



Resilient Boulder

Questions for Council



- 1. Does City Council have any questions about the 100RC Phase I process to date?**
- 2. Does City Council have any feedback on the initial scoping of potential Phase II focus areas?**

Agenda



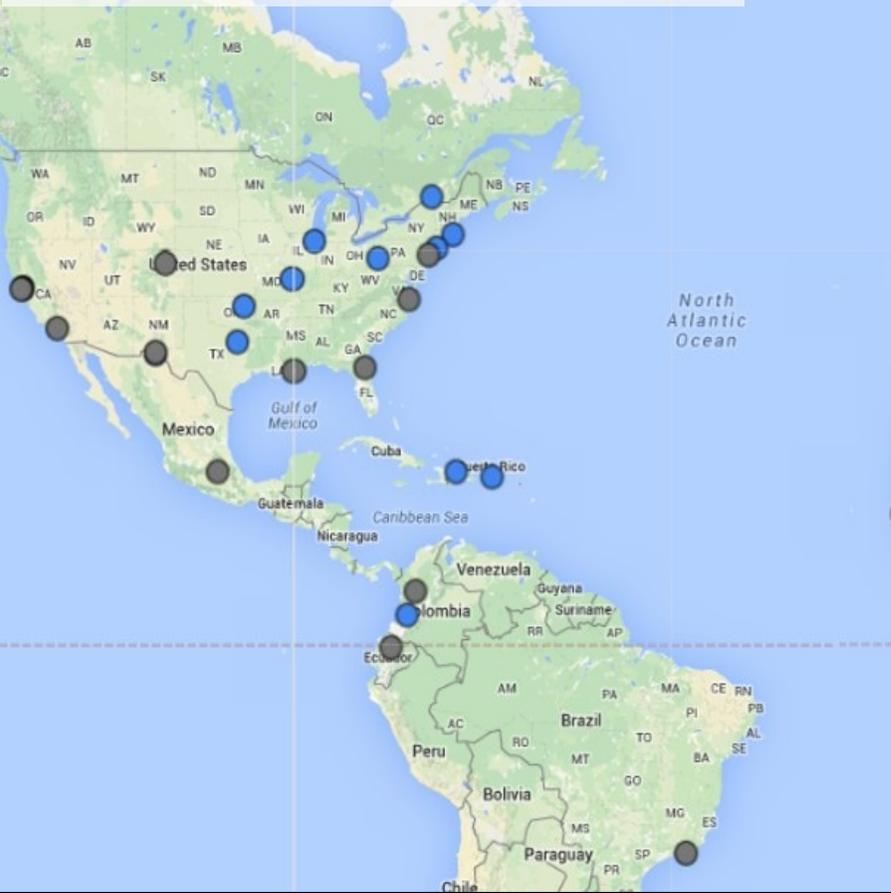
- 1. 100 Resilient Cities Process and Updates**
- 2. Boulder's Preliminary Resilience Assessment**
- 3. Potential Phase II Focus Areas**



**100 Resilient
Cities Process
and Updates**

The 2015 Challenge for the last 33 cities will open in the spring of 2015.

