

# Resilience Strategy Update

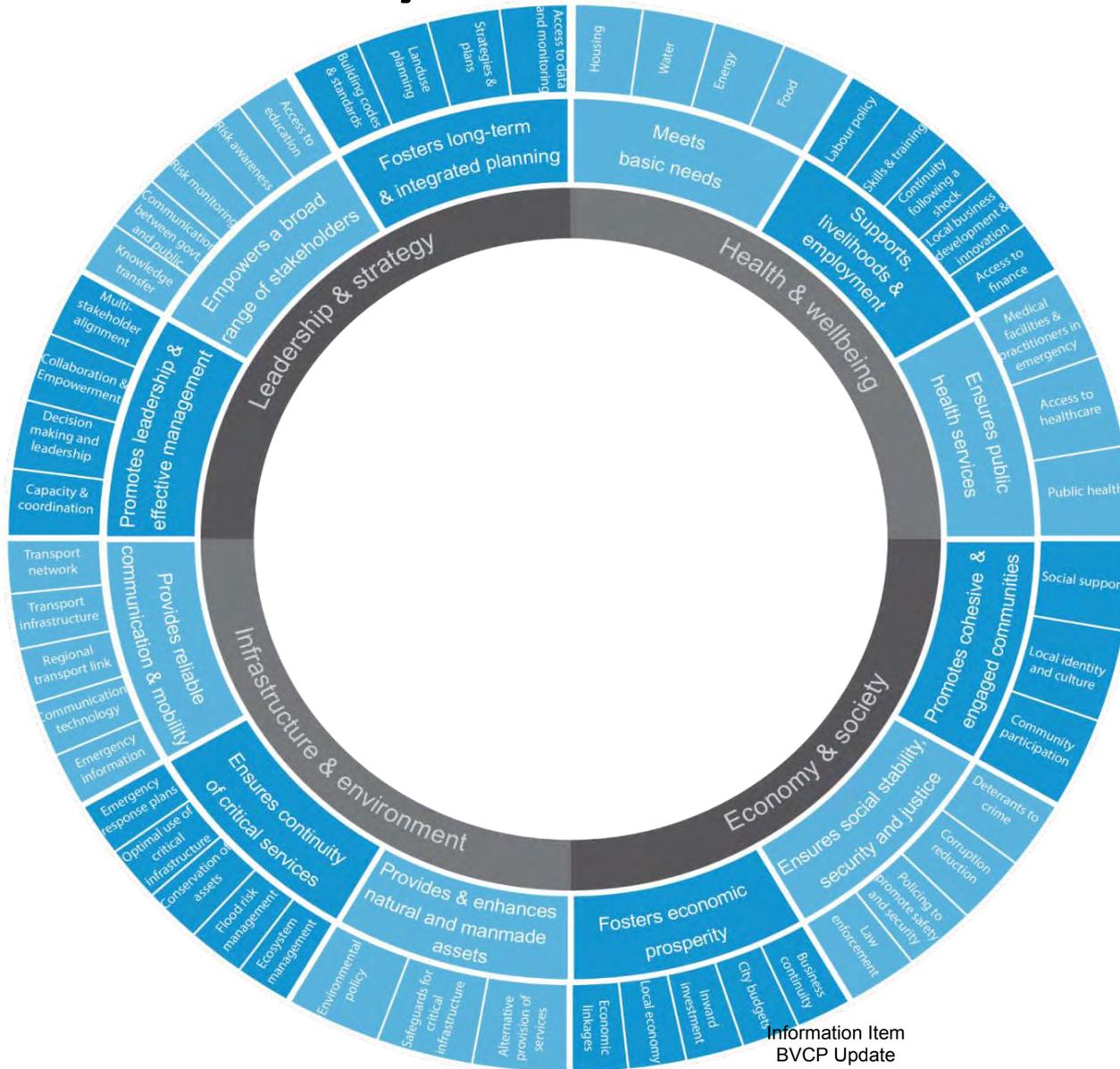
from 100 Resilient Cities

December 2014

# 100RC Overview

- **Objective:** Dedicated to helping cities around the world become more resilient to the physical, social and economic challenges that are a growing part of the 21st century. 100RC supports the adoption and incorporation of a view of resilience that includes not just the shocks – earthquakes, fires, floods, etc. – but also the stresses that weaken the fabric of a city on a day to day or cyclical basis.
- **Partners**
  - HR&A: <http://www.hraadvisors.com>
  - Platform
- **Network:** [www.100resilientcities.org](http://www.100resilientcities.org)

