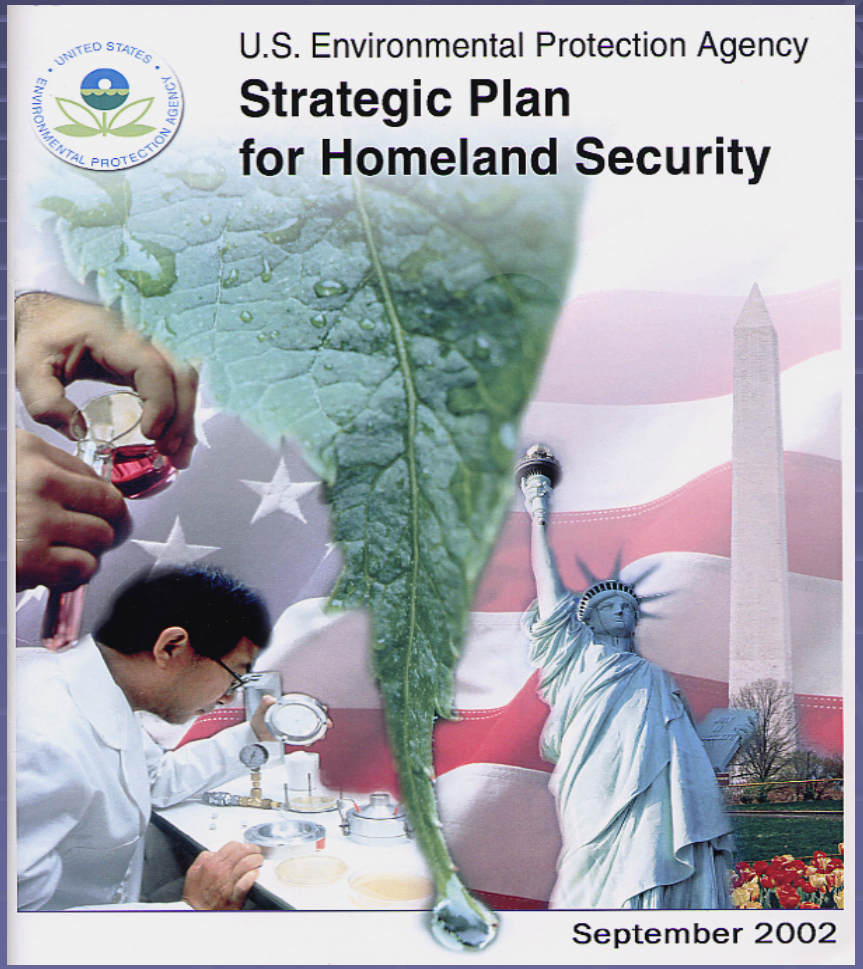
EPA Homeland Security Strategy

- Critical Infrastructure Protection
- Preparedness, Response & Recovery
- Communication and Information
- Protection of EPA Personnel and Infrastructure

