (FN: talk to Sue on Fri about this)
- Ongoing need for outreach and education; DOS regularly fields questions, refers to DEC
- FN: As pointed out in past plans, NYS generally adopted International Building Codes, but because of program issues brought to DOS, DOS has shepherded specific requirements through the process to make NYS codes more strict (e.g., National codes require 1' above BFE; NYS requires 2' above BFE; discussions in place re: requiring 3' above BFE)

- NYC recently revised to 2' above BFE. NYC also relaxed zoning requirements on height limitations to allow homes to be raised above BFE without violating overall height restriction

Questions

- Is there a definition/determination of percent of state's population in coastal areas? Some type of data available re: population in vulnerable coastal areas?
  - BP: May have numbers somewhere, don't know how up to date they are
  - CEHA areas are defined areas – use to define exposure
    - BP: Good marker for erosion issues, but a lot of vulnerable population are on bay shores, not in CEHA
    - Irondequoit Bay is in CEHA due to friable soils, vulnerable to erosion
  - FN: Look at SLOSH models to determine maximum run-ups and use census data
    - NF: Also considered using HAZUS-MH, but doesn't do that type of hazard
    - FN: Definition of vulnerable population for coastal storms
    - BP: SLOSH not available for rivers and lakes
      - FN: SLOSH now available for Hudson River up to Troy, not lakes
- NF: You referenced planning projects and identifying community assets – any definition of community assets?
  - BP: Special emphasis on critical facilities, relied on FEMA definition for that and may have added some. Is in draft memo underway now re: Risk Assessment; encompasses social and environmental assets. Flood defense structure is not considered an asset in this definition – it's a site characteristic that is protecting the assets
- NF: Potentially some community assets might be state assets also? Or just internal to community?
  - BP: We are suggesting that jurisdictions look outside their geographic boundary to incorporate systemic risks (e.g., utilities, sewer, water district)
- Adaptation working group information sharing – thinking about how programs link together
  - FN:Once planning is completed, will recommendations be fed back to regional planning councils?
  - BP: Not explicit in the guidance, but was positively received and we want to encourage that
- FN: Local plans have not been mined to date – Mitigation has not had staff to do it
  - Recommendation – not only do this, but tie results of initiatives like Community Reconstruction back into HM plan vs. recreating the wheel
- DOS administers $20 million/year in grant funding through Environmental Protection Fund (EPF). Apply through State's consolidated funding application. Communities not eligible for Community Reconstruction project due to impact threshold requirement may be eligible for other funding
  - Draft/final done by March – then make planning program available to other communities.
  - FN: Pots of money – some specific to e.g., flooding issues, redevelopment; might be good in Plan to define pots of money, what they can be used for, how it fits in with HM – e.g., EPF carved up by agencies, each prioritizes it themselves, many geared to flooding issues
- Changes in development or development impacts? Anything in past three years?

  - NYS doesn't really grow that fast; population grows ~2%, but development density goes down; over the course of time, people are spreading over the landscape, impacts watersheds and worsens flooding due to impervious surfaces
  - NF: How about coastal areas? Any spikes in development?
    - BP: No spike, but yes, continuing demand for coastal real estate; e.g., Fire Island got rebuilt quickly after Sandy
- DOS projects/activities over next three years?
  - Just finishing up climate action plan for the City of Albany. Want to use this as a template for other communities.
- NF: Last plan had a list of waterfront revitalization plans from 2010. Is there an updated list?
  - BP: Probably. Will look.
  - NF: Found a Feb 2013 list on the web. BP: Probably the most current info.
- NYSERDA projects underway – EMEP (environmental monitoring, evaluation and protection) – will be very helpful
  - NYSERDA has been a boon for agencies due to funding raised through utility surcharges. Funding initiatives, informational efforts in addition to brick & mortar projects
- Drought – water levels on Great Lakes extraordinarily low right now. May start affecting water supplies, etc. DEC will have info.
  - FN: Might want to identify and talk with DEC individual re drought as well
- Extreme precipitation events have gone up about 67% in NYS. Inland water bodies, inland rivers can't carry volume. Art DeGaetano at Cornell studies, climate science. Mark Lowery and Kristin Marcell will have info on this (DEC).
- Syracuse Univ, Buffalo, Cornell, Columbia – working on tapping into and funding studies
- NF: risingsea.net – study by Tansky 2008. Likelihood of Share Protection in NYS. Table of land above 1m above Spring High Water with ratings. Valid info?
  - FN: Stay away from studies that haven't been vetted by state agencies. Could hold up approval process. Plan should be neutral on controversial topics.
  - BP: EPA – Jim Titus – climate change studies. Tansky fed Titus's work. NY Sea Grant.
  - FN: Focus on trying to identify communities at risk now and using info we've been able to gain from science studies predicting sea level rise and additional communities/populations at risk. Various agencies have studies that already identify/address that.
  - Mark Lowery will be able to point us to reviewed and approved studies/sources.
- Send copy of document created by team to BP. Also send BCA program update from FN.

Department of Environmental Conservation (DEC); August 23, 2013

NYS Hazard Mitigation Plan Update
Meetings with Department of Environmental Conservation
August 23, 2013

Attendees:

Alon Dominitz, PE	Amanda Burnett	Princess Ousley
Susan McCormick, PE	Nancy Freeman	Tracy Smith
Fred Nuffer (OEM)	Julie Lam	Judy Wolf

Dam Safety – Alon Dominitz

General Introductory Discussion

- AD: Copied FN on CRS form sent to FEMA a couple months ago? FN: Yes, I believe you did. AD: Is this part of CRS (Community Rating System)? FN: Separate thing. HM is stand-alone. CRS is strictly part of NFIP.
- AD explained the Bureau of Flood Protection & Dam Safety is a mix of regulatory (dam safety) and operational (flood control). Dam Safety reviews and inspects dams, reviews permit applications for construction of dams, activites to ensure safety. Includes proper emergency planning in event of failure. Flood Control section partners with USACE to build and operate various flood control facilities. By statute, requires local partner with USACE constructing. Stand finds local partner to do flood control project. Some state responsibility for maintaining and operation. Law change shifted to local responsibility, or state contracts with locals to do work.
- Over 100 flood control projects in NYS, over 5000 dams. In 2011 Plan.
- Flood control projects we're talking about are all USACE projects – there are others.
- JL discussed location data w/AD. Anything restricted? AD: We've been releasing it for years. FN: Are local EMs aware? AD: Have interacted a lot with FEMA Region 2 – don't know re county officials. FN: Will ask Dave.
- Dams themselves are a mix. FERC licensed, privately owned, publically/municipally owned, energy (hydro), state-owned.
    - JL: Have all been broken down/classified somewhere?
    - AD: 2/3 of dams have that field filled in.
- FN: Describe authorities you have.
    - AD: Inspect dams. Planning schedule. High hazard dams every 2 years; medium hazard dams every 4 years. Low hazard dams no regular inspection; usually in response to complaints. Larger ones we try to inspect on a minimum 10-year cycle. For past several years, we've met our inspection schedule goals; for past four, we've exceeded them.
    - Field component: Inspections are visual. In 2009 issued stricter requirements. EM Action Plans must be filed with DEC and local EMs. Inspection and maintenance plans must be provided upon request. Annual certifications required. Must demonstrate diligence in monitoring.
- Engineering standards must be met (e.g., spillway that passes certain size floods, stability, etc)
    - We review what we know, follow up on deficiencies
    - If not successful, will follow up with an enforcement case, usually settle with a consent order. Some in hearings. Had two recent positive orders that can be identified in the Plan (they're settled/public).
    - FN: Note force of powers – have successfully mitigated a hazard.

        - AD: In process. Order has been issued with a schedule to get that done. If owner fails to follow order, DEC can carry it out (funding is available, ~1 million, to carryout work) and recoup costs.
        - FN: Important aspect: State has funds available to carry out that order)not just a paper threat)
- FN: Has State come up with funding recently to do work on its own dams?
    - AD: NY Works. ~$11.5 or 14.5 million. DEC owns the most dams (~500) in the State. State owns about 68 high and 79 intermediate hazard dams.
    - All DEC high and intermediate hazard dams are being assessed. A couple are scheduled to be worked on this year. Some go into remedial action this fall, others completed next year. Currently identifying and prioritizing needs.
    - Tom Miller is person to contact if web site doesn't have enough detail
    - AD can provide web site address [JW note: AD could not find it].
- FN: There are other State dam owners. How deal with and address deficient dams?
    - AD: Canal Corporation is second largest State agency dam owner. Parks also has many. Dept of Corrections and other agencies have some as well.
    - FN: Reach out to them.
- FN: What is the process to validate federal inventory?
    - AD: Periodic process for doing that. Every two years, submit our inventory that meet certain criteria to USACE. USACE creates a national inventory of dams. Serves as a quality check on our own data.
- 2009 regulations require emergency action plans for all high-hazard dams. 96% of high hazard dames in NYS meet requirement. Excellent compared to rest of country. Verify figures – there is a document. [JW note: AD verified]
    - 400 high-hazard dams in NYS – 96% with plan
    - 681 intermediate hazard dams in NYS – 47% have plan. Need some effort to improve things in the intermediate hazard area.
- USDA built flood control projects with no state involvement. ~30 dams. Build with local county (typically soil and water conservation). DEC inspects, but no state ownership component.
- FN: Schoharie County – Gilboa Dam
    - DEC regulates them for dam safety. Significant concern for residents in Valley. Local press attention. NYC owner of dam. Concern during various flooding events.
    - Engineering reports whether dams meet criteria. This particular dam report (engineers tend to be conservative) showed that for the design event, stability factor <1, so dam could fail. For the record event, it came close to 1, so came close to failing according to analysis.
    - NYC has done interim anchoring project to improve stability. Started in 2005 or 2006. Completed after last update. There is also a longer-term project to improve stability.
    - Installed warning system and telemetry instrumentation within the dam to report possible movement of structure. Activated during Irene, was said to have saved lives.
- Dams with release warnings at dam (gates opening for releases, warns people fishing downstream, e.g., West Canada). This is the only one AD knows of with warning system tied to instrumentation in NYS.
- Crest gates – NYC DEP snow pack mitigation plan in some of their reservoirs. Plan 2011 negotiating with NYC and other partners outside NYS (PA, NJ, DE) to adjust reservoir levels within Delaware portion of water supply especially (systems for NYC). West of Hudson systems and especially Delaware – agreement among parties to release water before Spring runoff

depending on snow pack, water shed, calculations of snow pack water content, etc. Draw down reservoir in winter months to establish water level they can absorb.

- Crest gates – will become part of that program on Gilboa Dam.
- TS: What counties are you most concerned about with vulnerable populations?
    - AD: Every county has high hazard dams. Most in downstate area – denser populations, more water supply.
- FN: Any recent analysis of impact of dam break?
    - AD: EM Action Plans require inundation analysis
    - NF: Identify population impacted? Evacuation details?
    - AD: Varies plan to plan; not typically population at risk statistics, but there are maps
    - FN: If being done anywhere, likely Schoharie Valley
    - JL: Maps in plans on bookshelf you mentioned? Raw data?
    - AD: Some yes, some no
    - TS: Available here or electronically?
    - AD: Sent Dave DeMatteo two disks with information, mix of PDFs and other formats
    - AB: NYC dams – is it okay to have in plan?
    - AD: Public information – on NYC web site
    - AB: 2011 plan talks about programs. Any other initiatives underway or planned?
    - FN: Project priority list for $11.5 (or $14.5, whichever it is) million. Deadlines?
    - AD: Next year. Got more funding for flood control and coastal erosion. NY Works. All state money. Coastal erosion may go toward state share of federal proejcts. Sue McCormack can tell us (USACE Continuing Works)
- JL: GIS information?
    - AD: KMZ file is up to date; can send raw data if you want to make your own. Dan O may have it also.
- JL: Engineering standards – state or federal?
    - AD: Each state has its own standards. Federally suggested guidelines, but not 100% followed.

Coastal Erosion Management Section – Sue McCormick

- Section is very small – three engineers as of three weeks ago, two prior to that
- Two sides: regulatory – Coastal Erosion Hazard Area (CEHA)which is permitting under Article 34 of ECL. Part 505 of 6 NYCRR. Other side is the work we do with Army Corps of Engineers.
- Anyone who wants to construct anything in erosion hazard area must come to DEC for permit
- 86 coastal communities in program; half managed by local building department (42); 44 are regulated by DEC.
- How determine in CEHA area?
    - Mapping – law provided to develop maps of CEHA with updates every 10 years. 1980s was the last map. 1.5 years ago, scraped up money to start map update. Two consultants making all new maps. Lakes Erie and Ontario done, but not public outreach component yet. Moving into public outreach phase. Increases restrictions on what can be done, so may encounter resistance/delay.
- Mapping is key to the program. Working with maps that are 30+ years old. Nothing digital. Mylar map with pencil lines. Can email JPGs of scan – grainy, unusable.

- Governor's 2100 Report/Resiliency Plan talks about CEHA, remapping need, need to strengthen the law and regulations.
- Regulations are very specific. Variance process, strict criteria to be granted a variance. Right now two staff are handling CEHA as a result of Sandy. General permit issued after Sandy for work in tidal wetlands and CEHA; 1400 applications came in under general permit; many projects are stretching the limits of the general permit – 30 consent orders under consideration in NYC
- Regulations themselves – Part 505 – in process of rewriting them, cleaning them up and hoping to strengthen to build resilient (e.g., piles above floodplain on addition). Started working on prior to Sandy, started resurrecting/rewrite yesterday. A good year away from first draft – anticipate late 2014 for draft. Lengthy process to get regulation revised. Late 2015, early 2016?
- JL: Sand dunes?
    - SM: other side of program is dealing with USACE shore protection program under the NYS Shore Protection Act. Law allowed State to partner with USACE on projects to protect shoreline. State as non-federal partner in USACE projects.
- Prior to Sandy, many projects. Many feasibility studies, e.g., South Shore Staten Island, Long Beach, Fire Island to Montauk Point (FIMP), Lake Montauk Harbor, Bayville and others. Project lined up in Seagate area of Coney Island and several inlet projects.
    - Budgetary constraints slowed projects for years. three months ago, went into high gear due to $51 billion provided to USACE for shore protection projects. $2.1 billion allocated to USACE for civil works NYS projects. 100% federally funded, no cost share.
- Three breaches in Fire Island by Sandy – two repaired right away. Changes made after '93 breach in West Hampton Dunes, took out 100s of homes on barrier islands took two years to close. Breach Contingency Plan outlined exactly what National Parks, State, USACE would do, how to respond. Post-Sandy, Cupsogue County Park and Smith County Park breaches took two months to repair. Third breach on Fire Island in wilderness area – will be monitored, but no duration specified. Has become a massive inlet into Great South Bay. Some engineers believe it should be closed – storm could impact Long Island. Natural Resources, Nature Conservancy and others believe it should be left open, habitat, flushing, etc. Law suits now threatened in both directions. Regulation recently found that must do full EIS, which Park Service has agreed to do, but has no money to complete. State has directed USACE to do everything necessary to be ready to close the breach at a moment's notice. Currently starving the west side of the breach, which is getting bigger.
- Feasibility studies – amending agreements with USACE and local partners to make them zero cost share agreements. On an expedited schedule to get them done.
- Construction and design will be cost shared But will have 30 years to pay non-federal share – normally 100% up front. Awaiting OMB guidance on payback period.
- Timeline for ~8 projects, e.g., $350 million South Shore of Staten Island – 13-mile stretch, sea walls, dunes, levees, bigger beaches. $100 million Long Beach – protection for City of LB, Town of Hempstead, Nassau County, Point Lookout.

