



Emergency Management Issues Special Interest Group Annual Meeting

Rapid Response Tools and Protective Actions

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Acknowledgements:

- Rapid Response Tool Developers
 - Alan Woodward, LANL EOD-EPP, alwood@lanl.gov
 - Rachel Hixson, LANL D-3, rhixson@lanl.gov
- IT Support Personnel
 - David Howard, LANL EOD-EM, dhoward@lanl.gov
 - Jeff Vigil, LANL EOD-EM, vigilj@lanl.gov

Description of the LANL Site

- **LANL site contains diverse operations.**
 - Modeling and Simulation
 - Biological Research
 - Materials Science Research
 - Laboratory Waste Operations
 - Environmental Remediation (and D&D)
 - Accelerator Facility Operations
 - HE operations (Hydrodynamic testing)
 - Plutonium Production
 - Subcritical testing
- **LANL site has complex and varying topography**
- **Complex weather and wind patterns due to topography.**
- **In some cases the distance to Site Boundary < 30m**

LANL Site Emergency Operations

- Extensive Base Program (covering 2,800+ buildings)
- Comprehensive site and facility maps
- 20 EPHA's, 249 EAL's for radiological, chemical, & biological releases
- Cat & Class procedure
- Written EAL's
- 112 Potential release locations

Strategy

- **During the first year, the focus has been on the Initial Response Period**
 - **A common operational picture is necessary to overcome difficult issues concerning incident objectives, strategies, or tactics.**
 - **The common operational picture needs to take place early in the event and communicate:**
 - Assignment and time duration need for completion.
 - Resources needed to perform the task.
 - **Planning and response information that is geographically located on a mapping system provides the basis for a common operational picture.**

Challenges

- **Purpose:**
 - Develop a common operational picture for Incident Command (IC) and Emergency Operations Center (EOC) staff.
- **System requirements:**
 - ✓ Graphically display Emergency Action Level (EAL) data
 - ✓ Ability to overlay plume model data
 - ✓ Ability to add data from the Incident Command Post (ICP)
 - ✓ Incorporate base program data (SIP locations, etc.)
 - ✓ Ability to add field sampling data
 - ✓ Compatible with existing systems, Mobile, Secure
 - ✓ Affordable

Path Forward

- **Strategy:**
 - DOE Requirements (Cat & Class, Notifications)
 - Existing HAZMAT plans & response procedures
 - Ease of use by the IC
 - Focus on the core principles of ICS
 - Facilitate better communication and decision-making capability
- **DOE Order 151.1C requires:**
 - An event or condition be categorized and classified as *promptly as possible*, but no later than 15 minutes after event recognition / identification / discovery.^{1,2}

Instruction on the RRT

- Instruction on the Rapid Response Tool began slowly initially, but has built to a once a week hands on meeting.
- Initial problems were encountered with laptops.
- Instruction includes:
 - Use of the RRT
 - Review of the Facility EPHA and EALs
 - Emergency response strategies

RRT Scenario Guide Minimum Information

Scenario description as called in from the facility.

1. What is the caller's name / contact number?
2. What is the site / facility / building?
3. What is the name of the material (name, UNID #, or CAS#)?
4. What form is it in (solid, liquid, or gas)?
5. What size of container(s) are affected / spilled / damaged?
6. Is the material on fire?
7. Is it inside or outside of the building?
8. Is the ventilation on or off? Is there a HEPA filtration system for the building? Is it functional? Are any doors blocked open to the outside (fire hoses, roll-up doors up)?
9. What is the name of the emergency contact who will brief the EM on scene? Where is he/she located?
10. Which direction is the wind blowing from?
11. What is the current MET conditions? What is the forecast?

