FTA RESEARCH

National Study on Carless and Special Needs Populations

Mobilizing Your Community for Emergency Evacuation

JUNE 2013

FTA Report No. 0067
Federal Transit Administration

PREPARED BY
John L. Renne, Ph.D., AICP
University of New Orleans

Thomas W. Sanchez, Ph.D.
Virginia Tech

Lauren Brown
University of Utah

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John L. Renne, Ph.D., AICP
University of New Orleans

Thomas W. Sanchez, Ph.D.
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Lauren Brown
University of Utah

Jacky Grimshaw, Center for Neighborhood Technology
Pam Jenkins, University of New Orleans
Todd Litman, Victoria Transport Policy Institute
Brian Wolshon, Louisiana State University
Clare Cahalan
Jon Dodson
Mariana Marmol
Robert Peterson
Max Williamson

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Office of Civil Rights
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Washington, DC 20590

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Metric Conversion Table

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liter	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
NOTE: volumes greater than 1000 L shall be shown in m^3				
MASS				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C

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13. ABSTRACT

The National Study on Carless and Special Needs Evacuation Planning was a multi-year study funded by the Federal Transit Administration to research how state Departments of Transportation (DOTs), metropolitan planning organizations (MPOs), transit agencies, and local governments are considering, in the context of their emergency preparedness planning, the unique needs of carless individuals and people with specific and/or special needs. This report includes findings of that study as well as an emergency evacuation guidebook and workbook and a summary of stakeholder workshops, including case studies.

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ABSTRACT

The National Study on Carless and Special Needs Evacuation Planning was a multi-year study funded by the Federal Transit Administration to research how state Departments of Transportation (DOTs), metropolitan planning organizations (MPOs), transit agencies, and local governments are considering, in the context of their emergency preparedness planning, the unique needs of carless individuals and people with specific and/or special needs. This report includes findings of that study as well as an emergency evacuation guidebook and workbook and a summary of stakeholder workshops, including case studies.

EXECUTIVE SUMMARY

The National Study on Carless and Special Needs Evacuation Planning was a multi-year study funded by the Federal Transit Administration (FTA), led by Dr. John L. Renne of the University of New Orleans and Dr. Thomas W. Sanchez of Virginia Tech. The objective of this study was to research how state Departments of Transportation (DOTs), metropolitan planning organizations (MPOs), transit agencies, and local governments are considering, in the context of their emergency preparedness planning, the unique needs of carless individuals and people with specific and/or special needs.

This Executive Summary provides highlights of the literature review, case studies, focus groups, and findings. All of the deliverables are available at http://carlessevacuationstudy.wordpress.com/.

Literature Review Findings

The literature review of the National Study on Carless and Special Needs Evacuation Planning examines carless and special needs evacuation planning across the United States and indicates that the integration of transportation planning into evacuation emergency planning is increasing due, in part, to the recognition that populations with special needs—people with mobility, sensory, and cognitive impairments, as well as limited English proficiency (LEP)-require specific evacuation plans tailored to their different needs and that address the carless aspect of these and other groups.

This study provides guidance to ensure that future evacuations effectively and efficiently accommodate disadvantaged populations that lack access to cars. This report reflects that emergency response plans should be evaluated based on the quality of service provided to the most vulnerable and disadvantaged populations. It does so by looking at how or whether state DOTs, MPOs, transit agencies, and local governments consider the unique needs of persons who are minorities, low-income, older adults, or have disabilities or who are LEP persons within "carless" households and residents.

Serving disadvantaged populations often requires new perspectives, relationships, tools, and methods. Conventional transport planning based on census data and travel surveys tend to under-represent travel activity by disadvantaged populations who are less likely to use motorized travel. In fact, conventional transport planning may provide little to no information on the number of people with disabilities in an area or the portion of households that lack access to a motorized vehicle for emergency evacuation. Special data collection and planning activities may be needed to identify disadvantaged populations and evaluate their transport needs and special needs during emergency evacuations.

Communication across various agencies and levels of government is essential for the successful evacuation of vulnerable populations. Researchers also agree that governments and agencies should work together with non-profit organizations

and other service providers to find out how best to communicate with carless and special needs populations.

In addition to highlighting the importance of cross-jurisdictional cooperation, the role of government, the private sector, and non-profit organizations in carless evacuations has also been identified in the literature. The federal government often sponsors research, mandates standards, and facilitates cross-agency communications. States can have a funding and coordination role in assisting local and regional governments and statewide non-profit associations. State DOTs may use technologies to monitor traffic flows and road conditions during disasters and evacuations, helping to direct mass transit and other vehicles that are evacuating carless populations. Regional and local governments need to focus on the implementation of actual plans to ensure they have adequate vehicles for evacuation and the outreach capacity to disseminate information to those in need. They should also coordinate with non-governmental agencies, neighborhoods, or community groups that service or have connections to carless populations and LEP persons.

In terms of technology, many agree that technologies implemented for emergency events provide benefits not only to vulnerable populations but also to the general public, making these technologies more cost-effective. Additionally, this makes the case for agency cooperation. Information technology can help improve evacuation plans for a number of emergencies (i.e., terrorist attacks or disasters) with the assistance of geographic information systems (GIS) and other evacuation-simulating software. Disaster response analysis should be a normal part of transportation planning.

Different types of disasters call for different measures for evacuation. A wide range of possible disasters, transportation system risk, and options for responding to these emergencies must be considered. It is essential that emergency plans identify who does what during a disaster, avoiding ambiguity as to planning and decision-making responsibility.

The role of an integrated, multimodal approach for evacuation planning is also discussed at length in the literature. Researchers find that increasing transportation system diversity tends to increase its resilience or the system's ability to accommodate and adapt to variable and unexpected conditions, thus avoiding catastrophic failure. Each mode has a unique performance profile, determining its limitations and opportunities within an efficient transportation system. Multimodalism is important for emergency response and evacuation planning because it potentially can accommodate different types of people and mobility needs, and it takes into account resource constraints.

Case Study Findings

The case study portion of this study examines the existing planning efforts and publicly-available plans addressing carless and special needs evacuation within five major American cities: Chicago, Miami, New Orleans, New York, and San Francisco. Special attention was paid to areas where the state's plan went beyond the National Response Framework.

In Chicago, planning efforts focus on terrorism and radiological emergencies. For security reasons, these plans are confidential. Their strength relies on their use of simulations and exercises, although it is unclear to which extent carless and special needs persons are considered in these simulations.

In New York City, planning efforts focus primarily on two areas: terrorism and coastal storms, both of which are kept confidential. In New York's case, the public is made aware of the parts of the plans that relate to them, especially the location of the nearest evacuee center. One of the strength of these plans, however, is public awareness. Public education efforts made by the Office of Emergency Management cover a wide range of circumstances or possible events and are offered in the widest variety of languages than any other city's plans.

In Miami and New Orleans, emergency plans focus mainly on the threat posed by hurricanes. These plans are made public and involve coordinated public transit and paratransit efforts to evacuate carless and special needs people effectively. Due to its location, Miami has had much more experience in this area than New Orleans. For this reason, Miami's carless and special needs evacuation planning is exemplary among the case study cities. Sharing a detailed account of its evacuation planning efforts could help other cities avoid the mistakes that Miami has learned from long ago. Although New Orleans had a plan previous to Hurricane Katrina in 2005, the plan was not successfully executed until 2008 for Hurricane Gustav. Strengths in both the cities revolve around the experience and management of logistics, particularly among organizations, agencies, and regions.

In San Francisco, planning focuses primarily on earthquakes. Due to the unpredictability of earthquakes, citywide evacuations are not possible or particularly necessary. San Francisco's emergency planning is held confidential by the agencies that developed the plan, yet its strength revolves around community involvement. The city accounts for community-based resources in its planning efforts through a concept called the "community-hub," which brings together organizations and resources.

Focus Group Findings

This report presents the findings from a series of stakeholder focus groups held with government officials and non-profit organizations and conducted in Chicago, Miami, New Orleans, New York, and San Francisco on the subject of carless and

special needs evacuation planning. The report presents the challenges that the different government and non-profit agencies face as they plan for the needs of vulnerable populations. The findings also highlight the resources available to each city as well as the strengths of the different emergency planning efforts.

Overall, the challenges surrounding jurisdiction, registries, inclusion, outreach, collaboration, and education with regards to evacuation planning are the same across the board and affect many cities as they plan for the evacuation of disadvantaged residents.

Outreach and identification of special needs and/or carless persons are the greatest challenges. The public needs to know about the risk levels, evacuation routes, and other important emergency response information. Participants concurred that while dissemination of information is critical during an emergency in order to have a successful evacuation, reaching vulnerable populations can be very difficult. Outreach efforts within the special needs and carless populations are often complicated by the fact that these populations are quite diverse and have a variety of needs and demands. In addition, outreach as an activity necessitates both an agency or government's efforts and an individual's effort. Carless or special needs persons need to communicate with the appropriate agencies so that their needs can be met during a state of emergency. Targeted outreach needs to focus on the diverse set of needs of these populations—the blind, the hearing impaired, the paraplegic, the homeless, and those in post-operative recovery, to name a few. The public's concerns over confidentiality need to be appropriately addressed as well to avoid low rates of participation in disaster registries.

Most cities provide disaster assistance registries, which provide critical emergency resource planning information and a real opportunity for agencies to respond to people's needs. In Miami's case, agencies expressed low participation in disaster registries, and assisted evacuations was also an issue. Agencies believe that the low participation is due to reluctance on the part of undocumented immigrants. Convincing this population that evacuation efforts will not lead to deportation is seen as important for increasing participation.

An individual's reluctance to evacuate also presents a challenge. During the focus groups, the two prominent reasons to stay discussed were "attachment to place" and "complacency." Residents that have experienced a similar threat a number of times feel less threatened and tend to undermine the risk or danger that a new natural disaster could cause. Such was the case in Florida when many residents stayed during Hurricane Andrew, which made a post- hurricane evacuation necessary. After Hurricane Andrew, emergency-planning efforts in Miami changed dramatically as a reaction to the disaster. However, after a few seasons of less strong landfalls, complacency was noted among residents.

Additionally, many older adults feel safer staying home and choose to weather the storm on their own terms rather than leave their neighborhood. Income also plays a role in evacuation, as low-income residents are afraid of the expense and the length of the evacuation.

A strength shared among some of the cities (in particular, New York City and San Francisco) was the effectiveness of cross-jurisdictional collaboration efforts. The focus groups revealed that collaboration efforts generally extend from each city's Office of Emergency Management (OEM) into three possible scenarios:

- Collaboration that intends to capacitate the community-level emergency response
- Collaboration efforts that occur between municipalities
- Collaboration that looks to a higher authority to overcome any cross-jurisdictional barriers that may exist between municipalities or other local agencies

Cities are recognizing the importance of collaborations with the human service and non-profit sectors to successfully identify special needs population. These groups can and should be brought into the planning process. In fact, some cities are recognizing the importance of emergency response at the local neighborhood levels through the use of pre-existing networks that allow people with special needs to be identified. Local agencies work not only with residents but also with each other to strengthen community's emergency response.

Guidebook, Workbook, and Workshop Findings

The purpose of the "Mobilizing Your Community for Emergency Evacuation: Vulnerable Populations Planning Workbook" is to help with the process of evacuation planning for carless and special needs persons. The workbook is a companion to the "Mobilizing Your Community for Emergency Evacuation: A Guidebook for Vulnerable Populations," which provides background on planning issues. The workbook follows the general outline provided in the guidebook with sections on Planning Process, Outreach, Plan-making, and Evaluation.

Representatives from Chicago, Miami, New Orleans, New York, and San Francisco attended a workshop in each city. Before the workshop, they were given time to review each of the documents, followed by meetings were convened in each of the five cities to discuss their feedback. The mix of organizations that participated demonstrated the diversity and reach of planning activities throughout each of the case study cities and their regions. We were able to hear directly from practitioners who handle the day-to-day interactions with community members and other organizations tasked with planning and executing emergency response and evacuation activities.

We found that whereas many of these cities encountered several of the same challenges, there were some issues that were unique to particular jurisdictions. As might be expected, most of the groups acknowledged that evacuation planning is quite complex and that the fragmentation of agencies, organizations, and other groups involved present significant challenges related to coordination, communications, and information sharing —not only among organizations but also with the public. This is understandable considering the wide range of logistical factors involved. Much of this fragmentation is a function of the geographic sizes of these particular cities and the large populations that reside in them. These large cities are also culturally-diverse, meaning that notifications and other communications must be in multiple languages and include otherwise hard-to-reach populations. Another challenge related to communications is that in most places, the occurrence of large-scale evacuations is very infrequent and, therefore, the planning process, preparation, conversation, and evacuation needs tend to be inconsistent over time. These efforts lose priority with time since the last event. Losing priority has an impact on the resources made available for planning efforts as jurisdictions struggle to meet other public service needs.

Other particular issues that emerged are that, in many cases, evacuation plans, routes, and other specifics are confidential and may reveal system vulnerabilities during an emergency or evacuation event. There is concern that ill-meaning individuals or groups may exploit these plans. Therefore, the question is how to properly plan when the plans cannot be made public far in advance of an emergency. Also, the location of individuals varies by time of day, so evacuation scenarios need to take into account evacuation from home, work, and school locations. School evacuations are challenging from the standpoint of connecting children with adults who themselves are in locations other than home.

Several of the points raised by stakeholders highlight not only the complexity of evacuation planning for carless populations, but also the progress that is being made on the topic. Cities such as Miami that experience frequent evacuation events have developed sophisticated planning and communication systems over time. The State of Florida is proactive in evacuation planning and clearly sets an example for other regions. Similar experiences were noted in post-Katrina New Orleans and in New York. This research was completed before Superstorm Sandy and thus does not benefit from lessons learned during that experience. However, the lessons from this study should help guide evacuation planning for carless and vulnerable populations across the nation, particularly for urbanized regions.

SECTION

1

Mobilizing Your Community for Emergency Evacuation: A Guidebook for Vulnerable Populations

Introduction

"Hope for the best but prepare for the worst" is the key to good emergency response planning. The objective of this guidebook is to help communities prepare for a particularly bad situation that creates the need to evacuate a community. While we hope this situation does not occur, the "Mobilizing your Community for Emergency Evacuation Guidebook" provides guidance for local and regional governments to develop a comprehensive, community-based planning process for emergency evacuations that accommodate all residents, particularly carless and other special needs populations.[1]

This guidebook addresses a particularly critical and sometimes complicated component of emergency response planning—evacuating vulnerable populations who, for various reasons, require special support before, during, and after an emergency event. A community's ability to provide such practical support to vulnerable people during their time of greatest need is a true test of the community's skill and compassion.

