

# GIS in an Emergency Situation

Graniteville Community  
Aiken County, SC

ESRI UC 2005

# Topics covered

- General info about accident
- Maps generated
- Things we did right
- Things we did wrong
- Lessons learned
- Questions

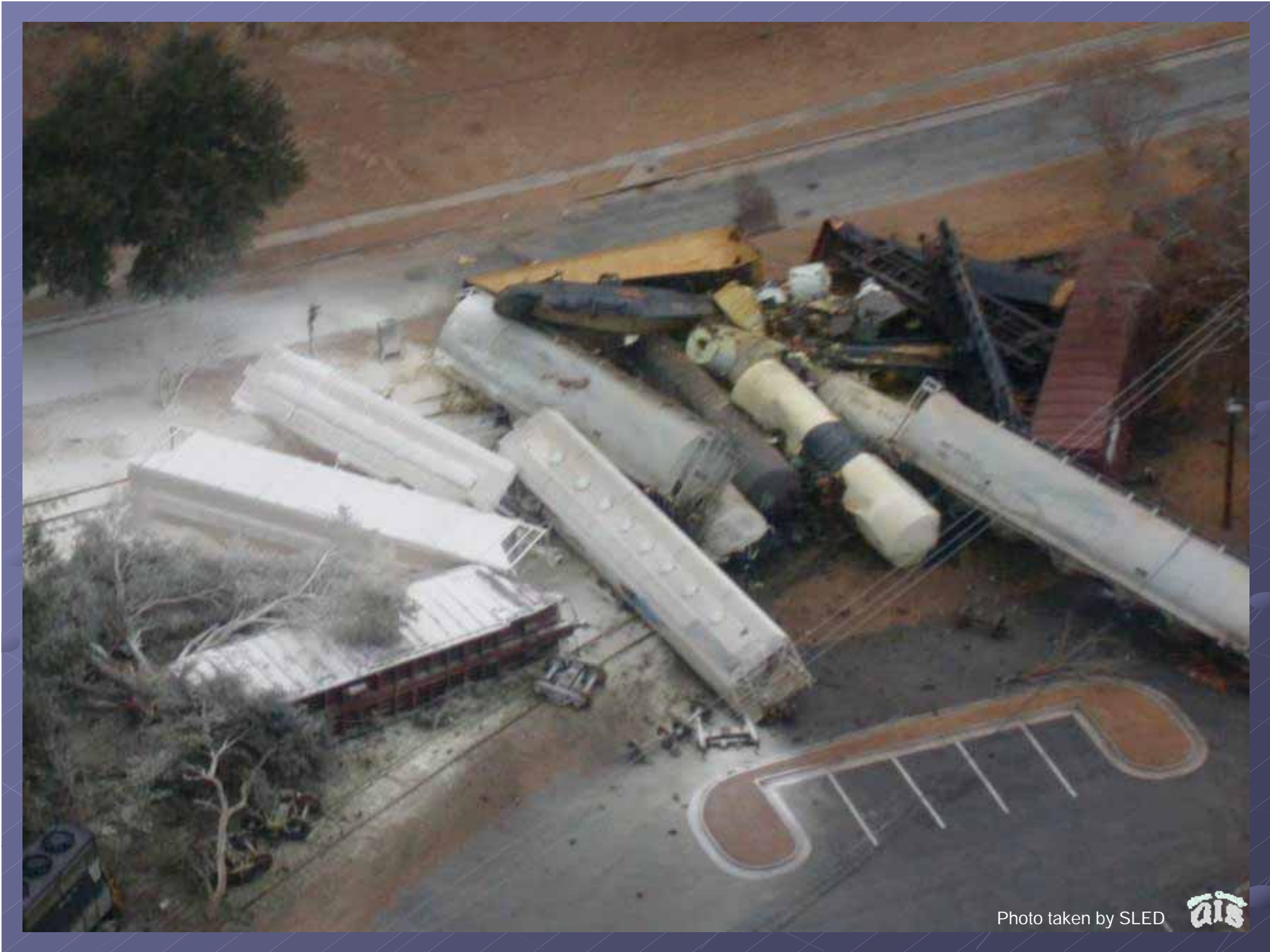


Photo taken by SLED



## A train accident involving Chlorine tanker cars.

- January 6, 2005 2:39am Accident occurs
- Emergency units begin to respond to 911 calls
- Road blocks and Decon areas setup
- EOC activated at 5:00am
- GIS first staff member arrives at office 6:45am
- GIS first staff member arrives at EOC 7:20am
- GIS staff in EOC for 14 days
- EOC active for 16 days
- 100+ Agencies involved

