

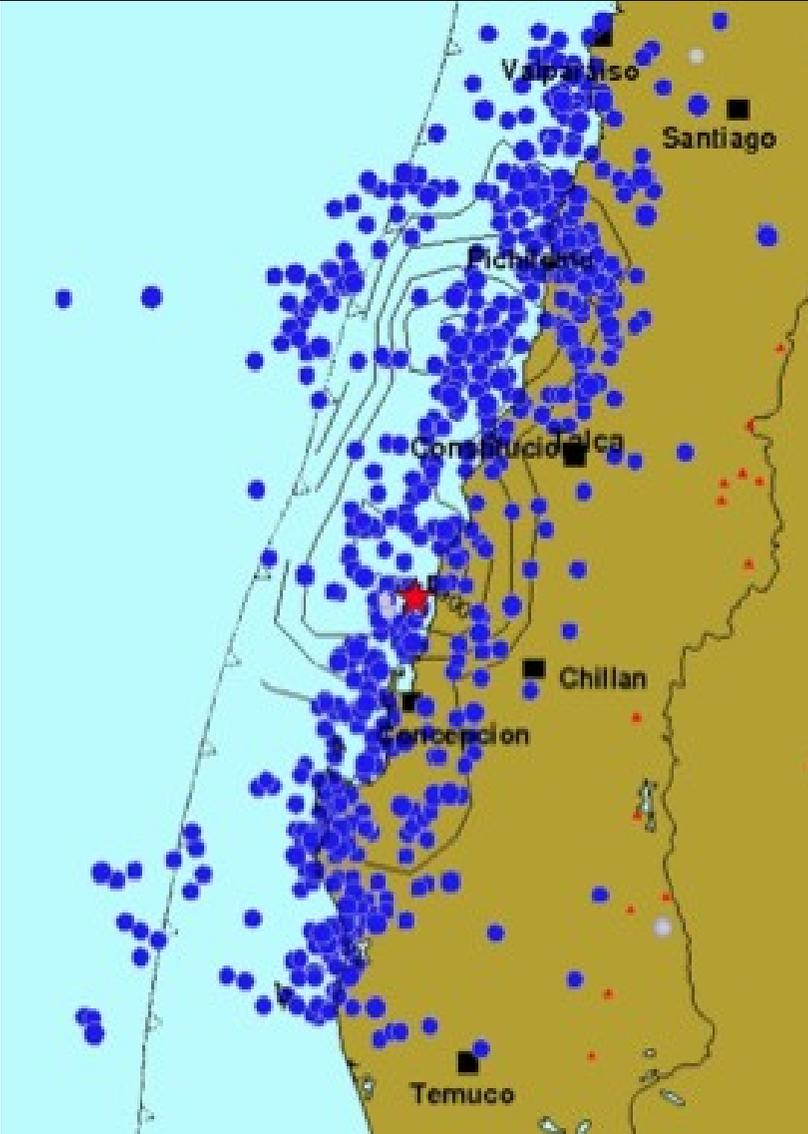
# Survival & Recovery from a 7.8 & 8.8 Quake: Lessons from Haiti & Chile for the US



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# On Saturday, February 27 at 3.34 AM an 8.8 Magnitude Earthquake & A Series of Aftershocks Struck the Maule Region of Chile



**435 Mile Long Area**

**12.8 Million People Effected - Similar to LA**

**802- 521- 279\* Killed**

**800,000 People Displaced**

**370,000 Buildings Damaged**

**170,000 Buildings with Major Damage**

**73 Hospitals unable to Operate Immediately**

**221 Bridges Damaged**

**Moved Earth 3 Inches off its Axis**

**Shortened the length of the day by 1.26 microseconds**

**\$8 Billion in Damage**

**10 Minutes later a series of tsunami waves  
hit low lying coastal towns  
like Talcahuano Killing Hundreds**



# Weekend campers are swept away



# January 12, 2010 Haiti Earthquake

- Casualties :250,000-300,000
  - Largest in History (per capita)
- 13 out of 15 Gov't buildings collapsed
- 250,000 homes collapsed
- 30,000 commercial buildings collapsed
- 300,000 injured
- 1.5 million homeless
- Estimated cost of \$10-14 billion
- Highest cost for a natural disaster (as function of GDP)







# What we see: Challenges and Opportunities

## Challenges

1. Large displaced population
2. Concentration of infrastructure and services in PaP
3. Sub-standard infrastructure and services (basic water and sanitation, roads, power, etc.); resultant environmental degradation
4. Lack of empowerment of private sector
5. Lack of coordination between GoH, NGO's, and private sector in Haiti
6. Dysfunctional education, healthcare systems
7. Political uncertainty
8. Lack of capacity in GoH

## Opportunities

1. Provide disaster resilient housing and development
2. Decentralize development across different regions of Haiti
3. Develop resilient and sustainable infrastructure systems (water, roads, power, etc)
4. Positively engage private sector
5. Restructure coordination among GoH, NGOs, and private sector in Haiti
6. Create new, improved educational and healthcare systems
7. Engagement of Haitian Diaspora

