



# RELi financing underwriting standards / resiliency standards\* RESILIENT ACTION LIST



RELi | THE RESILIENT ACTION LIST

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\*RELi consensus national standards cover green + resilient buildings, homes, infrastructure, productivity, and sustainable manufacturing & retailing.

For Educational Use Only

# RESILIENT ACTION LIST



## Minnesota State Sponsored Workshops

Minneapolis Pollution Control Agency Workshops

Funding for AREA Research

4 RELi Public Workshops / May + June 2015

RELi Workshop Co-Sponsors

Minnesota GreenStep Cities

MN Department of Labor + Industry

USGBC Minnesota

AIA Minnesota

Webinars / RELi Action List link from state website



Minnesota Pollution Control Agency



Minnesota GreenStep Cities



MINNESOTA DEPARTMENT OF LABOR & INDUSTRY



Minnesota

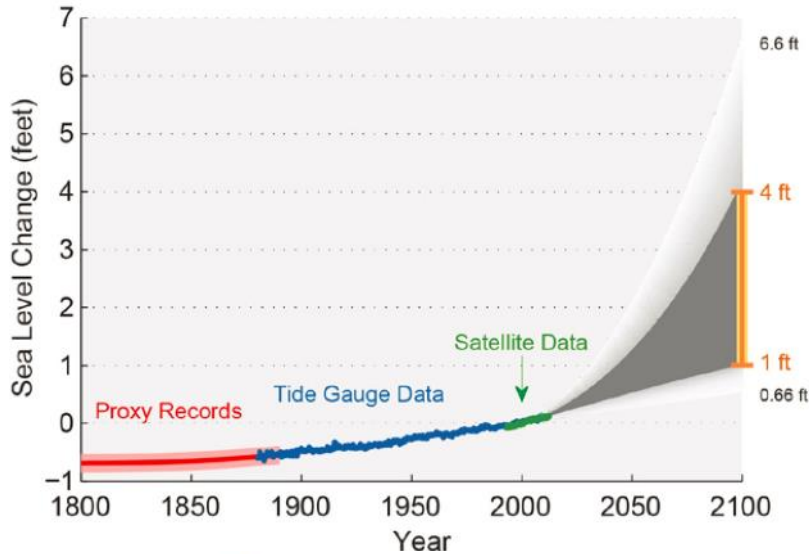


AIA Minnesota  
A Society of The American Institute of Architects

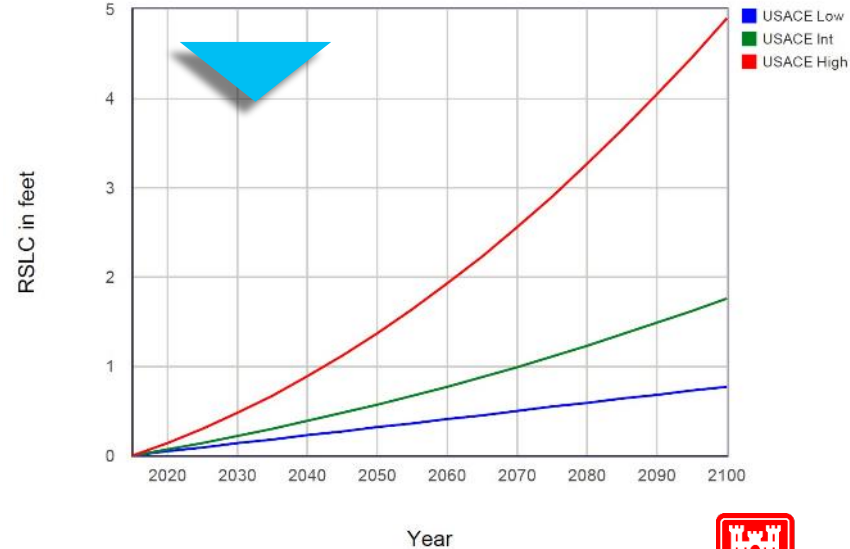


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# Sea Level Rise



Estimated Relative Sea Level Change Projections From 2015 To 2100 - Gauge: 8518750, The Battery, NY (2.77 mm/yr)



**Many communities are experiencing coastal flooding now from sea level rise, especially South Florida & Chesapeake Bay communities.**



US Army Corps of Engineers



U.S. Global Change Research Program  
National Climate Assessment



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# Sea Level Rise

## Unique South Florida Challenge

Stopping South Florida ongoing climate damages from rising seas including existing “sunny day flooding” are many trillions of dollars.

RELi cited map of expected 4’ mean South Florida sea level rise (US Climate Assessment Program) shows extensive areas in red inundated with property values of over \$100m / acre <http://ss2.climatecentral.org/#10/25.9043/-80.1508?show=property&level=4&pois=show>

Sea walls alone won’t work due to porous bedrock (see photo).