# GIS Responsibilities

- Create maps
- Find address locations
- Provide population numbers
- GPS points for inspections
- Answer phones

# Be prepared

- 184 hours week 1
- 156 hours week 2
- Provide data to other agencies involved
- Other agency's needing to use equipment
- Multiple simultaneous map request
- Large quantity of large maps

# First Map



# Map Quantity

- 85+ Different maps
- Over 600 18x24 or larger maps plotted
- Over 700 8.5x11 and 11x17 maps printed
- 7 Rolls of paper (36"x300')
- 1 Set of ink cartridges for plotter



# Maps Created

- General Road maps
- Aerial maps
- Buffer maps for "Hot", evacuation and curfew zones
- Road block maps
- Search Zone maps
- Re-occupation zone maps
- Building corrosion areas

# GRANITEVILLE - CHLORINE DISPERSION MODEL (RUN1)

Map Source: Division of Biostatistics and Health GIS, PHSIS, SC DHEC.

Funding by: Bioterrorism Grant Office of Public Health Preparedness.

January 10, 2005.

## PARAMETERS:

Chemical: Chlorine Gas  
 Amount: 52,095 gallons  
 Wind Speed: 2.9 mph  
 Wind Direction: 220 degrees  
 Temperature: 63 degrees  
 Humidity: Unknown  
 Source: On site  
 Release: Instantaneous

\* Three tank cars involved. Car No. 6 containing 17380 gal, car no. 7 containing 17312 gal, and car no. 9 containing 17403 gal for a total of 52095 gallons.

\* IDLH - Immediately Dangerous to Life and Health. 10 ppm is the NIOSH recommended level.

