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## **Emerging Strategies to Manage System-Level Risks**

**WEC-EPA-Wilson Center Earth Day Seminar:  
“Promoting Years of Sustainability: Responding to  
Mega Trends”**

**Terry F. Yosie, President & CEO**

**World Environment Center**

**April 22, 2015**

**Washington, D.C.**

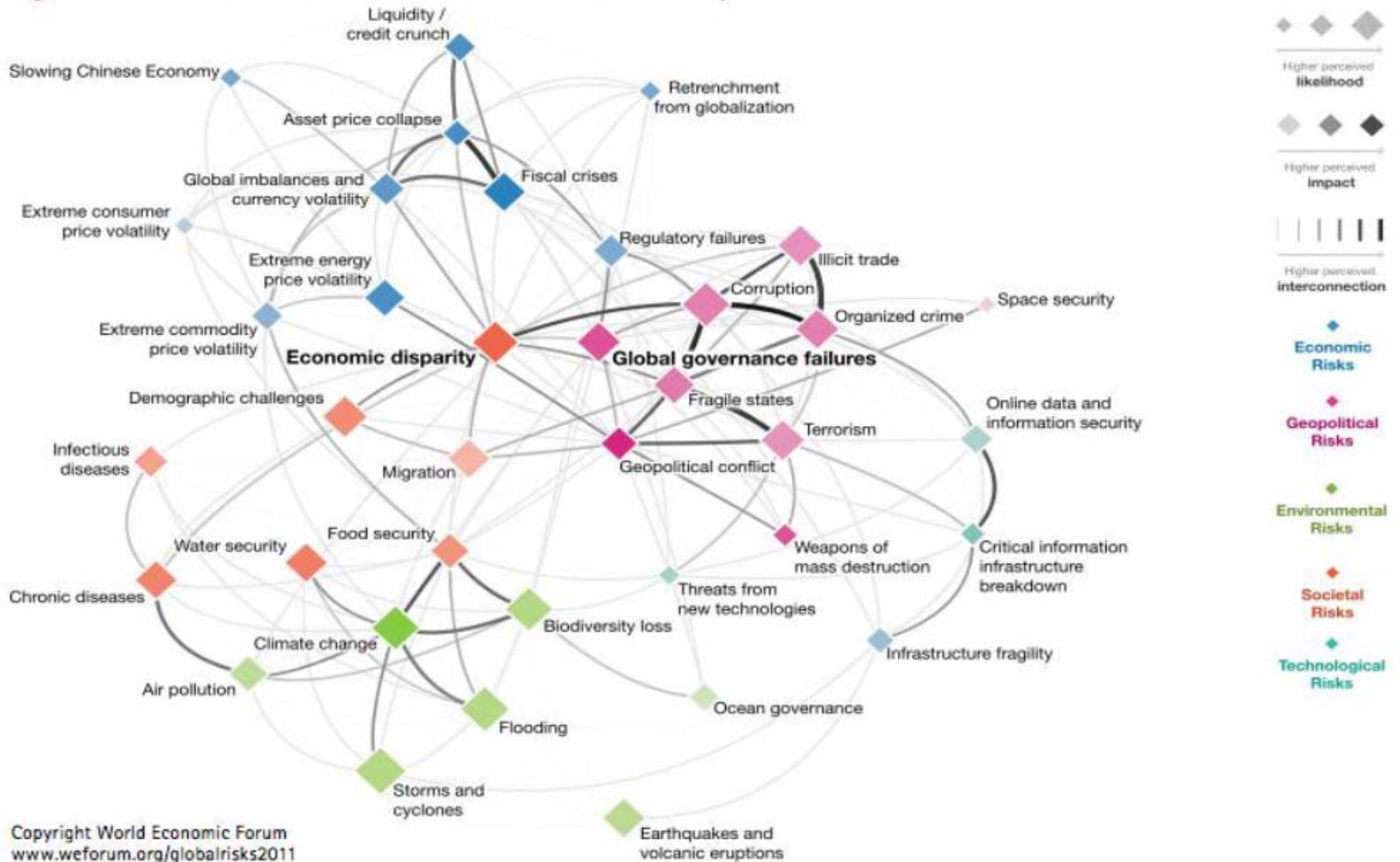
# Today's discussion

- A new risk context
- Examples of system-level thinking
- Implications for public policy



