

Locating Vulnerable Special-Needs Households in a Community Hosting a Chemical Weapons Storage Site

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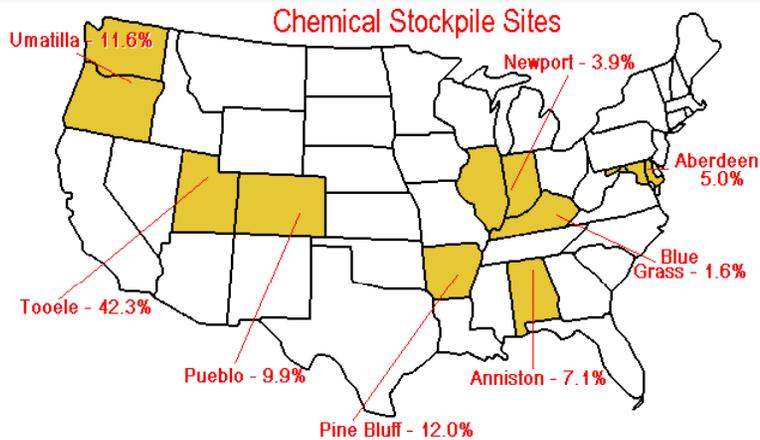
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A Comprehensive Overview in Responding to the Needs of Special Populations

- **Explain identification methods**
- **Describe data verification and update methods**
- **Profile personal characteristics**
- **Reveal protective action attitudes and expectations**
- **Place planning efforts in research context**
- **Initiate discussion of options for assisting those with assistance needs**
- **Summarize key points**

The Anniston Army Depot



(Percentages as of start of demilitarization program)
Source: FEMA Web Site - www.fema.gov

Depot Location:

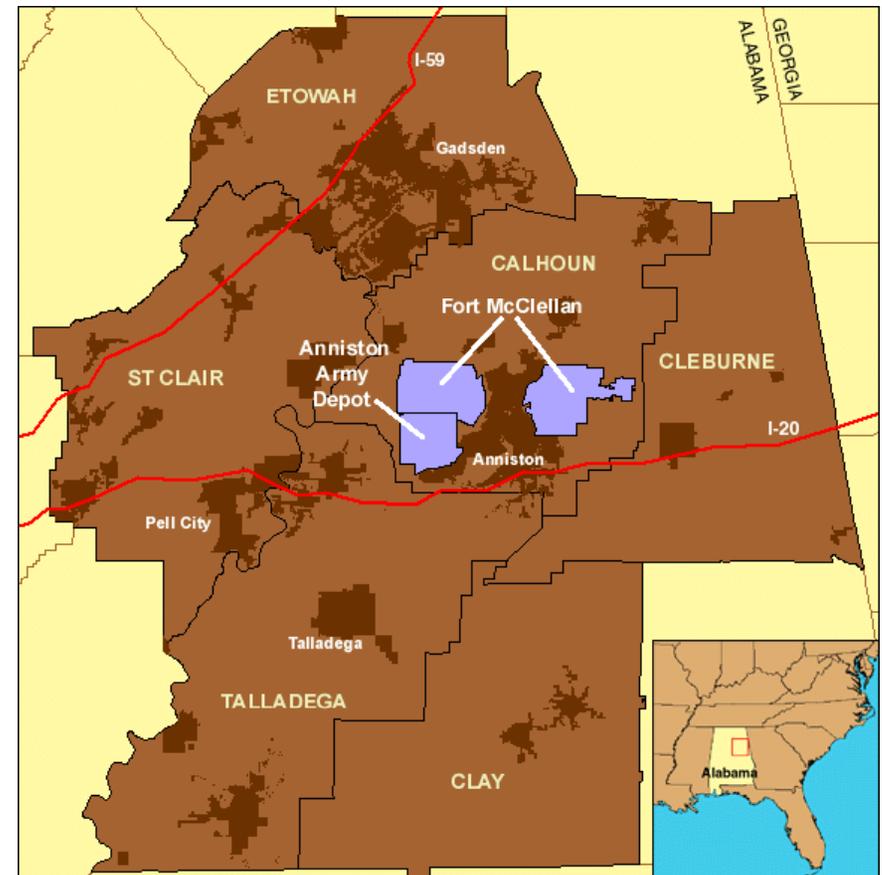
Northeast Alabama

Munitions Stored:

