Memorandum

CITY OF DALLAS

DATE April 8, 2016

TO Honorable Members of the Quality of Life & Environment Committee: Sandy Greyson (Chair), Tiffinni A. Young (Vice Chair), Rickey D. Callahan, Mark Clayton, Philip T. Kingston, B. Adam McGough

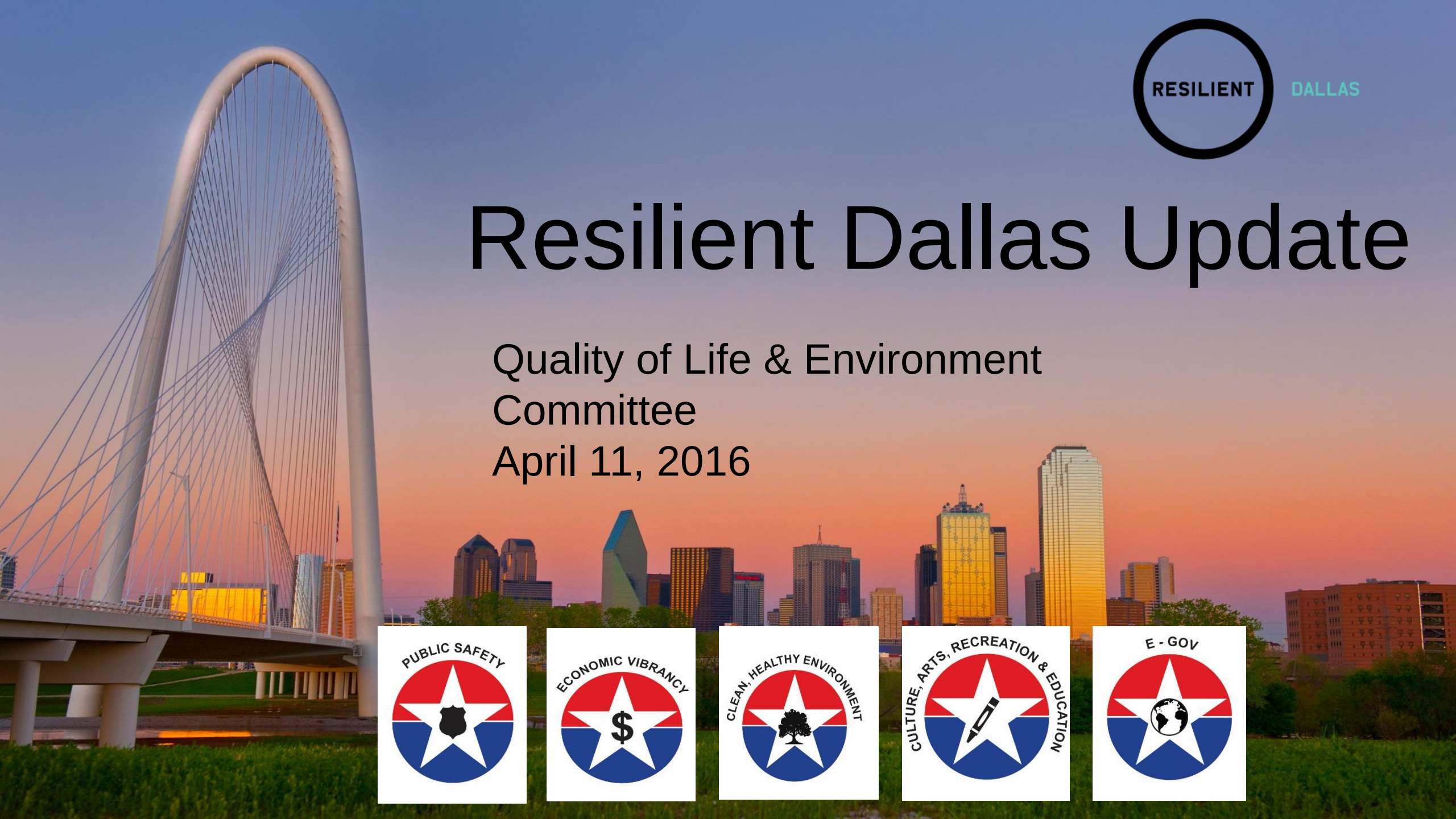
SUBJECT **Resilient Dallas Update**

On Monday, April 11, 2016, the Quality of Life & Environment Committee will be updated on Resilient Dallas. The Chief Resilience Officer will provide updates on progress so far, and make the committee aware of the next steps in the process.

Please contact me if you have any questions or need additional information.

Theresa O'Donnell
Chief Resiliency Officer

c: Honorable Mayor and Members of the City Council
A.C. Gonzalez, City Manager
Warren M.S. Ernst, City Attorney
Craig D. Kinton, City Auditor
Rosa A. Rios, City Secretary
Daniel F. Solis, Administrative Judge
Ryan S. Evans, First Assistant City Manager
Jill A. Jordan, P.E., Assistant City Manager
Eric D. Campbell, Assistant City Manager
Mark McDaniel, Assistant City Manager
Joey Zapata, Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Sana Syed, Public Information Officer
Elsa Cantu, Assistant to the City Manager – Mayor & Council