# Electricity Grid Goes Down Water Lines Are Broken



# No Communications



# Hospitals are Quickly Evacuated



# ...and Reassembled Outside



# First Responders Arrive



# The Injured are Transported Locally



# Temporary Shelters are Erected



# Field Hospital's Are Established



# Looting breaks out



# Citizens Protect Their Property



# The Military Restores Order





# Debris are removed & re-used



# Transitional Shelters are Constructed



# Families Move In



# Recovery Begins!



# This Disaster could have been much worse



At Night  
Full Moon  
Saturday  
Summer Vacation  
Low Tide  
Very Few Fires  
Very Few Water Breaks  
“Seismic Culture”  
Swift Local Response

# What Does This Mean For Southern California?



# Modern Buildings are Not Necessarily Safer Buildings



# Your Safety Depends on your Building's Location, Soil, & Construction



# ...& Your Builders Priorities & Liabilities!



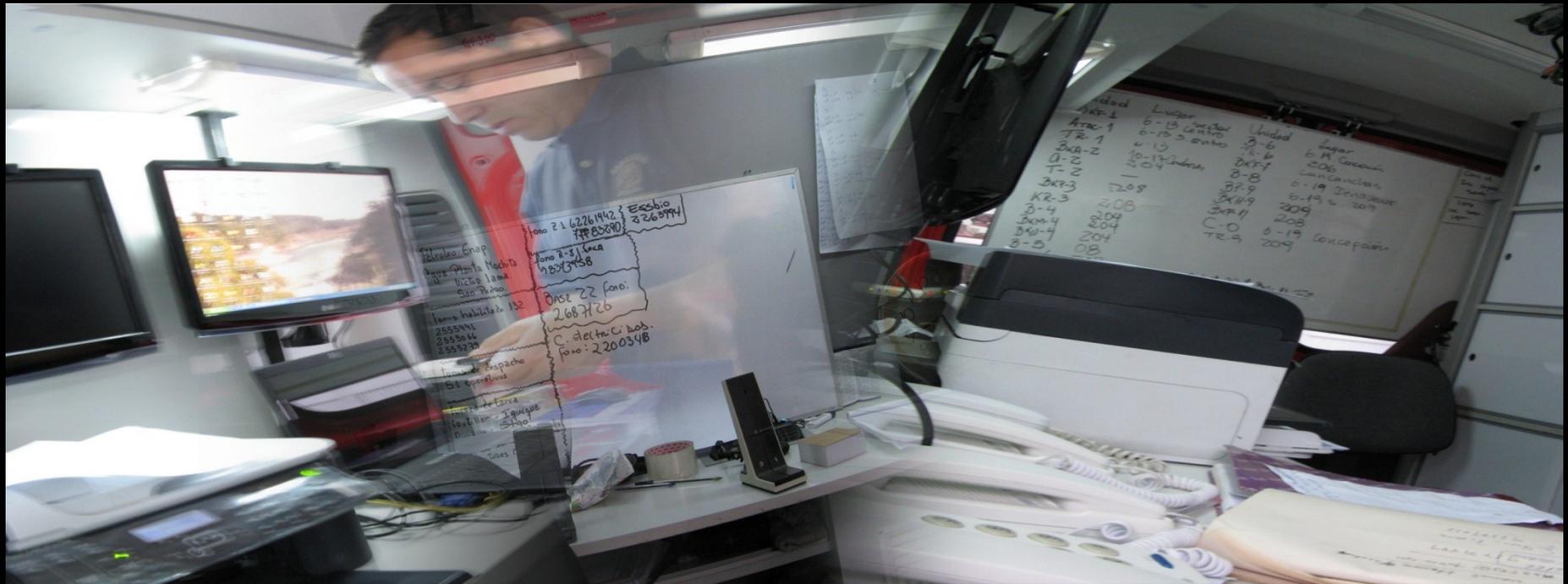
# Beware of Unsecured Nonstructural Elements!



# Governmental Communication Must Function Well



# .....Even When General Communication Systems Will Not Work



# Plan A Often Does Not Work ...Nor Does Plan B



# Fires will be a Bigger Issue Here



# Expect Industrial Fires



# Disaster Response Starts In Your Neighborhood



# Lives need to be saved quickly



# There is a Role for Our Military



# Your Neighbors Will be Your Heroes



# Hospitals Must be Flexible



# Mental & Moral Support is Needed



# Supplies will be Stranded



# Your Suppliers Will be Stranded



# Your Business Will Be Stranded



# You Could Be Stranded Too



# Business Continuity = Lives Saved



# Family Needs Will Come First



# Have an Evacuation Plan!



# Drinking Water Will Be Scare



# Have Three Days Of Supplies



# Prepare Your Pets & Loved Ones



# The “Social Earthquake” Arrives



# Community Makes A Difference



# Politics Can Slow Aid Efforts



# Infrastructure Takes a Long Time to Rebuild



# Is Los Angeles Ready?



# How will our Infrastructure Survive?



# Will we be able to respond?



# Will we handle the initial surge?



# Will We Pull Together as a Community?



# Will We Be Ready to Help Others?





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