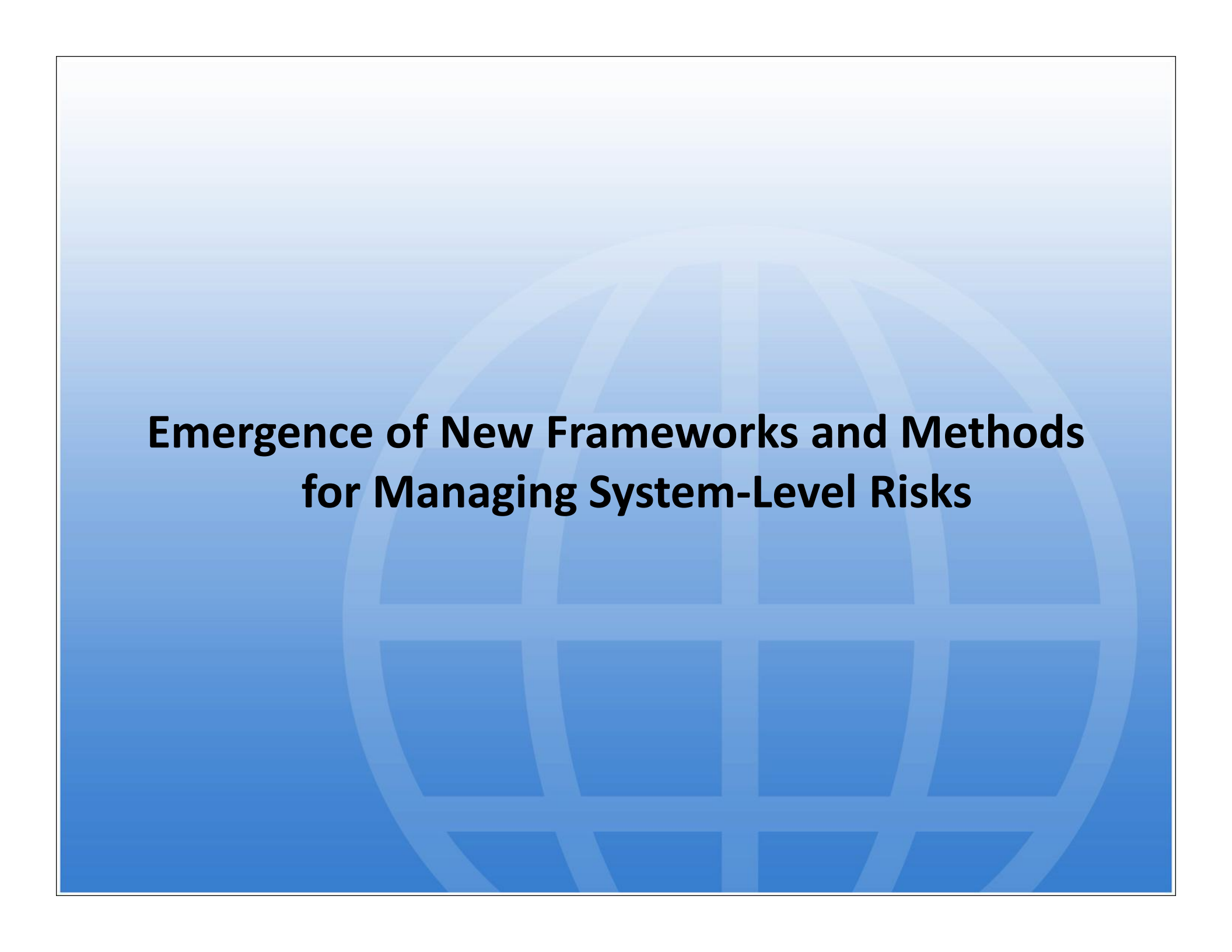
# The Risk Context: Everything's Connected

Figure 1: World Economic Forum: Risks Interconnection Map 2011



# The New Risk Context is Changing Mindsets & Methodologies

- Expanding risk management parameters
- Capital planning and productivity
- Innovation and growth strategies
- New financial tools and methods
- Emerging policy frameworks



