

Creating a Local Resource in Ensuring Responder and Public Health and Safety During CBRNE Events





Inception

- July 19, 1990:
 - One of Cincinnati's largest industrial accidents
 - BASF paint and resin facility (bordering the City of Norwood) exploded
 - Approximately 2,000 evacuated
 - Killed two and injured dozens



History of CAM Team

- 2000- created as a voluntary interagency effort
-no separate budget appropriation.
- Comprised of Environmental Safety Specialists and Sanitarians from five separate City Departments.
- Expanded to include outside agencies.
- Changed to Cincinnati Monitoring and Detection Team (CMDT) in 2008 to reflect expanded duties

Skill Set

- Members have extensive expertise in chemistry, biology, hazardous materials regulations, GIS, sophisticated air quality monitoring and modeling techniques, and the additional resources available in area.
- Equipment used during responses is owned and maintained by various City agencies as part of their normal tasks.

- CMDT direction comes from the CFD District Chief of the Environmental Crimes unit
- During an event, the DC ECU in consultation with the Fire Chief activates the team
- Partial activations are sometimes used for small-scale events

Member Requirements

- Up to date on 40 hour HAZWOPER certification
- ICS training
- Working knowledge of WMD
- Knowledge of all equipment assigned to CMDT
- Able to use PPE (APR)
- Required attendance at monthly meetings, training sessions, exercises

Members

- City of Cincinnati
 - Cincinnati Fire Department
 - Cincinnati Health Department
 - Metropolitan Sewer District
 - Employee Safety/Risk Management
- United States Postal Service
- Hamilton County Public Health Department

Partners

- USEPA On-Scene Coordinator
- START Contractors
- Ohio EPA On-Scene Coordinator
- National Atmospheric Release Advisory Center (NARAC) LLNL

- CMDT maintains equipment similar to partners to help coordinate response efforts more easily