2,253 Tons of Chemical
Weapons Agent

Incinerator Currently

Undergoing Systematization



Introduction to the Emergency Planning Zones

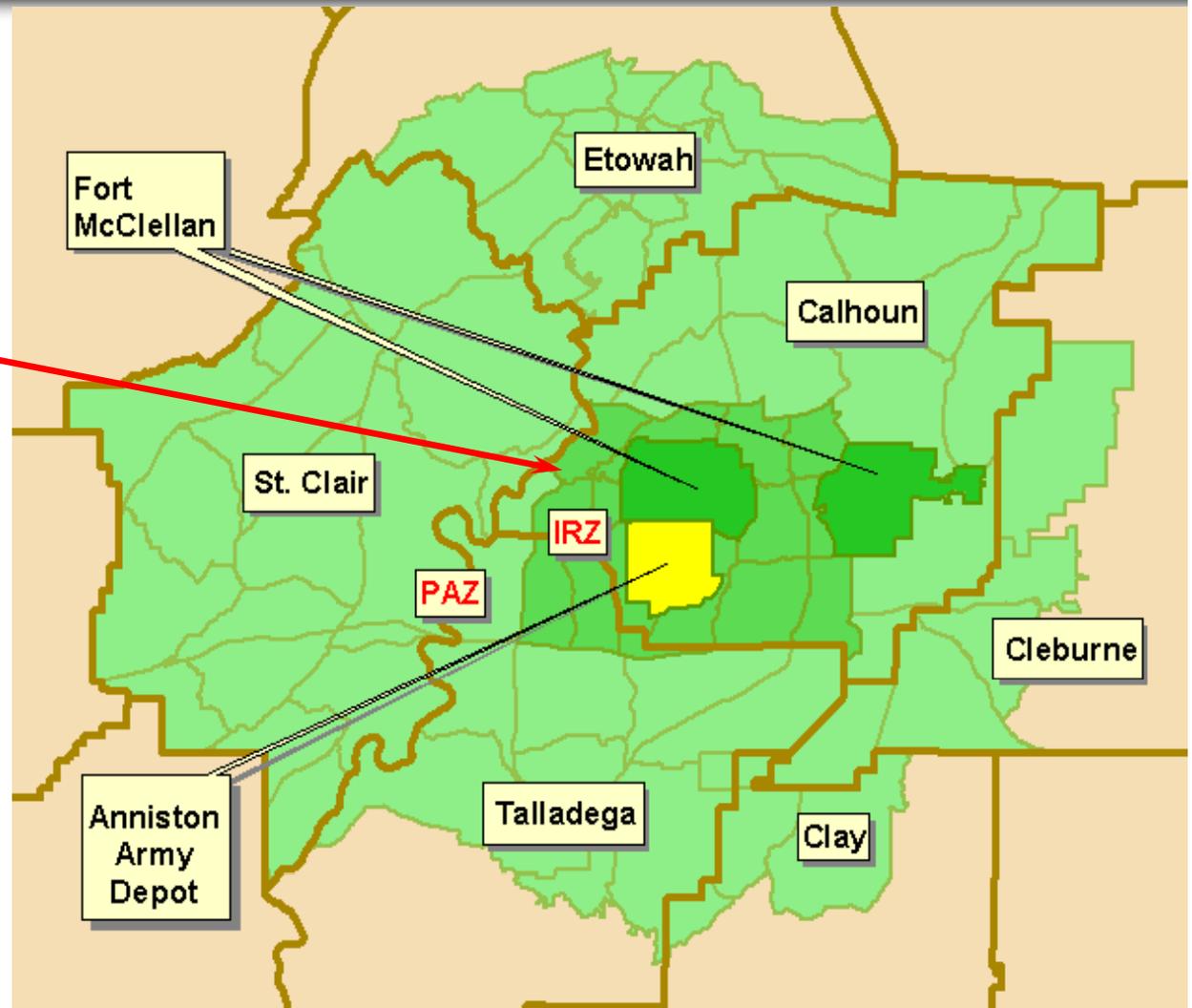
Immediate Response Zone (IRZ)

Area: 8-10 mile radius

Households: 31,000

Population: 75,000

Terrain: Rolling hills



Special Populations Include:

- **People with disabilities or health problems,**
- **People who do not have cars or other means of transportation available to them, and**
- **Children who, at times, are not supervised by an adult and would need help in case of an emergency.**

Basis for a Multi-Collection Approach

- Identifications from 1995 to 2000:
 - 376 persons self-registered through “Blue Cards”
 - 1 person reported by telephone from within the IRZ
- After Multi-Collection Approach and Verification:
 - 2691 verified persons with special needs *that require assistance* located within the IRZ

377



2691

0.05% - Of The Population - 3.5%

Outreach during Data Collection



A Positive Voice For Positive People

Serving Alabama since 1998

HELP US HELP YOU ONCE AGAIN

Residents of Calhoun and Talladega Counties

THE ALABAMA EMERGENCY
MANAGEMENT AGENCY



UAB THE UNIVERSITY OF
ALABAMA AT BIRMINGHAM

Because potentially dangerous chemical weapons are currently stored at the Anniston Army Depot, the Alabama Emergency Management Agency (AEMA) is assisting the Calhoun and Talladega county emergency management agencies to enhance their emergency planning and public protection strategies. Your assistance is needed for two important data collection efforts. Please provide the best information you can. The State of Alabama will protect your privacy and all private information you provide.

First, AEMA is asking those who have completed self-registration forms—or those who have recently provided information to University of Alabama at Birmingham interviewers—regarding a need for help or special assistance in an emergency to participate once again. AEMA is asking those people who receive the Special Needs Data Verification Form this week in the mail to review the information. If the information is correct, please mail back the form in the accompanying envelope. If the information is not correct, please correct it before mailing back the form.

Second, AEMA will once again mail a self-registration form to every household in the Immediate Response Zone portions of Calhoun and Talladega counties, an area extending outward 8-11 miles from the depot. This form offers everyone an opportunity to identify any person or any household that might need special assistance beyond what family, neighbors, and friends could provide during an emergency at the depot.

The purpose of both efforts is to identify those people or households with special needs that would require help to leave the area (evacuate) or to create a shelter environment at home if advised to do so by their county emergency management agency (EMA). It is critical to identify those who would require help or assistance from outside their circle of family, neighbors, and friends. Special-needs individuals and households include

- people with disabilities or health problems;
- people who do not have cars or other means of transportation available to them; and
- children who at times are not supervised by an adult and would need help in case of an emergency.

