

Operations and Maintenance (O&M) Program

Nael Nmair

Federal Energy Management Program (FEMP)

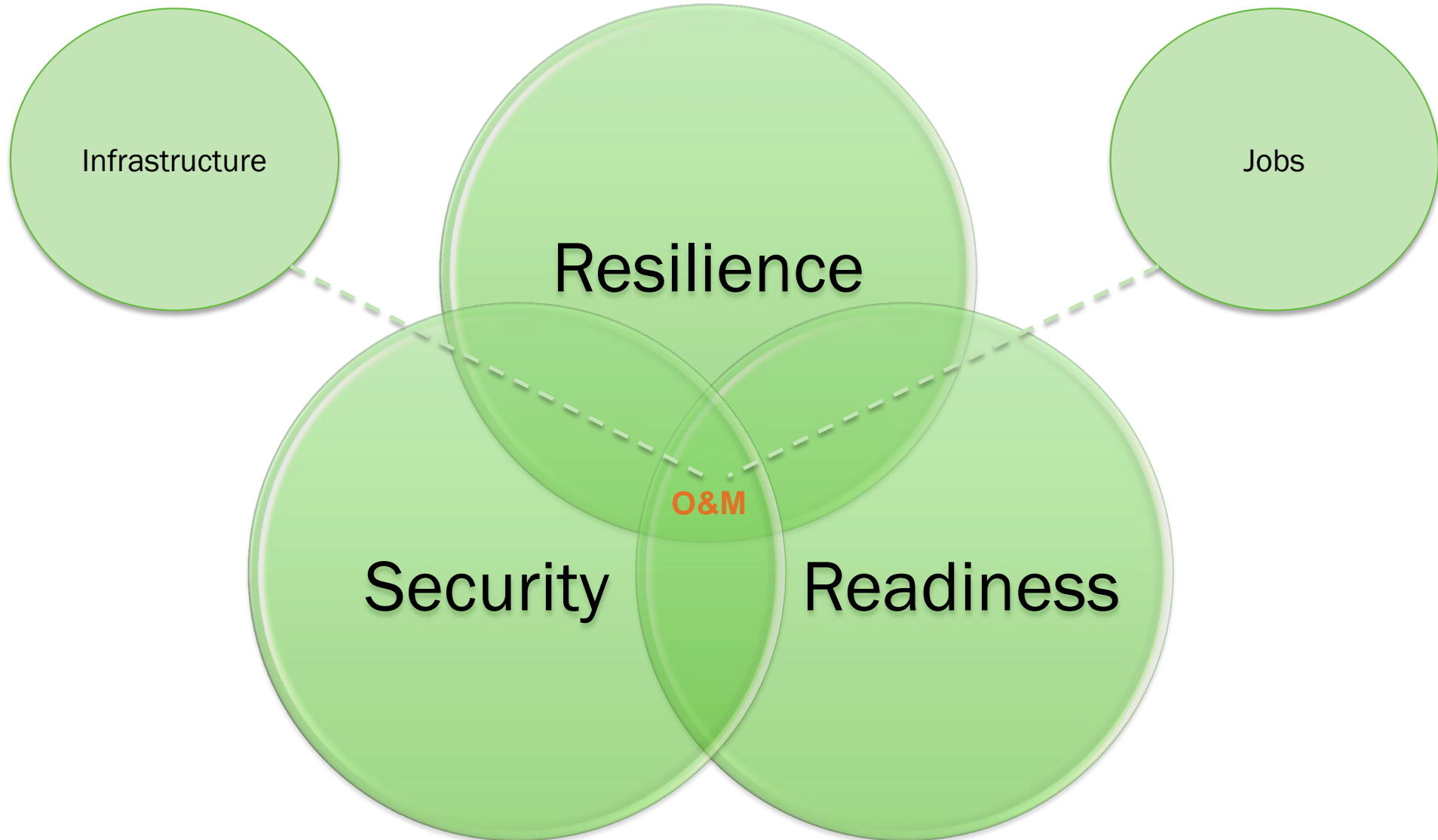
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Meeting Overview

- **Familiarize meeting members with FEMP's O&M Program**
- **Address Deferred Maintenance problem**
 - Form a Problem Solving Team (PST)
 - Seeking agency participants
- **Announce Re-tuning Challenge opportunity to jump start your savings this year**
 - Nominate your sites

Administration's Priorities and O&M



Background – Deferring Maintenance and Repair

*FY16, federal agencies reported \$165.3 billion of deferred maintenance for general properties, plants, and equipment
Why?*

Two studies were accomplished to analyze BMAR:

- 1998, National Research Council on *Stewardship of Federal Facilities*
- 2014, GAO study titled “*Improved Transparency Could Help Efforts to Manage Agencies' Maintenance and Repair Backlogs*”

Both studies found similar conclusions:

- **Focus on initial costs as opposed to life-cycle costs**
 - Installing lesser quality systems with lower initial cost
 - Higher O&M requirements; more maintenance frequencies, more spare parts needed, shorter life
 - More of a problem with Design/Build verses Design-Bid-Build

Deferring Maintenance and Repair (cont.)

