



Federal Radiological Monitoring and Assessment Center (FRMAC)



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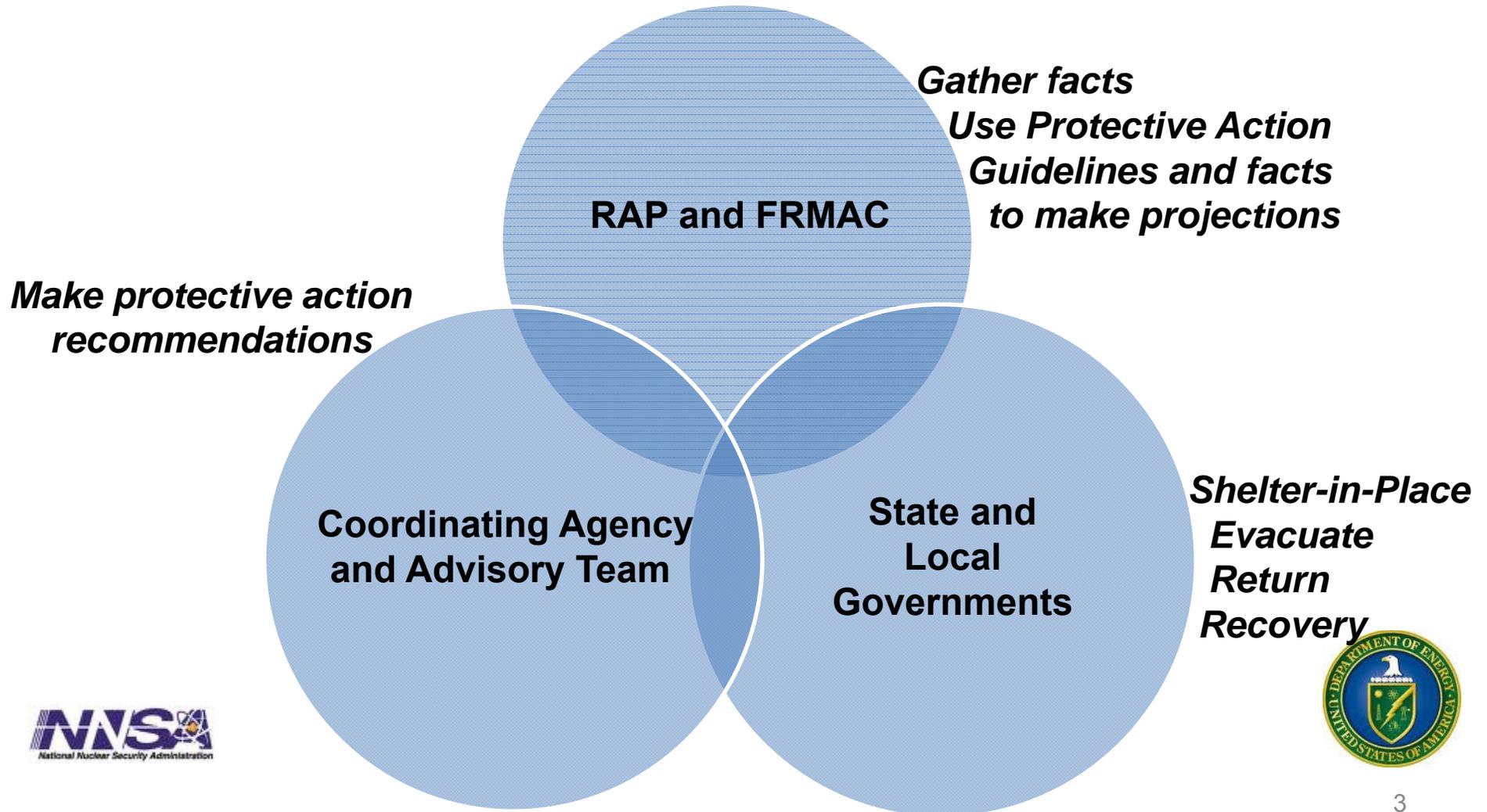
FRMAC Purpose

- The Federal Radiological Monitoring and Assessment Center (FRMAC) is established in response to a request for assistance from a Coordinating Agency, state, tribal, or local government entity following a release, or suspected release, of radioactive materials.
- The FRMAC becomes a coalition of all federal off-site radiological monitoring and assessment efforts to provide such assistance.
- The FRMAC integrates into the planning section of the Incident Command System structure.