Common Operating Picture Field Application (Incident Commander)

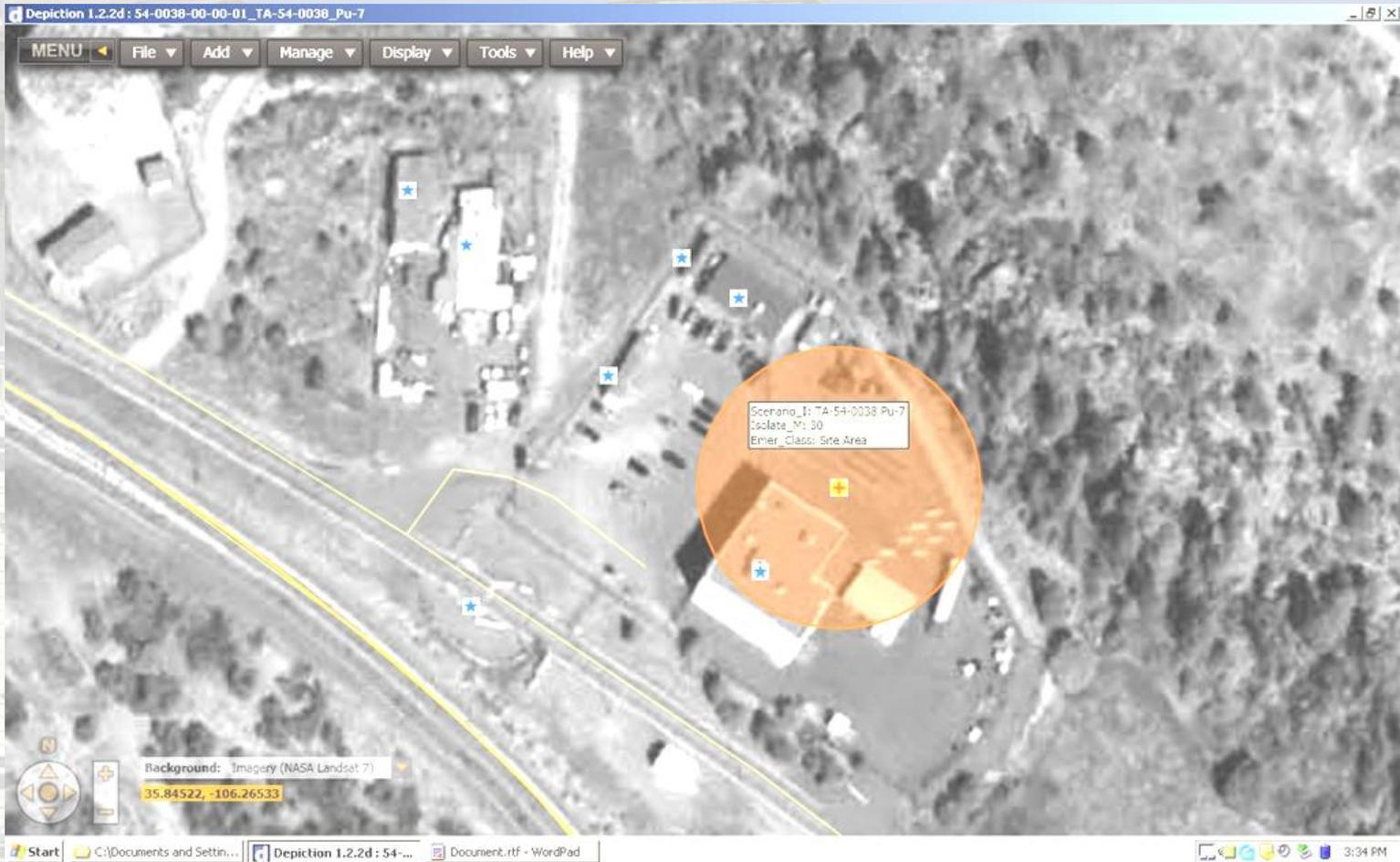


RRT Scenario Guide Incident Commander/ Ops Section Chief

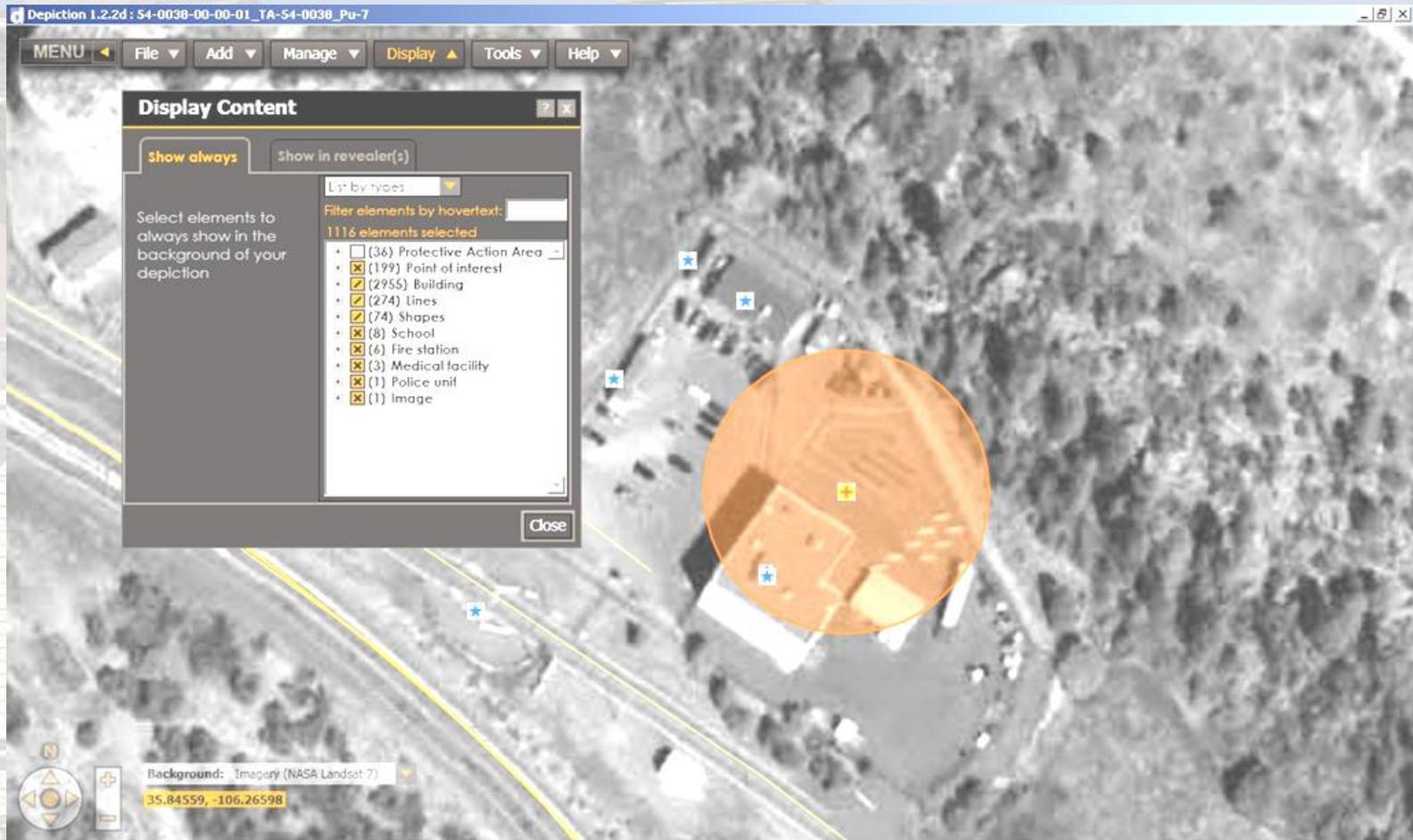
Scenario description as called in or reported to you.

1. Identify a safe approach route. Where would you report to at the facility in order to obtain the incident briefing?
2. Where are the assembly areas? Where would you choose to set up the ICP?
3. What is the Categorization & Classification (if appropriate) for this event?
4. Is there Scenario ID number this event?
 - **Select the correct RRT module**
5. What direction is the wind blowing from?
 - **Select the correct protective action area(s)**
6. What are the Protective Actions?
 - **How are the protective actions communicated?**
7. What normally occupied buildings are affected?
 - Using the building identification sheet, list the buildings and their routine occupancy.

