DOE/NV/11718—1107

Radiological Emergency Response from the U.S. Department of Energy National Nuclear Security Administration

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NNSA
National Nuclear Security Administration

NNSA

- Unique scientific and technical expertise capable of dealing with nuclear/radioactive events and materials.

- Trained, exercised, specially-equipped teams with pre-packaged equipment to conduct search, render safe, recovery and consequence management operations.

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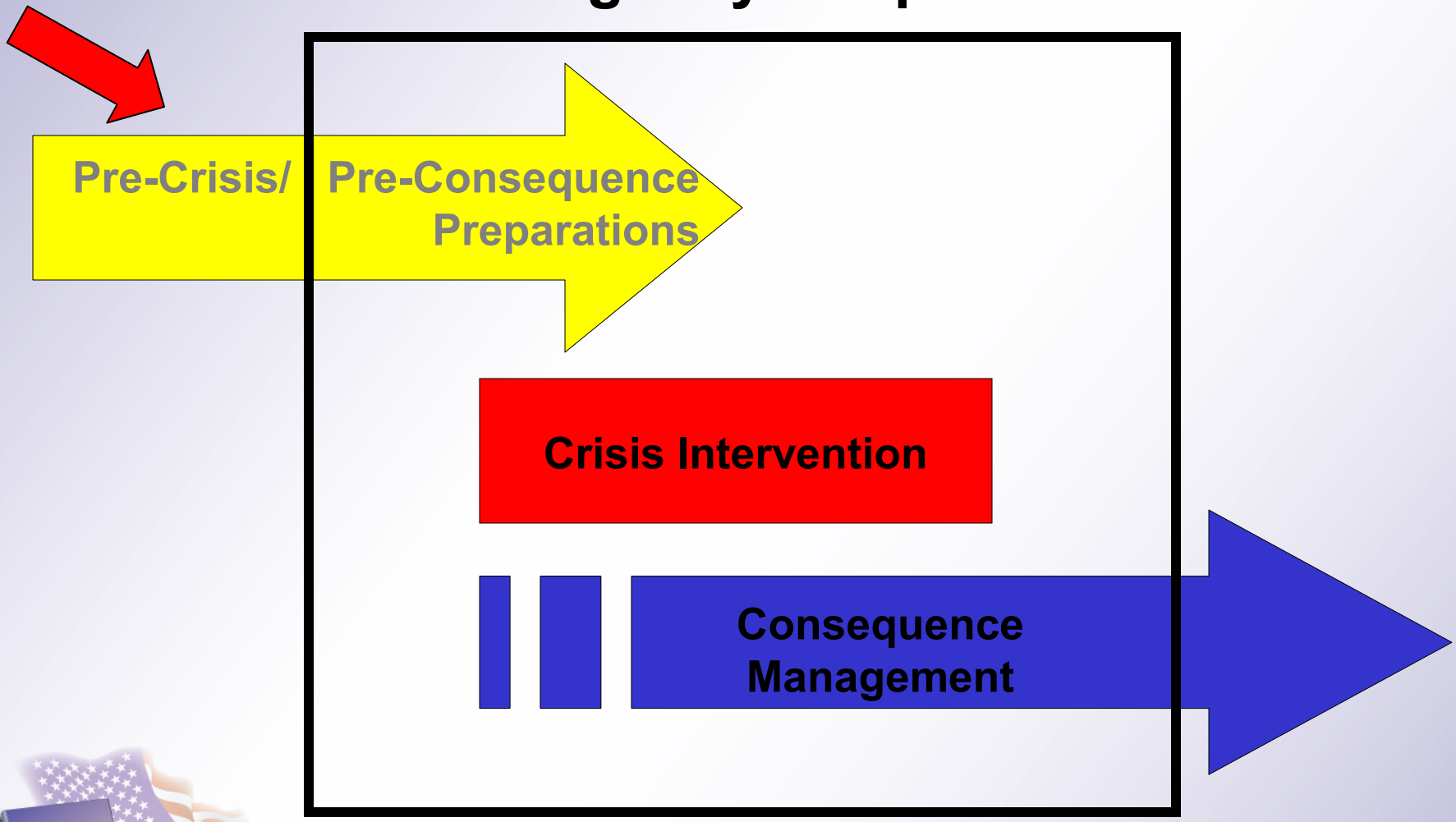
Emergency Response



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Pre-Crisis/Pre-CM Phase

- Baseline radiological measurements of at-risk facilities.
- Baseline measurements of New York City completed.