● 32 Wave 1 Cities



35 Wave 2 Cities ●

100RC provides member cities **four types of support**

MARKET SOLUTIONS DO NOT
SCALE EFFICIENTLY

1. Funding to hire a
**Chief Resilience
Officer (CRO)**

2. Support to
Develop a City
Resilience Strategy

3. A **Platform of
services** to support
strategy
implementation

4. Membership in
the 100RC **Network**

CITIES ARE COMPLEX AND
INSUFFICIENTLY ORGANIZED

Platform

WORLD BANK
CREDIT-
WORTHINESS
ACADEMY



DATA ANALYTIC
TOOLS



CITY RESILIENCE
INDEX

ARUP

ENERGY, WASTE,
WATER
BEST PRACTICES



HAZARD RISKS
ASSESSMENT TOOL



CROWD-
SOURCING AND DATA
MANAGEMENT



LONG-TERM ENERGY
RESILIENCE PLANNING



DISASTER
SCORECARD



FEASIBILITY STUDY
SUPPORT



REGIONAL
DESIGN
STUDIOS



METRICS FOR
SHOCKS AND
STRESSES

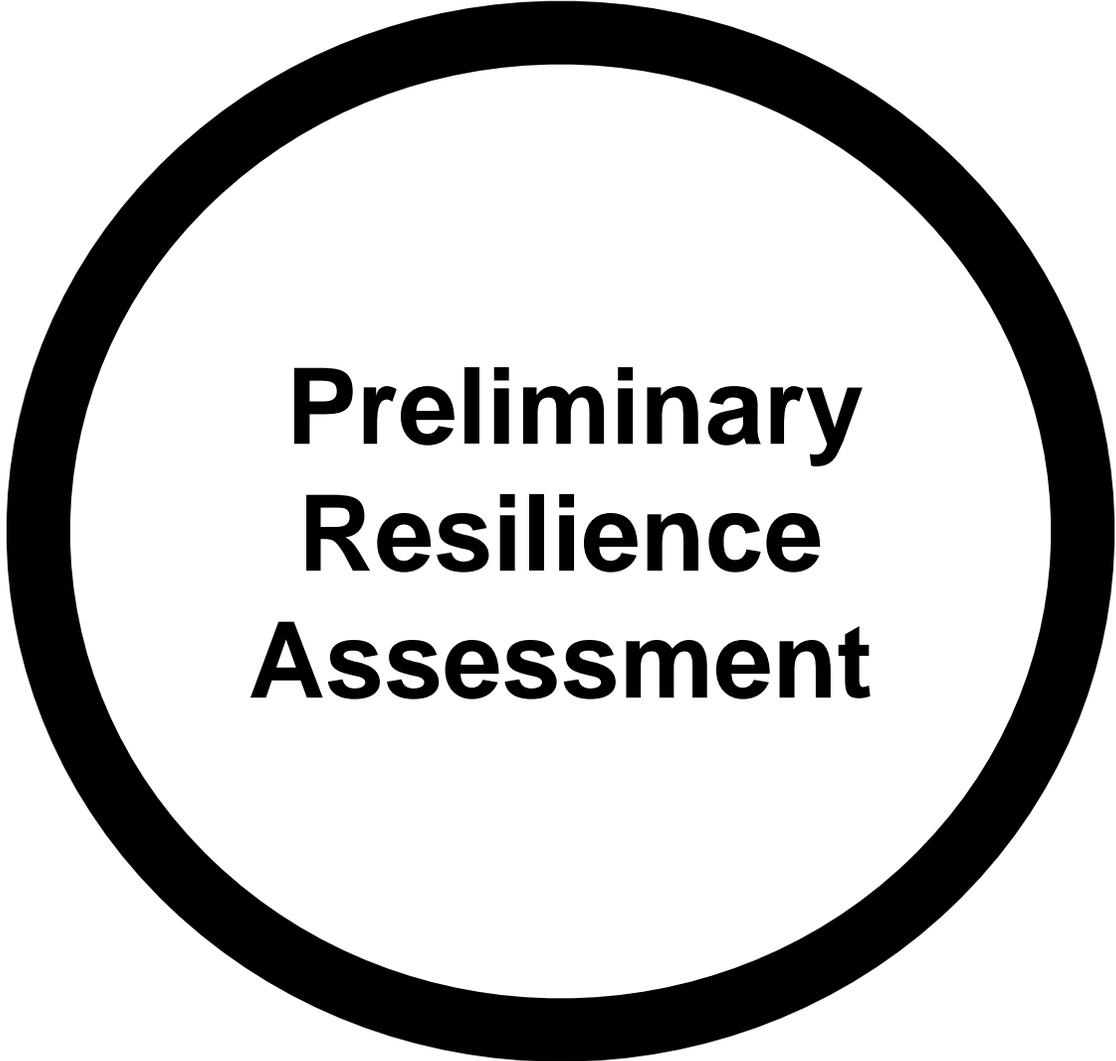




Sudden shocks or accumulating stresses can lead to social breakdown, physical collapse, or economic decline.