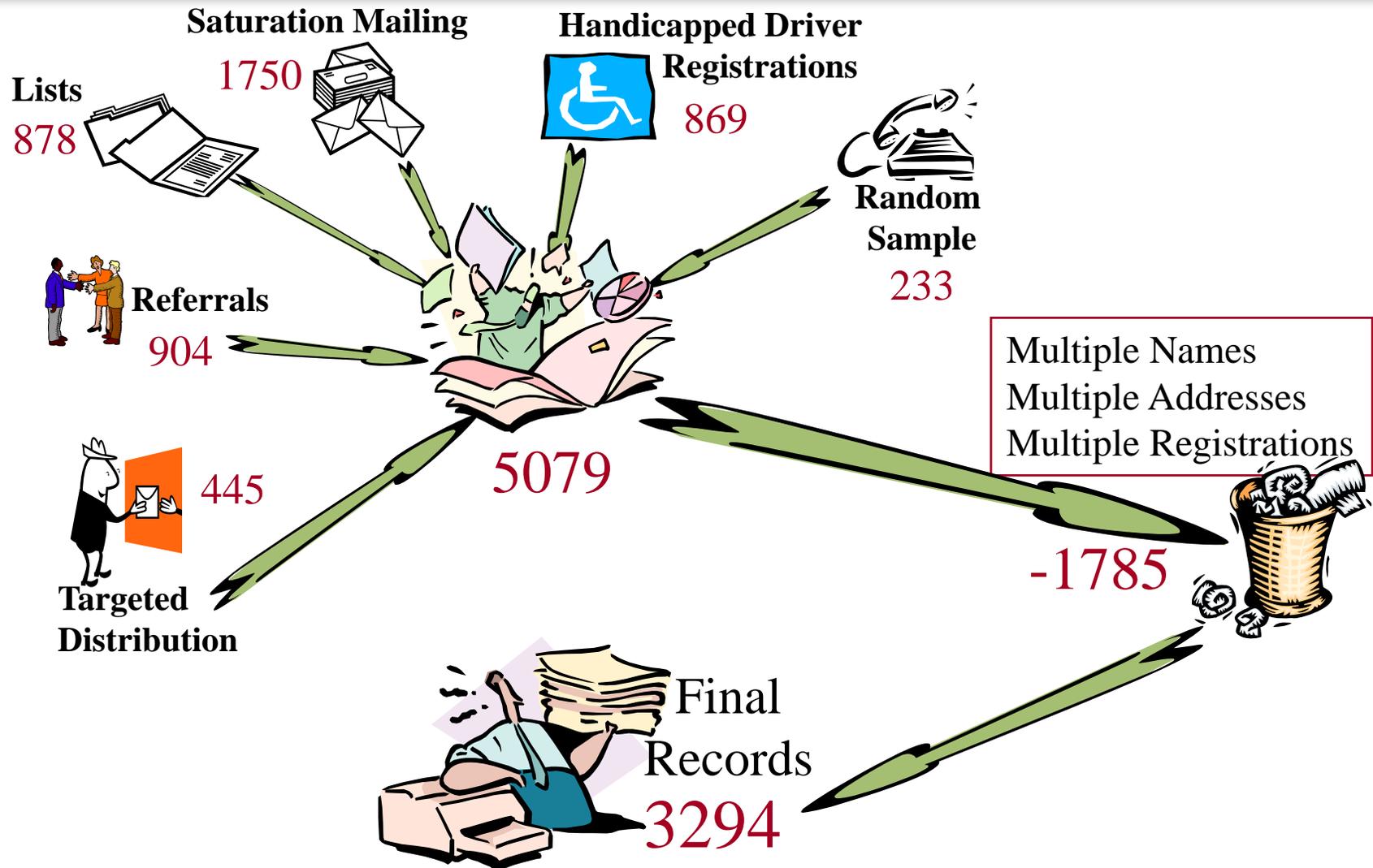
Please remember, person-helping-person assistance is always a very effective response if an emergency occurs, and it is essential because your county EMA may not be able to respond to each request for assistance in an emergency.

Identification Methods

- **Identification methods used to collect data on individuals with special needs:**
 - Random sample survey,
 - Saturation mailing of self-registration packets,
 - Targeted Distribution of self-registration packets,
 - List acquisitions, and
 - Referrals.

- **Multiple methods provided cost-effective data collection and update strategies.**