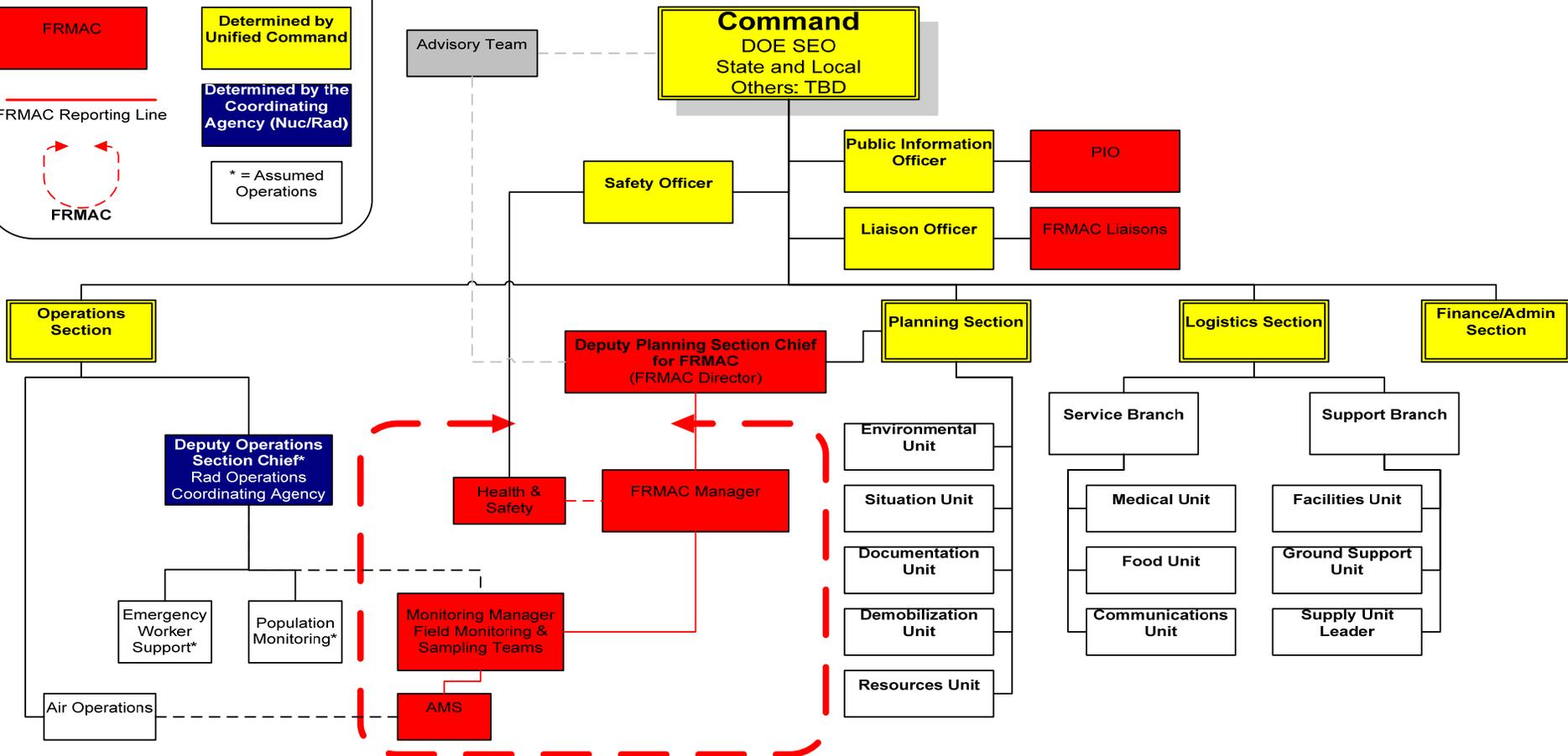
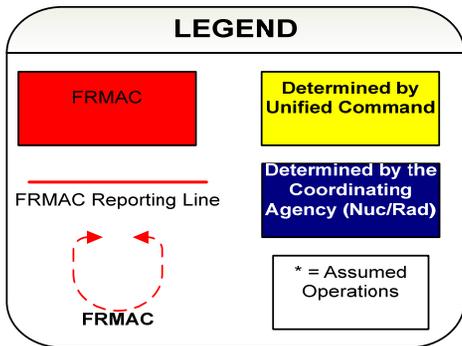
Coordinated Radiological Emergency Response





Federal Response

- Regardless of the Coordinating Agency
 - DOE coordinates radiological monitoring and assessment activities for the emergency and intermediate phases
 - EPA coordinates the intermediate to long-term activities for radiological monitoring and assessment
- FRMAC in NIMS
 - Under planning section
 - Personnel may be supplied to operations, logistics, and finance as well
 - Forms ICS compliant
 - Direction taken from Incident Action Plan



FRMAC

These elements will be collocated.

All FRMAC elements will remain under the administrative and policy control of their respective Department/Agency and/or the FRMAC