The issues of emergency response, evacuation, and special needs populations have not been well integrated in past planning efforts. One of the objectives of this guide is to draw together relevant materials on these topics for consideration by emergency response planners and their organizations. The accompanying workbook (Section 2) is meant to provide practical guidance for plan-making in this regard. The primary contribution of this guidebook and

[1] Defined by the Nation Response Framework as "Populations whose members may have additional needs before, during, and after an incident in functional areas, including but not limited to: maintaining independence, communication, transportation, supervision, and medical care. Individuals in need of additional response assistance may include those who have disabilities; who live in institutionalized settings; who are elderly; who are children; who are from diverse cultures; who have limited English proficiency or are non-English speaking; or who are transportation disadvantaged" (NRF online glossary).

the workbook are that they fill the void of evacuation planning for vulnerable populations.

In most regions across the United States, there is a lack of adequate planning to accommodate carless and special needs people during evacuations. Moreover, there is a lack of resource sharing, needs identification, planning education, and outreach. These problems are complicated when disasters cross jurisdictional boundaries. This guidebook presents several elements of a planning process to coordinate emergency evacuations for carless and special needs populations.

The evacuation of New Orleans for Hurricane Katrina was one of the most significant evacuations in U.S. history, with an estimated one million people leaving the city over two days. This success was based on years of planning to create an effective contraflow highway evacuation system that was part of an overall regional traffic plan. Officials at all levels of government and across state boundaries participated in planning, testing, practicing, coordinating, and educating the public.

Unfortunately, much of this hard work went unnoticed because the national attention focused on the significant failures in the evacuation effort, particularly the failure to adequately serve disadvantaged people who were unable to leave the city because they lacked a private automobile. This included persons with disabilities, the young, older adults, persons who are poor, and many tourists. This situation resulted not from a lack of resources, since hundreds of public transit and school buses went unused and were eventually ruined by flooding. Better carless and special mobility needs evacuation planning, as demonstrated during the evacuation of New Orleans during Hurricane Gustav in 2008, could have saved lives, equipment, and money and would have resulted in fewer emergency rescues after the storm.

Objective

The objective of the guidebook is to help planning organizations develop resilient emergency response and evacuation plans and processes that incorporate special needs populations. There is an extensive body of experience and research on disasters, emergency response, and evacuation. It recognizes the wide range of situations that can occur, reflecting different types of communities, disasters, geographic conditions, and other circumstances. We, therefore, cannot provide a single, standard solution to the challenges facing emergency planners and responders. This guidebook is organized around the four themes shown in Figure 1-1. First, our approach is multimodal, all-hazards, and regional. Second, we recommend an identification or assessment step that lays a local framework for evacuation planning. Third, building from the identification step, a planning process can be developed that reflects local needs and resources. Finally, we

recommend an evaluation step that is continuous and seeks to improve regional plans and processes.

Because the framework involves extensive data collection, analysis, coordination, and input, the cooperation of regional partners becomes quite important. As discussed later, required bodies (such as Metropolitan Planning Organizations [MPOs]) are a logical institutional setting for the role of coordination. Underlying this process is an inclusive and transparent participation strategy that integrates both public education and involvement.

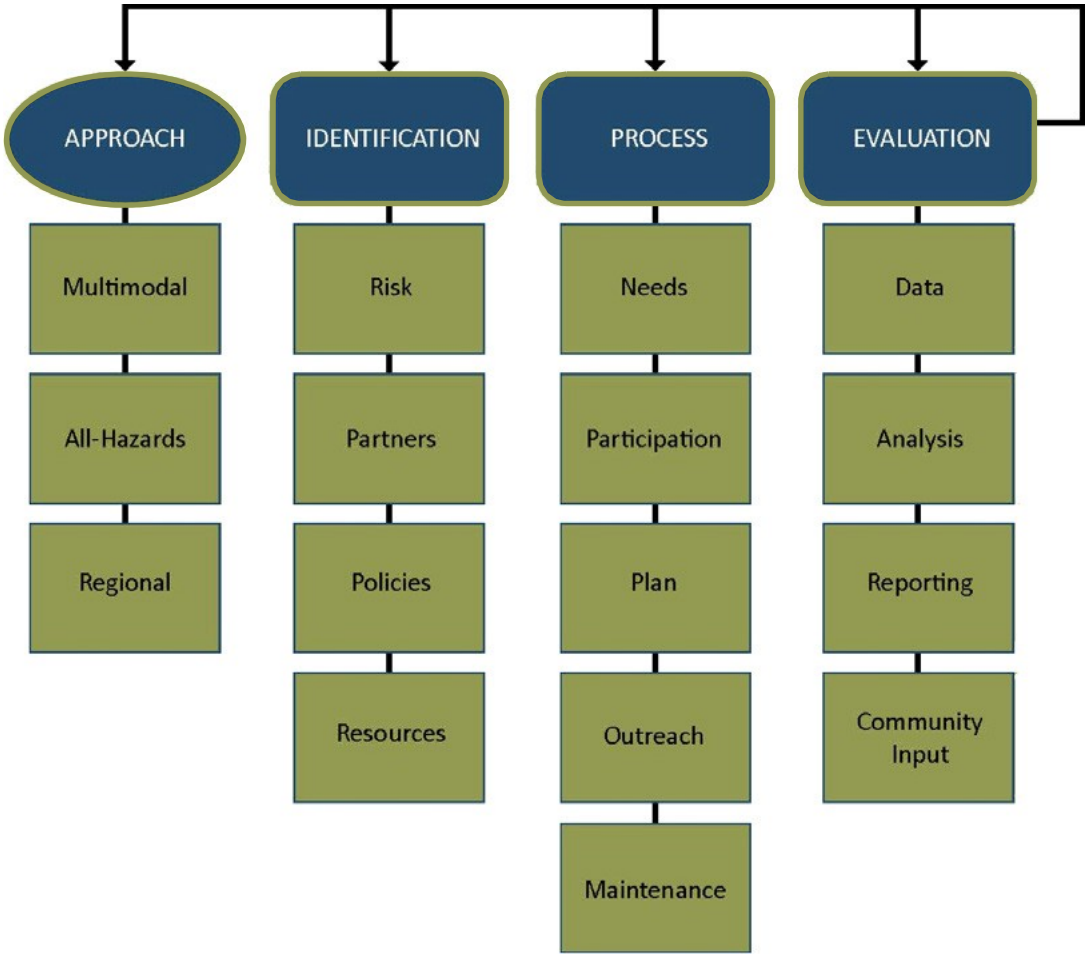


Figure 1-1 *Guidebook Framework*

Carless Populations Nationwide

New Orleans is not unique. In fact, according to the 2000 U.S. Census, seven cities had carless populations higher than the 27 percent in New Orleans, including New York (56%), Washington, D.C. (37%), Baltimore (36%), Philadelphia (36%), Boston (35%), Chicago (29%), and San Francisco (29%). Nationally, approximately 10 percent of the population is persons with disabilities, and many of these individuals cannot drive, even if a car exists within their household. As the population ages, an increasing portion of the population is becoming mobility-constrained. Even older adults who have cars may be reluctant to drive them during a mandated long-distance evacuation. These groups face disproportionate risk and suffered loss of life in the flood of New Orleans. For example, 71 percent of those who died in Katrina in New Orleans were over the age of 60 and 47 percent were over the age of 75 (AARP 2006a, 2006b).

Perhaps more alarming than the scope of emergency transport for low-mobility populations is the persistence of the problem. The extra risks that carless households face during an evacuation are well-recognized and have been documented in numerous reports and papers (Bourne 2004; Fischett 2001). Despite this attention, relatively little has been done to improve the situation, and only recently has a concerted effort been made to address this problem. Although some plans call for the use of local resources for the movement of indigent and older-adult populations during times of emergency, the strategies remain questionable. Based on the current level of preparedness, it is quite likely that the tragedies seen in New Orleans during and after Hurricane Katrina are bound to be repeated unless best practices can be understood and adopted widely (Jenkins, Laska and Williamson 2007).

Creating a Planning Process for Special Needs and Carless Populations

This section discusses the types of situations that require evacuation. Table 1-1 lists various types of disasters and their emergency transportation requirements. An evacuation plan should highlight the disasters that are most likely to occur in the area, although it should emphasize the importance of an all-hazards approach. It should also address multiple hazards that could occur simultaneously, such as an earthquake causing natural gas fires or flooding during a hurricane.

Table 1-1 *Transportation Issues Based on Disaster Type*

Disaster Type	Geographic Scale	Warning	Evacuation	Emergency Services	Search and Rescue	Quarantine	Infrastructure Repair
Hurricane	Very Large	Days	ü	ü	ü		ü
Earthquake	Large	None	ü	ü	ü		ü
Tsunami	Very Large	Short	ü	ü	ü		ü
Flooding	Large	Days	ü	ü	ü		ü
Forest Fire	Small to Large	Usually	ü	ü	ü		ü
Volcano	Small to Large	Usually	ü	ü	ü		ü
Blizzard/Ice Storm	Very Large	Usually		ü	ü		ü
Building Fire	Small	Seldom		ü	ü		
Explosion	Small to Large	Seldom	ü	ü	ü		ü
Bus/Train/ Aircraft Crash	Small	Seldom		ü	ü		ü
Radiation/ Toxic Release	Small to Large	Sometimes	ü	ü	ü	ü	
Plague	Small to Large	Usually		ü		ü	
Riot	Small to Large	Sometimes	ü	ü			
War	Small to Large	Usually	ü	ü			ü
Landslide/ Avalanche	Small to Medium	Sometimes	ü	ü	ü		ü

Disasters and Types of Evacuations

Classification frameworks categorize disasters to find commonalities that will assist in organizing response planning efforts. For instance, emergencies with similar frequencies and impacts can involve similar planning strategies and resources. This would depend on the nature of the events being air, water, fire, geological, or other climatological events. These classifications can also help to understand the potential urgency and associated response actions including evacuation and recovery. These evacuation guidelines must be tailored to the specific risks and transport conditions in each community.

Classifying disasters so that particular circumstances can be associated with the most appropriate evacuation method helps to narrow the range of alternatives that need to be considered in the planning process. Drawing on prior research (especially from past disasters) also helps to better understand the continuum of risk involved with different categories of natural disasters because different intensities will involve different types of evacuation responses. As discussed, disasters are multidimensional and complex. Therefore, planning efforts will involve significant amounts of information, not only about emergency preparedness but also public information and education.

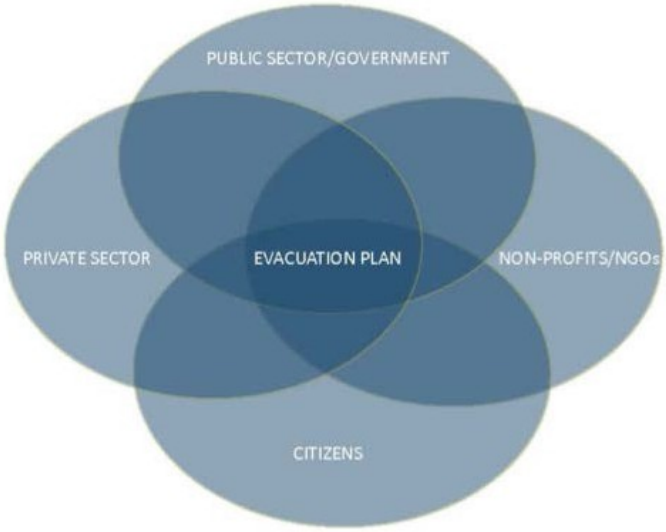
Partners

We recommend that regions identify lead agencies and/or conveners to establish regional partnerships to initiate an ongoing planning process. The convener should be able to bring together all stakeholders in an atmosphere of mutual respect, by involving the various governments of an entire risk area that is partitioned by jurisdictional boundaries and needs to be able to access resources from an even larger area during a major crisis. Partners may include:

- Counties
- Local utilities
- Municipalities
- Transit agencies
- MPOs
- State agencies
- Emergency Management agencies
- Special needs service providers
- Private bus companies
- Community Emergency Response Teams (CERTs)
- Community transportation providers (schools, church vans, etc.)
- Non-English speaking community leaders
- Area Agency on Aging
- Other advocates (for special needs, for public transit users, etc.)

Figure 1-2

Partners Involved in a Coordinated Evacuation Plan



This planning process provides an opportunity to develop effective working relationships among partners, rather than waiting for an emergency event to occur. Public transit and social agencies in particular should be involved in emergency

evacuation planning in order to tap their special knowledge and resources. People familiar with public transit planning and operations and with special needs populations can provide important insights that ensure that the plan is practical and responsive to people with mobility constraints and other special needs.

From several reports, a few general themes for government's role in emergency planning for special needs households have emerged. These include but are not limited to the following:

1. Engage the private sector and non-profit organizations through inclusion in emergency planning and by providing them with communication and outreach tools, training on emergency procedures, and direct or in-kind financial support.
2. Support research to better understand the size, location, and specific needs by gender, race, ethnicity, geography, age, income, language, disability, and/or carless population to aid in their preparedness and evacuation.
3. Improve and tailor public education materials on disaster preparedness and evacuation.
4. Facilitate the use and development of existing and new technologies to aid in the planning and operations of emergency evacuations.
5. Increase focus on the institutional, operational, and technological aspects of emergency planning and operations by documenting existing resources and gaps and setting standards, mandates, and models for evacuation plans and capacity. (Prior emphasis has been on the infrastructure and enforcement aspects of emergency planning.)
6. Facilitate interaction between emergency management agencies and other government agencies, including transportation, human services, and health care.

Private-Sector and Non-Profit Organizations Roles

The private and non-profit sectors have expressed their interest in having a larger, planned role in the provision of services in preparation, evacuation, mitigation, and recovery from emergencies and disasters. The American Bus Association, which includes private charter coaches and tourism operators, through its sponsorship of the 2006 report card by the American Highway Users Alliance, pointed out a role for private coaches in moving large groups of people to diverse destinations during a disaster. They add that private coaches, unlike school buses, have room for luggage and personal belongings, without loss of seat space.

