U.S. Army Corps of Engineers: Snapshot of Actions for Water Resources Adaptation to Climate Change

Meeting of the Climate Change and Water Resources Workgroup of the Advisory Committee on Water Information
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Rolf Olsen, PhD
Institute for Water Resources
U.S. Army Corps of Engineers
Alexandria, VA

Outline

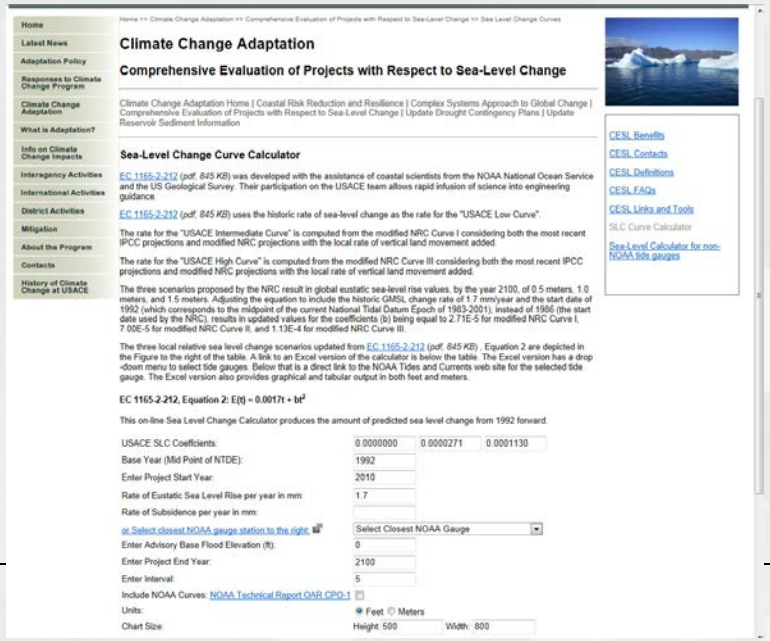
- Adaptation Policy
- Sea level rise
- Sandy
- Vulnerability assessments
- National Action Plan

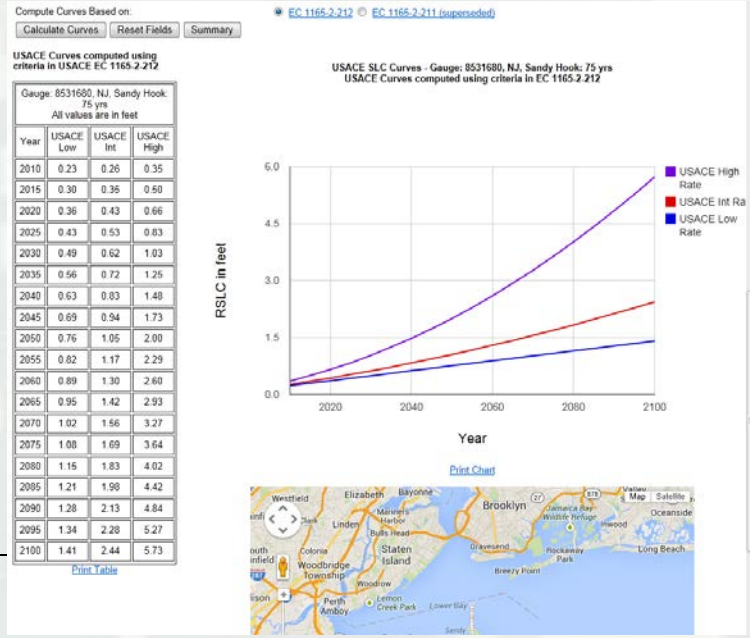
Policy and Strategy

- June 2011 Policy Statement: integrate climate change adaptation into all that USACE does.
- Priority areas
  - Infrastructure Resilience
  - Vulnerability Assessments
  - Risk-Informed Decision-Making for Climate Change
  - Nonstationarity
  - National Strategies (Action Plan to Manage Freshwater Resources in a Changing Climate, National Ocean Policy Implementation Plan and Fish Wildlife and Plants Strategy)
- Engage in meaningful external collaboration