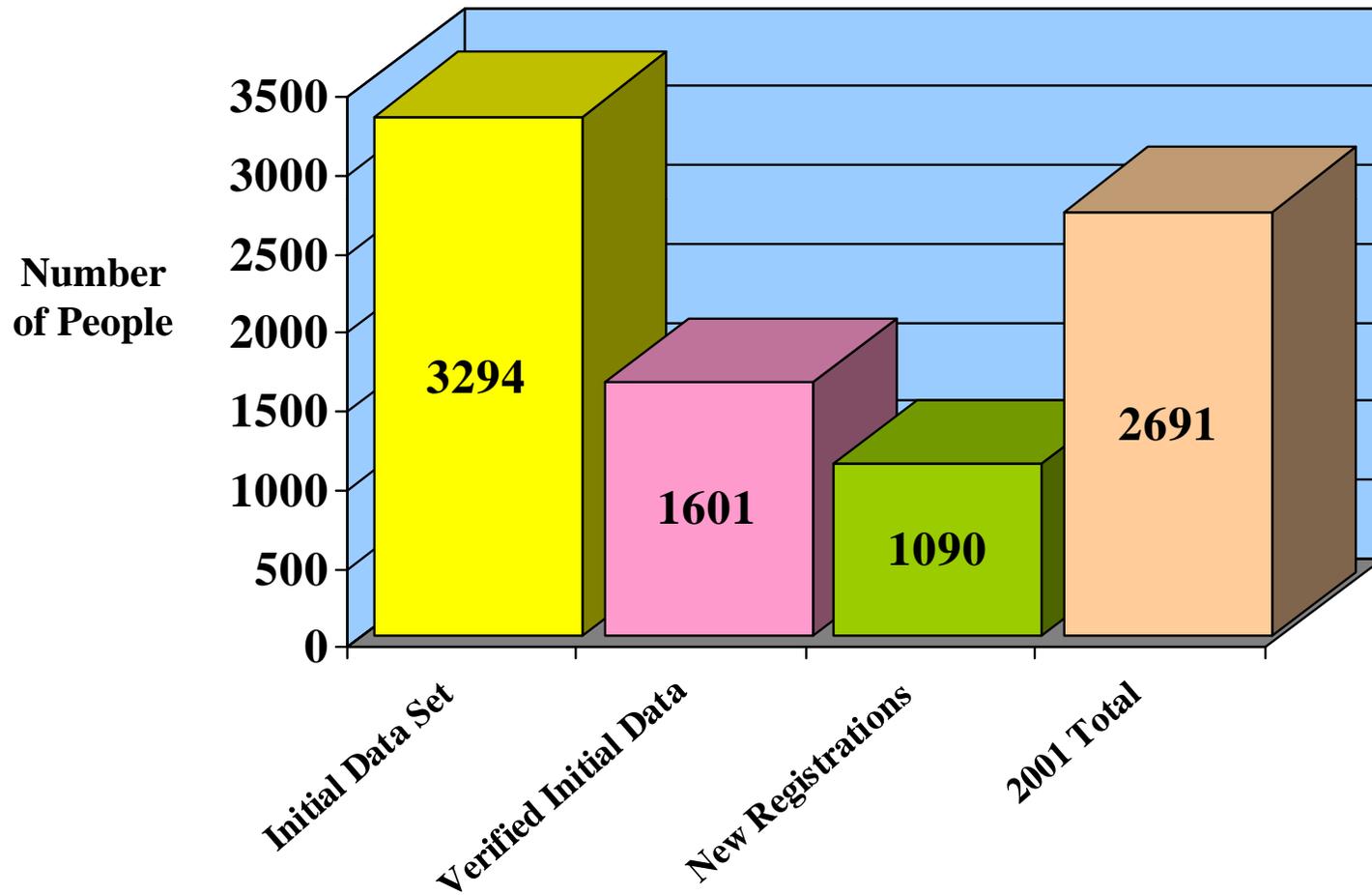
Deconflicting Initial Data



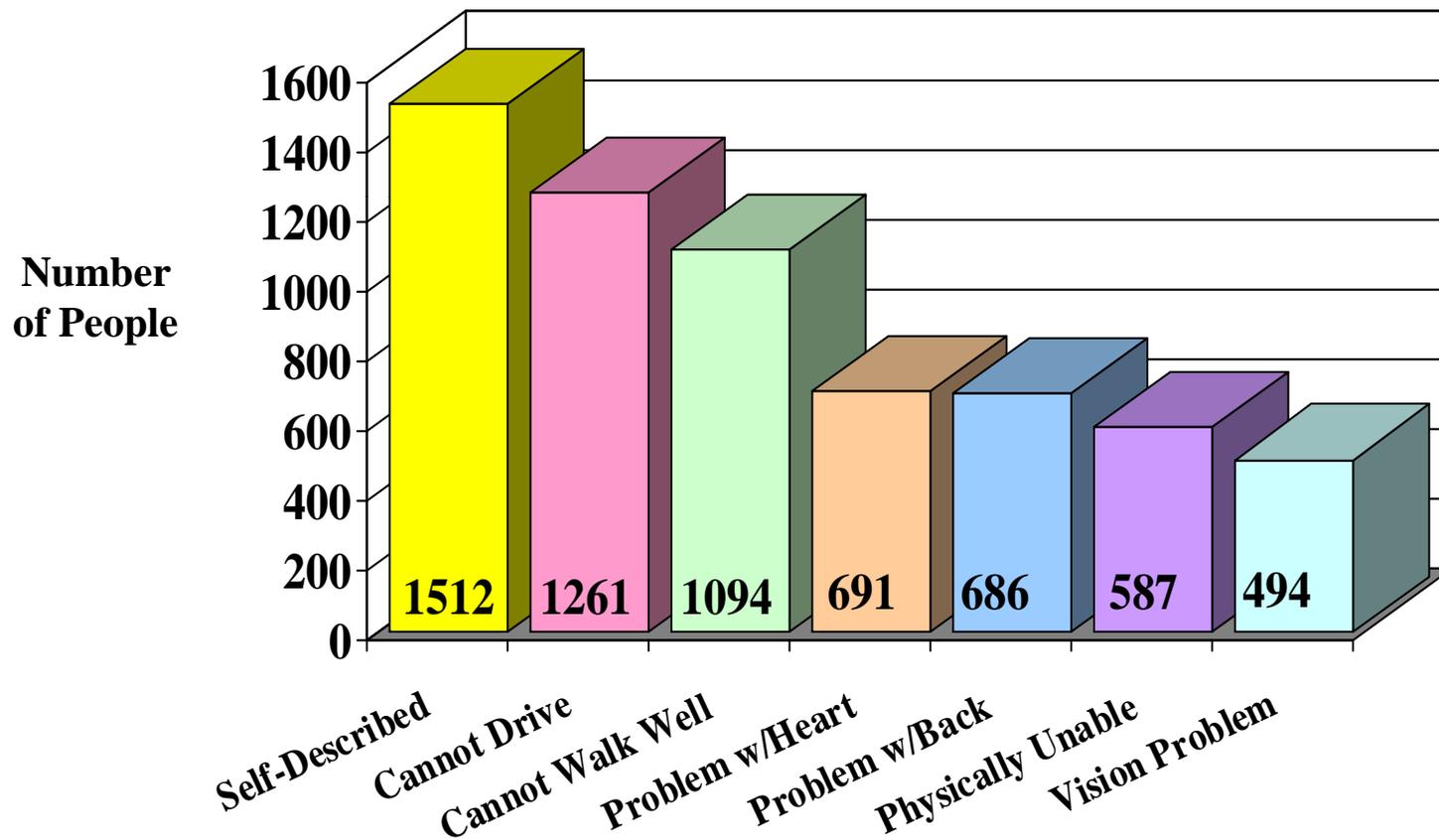
Data Update: Special-Needs Population

- Data verification conducted one year later confirmed only 1601 previously identified special-needs persons:
 - Targeted mailing to those previously identified.
 - Verification forms returned 1548
 - Verification through telephone calls and support providers for “undeliverable mail” and “forms not returned” 560
 - ***Total Returned Records*** ***2108***
 - The situation changed for 24% of those identified.
 - No longer needed assistance 208
 - Deceased 181
 - Moved to a nursing home 63
 - Relocated outside the IRZ 49
 - ***Total Changed Records*** ***501***
- Concurrent saturation mailing identified 1090 new special-needs persons requiring assistance.