Resilient Dallas Update

Quality of Life & Environment Committee
April 11, 2016

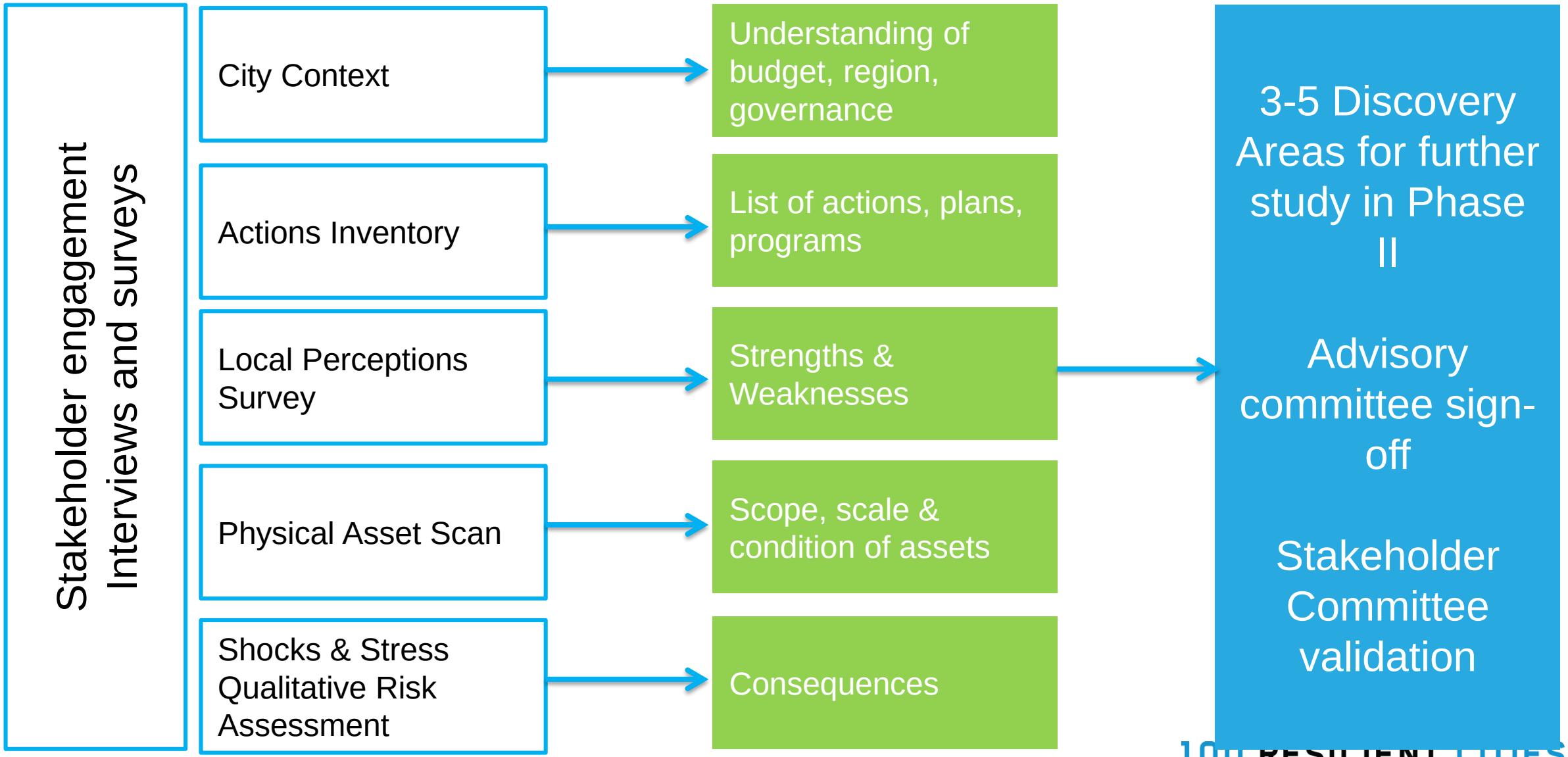
Purpose of the Briefing

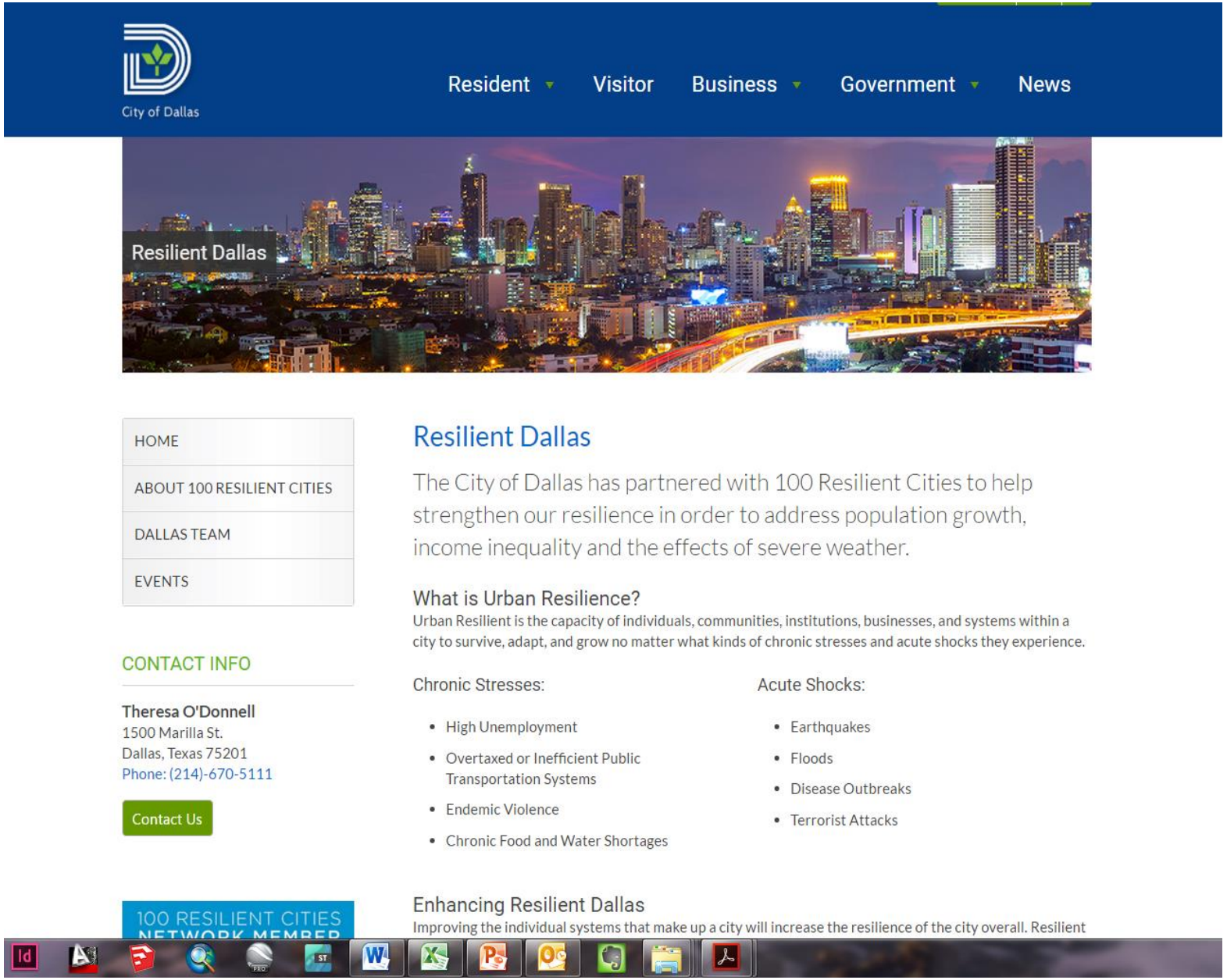
- Update the Committee on the progress to date
- Provide an overview of the work that is ongoing
- Discuss next steps and opportunities for public engagement