Sea Level Rise

- Policy and Guidance on Sea Level Change:
  - 1986 - National Research Council report on sea level rise; USACE letter
  - 2000, Planning Guidance – sensitivity to historic and NRC high rate sea level change
  - 2009 and 2011 Engineer Circulars – use 3 scenarios
  - 2013 Engineer Regulation – use 3 scenarios
- Tools for Sea Level Change:
  - Sea level change calculator: available to public, web accessible
  - Sea level calculator supporting Interagency Sandy Sea Level Rise tool

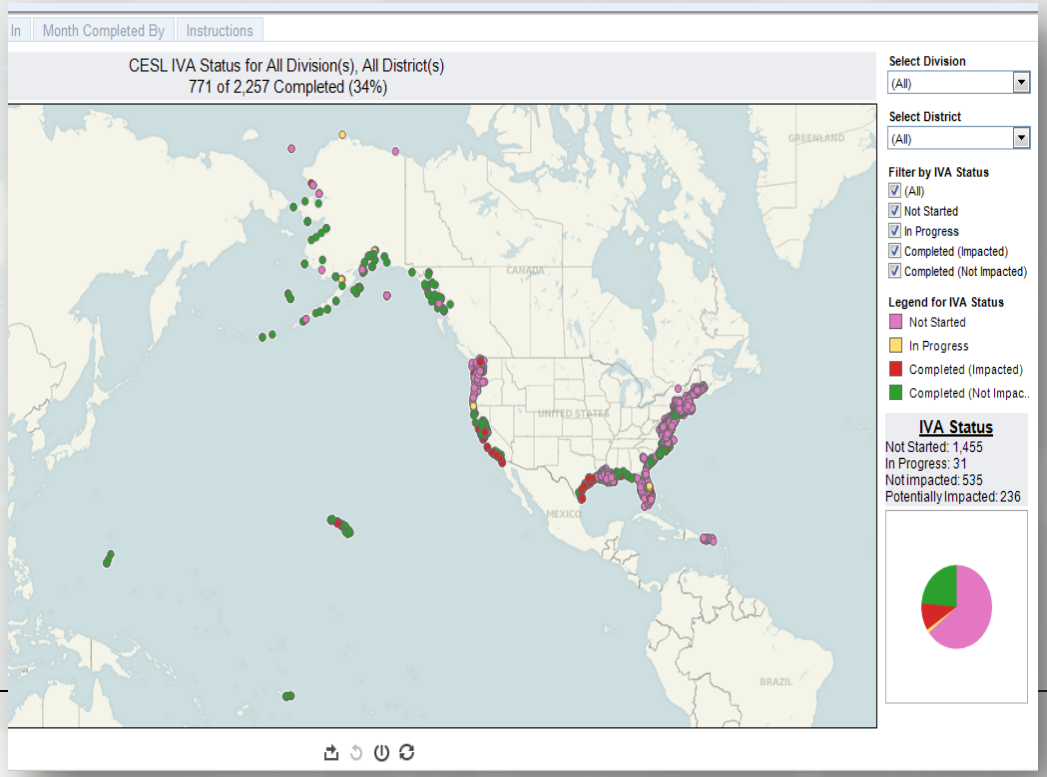




Year	USACE Low	USACE Int	USACE High
2010	0.23	0.26	0.35
2015	0.30	0.36	0.50
2020	0.36	0.43	0.66
2025	0.43	0.53	0.83
2030	0.49	0.62	1.03
2035	0.56	0.72	1.25
2040	0.63	0.83	1.48
2045	0.69	0.94	1.73
2050	0.76	1.05	2.00
2055	0.82	1.17	2.29
2060	0.89	1.30	2.60
2065	0.95	1.42	2.93
2070	1.02	1.56	3.27
2075	1.08	1.69	3.64
2080	1.15	1.83	4.02
2085	1.21	1.98	4.42
2090	1.28	2.13	4.84
2095	1.34	2.28	5.27
2100	1.41	2.44	5.73