Some have recommended that private centers for independent living (CILs) communicate and coordinate with local and/or regional emergency management agencies (EMAs), other CILS, disability agencies, and communities to create evacuation plans for persons with mobility needs. Statewide independent living councils (SILCs) should play a leadership role in bringing together various

organizations throughout the state. CILs and SILCs should also campaign for state and regional EMAs to separate people with disabilities from other people with so-called “special needs" (usually defined in terms of major medical support needs) in their emergency evacuation plans. In addition, this distinction should be clearly outlined in training to front-line emergency personnel. They should also have systematic training by staff and clients of CILs so that persons with disabilities have personal disaster plans. Community-wide efforts should identify people with disabilities in the community and to link them with services they will need in a disaster to either evacuate or shelter in-place.

Investing in local non-governmental organizations at the community level can also help post-disaster since people whose ability to function independently are dependent on access to medical and social supports.

Government agencies can also help organize citizen volunteers help in disasters. For example, in the New Orleans and Louisiana evacuation plans, emergency management officials encouraged local churches to implement “good neighbor" strategies in which motorists who had extra capacity helped evacuate their neighbors who lacked transportation.

Policies

Policies are rooted in the planning process. These processes present challenges to emergency response and evacuation planners and along with the physical and technical aspects of a disaster that should be understood, the policy landscape needs to also be mapped and understood.

Government agencies and non-profit organizations face many challenges when planning emergency response services for special needs populations. Recent disasters, such as Hurricane Gustav, have not only illuminated the limitations of outmoded evacuation plans that have traditionally accounted for auto-dependent populations but also have highlighted evacuation planning techniques that have safely and effectively evacuated special needs populations. Advancements in information technology can augment existing evacuation plans with the assistance of modeling and evacuation simulating software.

Disaster response analysis should be considered a normal part of transportation planning. For example, local and regional transportation plans and transit agency plans should include analysis of disaster vulnerabilities (the types of disasters that could occur in the service area), risks to the transportation system, emergency response transportation requirements, and how emergency transportation activities will be coordinated. This may reference a general emergency response plan or be a special section of the transportation plan.

Emergency response plans should be evaluated based on their effectiveness at serving the most disadvantaged and vulnerable populations. This requires

emergency response planning to give special consideration to serving people with special needs, including physical and mental disabilities, low incomes, non-English speaking, and socially-marginalized groups such as homeless populations.

Many people, especially those in vulnerable population groups, cannot speak or read English, lack telephone and Internet access, lack a reliable mailing address, distrust public officials, and face other complications in their lives. As a result, serving these populations often requires innovative planning and communications programs that respond to their needs. This requires working with social service agencies, community organizations, medical and mental health professionals, and special service providers to understand the needs, obstacles, and preferences of these groups.

Emergency action plans should specifically identify roles and responsibilities during disasters. There should be no ambiguity as to planning and decision-making responsibility, although plans should be flexible so they can respond to changing needs and conditions. Such plans should be critiqued by stakeholders and external experts to identify possible weaknesses and potential improvements. The plan should be updated regularly and reviewed after any exercise or actual emergency event.

Transportation facilities and equipment should be designed to withstand extreme conditions (earthquakes, storms, etc.). Critical transport system components should be designed to be fail-safe, self-correcting, repairable, redundant, and autonomous. For example, designing intersections with roundabouts rather than traffic lights may be safer and more efficient considering that traffic can flow even without electricity. Staff should be cross-trained to perform a multitude of roles. Transportation systems should be designed with redundancy, with multiple routes and modes to each destination, including rail corridors, bus routes, ferry services, roads, paths, and bridges. Emergency response planning should evaluate potential problems from, and responses to, the failure of critical links in the transportation networks during a disaster, such as the collapse of a bridge or closure of a highway due to a major crash.

Communications systems, in particular, should be designed to function despite multiple stresses on people and equipment. Public agencies should develop effective ways to maintain communication systems among transportation system managers, staff residents, businesses, and travelers under normal and emergency conditions.

Job requirements for transportation agency staff should specify which positions are “critical" during emergencies, with specific instructions concerning employees' responsibilities to be available. This may require public agencies to help protect and evacuate critical staff’s families while they work. For example, transit operators may be allowed to carry their families when evacuating buses and trains.

Plans should be flexible and provide systems to prioritize use of transport resources—for example, systems should be designed to give emergency, service, and freight vehicles priority over general traffic. Governments should maintain contingency plans for allocating fuel and other resources in emergencies.

Emergency transportation plans could include the following:

- **Communication and support networks that serve the most vulnerable people**. This involves a system to identify and contact vulnerable people, provide individualized directions for their care and evacuation, and establish a chain of responsibility for caregivers. This requires effective community outreach before an emergency situation develops. Each service area (municipality or neighborhood) should have an inventory of people who may need assistance, ways to contact them, directions for their evacuation, and a list of their friends and family who can provide emergency support. If possible, social service agency staff or volunteer community members should travel with vulnerable evacuees to provide information and reassurance to people who may be hesitant. Implementing such a system requires that planning professionals work with a broad range of community groups, professionals and social service organizations.
- **Guidelines for emergency deployment of public transportation resources**, including buses, vans and trains. This requires an inventory of such vehicles and their drivers and clearly established instructions for their use.
- **A system to prioritize evacuations** based on factors such as geographic location (evacuate the highest risk areas first), and individual need and ability.
- **Emergency evacuation information distributed to at-risk populations and all officials**, including instructions on pick-up locations and what evacuees should bring: This information should be distributed regularly, not just during major emergencies.
- **Coordination of fuel, emergency repair and other support services**.
- **Priority for buses and other high occupancy vehicles where critical resources (road space, ferry capacity, fuel, etc.) are limited**.

Resources

Many of the recommended actions may require new resources for many jurisdictions or the coordination of existing resources. It is important to identify the resources available to aid in small and/or large-scale evacuations. An inventory of resources can include:

- Shelters
- Hospitals
- Prisons
- Buses
- Airports

- Boats
- Trains
- Paratransit

In addition to an inventory, planning agencies should develop initial estimates of resource demand and resource supply. The fact that resources will need to come from various providers and possibly from a broader-reaching geography than just the risk area reinforces the need for a regional plan. Resource supply estimates should meet demand, and experience has shown that a deficit of resources should not be justified with discussions of "triage."

Summary

The "identification" or inventory stage of evacuation planning also serves as a preparedness assessment. First, the types and risks of potential disasters should be evaluated. These will vary by geographic region and by the social, economic, and environmental conditions of an area. After the potential types of disasters have been identified, the capacity for appropriate responses should be assessed. As discussed, this includes determining existing as well as potential partnerships that can provide an effective regional response. Partnerships span the public, private, and non-profit sectors, each having their own strengths. Effective plans commonly involve each of these sectors due to the range of experiences and populations that they most often deal with. Evacuation planning, like most other types of public planning efforts, occurs within a political realm. Local and regional policies can help or hinder evacuation planning and emergency response efforts. Finally, an assessment of resources will dictate the nature and extent of evacuation efforts within a particular region. Strategies to increase or redirect resources can make the difference between a feasible evacuation plan and a plan that will be difficult to implement.

Communication Considerations

All announcements, warnings, and instructions that will be broadcast should be drafted with awareness that many people with cognitive impairments (brain injuries, learning disabilities, mental retardation) need clear, concrete information about the nature of any risks, specific areas affected, and the steps they need to take. Again, plan to offer guidance to people with cognitive impairments who need such assistance. Universal symbols should be used whenever possible in printed materials.

Communications strategies intended to reach specific populations should not rely exclusively on disability-specific forms of media to make announcements, provide updates, etc. For instance, people who are deaf and do not have cable TV cannot benefit from captioned coverage of official announcements by State officials. It is important that releases and announcements broadcast over conventional news media or transmitted via electronic means be as accessible to as many audiences as possible.

Key Elements in Creating a Special Needs and Special Needs Evacuation Plan

For the purposes of this guidebook, special needs populations are those groups who for reasons of age, physical, or cognitive ability, poverty, or institutionalization are unable to independently participate in the general evacuation of a city during a natural or man-made disaster. People who do not own cars are included in this category when they are not carless by choice, but as a result of poverty or inability to drive. Other populations that choose not to own a car are not included in this discussion, under the assumption that they have other resources and networks that facilitate evacuation.

Needs

Among special needs and general populations alike, the need for advance information about potential evacuations is paramount. The difficulty of getting special needs populations signed up for evacuation registries is compounded in municipalities that keep virtually all details about evacuation secret. While certain parts of evacuation plans or evacuation plans under certain circumstances need to be secret, blanket secrecy works against the goal of identifying special or general evacuation needs. Greater transparency will be promoted throughout this section and the next as a necessary component of a successful evacuation plan.

The following discusses evacuation challenges for a variety of special needs populations. To facilitate discussion, the groups are categorized into three types of settings:

- Institutional – those populations that receive 24-hour care in an institution such as a nursing home, group home, or prison, as well as those who are temporarily in a hospital.
- Neighborhood institutional – elementary and secondary schools, day care, and elder care populations that are with family for the major portion of each day but are under the care of institutions on a regular basis. Also included are neighborhood homeless facilities such as churches and private agencies.
- Individual evacuees – persons needing evacuation from a private home or from a non-institutional homeless site.

The challenges posed in developing evacuation plans for a broad range of special needs evacuees are discussed below.

Institutionalized Populations

It seems these populations should be the easiest to identify, even if not the easiest to evacuate, because they are in State institutions or institutions licensed

by the State. The challenge generally is that evacuating these individuals requires more resources than are available locally. Many individual institutions make transportation arrangements to fulfill State emergency planning requirements. Unfortunately, the limited number of local transportation contractors become over-obligated, and emergency managers generally do not review them to ensure that they are not relying on duplicative contracts with bus and ambulance companies, i.e., that there is adequate capacity for evacuating the total institutionally-based population during a mass evacuation. Municipal or state emergency managers should maintain a master list of contracts between these organizations and transportation providers to ensure that capacity is sufficient.

Equally important is ensuring that drivers for bus and ambulance companies show up during an emergency. A desirable way to guarantee their availability is to guarantee their household members a seat on the bus with the driver and to arrange a hotel room for them.

Evacuees who must be removed from hospitals require special care. Obviously, for any patient who is able to evacuate with family members, release from the hospital in the case of advance notice disasters such as a hurricane, is preferable; however, caution should be taken in the event of heavy car traffic where medical conditions can worsen. The hospital has to make a determination, based on its disaster-readiness classification, of whether it is more prudent to shelter-in-place its more seriously ill patients, or all patients in the case of a no-notice disaster.

Residents of nursing homes, group homes and mental health facilities present additional challenges because of physical and/or emotional frailty. A break in routine can be very stressful for these populations, especially when they sense tension from their caregivers. Having a clear evacuation plan with partial simulations can reduce evacuee and caregiver stress. Such a plan needs to address the caregivers' families as well. This will ensure that caregivers are available to assist with an emergency evacuation. For example, guaranteeing that caregivers already at work or those at home who are willing to help in the evacuation will be able to bring family members on evacuation vehicles and have a place to stay will help to reduce the stress (and potential acting-out) for residents of these facilities. The types of vehicles appropriate for physically-impaired populations are also different from vehicles needed for able-bodied special needs populations. Nursing home and hospital evacuation plans must include an appropriate number of medically-equipped vehicles.[2]

[2] It is important to note that appropriate authorities must plan for the evacuation of imprisoned populations. However, that situation is so highly specialized in terms of the type of equipment used and the need for security that evacuation of prisons and jails is handled entirely separately from the evacuation of other populations and is not included in this manual.

Neighborhood Institutions

Neighborhood institutional sites such as schools, daycare facilities, and eldercare facilities, are responsible for removing their charges from imminent danger, but with the goal of immediately reuniting children and older adult residents with their families when possible. School and agency contracts with transportation companies should be on file with municipal emergency managers to prevent duplication or to develop back-up strategies if there are insufficient seats available.

Schools, daycare, and eldercare organizations should have reciprocal agreements with similar organizations within a safe receiving area (possibly within 30–50 miles) and should share this information with families in advance.

The users of homeless shelters are much more transient than the other three populations in this category. Shelter staff are more permanent; municipal emergency managers can ensure that homeless shelter evacuation plans are sufficient and that staff are adequately trained.

Individual Evacuees

Individual evacuees are people residing in neighborhoods. Likely populations to consider as individuals evacuees are older adults living in their own homes, persons with physical or cognitive disabilities, and low-income persons who do not own a car or who may have difficulty maintaining and fueling a car.

An additional group of potential special needs evacuees are limited English proficient (LEP) populations who may be difficult to reach for a variety of reasons. They may not use English-language media outlets or websites or read English-language brochures. In addition, if their immigration status is undocumented, LEP populations are resistant to any kind of registry that may lead to government awareness of their whereabouts. During the Hurricane Gustav evacuation, for instance, it was explicitly stated on Hispanic television and radio news that taking the buses to public shelters did not involve any connection with immigration services.

Just as daycare, eldercare, hospitals, and other institutions should have agreements with like agencies in other regions to shelter special populations, the Federal Emergency Management Agency (FEMA) proposes that municipal emergency managers also execute "mutual-aid agreements and memorandums of understanding" with other municipalities to confirm assistance agreements.[3] These municipally-directed agreements serve to provide shelter for special needs populations unaffiliated with an institution, which represent the majority of the carless and vulnerable special needs populations in most cities.

[3] "FEMA Interim Emergency Management Planning Guide for Special Needs Populations," www.nobodyleftbehind2.org/resources/pdf/FEMA_CPG301.pdf, p. 8.

Multiple Challenges, Community Level Assets

In many cases, special needs populations fall into more than one category. There is a high correlation between poverty and not having access to a car. Vulnerable populations are likely to be in poverty because of age, disability, or inability to secure a valid driver's license.

Individual evacuees present more difficult challenges than populations evacuating from an institutional setting. They are much more difficult to identify than populations that require evacuation from a public or private institution. They are much more dispersed throughout the population. Most need to be individually identified in their home. Sites that are likely to attract homeless people need to be identified. In spite of the difficulties emergency managers report in locating special needs populations, most recent studies point to the under-utilization of community assets, organizations that are likely to already be in contact with special needs persons.