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Pre-Crisis / Pre-CM Phase

- Intelligence
- Readiness preparations
  - Training
  - Deployment status
  - Equipment maintenance and packaging
  - Established Plans & Procedures
  - Local coordination

Flow of Nuclear Counter-Terrorist Activities

Securing of Sources In Foreign Countries → Portals In Foreign Port Facilities → Portals in US Ports and on Border Crossings (Detection/Survey) → Distributed Detectors (Detection/Survey)

→ Checkpoint / Way station Detectors (Detection/Survey) → **Search**
RAP
SRT
Triage → **Render Safe – Technical Analysis**
LGAT
JTOT → **Render Safe Operations**
JTOT
LGAT

→ **Render Safe – Device Disassembly And Disposition**
JTOT
Disposition → **Attribution** of Device to Responsible Parties

failure → **Consequence Management**
FRMAC
AMS
REAC/TS
NARAC

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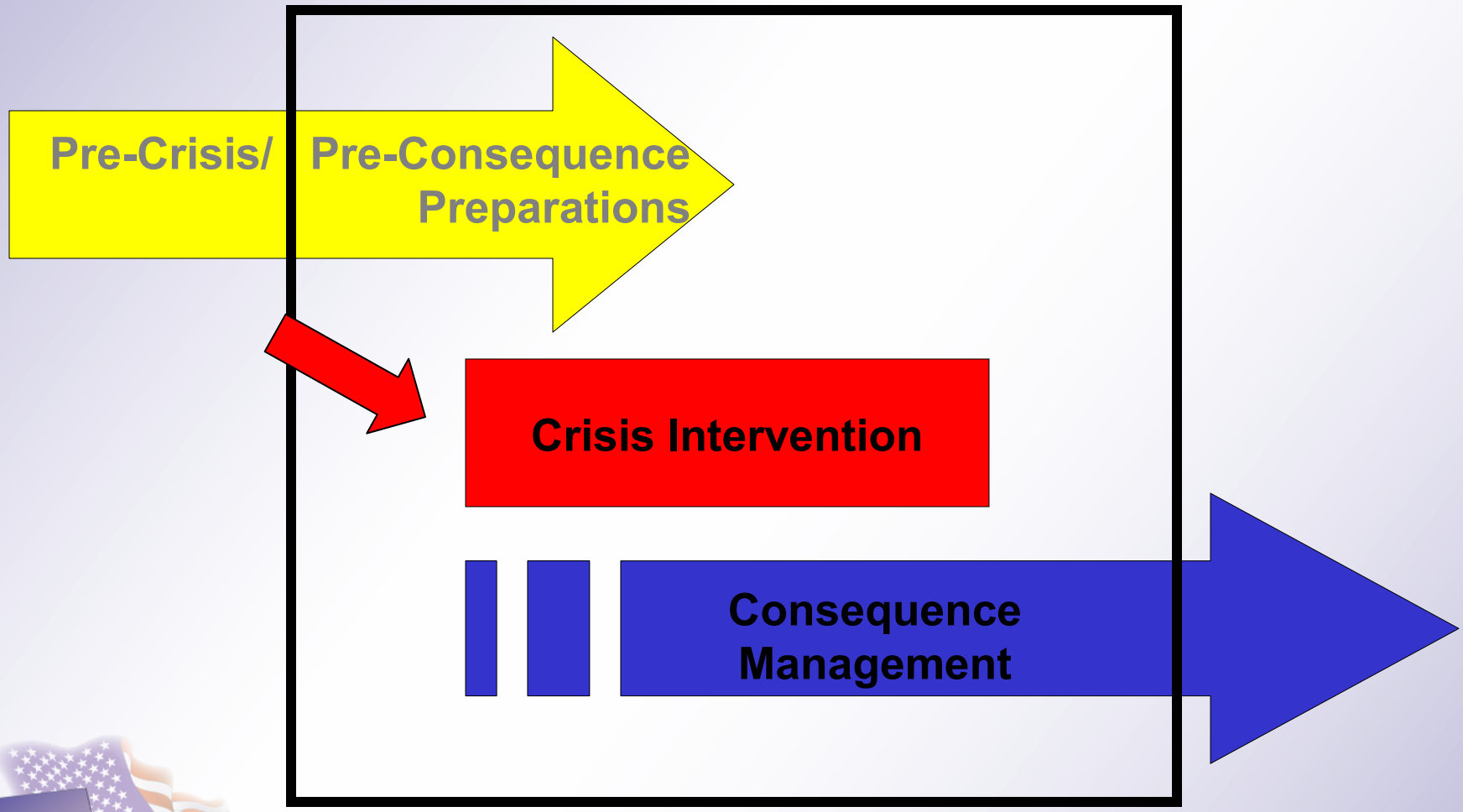
Emergency Response