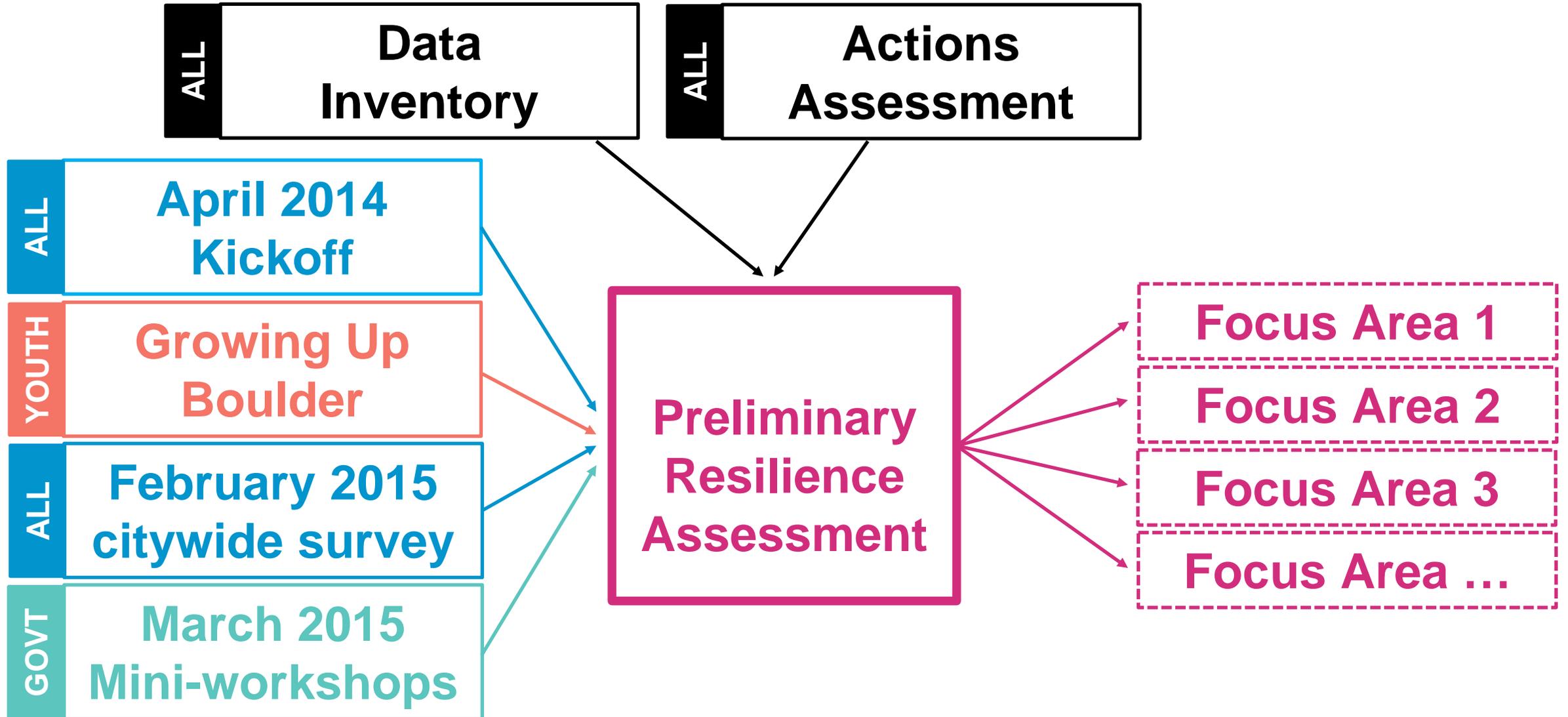
Riots in Tottenham, England





**Preliminary
Resilience
Assessment**

Inputs and Outputs



Risk Profile

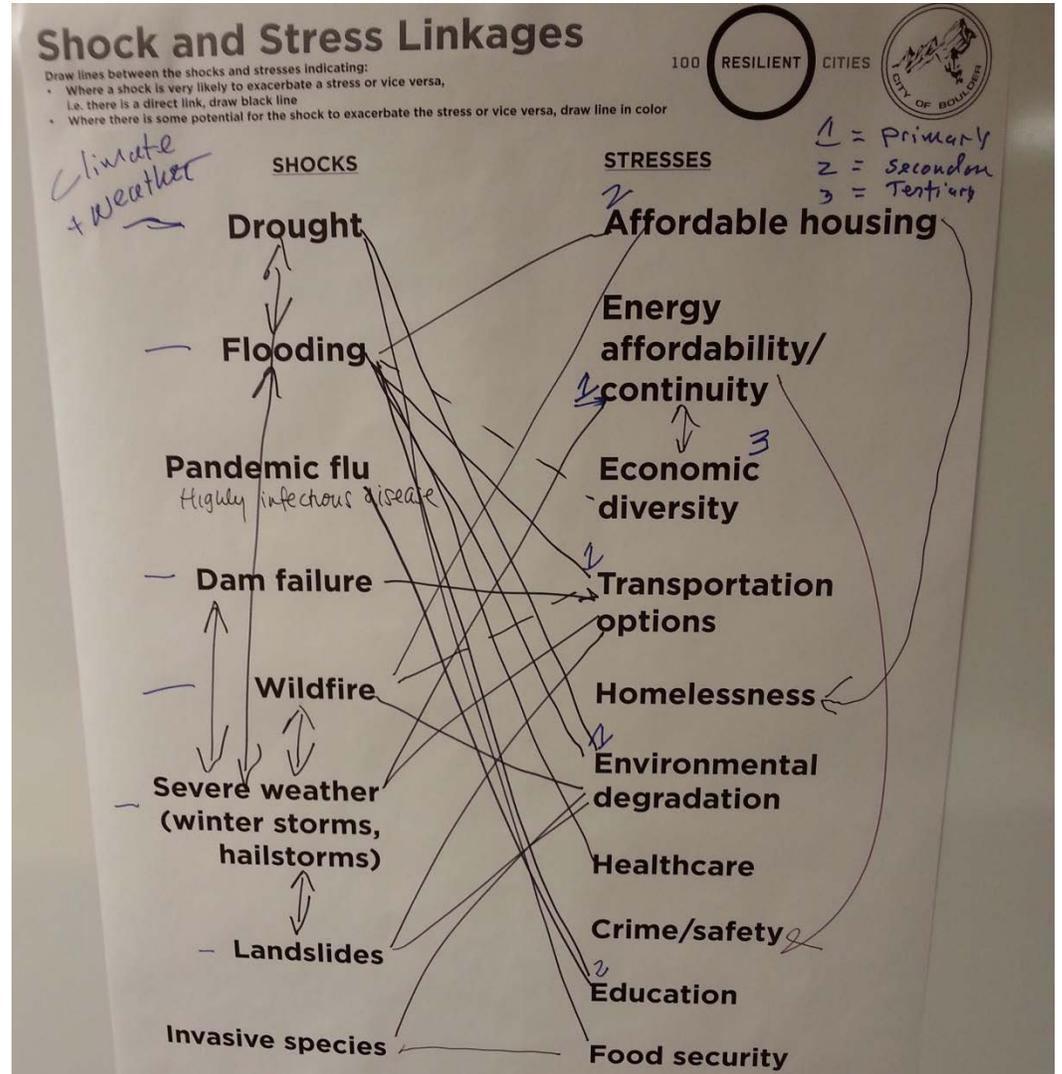
High risks

- Drought
- Floods
- Pandemic flu
- Wildfire
- Winter storms

Medium risks

- Dam failure
- Extreme temperatures
- Infrastructure/building failure
- Hazardous materials accident