In most cities, individual special needs evacuees are likely to be more numerous than institutional evacuees. In larger cities, non-institutional special needs persons might number in the tens of thousands or more. Efforts to reach out to them are time-consuming, but crucial. The investment of time can be made less onerous when emergency managers seek creative and indirect links for reaching isolated populations. For instance, New York City emergency managers reach out to doormen of buildings with substantial populations of older adult tenants. While these populations may not be impoverished, they may very well be without family nearby and unable to evacuate without assistance.[4]

Emergency managers can make use of the lessons public health professionals learned when trying to reach out to at-risk communities. Health initiatives that were unsuccessful when professionals tried to link directly to community members have been invigorated-and flourished-when community "mediators" were recruited to spread information. A breast cancer awareness outreach program directed at African American women floundered until hairdressers were recruited to spread the word.[5] The point is not that doormen or hairdressers are uniquely equipped for emergency management or public health work. The advantages community-based workers have over outsiders are their familiarity, accessibility, and credibility to local residents. In some cases, those assets are compounded by the workers' commitment to community residents. Even those community-based workers who do not make the effort to reach out multiple times are available if a person, upon reconsideration of an opportunity, takes it upon himself or herself to follow up with questions.

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[4] Renne, Jenkins, Sanchez, and Peterson, "The National Study on Carless and Special Needs Evacuation Planning: Government and Non-Profit Focus Group Results," p. 9.

[5] Gladwell, *The Tipping Point*, 2000.

Isolation

Special populations may be isolated in multiple ways from the resources they need to successfully evacuate. They may not know to whom to turn, even in advance of a crisis, and may not know how to find the right place to register for an evacuation, even if they are motivated to do so. Internet resources are useless to people who do not have access to a computer. Internet sites that cannot be "read" by computer screen reader programs exclude blind persons who are Internet users (generally providing all resource information in HTML format will make it "readable"; PDF documents are generally not "readable.") Brochures are helpful for those who are connected to institutions distributing emergency information; neighborhood institutions such as churches, libraries, and schools are the best resources for disseminating information in a hard-copy format. But the most isolated are least likely to be reached by brochures.

Isolation is a common denominator for many of the special needs populations that require assistance in an evacuation. Elderly or disabled people without families nearby can't evacuate with their family members. Special needs households without friends or relatives who own cars can not arrange evacuation assistance. LEP populations may have family members nearby, but the extended family may be isolated from the larger society by language and immigration barriers. Isolation is the common factor that makes all of these populations more vulnerable, but also makes them harder to identify than other populations.

Emergency Registries

The importance of signing people up in advance for evacuation is most critical and most difficult for those populations that are carless and isolated. According to available records, cities have been relatively unsuccessful in soliciting registration by special needs population for evacuation assistance.[6] Miami, for example, has a better-than-average record of interaction and communication with the community and a high proportion of older adults. But it has only 2,500 people on its evacuation registry, which is considered by local emergency managers to be a small fraction of the population in need of assistance.

For example, the Pinellas County (Florida) Fire Department assists in maintaining a special needs registry. Local fire stations establish contacts with registrants in their neighborhoods and also assist with making pickups.

One reason emergency managers may be reluctant to promote and expand their registries is that they anticipate difficulty in reaching even the small numbers currently registered during an actual emergency. Miami, which is to be credited for its openness, is also realistic in speculating that the city would have difficulty evacuating everyone on the registry.[7]

[6] Renne, Jenkins, Sanchez and Peterson, p. 22.

[7] *Ibid*., p. 9.

While registries can be beneficial for understanding special needs, mapping needs, and staging resources, it is important to not rely solely upon a registry. Many people are uncomfortable with registering, and some forget to update their registration when they move. Some have suggested that registries be maintained through service providers such a home nursing staff, Meals on Wheels, etc., to have the most up-to-date and complete registry possible. Emergency managers would then be creating a contractual agreement with service providers to compensate them for the additional recordkeeping service, albeit voluntary on the part of the individual and with sufficient assurance of privacy of information.

Identifying Concentrations of Special Needs Households

Demographic analysis is not a substitute for community liaison, but can be an additional asset in estimating what the demand for evacuation assistance is likely to be and whether the available resources are sufficient to meet the demand. Computer mapping can help to indicate which communities have substantial numbers of special needs households. While the isolation of some special needs populations from mainstream society is hidden from data sources, some groups that are heavily concentrated geographically can be mapped, making it more efficient to transport them. Planners can make effective use of statistical information that identifies communities with low rates of car ownership and redouble efforts to reach out to those communities. Geographic information systems (GIS) is an increasingly effective tool to collect and communicate these types of information. Cities in south Florida target areas with low car ownership for public transit evacuation vehicles when a disaster is imminent[8]. Georgetown County, South Carolina uses a model to determine hazard vulnerability of various populations.[9]

Where census data on car ownership is lacking, annual data can usually be obtained from state departments of motor vehicles or other licensing agencies. Other demographic variables that are likely to have a high correlation with carlessness include age (high concentrations of very young or very old persons), race, foreign-born, and low-income, all of which can be mapped. The example offered by the Federal Transit Administration (FTA) study "Equity in Emergencies" includes mapping done for 20 cities.[10]

[8] Renne, Sanchez, and Litman, "National Study on Carless and Special Needs Evacuation Planning: A Literature Review," p. 56.

[9] *Ibid*., p. 64

[10] "Equity in Emergencies," http://www.fta.dot.gov/civilrights/civil_rights_6343.html.

Who are Special Needs Populations?

Special needs populations include people who:

- cannot drive
- lack an automobile
- have a non-operating or very unreliable vehicle (which includes running out of fuel or a flat tire)
- have a significant physical, visual, or mental disability
- have an injury or illness
- are unable to read
- are unwilling to leave large pets
- are unable to understand English
- have an irregular legal status

Each population has different needs and considerations during an evacuation. We recommend making sure each population is identified and accommodated in your evacuation plan.

Data analysis for the purpose of estimating the potential size of the population needing assistance is very different from development of a registry of people who self-identify as needing assistance in an emergency. The size of the gap between numbers on the registry and estimates of actual need may help emergency managers estimate the how great the actual demand for assistance is likely to be.

There is no substitute for social science research that uses sound research methods to collect data about the local population. Surveys do not always capture detail and trends that are important to planning efforts. Surveys are difficult to execute given limited resources and expertise and, therefore, can lead to erroneous or questionable data if not performed properly. This is also true for mapping and spatial analysis.

Participation

Public participation and outreach needs to be tailored to the needs of various groups, including the general population and various special needs populations. Special needs groups may require alternative formats (large print, Braille or sign language, for example), translation, or varying levels of detail appropriate to different groups.

Representatives of special needs populations should be present at all levels of planning and outreach to ensure that outreach efforts are suitable to the many different types of populations. Households with special needs are more likely to be carless than the general population through poverty, physical disability, or language/immigration barriers that prevent people from securing a driver's license.

Public outreach can be a challenge for a variety of reasons. This section discusses some key considerations of the public outreach process. Effective approaches include and focus on the community by utilizing networks and assets. A community-based approach helps get the information to those who need it through several methods. Involving the community also means enlisting many community volunteers who understand the mission of an evacuation. Volunteers can be motivated with incentives to ensure that they participate in a meaningful way. With the help of volunteers, the network of those with special needs can be built and maintained to increase readiness. All of this leads to preparedness so in the event of an evacuation, those effected know what to do, where to go, and when to do it.

Community-Focused Outreach Options

There is no question that the distance between emergency managers and the public needs to be reduced. The burden is on government officials to reach the public. The following offers a variety of strategies, some of which have been proven successful elsewhere, some of which are the most creative way we can think to approach this seemingly intractable problem. We believe that the optimal program would be one that used all the available approaches together. Partial improvement can probably be obtained by partial application of these strategies.

The suggestions fall into the following categories:

- Publicity and Public Information
- Community Networks
- Inventory of Community Assets
- Volunteer Incentives
- Incentives to Register Advance-Notice Evacuees
- Incentives for Service Providers to Facilitate Outreach

Community Networks and Resources

Successful outreach efforts share a common characteristic—in one way or another, community organizations and institutions are partners in the effort. Emergency managers should employ or build community networks to facilitate outreach. A recent in-depth review of the outreach programs in five cities found

that San Francisco's emergency planning strength is its community participation: "There is a broad list of stakeholders invited to participate in emergency planning; there are the Community Emergency Response Teams (CERTs); and there are community response hubs, which are unique to San Francisco."[11]

Similarly, information is passed from the Los Angeles County Office of Emergency Services to groups such as the Central American Resource Center via Emergency Network Los Angeles, where it "will get on the street quickly, it will reach the people, and it will be trusted."[12]

CERTs are partners to city emergency management agencies. The role of CERTs varies widely from city to city. Whether a CERT or another structure is used to build a community network, the important factors are the breadth and depth of the network.

Trusted community leaders and institutions are able to reach special needs populations in ways that distant emergency managers could not duplicate. Emergency managers should be prepared to facilitate information-sharing between organizations and special needs populations, primarily by providing information in useful formats. But they should be flexible and prepared for community organizations to employ a variety of outreach strategies. No one strategy will fit all situations.

Community organizations are a diverse group. Some are faith-based, others focus on a particular school, some are civic organizations, and others include mental health programs, after-school care or professional service clubs. Many large statewide or citywide non-profit organizations such as United Way, Red Cross, Easter Seals, or AARP can be conduits to neighborhood-based groups.

Ethnic communities sometimes have strong networks of social clubs. In some communities, neighborhood gathering places are not necessarily non-profit organizations but might be neighborhood businesses like pubs, restaurants, beauty parlors, or barber shops.

The Neighborhood Disaster Response Hubs in San Francisco represent a successful model employing many of the tactics described above. These Hubs help to seek out additional community level resources in advance and have a communications role with the command center in the event of a disaster. Most importantly, in an actual emergency, these neighborhood responders are entrusted with the list of special needs persons who have requested assistance in evacuating.[13]

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[11] Renne, Sanchez, and Peterson, San Francisco case study, p. 1.

[12] Renne, Sanchez, and Litman, p. 17.

[13] Renne, Sanchez, and Peterson, San Francisco case study, p. 6.

Inventory and Utilize Community Assets

Once network-building is under way, emergency managers can begin to inventory the assets they have and develop plans to fill gaps. Neighborhood schools can be used as evacuation staging sites. There are a number of good reasons to use schools:

1. They are abundant and embedded in communities.
2. Most people know the location of the nearest school.
3. Many people have a neutral to positive association with the school; people are more likely to go there rather than to an unknown location in an emergency.
4. Many schools in the past were designated as air raid or bomb shelter sites.
5. Data for all school sites in cities and regions should be readily available and could easily be assembled by emergency managers.
6. Marketing "go to your nearest school in case of emergency" is a simple branding strategy.
7. Schools are already designed for bus access.

Playgrounds can provide temporary holding areas for large numbers of people and can keep parents and children occupied while waiting.

The list of possible efficiencies of using schools as evacuation staging sites is long. Examples include the following:

- Using well-known neighborhood institutions allows many special needs populations with limited mobility to access a site that is a short distance from home, allowing a larger number to self-evacuate to the staging area. These may also be people who for whatever reason, did not sign up for a registry and would be unknown to first responders.
- Using a local network for volunteer recruitment and training puts local people who are familiar with community in charge of first-response efforts to assist special needs registrants in getting from their homes to the local school.
- For larger cities with many bus routes, a portion of drivers could immediately reroute to the nearest school to begin picking up evacuees. Other local institutions with vehicles (churches, for example) could easily bring vehicles to the staging site.
- Using the local school as the site for pre-event training, drills, and meetings is an easy and inexpensive way to increase the visibility of the effort, which should result in greater community knowledge of where to go in an emergency. A special ceremony to designate the school as an emergency staging area, even some form of a "ribbon-cutting" is an easy and inexpensive way to attract attention from local media.

The staging site should be prepared with the following:

- List of other nearby schools (or other evacuation sites)
- List of trained local volunteers, with contact information)
- Water, protein bars, blankets, etc., for emergency distribution
- Diapers
- Common emergency medications, such as insulin and inhalers
- Equipment such as evacuation chairs where there are multi-story buildings
- Arrangements with nearby restaurants, pharmacies, banks, etc., to provide service to the staging area
- Shade—very important since during hurricane season it can be very hot outside, especially under the direct sun
- Information resources—depending on the type of emergency being planned for, a satellite phone may be appropriate
- Electric generator with fuel
- Spare pet carriers
- Ice and provisions for cooling older adult or sick evacuees

The ideal situation is one in which a school staff person who lives within a reasonable distance of the school can be trained and paid to coordinate at the site. Where that is not possible, another person needs to be designated as the lead to receive the list of advance registrants, send out search teams, keep records of the bus and vehicle destinations, etc.

Publicity and Public Information

With the understanding that special needs populations are diverse, managers should create a range of information formats. Examples include the following:

- **Brochures**: Produce a brochure that provides appropriate information to residents about their community's emergency evacuation plan. This should be translated into all languages commonly used in that area. New York City offers guides and other informational pieces in four to eleven different languages.[14] All basic informational pieces should be offered in large-format print (at least 14 point type). Sans serif fonts are generally easier to read and should be used in combination with large print when possible. Braille text should also be made available.
- **Electronic media**: Cable access TV is often an inexpensive way to advertise the availability of services such as an evacuation registry. Cities with substantial language minorities usually have television and radio channels specific to those languages; it is often easier to secure an interview on

[14] Renne, Sanchez, and Peterson, New York City case study, p. 9.

those channels than on English-language television or radio. Public service announcements (PSAs) should be produced in multiple languages.

- **Presentations**: PowerPoint presentations can be created for delivery in multiple languages, with volunteers recruited to present them to community audiences. Back-up with poster boards should be made in case electricity goes out.
- **Internet**: Although many people do not have access to the Internet, it can still be a useful tool to reach those who do. Brochures that are available for download need to be posted in HTML and PDF versions to facilitate computer "reading" of text. With regard to public information, literacy experts have suggested that all educational materials for the general public be written at no higher than a fifth-grade reading level.