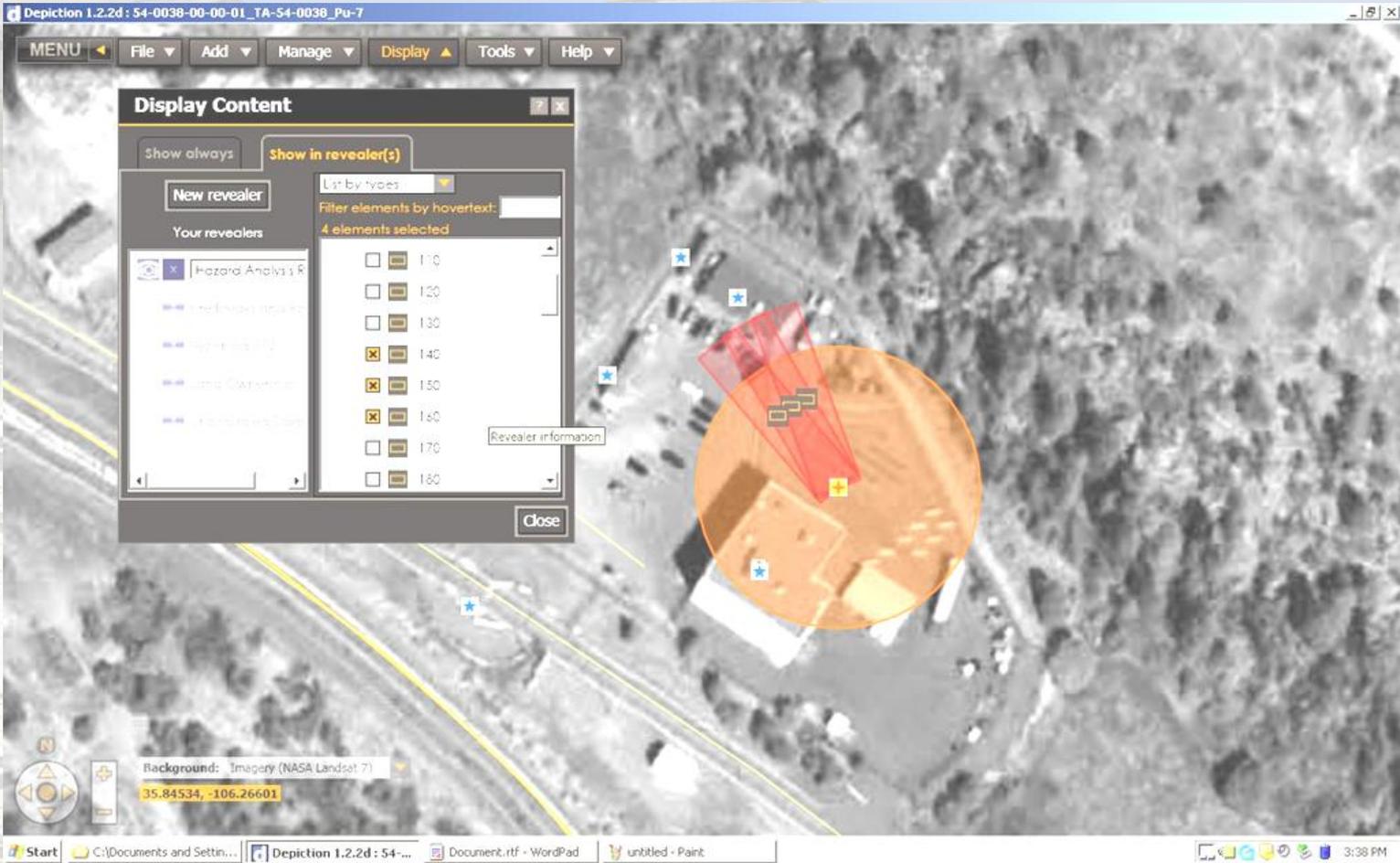
Initial Isolation Zone



Selecting a Downwind Distance



Selecting 150° + 10° each side



Downwind Building Properties

The screenshot shows the Depiction 1.2.2d software interface. The main window displays a satellite map with a red circular highlight over a building. A dialog box titled 'Element Information' is open, showing the following data:

Element Information

★ PROP_ID: 54-0038; Occupancy: 10

I'd like to...

