

Lifelines Risk & Resilience Measurement & Management Program: Providing the Decision Support & Process to Implement PPD-21



Presidential Policy Directive/PPD-21 – “Critical Infrastructure Security and Resilience”

– expands the national goal for critical infrastructures (CIs) from “protection” to “security and resilience” and shifts considerable initiative from the Federal government to “public and private CI owners and operators” (CIOOs) because they are “uniquely positioned to manage risks to their individual operations...and to determine effective strategies to make them more secure and resilient,” and to state, local, tribal and territorial entities (SLTTs), as a “shared responsibility,” pursued through a nationally integrated “unity of effort.” “Effective partnerships [of the U.S. Department of Homeland Security] with CIOOs and SLTTs are imperative to strengthen the security and resilience of the Nation’s CIs.”

This policy reflects the emerging consensus that CI failures, whatever the cause, impose unacceptable costs on the American public and economy; that CIOOs, SLTTs and other stakeholders, often in metropolitan public-private partnerships, can best address the unique issues that specific, “complex and diverse” CIs face in serving unique communities; and that resources for CI security and resilience are increasingly scarce, so must be allocated with greatest care based on solid analyses.

Decisions based on competent risk and resilience analysis allow individual CIOOs, SLTTs and partnerships to make the best use of their already-limited resources, and may ease the availability of new, added resources. These local decisions contribute to national security, so they should be nationally coordinated for greatest effectiveness, with the Federal Government playing a supporting role by developing the policy, tools, information, intelligence and resources not available to CIOOs and SLTTs, and by collaborating with them on cross-regional and national CI security and resilience.

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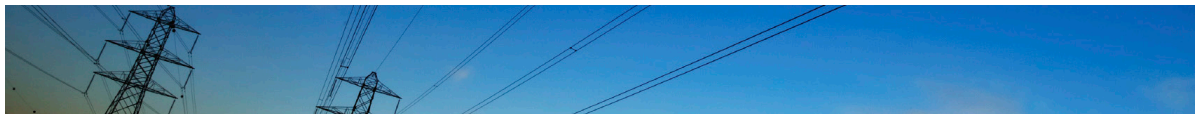
The **National Institute of Building Sciences** is one of several institutions contributing to this new consensus. It has been working on launching a committee on *Lifelines Risk/Resilience Measurement and Management* with the same goals as PPD-21. It is based on ANSI/AWWA J100, a well tested, SAFETY Act-designated national consensus **standard method** for infrastructure risk/resilience analysis. The committee is exploring offering an **open-source software toolset**, developed to support the J100 methodology, Program to Assist in Risk and Resilience Examination (PARRE), for use by CIOOs, SLTTs and partnerships to decide where resources can best advance security and resilience. The committee has also recommended a “bottom-up,” *national*, information sharing-cooperation-collaboration process – based on global, corporate enterprise risk management – to integrate local programs into a truly national program. The Lifelines Program, based on a decade of development and field-testing in actual CIs and regions, aligns seamlessly with the actions required in PPD-21.

The Lifelines Program uniquely supports the PPD-21 requirements for risk/resilience analysis, decision and evaluation, and integration for CIOOs, SLTTs and regional partnerships with DHS because it:

- Supports the *whole decision cycle*: (1) sets security and resilience *priorities*, (2) evaluates and selects improvement *options* and (3) manages options by actual, measured *outcomes performance*
- Quantifies *outcomes: resilience, security, benefits and progress*, in dollar terms, both prospective and actual, so they can be compared in conventional return-on-investment and/or benefit/cost decisions
- Mobilizes and coordinates *private, utility, state, local and partnership funds*

- Generates information for *Federal assistance* and *innovative financial* arrangements
- Provides the common metrics necessary to *measure progress* for infrastructure and regional managers, Federal and state grant programs, insurers, credit rating agencies, etc.
- Models *interdependencies* among infrastructures and their cascading impacts on customers and regions
- Models consequences of *cyber and manual process* control system failures
- Supports real-time *situation awareness and decisions*
- Sequences facility *re-starts* and *service restoration* after disasters
- Provides an *integrating analytical structure* for holistic solutions to unique local challenges and for bottom-up solutions to be aggregated as a *national* program
- Is based on and maintained through PARRE to be disseminated as *open-source consensus software* – which encourages rapid acceptance, continuous improvement, accelerated maturation and integration of complementary methods, guided by a panel of risk and software experts and users
- Complements implementation of PPD-8 – National Preparedness Goal and virtually all national plans
- Builds on an American National Standard with SAFETY Act designation, and has PARRE designation pending

The unique alignment of the Institute's program with PPD-21 requirements strongly suggests a federal/private sector **partnership** to accelerate implementation of PPD-21 by using the Institute's method, tools and bottom-up process as the core CIOO-SLTT-led process to advance the security and resilience of our infrastructures, regions and the Nation as a whole.



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