Projects

- Oakwood Beach area of Staten Island – looking at wetlands as a buffer instead of 26' seawall. Notice to proceed on feasibility study will be issued next week. State paying for it. Nature Conservancy asked for it.
- Staten Island – Northern 13 miles Fort Totten to Oakwood Beach. 13-mile stretch feasibility – USACE aiming for 2014; 100% federal likely. Phase 2 another 10-mile stretch, mostly bluffs (stabilization).
- Housing Community Renewal (State agency) – offers buyouts to homeowners for wetlands. Need 80-90 more buyouts to make it happen. 187 have volunteered. Need ~300 total. Monies out of block grant.
    - Set up meeting with Housing Community Renewal?
- Waiting on maps from HCR – whole community Fox Beach, Oakwood Beach – streets obliterated. Biggest area in NY for buyouts – Sandy.
- NYC Coney Island – Public beach. USACE project built in 90s. Held up well in Sandy. After Labor Day, ~400k cu yds pumped onto beach to bring back to design condition. 150' wide, protected community. Very western tip = gated community called Seagate. Bulkheads destroyed, 100 homes destroyed. Project to build T-groins and replenish beach at Seagate. Now 100% federal construction and going to bid in October. Agreement with NYC and USACE, but 100% federal. Four T-groins, 130,000 cu yds sand relocating to fill in groin compartments.
    - Sue just updated summary today. Will send.
- No information online except CEHA. Sue to send link to USACE web site with project descriptions.
- Rockaways – city lots of emergency repairs; trap bags (geotextile). Boardwalk destroyed. Putting 3,500,000 cu yds sand back on Rockaways done Jan/Feb. Exploring permanent solutions – end of 2014. Study completion is 100% federal.
- Long Beach, Nassau County – feasibility study - # years, completed Spring 2014. Dune and beach system – western Long Beach to Port Lookout on Jones Inlet. May be 100% federal on construction.
- Sandy Relief Bill had categories:
    - Feasibility studies 100% funded
    - Authorized but unconstructed projects 100% funded?
    - Authorized and something = 100% study but shared construction – see the Interim Reports for these details.
- Sue to send:
    - Interim Reports #1 and #2 from USACE [done]
    - Coastal update [done]
    - USACE link [done]
- Entire island of Long Beach underwater after Sandy. Bill Nechamen working on inundation maps.
- Fire Island – barrier island moved as much as 70' north by Sandy. Almost all dunes lost. More overwashes during winter storms. Threatens mainland as well as communities on Fire Island. Increased flooding over winter.

  - USACE emergency project pumping sand by Jan. Smith Point County Park. Robert Moses State Park.
    - Ask Parks & Rec about Robert Moses. Has done a lot of interim work – sand pumping – in April/May
- Middle Fire Island – to rebuild dune, must buy property. Will have unwilling sellers. May need to use eminent domain. Meetings with county and towns. Third phase of construction will take some time. Have formally requested USACE to take real estate.
- Westhampton emergency project – 90s big breach. Dunes and beaches in good shape after Sandy. 900k cu yds ocean sand to rebuild impacted dunes and beaches.
- West of Shinnecock Inlet – brought to pre-storm condition in late 2012; plans to bring to design condition in Fall 2013.
- Downtown Montauk – interim emergency project to provide protection; plan in process
- Lake Montauk Harbor – jetties in harbor causing erosion 40 years. Homeowners have sued to have DEC bring back beach.
- Hashamomuck – Segment of beach. No homes, beach eroded to county highway. Study to determine how to address/protect highway. Fast track USACE study – two years (normally takes 5-7)
- Asharoken – Spit that sticks into Long Island Sound, faces East. Historically hard hit. Study half done. Construction cost will be cost shared – village, state, USACE. Large dune structure – 600k cu yds sand from Sound.
- Bayville – Low lying; Bay on one side, Sound on other. Village floods. USACE halfway through study to see what to do to protect community. Will be cost shared – village, state, USACE.
- FIMP – 83 miles; comprehensive study to look at coastline. 1960 ongoing – very controversial, funding up and down over time. Sandy bill $700 million to complete study and do construction. Required to have local partner; just got last week – Suffolk County just agreed to be local sponsor (no cost share for initial construction).

- "Building Resiliency" – whole agency theme – coastal, floodplain especially
- CEHA –any new construction in hazard area. One requirement must prove they'll be safe from flood and erosion. Build to state building code (e.g., piles). Having issues with contractors – have gone after homeowners, now going after contractors themselves.
- Part of overall FIMP - $500 million out of $700 million is for mainland Long Island home elevations. 4400 homes (estimated) to be elevated under that program. Planning to prequalify contractors as part of that program. Anyone in 10-year floodplain would be offered elevation as part of FIMP plan.
- Some reconstruction going on, not allowed in CEHA. CEHA regs do not contain injunctive relief. All DEC can do to someone building without a permit is slap a penalty ($1k/day). Law needs to be strengthened – higher penalties (e.g., $10k/day/infraction), injunctive relief.
- NF: Checked 2011 maps
  - SM: CEHA maps have nothing to do with water. Based on natural protective features.

  - 2012 LIDAR – Great Lakes; oblique and aerial imagery. USACE, USGS, NOAA did LIDAR studies post-Sandy. Should be in State GIS library. DEC didn't have recent ortho, so hired Pictometry – NYC, Westchester – ortho & obliques. Sue could share imagery.
- NF: Others sources of information. Things that exacerbate erosion, e.g., climate change. Source NF found was Titus NY Sea Grant Study & Tanski.
  - SM: GIS person recently did map showing # parcels property that would be added/removed from jurisdiction, with new maps (Great Lakes only)
  - SM to send any statisics re percent shoreline that could be erosive and eroding/has eroded over last 30 years.
    - Shoreline erosion rate analysis. Anything greater than 1' over 30-year span is mapped as a structural hazard area. Now finding areas of that on north shore of Long Island. Also Lake Ontario – areas that have increased significantly.
- Requested historical listing of erosion events – specific details re major events, pattern through time. Sue to send contact/info if she runs across/thinks of who.
- Study re: hot spot in Atlantic for sea level rise – Sue to send article. Cape Cod to northern NC. Sea level rise faster there than anywhere.

- FN: DEC Division of Water has a role in Drought, but don't know that anything's changed significantly since 2011. Drought Management Task Force that's supposed to be headed by OEM. Ask RL who that head is.
- DEC has strengthened its regulatory authority on water taking (supply management). Runoff into Great Lakes has decreased significantly over past several years – climate change vs. temporary blip? Any studies?
  - NWS – Brit Westerguard – studies? Definitive science?
  - Amanda Stevens – NYSERDA studies re climate change
- Health Department also sits on Drought Management Task Force.

Department of Transportation (DOT); August 27, 2013

NYS Hazard Mitigation Plan Update
Meeting with Department of Transportation
August 27, 2013

Attendees:

Elisabeth Lennon (DOT)	Lynn Weiskopf (DOT)	Courtney Shorter
Mary Anne Mariotti (DOT)	Amanda Burnett	Tracy Smith
Arthur Sanderson (DOT)	Princess Ousley	Judy Wolf

- Mary Anne oversees FHWA-ER and FEMA PA programs; Lynn and Elisabeth are Office of Planning Policy, including Sustainability & Mitigation; Art is Office of Design, including Climate Change considerations
- 2011 Plan information verified as still ongoing and valid
- Doing research re: risk assessment
- New investment strategy – preservation strategy; started two years ago; Sea Crest looking at all assets – bridge and highway are the main focus. Bridge preservation is emerging as strongest in terms of how addressing it. Bridge preservation forms. Funding is state and federal (limited, but there).
- DOT was active in the post-Sandy governor's commission – operations/mitigation – played an active role in 2100 Commissioner, report issued in Jan.
  - Floodwatch program
  - Bridge inspection program
- Took inventory for parts of department – what's already being done, identifying potential vulnerabilities
- Scour critical bridges – looking at how to address most critical
- Keeping up with operations addresses lots of issues
  - Funding is always an issue; constant prioritization
- DOT has strong EM response team – any hazard, 24/7 availability; intra-agency responses, repairs, opening roads
- Commissioner's interview – Aashto Center for Environmental Excellence Climate Briefing (international climate briefing newsletter) August 2, 1013, issue. [JW note: non-DOT employees cannot access newsletter on web site, sign-in required]
- Commissioner is head of Aashto Climate Change National Committee
- Strong recommendation from 2100 Report – continue with vulnerability assessments
- From 2011 Plan: "Research project to mitigate number of bridge impacts well underway" – any update? Discussion re: may have been truck impacts.
- Some discussion regarding whether to check with Long Island people re culverts – what doing post Sandy? Regular cleaning project? Daily work plans include cleaning and maintenance of culverts.
  - Suggestion for a project: using funding for consultant to do maintenance work due to resources lost over past few years
- Hazard mitigation usually focuses on repetitive areas. Can also look at funding sources (e.g., HMGP, PDM).
- Pull projects out of 2100 Commission Report
- Vulnerability assessment – identifying areas prone to flooding now and future due to climate change. Future planning projects to take climate change into account.

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  - New York State Flooding Vulnerability Study – started process of assessing vulnerability; process is finalized. Started work in Region 8 (Poughkeepsie) – gave them paper maps for verification. Looking for future protective risks.
  - Hydronics – shows how Sandy event could happen annually in 2100
  - Compiling past vulnerabilities and future; asking questions like "If flooding got worse, where would those locations be?"
  - Product will be GIS layer showing locations for use by planners/designers for new projects
  - New development areas on state highways
  - Feeds into capital programming process – locations to be addressed – extreme weather vulnerabilities (e.g., Rte 20 at mall – flooding – attempt to be proactive in identifying areas)
  - Regions know where they are, but not yet documented in plan form
  - By next year, will have GIS layer to feed into process
- TS: List of areas identified available yet?
  - DOT: Yes a small portion. Can provide work plan, questions being asked.
- TS: Besides flooding, what are your second and third most significant hazards?
  - Intense inland precipitation – flooding
  - Sea level rise – flooding
- 2100 effort – looked at all types of hazards
- Landslides – work goes on to identify vulnerable slopes; statewide each region has a list of slop instabilities, pan in place to monitor.
  - Geotech engineers would have to provide a list/map (maybe GIS layers) – not online
- Retrofitting bridges for earthquakes
- Intense standards re: high wind events – past 10 years, changed design for sign structures
- Biggest flood vulnerability = intense coastal storm – will get worse with climate change and sea level rise.
- Get most damage from inland flooding.
- Not super vulnerable to coastal erosion – inundation is the biggest issue; most roads held up well after last storm.
- DOT suggestion: Consider interviewing NYC DOT
- NY Rising effort – up to 45 or 48 community plans to do inventories, risk assessments
  - Governor's initiative, available online (guidebook, list of communities)
  - Kick-off meeting was in July – support from State DOS, DOT planning staff
  - Funding = CDBG? ~$400 million; State resources to get plans in place
  - Post-Sandy funding to get prioritized
  - Deadline to complete is March 2014
- FHWA Pilot Program – Lake Champlain – vulnerability assessment pilot; study of adaptation measures
  - USGS stream statistics model – Expanded Stream Statistics Tool – for rainfall intensities predicted with climate change
  - Nature Conservancy also involved
  - Determine stream flow for different risk storms
  - Planners/designers could use model for future year to determine future vulnerability
- #1 – Flood; #2 – Hurricane & Coastal Storm; #3 – Winter Storm, but more response than mitigation (make sure we have enough equipment, trained personnel, etc)
- DOT does a lot of work trimming trees to minimize storm damage

- Trying to prioritize scour-critical bridges (DOT will provide information)
- Third study: NY-NJ-CT Study – vulnerability assessment related to impacts from Sandy, tri-state/metropolitan area; Sandy and preceding storms, methods of rebuilding to deal with event; assess how infrastructure performed; selected 10 representative assets to examine in greater detail (e.g., moveable bridge, fixed bridge, tunnel, highway sections); take a detailed look at the engineering standards for these assets and come up with adaptation strategies.
- Have done a lot to upgrade/update communications technology – 511 traffic travel info – be able to provide current, detailed information. TMCs have come a long way – 24/7 coordination and response across the State. Built capacity for rideshare matching, etc. Working nationally on vehicle technologies.
- NYSERDA funding – Cornell study looking at down-scaled intense precipitation models – normally models are on a large scale (e.g., 200 miles x 200 miles); this study focuses down to the regional level within NYS (e.g., 50 miles by 50 miles). Allows update of design standards for 100-year event models. Aiming for end of 2015.
    - Needed to look at changes in design for bridges, culverts, etc.; need to help engineers determine future stream flows to design culverts, bridges. Expected to last 75-100 years. Want to accommodate flow at the end of their design life, not just the beginning.
- Asset/Risk Assessment – FHWA pilot – asset management plan
    - One requirement in federal legislation is to have a risk-based asset management plan in place by end of 2016.
    - NYS is a pilot state; consultant working on risk assessment, risk registry, as part of developing plan; should be in place by May 2014 – being written now
    - Work plan is online (FHWA web site)
- Herkimer flooding – FEMA kickoff meeting yesterday
    - Various sites, ~ 400 sites; quite a few sites where HM was done
    - Governor's executive order directed DOT to help out locals
        - Replace culverts, stream work, retaining walls to mitigate future problems, improving infrastructure/culverts; roads held up well.
    - Washouts, increased culvert size; working on local system was challenging (communication, etc).
    - DOT performed hydraulic analysis for local communities.
    - DOT was asked to assess sites; in many cases no action taken so far.
    - Early coordination is better; outreach efforts; region did a lot of coordination.
- Work with neighboring states
    - I-95 Corridor Coalition, CONEG, NASTO
    - Share best practices following extreme weather events (largely response oriented, but coordination is good)
    - Involves Operations DOT, local programs people – discussing recommendations to make at a federal level
- FHWA delegates bridge inspection to NYS DOT; biannual inspections
    - If bridge owners fails to respond to flags, DOT can close bridge regardless of ownership
- List of projects sent to Governor's office (Lynn to check and send)
- Mary Anne to send list of Public Assistance 406 hazard mitigation projects
- For GIS, Kevin Hunt can tell Julie what's available. Email any questions to Elisabeth.
    - There's also a NYS ITS GIS group that may be helpful
- NYSERDA does a lot of studies, has a pot of research money

  - 2-3 years of climate change working group meetings; one product of meetings was LIDAR mapping along the coast, which is useful in mapping vulnerability models
  - Large statewide effort – NYS Climate Action Plan (started in 2009; draft interim report 2011); looks at all sectors across the board (e.g., water resources, agriculture, technology, etc); infrastructure, mitigation included
    - Interim draft available on NYS DEC web site
  - ClimAID report – also funded by NYSERDA
- Sea Level Rise Task Force – required by legislation
  - Report published Dec 2010
- DOT is also part of national research agendas; e.g., working on integrating climate change into pilot for risk-based asset management
- Establishing building blocks to support risk-based asset management (RBAM) and decisions made through RBAM
- Assets being tracked in GIS systems; bridge database includes all local bridges as well as state assets; culvert database also
  - Bridge = any span over 20'
  - Large culvert = 5' to 20' span
- Chosen for studies:
  - Coastal bridges in Long Island
    - Costly to replace
    - Time consuming to replace
    - Economically devastating to lose
    - Jones Beach area, Robert Moses Causeway to Fire Island; two combination bridges; Jones Inlet area, Loop Parkway, Meadowbrook Parkway
  - Highway segments
    - One near Indian Point (nuclear plant) and Camp Smith (military base), Route 6/202 intersection near Peekskill
    - Repetitive flood, more frequent (high tides seem to be getting higher)
    - Critical for evacuation route and access to two critical assets
  - Sawmill River Parkway
    - Regularly floods; carries 70,000 cars/day
- Statewide flooding vulnerability
  - Ask what happens if this road is closed for one day, two weeks, etc; detours available? Evacuation route? Etc.

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Office of Fire Protection and Control; August 27, 2013

Notes:

Office of Fire Protection and Control

8/27/2013

Meeting Attendees:

- Andrew Dickinson
- Donald Fischer
- Judy Wolf
- Tracy Smith
- Princess Ousley

Donald Fischer

The Firewise program primarily addresses the wildland urban interface (where the woods stop and development begins). DEC's website should have more information. The program has been in existence elsewhere in the country for a long time, but is in the formation stage in New York State.

- Somewhat of an ad hoc committee of state agencies and some non-governmental partners.

The Firewise Communities program is an attempt to mitigate the hazard as far as fuel load goes. Clean up around your own house and neighbor's home. There is one in New York State in Cragsmoor in Ulster County. Working with NFPA to push that program.

- Cragsmoor is the first and only Firewise Community in New York State.
- Firewise from the NFPA is a program with a pretty good history, just began in New York State within the last two years.
- New York state building codes reference one of the ICC codes on wildfire protection.

What is the probability of future wildfire events? DEC gets into the fuel management part of it. Vulnerability by jurisdiction would be more DEC.

The Firewise program takes you outside of the building to tell you what you should do outside your building to protect it. It focuses slightly on building construction like using metal roofs and not using wood shingles/siding.

- Clean leaves and pine needles out of house. Property maintenance issues, really.
- Very limited; looking at defensible space.
- 30 feet from building you should have very few shrubs, no brush.
  - Grass is good open space.
  - 30-100 feet should be thinned out quite a bit.
- Looks park-like when done.

Firewise has been out there for years; however, been sparked in New York within last 3 years.

The agency involvement has gotten more serious because of Dave Russell, Forest Ranger with DEC, serving as the spark plug of the project. NYS has gotten a couple of grants and acquired a trailer, video tapes, pamphlets and handout material.