Responses

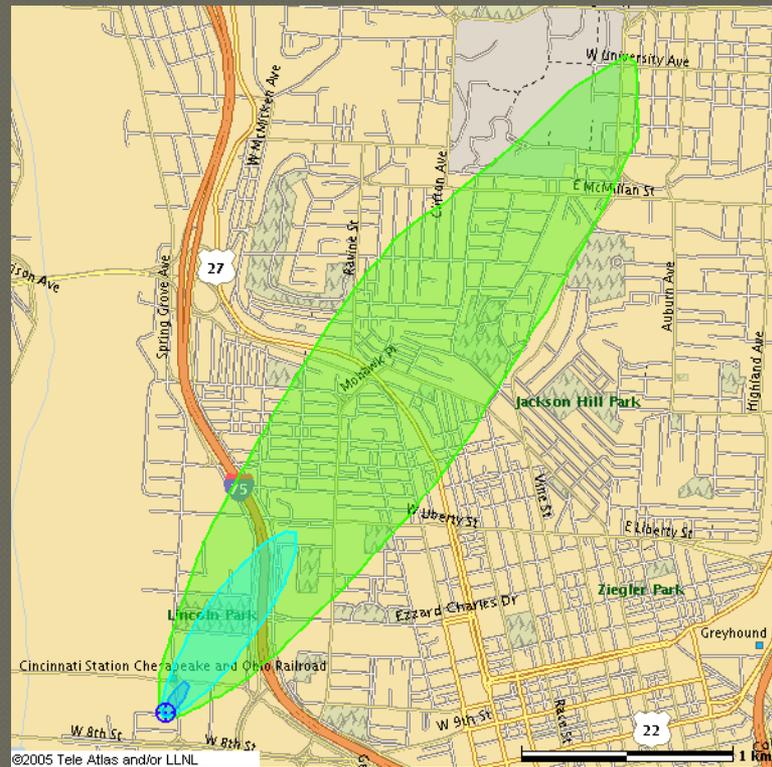
Queen City Barrel Fire

- August 2004



Queen City Barrel Fire

- Provided plume modeling and cold zone monitoring



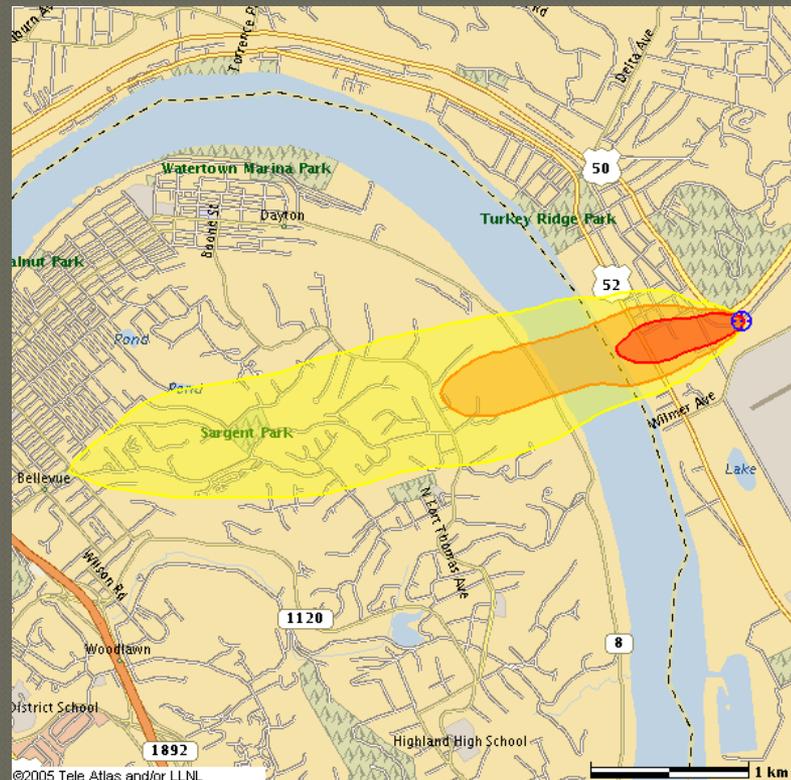
Styrene Railcar Release

- August 2005



Styrene Railcar Release

- CMDT provided cold zone monitoring and plume modeling



Benefits

- Share expertise
- Free up assets for CFD during a response
- Maximize equipment usage- both for emergencies and every day use
- Provide near real-time exposure data through new technologies



Leveraging Assets

- USEPA START (Superfund Technical Assessment & Response Team) contractors have led the way in cutting edge data collection and management
- Urban Area Security Initiative (UASI) funding assisted with local asset acquisitions
- Seamless integration of monitoring teams during events resulting in more and better data
- Better data=better decision making

National Atmospheric Release Advisory Center

- NARAC provides atmospheric plume predictions within minutes of user input

The screenshot shows a web browser window titled "Model Input - Step 1: Pick Scenario - Windows Internet Explorer". The address bar displays the URL: https://naracweb.inl.gov/web/modelinput/pickScenario.html?folderId=dir_200300000724. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The address bar contains the text "Google" and a search icon. The browser's toolbar shows various icons for navigation and utility, including a search icon, a "Go" button, and a "NARAC" button. The main content area of the browser displays the "Step 1: Pick scenario" page. The page has a navigation bar with four steps: "Step 1: Pick scenario" (highlighted in green), "Step 2: Model input", "Step 3: Review request", and "Step 4: Run model". Below the navigation bar, there is a instruction: "Select the situation (predefined) that best describes your needs or create your own." The main content area is divided into two columns. The left column is titled "Predefined Scenarios" and has a green checkmark icon. It contains a "Categories" dropdown menu with "Unknown Material" selected, and a "Scenario" list box with "Unknown Material-Continuous" selected. The right column is titled "Scenarios" and contains a list of six options, each with a radio button and an icon: "Point Source" (radio button selected), "Explosive", "Chemical Spill", "Sprayer", "Nuclear Detonation", and "Line Source". At the bottom of the page, there is a "Continue" button and a text prompt: "Proceed with predefined scenario **Unknown Material-Continuous**". The browser's status bar at the bottom shows "Done" and "Internet". The Windows taskbar at the very bottom displays the "start" button, several application icons, a search bar, and the system tray showing the time as 9:35 AM.