Interrelationship of Risk



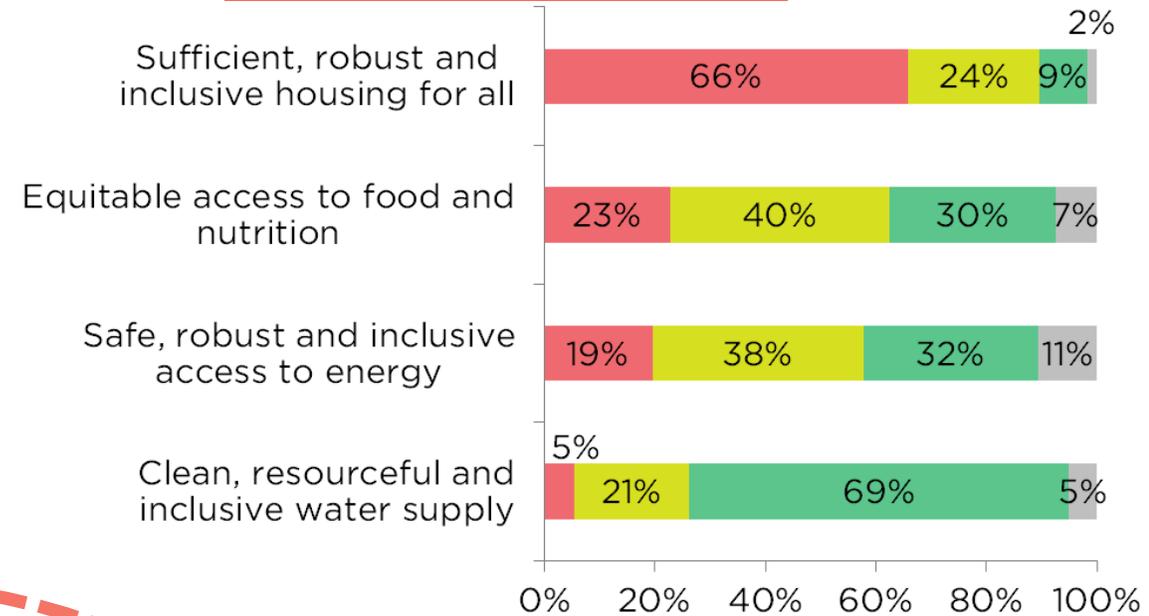
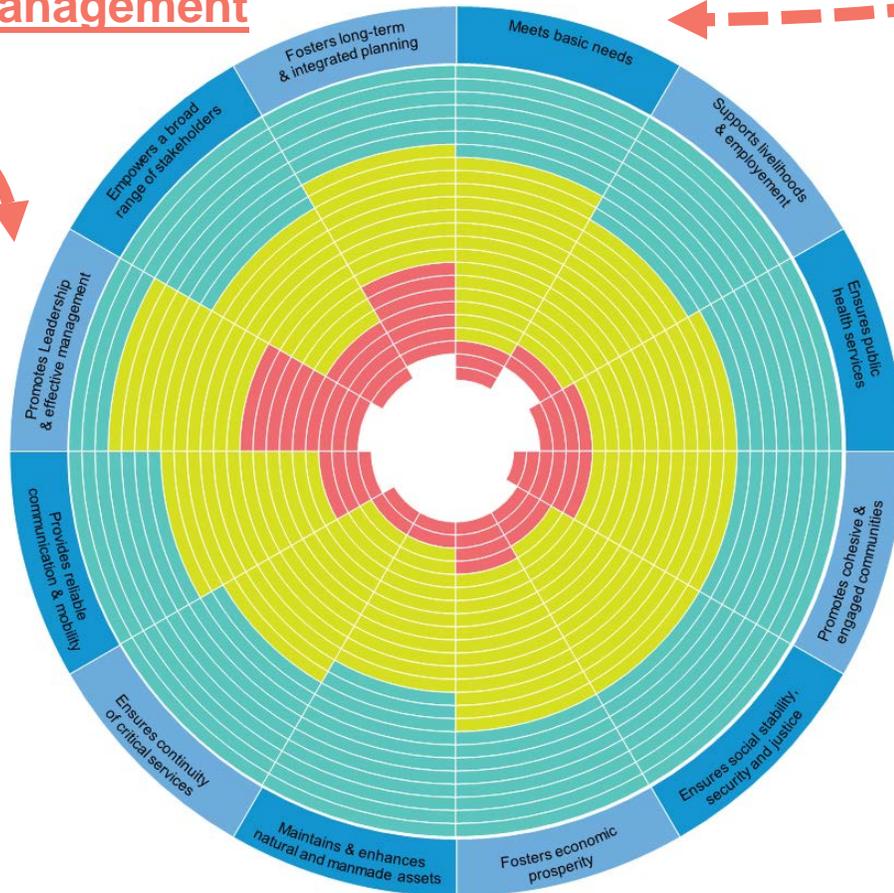
Resilience Perceptions

