

Building Rating Systems

Enhancing the Value of the Built Environment



US Resiliency Council

Consider the Buildings in Which You Work and Live

- **The public knows very little about the performance of buildings in natural disasters.**
- **Why is this important? Why should we care?**
- **Community resiliency and preparedness is becoming an increasingly important national issue.**
- **The USRC Rating System provides important missing information to help community resilience planners.**

Resilience is the Capacity to Rebound



We all face a wide variety of external threats

Once those threats are better understood, planning, preparation, and prevention can reduce uncertainties and facilitate recovery

Resilience is Different Than Sustainability

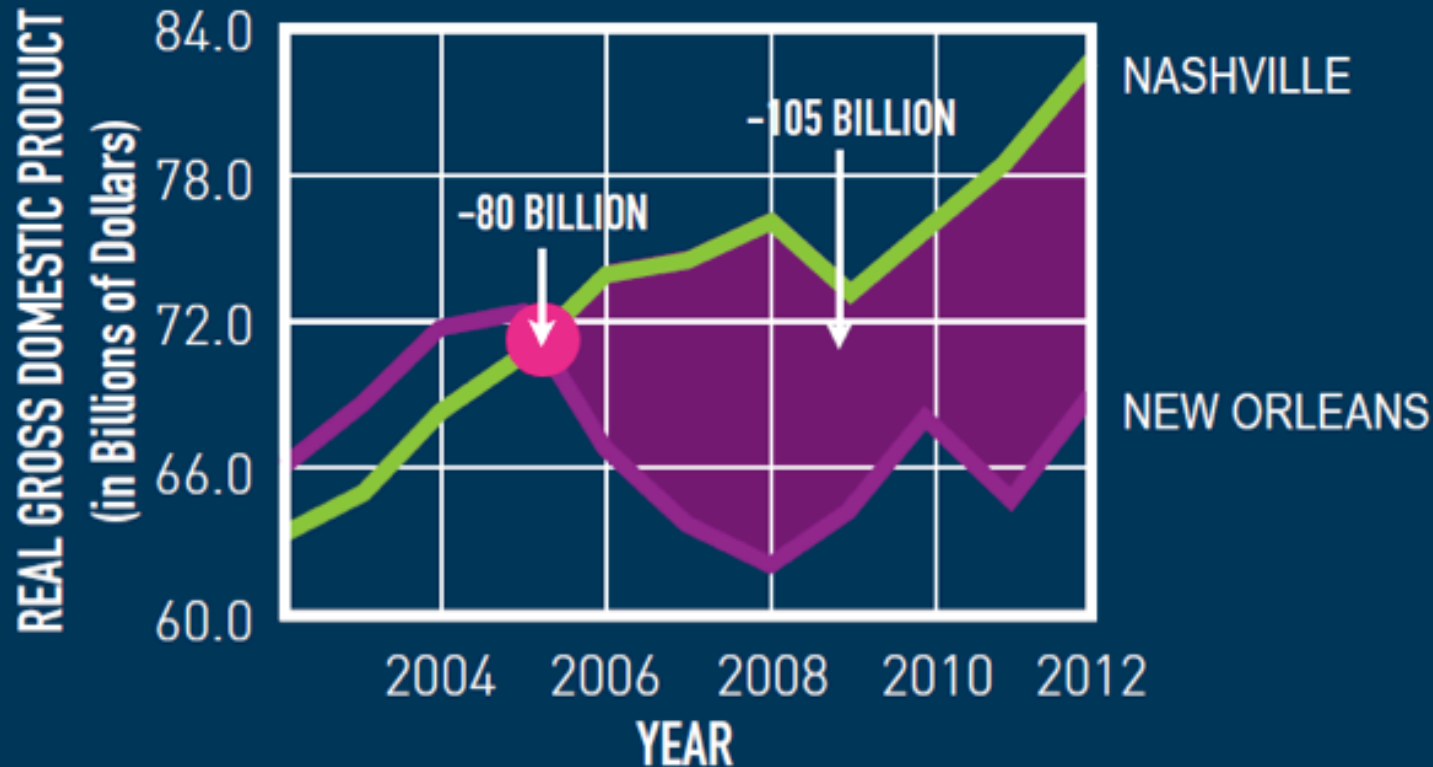
LEED certified buildings in Hurricane Sandy were designed to *have lower impacts on the environment...*

...but not for the environment to have lower impacts on them.