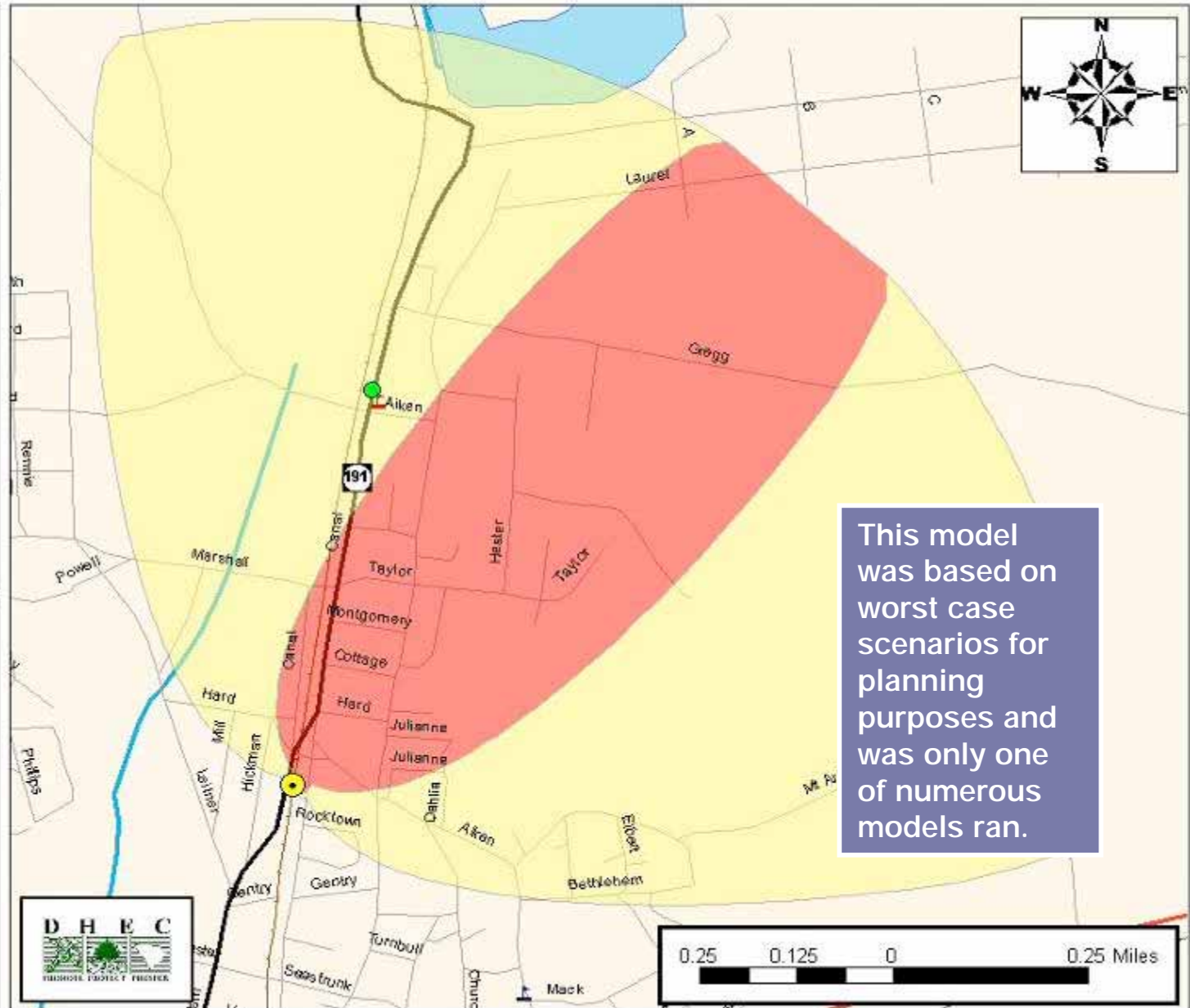
## Legend

- Health Facilities
- Nestor Health Facilities
- Public Schools
- Private Schools
- Shelters
- Chemical spill site

Plume (52095 gal, 2:30 AM, Jan 6)

LOC

- IDLH (10 ppm) \*
- Hazard Area
- SC HW
- US HW
- Secondary Roads
- Railroad
- City Boundaries



This model was based on worst case scenarios for planning purposes and was only one of numerous models ran.

# Things we did right

- Data pre-loaded on Laptop & jump-drive
- Network access
- Create folder for maps & data
- Supplies in stock (Ink & paper)
- Created .pdf & .jpg copies of maps

# Things we did wrong . . .

- Two versions of ArcMap 8.3 vs 9.0
- No printer/plotter in EOC
- Way to get/give large files quickly
- No preset way to handle attorney request

# Lessons Learned

- Media - Send maps to TV stations daily
- Attorneys – Policy in place for their request  
( They showed up the 1<sup>st</sup> day )
- FTP Site access
- Large Laminated map
- Surrounding counties data
- Emergency & other GIS contacts
- Consistency – Naming, templates, .lyr files
- IMS site for emergencies
- Map request form and logs



# Emergency Situation Map Request Form

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Phone # \_\_\_\_\_

Requested By: \_\_\_\_\_ Agency: \_\_\_\_\_

Date needed: \_\_\_\_\_ Time needed: \_\_\_\_\_ # of Copies: \_\_\_\_\_

Map Title: \_\_\_\_\_

Layers:

//// // Roads  
//// // Parcels  
//// // Hydro  
//// // Orthos  
//// // City Limits  
//// // Building footprints  
//// // Labels \_\_\_\_\_  
//// // Buffer ring(s)-Dist. \_\_\_\_\_  
//// // \_\_\_\_\_  
//// // \_\_\_\_\_

Map Size:

//// 8.5 x 11  
// 11 x 17  
// 17 x 22  
// 22 x 34  
// 34 x 44  
// 36 x 60  
// 42 x 60  
// \_\_\_\_\_

Print Location:

//// EOC \_\_\_\_\_  
//// Planning \_\_\_\_\_  
//// PWE \_\_\_\_\_  
//// RMC \_\_\_\_\_  
//// Other \_\_\_\_\_

Additional comments: \_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

Completed By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_



# Questions?

## Contact Information

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