Thus there must also be effective subsurface vertical and horizontal barriers. Based on extensive leak detection experience, subsurface visual leak detection is required.

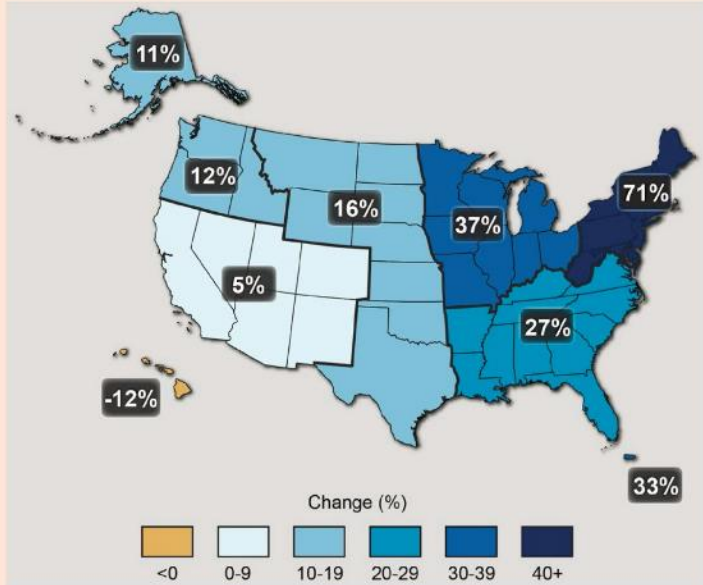
Otherwise, an inland retreat is needed stranding substantial assets / structures.



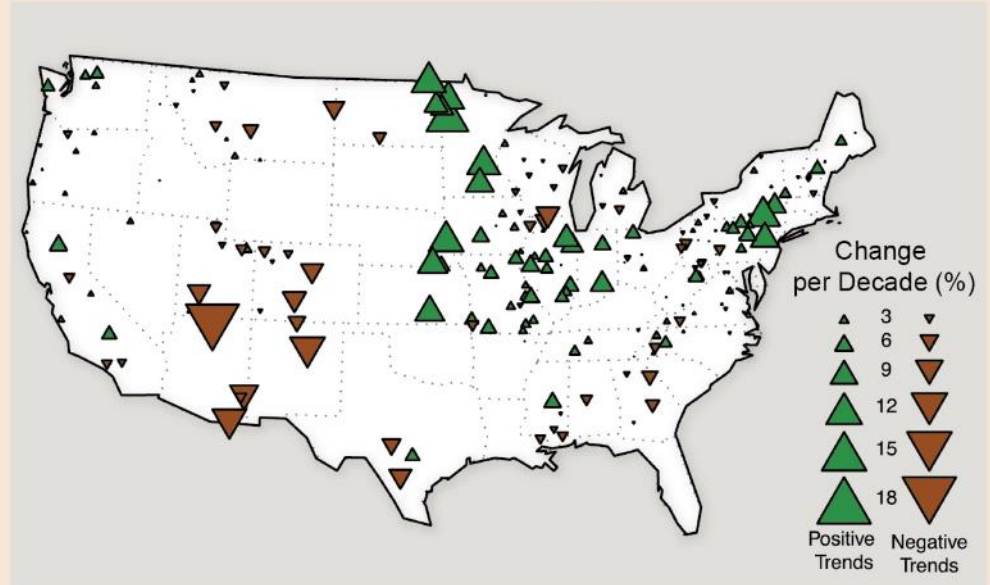
(William A. Wisner, 1972)

