Post-Sandy Infrastructure Resiliency Standards

OBJECTIVE: To ensure a resilient and sustainable rebuild of our vital drinking water and wastewater infrastructure as we recover from and integrate the lessons learned in the wake of Hurricane Sandy.

> "Mitigation" is defined as any sustained action taken to reduce or eliminate long-term risk to life and property from hazard events. The goal is to save lives and reduce property damage in ways that are cost-effective and environmentally sound.

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MISSION: Develop technical guidance and/or recommendations to enhance resiliency of wastewater and drinking water system infrastructure in post-Sandy recovery.

The guidance addresses the following subject areas:

- Auxiliary Power
- Flood Protection for Critical Facilities
- Emergency Preparedness & Response Plans
- Asset Management

Post-Sandy Infrastructure Resiliency Standards

Primary Goals of the Guidance ("build stronger, safer, smarter":

- Facilitate funding assistance for identified recovery projects
- Promote consistent, uniform standards to be applied to the repair/ reconstruction of damaged facilities as well as to proactively enhance the resilience of existing components to withstand future events
- Recognize "one size does not fit all" and allow flexibility, where appropriate

Approach of the Guidance:

- Specify Federal disaster relief funding requirements, as applicable
- Clarify existing NJDEP statutory/regulatory authority governing the aforementioned four subject areas to protect against future events and promote a quick, comprehensive response and recovery
- Consider codes/standards/BMPs implemented by Federal and other state agencies
- Emphasize the importance and benefits of proactive planning/action
- Identify the need for future rulemaking to update and clarify requirements

Auxiliary Power

Specify auxiliary power equipment/fuel standards to ensure continued, effective operation of systems to maintain minimum service standards and meet permit limits/standards

- Rules currently require auxiliary power for critical system components as necessary to ensure continuous, effective operation to meet drinking water quality standards and minimum pressure (drinking water) or to meet NJPDES discharge permit limits/conditions (wastewater)
- Clarify what is meant by key terms or concepts, such as effective operation, primary or critical components, and duration of back-up service
  - Length of power service interruptions
  - Identify on-site and reserve fuel protocols
  - Recommend auxiliary power fuel redundancies/alternatives (e.g. natural, landfill, or digester gas, and other innovative technologies)
  - Emphasize the benefits of self-sufficiency as well as multi-system/regional contracts or arrangements
  - Testing/maintenance protocols for reliability and increased life cycle
- Offers state-of-the-art auxiliary power alternatives that systems can pursue to minimize energy costs, incorporate redundancy, limit Air Quality permitting constraints

Infrastructure Flood Protection

Executive Order 11988 (Floodplain Management) – EO 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. This specifically relates to:

- acquiring, managing, and disposing of federal lands and facilities;
- **providing federally-undertaken, financed, or assisted construction and improvements**;
- conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

- Specifies Federal funding requirements for any projects for which Federal disaster relief funding, State Revolving Fund, and/or NJEIT funding is provided in connection with Sandy recovery.
- Applies to "critical actions" and minimum floodplain of concern = 500-year floodplain
- Guidance supports existing requirements found in Flood Hazard Area Control Act rules, UCC (ASCE 24), and other local/State/Federal codes/standards, as applicable
- For non-Federally funded projects, guidance clarifies NJDEP requirements and offers hierarchy of alternatives (avoidance, elevation, flood-proofing)

Emergency Response Planning & Preparedness

Outlines emergency response protocols consistent with existing DEP rules

- Aimed at enhancing continued, effective operations, minimizing disruption, and fostering communication with customers/emergency responders and relevant agencies
- Includes templates and guidelines (manuals, desktop exercises, regional partnerships/strategies) to foster a unified, customized emergency response strategy
- Clarifies NJDEP and individual systems' respective and collaborate roles
- Supports the integration of separate system evaluations such as vulnerability/ criticality analyses (asset mgmt.), auxiliary power protocols, operation and management procedures, etc.
- Ultimately, the guidance stresses the importance of making the ERP a "living, breathing" document that's considerably more than a list of personnel and phone numbers that sits on a shelf
    - The goal is to create an effective, workable, and familiar planning tool that facilitates proactive thinking, continual exercising, and, ultimately when needed, decisive action to respond to both unforeseen and reasonably expected (i.e. forecast) emergencies that interrupt the routine of day-to-day operations.