Overview of Progress to Date

- Stakeholder committee meetings
- Stakeholder interviews
- Dallas Resilience Website
- City Context (data collected, analysis in progress)
- Actions Inventory (final draft)
- Perceptions Survey (in progress, draft community survey)
- Physical Asset Scan (complete. validation by Stakeholder Committee)
- Qualitative Shocks and Stresses Assessment. (complete. validation by Stakeholder Committee)
- Scenario Planning (complete, validation by Stakeholder Committee)

Preliminary Resilience Assessment

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DALLAS TEAM
EVENTS
CONTACT INFO
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Contact Us
100 RESILIENT CITIES
Resilient Dallas
The City of Dallas has partnered with 100 Resilient Cities to help strengthen our resilience in order to address population growth, income inequality and the effects of severe weather.
What is Urban Resilience?
Urban Resilient is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.
Chronic Stresses:
High Unemployment
Overtaxed or Inefficient Public Transportation Systems
Endemic Violence
Chronic Food and Water Shortages
Acute Shocks:
Earthquakes
Floods
Disease Outbreaks
Terrorist Attacks
Enhancing Resilient Dallas
Improving the individual systems that make up a city will increase the resilience of the city overall. Resilient

External Stakeholders - engagement

Leadership and Strategy

- North Central Texas Council of Governments
- Communities Foundation of Texas
- Greater Dallas Planning Council
- North Central Texas – American Planning Association
- American Institute of Architects
- North Texas Commission
- Commit!
- Dallas Youth Commission
- Dallas Innovation Alliance

Health and Wellbeing

- Habitat for Humanity
- Commit Dallas
- CitySquare
- Regional Emergency Managers
- Friendship West Baptist Church

Infrastructure and Environment

- Oncor Electric
- Atmos Energy
- Regional Transportation Council
- Dallas Area Rapid Transit
- University of Texas at Austin
- SMU
- Texas Nature Conservancy
- Earth Day Dallas
- Trust of Public Lands

Economy and Society

- Greater Dallas Regional Chamber
- Oak Cliff Chamber
- Dallas Federal Reserve Bank

Shocks & Stresses

Top Shocks (Stakeholder Workshop)

- Weather related events (e.g. flooding, heatwave, ice-storm)
- Infrastructure failure
- Energy disruption

Top Shocks (Staff Response)

- Public Health Incident/Disease Outbreak
- Flooding
- Power Grid Failure
- Civil Disruption

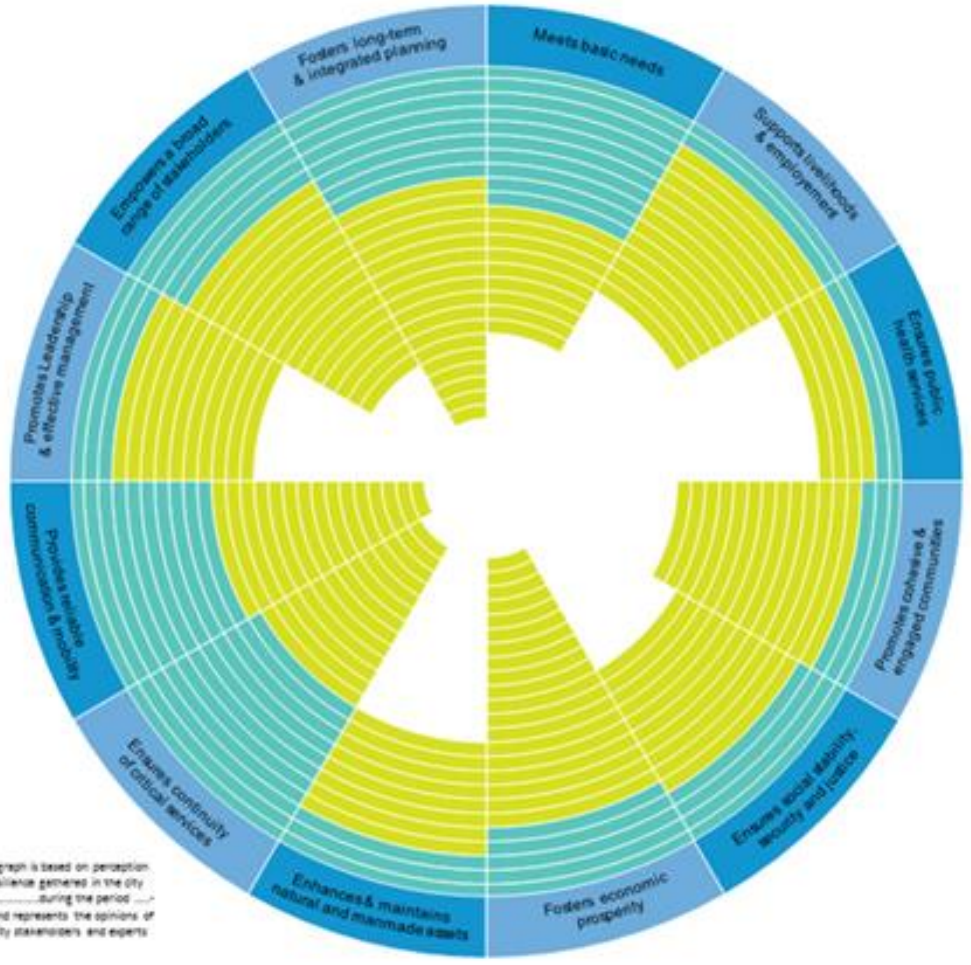
Top Stresses (Stakeholder Workshop)