**Emergence of New Frameworks and Methods  
for Managing System-Level Risks**

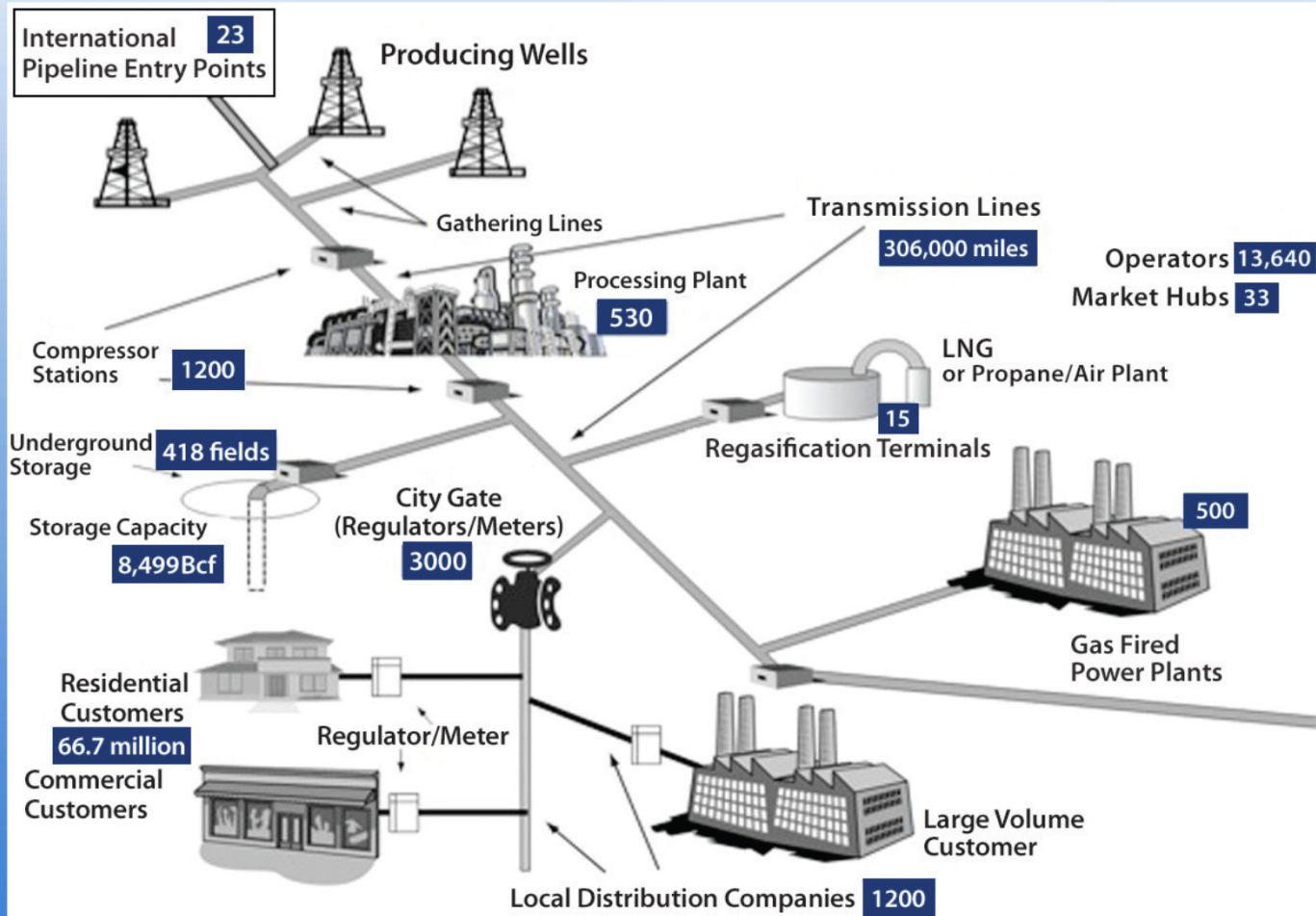


## Businesses and Consumers will be Empowered



- Where was this product manufactured and distributed?
- How do I know if this product genuine or counterfeit?
- Does this product contain prohibited substances?
- What is the genealogy of material of interest in this product?
- How do I know if this product is on the recall list?
- Has this product been mislabeled and contains a ingredient I am allergic to?
- How can I trust that this food in fact 'organic'?
- How can I remember to eat this product before it expires?