Volunteer Incentives

Incentives can help build loyalty to the program and reduce resistance to background checks, where necessary. Incentives include:

- **Stipends**: Community volunteers are more likely to think of their commitment as a "job responsibility" if they receive pay. Even a small stipend tied to regular performance objectives (e.g., speak at a certain number of community meetings, recruit a certain number of new community partner organizations, etc.) will enhance the volunteer work ethic.
- **Non-financial incentives**: United Way agencies in Miami are required to have a plan for continuous service during an emergency to be eligible for funding.[15]
- **Community recognition**: Many volunteers do not expect payment for their efforts, but an event or publicity to recognize their commitment raises awareness for the program and reward volunteers.

"Go-Kits"

"Go-kits" typically include an appropriately-sized container, generic supplies such as a water bottle, protein bars, first aid supplies, hand sanitizer, a whistle, and color-coded lists (medications, important addresses, reminders of other last-minute documents to add in a real emergency). Instructions on completing personalized lists and purchasing additional items such as personal medical supplies for the go-kit should be included. Volunteers might take on the responsibility to purchase or donate items for go-kits and assemble and distribute them locally.

Emergency managers should work with neighborhood institutions to provide direction for specialized mini-go-kits for children in daycare or those in eldercare. These kits would be small enough to pin on the dependent individual

[15] Renne, Jenkins, Sanchez, and Peterson, p. 27.

and would include a photo of the dependent with family members to ensure that children or older adults are not handed over to a non-custodial parent or stranger at the receiving center. A basic form with emergency medical and family information should also be in the kit. One example is the Emergency Information Form offered by the American Association of Pediatrics (http://www.aap.org/advocacy/blankform.pdf), which was prepared for children with special needs but is useful for all children.

Keep in mind ...

- Obtaining assistance in medical emergencies.
- Providing counseling and other mental health services.
- Re-evacuation.
- Obtaining medications, including psychiatric medications.
- Keeping medication and nutritional supplies refrigerated or cooled as needed.
- Contacting community providers, clinicians, and other human service liaisons when their expertise is needed.
- Providing electricity to charge batteries used in power wheelchairs and other equipment.

For more checklist items, see the Workbook section.

Source: CT Development Disabilities Network

Regional Planning for Evacuations

MPOs are responsible for decisions on transportation capital improvements and for creating a long-term regional transportation plans. Evacuation has typically been planned and administered locally by departments of emergency management, regionally by state police, and/or by state emergency management agencies. It is currently unclear who has the responsibility for regional disaster planning to identify the "demand side" of the carless and those with special needs as well as the "supply side" of transportation resources. Since MPOs already deal with regional transportation issues, they may be a logical place for regional disaster planning. Many MPOs already embrace areas such as land use and economic development planning because such fields are integrally connected with transportation systems. Disaster planning is no different. Our focus groups found that MPOs in all five regions are engaged with disaster planning; however, there are no clear federal guidelines as to the role of the MPO in emergency preparedness.

MPOs would make a logical home for a regional coordinating council on emergency preparedness, which should include a focus on planning for people with special mobility needs. MPOs already have the infrastructure in place to coordinate regional decisions across local jurisdictions. MPOs currently deal mostly with transportation planners across regions, but not necessarily with emergency managers.

Regional coordinating councils on emergency preparedness could be modeled after the Department of Homeland Security's Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities. An Executiveo Order signed in 2004 by the President (Executive Order 13347) required cities to address individuals with disabilities in emergency preparedness. This order mandated that people with disabilities be considered by all levels of government and that the Department of Homeland Security create an Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities. This Council includes members from 15 named executive departments, 4 federal agencies, and 6 other invited members. The purpose of the Council is to:

- Consider, in their emergency preparedness planning, the unique needs of agency employees with disabilities and individuals with disabilities whom the agency serves.
- Encourage, including through the provision of technical assistance, consideration of the unique needs of employees and individuals with disabilities served by state, local, and tribal governments, and private organizations and individuals in emergency preparedness planning.
- Facilitate cooperation among federal, state, local, and tribal governments and private organizations and individuals in the implementation of emergency preparedness plans as they relate to individuals with disabilities. (ICCEPID 2008)

Regional coordinating councils hosted by MPOs could serve a number of important functions for special needs emergency preparedness planning. This includes:

- Providing assistance to local governments in planning for all types of hazards.
- Representing local governments to state and federal governments to ensure that regions have adequate funding and resources for all types of hazards.
- Coordination of local plans into a regional plan so multiple jurisdictions in a region can share limited resources during an emergency.
- Coordinating with other regional councils so that regions can borrow resources from nearby regions in the event of a massive catastrophic disaster. This will create a web of resource sharing that would extend across the United States.

- Cross-jurisdictional evacuation planning, which includes contra-flow, high occupancy evacuation lane and/or corridors, and coordination of transportation resources across all modes, including foot, bicycle, automobile, van and shuttle, bus, rail, air, and boat.
- Creating and streamlining regional memoranda of understanding agreements that all local jurisdictions can sign onto, ensuring liability concerns are addressed before a disaster.
- Providing technical expertise for community and local emergency preparedness.
- Backing-up important local data for local partners.

A regional evacuation plan should be developed based on the results from a series of analyses:

- **Local Planning Analysis** – Review existing local plans and procedures to identify planning assumptions, current emergency operations procedures and capabilities as it relates to evacuation.
- **Hazard Analysis** - Review existing hazard identification and risk assessments, including local hazard mitigation plans, to identify the likely scenarios or hazards that may necessitate an evacuation.
- **Vulnerability Analysis** – Identify the areas, populations, and critical facilities or infrastructures that are vulnerable to identified hazards.
- **Special Needs and Vulnerability Analysis** – Conduct a survey to ascertain the potential evacuation needs of a region's population, including the number of individuals that will require assistance and the number that will require shelter.
- **Evacuation Zone Analysis** – Identify evacuation zones based on easily-identifiable regional landmarks such as highways, roads, buildings, and neighborhoods.
- **Transportation Analysis** – Evaluate current roadway network, including capacity, modes of transportation, and traffic management strategies, to identify potential clearance times. Analyze the quantity of paratransit vehicles, ambulances, buses, trains, and planes that are necessary given the estimate number of evacuees (of all types), their origin, their shelter destination, the trip time (with heavy traffic), and the time available to evacuate.
- **Shelter Analysis** - Analyze specific city, county, and regional host shelter capabilities, including persons with special needs requirements for sheltering and transportation.

Process Evaluation

The overarching goal of evacuation planning is to maximize the preservation of life while reducing the number of people that must evacuate and the distance they travel to seek safe refuge. Because of this, it is essential that cities, counties, and states have evacuation plans in place that denote specific actions to employ to facilitate the mass exodus of citizens during an emergency.

Several factors must be considered when developing evacuation plans and issuing appropriate evacuation warning orders for populations at risk: timing of onset, magnitude, intensity, duration, time-of-day, and potential impact. Each factor affects the number of people at risk, the time available to implement phased evacuations or shelter-in-place guidance, the distance evacuees must travel, roadway corridors, communication procedures, shelter capacity, mutual aid and traffic control measures to ensure at-risk populations can seek safe refuge. Each of these elements can be assessed and re-evaluated after an evacuation event to better prepare for the future.

By establishing an effective evacuation strategy and coordinating an appropriate plan with effective evaluation criteria, the capacity to implement a large-scale evacuation in a region is feasible. However, to establish an evacuation plan that will maximize safety, eliminate complications, and facilitate a streamlined mass departure of citizens, there are key elements of evacuation planning and implementation that must be continually evaluated, including:

- Public communication and preparedness
- Evacuation operations for all modes of transportation
- Evacuation-related sheltering considerations
- Decision making and management
- Reentry considerations
- Evacuation planning

Ideally, the evaluation process will result in revisions to operational plans. Each section of the plans should be re-considered so that improvements can be made. Additional items may be added to checklists, and procedures may be altered. As such, corresponding training and exercises should be adjusted accordingly. Planners and emergency managers should also stay current on new technologies and procedures that become available and read the literature and best practices on persons with disabilities, older adults, medical evacuees, and transportation. In addition, updates to registries, sheltering procedures, and local plans should be monitored, and the transportation operational plan should be updated accordingly.

Annual updates should be made to the plan including:

- Convening a planning task force that includes agencies likely to be involved in transportation beyond the agency's role such as:
  - Populations likely to be evacuated
  - Shelter operators
  - Facility managers
  - Transportation contractors
  - Law enforcement, EMS, fire and rescue, and emergency management personnel
- Assessing each section of the plan and updating as necessary, ensuring that the plan is consistent with what local planners in other agencies expect and what individual evacuees may need.

Transportation agencies should also participate in and offer training related to evacuation planning and operations. This may include training staff on communications, lifting, equipment, and emergency procedures, and working with staff from shelters, community residential care facilities (CRCFs), reception centers, and others involved in transportation for evacuations.

If not already completed, an inventory of vehicles, equipment, materials, and supplies should be undertaken so that these items can are ready prior to the next evacuation. Standby contracts could be arranged with private sector companies to ensure the availability of transportation equipment and supplies when needed.[16]

Critical Success Factors

Disasters are difficult to anticipate and adequately prepare for. Planning for a mass evacuation poses a number of challenges for jurisdictions, including coordinating public communication, "right-sizing" the management of the evacuation process, coping with transportation flow issues, and managing guests and visitors in the community. Moreover, the logistics involved with assisting older adults and persons who are medically fragile, have disabilities, or are transit-dependent create a complex planning situation.

Evaluation criteria should the following critical success factors:

- Pre-event education
- Emergency evacuation notification systems
- Regional coordination and planning

[16] FHWA, "Routes to Effective Evacuation Planning Primer Series: Evacuating Populations with Special Needs," 2009, p. 76.

- Community outreach and education
- Availability of resources
- Regional communications (voice and data)
- Regional command and control
- Public awareness
- Ability to provide updates on real-time basis

Checklists are useful tools in the evaluation process. Such checklists can include the key elements of evacuation planning, agency roles, and critical success factors like those mentioned above.

Recommendations

A primary challenge of evacuation planning is understanding how to assist, reach, and educate various populations for emergency preparedness and evacuation procedures. As discussed in this guidebook, communications, education, and outreach are vital in the evacuation planning process. Therefore, we recommend an emphasis be placed on education and outreach along with the application of technology to planning and operations.

Preparedness Education and Outreach

Materials on how emergency planning and response systems operate around the country need to be in a user-friendly format and available in multiple languages. See and earlier section that focuses on outreach to special needs populations.

Data Management for Emergency Planning

Transportation agencies regularly respond during emergencies by providing information and services. State and regional transportation agencies generally collect traffic information. Transit agencies provide information on the availability of rail and bus operators and drivers, and the number of available trains or other vehicles. Some new ideas for technology applications include:

- Encyclopedic digital collections on geography, environments, resources, buildings, computational facilities, and potential response personnel and organizations, together with software systems that can locate answers to pertinent questions. This requires research on storage of such a large set of information, computer languages to translate the different sources into a common source, and a method to allow distributed access and data management.
- Assembling a nationwide grid of unlimited computation using grid technology and the Internet to create a network of computation, data, and services that would support the use of any resource available during a response.

Drawing from a wide range of research and focus groups across the U.S., we conclude with the following eight general recommendations for evacuating special needs populations. These recommendations are also useful to guide the overall planning process.

1. **Coordinate** – Emergency evacuation planning should involve all appropriate stakeholders, including emergency planners, police and fire departments, transportation planners and engineers, transit agency managers, public health officials, social service agency officials, municipal engineers, and communications experts. The planning process should allow everybody involved to understand all facets of evacuation planning and the roles that each stakeholder plays.
2. **Comprehensive** – Consider the widest possible range of possible disasters and transport system stresses. Emergency evacuation planning should be able to respond to complex incidents. For example, an earthquake could cause a forest fire, or an explosion could occur during a hurricane, increasing emergency demands and the complexity of an evacuation.
3. **Clarify** – Emergency evacuation plans should clearly specify who will do what during disasters. They should indicate the decision-making process and how information and instructions will be disseminated.
4. **Communicate** – Develop effective and reliable communication systems. Distributed emergency evacuation information regularly, not just when major emergencies occur.
5. **Responsibility** – Design evacuation systems to serve the most vulnerable people. Establish a system to identify and contact vulnerable people, provide individualized directions for their care and evacuation, and establish a chain of responsibility for caregivers.
6. **Inventory** – Maintain an inventory of critical resources, including public transit and service vehicles (snow plows, dump trucks, etc.), fuel, medical resources (ambulances, medicine and hospital beds), food, and drinkable water.
7. **Prioritize** – Develop guidelines and allocation systems to prioritize use of limited resources, such as road space, ferry capacity, fuel, repair services, etc. Give buses and other high-occupancy vehicles priority in traffic. Coordinate fuel, emergency repair and other support services.
8. **Dynamic** – Emergency evacuation plans should be improved and updated over time, based on new knowledge and circumstances, particularly after a practice exercise or incident tests the plan's effectiveness. Plans should be tested regularly.

There are often years or even decades between major disasters, so it is important to preserve institutional memory by documenting successes and failures, and updating emergency plans while the experience is still fresh.

SECTION

2

Mobilizing Your Community for Emergency Evacuation: Vulnerable Populations Planning Workbook

Purpose

The purpose of this workbook is to help with the process of evacuation planning for carless and special needs persons. The workbook is a companion to the "Mobilizing Your Community for Emergency Evacuation: A Guidebook for Vulnerable Populations" which provides background on planning issues. The workbook follows the general outline provided in the guidebook with sections on the Planning Process, Outreach, Plan-making, and Evaluation.

Planning Process

An evacuation plan should highlight the disasters that are most likely to occur in the area, although it should emphasize the importance of an all-hazards approach. It should also address the multiple entities and the resources involved in such responses.

Questions and Considerations	Done	Not yet Completed
Have you identified disasters that would require evacuation?	☐	☐
Do you have a classification framework to find disaster commonalities?	☐	☐
Have you identified all stakeholders?	☐	☐
Have you established a role for public transportation?	☐	☐
Have you included a schedule for periodic updates and evaluation?	☐	☐
Do you have an inventory of: • Shelters • Hospitals • Prisons • Buses • Airports • Boats • trains, and • Paratransit	☐	☐
Do existing local, regional, and transit agency transportation plans consider analysis of disaster vulnerabilities (the types of disasters that could occur in the service area), risks to the transportation system, emergency response transportation requirements, and how emergency transportation activities will be coordinated?	☐	☐
Do existing emergency response plans consider the most disadvantaged populations?	☐	☐

Outreach and Identification

For the purposes of this manual, special needs populations are those groups who for reasons of age, physical or cognitive ability, poverty or institutionalization are unable to independently participate in the general evacuation of a city during a natural or man-made disaster. People who do not own cars are included in this category when they are not carless by choice, but as a result of poverty or inability to drive. Other populations that choose not to own a car are not included in this discussion, under the assumption that they have other resources and networks that facilitate evacuation.

