



WATER RESILIENCE STUDY

NATIONAL INFRASTRUCTURE ADVISORY COUNCIL (NIAC) QUARTERLY BUSINESS MEETING

DECEMBER 1, 2015

Jack Baylis, President and CEO, The Baylis Group, LLC, *Chair*

Albert J. Edmonds, Chairman and CEO, Edmonds Enterprises Services; CEO, Logistics Applications, Inc.

Margaret E. Grayson, President-Commercial Sector, Consulting Services Group, LLC

James J. Murren, Chairman and CEO, MGM Resorts International

Joan McDonald, Consultant, JMM Strategic Solutions

Beverly Scott, Ph. D., CEO, Beverly Scott Associates, LLC



AGENDA

- Study Charge
- Working Group Update
- Study Group Update
- Schedule
- Questions

STUDY CHARGE

Apply the NIAC-recommended framework for establishing resilience goals (developed in the 2010 study*) to the Water Sector in order to:

- Assess security and resilience in the water sector
- Uncover key water resilience issues
- Identify potential opportunities to address them.

**Framework for Establishing Critical Infrastructure Resilience Goals (NIAC 2010) – see [slide deck appendix](#)*

WORKING GROUP MEMBERS

- **Jack Baylis**, President and CEO, The Baylis Group, LLC, *Chair*
- **Albert J. Edmonds**, Chairman and CEO, Enterprise Services; CEO, Logistics Applications, Inc.
- **Margaret E. Grayson**, President-Commercial Sector, Consulting Services Group, LLC
- **James J. Murren**, Chairman and CEO, MGM Resorts International
- **Joan McDonald**, Consultant, JMM Strategic Solutions
- **Beverly Scott**, Ph.D., CEO, Beverly Scott Associates, LLC

WORKING GROUP UPDATE

- Five Working Group interviews completed:
 - **David Travers**, Director of the Water Security Division in the Office of Groundwater and Drinking Water, U.S. Environmental Protection Agency (EPA is the Water Sector-Specific Agency)
 - **Patricia Mulroy**, Senior Fellow at the Metropolitan Policy Program at Brookings; former general manager of the Southern Nevada Water Authority
 - **Marc Kodack**, Program Manager for the Office of the Deputy Assistant Secretary of the Army for Energy and Sustainability
 - **Christopher Dunn**, Director of the U.S. Army Corps of Engineers, Institute for Water Resources, Hydrologic Engineering Center
 - **Martha Daniel**, President and Chief Executive Officer; and Brenda Taylor, Chief Technology Officer and Executive Vice President; at Information Management Resources, Inc.
- Three additional interviews scheduled through the end of December; additional invitations pending.
- Water and Wastewater Sector and Government Coordinating Councils facilitated discussion conducted 11/10/15.
- Working Group planning and analysis session conducted 12/1/15.

STUDY GROUP MEMBERS

- **Adel Hagekhalil (Chair)** – Assistant Director, City of Los Angeles Sanitation
- **Diane VanDe Hei (Vice Chair)** – Executive Director, Association of Metropolitan Water Agencies
- **Dave Aucoin** – Safety Compliance Coordinator, Narragansett Bay Commission
- **Steve Bieber** – Water Resources Technical Manager, Metropolitan Washington Council of Governments
- **Cherrie Black** – Infrastructure Strategist, Idaho National Labs
- **Patty Cleveland** – Assistant Regional Manager, Northern Region, Trinity River Authority of Texas
- **Glen Daigger** – Professor of Engineering Practice, University of Michigan
- **Kevin Donnelly** – Deputy Commissioner, NYC Department of Design and Construction
- **Scott Haskins** – Senior Vice President and Director of Strategic Consulting, CH2M Hill
- **Rick Houck** – Vice President, Hawaiian Electric Company
- **Adam Krantz** – CEO, National Association of Clean Water Agencies
- **Terry Leeds** – Director, Kansas City Water Services
- **Bianca Mallory** – Vice President, The Allen Group
- **Kevin Morley** – Security and Preparedness Program Manager, American Water Works Association
- **Jonathan Reeves** – Manager, DC Water and Sewer Authority
- **Sunil Sinha** – Director, Virginia Tech Sustainable Water Infrastructure Management Center