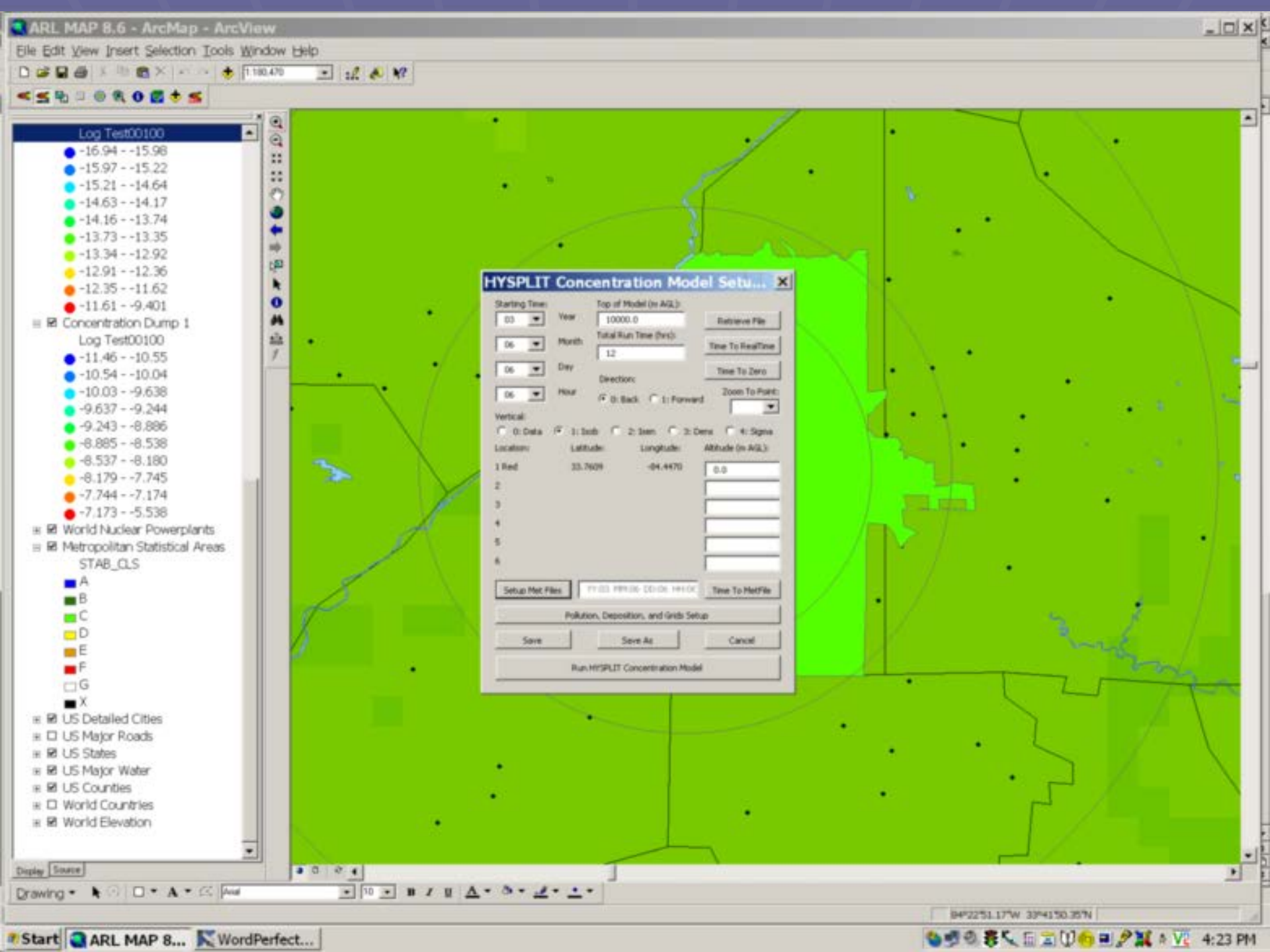


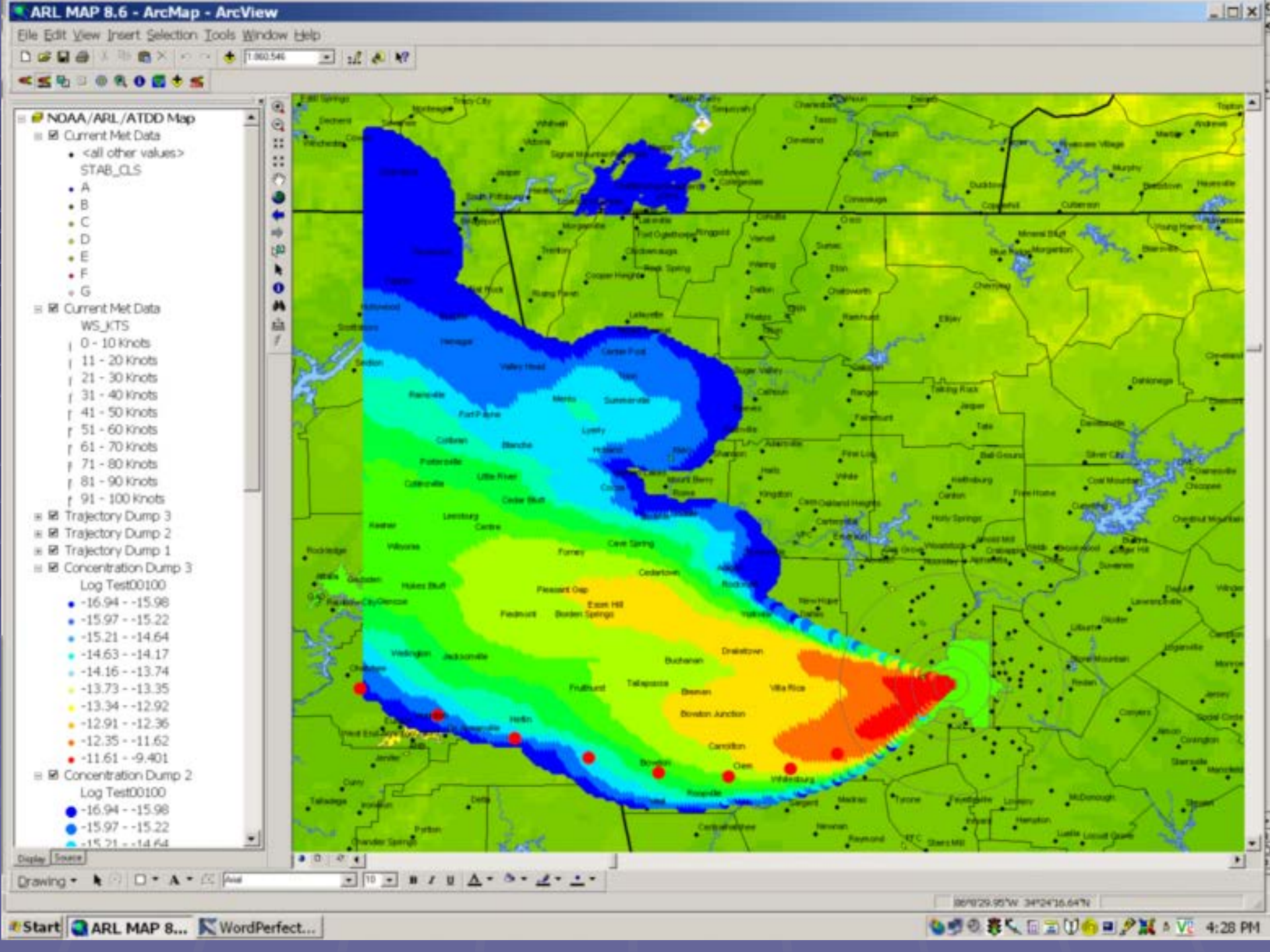
Rapid Risk Assessment

Information Systems & Tools
- hazard data
- exposure models
- risk assessment models

Risk Estimation
- threat scenarios
- water & buildings
- response level guidance

Risk Communication
- rapid risk assessment
- public, responders
- technical assistance


ARL MAP 8.6 - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
Log Test00100
-16.94 - -15.98
-15.97 - -15.22
-15.21 - -14.64
-14.63 - -14.17
-14.16 - -13.74
-13.73 - -13.35
-13.34 - -12.92
-12.91 - -12.36
-12.35 - -11.62
-11.61 - -9.401
Concentration Dump 1
Log Test00100
-11.46 - -10.55
-10.54 - -10.04
-10.03 - -9.638
-9.637 - -9.244
-9.243 - -8.886
-8.885 - -8.538
-8.537 - -8.180
-8.179 - -7.745
-7.744 - -7.174
-7.173 - -5.538
World Nuclear Powerplants
Metropolitan Statistical Areas
STAB_CLS
A
B
C
D
E
F
G
X
US Detailed Cities
US Major Roads
US States
US Major Water
US Counties
World Countries
World Elevation
Display
Source
Drawing
HYSPLIT Concentration Model Setu...
Starting Time:
Year
Month
Day
Hour
Top of Model (in AGL):
10000.0
Total Run Time (hrs):
12
Direction:
0: Back
1: Forward
Retrieve File
Time To RealTime
Time To Zero
Zoom To Point:
Vertical:
0: Data
1: Isob
2: Isen
3: Dens
4: Sigma
Location:
Latitude:
Longitude:
Altitude (in AGL):
1 Red
33.7609
-84.4470
0.0
Setup Met Files
Time To MetFile
Pollution, Deposition, and Grids Setup
Save
Save As
Cancel
Run HYSPLIT Concentration Model
Start
ARL MAP 8...
WordPerfect...
4:23 PM