Questions and Considerations

Identification

	Done	Not yet Completed
Does the plan include the demographic profile of the community and the type of assistance that may be required by various populations during an emergency?	☐	☐
How does the plan identify people with special needs?	☐	☐
Do you have a registry of people with special needs that may need to be evacuated and does it address their: • Medical equipment needs • Companion caregiver/attendant • Service animal • Household pet • Communication needs	☐	☐
What agency is responsible for maintaining/updating the registry of those with special needs who may need evacuation?	☐	☐
How often is the registry updated and disseminated to agencies responsible for evacuating those on the registry?	☐	☐
How is the need to register communicated to those with special needs?	☐	☐
Have you determined mutual aid agreements and memorandum of understanding for evacuating institutionalized populations to other municipalities?	☐	☐

Outreach Plan	Done	Not yet Completed
Have you established a public education program with an emphasis on personal preparedness?	☐	☐
Is the educational information available in accessible formats and languages to reach the entire community?	☐	☐
What local groups did you bring into the planning forum to address evacuations (e.g., local health, EMA, transportation, CRCFs, NGOs, community leaders)?		
Have you completed a demographic analysis to identifying the population for outreach?	☐	☐
When preparing for communication with people who have limited English proficiency or are non-English speaking, have you:	☐	☐
• Developed written and pictorial illustrations of various words and phrases that may need to be used during the evacuation process and included copies on board all transportation vehicles?		
• Did you create consistent, easily readable photo identification badges and shirts for the transportation staff?		
• Color-code the shirts and/or badges to identify supervisors, drivers, and other key staff?		
• A printed handout in relevant languages and/or with illustrations for evacuee being transported?		
Have you developed brochures, electronic media, presentations, and made these available online and in alternative formats, translation, and varying levels of detail?	☐	☐
How does the plan utilize and organize volunteer help?	☐	☐

	Done	Not yet Completed
What incentives does the plan include for volunteers?	☐	☐
Have you determined effective staging sites within community (e.g. schools, churches, other institutions)?	☐	☐

Do the staging sites have:

- A list of other nearby schools (or other evacuation sites)
- A list of trained local volunteers, with contact information)
- Water, protein bars, blankets, etc for emergency distribution
- Diapers
- Common emergency medications, like insulin, Benadryl, and inhalers
- Equipment like evacuation chairs where there are multi-story buildings
- Arrangements with nearby restaurants, pharmacies, banks, etc. to provide service to the staging area.
- Shade
- Access to information
- Electric generator with fuel
- Spare pet carriers

Plans

Evacuation has typically been planned and administered locally by departments of emergency management, regionally by the state police, and/or by state emergency management agencies. It is currently unclear who has the responsibility for regional disaster planning to identify the "demand side" of the carless and those with special needs as well as the "supply side" of transportation resources.

Questions and Consideration

How does the plan address the timeline for evacuating those with special needs?	☐	☐
How does the plan address communicating with people who have special needs such as:	☐	☐

- Speakers of other languages and those with limited English proficiency

	Done	Not yet Completed
• People with disabilities		
• People with medical needs		
How does the plan address coordinating transport of those with special needs with the special needs shelters?	☐	☐
Do you have copies of all agreements with Community Residential Care Facilities (CRCFs), hospitals, jails, etc.?	☐	☐
• Where are they located?		
• Who do you have agreements with?		
• Who do you not have agreements with?		

	Done	Not yet Completed
• Have you ensured that your agency is not the sole transportation provider? • Is there the potential for competition for transportation resources between your agency and CRCFs?		
How does the plan address communicating information/outreach to people with special needs about:	☐	☐
• Pick-up locations for transportation _____ _____ _____ _____ _____		
• What they can bring with them _____ _____ _____ _____ _____		
• What services/facilities are available at special needs shelters _____ _____ _____ _____ _____		
Do you have an inventory of available vehicles for an evacuation and does it address:	☐	☐
• Contact information • Number and types of vehicles		
How and when do you notify transportation providers to activate the evacuation? _____ _____ _____ _____ _____	☐	☐

	Done	Not yet Completed
How do you track requests for transportation to ensure requests are responded to and to support future planning for transportation?	☐	☐
How do you monitor the status of the evacuation and report it to your EMA?	☐	☐
How do you provide staff at the transportation pick-up locations?	☐	☐
Have all the CRCFs identified a like-to-like facility to which to evacuate, and what agreements are in place to support such an action?	☐	☐
How does the plan address communications with CRCFs before, during, and after an evacuation?	☐	☐

	Done	Not yet Completed
Have you considered, during the planning phase, some of the challenges that transportation agencies should include, such as: • Transporting adequate supplies on a continuous basis during an emergency when medical supplies and equipment may be at high demand • Transporting adequate food supplies • Coordinating transportation resources that include vehicles with accommodations for people with special needs during evacuations, re-entry, and recovery • Procurement of medical equipment, supplies, and medication that takes into consideration the full age, disability, and medical needs spectrum • Working with emergency officials on credentialing issues for "essential transportation personnel" in the context of special needs/CRCF patients	☐	☐
Have you considered different scenarios to help with contingency planning including: • Timing of the evacuation (should special needs populations be evacuated prior to others) • Specialized equipment to assist with the process • Different scenarios and the types of evacuation that would occur • Dealing with medically fragile people who are at high risk	☐	☐
How does the plan for CRCFs address: • Vehicle types _____ _____ _____ • Fuel for vehicles _____ _____ _____ • Vehicle operators _____ _____ _____	☐	☐

- Security

- Transport of service animals

- Medical emergencies en route

- Vehicle identification

- Credentialing

- Dispatch and tracking

Process Evaluation

The overarching goal of evacuation planning is to maximize the preservation of life, while reducing the number of people that must evacuate and the distance they travel to seek safe refuge. Because of this, it is essential that cities, counties and states have evacuation plans in place that denote specific actions to employ in order to facilitate the mass exodus of citizens during an emergency.

Questions and Considerations	Done	Not yet Completed
How does the plan address re-entry needs including:	☐	☐
• Assessment of road conditions		
• Identification of re-entry routes		
• Fuel availability on re-entry routes		
• Security		
• Availability of rest areas		
• Availability of food and water		
• Use of ITS components to support re-entry		

	Done	Not yet Completed
During re-entry how does your agency track and report the following to the EMA:	☐	☐
• Road conditions and status of whether they are open or closed		
• Need for vehicles to transport returning evacuees with special needs		
• Status of shelters—open or closed		
Post-event, how is your transportation agency taking the following actions:	☐	☐
• Conduct an after-action debriefing soon after the event (within a week)		
• Develop an after-action report to capture lessons learned and actions that worked		
How does the plan address seeking reimbursement for the costs of the evacuation?	☐	☐

	Done	Not yet Completed
As with evacuation procedures, transportation dispatchers should track the following: • Driver names/contact information • Vehicle information (owner, number, license plate, type, capacity, etc.) and assignment • Route maps • Location of fuel • Contact information for interpreters and translators • Evacuee information (where available through evacuation registries) • Contact information for liaisons and other people/agencies that will provide critical up-to-date information, including medical support personnel who cared for an evacuee prior to the exodus • Names and contact information for people assisting with evacuations (mechanics, personnel at fuel depots, staging area workers, assistants traveling with vehicles)	☐	☐
Due to potential hazardous road conditions on re-entry, have the vehicles also been equipped with: • Flashlights • Spare tires • Flat tire fixative • Shovel • Heavy-duty gloves	☐	☐
Have vehicles used in the evacuation been: • Cleaned • Refueled • Repaired • Restocked	☐	☐

Next Steps

This workbook focuses on evacuation planning for carless and special needs persons. The evacuation event itself obviously takes substantial preparation and effort to implement. This workbook assists in pre-event preparation, but the success of an evacuation depends on effective implementation. The next step in the process is to prepare evacuees for return to their places of residence. Depending on the nature and extent of the disaster, the return process may be hazardous. Utilities and other services may need to be monitored to insure there are no remaining health or safety concerns. This is also the point at which evaluation of the evacuation process should begin through data collection and other assessment methods.

A primary challenge of evacuation planning is understanding how to assist, reach, and educate various populations for emergency preparedness and evacuation procedures. As highlighted in this workbook, planning, communications, collaboration, and outreach are vital in the evacuation planning process. Therefore we recommend an emphasis be placed on education and outreach along with the application of technology to planning and operations.

SECTION

3

Mobilizing Your Community for Emergency Evacuation: Summary of Stakeholder Workshops

This report summarizes the creation of a guidebook called "Mobilizing Your Community for Emergency Evacuation: A Guidebook for Vulnerable Populations," a compendium workbook, and workshops held with stakeholders in Chicago, Miami, New Orleans, New York, and San Francisco to solicit feedback on these materials as well as address emergency evacuation issues for carless and vulnerable populations.

The purpose of the workbook is to help with the process of evacuation planning for carless and special needs persons. The workbook is a companion to the guidebook, which provides background on planning issues. The workbook follows the general outline provided in the guidebook with sections on Planning Process, Outreach, Plan-making, and Evaluation.

Representatives from each of the five cities were given time to review each of these and met in each of the five cities to discuss their feedback. The mix of organizations that participated demonstrated the diversity and reach of planning activities throughout each of the case study cities and their regions. We were able to hear directly from practitioners who handle the day-to-day interactions with community members and other organizations tasked with planning and executing emergency response and evacuation activities. The information gathered from these sessions was especially valuable and the stakeholder meetings generated some rich conversation.

Following are the summaries from each of these five meetings. We found that whereas many of these cities encountered several of the same challenges, there were some issues that were unique to particular jurisdictions. As might be expected, most of the groups acknowledged that evacuation planning is quite complex and that the fragmentation of agencies, organizations, and other groups involved present significant challenges related to coordination, communications, and information sharing—not only among organizations, but also with the public. This is understandable considering the wide range of logistical factors

involved. Much of this fragmentation is a function of the geographic sizes of these particular cities and the large populations that reside in them. These large cities are also culturally diverse, meaning that notifications and other communications must be in multiple languages and include otherwise hard-to-reach populations. Another challenge related to communications is that in most places, the occurrence of large-scale evacuations are very infrequent and, therefore, the planning process, preparation, and conversation and evacuation needs tend not to be consistent over time. These efforts lose priority with time since the last event. Losing priority has an impact on the resources made available for planning efforts as jurisdictions struggle to meet other public service needs.

Other particular issues that emerged are that in many cases evacuation plans, routes, and other specifics are confidential and may reveal system vulnerabilities during an emergency or evacuation event. There is concern that ill-meaning individuals or groups may exploit these plans. Therefore, the question is how to properly plan when the plans cannot be made public far in advance of an emergency. Also, the location of individuals varies by time of day, so evacuation scenarios need to take into account evacuation from home, work, and school locations. School evacuations are challenging from the standpoint of connecting children with adults who themselves are in locations other than home.

Several of the points raised by stakeholders highlight not only the complexity of evacuation planning for carless populations, but also the progress that is being made on the topic. Cities such as Miami that experience frequent evacuation events have developed sophisticated planning and communication systems over time. The State of Florida is proactive in evacuation planning and clearly sets an example for other regions. Similar experiences were noted in post-Katrina New Orleans and New York. This research was completed before Superstorm Sandy and thus does not benefit from lessons learned during that experience. However, the lessons from this study should help guide evacuation planning for carless and vulnerable populations across the nation, particularly for urbanized regions.

New Orleans

The following is a summary of stakeholder responses to evacuation planning issues for the New Orleans region. This information is compiled from written responses to the workbook and a discussion moderated by John L. Renne on November 11, 2011. Representatives from the following organizations were present:

- American Red Cross
- Catholic Charities
- Evacuteer.org
- Natural Hazard Mitigation Association

- New Orleans Council on Aging
- New Orleans Homeland Security
- Regional Planning Commission
- UNO-CHART

The summary is divided into three sections: Planning Processes, Outreach and Identification, and Process Evaluation.

Planning Processes

Due to the nature of most disasters, there is a need for more hazard mitigation as well as long-range planning. Unfortunately, emergency planning tends to be on the back burner until an event is actually happening. In addition, it may be necessary to bring the private sector into the planning process while the plans are still in their nascent stages.

Traditionally, evacuation planning in New Orleans has been stove-piped, meaning it is structured vertically, and it may be better to take a more horizontal planning approach to reach more targets. Currently, the City of New Orleans staff and budget for those that deal with evacuations are back to pre-Katrina days. There are no longer assurances that evacuation will be funded as it should. Due to this, it is extremely important for citizens to take control and have community based conversations. However, there is also a risk for preparedness fatigue with this approach.

As far as bringing the private sector to the planning process, incentivizing private evacuation efforts could be necessary. There are many private transportation assets that would be of great assistance—85 percent of the U.S. infrastructure is built and maintained by the private sector. This sector includes tourism, charter buses, and hotels, among other entities, that could play a part in evacuation implementation. Most often, the interaction between the private and public sector often consists of a single point of contact and if that fails, the whole conversation is for naught.

Community-based organizations use their representatives to determine the different neighborhoods' unique needs and to establish contacts to further broaden the evacuation planning conversation. It is a grassroots way to start dialogue and include the greatest amount of people. Enough time has passed since Katrina that things and preparations will need refreshing again.

In comparison to another hurricane-prone city, Miami's MPO does not have a role in an evacuation. Alternatively, the New Orleans Regional Planning Commission has a large role in the event of an evacuation. The RPC has a broad mandate and is able to assist other parishes that may lack certain resources during evacuations.

Catholic Charities has standing Memorandums of Understanding (MOUs) in place with area charter buses, vans, and other transportation services, which they can use as needed. They also use their own transportation and do not have to depend on RICPs.

Receiving funding from outside sources for evacuation planning is episodic and giving is seen not to provide tangible investment for these outside sources. The private sector would not necessarily fund evacuations without incentives, so if they were to be included, it must be with a question of "How can you help us?" so as to play to the collective advantage of all parties. This may prove important since the Katrina money is dried up; however, even with funding struggles, the story of evacuation and preparedness must be an everyday narrative within the community.