Set properties

Add a property

Set tags

Set hover text

Colorize

Set icon

Properties	
* PROP_ID	54-0038
* TA_NUMBER	54
* BUILDING_N	38
* X	1635867.18908000
* Y	1762857.34180000
* FOD	EWMO
* USE_	Office,Lab,Shop
* Occupancy	10
Author	Depiction, Inc.
Description	Use to represent a basic building
Name	Building

Delete Element Send OK Cancel Apply

Background: Imagery (NASA Landsat 7)
 35.84572, -106.26618

Windows taskbar: Start, C:\Documents and Sett..., Depiction 1.2.2d: 54-..., Document.rtf - WordPad, 3:39 PM

Identification of Additional Release Sites

The screenshot displays the 'Depiction 1.2.2d' software interface. The main window shows an aerial satellite image of a residential area. A specific structure is highlighted with a red circular overlay and a yellow crosshair. An 'Element Information' dialog box is open, displaying the following data:

Element Information

PROP_ID: 54-0038; LOC_DESCR: Center of structure

I'd like to...

- Set properties
- Add a property
- Set tags
- Set hover text
- Colorize
- Set icon

Properties	
Name	Radioassay and Nondestructive Test
× ID	124
× LOC_ID	54-0038-00-00-00
× PROP_ID	54-0038
× WING	0
× FLOOR	0
× AREA_NUM	0
× LOC_DESCR	Center of structure
× FACILITY	Radioassay and Nondestructive Test
× X	1635866.83600000
× Y	1262861.49000000

Buttons at the bottom of the dialog: Delete Element, Send, OK, Cancel, Apply.

The software interface also includes a menu bar (File, Add, Manage, Display, Tools, Help), a toolbar, and a status bar at the bottom showing the current location: Background: Imagery (NASA Landsat 7), 35.84554, -106.26560.

Contact Information 1

Depiction 1.2.2d : 55-0004-00-00-00 TA-55-0004-Pu-239-RD-06

MENU File Add Manage Display Tools Help

Element Information

OCC Occupancy: 26; Building: 64-0039

I'd like to...

- Set properties
- Add a property
- Set tags
- Set hover text
- Colorize
- Set icon

Properties

× OpsMgrCell	555-5555
× OpsMgrPgr	555-5555
× OpsMgrWk	555-5555
× OpsMgrOrg	MSS-IFCS
× OpsMgr	Boo Bitchen
× FacMgrCell	555-5555
× FacMgrPgr	555-5555
× FacMgrWk	555-5555
× FacMgrOrg	IFCS-DO
× FacMgr	Judy Blue Eyes
× FOP	BOP

Delete Element Send OK Cancel Apply

Background: Imagery (NASA Landsat 7)
35.86722, -106.31323

Alerts
4/4/2011 3:59:15 PM: Internet connection is down. Cannot get image tile for world map.

Start C:\Documents and Sett... Depiction 1.2.2d : 55-... 4:03 PM

Contact Information 2

Depiction 1.2.2d : 55-0004-00-00-00 TA-55-0004-Pu-239-RD-06

MENU File Add Manage Display Tools Help

Element Information

OCC Occupancy: 26; Building: 64-0039

I'd like to...

- Set properties
- Add a property
- Set tags
- Set hover text
- Colorize
- Set icon

Properties

FacMgr	Judy Blue Eyes
FOD	FOE
Occupancy	26.00
Floors	1.00
Building	64-0039
BldgMgr	Barney Rubble
BldgMgrOrg	HAZMAT
BldMgrWk	555-5555
BldMgrPgr	555-5555
BldMgrCell	555-5555

Delete Element Send OK Cancel Apply

Background: Imagery (NASA Landsat 7)
 35.86702, -106.31310

Alerts
 4/4/2011 3:59:15 PM: Internet connection is down.
 Cannot get image tile for world map.

Start C:\Documents and Sett... Depiction 1.2.2d : 55-... 4:06 PM

RRT Scenario Guide ETSC Staff

EOSC requests you report to the radio room. When you arrive, you are given the initial report.

- 1. What is the Categorization & Classification (if appropriate) for this event?**
- 2. Is there Scenario ID number this event?**
 - Select the appropriate RRT module.
- 3. What direction is the wind is from and at what speed?**
 - Select the correct protective action area(s)
- 4. What are the Protective Actions associated with the scenario?**
- 5. What normally occupied buildings are affected?**
 - Use the RRT module to identify all potentially affected buildings.
 - List them on the building identification sheet with their routine occupancy.