- The project has a huge community education component
- This summer was the first time we had an opportunity to really push it.
    - We put information out there and if there was an interest in the community then we went in and provided support. If there was no interest then we just provided the information.

Andrew Dickinson

There is a codes division within the State of New York that is in the Department of State. We inspect selected state agencies and all college campuses regardless if state or private.

- 20,000 state assets.
- 15-16,000 buildings a year.
- The college buildings and the office of general services

OFPC has three branches with training and operations as a part of inspections and investigations, which is 1/3 of organization.

Donald Fischer

How much overlap with training with DEC folks?

- Train together on wildfires.
- Co-work with their rescue course. Also with the wildlife and fire suppression course.
    - Rangers teach the course, but we developed it.
- Worked with them to create the program.
- DEC teaches the course and OFPC provides support (print workbooks, that sort of thing).
- Talking to DEC about updating the course. Written independent of Federal courses, which are S-190 and S-130.
    - What they call a "Crosswalk" – Wildland firefighting for structural firefighters.
    - Continue prioritization even in basic courses to have wildfire components in standards.
    - There are wildfire components in the career standards, but there is no volunteer standard. In the career standard, there are pieces in there about wildland training standard.
        - **That is a career firefighter standard and not volunteer.**
    - This is the first major update since 1984.
    - Recommends - small upgrades every 5-6 years.

Wish list related to past mitigation activities and looking forward in the next 3-5 years?

- 24,000 dollars a year annual grant recently turned into a 6-year grant.
  - Federal grant that comes to DEC
- Bulk goes to rural fire departments.
  - They get a very small piece of it to fund some of the training courses that particularly relate to wild fires.
- ICS training that we do as normal business is a project we would certainly want to continue.
- Continue to prioritize firefighter training and fire suppression equipment.
- Explore new training courses; incident command goal (from 2011 Plan) has probably been accomplished.
  - They are pushing out a lot of incident command courses.
  - Wildland-urban interface and specialized wildfire course, behavior course.

DEC operates a lot of campgrounds and has a lot of buildings in the woods. Syracuse School of Forestry has some remote facilities up in the Adirondack. Facility on Cranberry Lake Biologic Field Station. Pack Demonstration Forrest in Warrensburg. Harriman 3-room shacks in the woods. There are a lot of buildings out there that are vulnerable (they are state property). With budget cuts, the department can only do the bare minimum.

Ready Set Go. Ready Set Go originated in Australia. If you are in wildfire season, and you are in an area that is prone to wildfires residents should have a back pack, emergency information, prescriptions whatever stuff you need. Full tank of gas and have backpack. When word comes, throw bag in the car and get going. Ready set go is just starting to happen.

Most important thing is to update our training program.

- Increasing the amount of education that Firewise provides.
- Multiple spots within the state that have communities that are at risk.
  - All around the state you are getting the "Mc Mansions" in the woods, they keep pushing in. One of the first things they want is seclusion, which means you keep all the trees and the brush so that no one can see their homes from the road. Fortunately a lot of New York State is hard woods and they don't burn well.
  - Andy Jacob would be a perfect person to talk to. He intimately knows the fuel composition of the entire state. Last fall went down and met with Pine Barrens Commission and spoke about risks.
    - It's in Long Island and flows into New Jersey.
    - Major wildfire in 1995 - 5000 acres.
      - Everything has pretty much grown back to what it was prior to the fire.
  - Last spring was extremely dry. Fire danger was extremely high. We had a few small fires, but they were jumped on quickly. Everyone learned from 1995.
    - Tamarac fire lost 40 structures
      - That was not in the wildland-urban interface.

- It was more rural New York.
- It was windy and dry; met climate conditions.
- That was Easter weekend of 2012. DEC would have the details. That is where you would see the DEC-local partnership.

Recent conversation this past winter: Met with National Guard about their response to wild fires. What support they could offer and resources they could put into the mix. They have in the past been helpful, but they wanted to be more forward leaning. It's a new initiative, but has no name. Andy Jacob met with them last. National Guard has people, trucks, and helicopters. They can count real exercises as trainings, and they are required to do trainings.

Department of Environmental Conservation (DEC): Floodplain Management; August 28, 2013

DEC

Floodplain Management Notes

Wednesday, August 28, 2013

Meeting Attendees:

- Bill Nechamen
- David Sherman
- Amanda Burnett
- Julie Lam
- Princess Ousley
- Courtney Shorter
- Tracy Smith
- Kyrie Wagner

Routine Program

Flood Protection and Floodplain Management
The Department works with communities throughout the State in finding ways to reduce or protect against physical and property damage caused by flooding. The DEC works on structural flood control projects to prevent flood waters from damaging communities, but the Department also helps communities establish sustainable floodplain management programs to mitigate the potential for flooding. The DEC works with communities participating in the National Flood Insurance Program (NFIP) to administer local regulations and building standards for flood damage prevention.

- Responsible for working with approx. 1490 municipalities (town, city or village) to ensure compliance with the national floodplain program. This is done through a FEMA program called Community Assistance Program State Support Services Element (CAP-SSSE).

- FEMA CAP-SSSE grants are implemented in a number of ways. DEC recipients receive help participating in the national flood insurance program, where DEC serves as a resource to them.
    - Community assistant contacts (CACs) work with municipalities and conduct reviews to determine how recipients are implementing the program.
        - 30-40 phone interviews and brief on-site visits a year
            - When scheduled, it is a telephone interview with community officials that might last an hour or so. Providing an overview of the program and determining the level of understanding.
            - We reach out to smaller communities that haven't heard from anyone in a long time.
            - Many communities don't realize they participate in the national flood plain programs and don't know what their responsibilities are.

- Workshops – DEC's current work plan has them conducting 12 workshops a year.
  - In the past year roughly 18 have been conducted
  - Detailed program workshops for local building inspectors, the people who are actually on the ground doing permitting for local communities.
- DEC has a series of workshops that are accredited for code enforcement continuing education credits.
  - Workshops are some of the best outreach DEC can do because it provides face to face opportunities with a large number of community officials at one time. However, there are parts of the state that haven't had a workshop in a while, e.g., more remote parts of the state like St. Lawrence County.

- Technical assistance is also provided to local officials, communities, developers, property owners and others through phone calls and emails. Approximately 800 a year.
  - Phone calls range from "Could you help me figure out if I am on a flood plain?" to "Why am I in a flood plain?" to "I have this development going into my community; I don't have the experience to deal with this type of development, can you help me?"

- Local communities must have laws that comply with FEMA standards to participate in the National Flood Insurance Program (NFIP) and must also comply with state building code standards, which in some aspects are more restrictive then FEMA.
  - Whenever a municipality gets a new flood map, they are required by NFIP regulations to update their local law and adopt those maps. In some states, communities have automatic adoption so they don't have to do anything. New York is a home rule state so they have to go through a local legislative process to adopt a map. Tremendous workload because of the nature of local governments in New York.
    - Counties don't have land use authority. Counties don't manage development, only towns, cities and villages do.
      - If FEMA releases a new flood map for a county, you may have 40 communities at one time that have to update their local laws.
        - For example, Oneida County is getting a new flood map for over 40 communities, and some are very rural communities.
- Flood mapping side
  - No longer producing flood maps (Except for a few projects that are not quite finished, they are getting out of the business of producing flood maps for staffing reasons)
  - Works closely with FEMA on the community outreach side of flood mapping.

- Series of WebEx's and meetings with local communities to find out what their flooding issues are, where the development is or is probably going, where their flood maps may be adequate or inadequate.
- Part of that process is also a mitigation portion where looking at local mitigation plans and what plans they may have on going or in the thought process that the maps can help with. Then as maps are being developed there are periodic meetings with communities to let them know how process is going. Then when maps are delivered in preliminary form meet with them again to explain the maps, go over the maps, explain there is an appeals process and explain that, then have a series of public open houses where members of the public can come in and review their maps and get information about flood insurance. With the new flood insurance law those meetings moving forward are going to be very difficult.

Response

- When a flood hits, DEC works closely with the FEMA JFO (Joint Field Office) on Community outreach
  - When Irene and Lee hit, they were treated as one event. FEMA staffed up their JFO and their NFIP staff focused on doing substantial damage estimates of structures. DEC partnered with them, so DEC borrowed staff from other parts of the Division of Water and went out and did quick substantial damage estimates. FEMA then processed the data and delivered to the communities.
- Sandy actions
  - Sandy was a much bigger event in terms of the number of structures and population effected, however it was geographically smaller.
    - DEC floodplain management adjusted the DEC role. Instead of inspecting buildings, DEC staff partnered with FEMA JFO and went to every municipality in Long Island plus a number in Westchester and Rockland County and had several meetings with agencies of the City of New York to go over what was required for rebuilding.
      - Went in with FEMA reservist and conducted 35-40 meetings. Each meeting had a DEC person and a FEMA person talking directly with local officials.
      - FEMA did go out afterwards and do substantial damage estimates on 5 communities that were particularly hard hit.

Q. Have you followed up since those two months of meetings? Yes, a series of follow-up meetings with FEMA staff have been conducted; however, there are communities that require additional outreach.

Q. Looking at risk assessment, any issues or concerns? Approximately 80% of the state's housing stock was built before 1980 and in some communities there are more. The estimate is that only 25% of

people in flood hazard areas have flood insurance. In the last plan, Dan O'Brien from SEMO did some really good number crunching related to the old buildings with basements that were built before 1980. Some can be updated because some of the mapping has been updated. Parcel property value.

Q. What is DEC doing to tell people to get flood insurance? DEC works primarily with local government officials. Local governments are charged with pushing out the information to the general public.

The DEC Flood Control Projects Section manages about 100 miles of USACE-built flood control projects, which consist of levees, flood walls, and some stream management projects. 1-2 years ago, we had a real backlog of maintenance because of state funding. State passed a New York Works program that has allocated 50 million dollars for upgrades for Corps of Engineers flood control projects, which is ongoing.

- $5 million a year is needed on a permanent basis to keep up with maintenance

Q. What would you like to see for the Floodplain Management section? A letter of intent was sent to FEMA for outreach. HMGP allows funding for outreach, and training for local floodplain administrators. Funding would allow DEC the opportunity to work with county and regional planning agencies and hire contract help to put together a detailed state-wide training. DEC has 9 regional offices, and each office has 1-2 people in the flood programs. Regions have varying degrees of capability as it relates to the flood program. As a result, DEC field staff is somewhat spread out and unable to spend large amounts of time on community training.

Community Assistance Visits (CAV) would be considered a top priority. This would allow further one-on-one outreach with larger and smaller communities. It would also be helpful if as a part of local outreach, we could provide additional information on hazard mitigation opportunities.

Q. What are ways to mitigate risk with buildings? Elevating utilities would be a way to reduce risk. For example, making sure that the basement is free of any utilities that are necessary to the operation of the home. For many structures affected by a flood, you may get a foot or two of water surrounding the homes, but that completely fills the basement, which causes the furnace, water heater, and electricity to be destroyed. However the house itself does not suffer a lot of structural damage. This causes a huge expense and extends the time period in which people cannot get back into their homes after a disaster.

Q. Are the majority of homes above the advisory base flood elevation level? When you count square footage of the home, does it include the basement or does it start with the first level? The basement is defined under building codes, and under FEMA requirements for the national flood insurance program: a basement is any area of a structure that is below grade on all sides. If there is a basement, by definition a basement is on the lowest floor and that is what is used for insurance purposes. Building elevation standards for NFIP and building code compliance and for insurance rating is based upon the elevation of the lowest floor including the elevation of any basement floor.

The cost to elevate the home is $80-90K per home in the Long Island area.

Q. So if we were to do a program that elevated utilities, what would be the estimated cost for structure? Spending $20-30K per home to elevate utilities to remove them from the basement would save a lot of future damages.

Q. Have you identified the types of utilities you would be using? Heating, air conditioning, water heater, electric would be the main focus.

Q. Would you be moving the electrical up? Yes, elevating the meters, elevating the H-VAC and hot water heater. Once the wiring gets wet, if you don't have wiring designed to be underground/wet, you have to replace the wiring for the whole house.

DEC: Hudson Estuary Program; August 28, 2013

Hudson Estuary Program

DEC

8/28/2013

Meeting Participants:

- Kristin Marcell
- Nancy Freeman
- Amanda Burnett
- Courtney Shorter
- Tracy Smith
- Kyrie Wagner
- Princess Ousley

The program works with regional partners to manage the Estuary portion of the Hudson watershed from the Federal Dam at Troy down to the Battery in NYC using an ecosystem-based management approach. One thing it serves to do is integrate across different DEC programs and across DEC Regions 2, 3, and 4 and integrate activities that affect the Estuary. It also works very closely with communities in the Estuary watershed and other stakeholders, NGO's and academic stakeholders to help them make land use decisions that we think will benefit the long-term health of the Estuary. We fund a lot of research projects, we do a lot of public outreach, a lot of outreach to communities about land use decisions and their local water resources. In the last 5-6 years we've been able to focus on climate change as it becomes an issue more important to the state. We have also been able to move forward some interesting adaptations initiatives, they're not always branded as adaptation, but a lot of things that we've been doing for a while are considered very helpful for climate adaptation. Then we are doing things much more specific, addressing waterfront risks and coastal hazards such as in our project with the City of Kingston.

DEC Hudson Estuary Program has 12 goals in their Action Agenda. The goals can be found on their website at http://www.dec.ny.gov/lands/4920.html.

- Kristin Marcell works on the Climate Change Goal.

Kingston Waterfront Flooding Task Force (Started in December)

Scenic Hudson, the Hudson River National Estuarine Research Reserve, NYS Department of State and the Consensus Building Institute have been working with the Hudson River Estuary Program to design a waterfront flooding task force process for the City of Kingston, NY. The process allows Hudson River waterfront communities to select sea level rise and storm scenarios, undertake a simplified local flood vulnerability assessment, complete a site specific cost-benefit analysis for adaptation strategies to protect their waterfronts, and develop a roadmap for local adaptation to flood vulnerability. DEC contracting with Catalysis Adaptation Partners (CAP) to use their COastal Adaptation to Sea level rise Tool (COAST) to undertake the cost benefit analysis in the project. The final report is complete and a

public meeting to share results will happen in fall 2013. More information can be found at www.kingstoncac.org .

- The community selected their sea level rise and storm scenarios. They chose planning horizons 2060 and 2100. They chose the 100 year and 10 year storms; and they chose 36 and 68 inches for their long term sea level rise. We then used those storm scenarios and sea level rise scenarios in the COAST tool. The COAST tool uses the Army Corps of Engineers depth-damage function to estimate how much damage a specific structure would have under a certain water elevation, based on historical data the Corps has on how flooding has impacted different types of buildings over time. With that information and with some new high resolution elevation data (LiDAR) we collected last winter we're able to map which areas will be affected at a variety of water elevations. We used the depth-damage function and assessed tax values for properties to develop damage estimates at different water elevations. This was done for the different storm scenarios with sea level rise.

  One of the outputs we got for the COAST model was a table that shows the water elevations under the different storm scenarios and a total damage costs, including discounting.

LiDAR

DEC funded the collection of high resolution elevation data (LiDAR) in 2012 through the NOAA Coastal Services Center. The collection covers the entire tidally-influenced shoreline of NYS from the federal dam at Troy to Long Island (except NYC which has recently collected this data) at 1 meter point spacing, sufficient to map sea level rise in one foot intervals. This data is being used in order to identify areas at greatest risk of coastal flooding, areas of potential tidal wetland migration, and to remap state-regulated Coastal Erosion Hazard Areas. All DEMs can be found on the NYS GIS Clearinghouse (http://gis.ny.gov/elevation/DEM-1-Meter-NOAA.htm) and NOAA's Digital Coast website.

Sustainable Shorelines Project

This project is developing guidance for communities on the tradeoffs among management options for controlling shoreline erosion, including relative costs, impacts on habitat functions, and resilience to storms and sea level rise. The project includes a series of green shoreline demonstration projects including the design of two ecologically-enhanced (or "green") shoreline treatments to control erosion on shorelines in Cold Spring and Nyack, NY. More information can be found at www.hrnerr.org .

Assessing Flood Risk in a Changing Climate in the Mohawk and Hudson River Basins

The Estuary Program is funding researchers at SUNY School of Environmental Science and Forestry to characterize causes of flooding in the Mohawk and Hudson River valleys, including high precipitation, ice dams, and storm surge, and evaluate the relative contribution of upland watershed flow and storm surge to water levels on the main channel of the Hudson River. They will create a statistical framework for assessments of how future flood risk may change.