# City Resilience Framework



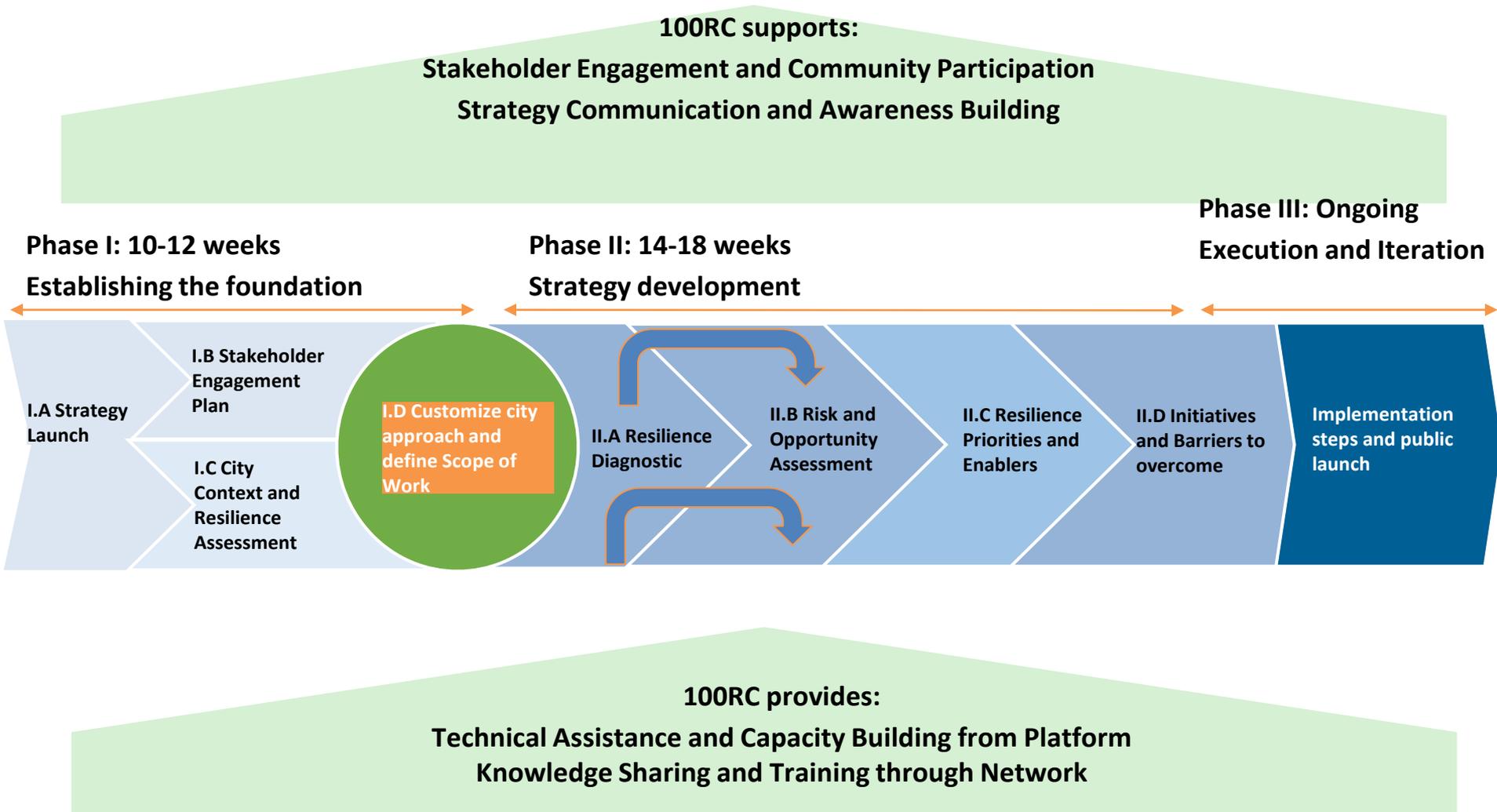
The CRF looks at cities through the lens of

**7 Qualities**  
**4 Dimensions**  
**12 Drivers**  
**50 Sub-Drivers**

# Resilience Qualities

|                   |                    |  |                  |                 |   |                   |
|-------------------|--------------------|--|------------------|-----------------|---|-------------------|
| <b>Reflective</b> | <b>Resourceful</b> | <b>Robust</b>  | <b>Redundant</b> | <b>Flexible</b> | <b>Inclusive</b>  | <b>Integrated</b> |
| Ability to learn  | .... and act       | ...conceiving systems & assets that can withstand shocks & stresses as well as using alternative strategies to facilitate rapid recovery |                  |                 | ...planned to take account of city-wide needs and promote coordinated actions |                   |