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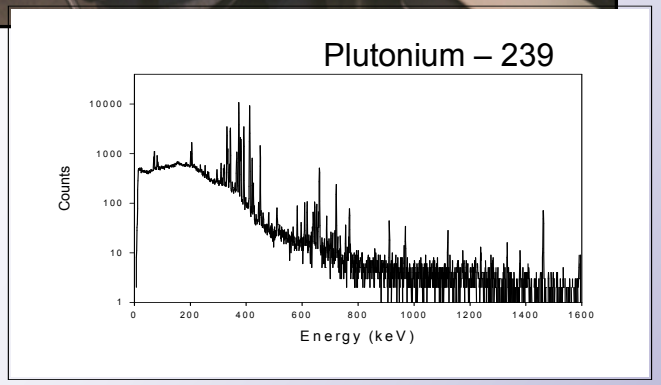
Crisis

- First Responders
  - Police, Hazardous Material Units, Coast Guard, Customs
- State and Regional Teams (Suspicious Package)
- Radiological Assistance Program (RAP) Teams
- National Search Teams
- Home Teams



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Crisis Intervention

- National Search Team
  - Locate and Identify Nuclear and Radiological Materials in Support of the designated Coordinating Agency
- Utilize low-profile techniques to locate
  - Nuclear or radiological materials
  - Dispersal Devices
  - Nuclear Weapons
- Different platforms
  - Hand held
  - Vehicle mounted
  - Aerial
  - Marine

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Aerial Measuring System - Search

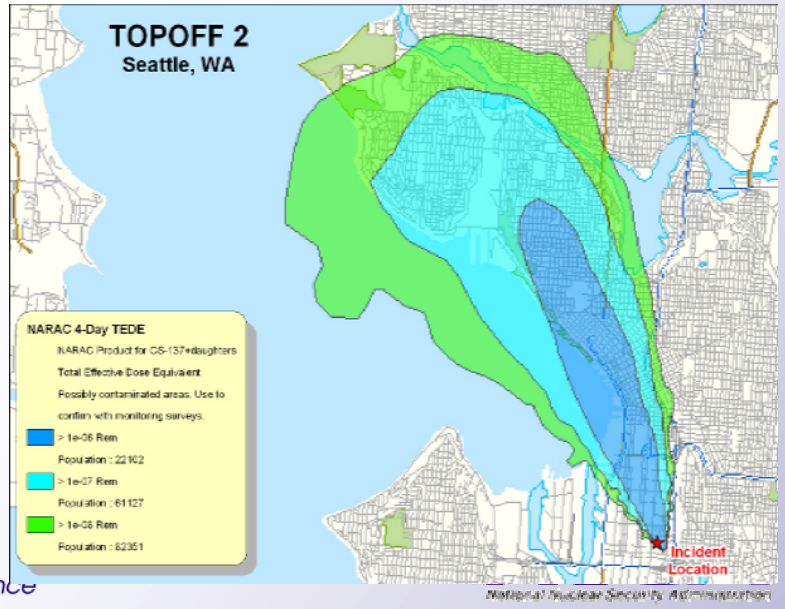
- Beechcraft B200 Fixed Wing Aircraft and Bell 412 Helicopter
- Nellis Air Force Base
- Andrews Air Force Base
- On-duty Team
  - Pilots
  - Scientist
  - Data Technician
  - Radiation Technician

Predictive Plume Modeling

World-wide Coverage

- Terrain and land-surface
- Vector and raster maps
- Real-time weather data
- Real-time hazard advisories available within minutes
- Distributed electronically

- Natural, chemical, biological, and natural resources
- Generic and specific sources
- Advanced modeling system
- Health effects and action levels