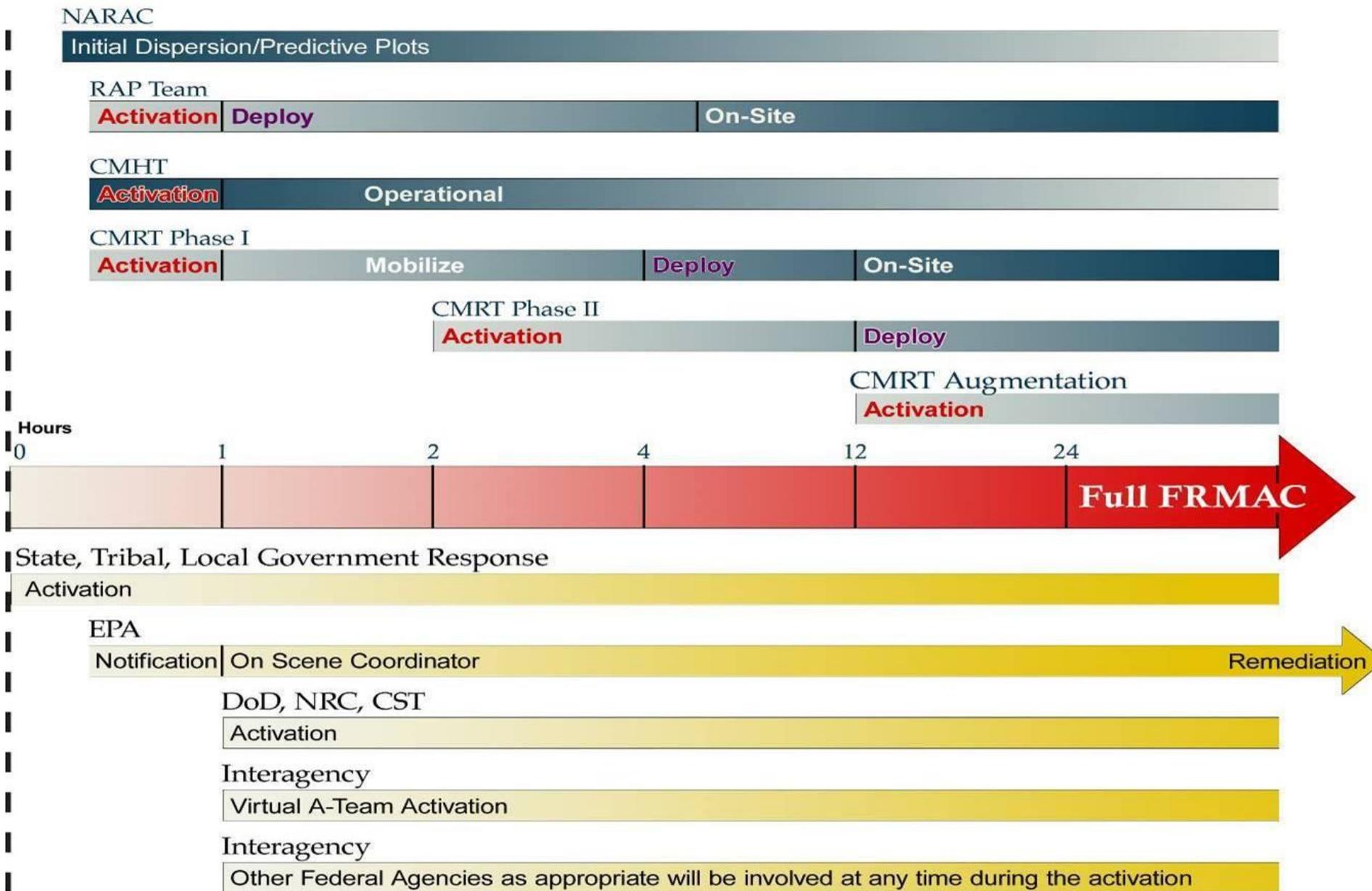
Consequence Management Home Team

All red boxes will interface.



Approximate Readiness Time After Activation – Emergency Phase

DOE





The first 15 min – 1 hour

- Initial NARAC / IMAAC predictive model
- May be used by the state to make decisions on public safety
 - Based on EPA Protective Action Guidelines
- Available through the NARAC Web Site
<https://narac.llnl.gov>
- CMHT, RAP, and CMRT Activated



What to expect within 2 – 4 hours

- Additional NARAC / IMMAC models
 - Information refined to include
 - Different isotopic mixes, affected population, expected dose levels
- CMHT stood-up and available to assist
- RAP Team en-route or arriving on scene



CM Home Team

Mission: Support incident while CMRT is en route
Ongoing reachback support to DOE as well as federal, state, local and tribal requests

Activation: Immediate (during duty hours)
2 hours (off duty)

- NARAC Support Personnel, Assessment Scientist, GIS Scientist, eFRMAC & Data Management, and AMS
- Bridge line
 - Monitored conference lines available 24/7 during an event
 - Provides state and local responders with access to assessment scientists and agencies such as EPA, NRC, CDC for guidance
- Assessment
 - Data assessment and map products
 - Assessment Scientists provide support to State personnel via Bridge Line
- CMweb
 - Provides access to maps and other data products
- RAMS database
 - Allows responders to report field data related to radiation in real time to CMHT
 - Houses all data generated by or received by FRMAC



Home Team Responsibilities

- **Collecting situational awareness information**
 - **Weblog**
 - **Advance Party Meeting Checklist**
- **Contacting involved parties**
- **Creating the Event**
- **Entering data**
- **QA/QC data**
- **Model runs**
- **Creating standard products**
- **Posting/Maintaining products**
- **Technical guidance**
- **Logistical support***
- **eFRMAC support**