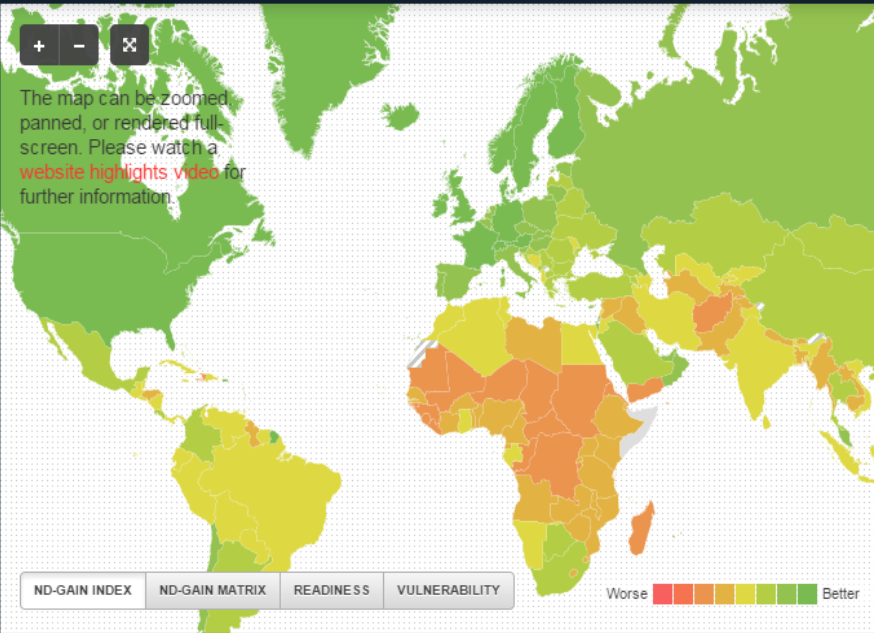
# Extreme Rain + Flooding

Observed Change in Very Heavy Precipitation



Trends in Flood Magnitude





The map can be zoomed, panned, or rendered full-screen. Please watch a [website highlights video](#) for further information.

ND-GAIN INDEX   ND-GAIN MATRIX   READINESS   VULNERABILITY

1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013



### Rigorous and Evolving

The ND-GAIN Index has been designed by industry experts and is improved under a continuous open review process. [See our methodology.](#)

## United States

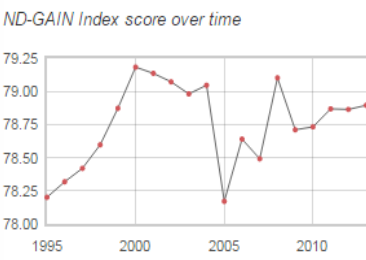
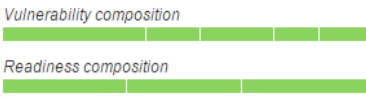
VIEW PROFILE

ND-GAIN Index rank  
**8**

Score: 78.9  
Trend:

Vulnerability +  
Readiness →

Vulnerability 0.221  
Readiness 0.799



<http://gain.org/>

**Standard & Poor's Planned Climate Credit Rating Downgrades:**  
Many US communities have risks similar to Southeast Asia – ranked # 1.

### Vulnerability To Climate Change

Overall ranking	Sovereign
116	Cambodia
115	Vietnam
114	Bangladesh
113	Senegal
112	Mozambique
111	Fiji
110	Philippines
109	Nigeria
108	Papua New Guinea
106	Indonesia
106	Suriname

Standards + Poor Rating Service

# Solving Climate Credit Rating Downgrades

## **Challenge:** Near Term Climate Bubble / Crash Can Be Triggered by

- Pending climate credit downgrades, and / or
- Imminent litigation over collapse of coastal property values from faster rising seas.

### **Accelerating Forces**

- Lack of insurance for climate damages / resilience
- Several trillion dollars must be spent on near term solutions.
- JPMorgan predicts unmanageable dangerous climate change is a near term high probability *Black Swan* statistical event.
- Time is of the essence: triggers can happen now.

### **Solution:**

Rating Agencies Use Consensus Criteria like RELi Entities Can Achieve to Avoid Downgrades BEFORE They are Issued.

### **Accelerating Forces**

- S&P criteria use can serve as underwriting for new insurance products, brand improvement, 30 yr. profitable business models.
- Government action not required.
- Capital markets have more than enough investor funds to pay for solution including through green + resilient bonds.
- Green bond growth is explosive.
- Higher ratings for energy efficiency acknowledged
- Improves public health & environment.
- Rebuilds / protects built environment.
- Creates estimated \$800B in new wages / 400,000 new jobs.
- Consensus criteria rating agencies helped initiate are available & similar to existing bond criteria.



# RESILIENCY'S POTENTIAL: A COOPERATIVE PERSPECTIVE

*Many people are looking to governments for solutions, however in practice policy actions will remain unpredictable, inconsistent and maybe reactive. So businesses must take the lead in mitigating environmental damage and tackling climate + resource challenges.*

Dennis Nally – Price waterhouse Coopers

Humanity is Maturing:  
Adolescence to Adulthood

Rethink Our Social Contract w/ Each Other  
Rethink Our Relationship w/ Rest of Nature  
Rethink Our Perspective on Happiness

Necessity is the Mother of Invention

Plato



# RESILIENCY'S FINANCING POTENTIAL

*Higher credit ratings acknowledged for energy efficiency due to statistically, 32% fewer defaults for energy efficient properties.*

*We must build with an eye toward prevention, and do so immediately to save money & lives in the long-term.*

Shalini Vajihada – re:focus Partners

*Investors with over \$70 trillion in assets under management want to buy green bonds.*

Vickie Tillman – President, Morningstar Global Ratings

Green bonds provide resilience financing and were a \$20b market in 2013, \$40b in 2014, and expected to be \$100b in 2015 with most if not all bonds selling out thus providing cheaper cost of capital.

These financial incentives are key so elected officials have voter support to pay now for prevention in order to avert future disasters.