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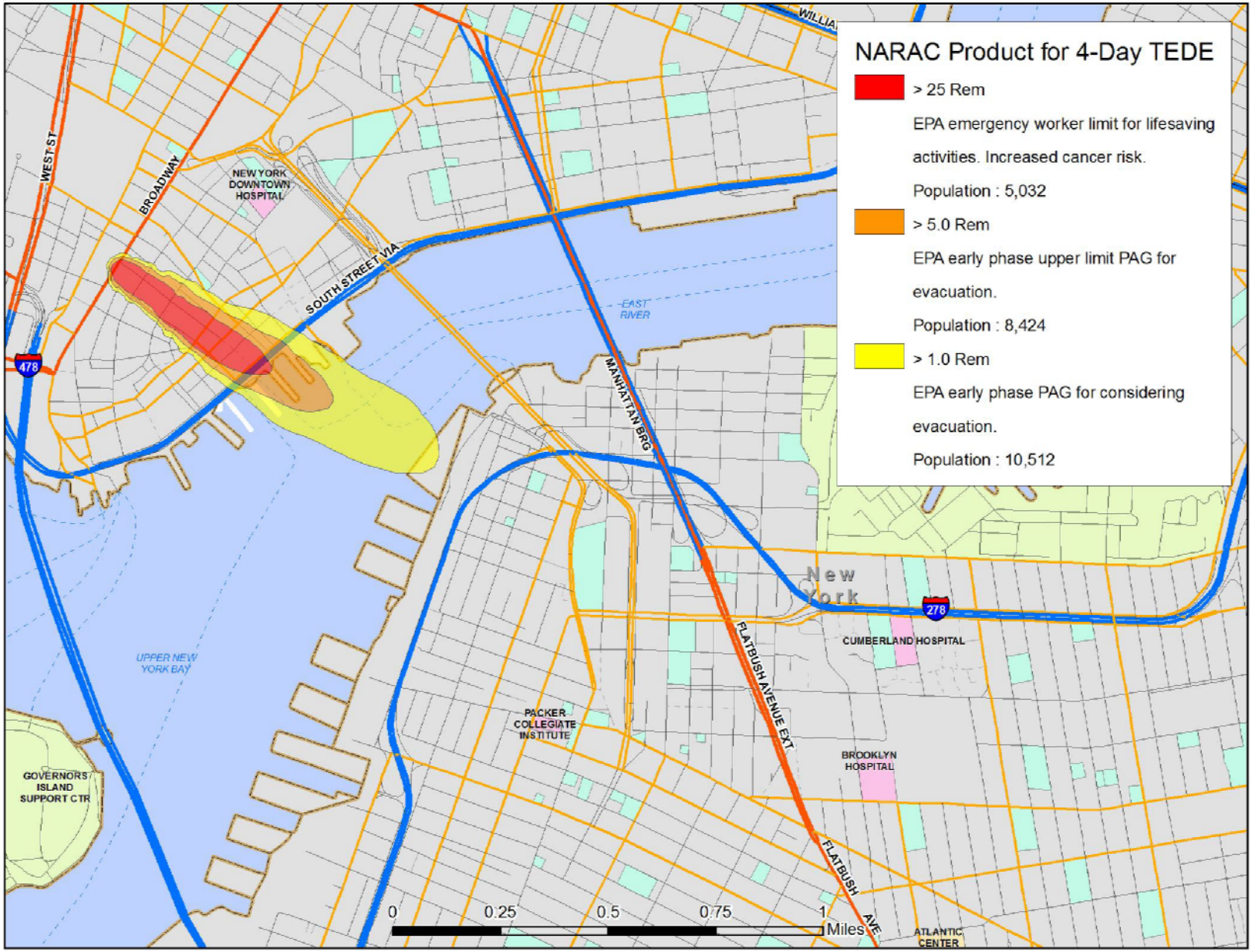
NARAC Product for 4-Day TEDE
> 25 Rem
EPA emergency worker limit for lifesaving activities. Increased cancer risk.
Population : 5,032
> 5.0 Rem
EPA early phase upper limit PAG for evacuation.
Population : 8,424
> 1.0 Rem
EPA early phase PAG for considering evacuation.
Population : 10,512