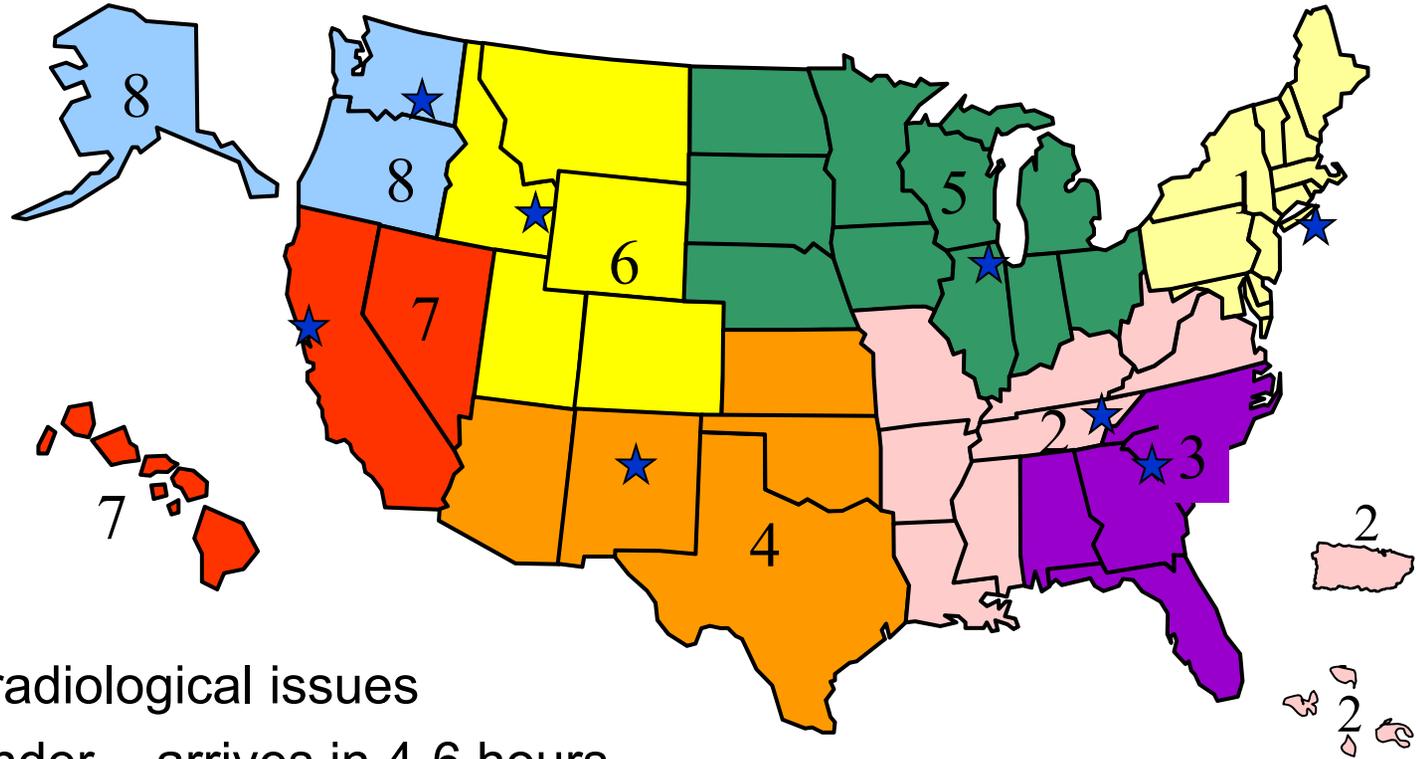
Advisory Team

- Provides coordinated advice and recommendations on environment, food and health matters to the Federal, state, local and tribal governments.
- Representatives from:
 - EPA - FDA
 - CDC - USDA
 - Other Federal agencies as needed





Radiological Assistance Program



- Advise on radiological issues
- First responder - arrives in 4-6 hours
- Assist with radioactive material recovery
- Assist with the characterization of radiological incident





What to expect within 6-12 hours

- AMS fixed wing deployed
- AMS rotary wing may be activated
- CMRT Phase I deployed
- CMRT Phase II activated



AMS On-Call Response

Mission: Get data from large area quickly, Fly high and fast
Activation: 5 to 10 hours on site