NARAC

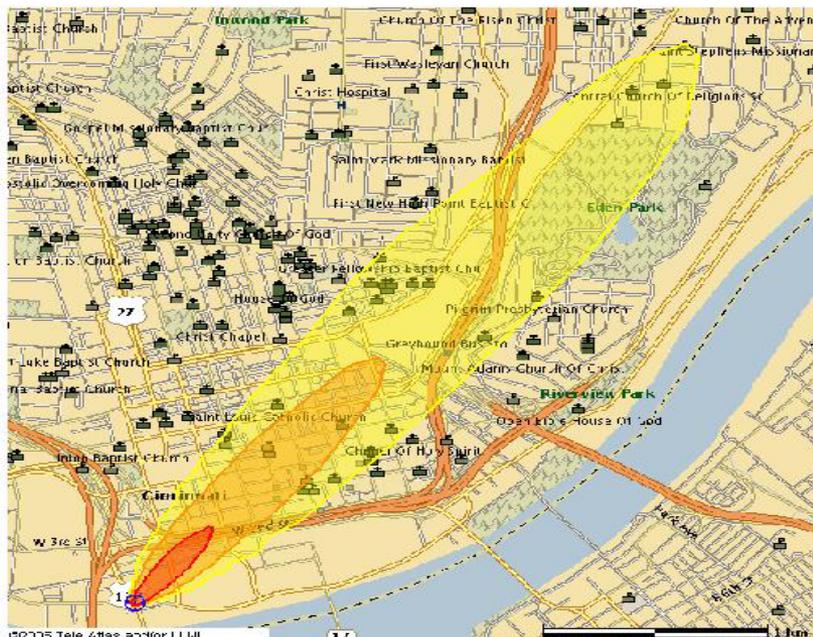
- NARAC uses real-time meteorological data to produce plumes with estimated exposure levels based on USEPA AEGL or ERPG levels
- CMDT attempts to truth this data through real-time field monitoring
- Plume models assist decision makers in Evacuation and/or Shelter-In-Place orders

Example Plume



Not For Public Dissemination
Max 10-min Avg Air Conc. of ACROLEIN

ROC Demo
 Automated Report - Testing



Map Size: 3.6 km by 3.6 km Id: Production2.rcE29462.rcC1

Acute (Short-Term) Effects		
Description	(ppm) Extent Area	Population
>ERPG-3: Death or irreversible health effects possible.	>3 0.6km 0.05km ²	50
>ERPG-2: Serious health effects or impaired ability to take protective action.	>0.5 1.8km 0.5km ²	1,120
>ERPG-1: Minor reversible health effects. Possible odor.	>0.10 4.0km 2.3km ²	4,800

Note: Areas and counts in the table are cumulative.

Effects or contamination from January 10, 2007 21:40 EST to January 11, 2007 01:40 EST at or near ground level.

Release Location: 39.094335 N, 84.520201 W

Material: ACROLEIN

Generated On: January 10, 2007 21:48 EST

Model: ADAPT/LODI

Comments:

Hypothetical release
 1/11/2007 2:40 UTC for 3 hr 18 min 1 sec
 canned met

NARAC Operations: (onDuty Assessor), narac@lhl.gov, 925-424-6465

Requested by: John Dunham, OH - Cincinnati, 513-357-7207; john.dunham@cincinnati-oh.gov

Not approved for further distribution

Rapid Assistance Tool (RAT)

- Software designed by F.I.E.L.D.S group from USEPA Region V
- Allows geocoding of every datapoint collected during an event
- Integrates with GIS (CAGIS)
- Provides street level display of monitoring data



Rapid Assistance Tool (RAT)



Next Steps

- Expand partnerships and mutual aid agreements with:
 - Other jurisdictions including Indiana and Kentucky
 - Other response teams (ENSURE, etc.)
- Train and exercise with regional partners
- Create a team that can act as a regional resource, regardless of state and natural boundaries

Contact Info

- John Dunham: (513) 357-7207
John.Dunham@cincinnati-oh.gov
- Aaron C. Schwarber: (513) 244-5124
Aaron.Schwarber@cincinnati-oh.gov
- Ami McLandsborough: (513) 357-7212
Ami.McLandsborough@cincinnati-oh.gov