Citywide Online Survey



Promotes leadership and effective management

Meets basic needs

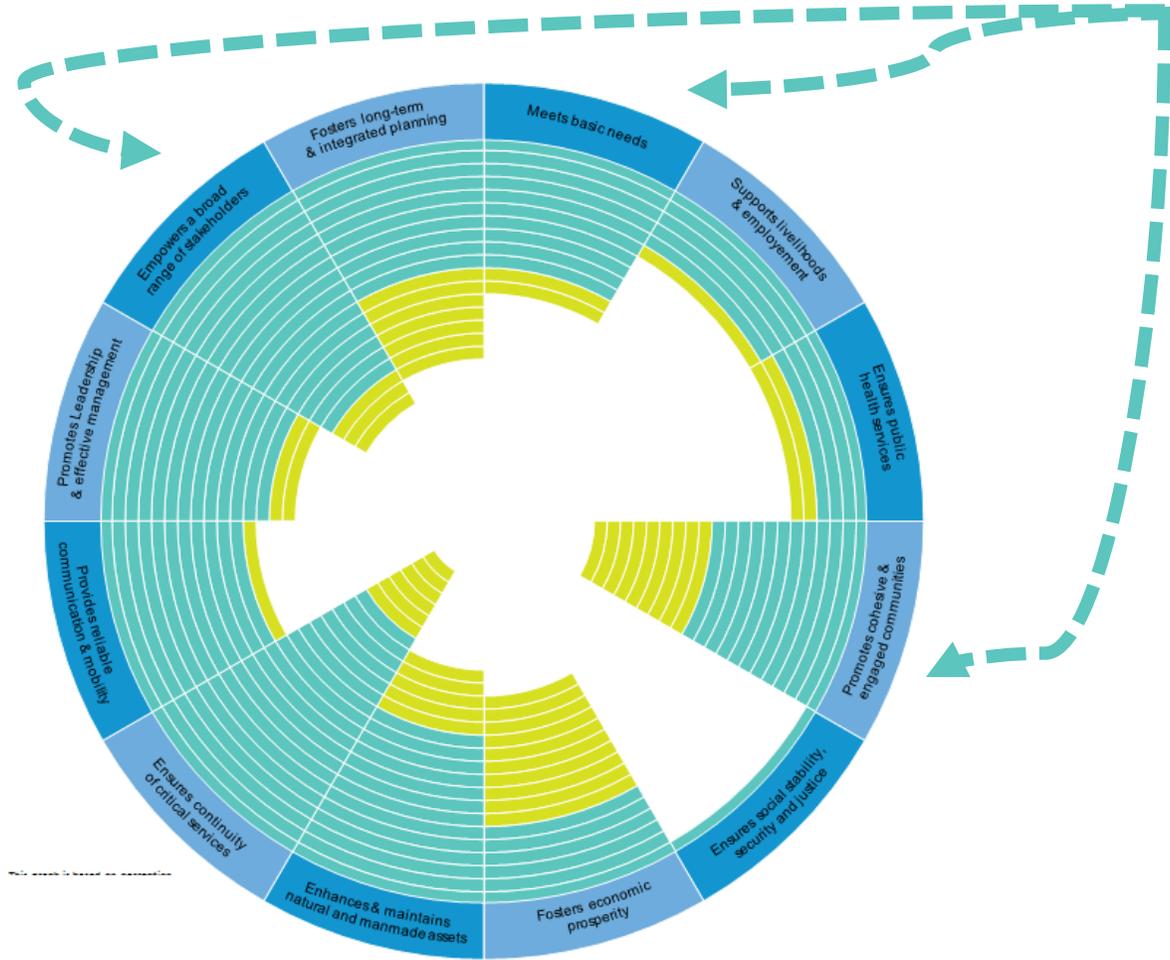


Promotes cohesive and engaged communities

N=435

■ Need to do better ■ Doing well, but can improve ■ Area of strength ■ Unknown

Resilience Actions



■ Primary Objective ■ Secondary Objective

Actions exist in categories identified as particular weaknesses in the survey and workshops:

- 1) Housing affordability
- 2) Government transparency
- 3) Community engagement and feedback integration

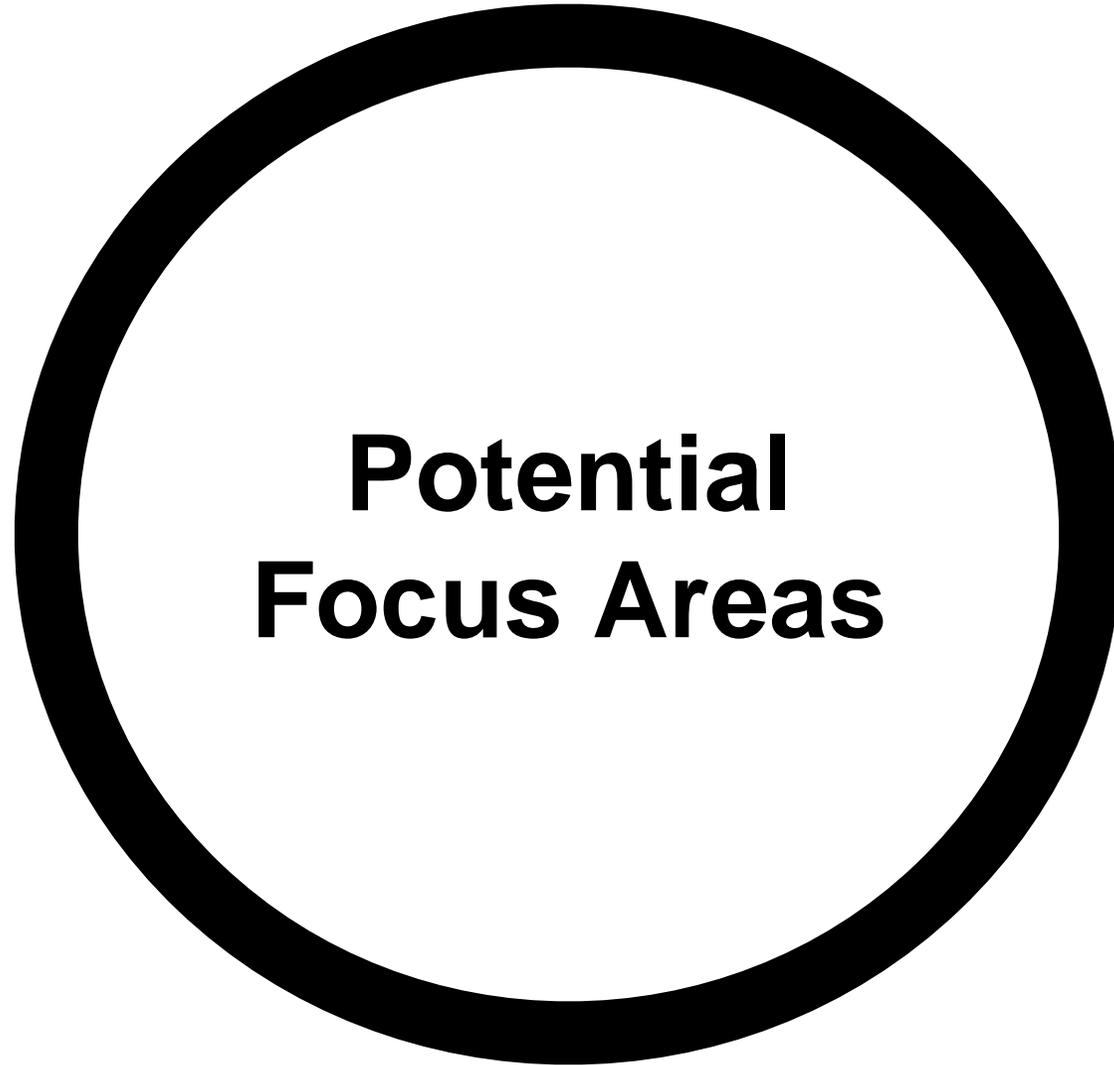
But these initiatives do not necessarily reflect the amount of city resources behind these actions. For example, many actions “Promoting Cohesive and Engaged Communities” are new or in the process of being refined (Neighborhood Liaison, Code for America).