Mapping of barriers (bridges, culverts and dams) that constrict stormwater to develop a method to prioritize their removal or replacement

A climatologist (Art Degaetano) and eco-hydrologist (Todd Walter) from Cornell are working with the Estuary Program staff and local Soil and Water Conservation District(s) to use local culvert information in hydrologic models, identifying which ones are undersized for predicted changes in runoff in three pilot watersheds in the Hudson Valley. This information will be used to prioritize which culverts, bridges or barriers should be replaced or upgraded to deal with future flood flows.

Habitat Corridor Mapping in the Hudson Valley

Cornell University is working with the Estuary Program to develop a landscape-scale habitat connectivity map based on changes in species distribution caused by climate change. This will help to prioritize land conservation for north-south corridors to allow wildlife migration as the climate changes. They will also conduct field work to establish indicators of climate change (plants, animals, ecosystems). They will also conduct outreach and technical assistance to communities on climate-related habitat conservation and open space planning.

Long-term water level monitoring station in the Hudson estuary

The Hudson River National Estuarine Research Reserve is leading an effort to install a long term water level monitoring station in the Hudson estuary near Kingston, in partnership with NOAA. Currently the only NOAA gage for the estuary is at the Battery. This station will help resolve water levels and tide stages for the estuary and track long-term sea level rise.

Hudson Estuary Watershed Resiliency Project

The Estuary Program is funding Cornell Cooperative Extension staff in Columbia, Dutchess, Greene, Orange and Putnam counties to conduct outreach to municipal and landowner audiences in target watersheds on flood resiliency. This effort will address the need for communities to enhance their understanding of stream dynamics, floodplain function and watershed planning to reduce their vulnerability to floods. The project will also evaluate the capacity of communities to respond to floods in a manner that ensures the long-term viability of stream systems and reduces future flooding impacts. Topics include the causes of flooding, the role of land use in flooding, benefits of wetlands and riparian buffers in flood mitigation and techniques to restore stream integrity after flood events. Outreach efforts will also include the provision of fact sheets regarding jurisdiction in streams, what agencies to contact during and after flood events, and resources to assist municipalities in planning to reduce flood vulnerability.

- Interviewing local officials to get a sense of what they are doing now so they can target their outreach efforts.

SLAMM modeling in the Hudson Estuary

Cornell University and Scenic Hudson are using the SLAMM (Sea Level Rise Affecting Marshes Model) to model potential marsh migration in the Hudson estuary to develop shoreline conservation priorities and assess the need for barrier removal to facilitate the landward migration of tidal wetlands as sea level rises. Loss of tidal wetlands can impact water quality especially in drought or heat extremes. Some communities get their drinking water from the Hudson River, including Poughkeepsie.

Climate Smart Communities Certification Program

The Hudson River Estuary Program is funding VHB (Vanesse Hangen and Brustlin) to develop a certification program for the NYS Climate Smart Communities program. The work is being piloted in four communities in 2013. The program track active Climate Smart Communities and recognize the most active communities. The project will design a roadmap for community climate action. A steering committee will advise on which actions will make a community a certified CSC. NYSERDA may base some of its programs on the certification process.

NYS Canal Corporation; August 30, 2013

NYS Canal Corporation

August 30, 2013

Meeting Participants:

- Howard Goebel
- Cathy Sheridan
- Fred Nuffer
- Tracy Smith
- Kyrie Wagner
- Princess Ousley

Program Overview

The New York State Canal System is a navigable 524-mile inland waterway that spans upstate New York. The waterway connects the Hudson River with Lake Champlain, Lake Ontario, Cayuga Lake, Seneca Lake, and Lake Erie via the Niagara River.

The Canal System includes four Canals: the Erie, Champlain, Oswego and Cayuga-Seneca; canalized natural waterways, plus five lakes: Oneida, Onondaga, Cross, Cayuga and Seneca; short Canal sections at Ithaca and Watkins Glen; feeder reservoirs, canals and rivers not accessible by boat from the Canal; and Canal terminals on Lake Champlain. The Canal System passes through 23 counties and close to 200 villages, hamlets and towns. The system also includes some historic canal from the original Clinton's Ditch and the Enlarged Canal, and the 290-mile Canalway Trail system.

The New York State Canal Corporation is charged with operating and maintaining this historic canal system that first went into operation in its existing form in 1915. It's a very old and complex system with over 2,000 structures, including 57 navigation locks; 22 reservoirs and numerous dams and water control structures. In order to preserve its historic character, the system has not been modernized, and functions largely as it was originally designed 100 years ago.

This system unlike its predecessors is extremely prone to wet weather damage, especially under very extreme weather events. One of the biggest issues is impacts from major wet weather events, such as flooding that has caused major damage to Canal structures. The Canal System was constructed for navigation purposes, not as a flood control facility. The Canal Corporation has limited ability to operate the system for flood control. Actions taken by the Canal Corporation usually have a consequence. Actions which may minimize impacts in one location may cause damage to another location. The Canal Corporation operates the system within the limitations of the navigation system it was designed under.

Q. How are you trying to resolve the problems you have with flooding?

The Canal Corporation is consistently improving its data gathering and monitoring. Over the years there has been a dramatic improvement through the development of the Canal Infrastructure Management System (CIMS). One component of CIMS is it houses all Canal water

resource data, so the staff can access the database in the office or from a remote location. The data is updated routinely by Canal Corporation staff in the field, to provide a relatively real-time view of conditions.

One of the biggest issues is that damages to Canal infrastructure have occurred systematically and repetitively at a high cost. Regardless of whether an event is declared as a federal disaster, and if FEMA reimbursement occurs, the costs are high. The Canal Corporation has moved forward with several mitigations projects eligible for FEMA reimbursement to minimize the damage by modifying how Canal structures are operated. A significant amount of engineering has been accomplished from a structural standpoint; and from a hydrology and hydraulic standpoint to determine what modifications can be put into place which would substantially minimize the level of potential flooding damages that would occur on the canal system.

In addition to that, there's a tremendous benefit to the communities and property owners along the canal system.

Fred - An example, that has caused concern at the local level and damages specifically for the canal system. When you have floods you have lots of material coming down stream, trees and debris. Those trees and debris catch on some of the gates that control water levels for the boating purposes. If you have that material backing up, what you're having then is a back water effect that potentially can flood low-lying building structures and communities. So the work that they're doing is very specific in trying to mitigate that problem but again they've had millions of dollars of damages to those structures that the canal corporation must maintain. By doing some of the mitigation work that they're doing, hopefully, we will be able to reduce future damages to the infrastructure, that's NYS infrastructure, and hopefully there will be some resultant benefits to the communities that reside upstream and potentially downstream to some of the structures that are there.

Cathy –Coincidental benefits from these mitigation projects can be very large.

Howard – Damages which may not be readily captured are the economic loss to Canal customers. In 2011, due to Hurricane Irene and Tropical Storm Lee, the Canal System was closed for navigation system for 74 days. The Canal System is a transportation system as well as a tourism destination. Businesses that were relying on using the canal weren't able to as planned. The canal is used as the primary conduit for boats to get from the Great Lakes to their Winter Harbors. It's not just the damage of the structure but also the use of the system.

Cathy - an example of that would be Blount Small Ship Adventures that plan summer cruises in the Northeast and Great Lakes, and then winter cruises in the Caribbean and Central America. They end up canceling a portion of their season because their vessels were trapped in the closed portion of the system following Hurricane Irene and Tropical Storm Lee.

It could also affect cargo shipments. This year a considerable amount of agricultural product is being shipped on the Oswego Canal. Significant flooding has the potential to delay those and other commercial shipments.

Review of the Natural Hazard List comments:

Howard – While the Canal System is a riverine system, it's a canalized riverine system; the river is not free flowing. The Canal Corporation has dams every 10-15 miles to create a navigation system. Debris collection also contributes to flash flooding. Ice jam flooding, during the winter when the canals are closed, can occur at times in flood prone areas. A positive from the Canal Corporation's perspective is that it does occur when the navigation season is closed. So ice jamming is not directly impacting operations, even though the damage can occur. The dams on the Mohawk River that are prone to catching debris are fully removed from the river after the close of navigation. The river is returned back to flowing as a free flowing river once navigation is closed, around Thanksgiving each year. So it's an issue that has multi-facets to it relative to the natural hazard.

Cathy - An ice jam flood wouldn't necessarily affect the Canal Corporation or Canal structures; it may affect an adjacent community that's on the Canal system.

Howard – One of the hazards is the Canal Corporation owns a numerous high hazard dams, and is working with other state and federal agencies to ensure that they are maintained and operated in a manner that is consistent with the standard practices for dams. Any high hazard dam breach could have substantial the impacts.

- Flood – the issue of flooding varies throughout the Canal system; some areas are more flood prone then others. Any part of the system can be impacted, just certain parts are more prone than others.
- Drought – is an issue that is ongoing. Fortunately the droughts experienced in recent decades have been on a small enough magnitude that the Corporation has been able to manage them. If a drought does occur on a major level, which includes magnitude and duration, that would become a big problem because the navigation system couldn't operate.
    - The bigger challenge with droughts is that the Canal System is a water source of so many other entities (agriculture, water supply for other communities). The Canal Corporation has reservoirs that are used for various other uses; such as irrigation for golf courses, hydropower generation, and as sources of drinking water. Ultimately, if a drought persisted for long duration and magnitude the impacts could be extreme to numerous stakeholders.

Projects:

Movable Dam Improvements - $30 million - (pro-active mitigation)

The Mohawk River portion of the Erie Canal is susceptible to damaging flooding between Locks E-8 (Scotia) and E-15 (Fort Plain) due to the inability to rapidly remove components of an almost 100-year old system of historic water control structures prior to a major flood event, as recently evidenced in 2006 (New York Severe Storms and Flooding, DR-1650 and DR-1670) and 2011 (Hurricane Irene, DR-4020 and Remnants of Tropical Storm Lee, DR-4031).

The water control structures used to create navigation pools on the Mohawk River are a system comprised of three primary components: 1) uprights, 2) lower gates and 3) upper gates. These components are installed prior to the opening of each navigation season to create a waterway conducive to navigation and fully removed at the end of the navigation season returning the river to a run-of-river waterway.

During the navigation season (May 1st through November 15th) only the upper gates are opened and closed to maintain targeted water levels at each location. The lower gates and uprights are presently unable to be rapidly removed during the navigation season due to structural and mechanical limitations. This results in considerable obstructions during high flows events, which is compounded since the uprights become blocked by enormous amounts of woody debris which further obstructs flow. These obstructions result in substantially higher peak water levels at each location than would be otherwise observed if the lower gates and uprights were removed and the debris accumulation was not present.

Types of damages due to these higher water levels include erosion, structural damage to buildings and navigation structures, electrical and mechanical damage to navigation structures, scour of navigation structures, erosion and closure of roadways and bridges, and water damage to homes and businesses. Additionally, the economic loss to business and communities along the Mohawk River / Erie Canal as a result of the damages is substantial.

Source of Funds

Federal Emergency Management Agency (FEMA) 406 Hazard Mitigation & New York State Thruway Authority General Reserve

Anticipated Program Use

The proposal is to modify the water control structures to remove the hydraulic obstruction associated with the lower gates and uprights, and to remove the ability for debris to accumulate at these locations. If implemented, a substantial reduction in peak observed water levels would be realized at each location by allowing this portion of the Erie Canal / Mohawk River to be returned to a run-of-river waterway prior to major wet-weather events during the navigation season. This proposal has two direct benefits: 1) maintain the long-term integrity of the structures with the elimination of the event-specific damages along the Mohawk River

portion of the Erie Canal and 2) substantial adjacent property damage reduction along this portion of the Mohawk River / Erie Canal.

As there is repetitive loss due to extreme weather events along the Mohawk River / Erie Canal, damages for the New York State Canal Corporation, due to events DR-1650, DR-1670, DR-4020 and DR-4031 amount to almost $105 million. Additionally, the Canal Corporation is aware of damages from these same events to New York State Thruway Authority and New York State Department of Transportation facilities, in the area of influence of this system of dams. Considering the changing weather patterns and the likelihood of additional significant flooding events, using these values alone (without adjacent community damage costs, which are also significant), implementing this mitigation proposal to prevent future damages in the same or higher amounts is fiscally responsible.

The project will also have related benefits to minimizing flood damages in the Mohawk Valley to the surrounding communities, CSX railroad east-west line, New York State Department of Transportation highways (such as State Routes 5, 5S and 103), and New York State Thruway I-90, by substantially reducing water levels during flood events.

Further Background

This proposal has been approved by FEMA under the 406 Hazard Mitigation Program for events DR-4020 and DR-4031. This project is approximately 30% complete, and is expected to be fully implemented in late 2017.

Flood Warning Systems - $10 Million - (pro-active mitigation)

Summary of Need

Flooding has long been a recurring problem for Upper Hudson, Mohawk and Oswego River Basin communities with events documented regularly since at least 1832 to present day. Of these, the most recent events occurred during the summers of 2006 and 2011 in the Mohawk and Upper Hudson River basins. These floods resulted in complete loss of structures at Canal locks, thousands of homes damaged or destroyed, and bridges and roads damaged or destroyed including portions of the New York State Thruway System. Damages to public infrastructure from the June-July 2006 floods, which resulted in Presidential Disaster Declaration DR-1650, approached $400 million. FEMA estimates public infrastructure damages from Hurricane Irene and Tropical Storm Lee in 2011 (Presidential Disaster Declarations DR-4020 and DR-4031, respectively) will surpass $1.7 billion.

There are no flood warning systems in these regions. This led to considerable uncertainty regarding how the State, local emergency managers and the public reacted to the recent floods as the events unfolded.

Source of Funds

Federal Emergency Management Agency (FEMA) 404 Hazard Mitigation, Community Development Block Grant – Disaster Relief, & New York State Thruway Authority General Reserve

Anticipated Program Use

Implementation of watershed-based Flood Warning Systems for the Upper Hudson River Basin (Champlain Canal), Mohawk River Basin (Erie Canal) and Oswego River Basin (Erie, Oswego, and Cayuga/Seneca Canals) would lower the risk to flood prone communities and the associated financial losses by enabling the State, emergency managers and the public to view and understand the real extent of forecasted flood conditions. Additionally, the ability of communities to appropriately prepare and protect lives, private property, public infrastructure and critical facilities can result in as much as a 30% reduction in damages by providing accurate forecasted flood conditions in advance of severe events and on a real-time basis.

The funding would be used as a direct grant for system design, gage installation and operation, model development, and creation and operation of the Flood Warning Systems. An operating funding component for this project would be needed throughout the life of the project.

Further Background

Flood Warning Systems for the three basins will consist of a comprehensive plan for basin-wide improvements in the measurements and methods needed for advanced predictions of flood stage and dissemination of this information, especially flood inundation mapping. These Flood Warning Systems will consist of a series of existing and new networked stream and precipitation gages; enhancing flood forecast capabilities by the National Weather Service (NWS) through their Advanced Hydrologic Prediction Service and the creation of basin-specific hydrodynamic models to utilize this information to determine the timing and magnitude of flooding throughout the basins with flood inundation mapping to illustrate where flooding is forecast to occur. The Flood Warning Systems would be implemented by the New York State Canal Corporation in partnerships with appropriate local, State and federal agencies. The system will include a mechanism for disseminating information to the NWS, State, emergency managers and the general public through various media on a real-time basis.

The proposed Flood Warning Systems would provide advanced flood warning for 27 of New York State's most flood prone counties with a population in excess of 2.6 million people in these basins. Without the present ability to permanently control flooding and reduce flood frequencies this system would assist the New York State Canal Corporation and other agencies with operational decision making prior to and during extreme flood events as well as substantially lowering the risks to communities and the financial losses associated with flooding in each basin.

DEC Flood Control Program; September 3, 2013

Flood Control Program

DEC

Tuesday, September 3, 2013

Meeting Participants:

- Stephen Len
- Alan Fuchs
- Kyrie Wagner
- Courtney Shorter
- Princess Ousley
- Tracy Smith

New project development

The Department of Environmental Conservation (DEC), Flood Control Division works with the federal government. By law, DEC has to serve as the non-federal partner for the federal government when they develop flood control projects in the state of NY.

- Projects typically start from a study, and then move to the design stage. If all components work out and if the benefits and costs work the project then goes into the construction phase.
- During that stage we also have to have for the design and construction, a local municipal partner and costs are shared with the feds and the local partner for construction.

Q. What is the percentage normally? Is it a 75/25 split?

When the U.S. Army Corps of Engineers (USACE) initially goes out and scopes out a project the first 100K is covered by the federal government. What they go out to determine is if there is federal interests to move forward. If there is federal interest identified then the USACE conducts a feasibility study.