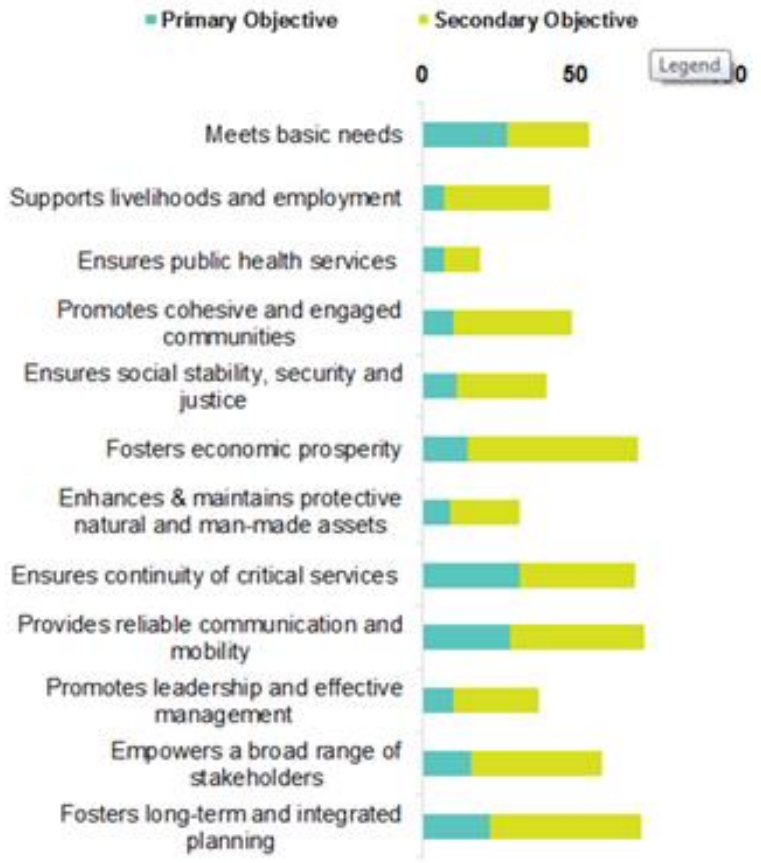
- Social equity / poverty
- Access to quality education
- Drought/climate change

Top Stresses (Staff Response)

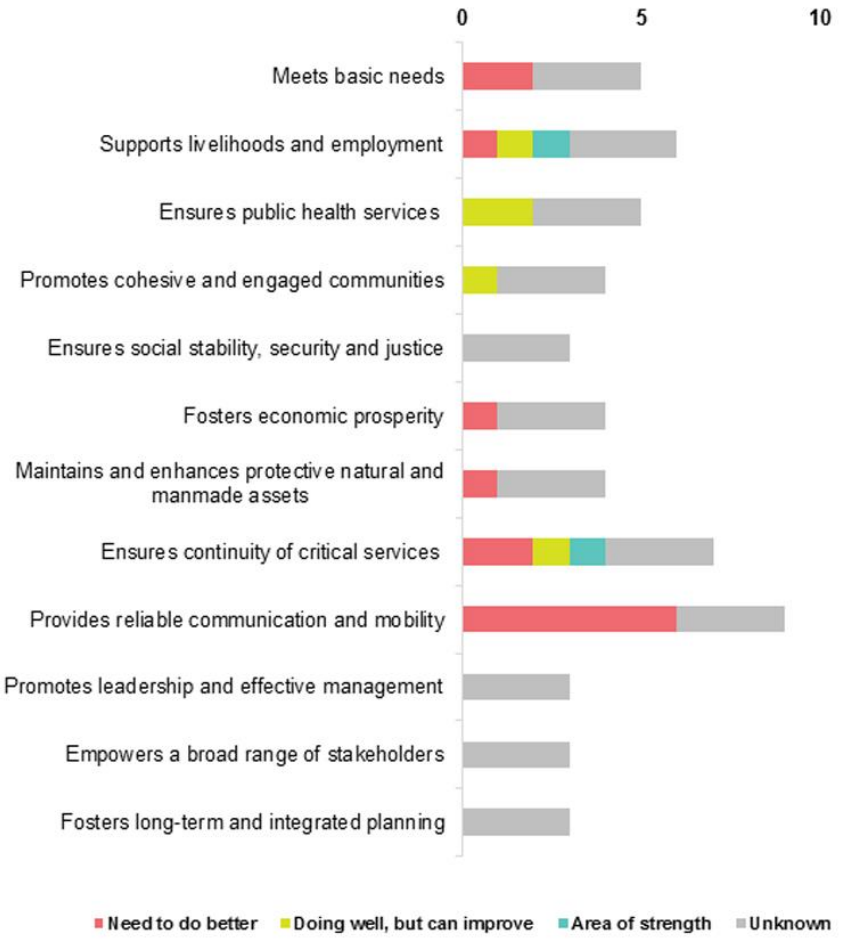
- Lack of Economic Opportunity if specific neighborhoods
- Income Disparity
- Cyclical Economic Fluctuations