In comparison to Miami dealing with Andrew 20 years back, the city manages to keep preparedness fresh every year, whereas New Orleans seems to move farther away from preparedness each year. Despite a key difference in Miami focusing more on sheltering than evacuation and the fact that it is a far wealthier city, it also has an evacuation component built into its build applications to encourage mitigation.

Related to the bringing in the private sector, one idea is to approach the insurance industry with ideas of how it can save money. If these ideas are aired, insurance companies may be more inclined to assist with the efforts. It is a way to providing funding while building resiliency. New Orleans should look to Miami for ideas of how this may work best for the area.

Outreach and Identification

The farther we get from 2005, the more some events are forgotten and the more of an uphill battle it is to reach people. One model that could serve as an example of how to reach and identify people would be New Orleans' Catholic Charities. They have standing MOUs with area homeless shelters to recognize potential carless candidates. They also work within the diocese and congregation to train and have disaster plans and leaders in place throughout the churches and also to identify the vulnerable population through that process.

Similarly, there was an outreach program through the Red Cross called "My Brother's Keeper" that helped train hundreds of people and assisted in producing a database of at-need candidates as well as bring communities together. Evacuteer organizes and participates in biannual events commemorating the beginning and ending of the season so that it can bring more attention to hurricane preparedness.

The 311 calling service was defunded at the tail-end of the Mayor Nagin administration and was picked back up under Mayor Landrieu in recent years.

For medical special needs, 311 partners with clinics and can register for CAAP once called. The caller runs through a three-question survey and if the answer is yes to any question, he then escalated to a nurse. The nurse follows up and determines if an ambulance is needed for transport. If a caller can sit up in bed, then he does not need an ambulance for transport. It is vital to use 311 and the ambulances in the most efficient way possible. Users have to reregister every year, with the database also being updated on a yearly basis. Faith-based organizations also work with their members and communities to identity those that may need transportation.

However, due to confidentiality agreements, it is often very difficult to share these lists with outside entities. The City only has four paid workers who attempt to coordinate the task of working with partner agencies to determine a clear list of those at need. It should also be noted that this process, regardless of the difficulty, is still better than pre-Katrina. In total, there are roughly 30,000 people on the registry list at this time.

In discussing what segments of the population may have been overlooked within the carless and low-mobility population, one include the homeless and/or low-income adolescents and the other includes those in the public who have an aversion to inclusion on any form of government or organizational list. The overall homeless population is monitored well enough so that there is very little overlooked within that community.

Mid-City has the highest number of participants on the registry, in part, because that area has a solid network of transportation alternatives. This is important because 20 percent of the New Orleans population remains carless. The means to reach people depends on the individual. The most essential aspect of outreach is community involvement. Technology and printouts do not work well, considering the target audience may be lacking in the means to either view or obtain the information. This community involvement outreach should not just end at the community leader—it is necessary to reach others face-to-face. It is without question the most critical component.

Evaluation of Response

Considering that the registry is operational, there are numerous ways to evaluate the success of a response. One of the biggest challenges is preparedness fatigue. Around 1.7 million people left the gulf coast for Gustav and of those, many said they would never evacuate again.

Part of what needs to be done is to focus primarily on preparedness and not evacuation. The City must acknowledge that hurricane season is not really 6 months but actually 12 and must prepare accordingly. Ideally, children would come home from school asking their parents "Where is my disaster kit?"

Community-led traditions must also be established. These would be seen as inspirational and would force people to think for a moment about ways in which to help themselves as well as those around them in regards to response. The biannual hurricane gatherings are an example of traditions that would help the public.

Citizens of New Orleans must have a more realistic understanding of what it means to live in this area. They need to know how much time they would have it the levee breached and have a route and bag ready in that event.

Stakeholders can also be better identified and a concerted effort should be made to reach those who are not yet attached to any organization. Currently, some surveys show that only 30–40 percent of the population has taken steps to prepare for an evacuation. Some organizations have also seen a decrease in attendance in their preparedness meetings. Citizens need to embrace their stakeholder role and encourage dialogue with one another to continue the evacuation conversation.

New York City

The following is a summary of stakeholder responses to evacuation planning issues for New York City. This information was compiled from written responses to the workbook and a discussion moderated by John L. Renne and Thomas W. Sanchez on October 26, 2010. Representatives from the following organizations were present:

- Con Edison
- Metropolitan Transportation Authority (MTA)
- New York City Department for the Aging (DFTA)
- New York City Department of Health and Mental Hygiene (DOHMH)
- New York City Office of Emergency Management (OEM)
- New York City Transit (NYCT)
- New York State Department of Transportation – Albany (NYSDOT)
- New York University Public Safety (NYU)
- New York University Wagner Graduate School of Public Service (NYU)
- The City University of New York – John Jay College (CUNY)
- World Cares Center

Planning Process

- The Office of Emergency Management (OEM) is the primary coordinator of evacuation planning in New York. The Department for the Aging (DFTA), State Department of Transportation (NYSDOT), and New York City Transit (NYCT) are some of the agencies that use their plans. Many organizations

provide the data inputs for OEM's plans. The Mayor's Office, MTA, and DOHMH are cited as other sources for plans. Emergency Management Assistance Compacts (EMAC) are mutual-aid agreements.

- Inventory—NYCT keeps an inventory of transit vehicles, and DFTA keeps a directory of senior centers and transportation programs.

Outreach and Identification

There is no single registry for special needs; each service provider keeps its own, which is a problem. NYSDOT thought DFTA kept a registry, but it is actually kept by community-based organizations. Some agencies and transit providers cannot use volunteers, but there are conditions in which employees are used. DFTA has staff that are asked to volunteer and provides training. OEM's CERTs coordinate human service partners and volunteers. There is outreach being done about pedestrian evacuation. OEM's "Ready NY" campaign is aimed at personal preparedness and uses many languages. Special needs are generally self-designated, and outreach is done through agencies and direct mail. Citizen Corps Council, Medical Reserve Corps, Community Emergency Response Teams, Volunteer Organizations Active in Disasters. Related to demographics, some Census analysis has been done, but not enough.

Plans

Staging sites are uneven, voluntary, and vary in resources. Shelter locations are kept confidential. The community wants to know where to go, however. Evacuation centers are identified. There are special needs shelters for medical needs. Advanced Warning Systems (AWS) provide rapid messaging and coordinate with OEM and transit agencies. "Notify NYC" is an email and text messaging alert system. 311 and 911 systems are used for people needing help and transportation. A hazard-specific approach to transportation is necessary because they impact different modes differently. Public transit is encouraged. Pedestrian evacuation should be encouraged.

Process Evaluation

Transportation infrastructure conditions for re-entry are reported through the existing dispatchers and command centers. NYCT debriefed and reported lessons learned after 9/11. OEM plans could use more about re-entry. OEM's Emergency Operations Center has capacity for regional partners and plans for a backup center. There is a Regional Emergency Liaison Conference Call.

Next Steps

The Regional Catastrophic Planning Team/Grant provides for planning for the region to tackle natural and security disasters. The UASI funds and coordinates 8 or 10 municipal agencies. Smaller organizations and NGOs are not funded for

disaster management or have "unfunded mandates." Agencies may not fund staff to attend meetings of non-profits.

Other Concerns

People who are not economically disadvantaged and who are voluntarily carless will need the same resources and have some of the same challenges as special needs populations. There is a conflict between confidentiality of plans and outreach and education. Evacuation planning for school children; after 9/11 many parents could not find their children.

Miami

The following is a summary of stakeholder responses to evacuation planning issues for the Miami region. This information was compiled from written responses to the workbook and a discussion moderated by John L. Renne on April 26, 2011. Representatives from the following organizations were present:

- Alliance for Aging, Inc.
- American Red Cross
- Community Partnership for the Homeless, Inc. (CPHI)
- Florida Department of Emergency Management (Florida DEM)
- Florida Department of Transportation (FDOT)
- Florida International University (FIU)
- Miami Coalition for the Homeless
- Miami-Dade County Public Schools (MDCPS)
- Miami-Dade Emergency Management (Miami OEM)
- Miami-Dade Transit
- Monroe County Board of County Commissioners (MCBOCC)
- Monroe County Emergency Management (Monroe OEM)
- Monroe County Health Department (Monroe DOH)
- South Florida Regional Planning Council (SFRPC)
- The Arc of South Florida

Planning Process

- Identifying disasters—The State has just completed a statewide regional evacuation study with 11 planning regions and 7 operational regions. The study separates storm threats into five categories for wind speed and uses an A to E scale for storm surge (available at http://www.floridadisaster.org/res/index.asp). One planner described it as more of a framework/strategy than a plan. The strategy is revolves around what issues need to be considered.
- Most plans for Monroe County (where Key West is located) are all-hazard. The biggest threat is hurricanes Category 3 and higher. The possibility of

a bridge failure necessitates a sheltering plan. They work closely with the National Weather Service and monitor lower-category storms that do not require evacuation closely. Key West is the only place where flooding is a threat.

- Carless evacuation plans—At Miami-Dade Transit, the Miami area practices its plans often. It is not a full evacuation plan; it aims to transport people from vulnerable areas to safe areas. The role of public transit buses is to pick up able-bodied people, and school buses are used to pick up special needs. The pick-up points are sorted by ZIP code, grouped into special route maps based on location, and distributed to drivers. This minimizes distances traveled. Pick-up points are identified with special bus stop signs. Turkey Point has a special set of maps.
- Transport for drivers' families-For Miami-Dade Transit, drivers are not first responders, so there is no legal requirement to serve. There is an emergency contact list, and assignments are based on duty and availability. A backup plan to use National Guard troops for drivers would help. In Monroe County, there is a requirement to help in an evacuation in their job description. There are backup drivers, and families are generally allowed to come on the same bus. In Monroe County, carless populations are not addressed in the special needs directory. They can use the existing bus plan for the general population, which has lots of outreach.
- Vulnerable populations—The Red Cross has done a review of shelters for ADA compliance in response to a Department of Justice lawsuit relating to a gentleman with disabilities who was not allowed in a general population shelter. The settlement with the school district mandated ADA compliance (used to be case-by-case), and the settlement with the County relates to signage. The primary shelters are all ADA-compliant; the secondary and tertiary shelters are not all complaint. There are generators for air conditioning at all special needs shelters, but not all general population shelters.
- Homeless population—There are more homeless people in the winter than the summer, with around 800–900 are on the street; there used to be 8,000 but a citizen tax addressed much of the problem. The size of the "shadow" population is unknown. The shelters work with the Red Cross to provide meals during an emergency. The shelters use the transit bus plan and work with the EOC. There is a pre-designated evacuation site, a school. For homeless on the street, a Community Action Agency brings them to shelters by bus. Miami-Dade Transit has had problems with post-disaster return transportation. Homeless people do not have a physical address and will sometimes refuse to leave the bus. In Monroe County, similar problems have arisen, and the police are unable to remove them.
- Regional cooperation—Local planning is highly valued for evacuations and is integrated well into the plans at higher levels of government. There are regional conference calls. Plans are coordinated in a phased approach with local and county plans. Re-entry is based on impact and is determined locally.

Outreach and Identification

- Registries—The State requires every county to have a registry, which falls under emergency management. Monroe, Miami-Dade, and Broward counties are the most aggressive on outreach. One concern is that being on a registry is a requirement for insurance, in some cases, and these people may not actually intend to use it. Outreach is important to determine an actual number of users. A big issue is comparing the registries to the state public health vital statistics to keep the registry updated. In Monroe County, registration involves huge outreach operations, described below. The registry is updated daily, is active in removing deceased residents, and an annual call contacts everyone on the list. In Miami-Dade County, similar to the Monroe registry, it is large-scale and has two call-downs annually to update it. Volunteers from the Red Cross call the list in an evacuation.
- Outreach— Outreach from the Red Cross is very good at assisted living facilities, and guides are very helpful. Outreach to people living alone is harder. In Monroe County, community organizations, health providers, word-of-mouth, local TV, newspaper, website, radio, and electric bill outreach is done.
- Behavioral studies—The statewide regional evacuation study used 8,500 responses to determine how people would react to a disaster. Jay Baker at FSU is a key researcher in this field. The study was based on vulnerability areas, assessments, hazards, and transportation analysis. This study developed software called "Transportation Interface for Modeling Evacuation" (TIME) with the Florida Department of Transportation (FDOT). This software is provided free to all communities, but FDOT also wants to train people to use it, and there are sessions for this.

Plans

- Alerts—In Monroe County evacuations, coordinators are alerted 48–72 hours before, and special needs evacuees are notified 12-24 hours before. They are picked up, taken to Florida International University (FIU), and brought back. They have been told to have a pack ready, but can forget things in a panic. Some help is possible when transportation arrives, but it is hard to make sure everything is packed. The driver can enter the home and grab the bags, but there is not enough time to pack. People who cannot make it to the pick-up points can be picked up at home by staff.

- Shelters—In Monroe County, special needs individuals are evacuated to FIU, and the general population goes there as well as elsewhere. FIU can accommodate 91 special needs (60 sf each) and several hundred general population, but these populations cannot mix. There are 393 on the Special Needs registry, and currently no plan for the 92nd person. They are looking for a backup for FIU within Miami-Dade County. Schools are a last resort, and are all Enhanced Hurricane Protection Area (EHPA) compliant. "Refuge of last resort" is preferred because it implies that there are no amenities

(versus a shelter). In Miami-Dade County, public schools are expected to be EHPA and follow the Florida Building Code. There are non-EHPA schools that are used as shelters because all schools are offered to the state, and the state decides which ones to use. The state requires a shelter inventory every two years, and the legislature makes sure this happens.