- The feasibility study is 50/50 split between the federal government and the state
  - Locals must provide a letter of support.
    - The letter must confirm that the local government is in support of the state and federal government conducting the study.

The next phase is design and construction and that cost is shared between the state and federal government. It's typically a 65/35 split between federal and state costs. It can go higher than 35 percent if real-estate costs are higher.

- The federal government makes the local government get real-estate so the cost share could go as high as 50 percent.
- It's typically a 65/35 split and we would have to have a local cost sharing partner at that phase.
  - It's 50/50 split between the state and the local municipality.
  - Local municipality could be a county, city, village or a group of them as long as we have one lead.

Then when the USACE builds a project they turn everything over to the state. DEC is then responsible for operating and maintaining each project. The state turns certain portions over to the local community. The state keeps major repairs, but ordinary maintenance would then transfer over to the local partner. Both parties go out and inspect the project with the USACE or with the Federal government periodically.

- Prior to 1938 these projects stayed 100 percent with the state. So many of DEC's large flood projects have no local partners.

Completed Works

There are over 100 projects in NYS that DEC is responsible to oversee. Forty or so are projects with levees and floodwalls and there are a lot of operational features to them.

DEC's role is three parts: Operations of the projects, maintenance and repair of the projects and monitoring any changes to the project.

DEC has a permitting program to make sure the integrity of the project isn't comprised. Through the permitting program, DEC makes sure all work is done according to USACE requirements and are up to engineering standards.

Q. Does DEC worry about levee breaks?

Fortunately not too often, although with the flood in 2011 there was some overtopping and some projects that were damaged. It is DEC's responsibility that the levees are intact and maintained so that they will not breach.

We watch river conditions all of the time and we have OMM manuals for all of these projects.

Q. Have you had more occurrences of breaches in the levee or overtopping?

We have not had a breach in a levee. Back in Hurricane Agnes we had storm levees wash out but that was back in 1972. We're concerned that the stability of the projects is intact to handle their design. The USACE built these projects to withstand a design storm of a 100 year storm. We make sure that they'll pass that flow.

There are physical features that we have to operate on each project during the storm and that's done by our regional operation staff.

Generally we operate and maintain, so we have people out there mowing lawns, filling holes, doing whatever is necessary to maintain the project. During the storm we have people out there patrolling the levees. We also have equipment coming in and out to fix things during the storm if we think something is going wrong. After the storm we are assessing whatever the damage is and repairing it.

Q. Are you concerned about any vulnerability to your state facilities? Do you have state facilities that you are responsible for?

There are over 100 projects and over 40 of them have projects that we need to operate during the storm. Other ones we are concerned about but there's not much to do during a storm. After the storm we go back in to make repairs.

The bigger projects when we do operate those most of them are 50 plus years old. So there is a lot of aging infrastructure problems that we are now seeing with these projects. It's a constant battle to keep them up to current standards and make sure that they are going to function properly during a storm event. We are constantly trying to make upgrades to these projects. So for instance we talked about levees but we have a 160 miles of conduits; we have 19 pump stations (actual buildings with pumps and electrical). We also have 100 miles worth of levees and floodwalls, it like 85 miles of levees and 15 miles of flood walls across the state.

They have pipes through them, the concrete gets old and they start breaking down and cracking and we have to chip it out.

Q. How often does DEC do inspections?

Officially once a year with the USACE but we also inspect with the local community prior to the USACE inspection. Where there isn't a local community, DEC Regional staff are performing everyday maintenance on these projects.

Q. Do you have state facilities that you are responsible for that have been damaged from storms?

There has been a lot of damage within the last three years along the southern tier and in the Catskill's. We have a lot of erosion on our projects. Actually the last storm we just had in June did damage to the Herkimer.

Q. What's the biggest flood issue?

Inland - Riverine flooding from the Great Lakes and down the shore line.

Action Items

- Emailing list of projects
- Emailing a sample of projects sent to the CORP

NOAA September 3, 2013

NOAA Meeting Notes

Tuesday, September 03, 2013

Meeting Participants:

- Britt Westergard
- Steve DiRienzo
- Fred NNuffer
- Nancy Freeman
- Courtney Shorter
- Tracy Smith
- Kyrie Wagner

Anything you have that would enhance the climate section? We are looking for characteristics on trying to identify all the different kinds of impacts to climate change from extreme temps, drought, to flooding to sea level rise.

There's a national database on national precipitation records that's online. It's a link to the National Climatic Data Center. Albany has records dating back to the late 1920s and some dating back to the 1800's. The last major drought in this part of the world was 1964. There's been localized drought but that's the last major one. Check FEMA website as a source. If you look at the 1900's as a century until about 1964 it was rather dry across the northeast. 1800's were very wet in this part of the world, the 1900's were dry and we're back on the wet side of things now. That's just based on the precipitation records. Climate change is pretty common around here. Localized drought occurs every year but on a state level it is rare.

Q. Is there any other good source for information on Climate Change or any record types?

The NOAA Coastal Services have a sea-level rise mapper that will show inundation based off of sea-level rise. Also, there is the latest Climate Report from NCDC. There was a Climate Town Hall Meeting in January. The group's goal was to downsize the Climate Report. It was being done by NYSERDA and the Syracuse Environmental Group.

Q. Are there any resources/tools available for drought?

The national drought monitor is really the best tool. The National Drought Monitor is a national collaboration which they refer to as a blending of arts and science. It's an attempt of an objective assessment of drought, and they have a whole archive section that goes back for a decade or two. There link www.Drought.gov is updated every week.

Tsunami Info – (Gary Konki) There is a Tsunami warning system in place and NYSERDA and the weather service relays warnings. The Wireless Emergency Alerts (WEA) alerts on the cell phone for Tsunami's, Blizzards, Flash Floods, Presidential Messages and Child Abductions.

What Are Wireless Emergency Alerts (WEA)?

WEA (formerly known as the Commercial Mobile Alert System (CMAS) or Personal Localized Alerting Network (PLAN)) is a public safety system that allows customers who own certain wireless phone models and other enabled mobile devices to receive geographically-targeted, text-like messages alerting them of imminent threats to safety in their area.

The technology ensures that emergency alerts will not get stuck in highly congested areas, which can happen with standard mobile voice and texting services. WEA was established pursuant to the Warning, Alert and Response Network (WARN) Act.

WEA enables government officials to target emergency alerts to specific geographic areas through cell towers. The cell towers broadcast the emergency alerts for reception by WEA-enabled mobile devices.

WEA complements the existing Emergency Alert System (EAS) which is implemented by the FCC and FEMA at the federal level through broadcasters and other media service providers. WEA and the EAS are part of FEMA's Integrated Public Alert and Warning System (IPAWS).
Wireless companies volunteer to participate in WEA, which is the result of a unique public/private partnership between the FCC, FEMA and the wireless industry to enhance public safety.

Natural Events – When looking at the size and scale of the storms it important to realize that there have been storms that have covered the entire state. Maybe not the entire state or 100 percent at one time but if you are looking at multi-hazards they have covered the entire state. You can get a very large coastal storm and have rain, high wind and flooding in New York City and coastal erosion on Long Island and meanwhile it's producing snow in the Buffalo area with inland river flooding in between. That happened in the past. There have been giant winds storms from large winter storms that have knocked out power in majority of the state at a time when the temperature is like zero degrees so you can get widespread power outages in majority of the state. Also large winter storms have covered a large part of New York with heavy snow and blizzard or near blizzard conditions.

Lake levels – a couple of different things can happen with lake levels. One thing that can happen is that you can have flooding along the sides of the lake for a prolonged period of time. That is what happened with Lake Champlain in 2011, the lake was above flood levels for months (April-June).

On Lake Erie they have what you call seiche, where the water sloshes around like a bathtub. (Buffalo) There is a record of 200 people drowning in a famous seiche in 1844. With the wind from Sandy we had seiche's on Lake George, flooding from that and the village. In the Champlain the winds can move from the North and South so you can have seiches there as well.

Avalanche's occurred last year in Avalanche pass, with incidents of deaths.

Development of flood warning systems is mitigation.

Action Items

- NOAA - sending contacts
- NOAA providing general overview of agency

Environmental Emergency Services, Inc.; September 4, 2013

Environmental Emergency Services, Inc

Meeting Notes

Wednesday, September 4, 2013

Meeting Participants

- Mike Sprague
- Tracy Smith
- Amanda Burnett
- Kyrie Wagner
- Princess Ousley

Environmental Emergency Services, Inc., is a not-for-profit corporation that derives its funding from contributions made by Chemung, Schuyler and Steuben counties and the cities, towns, and villages within those counties. EES operates an automated Flood Warning Service (FWS) and provides a centralized point for real-time data/information collection, analysis, and distribution for Steuben, Schuyler and Chemung counties. This mission is carried out through cooperative activities with the Chemung, Schuyler and Steuben County Emergency Management Offices (EMOs), the National Weather Service (NWS), the New York State Department of Environmental Conservation (DEC), the U.S. Army Corps of Engineers (USACE) and the U.S. Geological Survey (USGS).

Current capabilities include:

- 30 rain gauges
- 12 river and stream gauges
- 7 full climate stations

The Flood Warning Service operates from a forecast center located in the Corning Fire Station. It is operated by trained volunteer staff. The center is normally activated by one of the following agencies: Steuben County EMO, Chemung County EMO, Schuyler County EMO or DEC Region 8 Flood Control. These agencies have emergency weather notification via the New York State Police Information network, through which they receive immediate notification of all-weather watches, warnings, bulletins, and statements. The criteria for activation include the following: NWS statement, automatic rain gauge alarm (1 inch/hour), river gauge threshold, and/or observer reports. A telephone call-up procedure is used to notify volunteers. The activation procedure is organized into four levels of response, reflecting the severity of the flooding situation.

The Flood Warning Service receives weather forecast, precipitation, and stream-level data from a variety of sources. Stream-level gauges and precipitation gauges are located throughout Chemung and Steuben counties and in upstream locations. These and other relevant data are available through the following sources.

National Weather Service: Severe weather forecasts, flood forecasts, rainfall amounts, and flash flood guidance information are received from the NWS. The FWS obtains this information through the Steuben and Chemung county EMOs, by phone, or by fax. Near real-time rain and river gauge data are available through NWS web pages on the internet.

Flood Warning Service automated rain and stream gauges: The FWS owns and maintains a network of automated rain and stream gauges located throughout Chemung, Schuyler and Steuben Counties. At this time, there are 4 automated river gauges and 17 precipitation gauges. Data from these automated gauges are fed by telemetry to the FWS. The data are collected, tabulated, and plotted by two computer data base program systems (ALERT and GAGER). These data are also relayed by telemetry to the NWS office in Binghamton for use in preparing NWS flood forecasts.

Telemark river gauges: River-level data is currently available from six Telemark gauges, four of which are located at the same points as the FWS river gauges. This data is accessed by telephone. Near real-time data from some of these gauges is posted on the internet.

USACE Baltimore computer database: Current and historical reservoir data for the Hammond, Tioga, Cowanesque, Almond, and Arkport dams are available from the USACE computer database and by telephone. The database also includes data from precipitation and river gauges in the COE and Susquehanna River Basin systems. The COE computer database can be accessed by a direct log-on procedure or through the internet.

United States Geological Survey (USGS) internet database: River stage and discharge data from river gauges in the Chemung River Basin in New York and Pennsylvania is posted on the internet and accessed through the USGS web page. This data is updated daily.

Volunteers and emergency personnel: Additional precipitation and river/stream data is available from volunteer rain and river staff gauge readers. An answering machine at the FWS forecast center is set up to receive this information and can be accessed remotely by telephone. Staff gauges are monitored by DEC operations staff and local emergency personnel during a flood. Water levels are reported to the DEC flood control office, the county EMO, and/or FWS.

Data links available through EES website include:

- Datawise Data System
  - Station List
  - Sensor List
  - Sensor Data Display
  - Tabular Report
  - Custom Report
  - Plot
  - Maps
  - Active Alarms
  - Historical Alarms
  - Animated Graphics
  - Display Time Zone
- Datawise Graphics (new!)
  - Real-time water levels at each gauge
- Hydrograph Summary Page
  - Susquehanna River Basin
    - North Branch
    - Chemung River
    - West Branch
    - Juniata
    - Lackawanna River
    - Main Stem - Towanda to Conowingo Power Dam
    - Main Stem Small Streams
  - Delaware River Basin
    - Main Stem to Trenton
    - Lehigh River
    - Schuylkill River
    - Main Stem Small Streams
  - New Jersey Rivers
    - Passaic River
    - Raritan River
  - Potomac River Basin
    - Potomac River
    - Shenandoah River
    - Rappahannock and Rapidan Rivers
  - James and Appomattox River
    - James River
    - Appomattox River

- County Precipitation Information
  - County listings of rainfall amounts are routinely updated at half past the following hours: 8am...2pm... and 8pm EDT with 24-hour...6-hour... and 12-hour totals respectively.

Additional information can be found on EES webpage at www.highwater.org

NYSERDA September 5, 2013

NYS Hazard Mitigation Plan Update
Meeting with NYSERDA
September 5, 2013

Attendees:

Chris Reohr (NYSERDA)	Nancy Freeman	Tracy Smith
Amanda Stevens (NYSERDA)	Princess Ousley	Judy Wolf
Mark Watson (NYSERDA)	Courtney Shorter	

- General introductions: Mark and Amanda are project managers with the environmental research program; Amanda focuses on climate change and adaptation; Mark also oversees acid rain, ozone, mercury pollution, wastewater, biomass fuels, and biomass heating. Chris is with the energy efficiency group, including new construction program for buildings and the Cleaner, Greener program.
- NF: PO and I attended the Climate Change Working Group (CCWG) meeting and heard your presentation. We have all the handouts. Project status on the research mentioned. One item mentioned is "need research into better benefit-cost analysis (BCA) tools. Has that been proposed? Is it in development?
  - AS: Don't have at the moment, was raised as a need. Will be going into research plan. Flood mapping VIS tools may help along those lines. Some economic analysis.
- NF: Trying to capture projects, both underway and in development.
  - AS: The one I just mentioned in on the list of ongoing projects. Columbia & Stevens, Dewberry.
  - NF: Any other sources? I've pulled data from ClimAID; tables, etc. will reference as resources. Anything specific we should look at for a picture of vulnerability and areas of vulnerability for the State?
  - AS: Synthesis will give a good overview without too much detail.
  - MW: There will be section on climate change hazard. Look at appendix for economic analysis and BCA by sector. Will give some numbers.
  - NF: Chart by sector identifying vulnerability, specific criteria will probably reference that. Any other specific resources?
  - None beyond what was provided/already referenced, but will send if think of any additional.
- Question: When expect to have final draft done? Discussed timelines.
- NF: For project(s) mentioned regarding storm impacts over landscape; location/scale, modeling. Is there a defined scope of a project that would work to meet that? Project for modeling?
  - AS: Could be all: economic, etc. Mostly not very specific; broad knowledge haps brought to our attention as needing attention.
  - Even for the ones that are better defined: as part of the process, we'd reach out to proposers to expand on need – could make the final project narrower or more comprehensive.
- Need information just for the State? Or private entities as well?
  - NF: All of it.
  - Look at post-Sandy enhancement plan from Con Ed. June 20, 2013.
- CR: (1) Incentives for resiliency through Commercial New Construction Program. (2) Cleaner, Greener Communities Program

  - Cleaner/Greener is a 2-phase program. First started two years ago. Develop plans to reduce greenhouse gas, improve sustainability. ~$1 million in resources.
    - Plans are on NYSERDA web site.
  - Phase 2 is a 3-part program: (1) incentives for municipalities updating plans, (2) helping municipalities update comprehensive plans, (3) increase opportunities for resiliency, decrease greenhouse gas, increase economic development. Competitive program, closed Aug 12. Another round next year. $100 million total funding: $90 million Round 2; $30 million Phase 1. Regional greenhouse gas initiatives.
- Gas Station Program – help position gas stations. Install switch gear, be able to hook up generators, supply groceries, gas, etc., locally, especially downstate. Have to show ability to hook up generation within 24 hours.
  - NF: New state requirement?
  - CR: Believe so.
- MW: Look at NY Rising Community Reconstruction Program. Governor's web site. $750 million.
- ClimAID
- NF: Anything specific to propose projects to assess impacts on water supply?
  - AS: Not on water supply. There's one on water quality.
  - Trying to provide funding for stream gauges that are losing federal funding.
- Current activity – okay to run by NYSERDA to make sure we're not missing anything significant.
  - NF: Would like to send rough draft of climate change
  - AS/MW: Yes

Susquehanna River Basin Commission; September 5, 2013

Susquehanna River Basin Commission

Meeting Notes

Thursday, September 5, 2013

Participants:

- Ben Pratt
- John Bala
- Amanda Burnett
- Kyrie Wagner
- Tracy Smith
- Princes Ousley

Program Overview

The SRBC is established through an agreement between the State of NY, Penn, Maryland and the Federal Government, all recognizing a common interest in the waters of the Susquehanna River Basin, and also recognizing the need to coordinate or to have a comprehensive management strategy for those water basins. The SRBC is established by a federal inter-state compact between those entities, similar to the Delaware River Basin which predates the SRBC by approximately 6-7 years. SRBC has regulatory authority in the basin over water withdrawal; that's both ground water withdrawal and surface withdrawal and also consumptive water use, which is water that is used withdrawn from the resource and not returned. It's either incorporated into a product, evaporated, or otherwise lost to the system overall (e.g. golf course irrigation).