WEST ST
BROADWAY
NEW YORK DOWNTOWN HOSPITAL
SOUTH STREET VIA
EAST RIVER
MANHATTAN BRG
478
278
New York
CUMBERLAND HOSPITAL
FLATBUSH AVENUE EXT
FLATBUSH AVE
BROOKLYN HOSPITAL
ATLANTIC CENTER
PACKER COLLEGIATE INSTITUTE
UPPER NEW YORK BAY
GOVERNORS ISLAND SUPPORT CTR
0
0.25
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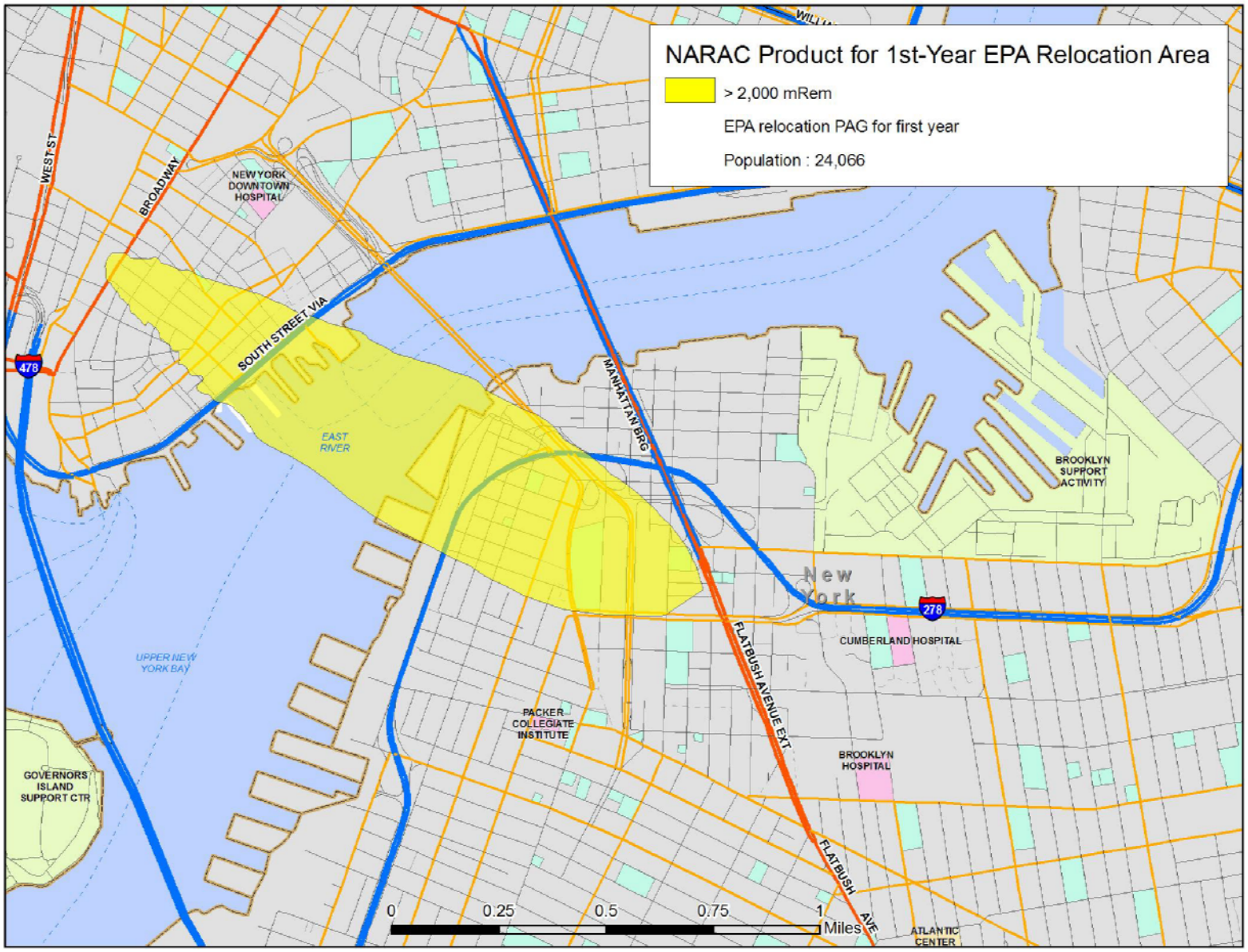
1
Miles