Perceptions and Actions



Common themes have emerged through the survey and mini-workshops that may help to define Boulder's Resilience Strategy:

- 1) Community **engagement methods could be more transparent** and better demonstrate the integration of public feedback.
- 2) Boulder's **strong civil society sector is considered to be underutilized** in the daily business of the City.
- 3) Housing **affordability is the dominant issue in the City**, but can be broadened to be analyzed at the regional scale or through the systems that relate to the City's sustainability goals.
- 4) The Resilience Strategy should **support ongoing City Actions related to these themes and undertake analysis** to advance ideas where gaps exist.



**Potential
Focus Areas**

Focus Areas

Focus Areas are priority topics where the city wants to develop more knowledge, gather more data, and conduct more analysis.

Focus areas may be designed to:

- **Further understanding and analysis of a city's vulnerability to a shock.**
- **Analyze how shocks and stresses might interact.**
- **Integrate and prioritize existing efforts around resilience principles.**
- **Focus on a specific part of a shock or stress which requires deep exploration.**





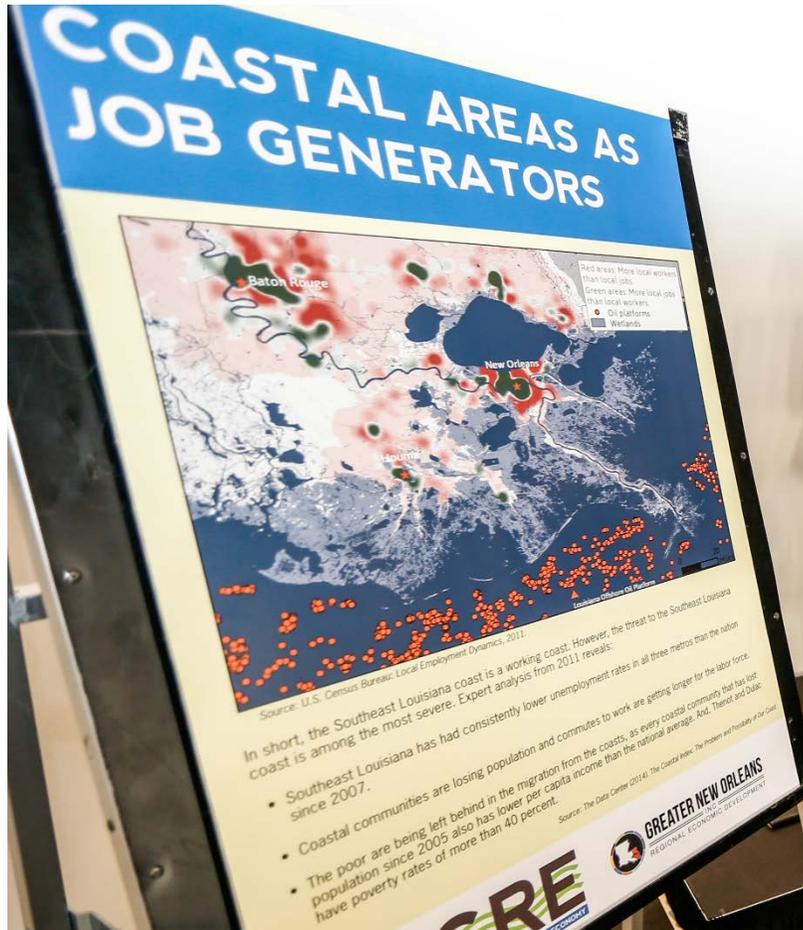
FOCUS AREAS:

“Developing a resilient management system: how to better integrate the disparate and complex planning efforts across the city, and to leverage different resources and existing plans”

“Fostering resilient behavior: educating all of the community on resilience”