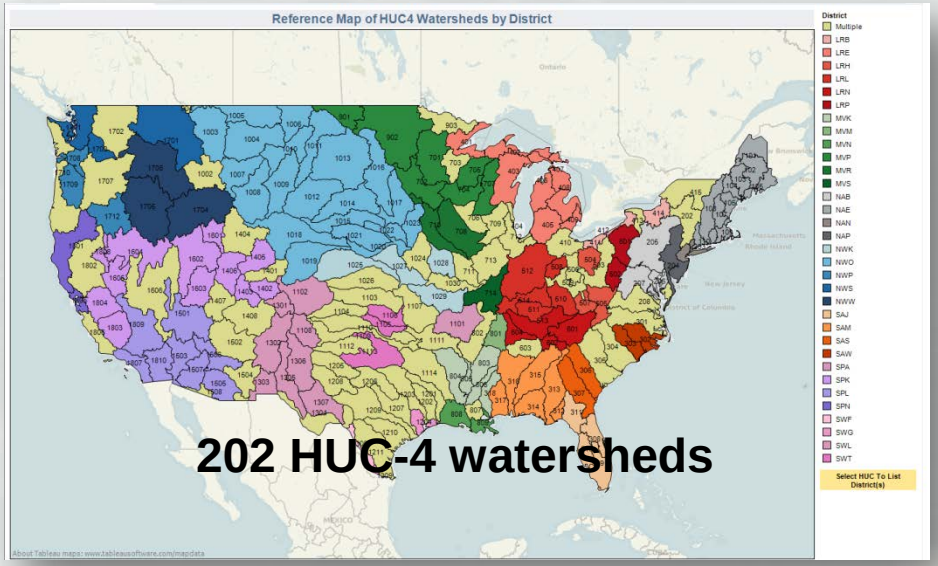
Sea Level Rise

- Comprehensive Evaluation w.r.t Sea Level Change (CESL)
  - Initial nationwide screening-level coastal vulnerability assessment in progress for USACE coastal projects (~2200)
  - Detailed assessments to follow with priority based on screening
  - Pilot of detailed analysis underway at Stamford, CT Hurricane Barrier