NARAC Product for 1st-Year EPA Relocation Area
> 2,000 mRem
EPA relocation PAG for first year
Population : 24,066
WEST ST
BROADWAY
NEW YORK DOWNTOWN HOSPITAL
SOUTH STREET VIA
478
EAST RIVER
MANHATTAN BRG
BROOKLYN SUPPORT ACTIVITY
New York
278
CUMBERLAND HOSPITAL
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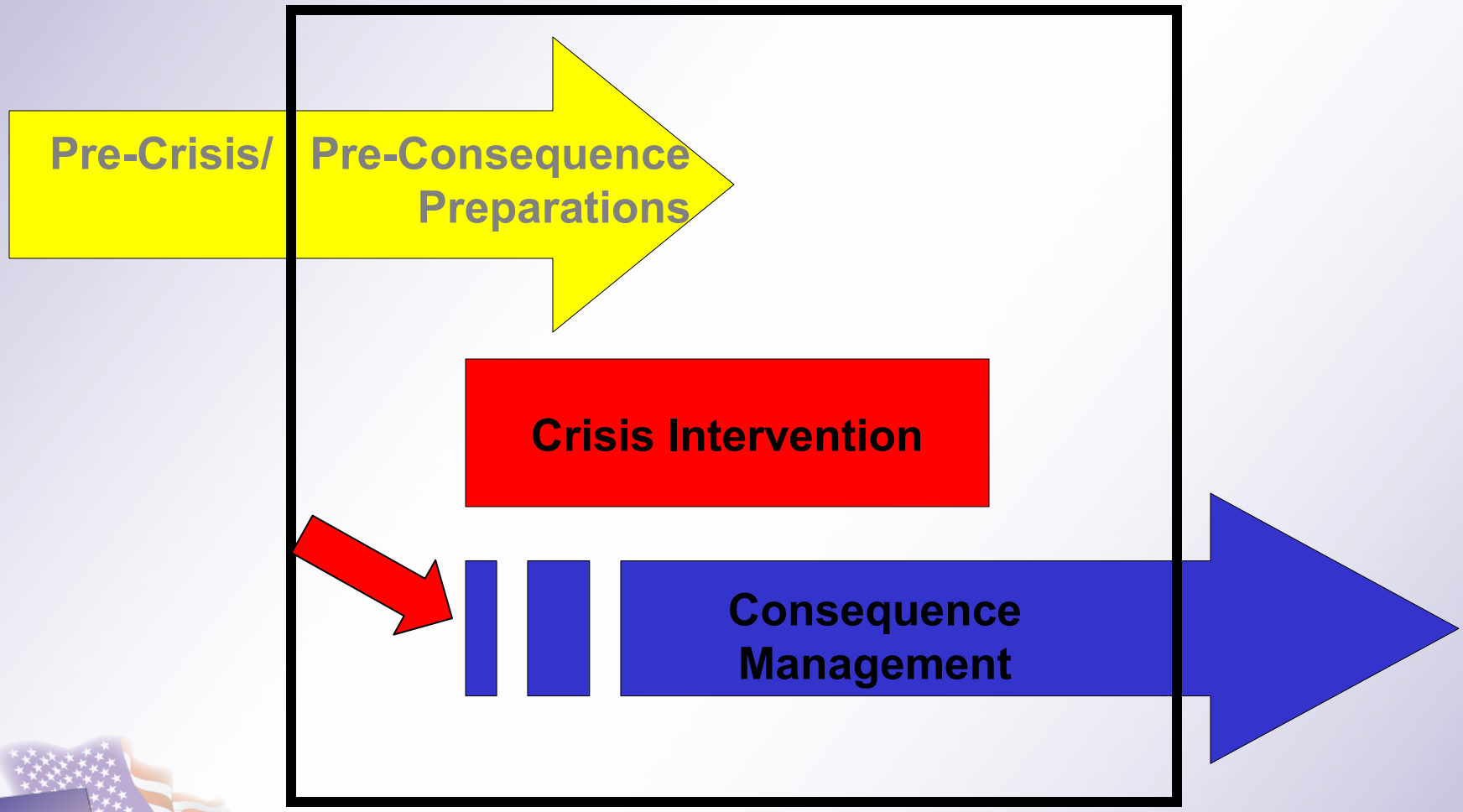
Emergency Response