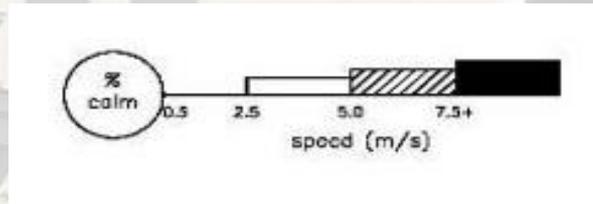
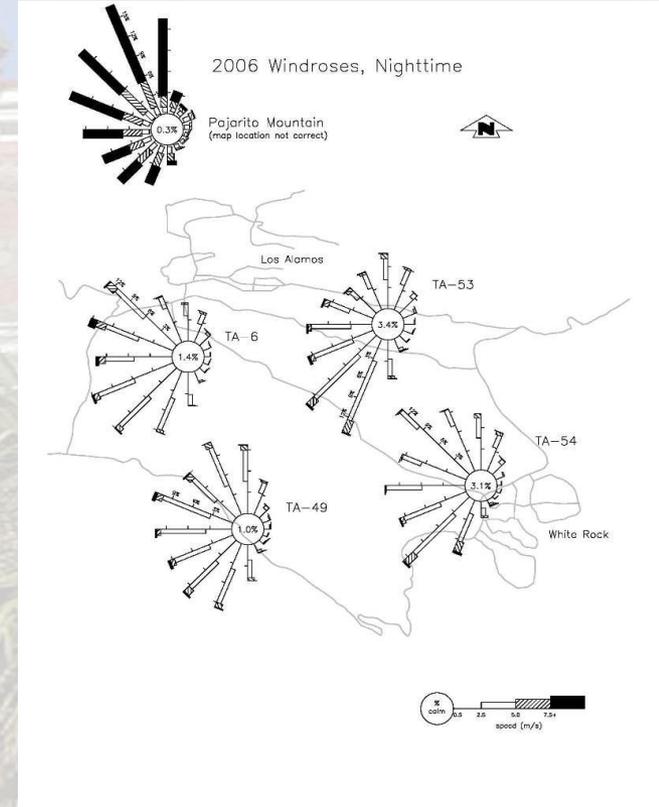
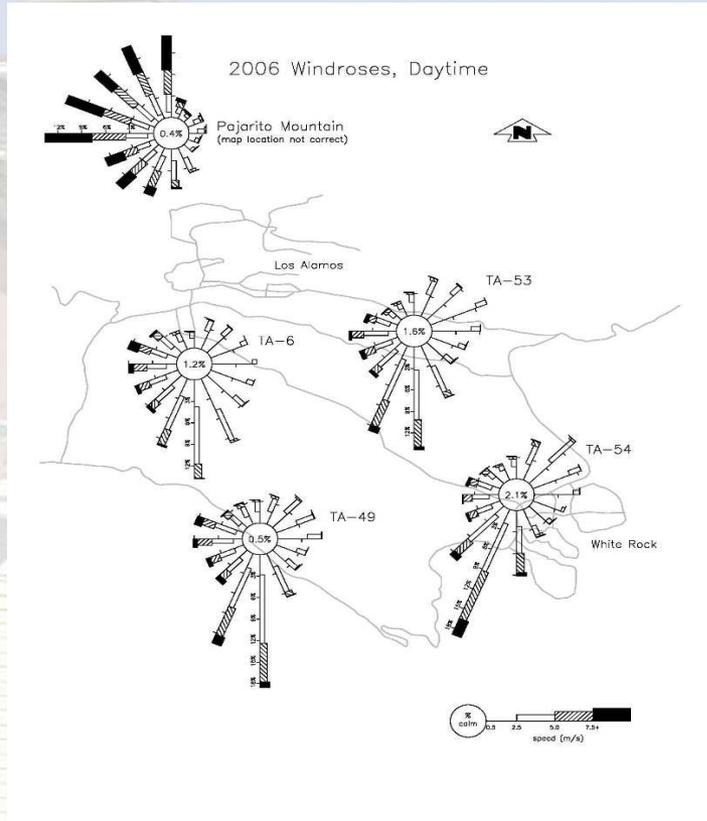
Common Operating Picture Emergency Technical Support Center (ETSC)