“Developing socio-economic resilience: how to grow an inclusive business environment based on a low-carbon economy”

Other Focus Areas



BYBLOS

“How to preserve historical assets and revive customs and traditions to ensure economic activity and peace against challenges such as aging infrastructure, environmental risks, changes in demographics, lack of urban planning, high dependence on tourism and the vivid depletion of historic knowledge and awareness”

BERKELEY

“Assess and improve the community’s ability to care for and shelter vulnerable and displaced residents in the event of a disaster”

MEDELLIN

“How to curve illegality through providing socio-economic opportunities to the local population, with a particular focus on the youth”

Focus Areas

Things to consider:

- **The extent to which a focus area maps to existing efforts and city priorities**
- **The extent to which a focus area will produce something new and novel**
- **Whether the focus area work will result in something actionable**
- **The relative importance or depth of the resilience gap to be filled**
- **Whether potential activities will be fun, interesting, and engaging**



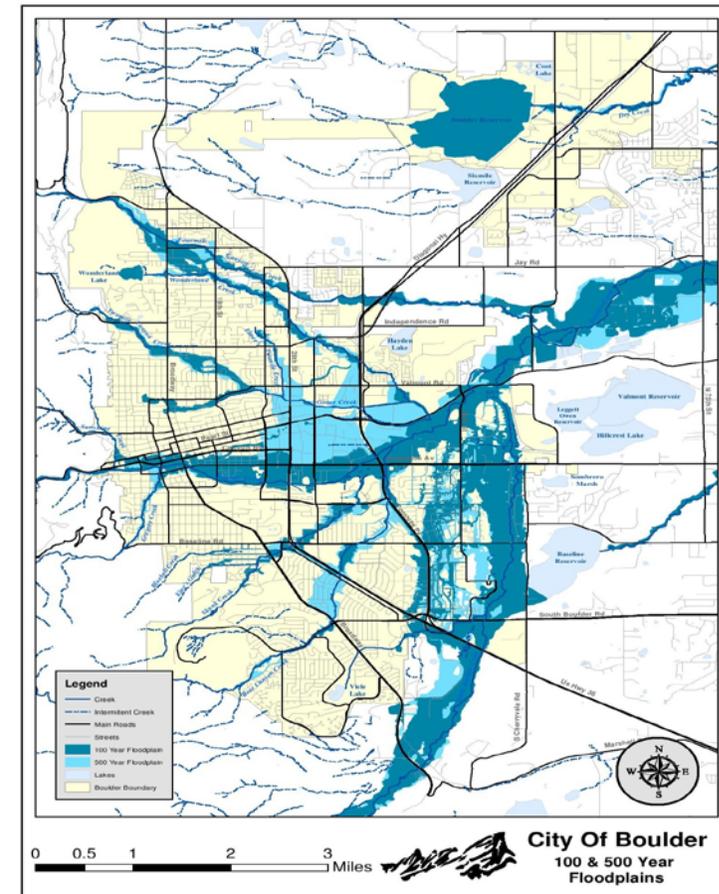
1. Resilient Recovery

Gap: Current post-flood assessments and a pivot towards long-term recovery allow for new or novel resilience building activities within the broader community

Increase individual risk awareness and responsibility for protective action

Explore groundwater intrusion as a new community-wide risk

Institutionalize lessons learned and better practices from the 2013 response



2. Resilient Governance



Gap: Although many existing city activities can be characterized as ‘resilient’ (ex. progressive flood plain management), core resilience principles are not well incorporated into city planning, strategy, or budget documents or processes

Develop a resilience vision and framework that is comparable and complementary to the existing Sustainability Framework for the BVCP update

Develop community health and well-being metrics to support Human Services Master Plan

3. Climate Wealth and Security



Gap: Boulder's current energy production and distribution system is not well designed to withstand the shocks associated with future natural hazards nor to mitigate the current and future price volatility in the fossil fuel-based energy markets.

**Design a distributed neighborhood
'Safe Havens' demonstration
project**

**Promote autonomous adoption of low-
carbon technologies and increase
community sense of climate action
ownership**

4. Understanding Changing Risk

Gap: There has been no comprehensive or detailed analysis of likely impacts to the city's infrastructure or buildings. Further, specialized analyses that have been conducted are piecemeal and use widely varying climate projections and methodologies, ensuring that policy and planning outcomes are inconsistent.

Conduct a climate impact analysis on city infrastructure and buildings

Design and validate a community climate scenario toolkit



5. Business Community Resilience



Gap: The disasters of the last five years have largely spared the local business community and many businesses remain unprepared for future events.

Deploy a Continuity Planning Toolkit and other online resources

Develop a comprehensive outreach and partnership strategy around risk awareness and transfer or reduction strategies

Explore new policies for preferential, expedited post-event local contracting

Develop the information and relationship infrastructure for rapid post-event impact assessment

6. Economic Risk Assessment



Gap: The city lacks a robust understanding of its exposure to wider economic trends, such as shifts in credit markets or declines in federal investments in research and development

Conduct an community-wide economic risk assessment by major sectors and business types

Determine level of exposure to major shifts in employment and economic impact by conducting ‘if-then’ and ripple effect modeling analyses

