

THE FOUR ESSENTIALS OF LIFE

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WASHINGTON POST

*Human Response in Disasters Drives
New Approach to Emergency
Management*

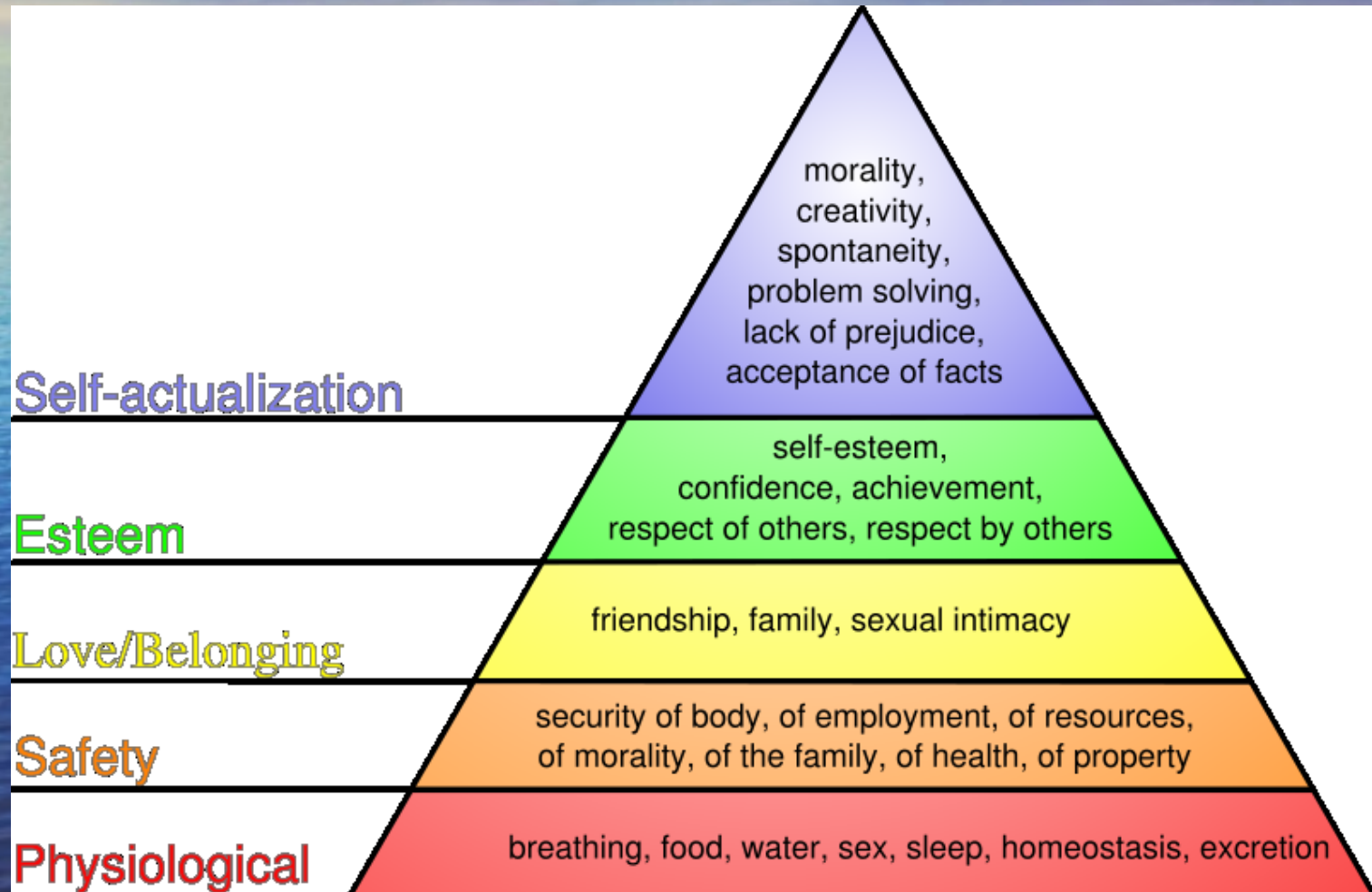
Economic Realities

- **13.2% below poverty level** (Feb 10)
- **9.7% unemployment** (Feb 10)
- **1.5 mill on food stamps (30% increase in 1 yr)**
- **20-25% increase at food pantries /soup kitchens**
- **22% of population does not have one credit card**
- **25% of households lack bank accounts or use payday loans**

The Economy & Emergency Management

- Increase in special needs populations
- Increase in assisted evacuation
- Fuel, food & shelter demands increased
- The cost of personal preparedness
- Are we asking too much?