To secure higher credit ratings for cities and their bonds and cheaper cost of capital to provide the needed large-scale capital markets financing, the credit rating agencies require a uniform national consensus underwriting approach like RELi.



# BALLOTTED + READY FOR PILOTS

Public Announcement  
6,500 E-mails / 12-1-14 approval

Underwriting for Green + Resilient Buildings, Homes + Infrastructure Bonds



Call for Public Comments + Request for Your Expertise



We are seeking written and in-person comments for the Resilient Infrastructure Underwriting Standard Amendments and Green + Resilient Underwriting Checklist. More information on the review and comment process is available at: <http://mts.sustainableproducts.com/resiliency>

**What are the benefits of Consensus-based Underwriting Standards? What is the need?**

Green Properties are a \$450B/yr. US industry with explosive growth. The Consensus-based Underwriting Standards' Green Value Score covers homes, buildings, community infrastructure, & manufacturing. They identify important Green + Resilient property attributes that increase economic value and mobilize funding for sustainability and adaptation at multiple scales. The Standards are being used for Green Property Bonds being issued in 2014 and Green + Resilient Bonds in 2015. The standards also support higher credit ratings for cities by reducing cost and risk through sustainability + resiliency. They cover 90% of global economic activity throughout the supply chain.

**Key Resiliency Attributes for Property, Infrastructure + Communities:**

**Reduced Economic Risk to Property Value** from exposure to acute Natural Disasters, Climate Change + Social Stress

- Extreme weather, rain, drought, wildfire, earthquakes, sea level rise, terrorism + more

**Increased Property Value + Recognition** through Sustainability, Ecological Well-being + Long-term Resiliency

- Energy + water efficiency, renewable power, improved indoor air, commissioning, proximity to transit, productivity, integrative process

- Human + Ecological Health, vitality, diversity + productivity, community connectivity, local & regional economic vitality + more

**Underwriting Standards** are used to raise capital for debt + equity, including bonds. Consensus standards are developed through a national vote of approval in a democratic process, and are required by regulators and rating agencies to reduce legal, technical, political and business risk and uncertainty.

Sequoias are a good example of resiliency: withstanding storms, fire, drought, and disease – living over 3000 years.



The National Consensus Green Property Underwriting Standards are being amended to include Resiliency. Along with carbon mitigation and reduction, they will now include climate adaptation + infrastructure for communities.

**A National Public Meeting for interested and affected parties is being held 9am-Noon on September 16**

at Perkins + Will  
(located in the World Wildlife Fund Headquarters)  
1250 24th Street NW, Suite 800,  
Washington, DC 20037

More info: <http://mts.sustainableproducts.com/resiliency>



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**CAPITAL MARKETS PARTNERSHIP**

Hon. Gavin Newsom  
California Lieutenant Governor  
Chairman  
Vickie Tillman, Former S&P  
Global Ratings Head, Vice Chair

- ACEE
- Appraisal Institute
- Australia
- Bank of America Securities
- Balmain Green Building Council
- BOMA International
- BOMA International
- Canada Green Building Council
- CHI
- CIC Property Investors
- City of Chicago
- City of Dallas
- City of Denver
- City of New York
- City of Oakland
- City of Santa Monica
- City of San Francisco
- City of Seattle
- Citizens Bank of Canada
- Consent Global
- Delaware Valley Green Building Council
- Deputy + Latham
- Diary Development
- EPA Energy STAR
- Environmental Builders Association
- Evolutionary Partners
- Fairfax Place
- Finmark + Fund Finance
- First Alternative Financial
- Foyle Group
- Forest Stewardship Council
- Garding Edin Development
- Goldman Sachs
- Green Building Alliance
- Global Green
- Investor's Circle
- JW.organs Group
- Laifang
- Malacita LLC
- Malina
- Morgan Stanley Smith Barney
- National Institute of Building
- New Jersey Green Building Council
- New York Green Building Council
- NYCDO
- PH&P
- Profil + Associates
- Sageam Energy
- Social Investment Forum
- State of New Jersey
- Suburban Builders'
- Former Construction
- ISO Securities
- United Kingdom
- US Green Building Council
- US Treasury Department
- Verity Bonds
- Victor + Blatt
- Wells Fargo
- Woodward Clyde + Stone
- World Court Green
- World Green Building Council

**National Consensus Green Building Investment Underwriting Standards**

Commercial Buildings

**UNANIMOUSLY APPROVED**  
September 2, 2008

Version 2.2 – July 2012  
Sections 1.0 through 8.0 of 19

# COMPREHENSIVE



<Structures + Communities>

<Operations + Design>

Covers (3) Major Areas

1. Integrative Process + Holistic Planning
2. Acute / Short-Term Conditions:  
Hazard Preparedness, Mitigation + Adaptation
3. Chronic / Long-Term Conditions:  
Adaptation + Resiliency