7. Ecological Services Master Plan

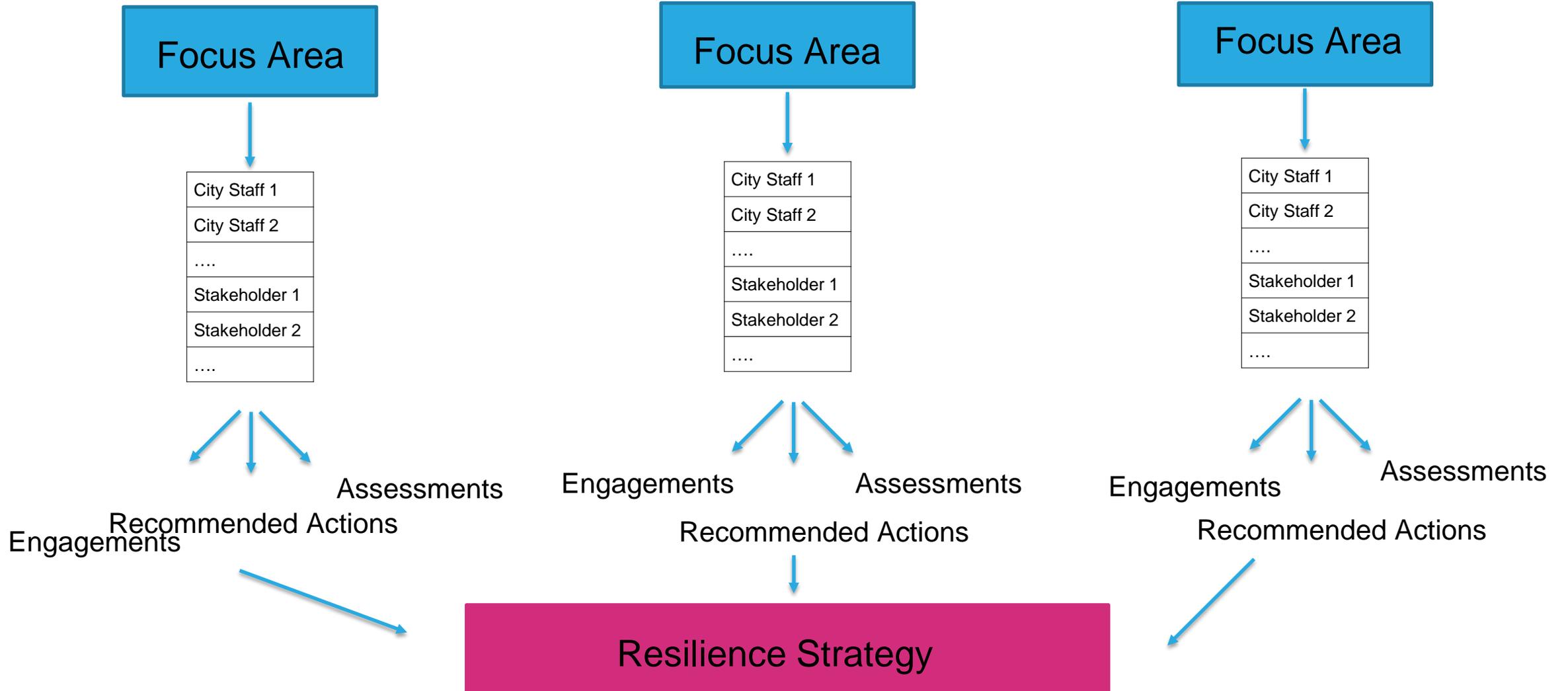


Gap: The city's current ecosystem management and performance assessment efforts are generally reactive to changing conditions and currently are not coordinated or oriented around specific integrated management goals.

Clearly define the problem related to ecosystem management, biodiversity preservation, and wildlife habitat

Define a strategy for integrating existing efforts, developing new priority areas of intervention and protection, budgeting, and future climate impact analysis to achieve goals

Potential Structure



San Francisco Working Group Approach - Example



Focus Area #2: Build on current understanding of vulnerability of the city’s existing housing stock to improve the ability for residents to return to their homes after a disaster.

Diagnostic tasks for Phase 2	Stakeholders to engage	Team members responsible
Data Collection (inventory & mapping)		
<p>Ascertain the relative level of resilience of public housing (all three types) in SF. Understand the needs of public housing tenants to help them return to their homes post-disaster.</p> <p style="text-align: center;">This could also include community consultation.</p>	<p style="text-align: center;">Housing Authority BOS City Administrator</p>	<p style="text-align: center;">PO (lead)</p>
<p style="text-align: center;">Map non-ductile concrete buildings against vulnerable populations groups. Further articulate definition of vulnerable populations for this task.</p>	<p style="text-align: center;">DPH - vulnerable populations’ data sets. EERI – Concrete Collation work.</p>	<p style="text-align: center;">MH (lead)</p>
<p>Identify current vacant building stock in the city and opportunities to redevelop them for interim housing.</p> <p style="text-align: center;">Vacant building data sets already exist for this task, and it is about investigating size, locations, and availability for long term housing (i.e. up to 18 months - 5 years).</p>	<p style="text-align: center;">DBI</p>	<p style="text-align: center;">SL</p>
<p>Work with Palantir to develop a web based application for the community to access a multi-faceted platform of housing mitigation and recovery services in the city.</p>	<p style="text-align: center;">OEWD Mayor</p>	<p style="text-align: center;">PO Palantir</p>

Questions for Council



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Potential Focus Areas – Summary



- 1) Resilient Recovery**
- 2) Resilient Governance**
- 3) Climate Wealth and Security**
- 4) Understanding Changing Risk**
- 5) Business Community Resilience**
- 6) Economic Risk Assessment**
- 7) Ecological Services Master Plan**



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