City Actions Contributing to Resilience: Primary and Secondary





Perceptions
Output 1: Driver Analysis



This graph is based on perception of resilience gathered in the city of .....during the period .....-.....and represents the opinions of the city stakeholders and experts

Scenario Planning

External forces	Description of current state	What is the current trend?	Scenario description	Is there consensus about future scenario occurring?	Maximum consequence of scenario - description	Likelihood of occurrence rating	Maximum consequence rating	Risk to city	Priority scenario?
	Free text	*Free text*	*Free text*	*Drop-down*	*Free text*	*Drop-down*	*Drop-down*	*Auto-populate based on risk table below*	*Drop-down*
Social									
Population size and distribution	The region and City is seeing unprecedented growth, but Dallas	The population trend is overall growth at about 100k a decade.	The City will begin to capture more of the regional growth than it currently is	Yes	1.7-1.8 Million total population	High	High	High	Yes
Income disparity	**One of the worst in the country in terms of income disparity**	**Cannot Decide**	The city's income gap and wealth gap becomes even more pronounced	No	The city becomes so polarized between wealth classes that	Medium	High	High	Yes
Environmental									
Water Supply	Dallas water and Fort Worth manage water well. However, the	Water management will become more and more important and	Dallas does not OWN the water reseveroirs. Dallas only manages it. It	Yes	The region fails to manage it's water supply well and water becomes	Medium	High	High	Yes

Scenario #1: The City captures more of the regional growth than it currently does and the urban core continues to remain vibrant and strong.

Scenario #2: Income disparity and the wealth gap becomes even more pronounced.

Scenario #3: Other water purveyors rely on Dallas Water Utilities to address water supply shortages.