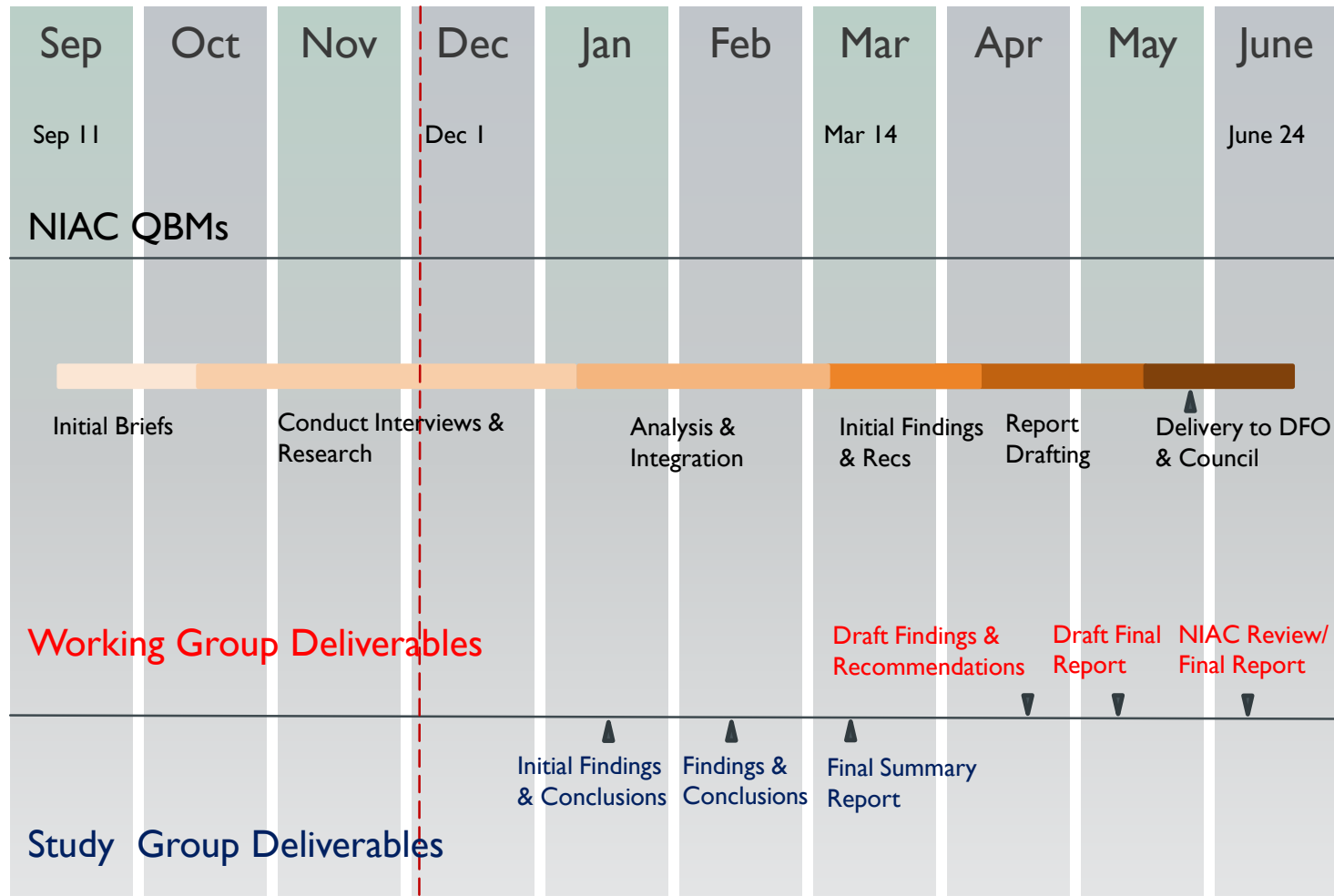
STUDY GROUP UPDATE

- 16 Study Group Members with broad expertise
- 7 panel discussions completed:
 - Water Sector Risks and Barriers to Resilience
 - Cross-Sector Dependencies and Interdependencies
 - Planning and Investments in Resilient Practices and Infrastructure
 - Extreme Weather Impacts on Infrastructure
 - Emergency Management
 - Cybersecurity
 - Next Generation Resilience
- Additional one-on-one interviews with sector and resilience experts

STUDY GROUP UPDATE (CONTINUED)

- Approximately 40 subject matter experts participated in panel discussions and interviews, including:
 - Owners and operators from all subsectors
 - Consultants specializing in the Water Sector
 - Advocacy organizations
 - Higher education institutions (policy and engineers)
- Study Group is on target to deliver preliminary findings to the Working Group in January.

