

# RESILIENCE

## tumbling blocks

### The Goal

Complete a set of at least 7 **Characteristics of Resilience** before the blocks come tumbling down.

### How to Play

- Pull a block and place it at the top of the tower, but hold on to any Characteristics of Resilience that you collect.
- Every other turn, the player must roll the *Dice of Disruption* and pull a block of the corresponding color from the tower.
- If you roll “Bounce Forward,” you can add a block back into the tower to add stability, or you can draw a Characteristic of Resilience.
- Build your community—let new players jump in and out of the game. Work together to strategize and collect Characteristics of Resilience.

(See back for the full listing of characteristics)

## Learning Through Games

ISET-International works across geographies and cultures to promote urban climate resilience. Through these engagements we have found a need to take on new, creative ways of communicating concepts and theories. This game is a prototype for a games toolkit that will be used at international workshops and conferences starting in 2015.

**This game is designed to teach everyone from local residents to policymakers about:**

- The need to develop infrastructure and systems that are resilient to climate change. Core systems (ecosystems, energy, communication, transportation, potable water, and shelter) are critical in ensuring the resilience of a city.
- Analyzing a city or community by these characteristics of resilience (listed on the back), will help city planners and community leaders discover areas of strength and weakness, and better prioritize resilience planning initiatives.

Let us know your thoughts, feedback, and questions by contacting Michelle Fox, Director of Art + Communications at [michelle@i-s-e-t.org](mailto:michelle@i-s-e-t.org).

# Characteristics of Resilience

The set of characteristics listed below are used to describe elements of a resilient city. Unless these characteristics are present or planned into a city's design, the entire system can become vulnerable and at risk of failure—causing financial or life loss.

The characteristics listed below are anecdotal and partially illustrated using examples from the Boulder floods case study. See more at [www.i-s-e-t.org/projects/boulder-flood.html](http://www.i-s-e-t.org/projects/boulder-flood.html)



## **AGENTS** (People & Organizations)

### **RESPONSIVENESS**

Public, private, and volunteer groups came together to get people the help they needed during and after the flood.

### **RESOURCEFULNESS**

Residents shared equipment, like sump pumps, sand bags, and shovels to direct flood waters away from homes and infrastructure.

### **CAPACITY TO LEARN**

Learning from the 2010 Fourmile Fire allowed for the rapid establishment of Disaster Assistance Centers, providing citizens with access to information and services—enabling the recovery and response process.

### **RELATIONSHIPS**

Neighbors, family, friends, and organizations mobilized to help one another during times of need.



## **INSTITUTIONS** (Laws, Regulations & Cultural Norms)

### **ACCESS**

Access to financing and credit—through personal credit lines, FEMA, and insurance agencies—helped people recover and respond quickly, reducing continued threats or financial loss.

### **INFORMATION**

In the mountain communities, 'Climb to Safety' messaging urged people to climb to elevated areas preventing loss of life and injury. Throughout the flood, communication systems stayed online, allowing response efforts to be directed to places where they were most needed.

### **DECISION-MAKING**

During the floods, having a number of federal and local decision-makers present in the area allowed staff at the Wastewater Treatment Plant to take rapid action—avoiding what otherwise would have been months of paperwork and permitting—when a major wastewater pipe became exposed.



## **SYSTEMS** (Infrastructure & Ecosystems)

### **SAFE FAILURE**

The Boulder Creek Path 'failed' in its role as a recreational area, but it allowed space for creeks to overflow safely, buffering major infrastructure, buildings, and homes as it was designed to do.

### **REDUNDANCY + MODULARITY**

The existence of two separate water treatment facilities in the City of Boulder allowed safe water to continue to flow even when one plant was knocked out.

### **FLEXIBILITY + DIVERSITY**

Power failures in mountain communities did not stop dissemination of warning information, because emergency personnel with ham radios were present, maintaining emergency communications with the county at large.