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National Response Plan

- December 2004
- Nuclear / Radiological Incident Annex
- Establishes Coordinating Agency, Advisory Team, and a Federal Monitoring and Assessment Center (FRMAC).
- Assigns the coordination of the FRMAC during the initial phase to the U.S. Department of Energy (DOE) National Nuclear Security Administration.

Consequence Management

The DOE National Nuclear Security Administration (NNSA) has the role to coordinate the FRMAC and assist the states in their mission to PROTECT THE HEALTH AND WELL BEING OF THEIR CITIZENS with:

- Verified radiation measurements
- Interpretations of radiation distributions based on EPA, FDA or local Protective Action Guidelines
- Characterizations of overall radiological conditions

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CMRT Time Line

- Conduct Advance Party meeting upon arrival.
- Begin monitoring and sampling plan.
- Upload predictive models and begin assessment of first responder data.
- Ensure Health and Safety of responders
- Begin producing maps and compiling data utilizing the Geographic Information System (GIS).
- Upload GIS to FRMAC Web.
- Set up secure communications.
- Begin logistics planning for follow on response.

CM Products: Monitoring and Sampling Data

- Direct monitoring measurements
- Isotopic mix (*in situ* spectroscopy)
- Sampling
  - Control (hotline to lab)
  - Prep
  - Analysis
- QA & QC
- Standardized data forms

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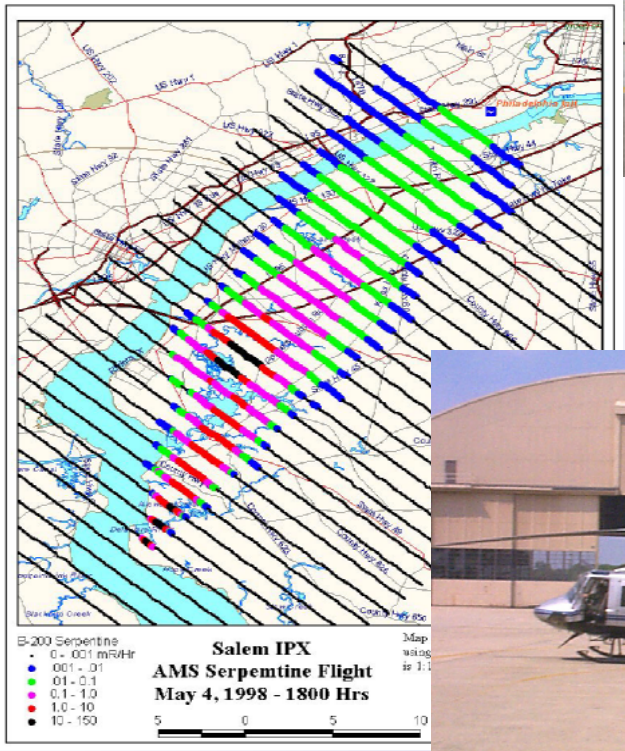
Consequence Management
Aerial Measuring System (AMS)

Mission – Provides radiological detection capability mounted on helicopters and fixed wing aircraft to measure ground disposition of radiation in radiological emergencies

- Aircraft located at Nellis and Andrews Air Force Base
- Responds in 4 to 6-hours
- 40 team members



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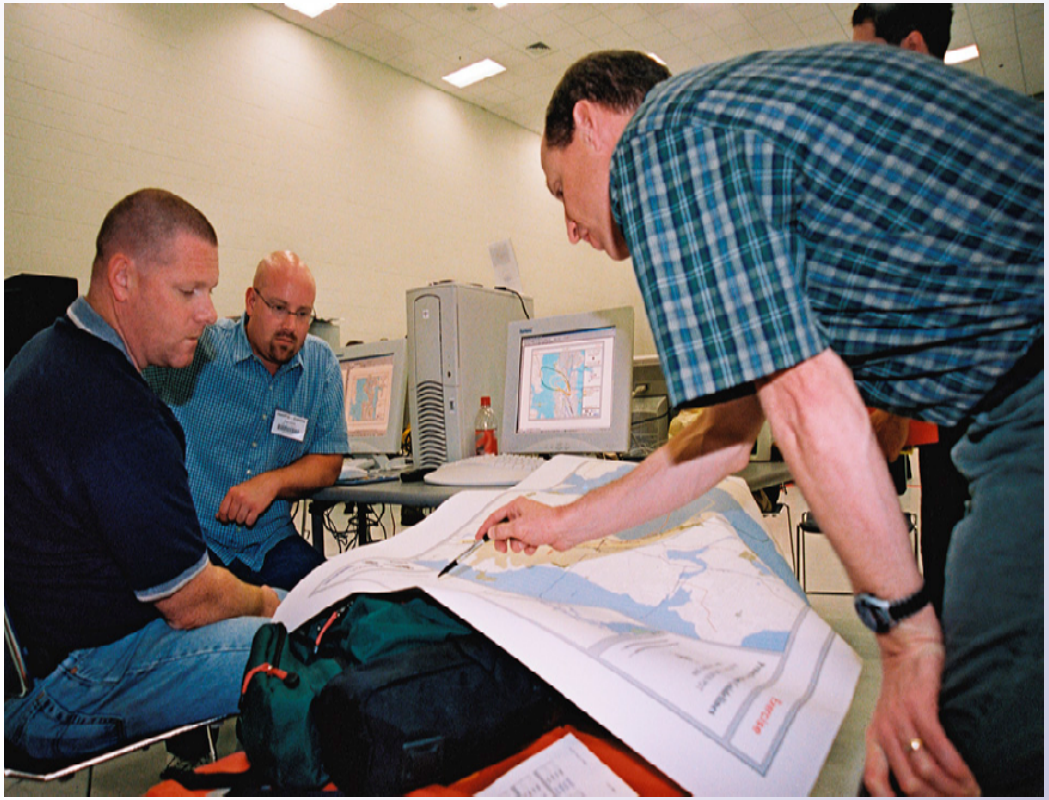
Laboratory Analysis