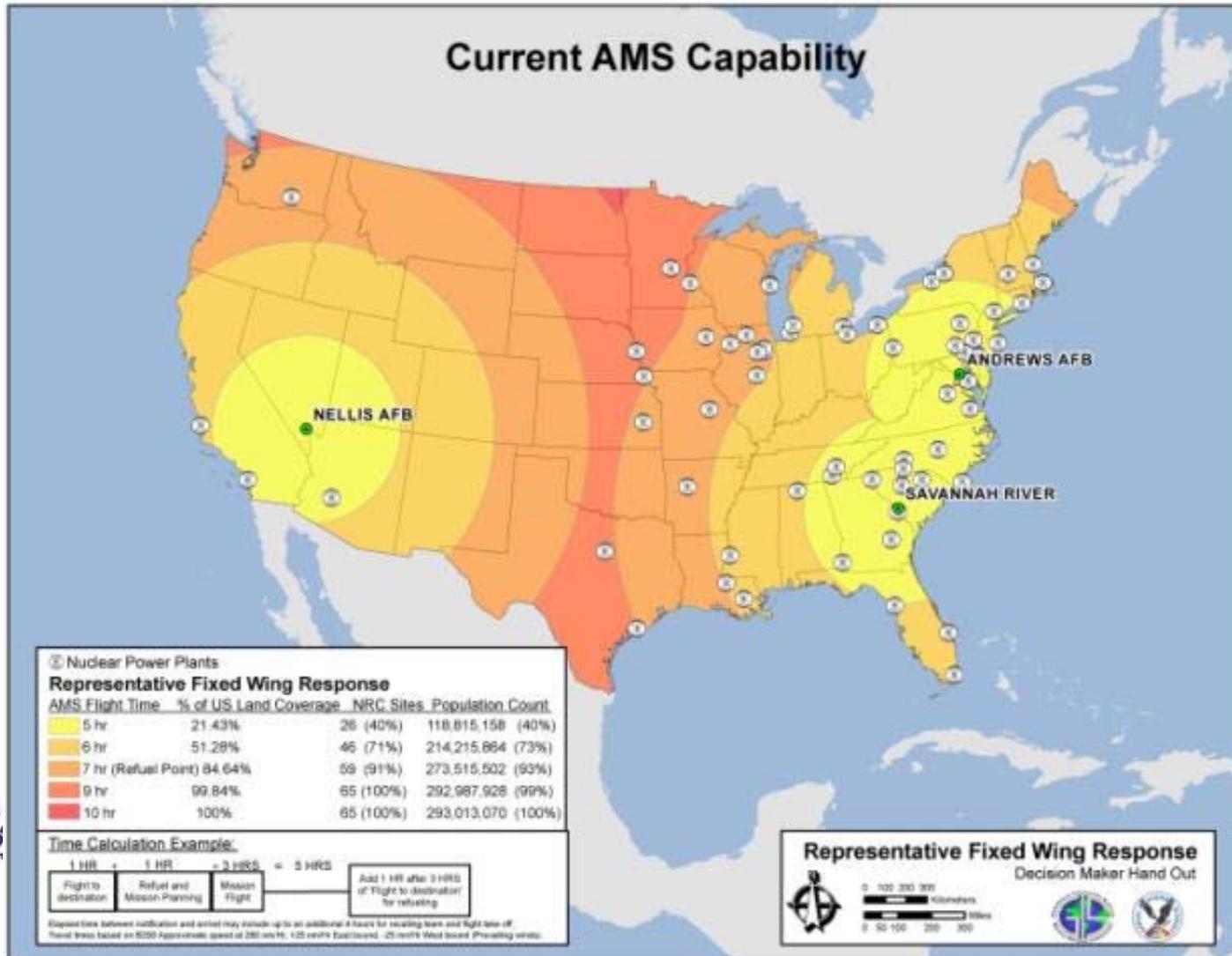
Beech King Air B-200

- Avg. post-flight data processing time: 1 hour
- Data Products: Breadcrumb overlay plot
- Real-time data telemetry





Fixed Wing Response Range



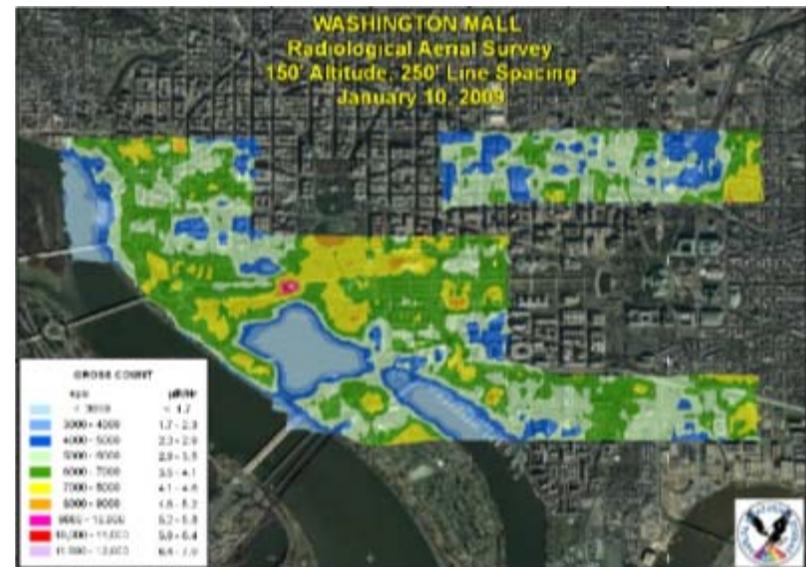


AMS Radiological Mapping Helicopter Response

Mission: Get more detailed data. Fly low and slow
Activation: 8 to 20 hours to site

Bell-412

- Data product: Contoured ground exposure map
- Data processing time: 3-4 hours
- Intermediate phase product





CM Response Team I

Mission: Initial field element of FRMAC

Activation: 4 hours following notification

Operations – 24 hours (for limited time)



Capabilities

- Assessment
- Geographical Information Systems
- Health & Safety
- Monitoring & Sampling
- Five field teams
- Logistics



CM Response Team II

Mission: Complete CMRT staffing for full 24-hour operations

Activation: 12 hours following notification

- Additional responders
 - 24-hour/day operation for several weeks
 - Augmented monitoring, sampling and assessment
- Additional equipment
 - 20 field teams
- Laboratory Analysis
 - Sample receipt
 - Prepare samples for transport to labs
- Training for additional responders





Augmentation

- Augments CMRT I & II and is staffed through the national laboratories and the RAP regions
- Their main focus is sampling activities in the affected areas, dose assessment, and clean up
- An additional 42 responders mobilizing within 24 hours of activation
- Regionally deployed to the affected area