UPDATED STUDY TIMELINE





QUESTIONS?





APPENDIX: BACKGROUND INFORMATION



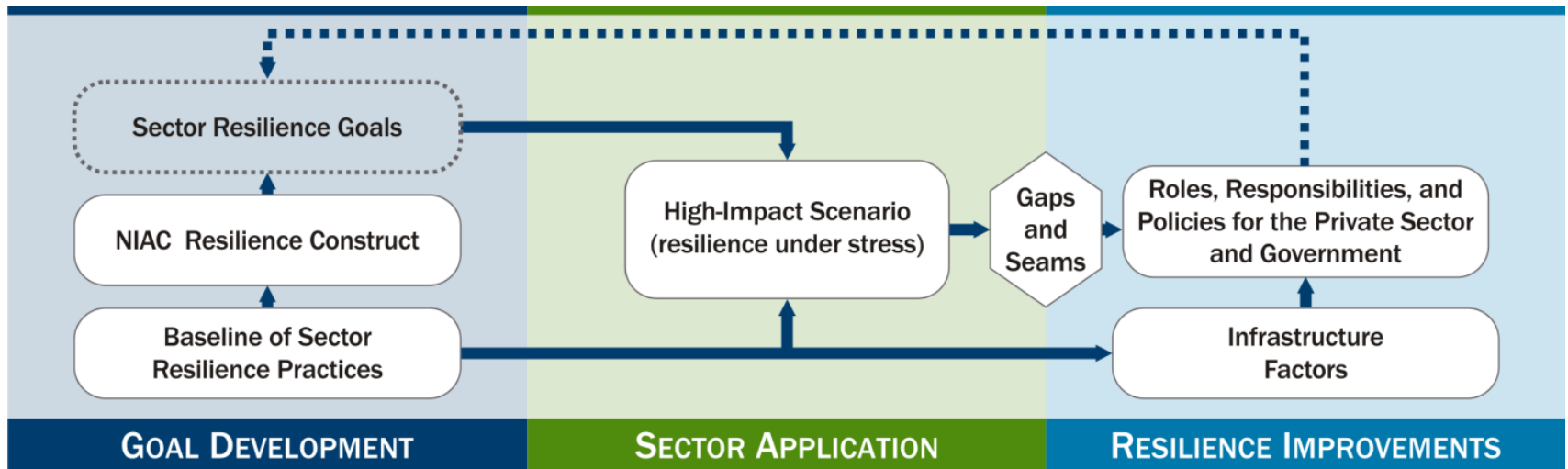
FRAMING QUESTIONS

1. What **current strategies and practices promote resilience** in the sector?
What differences or common areas of understanding of resilience and plan coordination exist across regions and subsectors?
2. What are the implicit resilience goals that are aligned with **common practices for each region or sub-sector, and across the sector?**
3. What considerations and cascading effects result from **dependencies between sub-sectors and other infrastructure sectors**, including cyber systems and their disruptions, within a region and across the nation?
4. What **potential gaps and seams** exist that create obstacles for the sector and subsectors to achieve their resilience goals?

FRAMING QUESTIONS (CONTINUED)

5. What **unique factors within the sector influence risk mitigation**? What are the practical realities of risk priorities and risk mitigation, such as those related to investments and operations?
6. What **roles and responsibilities** should private sector and government at all levels play, operationally and at the senior executive level?
7. What **new policies and strategies** may be needed to improve resilience for the sector? What steps can the government take to implement them?

FRAMEWORK FOR ESTABLISHING RESILIENCE GOALS



- Establish a baseline of current practices
- Describe and organize practices using the NIAC Resilience Construct
- Set prospective sector goals implied by practices

- Assess sector resilience using a high-impact scenario (e.g., tabletop)
- Identify gaps and seams in response

- Clarify sector roles and responsibilities, and infrastructure factors that affect resources
- Modify sector resilience goals based on lessons learned