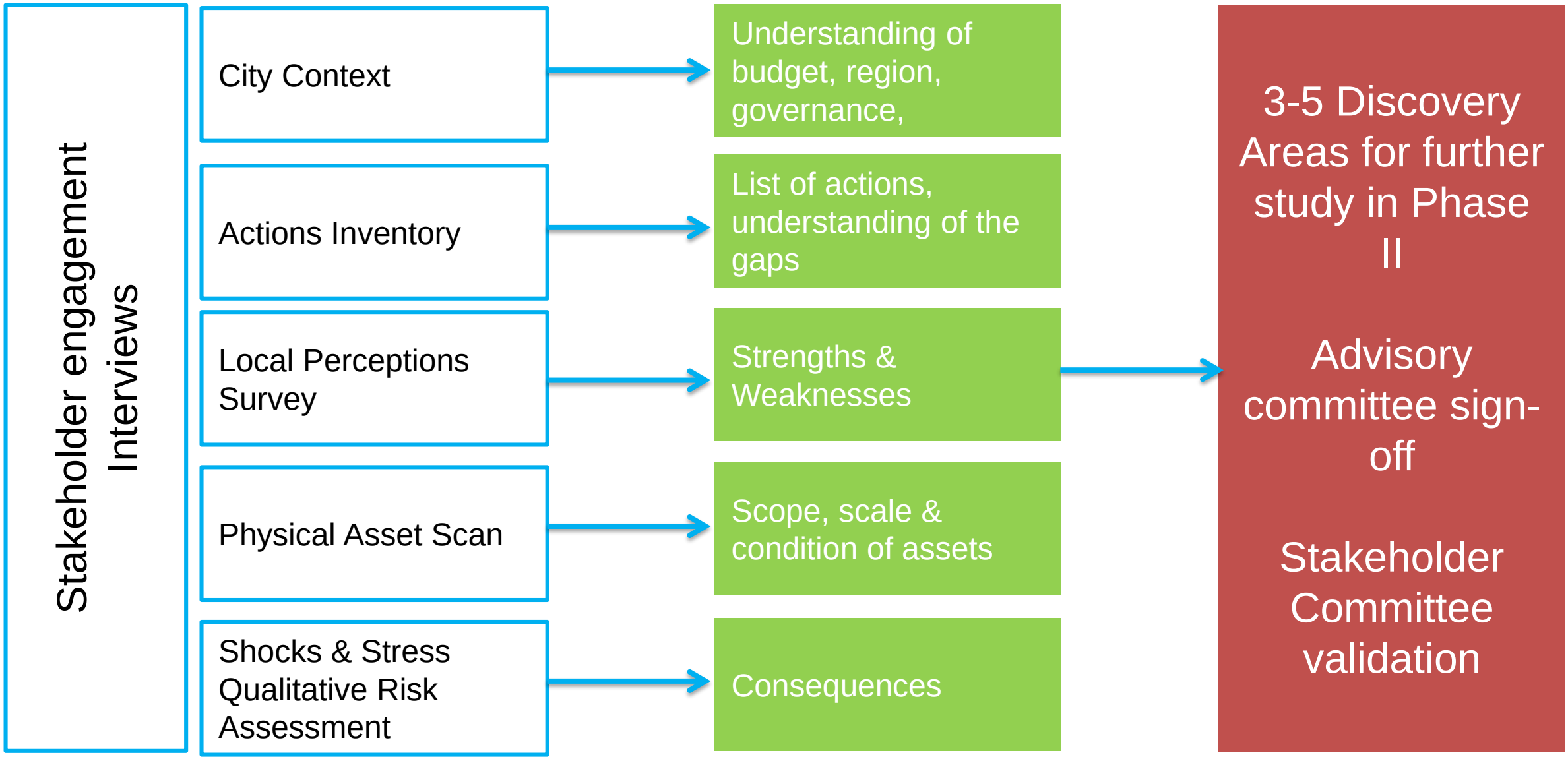
Asset and Shocks Matrix

Physical asset type	Current overall condition	Future score considering vulnerability to shocks	Screened shocks - if this shock event were to occur, what would be the consequence for this asset type? (consider the worst case scenario shock event)									
	Total score (from RA1)	*Total score (auto-calculated)*	River flood (fluvial flood)	Drought	Icestorm	Earthquake	Power Grid Failure	Tornado	Disease outbreak	Heatwave	Riot / Civil Unrest	Terrorism
Water Sources	1.3	16.3	Low	High	Low	Medium	Low	Low	High	High	Low	High
Water Distribution/Delivery	1.3	18.8	Low	Low	Medium	High	High	Medium	Low	Low	Low	High
Water Production	1.5	25.5	Medium	High	Low	High	High	High	High	High	Low	High
Waste Water Collection System	1.3	16.3	Low	Low	Low	High	Medium	High	High	Low	Low	High
Water Reuse	2.0	32.0	Low	High	Low	High	High	High	High	Medium	Low	High
Waste Water Treatment plants	1.3	17.5	Low	Low	Low	High	High	High	High	Low	Low	High
Storm Water Drainage assets	2.3	36.0	High	Low	High	High	Low	Low	Low	Low	Low	Low
Electricity generation	1.0	17.0	High	Low	Medium	High	High	High	Low	High	Low	High
Electricity transmission	1.0	18.0	High	Low	High	High	High	High	Low	Low	Low	High
Natural gas distribution	2.0	10.0	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Main roads	2.5	40.0	High	Low	High	High	Low	Medium	Low	Low	Medium	High
Railways	2.0	36.0	High	Low	High	High	High	Medium	Low	Low	Low	High
Tunnels	0.0	0.0	High	Low	High	High	Low	Medium	Low	Low	Low	High
Bridges	1.8	28.0	High	Low	High	High	Low	Medium	Low	Low	Medium	High
Airports	1.0	18.0	Low	High	High	High	High	High	High	High	Medium	High