# The Strategy building process and 100RC resources



# 100RC Program Elements

- **Chief Resilience Officer:** a new position in the government who will lead the effort
- **Tools and Methods:** Technical and logistical support for the development of a resilience strategy that will serve as the city's roadmap to resilience activities and priorities
- **Platform Partners:** Specialized partnerships to help developed a sophisticated understanding the city's risks, assets, weaknesses, and opportunities and how they interlink in unanticipated ways
- **Network:** Inclusion into a network of 99 other cities from which best practices, innovation, and peer-to-peer learning can advance the practice of resilience globally.

## What is the Platform and Why Do We Need it?

### The Challenge:

- Market has limited information around city needs
- Existing resilience building tools and services are not reaching cities

### The Solution: The Platform

- The Platform links resilience tools and services with city demands
- Team identifies, negotiates and aggregates resilience-building tools and services in a web-based Catalog
- Engages with RMs and cities to pair Catalog services with city needs
- Facilitates and monitors implementation of solutions

Partner identification

Tools/Services/ Research/  
Funding  
↓ ↑ ↓  
(the Catalog)

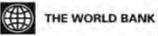
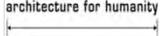
Uptake off the Catalog



Implementation of Tools  
and Services

Monitoring & Evaluation

**The Platform Catalog is composed of 22 Platform Partners, with 29 services for a total current value of \$81 million**

|   |   |  |  |  |
|---|---|--|--|--|
|  <p>Regional Resilient Design Studios</p>        |  <p>Procurement</p>  |  <p>CRO Recruiting</p>               |  <p>City-wide Modeling and Simulation</p> |  <p>Water, Energy, and Waste Mgmt. Services</p> |
|  <p>Cultural Preservation through Coating</p>    |  <p>Part of the Medellín Collaboration Group</p>                                       |  <p>Online Outsourcing Platform</p> |  <p>Natural Hazard Visualization Tool</p> |  <p>City Creditworthiness Academy</p>           |
|  <p>Regional Resilient Design Studios</p>        |  <p>Situational Awareness for Public Health</p>  |  <p>Water Resource Mgmt.</p>         |  <p>Land Zoning</p>                       |  |
|  <p>City Resilience Framework</p>                |  <p>Inter-American Development Bank<br/>Resilience Financing</p>                       |  <p>Data Integration</p>             |  <p>DRM Tools</p>                         |  |
|  <p>Community Outreach for Water Resources</p> |  <p>International Finance Corporation<br/>Feasibility Study Technical Assistance</p> |  <p>Earthquake Modeling</p>        |  <p>Crowdsourcing Tool</p>              |  |

# Examples of Platform Engagements

We have deployed certain platform offerings where appropriate to facilitate cities' strategy processes

| Status of City Engagements   |  |                   |  |
|--|--|-------------------|--|
|  Palantir                        | Situational Awareness Model                          | Norfolk, VA       | Palantir is integrating datasets across many departments, enabling the city to quickly understand situational awareness during an event and provide planning information.                                    |
|  Sandia National Laboratories   | Flood Mitigation Cost Analysis                       |                   | Sandia is looking to conduct an economic analysis to assess the costs of sea level rise/flooding in Norfolk allowing it to better understand costs/benefits associated with different mitigation approaches. |
|  Ushahidi                        | Resilience Network Initiative<br>Crowd Sourcing      | Porto Alegre      | Ushahidi is providing technical advice on technology for citizen engagement to engage marginalized groups and civic data more readily available for use by local software developers                         |
|  Sandia National Laboratories | Energy and Transportation analysis<br>Infrastructure | San Francisco, CA | Sandia developed a project scope for creating a list of actions and investments San Francisco should undertake in energy and transportation systems to make the city and region more earthquake resilient.   |
|  RMS                          | Catastrophic models                                  | San Francisco, CA | RMS is implementing technology to help the city use software models more dynamically to better understand risks and potential ways to mitigate them.   |