Maslow's Hierarchy of Needs



Human Behavior & Emergency Management

- **How do people actually react & why?**
- **Accept what is, not what we want to believe**
- **What we plan, and what people actually do are increasingly different**
- **Design systems to support what people actually do**

Human Response in Emergencies

- **Most people take shortcuts based on experience, emotion & various biases**
- **They will act in what they believe is in their best interest**
- **Efforts to modify these behaviors will not significantly influence actions**

The Four Essentials Of Life

From the human perspective...

Communications

Transportation

Power

Water

#1 -- Communications

- **The prime directive....communicate!**
- **Confidence provided by communications**
- **Happening independent of e services**
- **Reduces fear and anxiety**
- **Enhances resiliency**



Recent events...



Virginia
Tech, April
2007



Sichuan China EQ,
May 2008



Mumbai, Dec 2008



US Airways
Crash, Jan 2009

Australian Bushfires
Jan 2009



Red River Flood
March 09-10



Iran Election
Protests 2009



Philippines,
October 2009



Haiti January 2010



H1N1 outbreak



Mind Boggling Numbers

- **87% of the US population owns a wireless device**
- **90% of Americans are within 3 feet of their mobile device 24 hours a day**
- **35% of US households basically wireless**

Communications

- **Billions of cell phones /communications devices**
- **Public expectation is to communicate 24/7**
- **An imperative to communicate**
- **Nothing can be done to reduce this imperative**

Communications

- **Public to public communications underway before authorities have arrived on the scene**
- **Cell calls, text messages, photos, video, and audio**
- **Viral communications**

The Media Role

- **CNN I-Reports pull communications from the public**
- **Local TV Stations: encourages viewer submissions**



Actions for Emergency Managers

- **Prepare PSAPs & EOCs to use new media**
- **Follow lead of news media – pull & push**
- **Give highest priority for restoring cell phone service post incident / post disaster**



#2 -- Transportation

- **Normal rush hours demonstrate inadequacy of highway system**





Transportation

- **Get to my family, Get away from danger**
- **Drastic increase in “special needs” populations**
- **Non-self evacuating populations**
- **Who pays?**

Transportation

- Only 11 of 37 urban areas received passing evacuation grades
- Evacuation of urban areas is critical unresolved issue in emergency management today



Actions for Emergency Managers

- **Move evacuation to high priority and decide who will pay**
- **Use easy-to-understand visuals & process**
- **Pass state legislation for generators at gas stations**



#3 -- Electrical Power

- **Everything we do is based on having availability of power**

- **More batteries than ever before, even our candles!**



- **Without power, society loses all key functions**
- **But, loss of power is not in DHS catastrophic planning scenarios.....**

2003 Blackout

- 9,300 square miles
- 8 states, 2 provinces
- 50 million people
- No trains, no planes, no cell phones, no computers
- Water systems shut down



Power Concerns

- **Intentional intrusion of electrical grid**
- **Most fire, police, government buildings do not have full building auxiliary power**
- **Power companies selling generators for homes**
- **Portable generators**



Mixed Messages?

- **Power companies selling “whole-house” generators for private homes**
- **Portable generators**
- **Gasoline?**



Actions for Emergency Managers

- **Sustained power interruption must be part of your catastrophic planning**
- **Address availability of gasoline/diesel**
- **Key government facilities must have backup power**