2012 Superstorm Sandy	
Deaths	> 200 in 7 countries
Damaged buildings	> 380,000
Cost	> \$71 billion
Insured losses	\$16 - \$22 billion.
Business losses	> \$25 billion
Homes without power	8.51 million
Debris	10 million cu. yards

Why is Resilience Planning Important?

NEW ORLEANS VS NASHVILLE ECONOMIC GROWTH

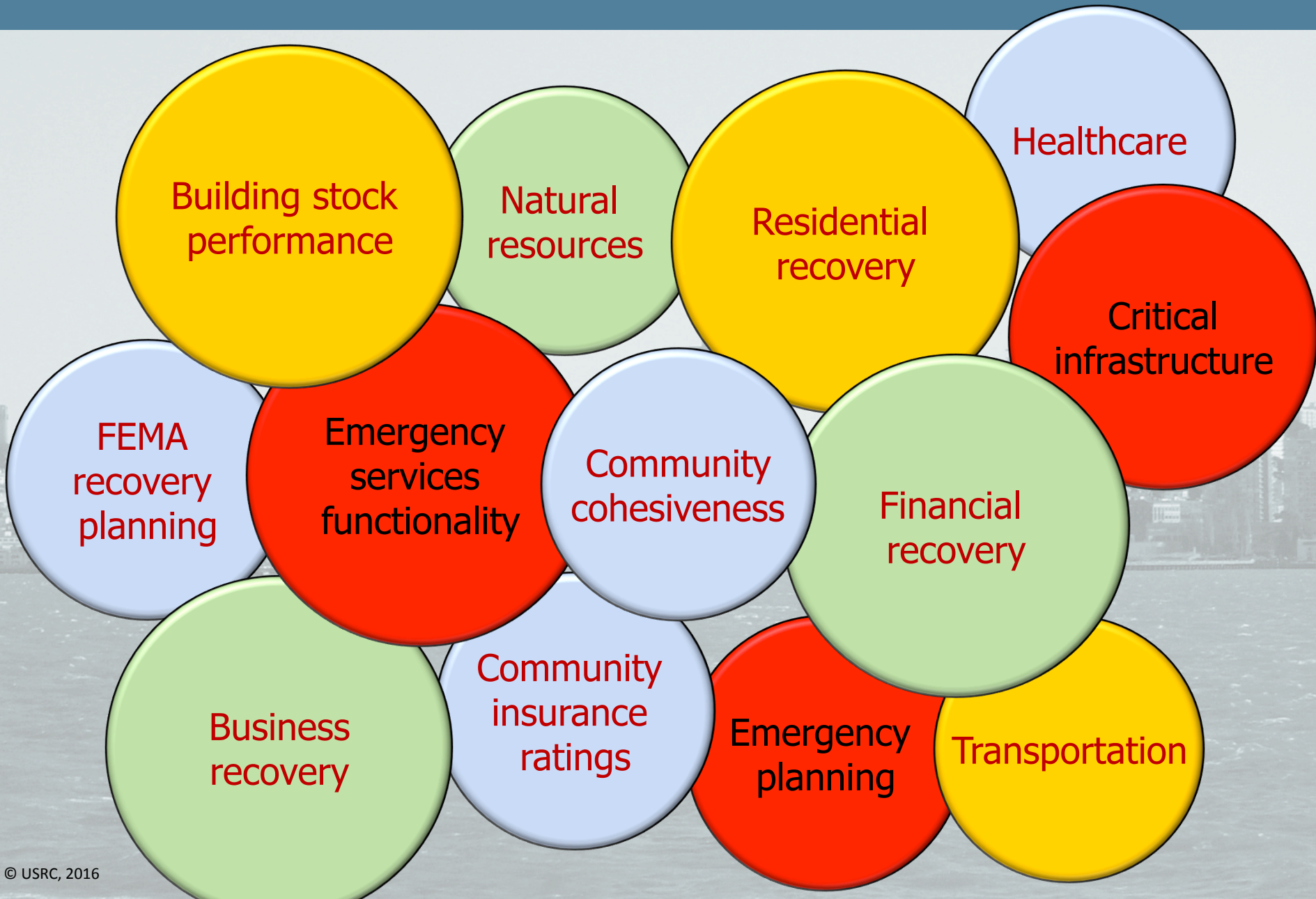


Loss of:

- Assets
- Operations
- Tax base
- Employees
- Tourism
- Business
- Residents