- Sample Hotline
- Sample Preparation
  - Documentation
  - database entry
  - chain-of-custody (sample tracking)
  - laboratory database
  - QA/QC process
- Sample Analysis
  - Laboratory Information Management System

Assessment

- Provides interpretations of radiological conditions in terms of recognized Federal or State PAGs.
- Characterizes radiological environment to address re-entry, return, and recovery issues.
- Geographic Information System (GIS)



Consequence Management – Radiation Emergency Assistance Center / Training Site (REAC/TS)

Mission – Provide medical response, advice, and consultation for rapid assessment and treatment of high-dose radiation cases

- 24/7 capability
- Staffing – 14
- Assistance to Federal, state, local government governments as well as the IAEA, foreign governments and private physicians
- Provides training programs for health professionals
- Maintains “Radiation Accident Registry System”

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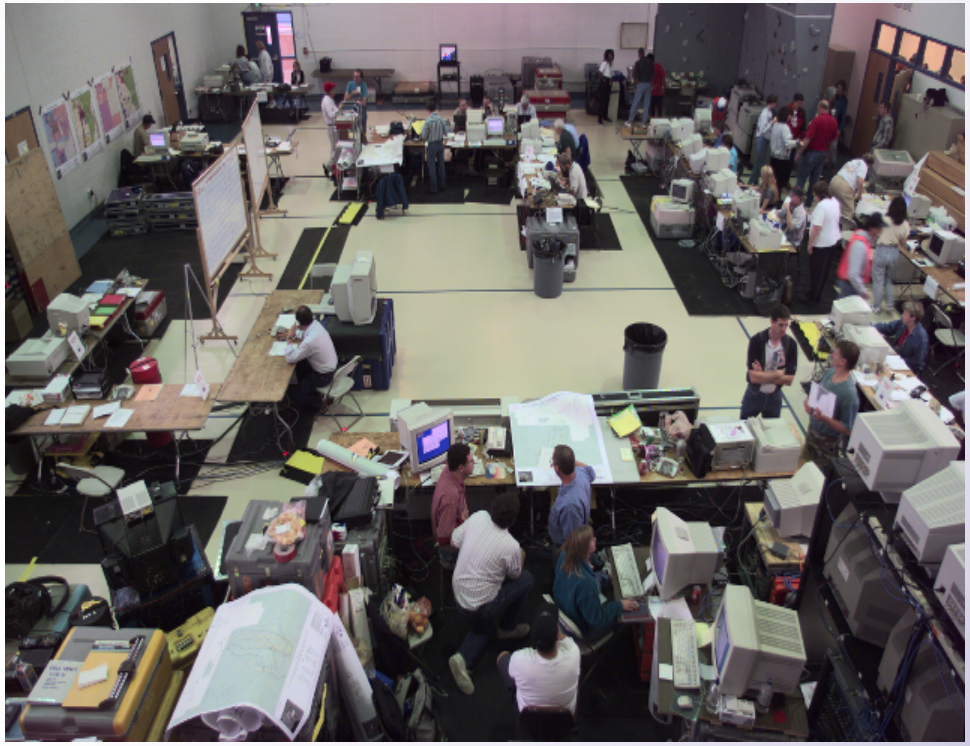
FRMAC

- Multi-agency response.
- Large scale/long-term operations.
- Photo/video capability.
- Additional communications (voice, data, video).
- Data networks.
- Mechanical and electrical support for extended operations.
- Additional logistics and administrative support.



Digit Pace Exercise

Transfer from DOE to EPA

- At a mutually agreeable time AND after consultation with DHS and State, local, and tribal officials.
- The following conditions are to be met before transfer:
  - Immediate emergency condition is stabilized.
  - Offsite release of radioactive material has ceased.
  - Offsite radiological conditions have been characterized.
  - Initial long-range monitoring plan has been developed.
  - Other Federal agencies will commit required resources.

Questions?

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