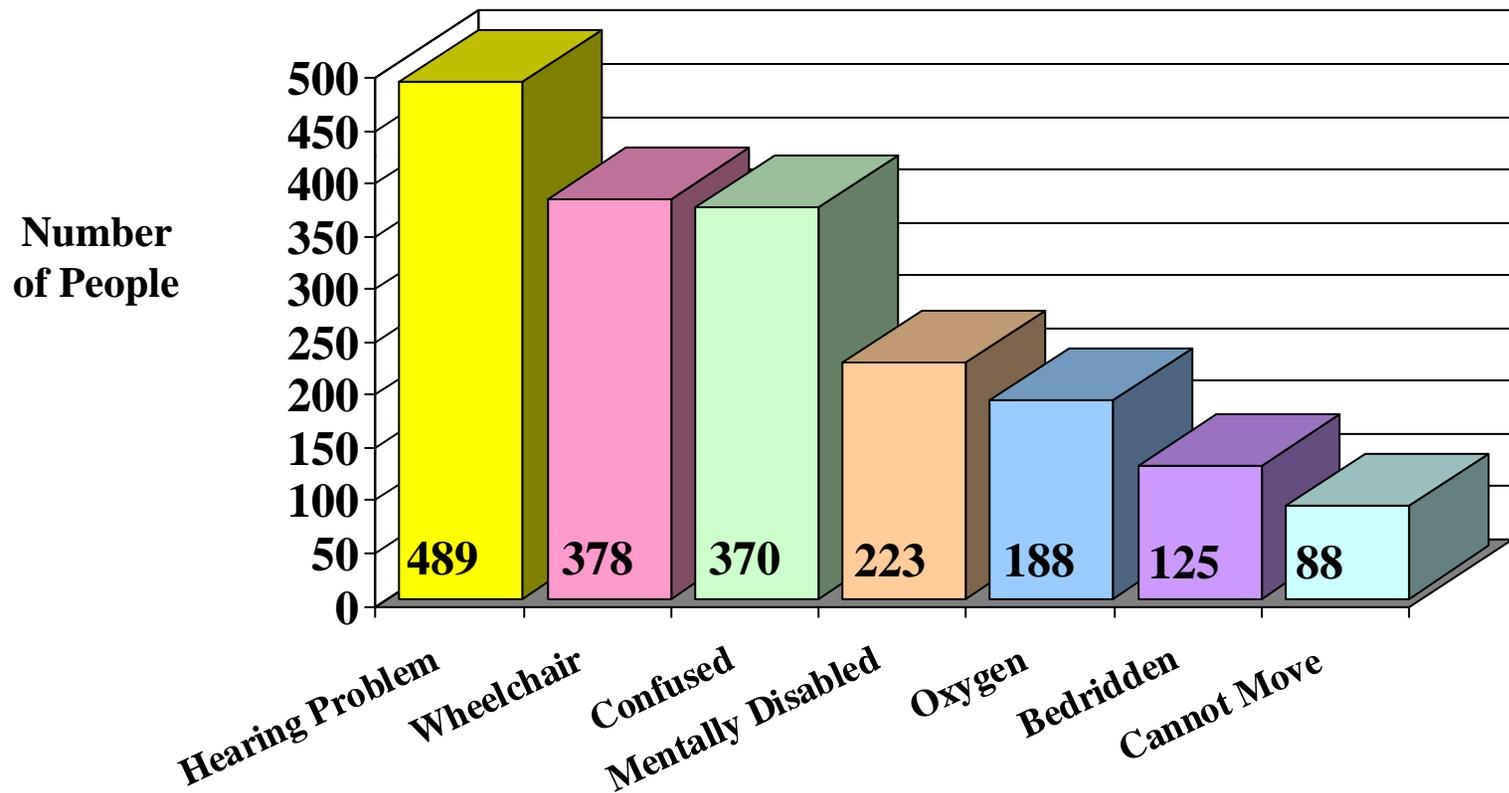
2001 IRZ Verification Experience Shows Special-Needs Data Perishability



Physical and Medical Impairments of 2691 IRZ Special-Needs People



Infrequent Disabilities May Create the Most Protective Action Difficulties



Portrait of IRZ Special-Needs Individuals

- **Gender - women outnumber men 2 to 1**
- **Age - 80% are 60 or older**
- **Marital status - majority are widowed or divorced**
- **Household - 25% live alone**
- **Residence - 79% live in a house; 80% of those own**
- **Permanence - majority at current address 15+ years**
- **Education - 50% completed high school, 43% of those 12+**
- **Income - 68% of those reporting income earn less than \$15,000**
- **Guardian - 28% completed the form for the special-needs person**
- **Church - majority attend church with some regularity**
- **Impairment - 67% have had problem for 5+ years**

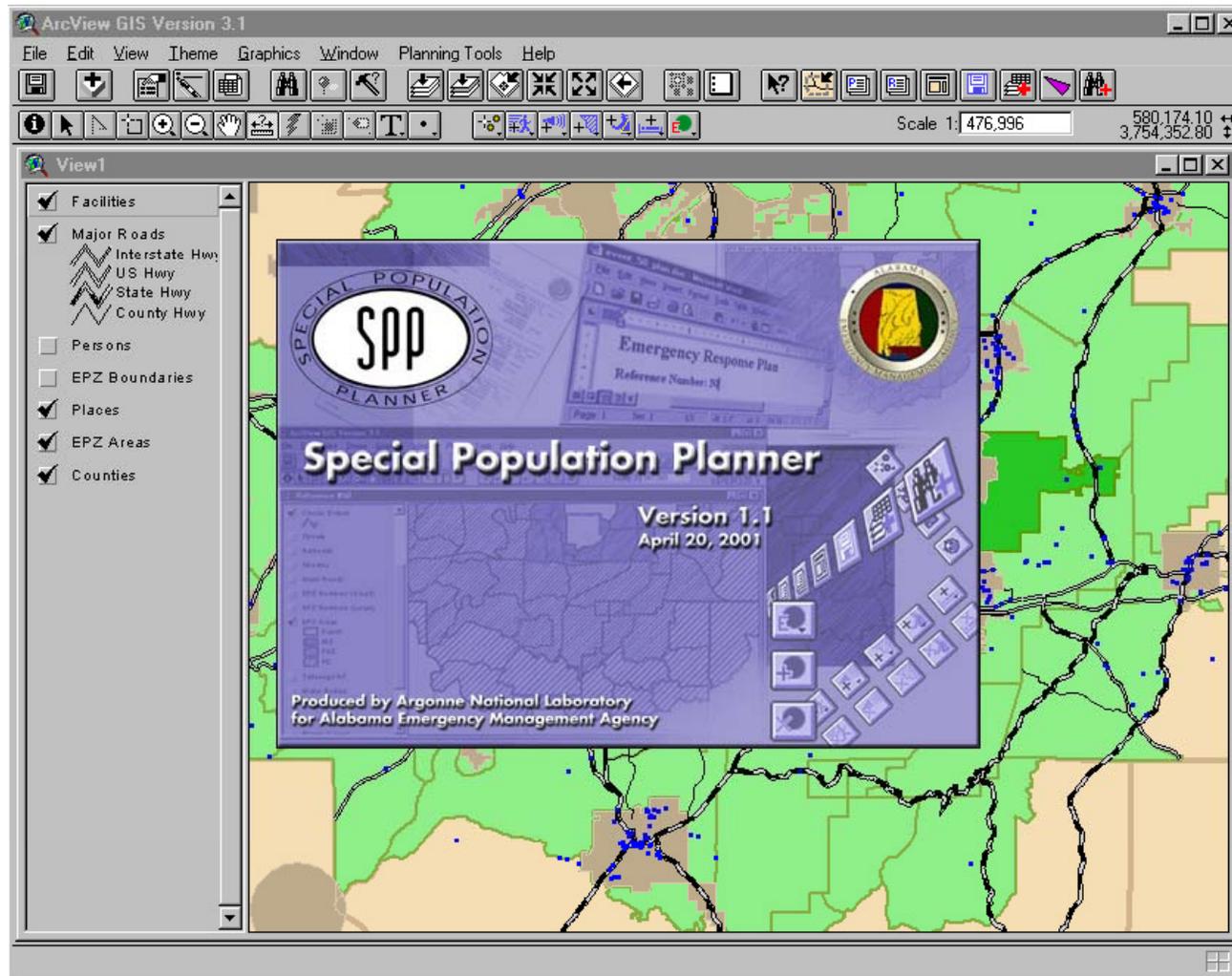
Attitudes of Special-Needs Individuals toward the Threat