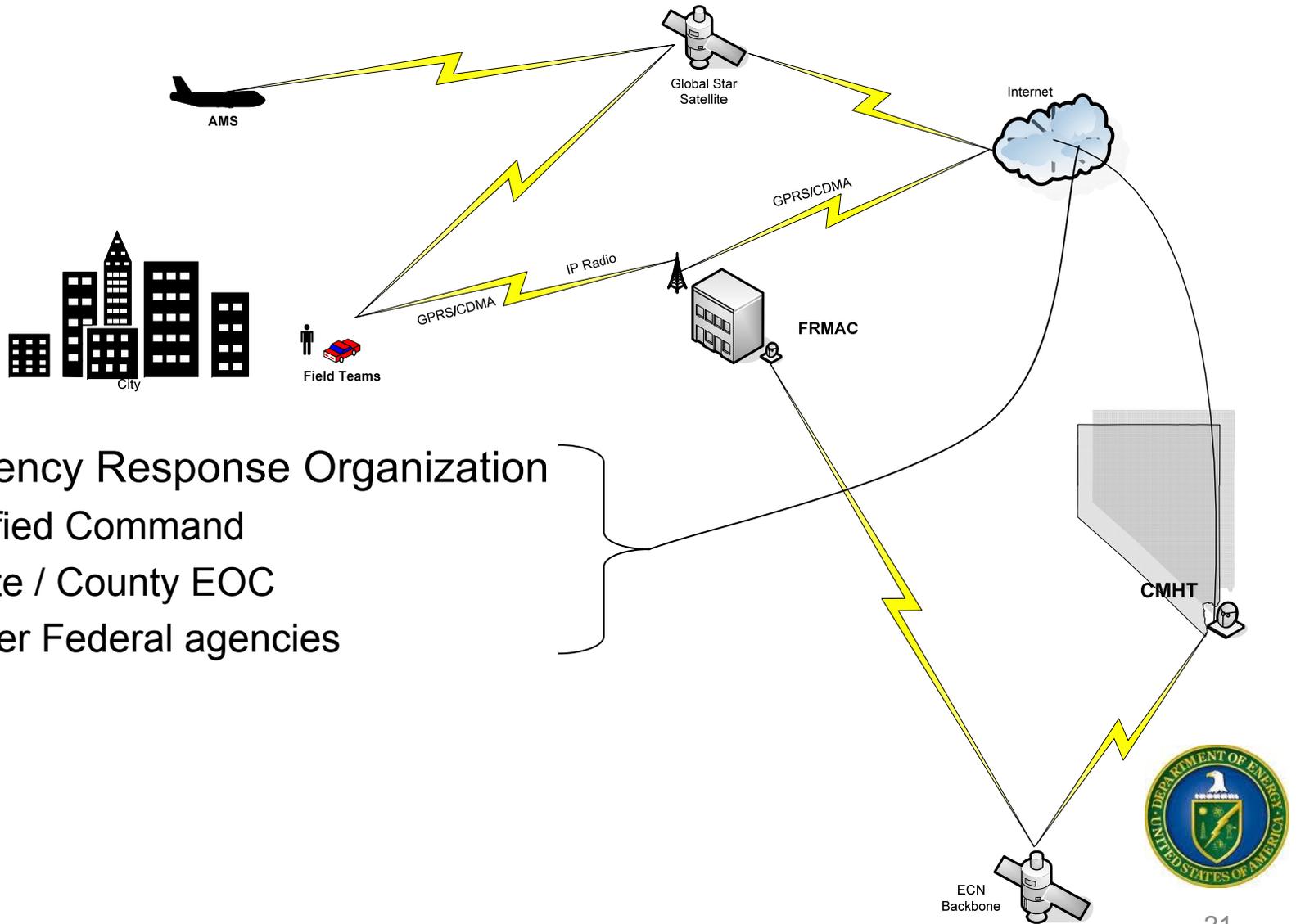


FRMAC Data Collection and Products

- FRMAC monitoring and sampling data captured via pFRMAC tablet system
- Data managed via RAMS database
- Outputs directly to NARAC, EPA, and FRMAC GIS to generate products