SRBC also regulates the water use for tracking natural gas extraction. We do not regulate water quality but are very involved in monitoring water quality in the basin and doing different studies. They work a lot with EPA. We do maintain a water quality monitoring network that was established within the last 5 years mostly in response to the natural gas development in the basin and to try and evaluate the impact that the industry has on the basin. From a NY perspective, the basin starts in Cooperstown, NY and flows down into Pennsylvania, into Susquehanna County, Pen., Great Bend. It then flows back north to Bengumtin and picks up the Chenango and flows down to the Waverly where it meets the Chemung River for the Chemung Basin where eight or nine counties in the southern tier are in the SRB (Steuben, Arsego, Tioga, Broom, and a little bit of Delaware County). It's not the entire state of NY but our area of interest is specific to Susquehanna River and Susquehanna Basin which is the southern tier of NY State. One of the primary objectives is to protect property and reduce loss of life to the greatest extent possible when faced with flood hazards, so flooding is essential to our mission and our activities in flood hazard reduction. Over the years we have been involved in more of the non-structural aspect of flood hazard mitigation verses Corps activities, U.S. Army Corps of Engineering activities, which will be structural such as building levees. We focus on the non-structural and specifically in flood warning. We have maintained a partnership with the National Weather Service, USGS, the Army Corps of Engineers, NYS EM, Penn EM, and State agencies to facilitate flood forecast and warning in the basin, which has

been in place since the mid-80s. The partnership is probably as stressed as it has been in recent years mostly due to up unto FY10 we received an annual earmark to support the Flood Forecast and Warning System. When the feds decided not to support earmarks in the federal budget our budget was essentially cut to zero. That funding supports the stream gauge and rain gauging network, among other things, that provide data to the NWS that they can consume and parley into a forecast at a local gauge.

We would like to say we have one of the premier flood warning systems in the SRB because of the partnership that surrounds the flood forecasting system, the number of stream gauges and rain gauges, the fact that they are all transmitting data in real time, and due to our state of the art equipment. However, today SRB is faced with significant challenges. Facing a reduction in the stream gauge network in FY14.

Majority of the significant flood issues come from NY. The southern tier of NY, glacial outwash, sandy gravel, hilly terrain, flash flood hazards, riverine flooding, geographically the location is susceptible to tropical storms, heavy thunderstorms cause significant flash flood concerns. 2006 catastrophic flooding in the upper SB; 2011 TS Lee both had loss of life.

In forecasting drought and knowing where each one of those signatories is thinking is as far as we are on the drought stage. Drought is not well defined, hard to tell when we're in a drought. During hydrological conditions we convene our drought coordinating committee and begin to have an open dialogue to make sure we are all seeing the same thing or not and assessing current situation verses future needs in terms of the water resource overall.

Percentage breakdown it's more of flood hazard mitigation side but during times of drought we are focused on mitigating those hazards as well by working with our signatories in the compact.

Are there any brick and/or mortar projects that help reduce risks in that area?

Flood forecast and warning system and the gauge warning system is what we consider a brick and mortar project. It's not a levee, or flood wall...that's an ongoing effort. In the last year our focus has been on infrastructure and preserving that infrastructure.

A lot of what we do is captured in the 2011 plan.

Works with FEMA to promote the NFIP.

Not looking for mapping projects in NY. All available resources are needed to sustain the gauge network.

NYS Parks, Recreation and Historic Preservation; September 9, 2013

NYS Parks, Recreation and Historic Preservation

Monday, September 09, 2013

Meeting Participants

- Marc Talluto
- John Orsini
- Amanda Burnett
- Princess Ousley
- Tracy Smith
- Joe Jones
- Fred Nuffer
- Courtney Shorter

Program Overview

NYS Parks, Recreation and Historic Preservation (PRHP) operates 214 state parks and historic sites across all of NYS, ranging from Niagara Falls, to Jones Beach on Long Island, Montauk Point and numerous parks and sites in between. The agency also manages 35 state historic sites under its jurisdiction as well. The agency hosted 60 million visitors across all of those facilities in 2012, with the largest attendance facilities being Niagara Falls, Jones Beach, and Robert Moses to name a few.

As part of operations the agency has just over 350,000 acres under its direct management as well as 5,000 buildings, 106 dams, 640 bridges, 29 golf courses, 76 swimming beaches, 53 swimming pools, 8,000+ campsites, 850 cabins, and a lot of infrastructure under its direct control and operation. The agency operates with 1,780 permanent staff and during the summer the agency hires an additional 4,000 seasonal staff. Staffing requirements fluctuate throughout the year depending on our operation.

The agency maintains its own police force, NYS Park Police, which has statewide jurisdiction. We also oversee various program areas. State parks are also responsible for recreational boating in NYS as well as commercial boating on sole NYS navigable waterways. We also oversees the NYS snowmobile program, which includes over 10,000 miles of snowmobile trails that we provide grant funding to, to ensure the safe operations of snow mobiles throughout NYS.

Q. How are you affected by the natural disasters? What types of disasters mostly impact the Parks and Recreation?

As a general rule the last few years Sandy, Lee and Irene, flooding was probably our single largest issue. With Sandy particularly our coastal beaches, coastal properties were hit hard, primarily Jones Beach and Robert Moses. Those areas are on the southern shore of Long Island, which was basically "NYS's chin" leading into Sandy. Our beaches were hit hard, our board walk on Jones beach was severely damaged and most of our property was fairly flooded. We had 11 counties that our facilities were in that

sustained some sort of damage. The vast majority of our damage was centered in Long Island (Nassau and Suffolk).

As an agency from Sandy we sustained about 120 million dollars' in damages. (We actually sustained close to 200 million dollars in damages to agency-owned property although some of the damages we sustained became the responsibility of other agencies to repair: for example, the Robert Moses Traffic circle, , and Ocean Parkway; although owned by State Parks they are managed by NYSDOT and DOT took responsibility of the cost of repairs so State Parks did not have to fund those.)

The rest of the damage, the damage to boardwalk of Jones Beach, beach loss and severe erosion on our beaches of Robert Moses, those were damages we had to absorb. We also had substantial tree damage throughout the lower Hudson Valley and Long Island. Thousands of trees were destroyed as a result of Sandy from winds.

From Hurricanes Irene and Lee those were more upstate, Upper Hudson Valley and Upper and Central NY - our biggest issue there was flooding and erosion. Additionally, on occasion State Parks has been exposed to instances of wildfire. Several years ago we had a major forest fire in Minnewaska State Park where over 3,000 acres were affected and it was probably a three week operation to get it under control. As a rule wildfires are more sporadic and spot treated and are usually reserved to several acres. Harriman State Park is a particular hot spot as it relates to forest fires for the agency. Forest fires are not necessarily a significant issue accept on rare occasions.

Minnewaska Fire was three or four years ago and may be in the previous Hazard Mitigation plan. The fire was never a declared (federal) disaster.

Landslides – the occasion slopes slides (localized) but nothing on a large scale.

Q. Erosion: Was there specific places or issues with erosion that occurred upstate? Do you have more of a problem with the Great Lakes or mostly along rivers and streams?

Mostly rivers and streams, Chenango Valley being one of the big areas resulting from the Page Brook, which is a particularly flood prone area. Several years ago, after repetitive flood damage, we participated in (406) hazard mitigation for that area and we completely relocated a campground out of the flood area to higher ground. That was a classic example of our participation in 406 mitigation, which we are active participants with every disaster.

For Irene we did have erosion along Lake Placid in the Northern part of the state and we sustained some erosion on the coast of that lake. No buildings (totally) destroyed just some minor damage.

Action Items:

- Providing a brief description and statistics on the property PRHP is responsible for overseeing

NYS Disaster Preparedness Commission; December 18, 2013

NYS DISASTER PREPAREDNESS COMMISSION MEETING

December 18, 2013
9:00 a.m.

DHSES Offices
1220 Washington Avenue
Building 7A
1st Floor Conference Room

AGENDA

Pledge of Allegiance	
Roll Call and Opening Comments	Jerome M. Hauer DPC Chair Commissioner DHSES
NYS Multi-Hazard Mitigation Plan Resolution Adoption	Andrew X. Feeney Deputy Commissioner DHSES
	Richard Lord Chief Mitigation Programs & Agency Preservation Officer DHSES
Federal Hazardous Materials Reporting Activity	Bryant Stevens State Fire Administrator
	Erwin G. LaTourette Deputy Chief OFPC
NYS Homeland Security Strategy	Terry Hastings Senior Policy Advisor DHSES
Concluding Comments	Jerome M. Hauer DPC Chair
Adjourn	

A.2d: Sign-In Sheets

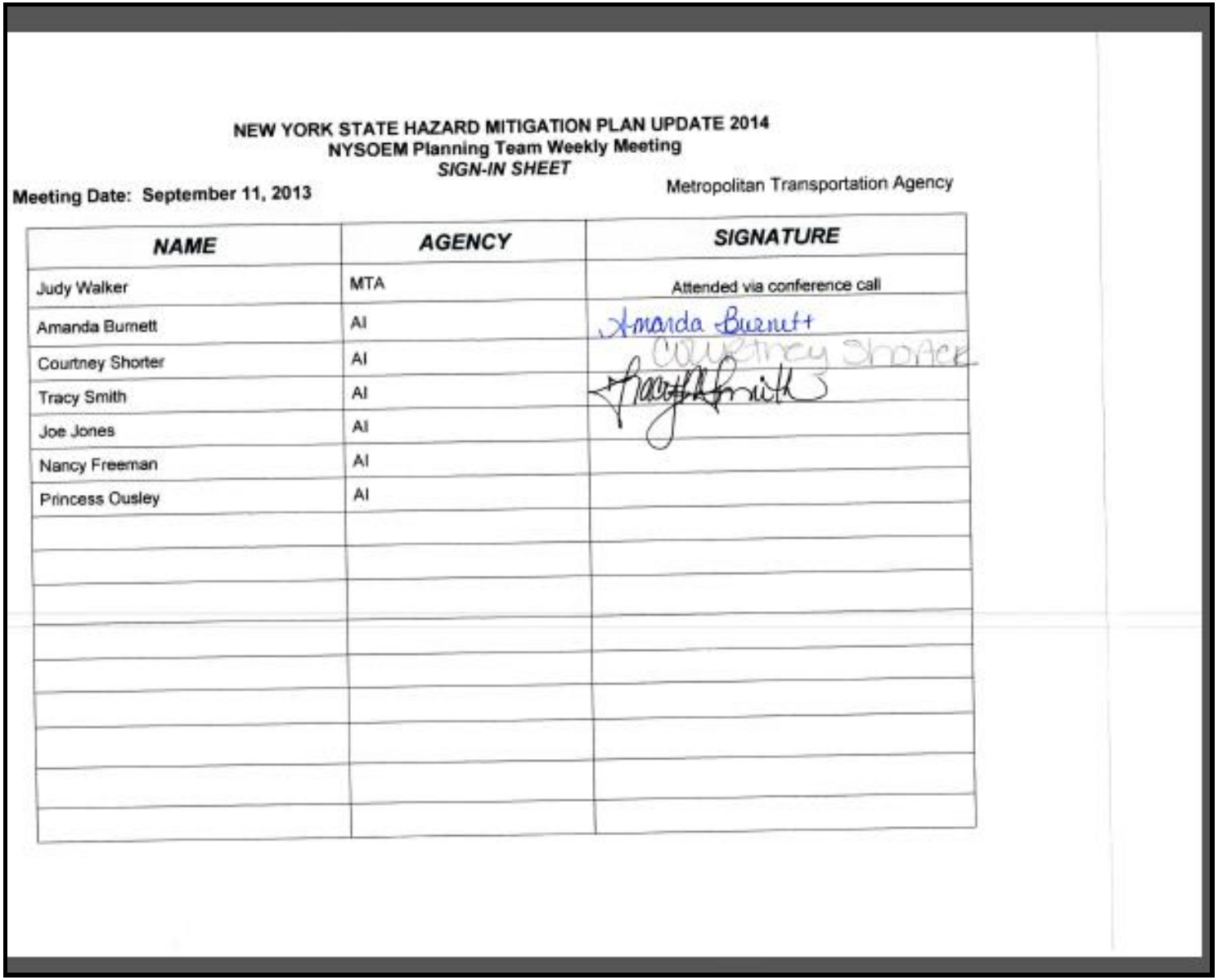
NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: September 11, 2013 Metropolitan Transportation Agency

NAME	AGENCY	SIGNATURE
Judy Walker	MTA	Attended via conference call
Kevin Jones	MTA	Attended via conference call
John Decker	MTA	Attended via conference call
Jules Flynn	MTA	Attended via conference call
Alok Saha	MTA	Attended via conference call
Jared Katseff	MTA	Attended via conference call
Laura Shabe	MTA	Attended via conference call
Elisa Picca	MTA	Attended via conference call
Romolo Desantis	MTA	Attended via conference call
Donald Look	MTA	Attended via conference call
John Hinge	MTA	Attended via conference call
Steven Hansen	MTA	Attended via conference call
Kim Smith	MTA	Attended via conference call
Ryan Frigoo	MTA	Attended via conference call
Sean Ryan	MTA	Attended via conference call

Collette Ericsson	MTA	Attended via conference call
Daniel Horn	MTA	Attended via conference call
Amanda Burnett	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
Princess Ousley	AI	

*Revised to include all conference participants



NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: September 11, 2013

Metropolitan Transportation Agency

NAME	AGENCY	SIGNATURE
Judy Walker	MTA	Attended via conference call
Amanda Burnett	AI	Amanda Burnett
Courtney Shorter	AI	Courtney Shorter
Tracy Smith	AI	Tracy Smith
Joe Jones	AI	
Nancy Freeman	AI	
Princess Ousley	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: August 29, 2013

NYS Canal Corporation / Thruway Authority

NAME	AGENCY	SIGNATURE
Howard Goebel	NYS Canal Corporation / Thruway Authority	
Fred Nuffer	OEM	
Juliana Lam	AI	
Nancy Freeman	AI	
Kyrie Wagner	AI	
Amanda Burnett	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
Judy Wolf	AI	
CATHY SHERIDAN	NYSTA/NYSCC	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: August 29, 2013 Department of Environmental Conservation

NAME	AGENCY	SIGNATURE
Mark Lowery	DEC	Attended via conference call
Nancy Freeman	AI	
Kyrie Wagner	AI	
Amanda Burnett	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: August 28, 2013 NYSDEC Hudson River Estuary Program

NAME	AGENCY	SIGNATURE
Kristin Marcell	NYSDEC Hudson River Estuary Program	Attended via conference call
Judy Wolf	AI	
Nancy Freeman	AI	
Amanda Burnett	AI	
Julie Lam	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
Kyrie Wagner	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: August 27, 2013

NY Office Fire Prevention and Control

NAME	AGENCY	SIGNATURE
Andrew Dickinson	OFPC	
Donald Fischer	OFPC	
Judy Wolf	AI	
Amanda Burnett	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: August 23, 2013 **Department of Environmental Conservation (DEC)**

NAME	AGENCY	SIGNATURE
Alon Dominitz	DEC	
Stephen Len	DEC	
Sue McCormick	DEC	
Kristin Marcell	DEC	
William Nechamen	DEC	
Mark Lowery	DEC	
Fred Nuffer	OEM	
Judy Wolf	AI	
Nancy Freeman	AI	
Amanda Burnett	AI	
Julie Lam	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
Kyrie Wagner	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: August 27, 2013 Department of Transportation

NAME	AGENCY	SIGNATURE
Elisabeth Lennon	DOT	
Judy Wolf	AI	
Nancy Freeman	AI	
Amanda Burnett	AI	
Julie Lam	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
Kyrie Wagner	AI	
Arthur Sanderson	DOT	
Lynn Weisdorf	DOT	
Mary Anne Mariotti	DOT	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: September 9, 2013 New York Parks, Recreation & Historic Preservation

NAME	AGENCY	SIGNATURE
Mark Talluto	NYPRHP	Attended via conference call
Amanda Burnett	AI	Amanda Burnett
Princess Ousley	AI	
Tracy Smith	AI	Tracy A. Smith
Joe Jones	AI	Joseph Jones
Nancy Freeman	AI	
Fred Nuffer	OEM	Fred Nuffer
Courtney Shorter	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: September 5, 2013 New York State Energy Research and Development Authority

NAME	AGENCY	SIGNATURE
Amanda Stevens	NYSERDA	Attended via conference call
~~Amanda Burnett~~	~~AI~~	unable to attend ~~Attended via conference call~~
Princess Ousley	AI	
Tracy Smith	AI	
Kyrie Wagner	AI	
Nancy Freeman	AI	
Courtney Shorter	AI	
Judy Wolf	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: September 5, 2013 Susquehanna River Basin Commission (SRBC)

NAME	AGENCY	SIGNATURE
Ben Pratt	SRBC	Attended via conference call
Amanda Burnett	AI	Attended via conference call
Princess Ousley	AI	
Tracy Smith	AI	
Kyrie Wagner	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: September 4, 2013 Environmental Emergency Services, Inc.