- **Personal Risk - 36% think they will die from a depot accident**
- **Distance - 89% know their location in relation to the depot**
- **Officials - 83% say they will follow orders from officials**
- **County Plans - 46% think officials have workable emergency plans**
- **Personal Plans:**
 - **30% have discussed personal protection plans with their family,**
 - **11% with relatives or neighbors, and**
 - **9% with friends**
- **Protective Actions - 6% said they would take no protective action**
 - **Shelter-In-Place - 66% will shelter-in-place if directed to do so**
 - **Evacuation - 72% have confidence in evacuation**

Options for Assisting Those with Special Needs

- **Educate for increased self-sufficiency**
- **Encourage community support system**
- **Develop signal system to take advantage of community resources**
- **In-place support**

Special Population Planner: A GIS-Based Emergency Planning System User Interface



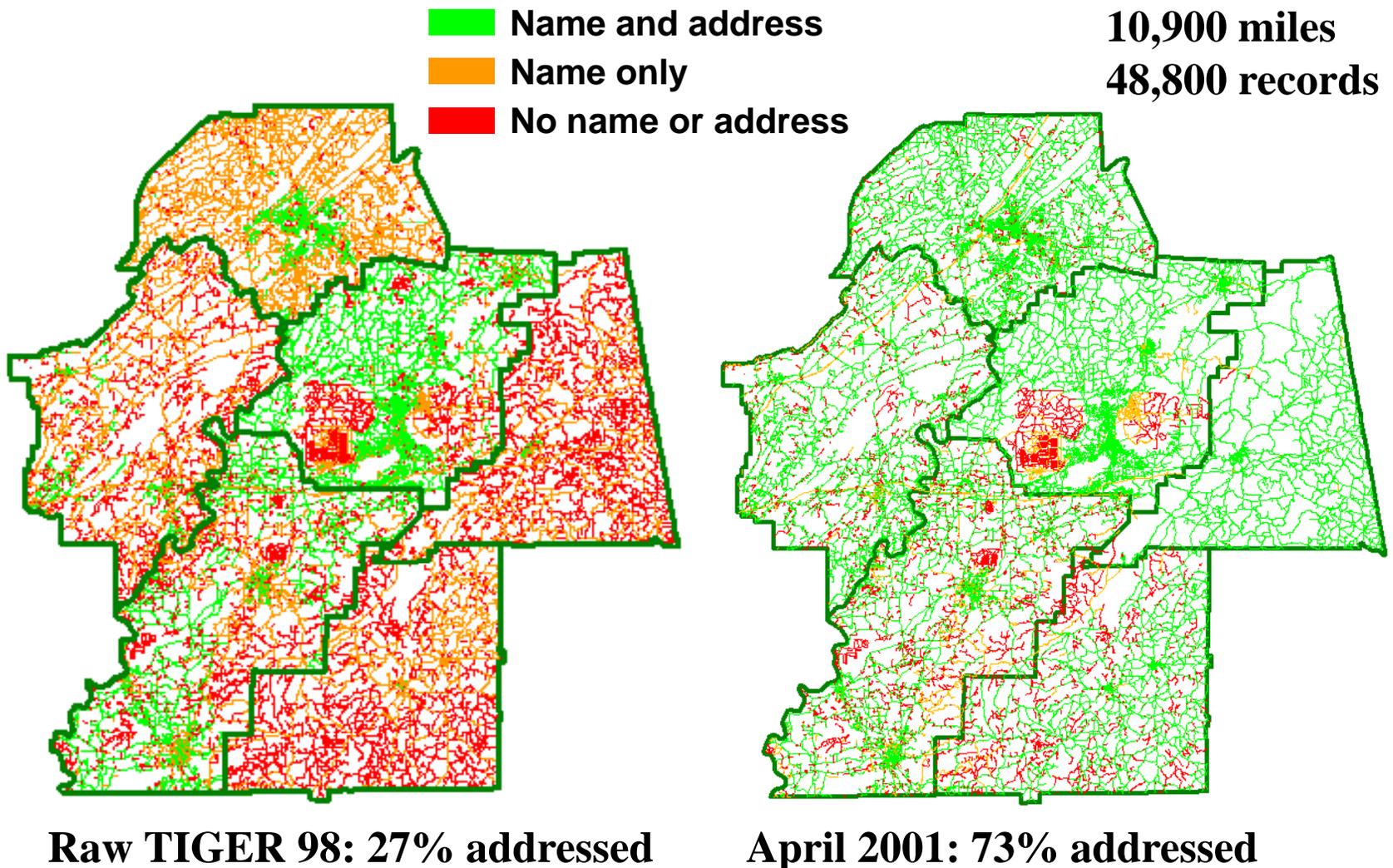
Special Population Planner: A GIS-Based Emergency Planning System Database Development