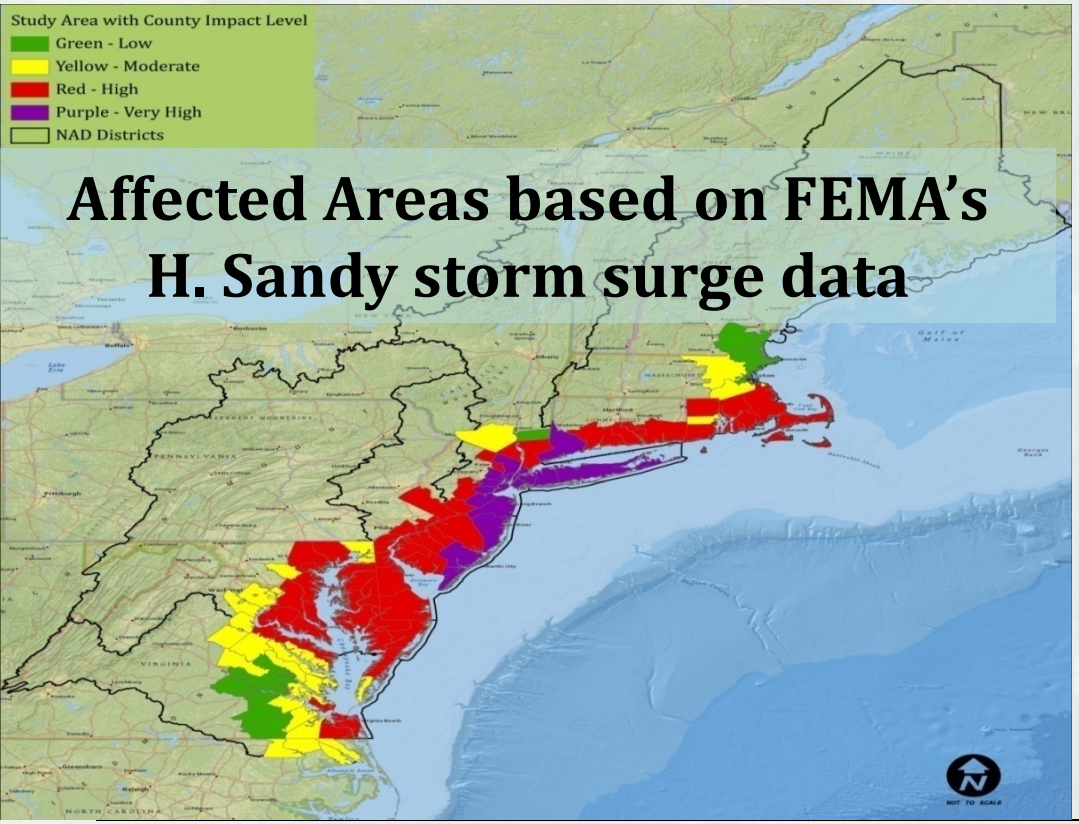
Vulnerability Assessments

- Watershed Vulnerability Assessment
  - Applies consistent nationwide (unregulated) hydrology at HUC-4 watershed level for CONUS based on statistically downscaled climate data
  - Initial nationwide screening-level vulnerability assessment at HUC-4 watershed level in progress for CONUS
  - Vulnerability for each HUC for each business line and for all business lines

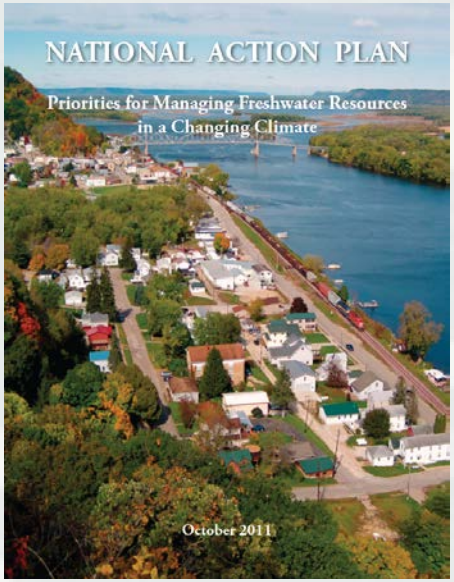


Authority, Study Area, and Goals

- "… using up to $20,000,000* of the funds provided herein, the Secretary shall conduct a **comprehensive study** to address the flood risks of **vulnerable coastal populations** in areas that were **affected by Hurricane Sandy** within the boundaries of the **North Atlantic Division** of the Corps…" (*$19M - sequestration)
- Complete by **Jan 2015**



- Provide a **Risk Reduction Framework (Infrastructure Systems Rebuilding Principles NOAA-USACE)**
- Support **resilient coastal communities and sustainable coastal landscape systems,** considering future sea level rise and climate change scenarios, to reduce risk to vulnerable population, property, ecosystems, and infrastructure.

National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate

- USACE is leading implementation of three Integrated Water Resources Management (IWRM) actions.
  - Action 17: Strengthen the role of river basin commissions in climate change adaptation
  - Action 19: Working with States, review flood risk management and drought management planning and identify “best practices” to prepare for hydrologic extremes in a changing climate
  - Action 20: Develop benchmarks for incorporating adaptive management into water project designs, operational procedures, and planning strategies