ARL MAP 8.6 - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
NOAA/ARL/ATDD Map
Current Met Data
<all other values>
STAB_CLS
A
B
C
D
E
F
G
Current Met Data
WS_KTS
0 - 10 Knots
11 - 20 Knots
21 - 30 Knots
31 - 40 Knots
41 - 50 Knots
51 - 60 Knots
61 - 70 Knots
71 - 80 Knots
81 - 90 Knots
91 - 100 Knots
Trajectory Dump 3
Trajectory Dump 2
Trajectory Dump 1
Concentration Dump 3
Log Test00100
-16.94 - -15.98
-15.97 - -15.22
-15.21 - -14.64
-14.63 - -14.17
-14.16 - -13.74
-13.73 - -13.35
-13.34 - -12.92
-12.91 - -12.36
-12.35 - -11.62
-11.61 - -9.401
Concentration Dump 2
Log Test00100
-16.94 - -15.98
-15.97 - -15.22
Display
Source
Drawing
Start
ARL MAP 8...
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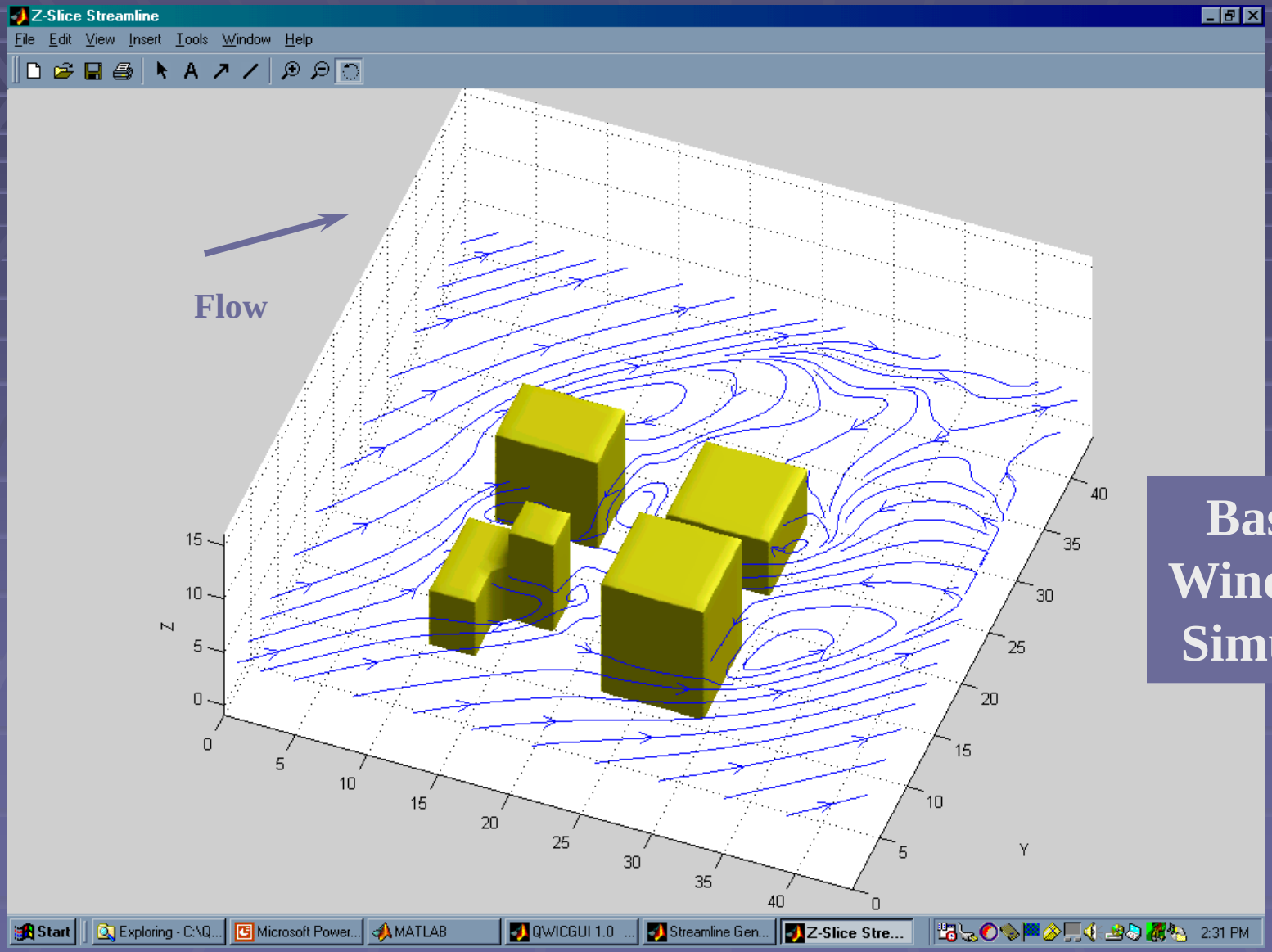
QWIC-URB Model