Cities may take decades to recover from an event without appropriate advanced planning

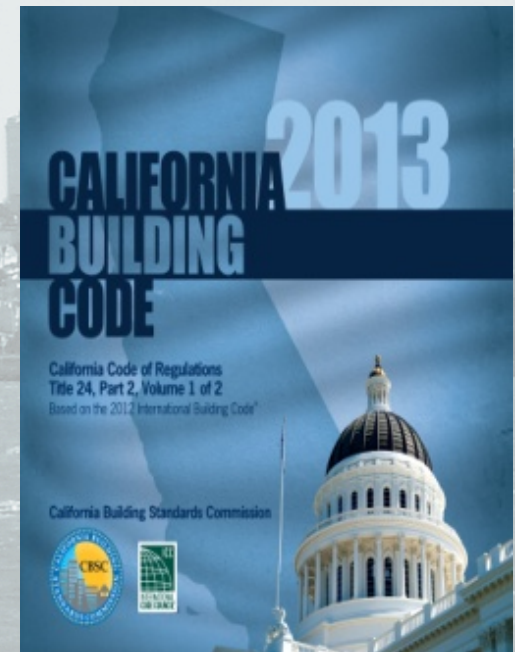
Resilience Management Elements



Public's Misconception Regarding Building Code Performance

Modern buildings codes make buildings “disaster proof” – Not True!

A code-compliant building is meant to provide life-safety (prevent collapse), not to prevent injuries, limit damage or permit quick recovery.