Community Points of Light

- **Every fire station**
- **Every police station**
- **Major public buildings**

- **Whole-building generators**





#4 -- Water

To sustain life

- 5 weeks without food**
- 5 days without water**



**Potable water is one of the first post-disaster
“requirements” for both responders and survivors**

Movement of Water = \$\$\$

- **Katrina/Rita**
- **13+ mill gallons**
- **More than \$100 million**

- **Gustav/Ike**
- **10+ mill gallons**

- **8 pounds/gallon**



Alternatives for Water Purification

- **Lifestraw: 3 year shelf life, 184 gallons or 1 year of use -- \$3.00**



- **PUR Purifier of Water: costs \$0.10 for a family of five for one day**

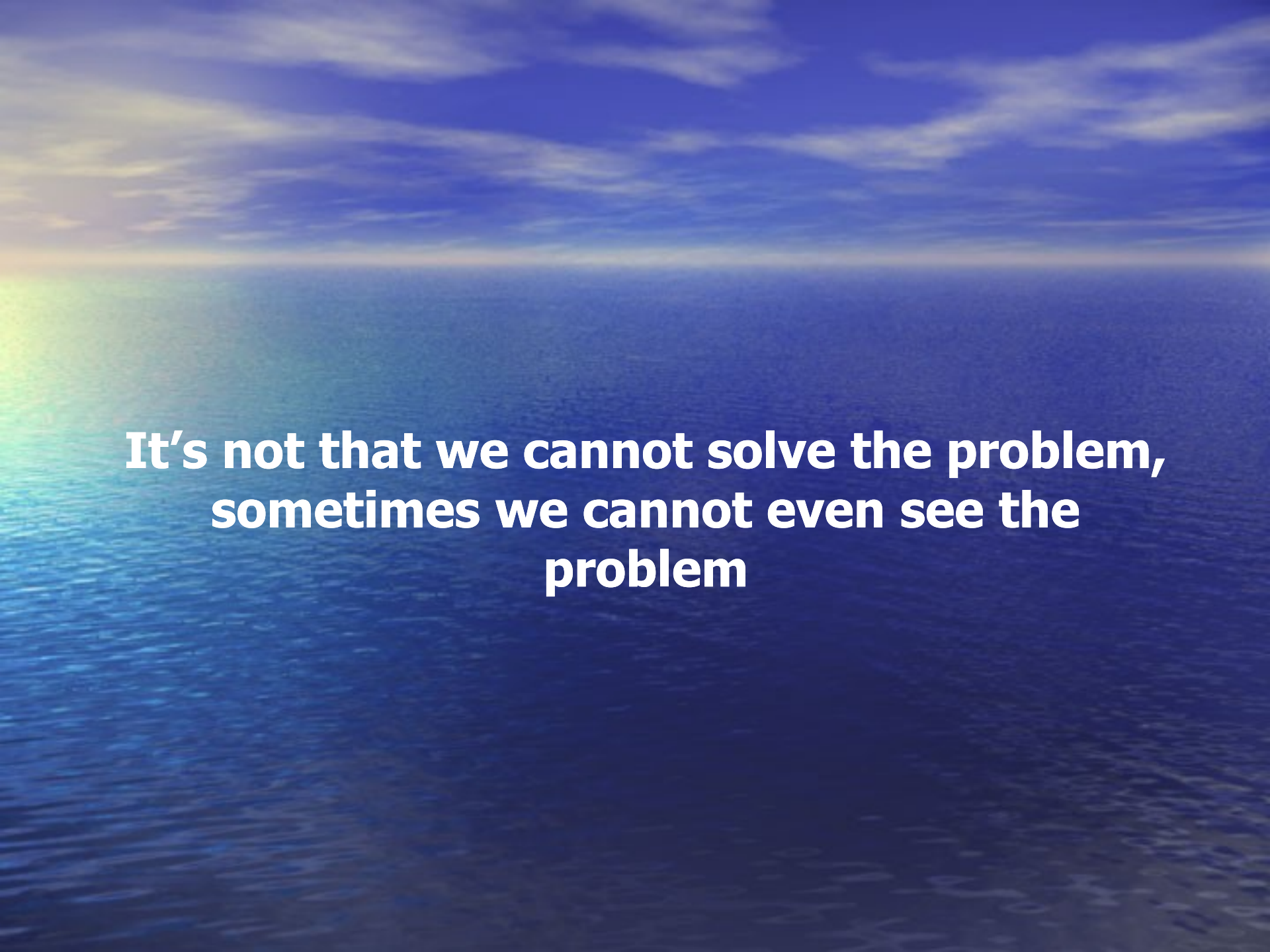
Actions for Emergency Managers

- **Increase public education about water**
- **Address water supply chain**
- **Use alternatives for purification**



Looking to the Future

- Base actions on research of what people actually do in emergencies & disasters
- Accept what is, not what we want to believe
- Design systems to support what people actually do



**It's not that we cannot solve the problem,
sometimes we cannot even see the
problem**



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