Electronic FRMAC

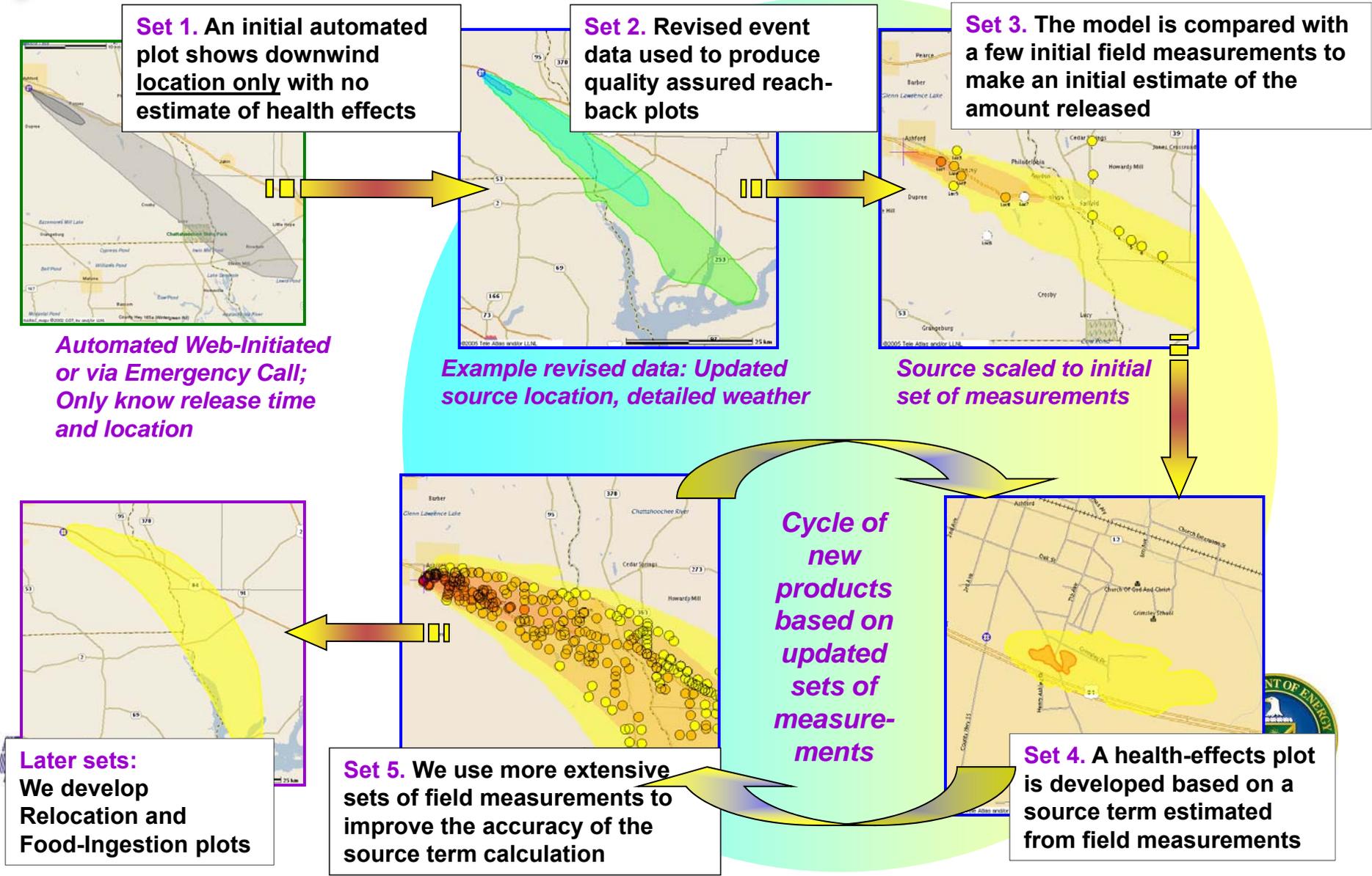


- Emergency Response Organization
 - Unified Command
 - State / County EOC
 - Other Federal agencies