# 100RC Outputs and Deliverables – Phases 1-2

## Phase I

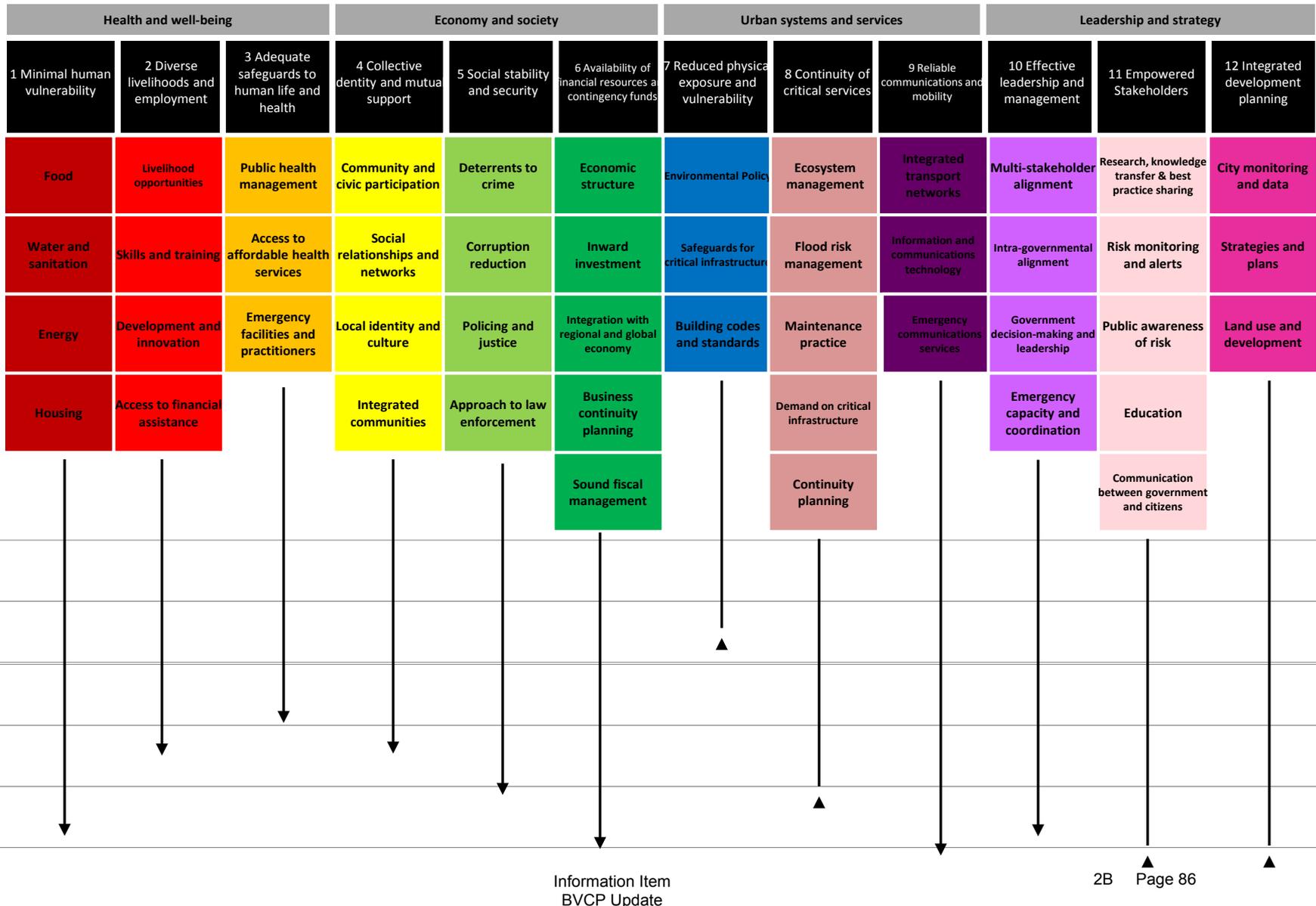
1. Phase I Work Plan
2. Stakeholder Engagement Plan
3. Resilience Steering Committee
4. List of major shocks and stresses
5. Resilience Assessment Tools outputs
6. Preliminary Resilience Assessment & Focus Areas
7. Phase II Work Plan

## Phase II

1. Focus Area diagnostic and analysis outputs
2. Cross-Focus Area analysis
3. Documentation of Field of Opportunity
4. Documentation of Resilience Priorities, enablers and initiatives
5. Resilience Strategy