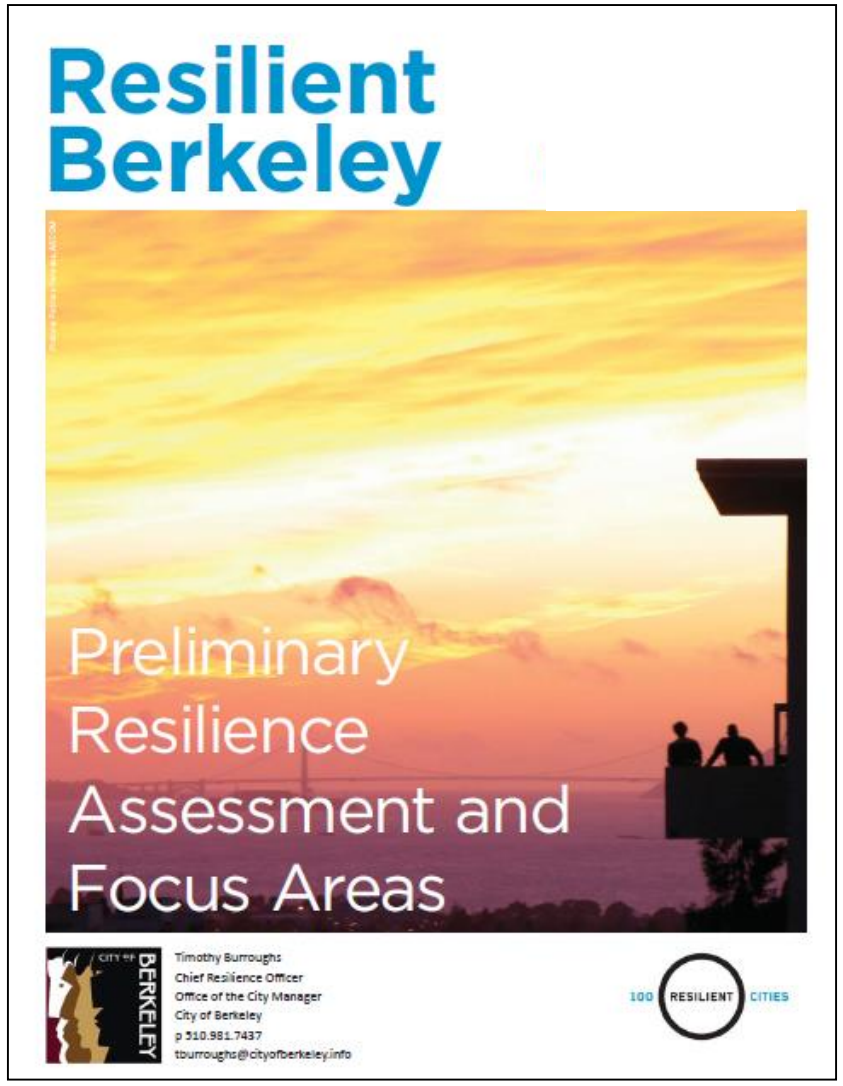
Assets most vulnerable to shocks

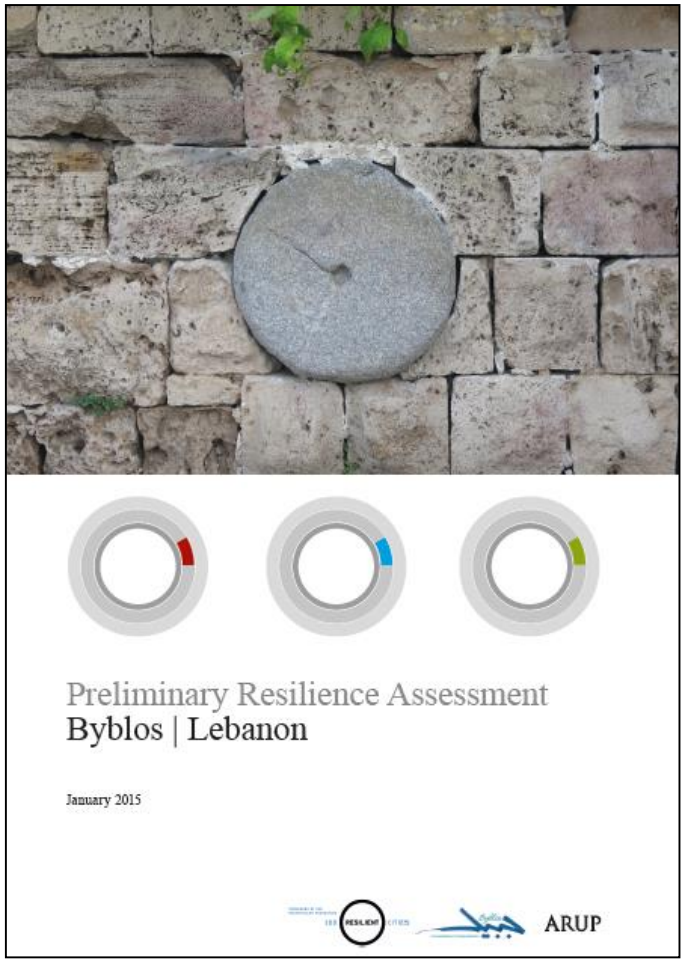
- Main Roads
- Stormwater Drainage Assets
- Railways
- Bridges
- Water Infrastructure

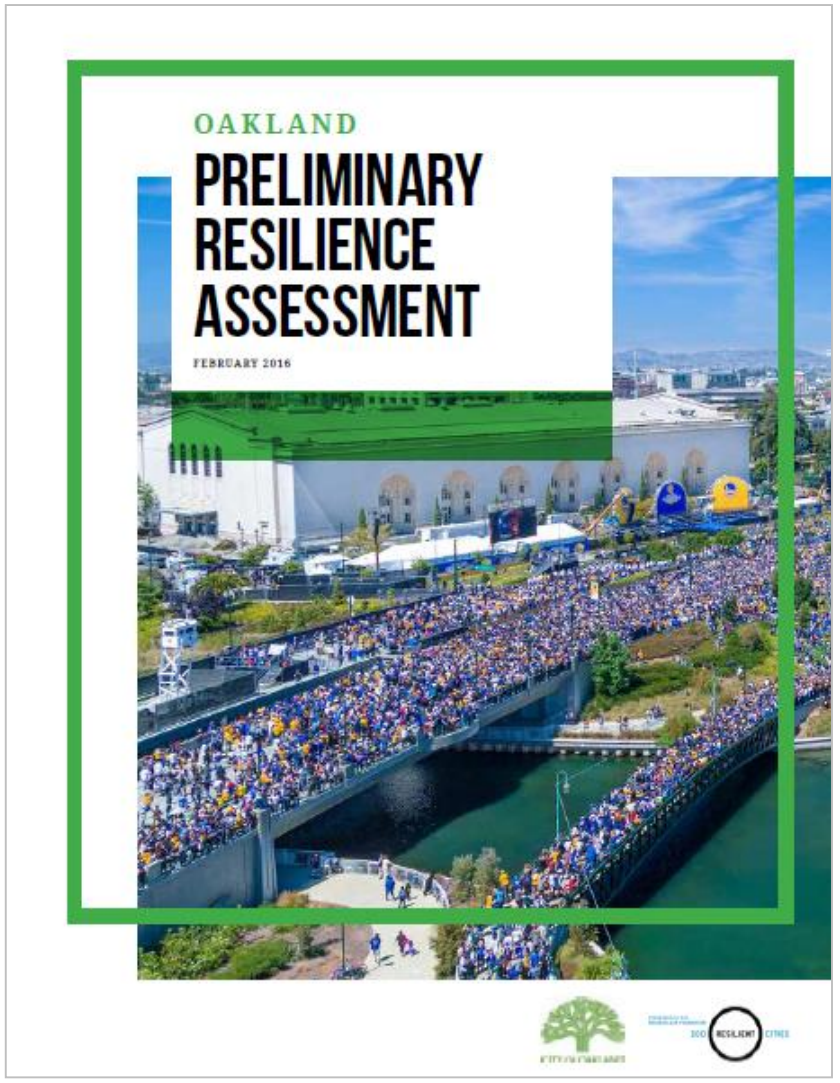
Preliminary Resilience Assessment



Preliminary Resilience Assessment Plans







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Questions for discussion during the PRA

What have we learned in Phase I and how can this shape Phase II?

What are the important linkages between the shocks and the stresses?

What existing actions and successes should we build on?