GIS layers include

- **Supporting map layers**
 - **CSEPP planning zones and planning grid**
 - **General layers such as counties, places, hydrology, etc.**
 - **Addressed street layer for geocoding**
 - **Census data**
 - **Digital elevation model and shaded relief map**
- **Plan-specific layers added by users**
 - **Evacuation and alert routes**
 - **Shelter zones**
 - **Resource locations, and traffic control points**
 - **Wedges representing plume extent**
 - **Derivative layers**

Special Population Planner: A GIS-Based Emergency Planning System

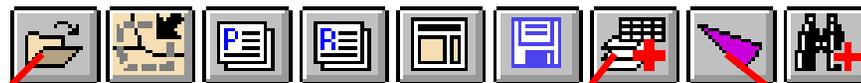
User Interface – Data Maintenance



Special Population Planner: A GIS-Based Emergency Planning System

User Interface - Planning

Examples of planning tools



Choose Method to Determine Reference Number...

Number or Name

Wedge Definition

List of Zones

Choose Map Layer(s)

Choose one or more map layers to add.
It may take some time to load some choices.

- Block Groups (1990)
- Control Points
- Counties
- CSEPP Planning Grid
- EPZ Areas
- EPZ Boundaries
- Facilities
- Igloos

Wedge Definition

Origin

Source Igloo: C1004 Coordinate X: 598388.81

Map Click: Y: 3726015.27

Direction

To Wind Direction (degrees): 160

Width

Wedge Width (degrees): 60

Distance

Distance: 10 Miles

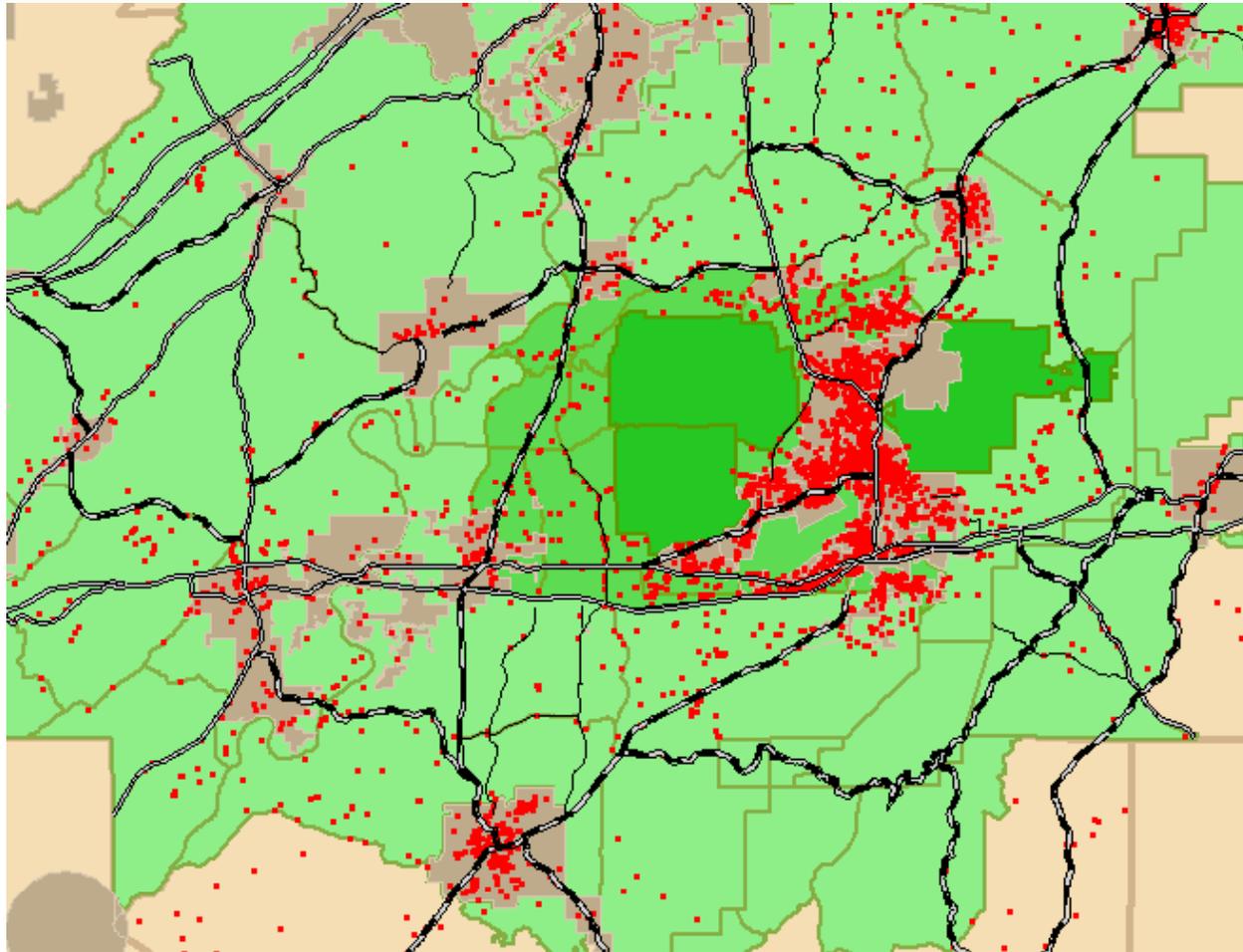
Choose Zones by Reference Number or Name...