Flow Streamlines around a simple building cluster



Based on Wind Tunnel Simulations

Los Alamos NATIONAL LABORATORY

Physical Modeling of Dispersion from WTC Site

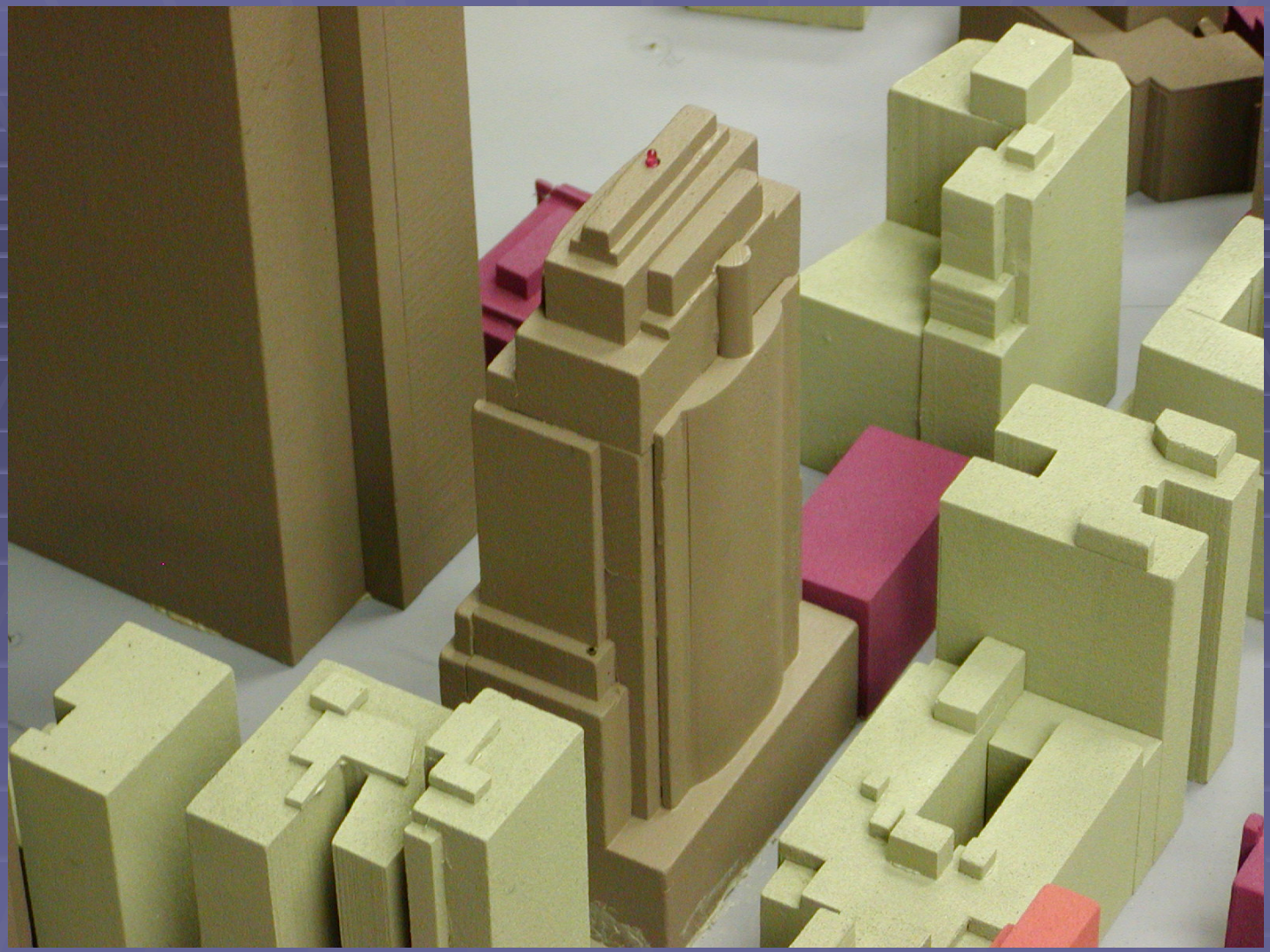
- A 1:600 scale model of Lower Manhattan on turntable in Meteorological Wind Tunnel

- Smoke observations, turbulent velocity meas., tracer concentration meas. (in progress)