# Phase 1 Tool Example: Stakeholder Map Template



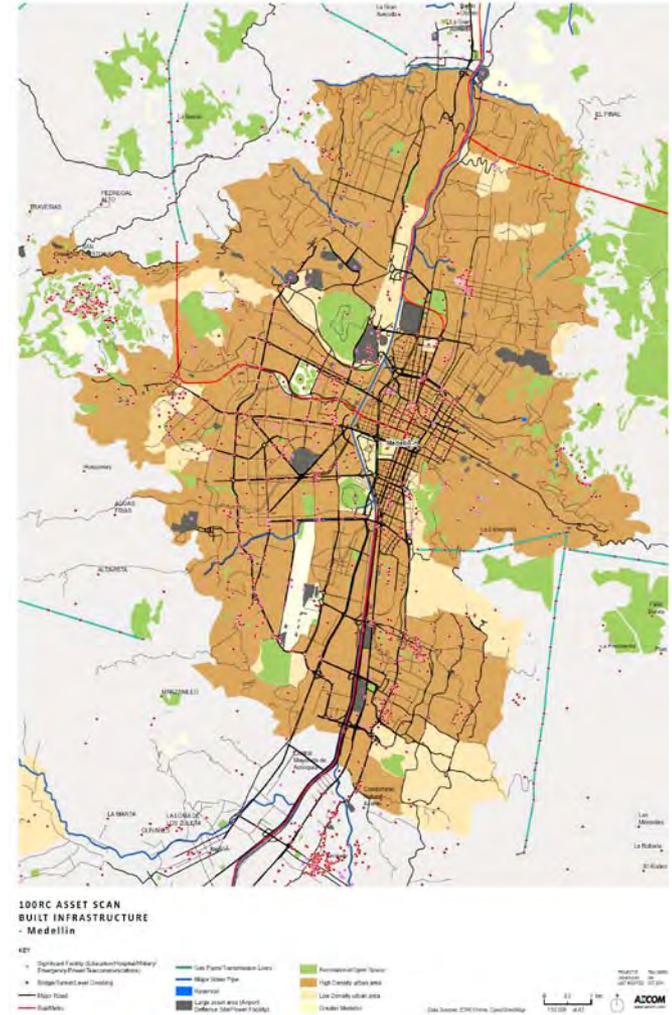
# Phase 1 Tool Example: Risk Screening

Table 6 Risk screening matrix

|             |        | Likelihood |        |      |
|-------------|--------|------------|--------|------|
|             |        | Low        | Medium | High |
| Consequence | Low    | L          | M      | M    |
|             | Medium | L          | M      | H    |
|             | High   | M          | H      | H    |

Table 11 Task RA5 shock and stress linkage guidance

| Linkage  | Descriptor   |
|----------|--|
| Direct   | <p>There is a direct link between the stress and shock (e.g. the stress is likely to directly exacerbate one or more consequences of the shock event, or vice versa).</p> <p><b>Example:</b> A blizzard is likely to result in a higher number of deaths in a city with a large homeless population.</p> |
| Indirect | <p>There may be an indirect link between the stress and shock (e.g. the stress may exacerbate one or more consequences of the shock event, or vice versa).</p> <p><b>Example:</b> Low levels of education may constrain the ability of residents to respond appropriately to a disease outbreak.</p>     |
| None     | <p>There is no foreseeable link between the stress and shock.</p> <p><b>Example:</b> High energy prices within a city are unlikely to exacerbate the consequences of a landslide.</p>  |



# Initial Areas of Opportunity/Priority

- Boulder Valley Comp Plan integration
- Energy systems blueprint
- Local Foods policy
- Civic Area design and community discussion
- Neighborhood level / non-traditional engagement
- A few others:
  - Flood recovery, disaster preparedness, performance and asset gap assessment
  - Climate science planning knowledge infrastructure
  - Data management and cyber infrastructure

# Potential Platform Partner Linkages

- Ushahidi – Resilience Network Initiative\*
- Palantir – big data design and assimilation
- Sandia National Labs – energy system design, CBA of resilience interventions
- Digital Globe – remote sensing, situational awareness
- SwissRE – climate risk screening, risk transfer strategies, disaster modeling

# Network Examples



## BERKELEY

Berkeley hopes to use the **strategy process** to find ways to jointly tackle **climate adaptation** and **seismic retrofits**, and link planning to the **budget cycle**.

# NORFOLK

Norfolk is working with **Palantir** and **Sandia** to integrate their departments' **data** sets to better plan for the future and **model** the devastating social and economic **consequences** of not better managing their **chronic flooding**.



# VEJLE

Vejle is collaborating with private businesses and **100RC Network** partners to advance new thinking on **energy resilience** and **micro-grid technology**, being at the forefront of transitioning from a “**smart city**” to a “**resilient city**”.