- **Inadequate funding** for maintenance and repairs
 - O&M funding should be 2 – 4% of the replacement value of facilities portfolio. Federal Agencies historic funding is much less
- **Aging facilities** that require increased levels of maintenance and repairs to keep them operating effectively
- **Lack of information** (Metrics) that would assist facility program managers in making compelling arguments for maintenance and repair budgets to decision makers
- **Lack of accountability** for stewardship

O&M Overall Strategic Goals and Statute

- **Statutory Requirement**
 - No direct statute found
- **O&M Program Strategic Goals:**
 - Enhance O&M delivery
 - Improves energy & water savings, reliability, and operational efficiency
 - Enhance resiliency through improved O&M (increased reliability of systems)
 - Increase Outreach to include “One-Stop-Shop” Website for all tools, training, resources, and best practices
- **Announcing FEMP’s Re-tuning Challenge**

O&M Delivery – Problems and Solutions

- **Problem 1: O&M is not viewed as an urgent requirement**
 - Federal deferred maintenance of \$165.3 billion
 - Form a Problem Solving Team (PST)
 - Identify potential solutions
 - How to implement such solutions
 - Enlist agencies in solution process
 - Develop operational efficiency metrics
 - Coordinate with Performance Contracting on areas of O&M and retuning opportunities
 - Most, if not all, ESPC/UESC projects should include O&M
 - Work with agencies to address planning for post-construction O&M costs
 - Include O&M in Planning and Programming (P&P) packages as a part of project's costs for new construction and major renovations
 - Include O&M costs as part of all efficiency and resilience systems' retrofits, renovations, and new construction



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O&M Delivery – Problems and Solutions (cont.)

- **Problem 2: O&M programs lack needed resources**
 - Develop technically focused resources on best practices for resourcing O&M
 - Develop template for compelling reasons for PMs to justify O&M funding
 - Look for solutions and alternatives to optimize O&M resources (staffing, prioritization of work, funding, zones verses work category, etc.)
- **Problem 3: New technologies being deployed require new skills to operate and maintain**
 - Develop technical resources for new technologies used in buildings and resilience
- **Problem 4: Performance specifications and agency O&M manuals are often based on outdated practices**
 - Develop lessons learned and tools on new specifications and cutting edge approaches

O&M for Resilience – Problems and Solutions

- **Problem 1: Evolving mission requirements (energy and water resilience) will further strain overall resources of O&M programs**
 - Develop metrics for O&M prioritization of energy and water resilience/security technologies
 - Enhance/develop guidance for effective O&M plan for resilience technologies (e.g. standby generators)
- **Problem 2: New energy resiliency technologies being deployed require new skills to operate and maintain**
 - Develop Best Practices guidelines for resiliency technologies that are being increasingly deployed

O&M Outreach – Problems and Solutions

- **Problem 1: No comprehensive O&M website exists**
 - Develop “One-Stop-Shop” O&M Website for all tools, training, resources, best practices, and case studies
 - Post all O&M program developed materials – technology checklists and issues papers/guidance on the website
 - Locate and vet available materials, tools, training, and resources across federal and non-profit sectors

FEMP O&M Best Practices Website Organization



Re-tuning

What is Re-tuning:

- Re-tuning is a process of improving control of a building energy systems utilizing Building Automation System (BAS) of centrally controlled buildings through:
 - The application of simple and common sense principles



“Turn it off”



“Turn it down”



“Mitigate simultaneous heating and cooling”



“Reduce infiltration and outside air”

- Identification and correction of faulty control infrastructure
- Instilling strategies for better monitoring and control into the culture and mindset of the building operators

Benefits of Re-tuning:

- Quick energy savings
- Cost savings and cost effectiveness
- Occupant’s comfort

Re-tuning Success Stories

Agency	GSA	Army	Navy
Location	Carter-Keep Courthouse San Diego, CA	AMC Headquarters Redstone Arsenal, AL	Central Plant Honolulu, HI
Size (SF)	480,000	435,000	1.2 million
Investment	\$50,000	\$250,000 (included other buildings)	\$150,000
Energy savings	29%	18%	16%
Costs savings	\$252,397	\$201,500	\$150,000
EUI * (before/after)	51.1 → 36.6	122.0 → 99.7	N/A
Measures	11	6	4

*EUI – Energy Use Intensity in kBtu/ft²

FEMP Re-tuning Challenge – Outline

Retuning steps:

1. Onsite classroom training includes on-the-job training (OJT)
2. Re-tuning Team retunes; Onsite Staff observes
3. Onsite Staff retunes, Re-tuning Team oversees
4. Onsite Staff retunes by themselves, Re-tuning Team spot checks
5. Re-tuning Team is available for reach back support

Targeted outcome:

- Train the trainer
- Utilize lessons learned and templates

Next Steps:

- Agencies share Re-tuning Challenge information with their sites
- Interested agencies should contact FEMP – Nael Nmair for follow-up
- More details will be offered at a webinar on Jan 10, 2019

Re-tuning Challenge – Webinar Information

FEMP Re-tuning Challenge Webinar

- **Thursday, Jan 10, 2019**
2:00 PM – 3:00 PM EST
- **Link: Join meeting from your computer, tablet or smartphone.**
<https://global.gotomeeting.com/join/166369605>
- **Audio: You will receive the option to join via computer or dial in using your phone.**
United States: +1 (786) 535-3211
Access Code: 166-369-605
- **First GoToMeeting? Let's do a quick system check:**
<https://link.gotomeeting.com/system-check>

Next Steps for Agencies (Action Required)

- Participate in the deferred maintenance Problem Solving Team (PST)
- Recruit respective sites for the Re-tuning Challenge
- Share your ideas for FEMP O&M
- Contact Information:

Nael Nmair, FEMP O&M Program Manager

Nael.Nmair@ee.doe.gov



QUESTIONS/DISCUSSION?