NAME	AGENCY	SIGNATURE
Mike Sprague	EES	Attended via conference call
Amanda Burnett	AI	Attended via conference call
Princess Ousley	AI	
Tracy Smith	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: August 29, 2013 Office of Emergency Management

NAME	AGENCY	SIGNATURE
Dave DeMatteo	OEM	
Amanda Burnett	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
Kyrie Wagner	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: August 28, 2013 Department of Environmental Conservation (DEC)

NAME	AGENCY	SIGNATURE
William Nechamen	DEC	
Amanda Burnett	AI	
Julie Lam	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
David Sherman	DEC	
Kyne wagner	AI	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: September 3, 2013 Department of Environmental Conservation
(DEC)

NAME	AGENCY	SIGNATURE
Steve Len	DEC	
Amanda Burnett	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
ALAN FUCHS	OEC	

NEW YORK STATE HAZARD MITIGATION PLAN UPDATE 2014
NYSOEM Planning Team Weekly Meeting
SIGN-IN SHEET

Meeting Date: September 3, 2013 **National Weather Service**

NAME	AGENCY	SIGNATURE
Britt Westergard	NOAA	Attended via conference call
Steve DiRienzo	NOAA	Attended via conference call
Fred Nuffer	NYSOEM	
Judy Wolf	AI	
Nancy Freeman	AI	
Amanda Burnett	AI	
Julie Lam	AI	
Princess Ousley	AI	
Courtney Shorter	AI	
Tracy Smith	AI	
Kyrie Wagner	AI	

A.2e: Presentation Slides State

Federal Mitigation Plan Requirements
• Disaster Mitigation Act of 2000 (P.L. 106-390)
• 44 CFR, 201.4 – Standard State Hazard Mitigation Plan (HMP)
• Three-year update cycle

Plan Update Goals
• Meet federal regulations for state mitigation planning
• Document New York's progress in identifying and mitigating natural hazards
• Serve as a resource to local jurisdictions, stakeholders and the public in the planning process
• Maintain State and local eligibility for federal funding – mitigation and public assistance (406 mitigation projects)

Plan Components
• Prerequisite – Adoption by the State
• Planning Process
– Documentation of the process
– Coordination among agencies
– Program integration

Plan Components
• Risk Assessment
– Identifying Hazards
– Profiling Hazards
– Assessing Vulnerability
• by Jurisdiction (County level)
• State facilities
– Estimating Potential Losses
• by Jurisdiction (County level)
• State facilities

Plan Components
• Mitigation Strategy
– Hazard Mitigation Goals
– State Capability Assessment
– Local Capability Assessment
– Mitigation Actions
– Funding Sources

Plan Components
• Coordination of Local Mitigation Planning
– Local funding and Technical Assistance
– Local Plan Integration
– Prioritizing Local Assistance
• Plan Maintenance Process
– Monitoring, Evaluating, and Updating the Plan
– Monitoring Progress of Mitigation Activities

Severe Repetitive Loss (SRL) Strategy
• Supported through mitigation activities
• Considered in policies, programs and capabilities
• Addressed in risk assessment
• Describes specific actions taken to reduce the number of SRL properties
• Identifies current and potential sources of federal, state, local or private funding to implement SRL activities

Realignment of NATURAL Hazards*
• Flood
– Riverine, Mudflows, Dam/ Levee Break, Coastal
• Hurricane
– Tropical, Coastal
• Coastal Erosion
• High Wind Events
– Tornado, Straight-line
• Severe Winter Storm
• Hailstorm
• Wildfire
• Drought
• Extreme Temperatures
• Earthquake
• Landslide
• Land Subsidence & Expansive Soils
• Avalanche
• Tsunami
• Climate Change
*Red font denotes hazards addressed in the 2011 plan

Information Needs

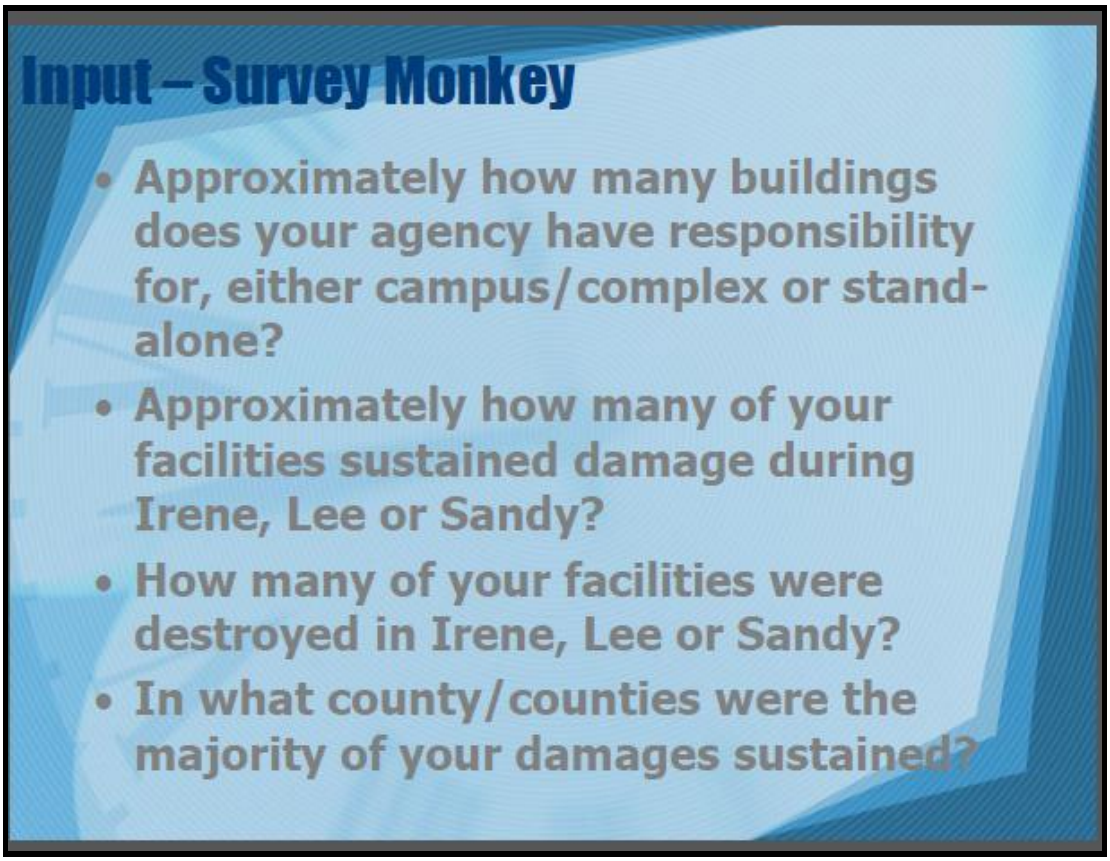
- What has your agency been doing in relation to mitigation in the past three years?
- What mitigation activities does your agency have underway (or planned) over the next three years?

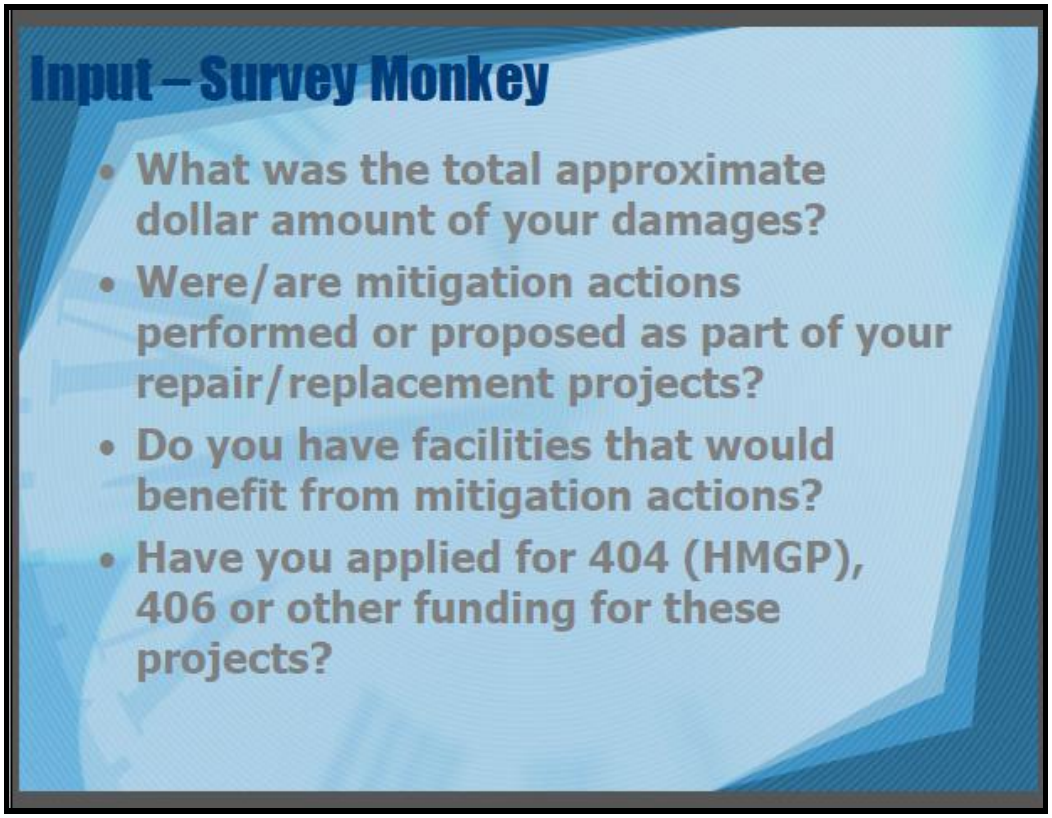
Examples of Mitigation Activities

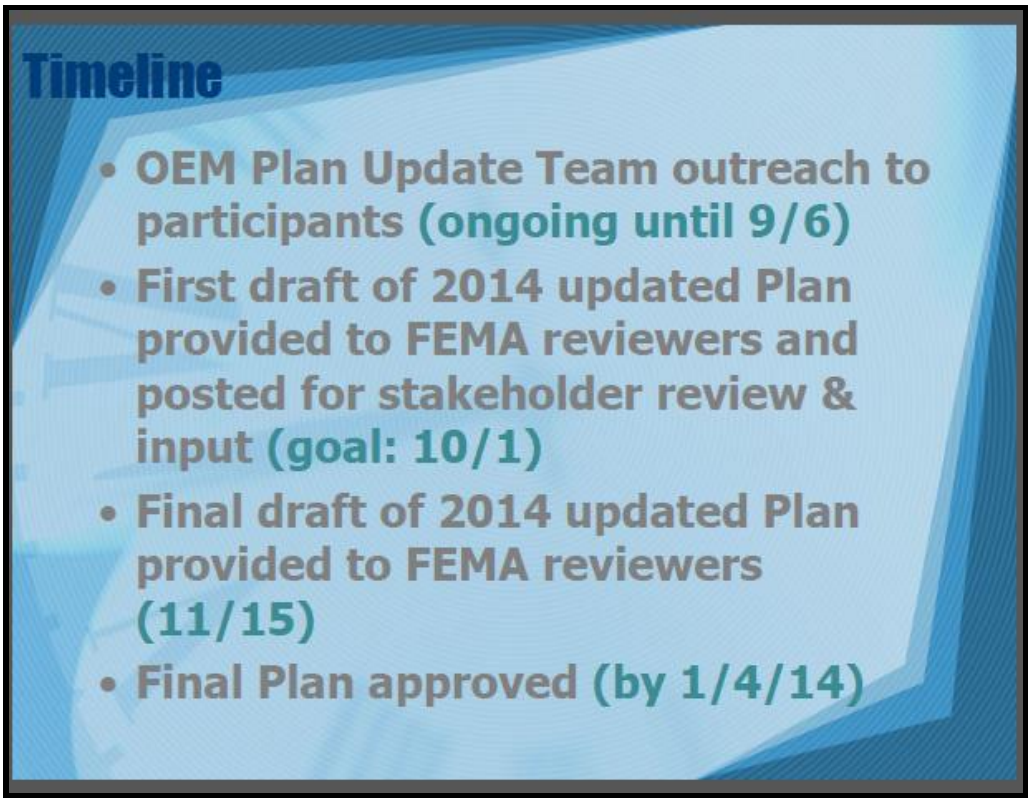
- New codes, laws, rules, regulations, policy changes
- Programs & initiatives
- Capital investments/improvements
- Integration of mitigation considerations into planning efforts
- Participation in interagency working groups focused on mitigation issues
- Public education

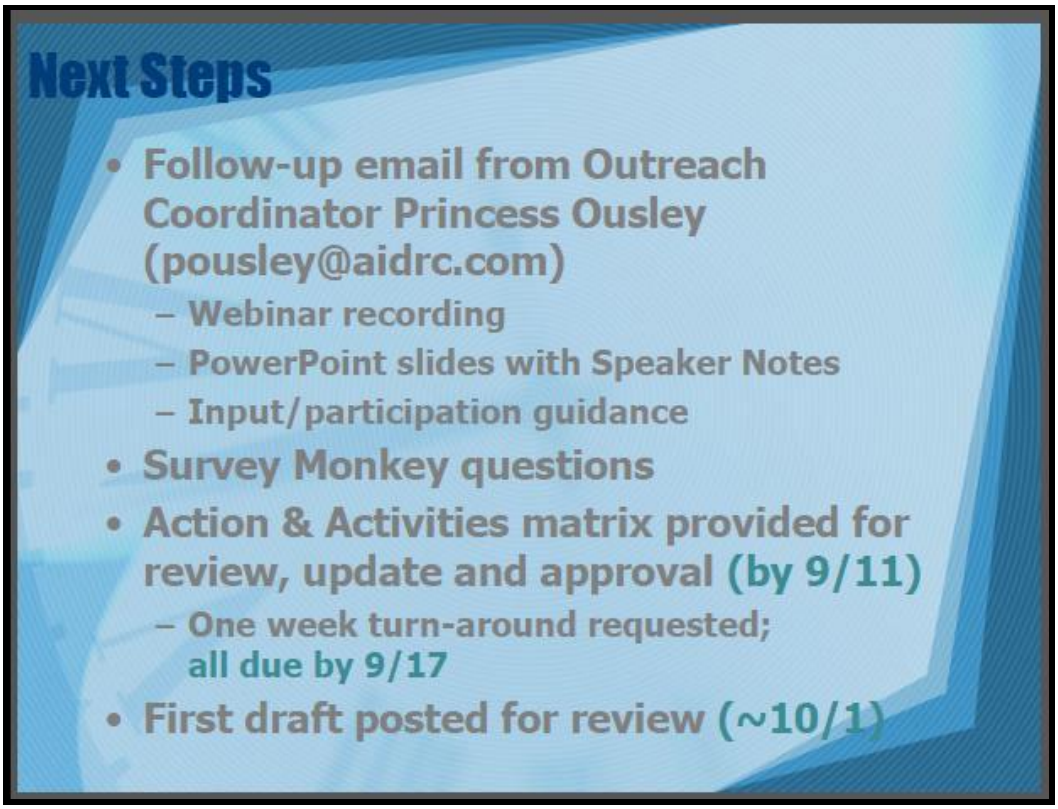
Project Team
• New York Office of Emergency Management
• Stakeholder Agencies, Departments and Organizations

Action Steps with Stakeholders
• Review 2011 New York State Hazard Mitigation Plan
• Provide input related to:
– Strategy and goals/objectives
– Hazard profiles and characteristics
– Risk and vulnerability assessments
– State facilities
– Loss exposure
– Mitigation activities


Input – Survey Monkey
• Approximately how many buildings does your agency have responsibility for, either campus/complex or stand-alone?
• Approximately how many of your facilities sustained damage during Irene, Lee or Sandy?
• How many of your facilities were destroyed in Irene, Lee or Sandy?
• In what county/counties were the majority of your damages sustained?