Building Performance is Key to Resilience Management

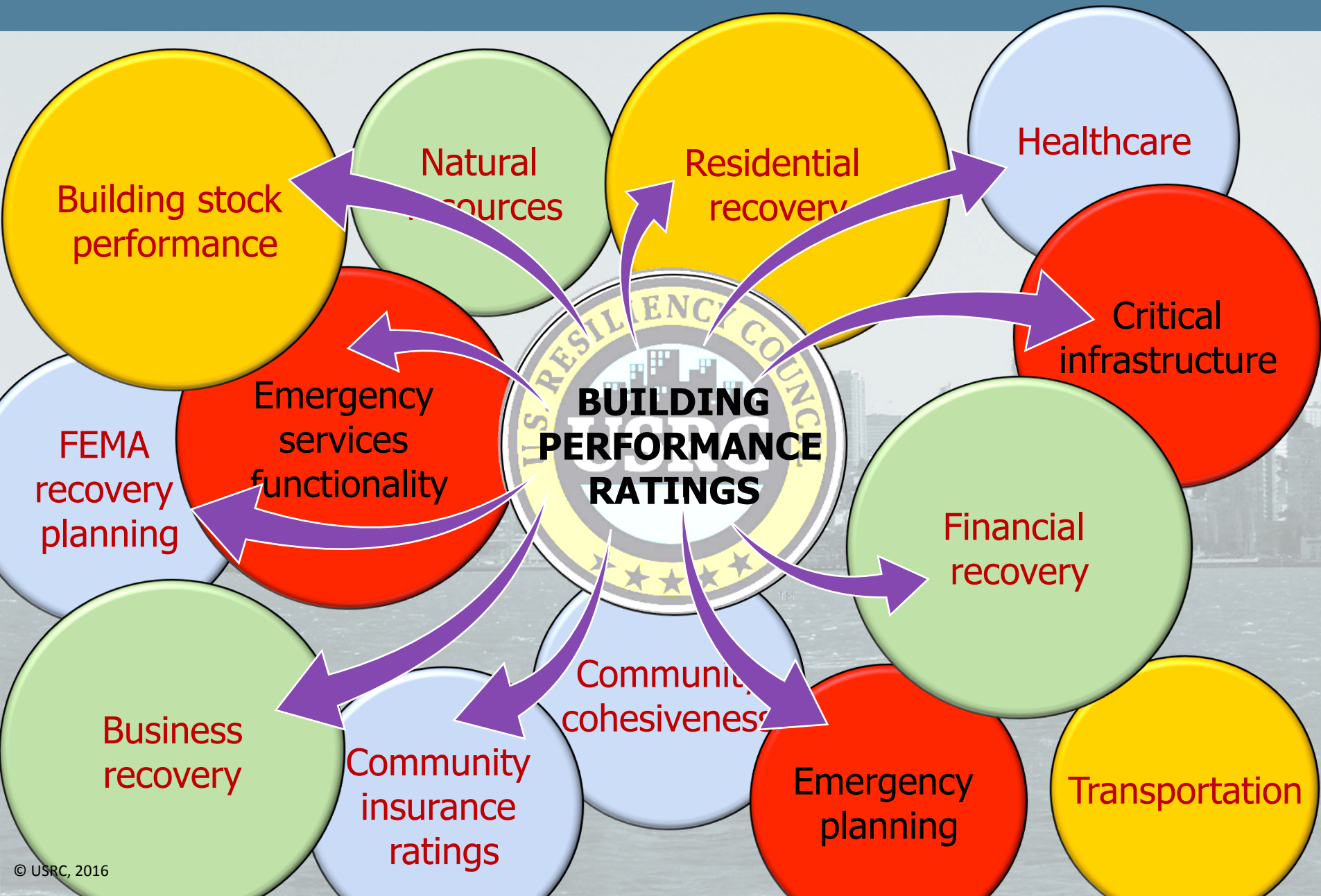
The public & community leaders need to know:

1. How safe their buildings are

Owners, architects, tenants, brokers, buyers, lenders, insurers and resiliency planners need to know:

1. What will need to be repaired and at what cost
2. How long will it be until buildings can be functional again.

The Role of Building Ratings



US Resiliency Council Launches New Building Rating System



MISSION

Establish and implement rating systems that describe the performance of buildings during earthquakes and other natural hazard events.

As of January 2016:

- ***65 certified rating engineers.***
- ***Los Angeles City has committed to use the USRC Rating System to rate the 800+ buildings it owns.***
- ***The USRC is initiating the development of rating systems for floods, hurricanes, tornadoes and blast.***
- ***The USGBC is offering three pilot LEED resilience points and is considering the USRC Rating System for approval.***

What is a USRC Rating?



A USRC Rating identifies expected disaster performance of buildings in which you live, work or invest.

The Rating considers the performance of:

- the building's structural framing members,
- mechanical, electrical and plumbing systems,
- architectural components such as cladding, windows, partitions, and ceilings.

Building performance affects:

- occupant safety,
- cost and time to carry out repairs,
- when you can begin using the building again after the event.