# Value Chain Analysis: Natural Gas





# Risk Profiles

- Summarize risk to Sea Level Rise for asset managers
- Provides information to inform most appropriate adaptation strategies
- Includes data on:
  - ‘vital characteristics’ of the physical and operational functionality
  - Sensitivity
  - Exposure to SLR (depth of inundation at 6 different scenarios)
  - Vulnerability and risk rating

## Asset Risk Profile

### West Oakland BART Station (T-03)

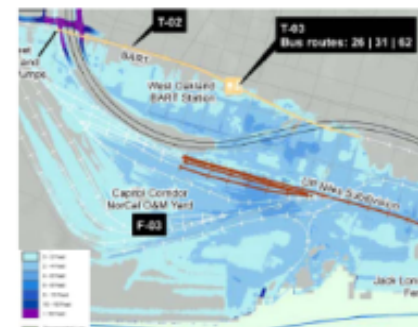
<b>Asset Location / Jurisdiction</b> Oakland / BART	
<b>Summary</b> West Oakland BART Station is a transit facility serving West Oakland neighborhoods and includes bus transfer and parking facilities. Due to lack of data, this asset was not rated with respect to sensitivity. Exposure is rated low, due to inundation under only 100-year SWEL + wind/waves for both the 16" and 55" SLR scenarios. No adequate alternative station exists for West Oakland BART Station, resulting in a medium vulnerability rating. Consequence is rated high for capital improvement costs, commuter use, and socioeconomic impact; moderate for time to rebuild; and low for public safety and goods movement, which does not apply. The overall consequence rating for this asset is 3.33, making this a medium-risk asset.	
<b>Characteristics:</b>	
<ul style="list-style-type: none"> <li>• Elevated</li> <li>• Commuter route</li> <li>• Transit routes [4 BART lines: AC Transit: 26, 31, 62]</li> </ul>	

<b>Sensitivity</b>	
Data unavailable in project timeframe.	
Annual O&M	\$3.43 million
Liquefaction Susceptibility	Medium
Exposure: Low	
<b>Maximum Inundation Depths</b>	
16" + MHHW	0 ft
16" + 100-yr SWEL	0 ft
16" + 100-yr SWEL + wind waves	YES
55" + MHHW	0 ft
55" + 100-yr SWEL	0 ft*
55" + 100-yr SWEL + wind waves	YES
<b>Inadequate Adaptive Capacity (16" SLR): High</b> No adequate alternative station	
<b>Vulnerability Rating (mid century): Medium</b>	

\* The BART station is elevated, hence no inundation at the 55" + 100-yr SWEL scenario, although access to the station will be impacted



Projected Inundation with 16 inch SLR + 100-yr SWEL



Projected Inundation with 55 inch SLR + 100-yr SWEL

# Ingersoll Rand's Resilient Buildings Program

## Example: High Temperatures Affect Hospital Operations



### Situation:

- A hospital loses air conditioning with heat index topping 105 F in Virginia
- No cooling contingency plan in place and valuable time is lost determining what to do next