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Predominate Winds at LANL



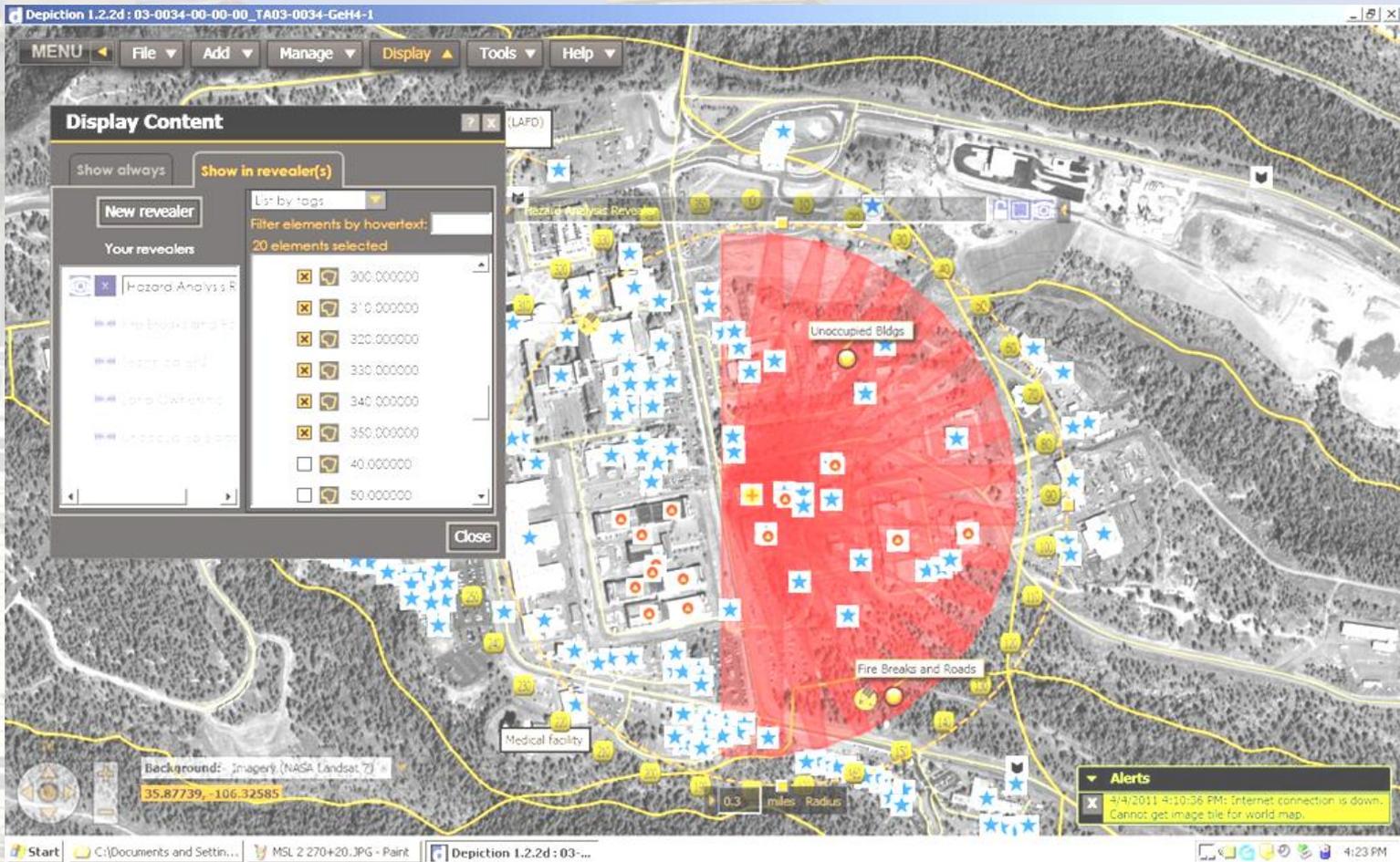
Setting Initial Protective Actions from EAL Wind from 270°