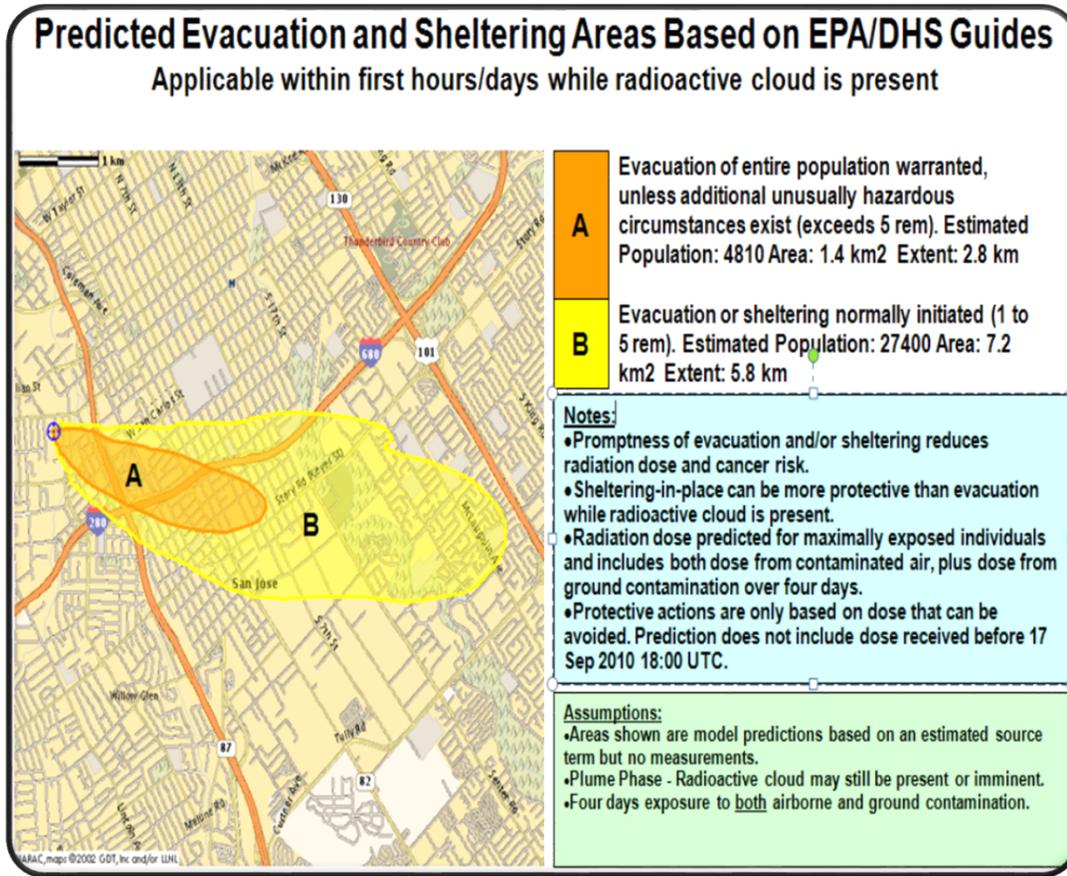
Data Products Cycle





Briefing Products

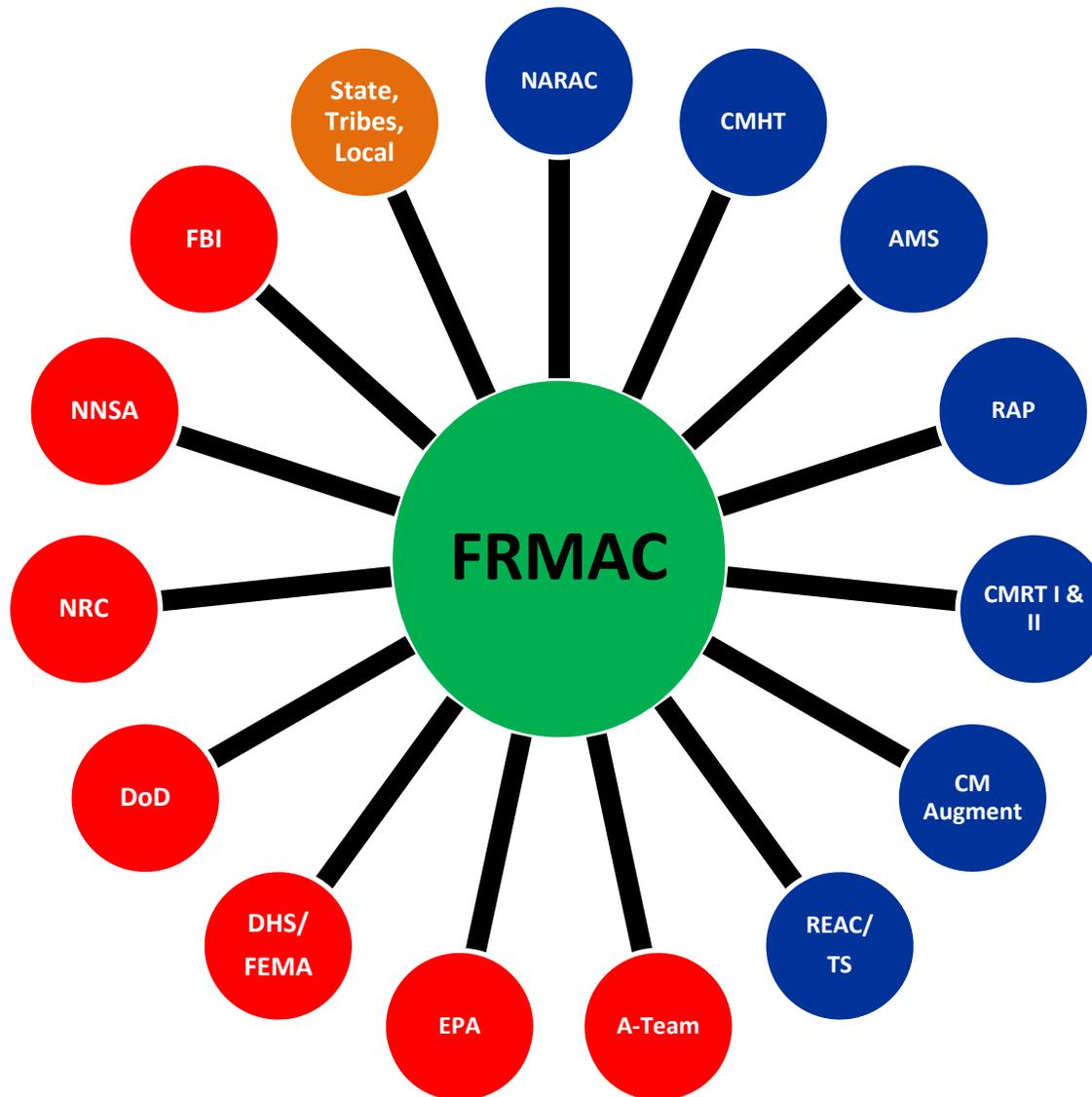
Critical to explain for each Data Product



- What decisions or actions are being addressed
- Key points they should take away
- Actions that should be considered
- Assumptions and limitations of Data Product
- How each Data Product fits into the overall situation



FRMAC Participation





Transfer from DOE to EPA

- At a mutually agreeable time
- After consultation with DHS, the JFO Coordination Group, 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



Environmental Protection Agency

- Assist with non-radiological hazards
 - Such as chemical spills, hazardous materials fires, accidental hazmat releases due to radiological event
- Coordinate off-site cleanup activities
 - with NRC
 - with appropriate jurisdiction
- Eventually close FRMAC in time and transition to EPA-only or other monitoring program



CM / FRMAC Contact Information

Alvin Morris

NNSA / NSO - 702-295-4944

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FRMAC Program Information

<http://www.nv.doe.gov/nationalsecurity/homelandsecurity/frmac/default.htm>

Emergency Response Numbers (24-hr)

NNSA / HQ – 202-586-8100

NARAC – 925-422-7627





Questions??





Manuals

- FRMAC Operations Manual – Oct. 2010
 - This manual describes the Federal Radiological Monitoring and Assessment Center's (FRMAC) response activities in a major radiological emergency
- FRMAC Assessment Manuals (2 volumes) – April 2010
 - These manuals provide the scientific basis and methods for assessment calculations
- FRMAC Monitoring Manuals (2 volumes) – Dec. 2005
 - These manuals provide the monitoring and sampling methods for a radiological response





Manuals (cont)

- FRMAC Laboratory Analysis Manual – Dec. 2005
 - This manual provide general guidance relating to sample tracking and analysis
- FRMAC Health and Safety Manual – May 2001
 - The manual describes how radiological health and safety plans will be implemented for FRMAC

Link: <http://www.nv.doe.gov/nationalsecurity/homelandsecurity/default.htm>