- Developing a model evaluation data base

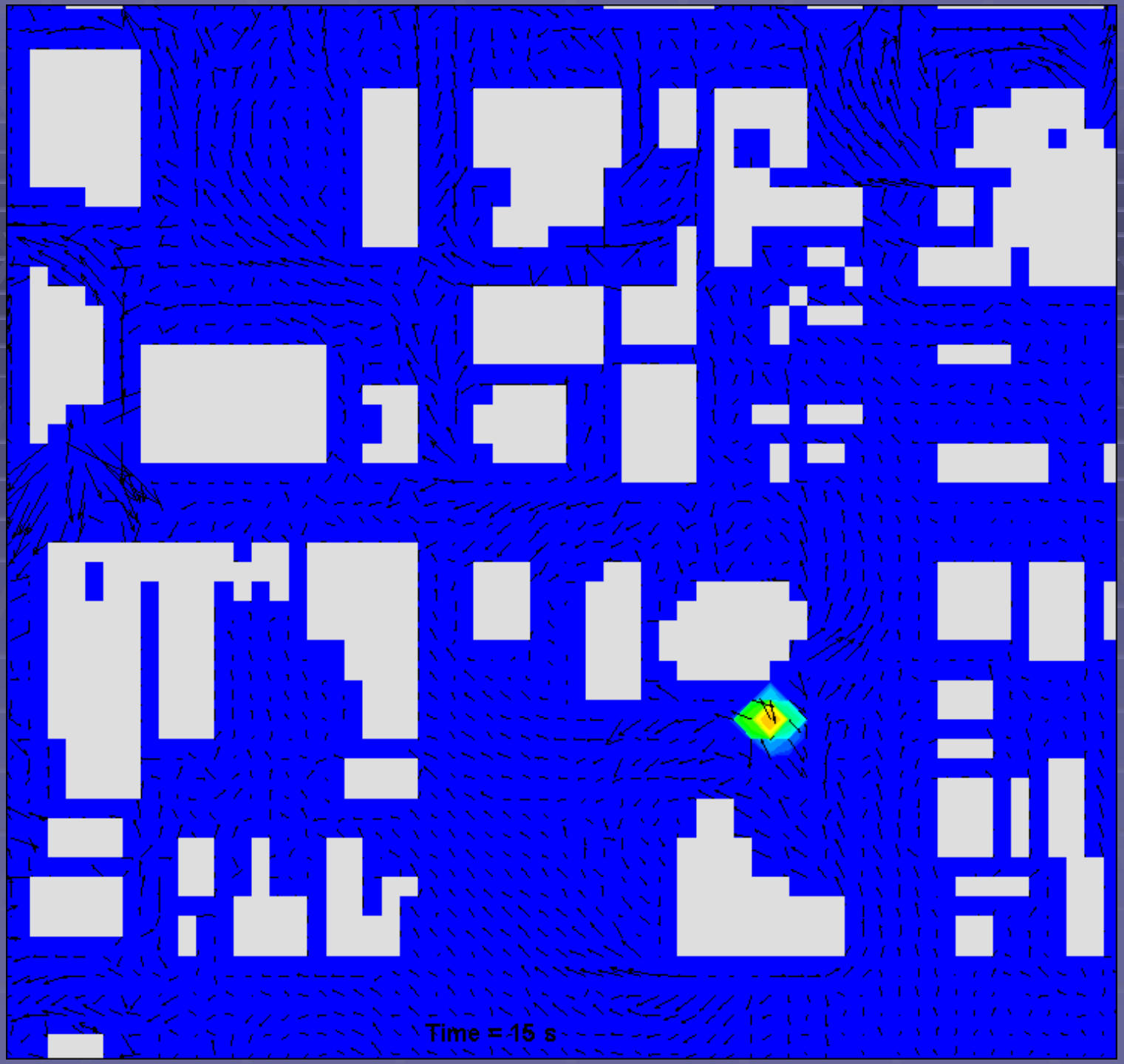
- Characterizing flow within complex urban areas

- Estimating potential human exposure with tracer concentration fields



Scale Model of Federal Building (EPA Region 2) at 290 Broadway

1:600 Scale Model of Lower Manhattan and WTC Rubble


Time = 15 s

Challenge for Modeling

- Timely modeling to assist in monitoring set up and planning studies.
- How to use timely modeling along with monitoring in communications at all stages of an emergency.
- Develop fast, inexpensive and reliable models