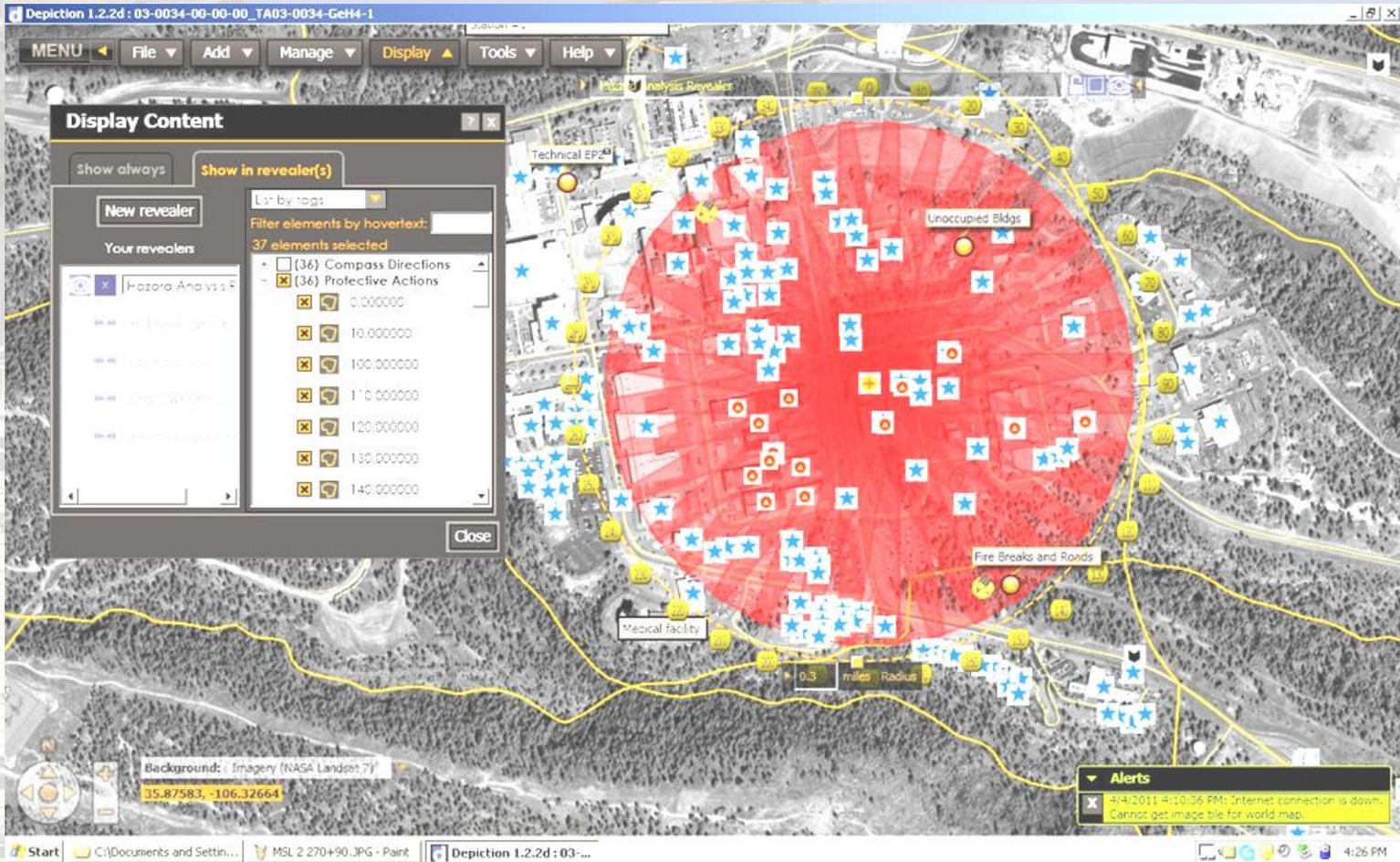
Expanding Protective Actions: + 20° either side of 270°



180° Wind protection



360° Wind Protection



Evacuation Routes



New Directions: Planning for the Annual FPX



New Directions: Communication of Safe Approach Route

- Communication of safe approach routes via yellow network secure e-mail to hand held Blackberry.



Contacts

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- Instructor
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