3 Dimensions & 5 Thresholds



Safety

- 5 ★ Injuries and blocking of exit paths unlikely
- 4 ★ Serious injuries unlikely
- 3 ★ Loss of life unlikely
- 2 ★ Loss of life possible in isolated locations
- 1 ★ Loss of life likely in the building

Damage

- 5 ★ Minimal damage (< 5%)
- 4 ★ Moderate damage (< 10%)
- 3 ★ Significant damage (< 20%)
- 2 ★ Substantial damage (< 40%)
- 1 ★ Severe damage (40%+)
- NE Not Evaluated

Recovery

- 5 ★ Immediately to days
- 4 ★ Within days to weeks
- 3 ★ Within weeks to months
- 2 ★ Within months to a year
- 1 ★ More than one year
- NE Not evaluated

Applications of a Rating System



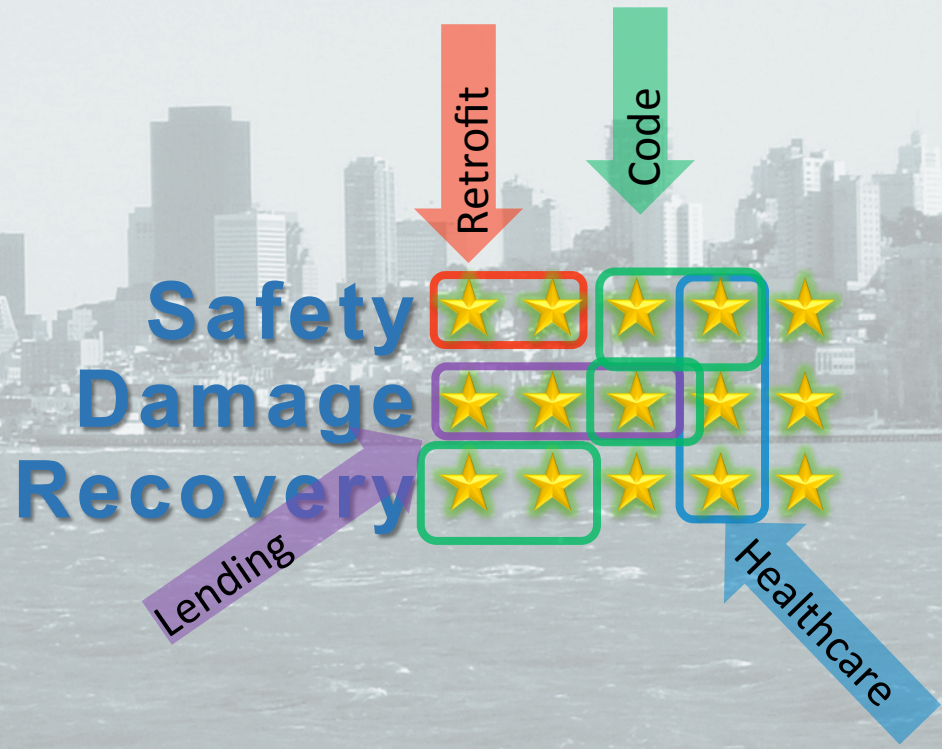
- **Promote better performing new construction**
- **Alternative to current Probable Maximum Loss (PML) process**
- **Marketing of highly rated buildings**
- **Incentivizing voluntary retrofits**
- **Replacement for existing rating programs**
- **Obtain new LEED pilot resilience points**

USRC Rating Programs



USRC Rating System used to develop community or corporate BUILDING RATING PROGRAMS

Use by	Dimension	Rating
Building Codes	Safety	3 to 4 stars
	Damage	3 stars
	Recovery	2 to 3 stars
Seismic Retrofit	Safety	2 stars minimum
Lenders	Damage	3 stars minimum
Healthcare	Safety	4 stars minimum
	Damage	4 stars minimum
	Recovery	4 stars minimum



Different organizations have different needs

USRC Founding Members



64 Founding Members

Structural engineers

Architects

Industry partners

Contractors

All major earthquake engineering professional organizations



Thank You!



**For more information on
The USRC, Ratings and Membership**

www.usrc.org

www.usrc.org/building-rating-system