- Health care—In Miami-Dade County, every residential care facility submits a plan for review. They must have food, water, transportation, and mutual aid with another facility. The OEM has a registry of children and electrical-dependent and bed-bound citizens. Plans are updated annually, and the registry is contacted. At the time of an emergency, they are contacted and transported to hospitals based on location. In Monroe County is one nursing home, which has its own plans.
- Transportation—In Monroe County, a coach bus service is contracted to help with evacuation. Special needs are in the registry, transportation system, and paratransit system. Transportation planning and special needs planning are done in the same room. It can take all day to get from Key West to FIU. Because there is one road out, Monroe County needs the greatest warning. There are feeder buses to a high school in the upper Keys (Coral Shores) and American Coach buses that go to FIU. At Miami-Dade Transit, two wheelchairs can fit on a bus, and four on a coach bus. Some paratransit vehicles are wheelchair accessible. After Hurricane Andrew destroyed some buses, the agency would like to move their buses out of harm's way.
- Bridges-The bridges in the area never officially close, which is a popular misconception. They are advised not to be used at a certain point, and drawbridges are locked down by the EOC, coast guard, and DOT.
- Provider duplication—Transportation providers send a copy of all contracts with facilities that they have to the EOC. Assisted living facilities are required to have two transportation services (can be from the same provider). This can be two vehicles for small facilities.
- Volunteers—In Monroe County, many volunteers were signed up and trained a few years ago, but that number has dwindled to zero. They had a grant to start back up, but there were problems, and the funding was reallocated. Religious groups such as San Pedro have offered their building and volunteers. Shelter managers are volunteers—County employees that become temporary disaster workers—and are paid $12/hour after a security check. This is not mandated. In Miami-Dade County, there is a Disaster Assistance Employee (DAE) program. Non-essential employees are required to report to the EOC and are given many duties. They have gone through an employee orientation. There is a "blue book" of 25,000 employees and their assigned response.
- Red Cross and CPHI work together to provide food service.
- Broward County Human Services has non-essential employees and social workers who are assigned to shelters.

- CERT Teams are useful on a neighborhood level. It is hoped that these are the most prepared citizens in the community and that they won't draw on resources needed by others.
- Re-entry—Compromised structures (such as a house) can mean people will need to be picked up again. Monroe County will not drop people off unless the structure is habitable. Sequencing of re-entry, security checks, determining critical private sector workers are all done on a local and county level. Monroe County uses colored stickers on vehicles. Statewide, there are staging areas and resources at rest stops, a logistics center in Orlando, and plans for first responders and road clearance. The same checkpoints are used by state and local governments, making conflicting security problems less likely. Counties are anxious to get schools operating again, but some of the evacuees are newly homeless; there is a need for post-disaster sheltering.

Process Evaluation

- Updating plans—For Miami-Dade Transit, planning is done in-house. It helps to run the plan several times a year to evaluate it. The FTA and State safety oversight mandate periodic updates to their plans. System Safety Program Plan (SSPP) and System Security and Emergency Preparedness Plan (SSEPP) are two plans that review and revise Emergency Action Plans every year. A hurricane preparedness plan is revised every year and sent to many cities across the country as a model.
- CPHI—The main focus of what CPHI does each year does not change, and many of the responsibilities happen every year. For this reason, it is high profile, and receives funding. It is also funded by a sales tax.

Next Steps

- Funding—Florida has very advanced hurricane planning. There were several years with many hurricanes, so funding was easy to obtain. This funding has paid for LIDAR, surge maps, behavioral studies, and demand data. The State understands that "all evacuation is local." The State has also received Hazard Mitigation Grant Program (HMGP) funding from FEMA.

Other Concerns

Social media is already a reality for any evacuation. What is missing is an integrated application for the various forms it takes. FEMA is using it. It is also important to note that older adult populations are using cell phones more, and low-income people are more likely to have only a cell phone.

Chicago

The following is a summary of stakeholder responses to evacuation planning issues for Chicago. This information was compiled from written responses to the workbook and a discussion moderated by John L. Renne on December 7, 2010. Representatives from the following organizations were present:

- Center for Neighborhood Technology (CNT)
- Chicago Metropolitan Agency for Planning (CMAP)
- Chicago Transit Authority (CTA)
- Chicago Department of Transportation (CDOT)
- Illinois Department of Public Health (IDPH)
- Mayor's Office for People with Disabilities (MOPD)
- Office of Emergency Management and Communications (OEMC)
- Regional Transportation Authority (RTA)

Planning Process

OEMC is the primary coordinator of emergency and evacuation planning in the city of Chicago. It does tabletop exercises to prepare for disasters. IDPH has an all-hazards approach with an informal system to update the plan. The Illinois Emergency Management Agency (IEMA) collects and compiles all local evacuation plans. The Special Needs Advisory Panel (SNAP) is a City-County initiative but does not yet have a transportation component. The Collaborative Healthcare Urgency Group (CHUG) contracts mass care and shelters for functional needs.

- Inventory—OEMC has a database of care facilities and statistics. CDOT has inventories of resources and demographic data, and has done some modeling. RTA is a planning and financial oversight agency; it has an inventory of buses, but does little evacuation planning.

Outreach and Identification

- Registries-The Mayor's Office for People with Disabilities (MOPD) works with OEMC on a voluntary registry; those who do not update are dropped. RTA has a database of paratransit customers as well as their disabilities. The CTA works with the Department of Aging (DOA) and MOPD to identify people with special needs. IDPH works with a team of agencies and has a Mass Care/Mass Shelter committee to identify special needs, but registries are kept at a local level of government. State law now requires municipalities to have a registry.
- Outreach-OEMC does outreach to NGOs and non-profits through community meetings; the "connect the dots" program is an example. "AlertChicago" is OEMC's personal preparedness initiative. CTA has

outreach in multiple languages; it publicizes pick-up locations in the media and other resources.

Plans

- Alerts-OEMC's Emergency Operations Center notifies transportation providers; 311 is used to track requests. The CTA has an emergency communication system to notify transportation providers.
- Shelters—There may be an inventory of staging points. Shelter sites are kept confidential, but communities want to have information.
- Transportation—CTA has 1,781 buses equipped to transport people with functional needs, and some have specialized equipment. Pick-up locations are staffed based on a predetermined hierarchy. Service animal transport must be considered. MOPD has agreement with paratransit operators. The bus and rail system provide redundancy in many places; the rail system is electrified.
- Volunteers—At the state level, the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) is used.

Process Evaluation

Traffic management centers assess road conditions. CDOT debriefs afterwards.

Next Steps

- Funding—the Emergency Management Assistance Compact (EMAC) allows for the city and suburbs to share aid.

Other Concerns

- How do emergency plans become ADA compliant? Community confidence is key; the OEMC must see communities as clients. A continuous dialogue is missing. There is no neighborhood level planning.

San Francisco–Oakland Bay Area

The following is a summary of the stakeholder responses to evacuation planning issues for the Bay Area. This information is compiled from a discussion moderated by John L. Renne on April 18, 2012. There were 19 representatives across numerous fields present at the meeting; unfortunately, none of the agencies represented were transit agencies. The agencies present included:

- San Leandro City Emergency Preparedness
- Eden Medical Center
- Alta Bates Sutter Health
- Children's Hospital and Research Center
- Livermore-Pleasanton Fire Department

- Alameda Sheriff's Office
- City of San Francisco Department of Emergency Management
- City of Oakland Office of Emergency Services
- Berkeley Unified School District
- American Red Cross
- Holy Names University
- Mills College
- California College of the Arts
- City of Oakland Parks and Recreation
- CARD, Collaborating Agencies Responding to Disasters
- Alameda County Medical Center
- City of Oakland Department of Human Services
- Consultant Company

Planning and Outreach

- Key takeaways—the Bay Area is a progressive region that encourages a holistic, all-inclusive approach to planning in the area. Evacuation shelters do not separate by needs for certain segments of the population in the event of an emergency evacuation. Fundamental to their system is having the capability to include all persons in every facility.
- One key component they felt was lacking in the overall process was the ability to track inventory. An additional issue was whether or not regions and transportation agencies/companies with MOUs had the ability to actually follow through with those agreements in the event of a large scale evacuation when there is a possibility that other cities and facilities may have MOUs with them as well.

Planning Processes

The Children's Hospital, in accordance with their accreditation process, created a dataset of non-federal helipads across northern California and parts of Nevada and Oregon. In coordination with CalTrans, the dataset contained information on 140 hospitals, including pictures, specifications, helipad facilities, and mapping features. This has never before been attempted at any other hospital in the area. This process, essential to their highly regulated industry and in receiving accreditation, also helped stimulate thought about how this can be of benefit in the event of an emergency evacuation. Aside from being useful for day-to-day operations, in the event of a local or large-scale catastrophe, the dataset can also be shared with pilots and other hospitals to assist with their evacuation efforts.

As a children's hospital, there are also other complexities such as extreme NICU and Pediatric Intensive Care Unit patients may require cumbersome instruments

for transport. There is also the added difficulty of accounting for outpatient care patients, such as an asthmatic child living in a wildfire prone area.

Evacuation of the hospitals is first done at the city and county level. Transport in the area is heavily reliant upon MOUs between hospitals and transportation companies. Alameda County is a heavily collaborative county that is reliant upon sharing information and coordinating between various agencies. MOUs were initially executed at the county level, but have since moved beyond jurisdictional boundaries. Currently, Alameda extended its MOU to three neighboring counties. Alameda County also required for accreditation to ensure that they were properly integrated within the community. MOUs between suppliers and other facilities must also be vetted and established.

The system in the region is designed to be multi-tiered. When immediate local resources are drained, they move to the next highest level. In theory and if necessary, this process would continue up until the federal government would get involved. This process has separate groups looking at cities and regions initially and establishing MOUs within one another as well as outside agencies. However, data collection and inventory assessment is missing in this equation. Presently, however, there is a State-led metrics program to track equipment and personnel throughout the state in order to send the proper equipment to the areas that need it most. This has to occur at the state level because local jurisdictions cannot be expected to create a metric system of this magnitude on their own as they simply cannot function on that level.

Each city typically has its own evacuation plan, which is modeled off the regional plan. Regarding tsunamis, San Francisco has defined the potential impact zones when high tide is present. Maps were created and warning and evacuation route signs posted.

The City of San Francisco has an MOU in place with groups ensuring 150 paratransit vehicles to evacuate functional needs individuals from their present locations.

San Francisco has a plan in place to use the ferries during an evacuation. Collaboration for this is done at the state level under the San Francisco Bay Area Water Emergency Transportation Authority. An issue with this plan is not the retrieving of people, but identifying a proper drop-off point.

Emergency preparedness is focused heavily on resilience. Looking across sectors highlights different segments of the population with regards to the vulnerability. Understanding the complexities and diversities of communities at large is essential to achieving success.

Outreach and Identification

Within the healthcare system, hospitals are only one component. Community clinics and skilled nursing groups are not at the same level as the hospitals when it comes to evacuation planning. Some have plans that call for patients to go to one hospital or another, while it could be that the receiving facility does not have enough room to house additional patients. A manifest tracking and banding system was instituted so as not to lose track of certain individuals as they are relocated.

A regulatory framework began five years ago with the California Community Care Licensing Division Title 22 issues need to be addressed as well. This process helps hospitals identify partners that will support the evacuation of a facility and assist in moving patients.

Due to the topography of the area, if something happens in one area, it is necessary to depend on neighbors to assist one another, so a tri-city plan was created for cities in eastern Alameda County. LAVTA (Livermore Almador Valley Transit Authority) provides evacuation services that are operated by local drivers and vehicles. They have also created alternative route plans with County transportation departments, creating a list of local stakeholders and features what each group can bring to the table in terms of resources and manpower. California State Law 3100 also requires government employees to respond to all emergencies and evacuations where possible, also helping curb any truancy of the transit agency drivers.

Some area colleges are also concerned because they are not certain where to turn to establish planning and recognition during an evacuation. They feel that since they have large grounds and numerous buildings, the nearby public would gather there and turn to them for help; unfortunately, the colleges present did not know what information they could relay or direction they could give to help remedy such an event. They also were not certain how transit would factor into the equation. Hospitals facilitate the conversations by being proactive and seeking transit and emergency personnel contacts before a disaster in order to gain knowledge and better contacts. The colleges need to speak with the Oakland Office of Emergency Service to create an evacuation plan. This will help initiate the proper response from the EMS. Furthermore, if a catastrophic event does take place in the area, local transit buses will be insufficient for evacuation. Oakland would need to turn to San Francisco for assistance.

The Office of Emergency Services began developing scenario-driven regional preparedness plans for the community. Some universities were involved and others were not, which goes back to the lack of community recognition and outreach that is sometimes apparent in the area.

The local government has traditionally done a poor job of dispersing information to the public. Occasionally, outside agencies and non-profits are brought in to help mediate discussions, but the conversations are not sustained and soon fall to the wayside. As far as quick notification and outreach, one agency found using nixle.com was a reasonable way to disperse quick information to the public, allowing batch alerts and texts to be sent all at once. However, this system is dependent upon there being power in the area.

In regards to cultural preparation, CARD assists in bringing attention to accommodate the various language groups, which should also be sensitive to what these groups need from the agencies. Simply translating an English pamphlet will not work. Studies have shown the ability to speak a second language significantly reduces when under duress.

In the area, as in across the nation, 211 is used to help find shelter following a disaster; 511 is used to communicate road closures and transportation issues.

Evaluation of Response

California is unique as compared to other states and their needs are reflected in that as well. The State has a standardized all-purpose emergency plan, and the conversations work well within places the system is already established. However, it is not established everywhere and more attention and dialogue needs to be brought to communities concerning the matter. An example of this shortcoming was identified when one agency was speaking to the board of a health care facility and it was made apparent that they had not even considered preparations for an emergency event. A newly-implemented State law helps facilitate this by reimbursing non-profits for disaster response and education.

MOUs are not the "be all, end all." They exist, but one county may have hundreds of them with different organizations and these may be in conflict with one another. The numerous groups need to compare plans and operations to verify that there is no overlap in the event of a large disaster. The hospitals are also unsure of identified earthquake evacuation routes and if they do exist, then they are apparently not readily shared with the public. However, due to the nature of the terrain and the unpredictable results from an earthquake, evacuation routes may not be of use whatsoever in the county.

The planning paradigm present in the area has not advocated for carless and vulnerable populations as unique plans. The Bay Area leads the country in taking a holistic approach to planning and does not divide special or functional needs from the general population within shelters. They do not build a special annex to deal with functional needs individuals. This is in part, due to threat of litigation so great efforts are made to be all-inclusive. ,

Any organization not planning for the totality of the community will be left outside of the conversation as well as funding sources. As one agency stated: "Annex is a nice way of saying you're an afterthought. We have been sued by the best of them. We are the home of the vulnerable population movement, so we have much more experience at this than the rest of the country."

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U.S. Department of Transportation
Federal Transit Administration
East Building
1200 New Jersey Avenue, SE
Washington, DC 20590
http://www.fta.dot.gov/research