### Solution:

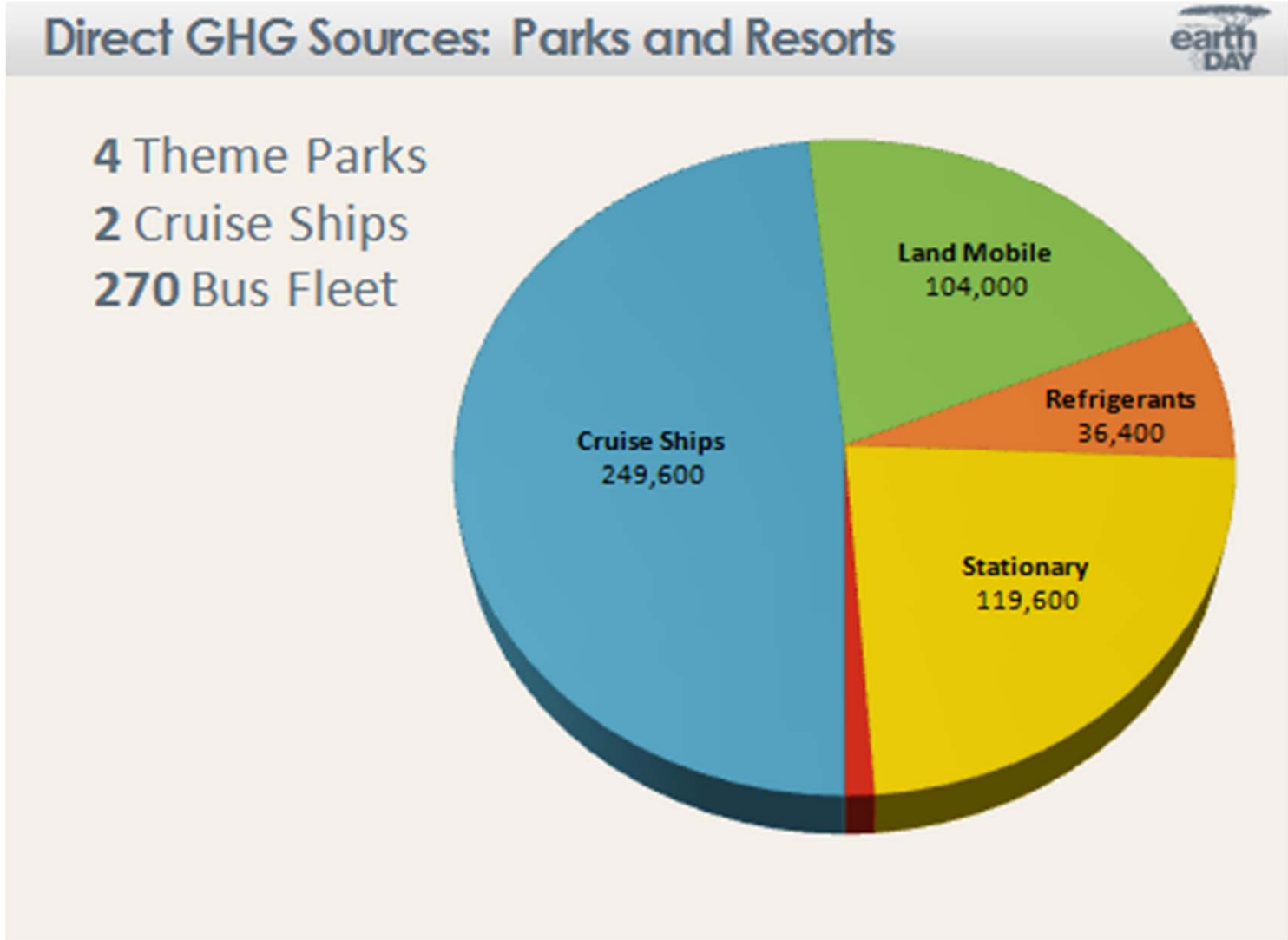
- Trane brought on board as lead repair contractor
- 60 technicians work around the clock to bring the systems on line within 48 hours
- 5,200 tons of temporary cooling is commissioned within 24 hours



WEC – Sept. 10, 2013



# Disney's GHG Infrastructure Footprint



# Valuing Natural Capital Initiative

## *The new* BUSINESS IMPERATIVE: VALUING NATURAL CAPITAL

2012

CEO PERSPECTIVES  
THE BUSINESS IMPERATIVE  
FRAMEWORK FOR ACTION  
COMPANY COMMITMENTS  
TOOLS AND RESOURCES

FEATURING 24 BEST PRACTICE COMMITMENTS BY:



# U.S. National Academy of Sciences

## EPA's New Sustainability Road Map



**BEST**

Board on Environmental Studies and Toxicology

## Sustainability Concepts in Decision-Making: Tools and Approaches for the US Environmental Protection Agency

September 10, 2014

# Implications for Public Policy

- Policy should embody a “systems approach” to effectively assess and manage risks
- Apply integrated tools and methods—life cycle analysis/risk assessment, improved economic valuation methods
- Transition to regulating value chains and not only point sources or individual business sectors
- Achieve market scale in policy design
- Develop new skills and competencies



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**Thank you**

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