Ref Number: 900116 Name: Demonstration Plan

Description: Demonstration Plan



Special Population Planner: A GIS-Based Emergency Planning System Database Development



Distribution of special needs persons

SPP Can Help Develop Individual Plans to Link Special-Needs Populations with Facilities

ArcView GIS Version 3.1

Reference #900113

Scale 1:23,595

592,465.51
3,720,116.43

Evacuation Route

- D2pc
 - 1% Lethality
 - No Deaths
 - No Effects
 - Wedge
- Igloos
 - GB
 - HD
 - HT
 - None
 - Other
 - VX
- Control Points
- Resources

Identify Results

1: Persons - 1603	Shape	Point
ID	691	
FIRSTNAME	Jane	
MIDDLENAME		
LASTNAME	Roe	
SUFFIX		
AGEYR	90	
VISIONPROB	No	
HEARINGPROB	No	
ISCONFUSED	No	
MENTDISAB	No	
CANTWALK	No	
CANTMOVE	No	
CONFTOBED	No	
CANTDRIVE	No	
BACKPROB	No	
ONGXYGEN	No	
WHEELCHAIR	No	
HEARTPROB	No	
PHYSUNABLE	Yes	
WHATELSE		
FAMCANSST	No	
CANSHELTER	No	
CANGTRIDE	No	
CHILDALONE	Yes	
ARFORCHILD	No	

Event_900113_Plan.doc - Microsoft Word

Emergency Response Plan

Collective shelter for Jane Roe and Grandchild

If notified through her Tone Alert Radio, Jane Roe will:

- 1) → Walk northeast on Alan Drive to Harry Ayers Drive.
- 2) → Turn southeast (right) and walk on Harry Ayers Drive to Bynum Elementary
- 3) → Enter Bynum Elementary School's main entrance and proceed to collective

Project saved to 'divisionreview2.apr'

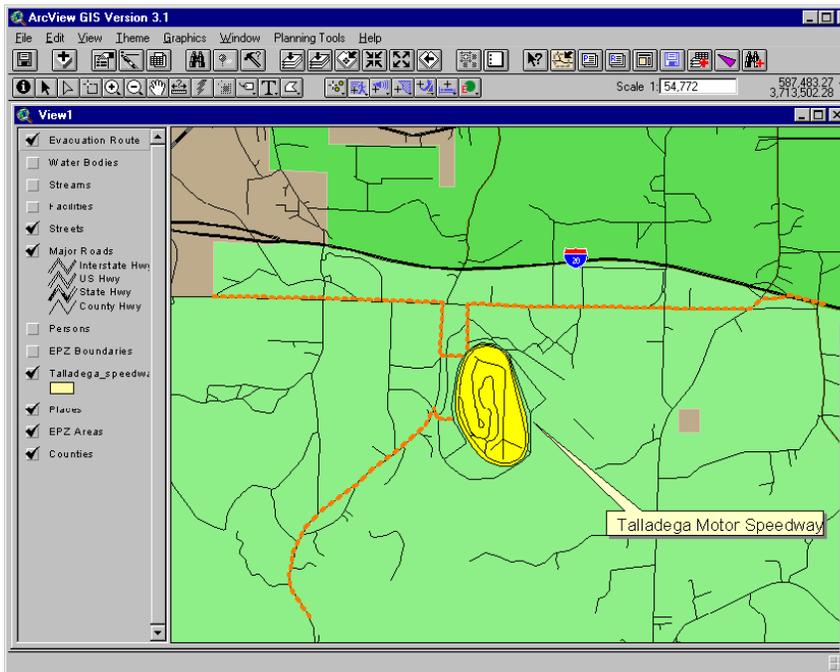
Special Population Planner: A GIS-Based Emergency Planning System

User Interface - Planning

Examples of “all hazards” planning SPP could support

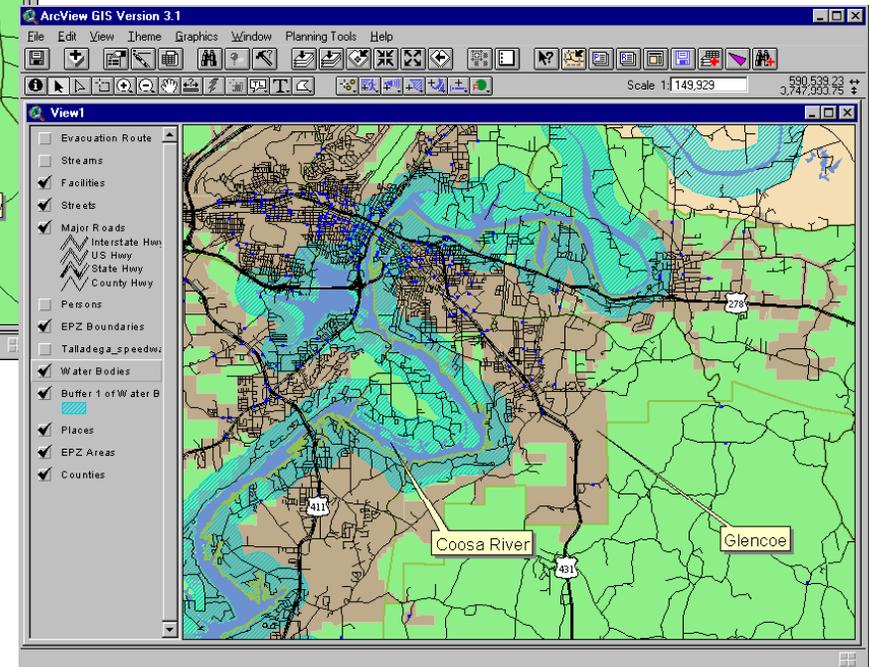
- Accident and fire along I-20
- Tornado in Ashville
- Forest Fire in Talladega National Forest

Flood of Coosa River



Terrorist activity at Talladega Motor Speedway

- Ice storm with downed power lines
- Natural gas pipeline rupture and fire



Key Points for Emergency Managers

- **Special-needs persons do not readily self-identify.**
- **Multiple data collection methods required.**
- **Data is very perishable and situations change.**
- **Planning for the special-needs population needing assistance is a difficult challenge, especially for those with extreme needs.**
- **Planning for special populations requires special tools.**