Input – Survey Monkey
• What was the total approximate dollar amount of your damages?
• Were/are mitigation actions performed or proposed as part of your repair/replacement projects?
• Do you have facilities that would benefit from mitigation actions?
• Have you applied for 404 (HMGP), 406 or other funding for these projects?


Timeline
• OEM Plan Update Team outreach to participants (ongoing until 9/6)
• First draft of 2014 updated Plan provided to FEMA reviewers and posted for stakeholder review & input (goal: 10/1)
• Final draft of 2014 updated Plan provided to FEMA reviewers (11/15)
• Final Plan approved (by 1/4/14)

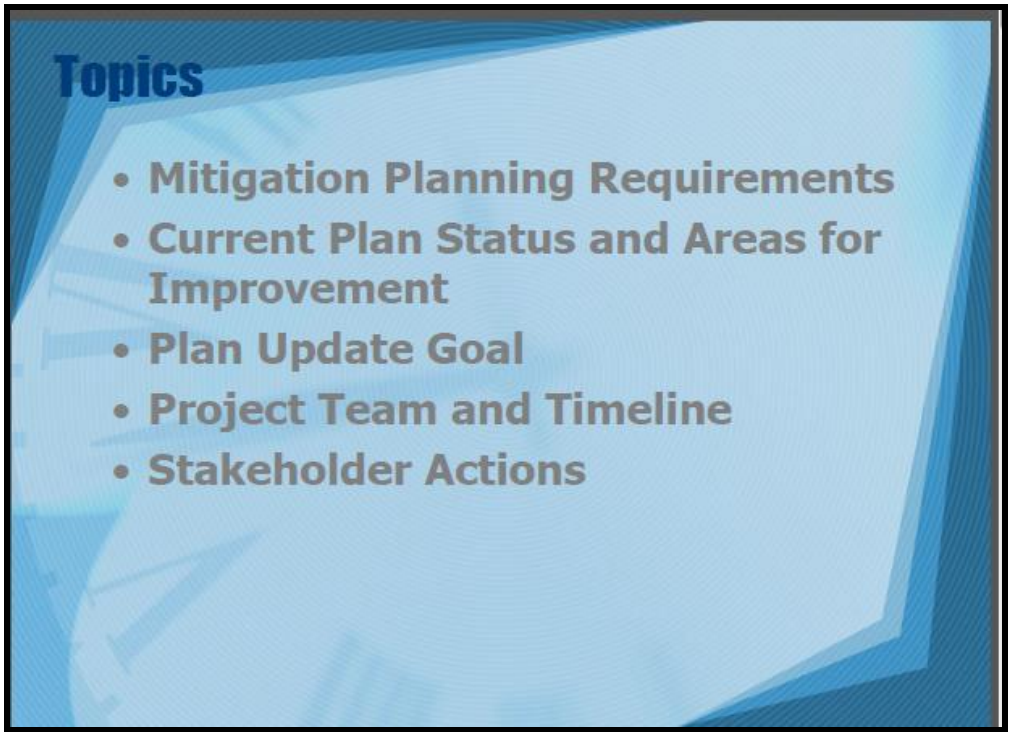

Next Steps
• Follow-up email from Outreach Coordinator Princess Ousley (pousley@aidrc.com)
– Webinar recording
– PowerPoint slides with Speaker Notes
– Input/participation guidance
• Survey Monkey questions
• Action & Activities matrix provided for review, update and approval (by 9/11)
– One week turn-around requested; all due by 9/17
• First draft posted for review (~10/1)

Questions?
Comments?

A.2f: Attendee List

State Agency Attendee List			
Name	Job Title	Company Name	When registered
Judy Wolf	Project Manager	Adjusters International, Inc	Thursday, August 29, 2013 4:33 pm
Nancy Freewman	Contractor	Adjusters International, Inc	Thursday, September 5, 2013 9:44 am
Princess Ousley	Hazard Mitigation Team	Adjusters International, Inc	Thursday, August 29, 2013 4:38 pm
William Wagner III	Mitigation Plan Consultant	Adjusters International, Inc / Early Alert, Inc.	Wednesday, September 4, 2013 6:16 pm
Amy Phoenix	Office Manager	DHSES	Thursday, September 5, 2013 9:57 am
Steven Fukino	J3 Director of Domestic Operations	DMNA	Tuesday, August 27, 2013 9:29 am
Julie Nemeth-Weisser	Assistant Director for Administration	DOS	Thursday, September 5, 2013 8:40 am
Cathleen Carlisle	Senior Hazard Mitigation Planner	FEMA	Thursday, September 5, 2013 9:26 am
Nicole Aimone	Hazard Mitigation Planner	FEMA	Thursday, September 5, 2013 9:19 am
Howard Goebel	Canal Hydrologist	New York State Canal Corporation	Thursday, September 5, 2013 9:42 am
Mark Chaffee	Captain	New York State Police	Tuesday, August 27, 2013 9:55 am
Sharon Cates-Williams	Deputy Commissioner	NY State Education Department	Thursday, September 5, 2013 9:57 am
Gary Monitz	Hazard Mitigation Specialist	NYC OEM	Tuesday, September 3, 2013 3:11 pm
Heather Roiter	Mitigation Program Manager	NYC OEM	Tuesday, September 3, 2013 3:03 pm
Melissa Umberger	Hazard Mitigation Specialist	NYC OEM	Tuesday, September 3, 2013 3:14 pm
Ronald Rausch	Deputy Commissioner	NYS Department of Agriculture and Markets	Tuesday, September 3, 2013 12:19 pm
Christian Bonvin	Utility Supervisor	NYS Dept of Public Service	Wednesday, September 4, 2013 5:05 pm
Stephen Crozzoli	Facilities Planner 3	NYS DOCCS	Thursday, September 5, 2013 8:40 am
Melissa Pinke	Emergency Management Supervisor	NYS DOL	Tuesday, September 3, 2013 9:48 am
Sam Zhou	Acting Regional Director	NYS DOT	Wednesday, September 4, 2013 12:19 pm
Radworth Anderson	Director, Security ID & Emergency Management	NYS Office of General Service	Tuesday, September 3, 2013 3:15 pm
Steven Moskowitz	Director of Emergency Preparedness and Response	NYS Office of Mental Health	Wednesday, August 28, 2013 11:14 am
Don Hughes	Director Facilities Management	NYS OPWDD	Monday, August 26, 2013 3:31 pm
mark hixson	superintendent of maintenance	NYS Thruway Authority	Thursday, September 5, 2013 9:49 am
Douglas Bernhard	Asst. Director Div of Operations	NYSDEC	Tuesday, August 27, 2013 11:21 am
Michael Primeau	Director	NYSDOH	Wednesday, September 4, 2013 3:21 pm
Nikhil Natarajan	Deputy Director	NYSDOH	Wednesday, September 4, 2013 3:22 pm
Elisabeth Lennon	Environmental Coordinator	NYSDOT	Friday, August 30, 2013 9:16 am
Stan Brownell	Facility Manager	NYSERDA	Thursday, August 29, 2013 2:29 pm
Derek Holtzclaw	Associate Commissioner for Financial Management	Office of Children and Family Services	Wednesday, August 28, 2013 11:57 am
Raymond Farina	Director	Office of Children and Family Services	Wednesday, August 28, 2013 1:17 pm
Gerard McCarty	Director	Port Authority of NY&NJ	Saturday, August 24, 2013 3:37 pm

A.2g: Presentation Slides Non-State



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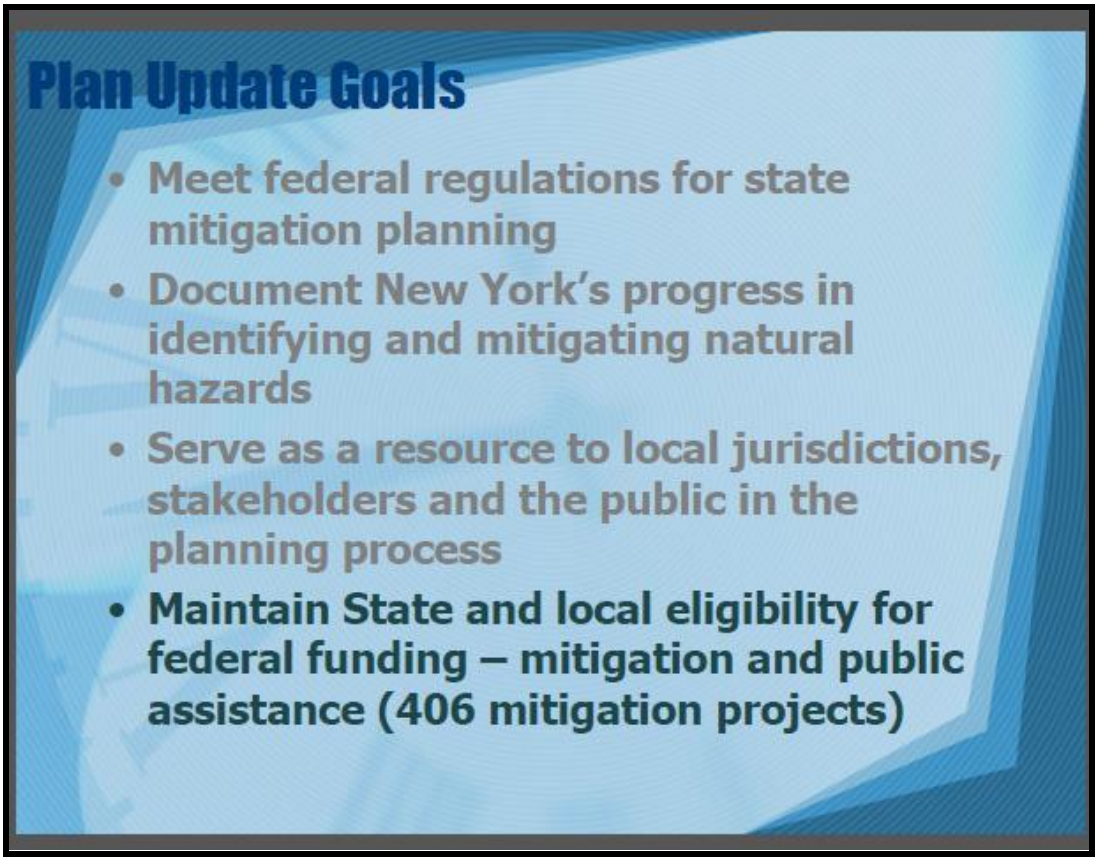
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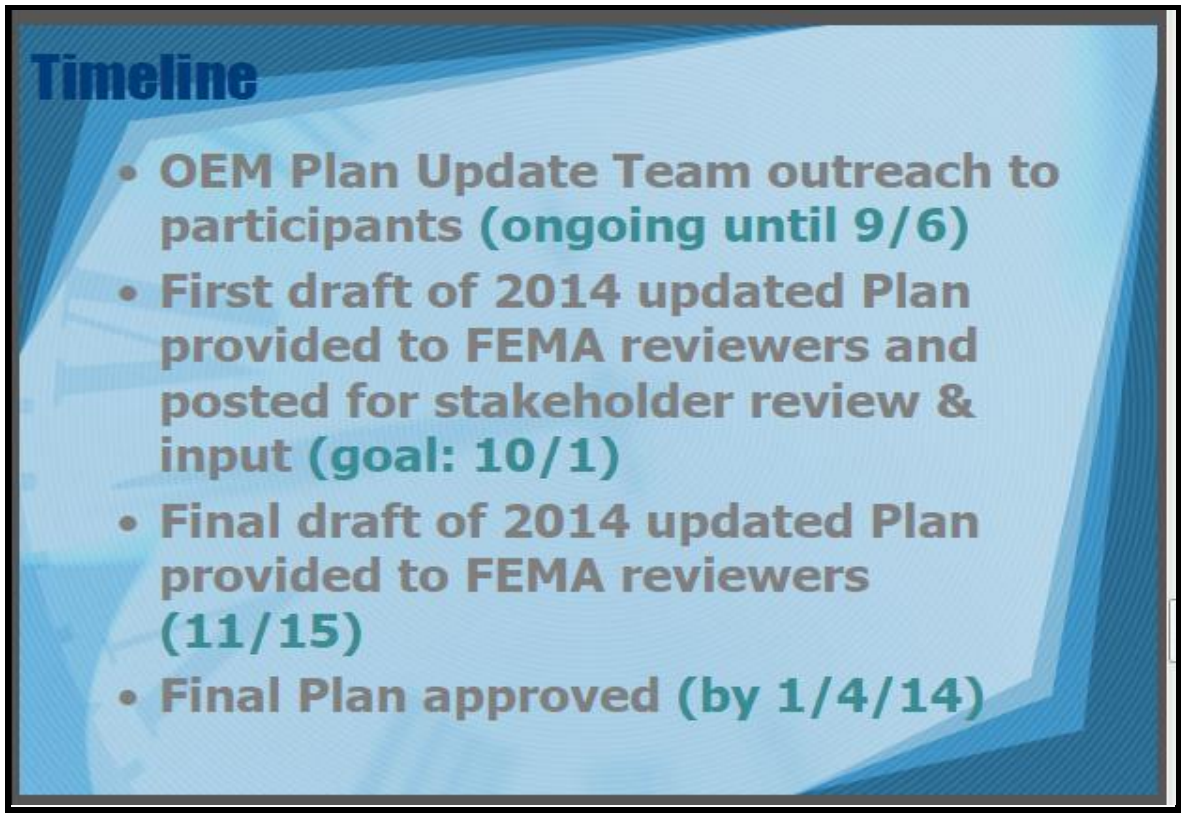
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A.2h: Attendee List

Non-State Webinar Attendee List			
Name	**Job Title**	**Company Name**	**When registered**
Beth Lucas	Senior Planner	Broome County Planning	Monday, August 26, 2013 8:57 am
Crystal Gross	Microcomputer Specialist	Cattaraugus County DPW	Monday, August 26, 2013 10:23 am
David Walowsky Jr	State Design Engineer	USDA-NRCS	Monday, August 26, 2013 11:08 am
David Zatlin	Director of Emergency Recovery	Nassau County OEM	Monday, August 26, 2013 9:04 am
Fred Rion	Emergency Preparedness Administrator	Monroe County OEM	Monday, August 26, 2013 12:30 pm
James Kalohn	Planner	Sch'dy County Gov't	Monday, August 26, 2013 3:38 pm
Jessica Verfuss	Assistant Director	Tompkins County Emergency Response	Monday, August 26, 2013 3:40 pm
Jim Lieberum	District Manager	Warren County SWCD	Wednesday, August 28, 2013 8:08 am
Jonathan Pease	Deputy Director	Washington County Department of Public Safety	Tuesday, August 27, 2013 9:03 am
Pamela DiCarlo	Code Enforcement	Village of North Syracuse	Tuesday, August 27, 2013 3:46 pm
Peter deVries	Supv. Hydrologist	US Geological Survey	Tuesday, August 27, 2013 3:04 pm
Seamus Leary	Deputy Commissioner	Orange County	Tuesday, August 27, 2013 11:21 am
Thomas Remmert	Dep. Dir. of Emergency Management	Albany County Sheriff's Office	Monday, August 26, 2013 11:53 am
Ken Davidson	Emergency Manager	Dutchess County	
Jonathan Schultz	Director of Emergency Management	Niagara County	
John Maguire	Budget Analyst	Nassau County OEM	
J.T. Glass		Erie County	
Kristin Card-Griffin	Deputy Director Administration / LEPC Chairperson	Chemung County	
Britt Westergard		National Weather Service	
Rick Lord	Chief of Mitigation Programs	Division of Homeland Security and Emergency Services	
Marlene White			
Nancy Freeman	Contractor	Adjusters International, Inc	
Judy Wolf	Project Manager	Adjusters International, Inc	
William Wagner III	Mitigation Plan Consultant	Adjusters International, Inc / Early Alert, Inc.	

OEM Team
AI Team