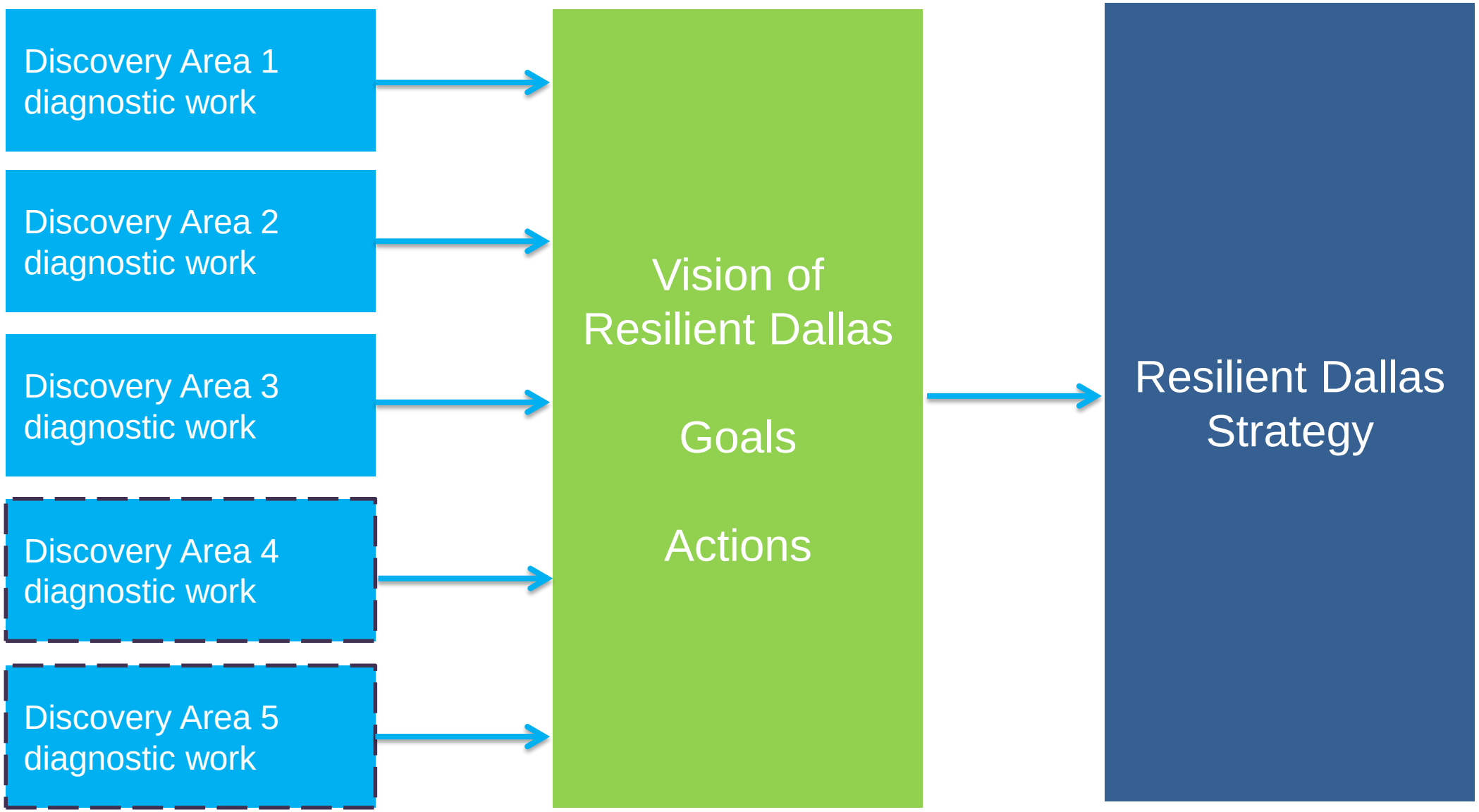
Does the public's perception of the city's preparedness and performance match the plans and actions currently underway?

Do we have enough information to confirm the perceptions? If not, which stakeholders do we still need to reach?

Does the information validate or illuminate the city's current situation and its ability to respond?

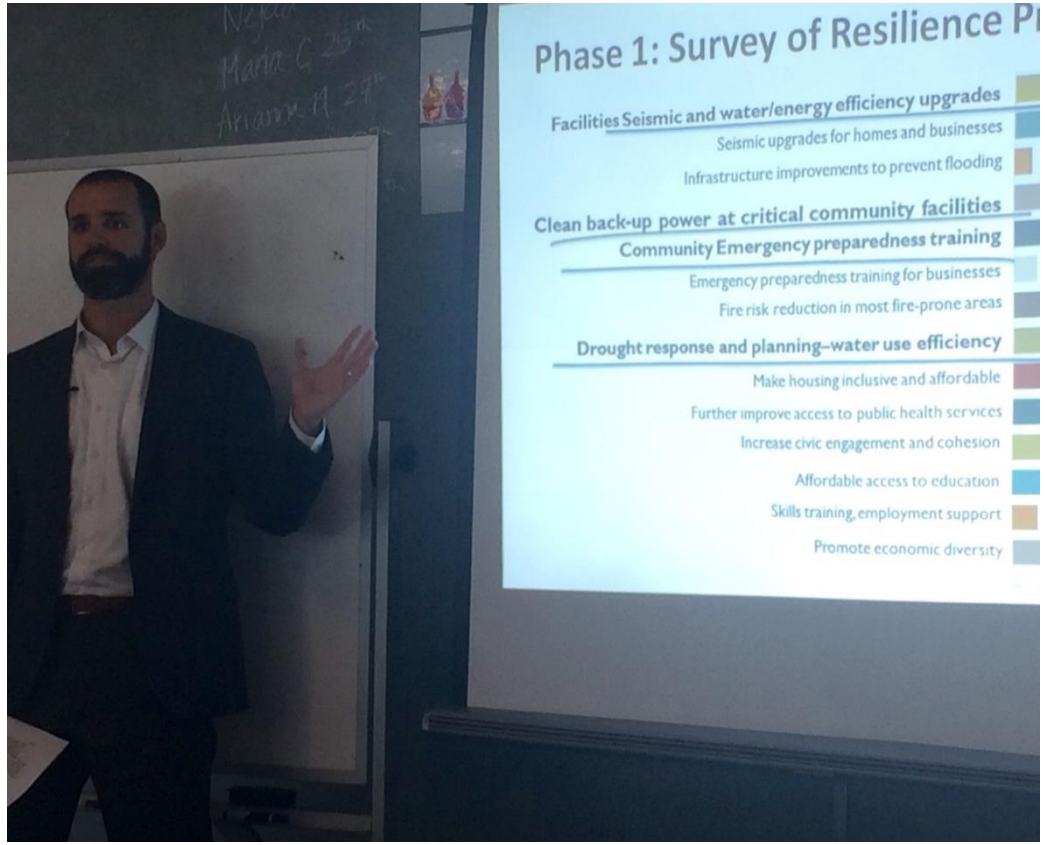
What aspects of resilience is the city not yet addressing?

What happens after the Preliminary Resilience Assessment?



Discovery Areas

Priority topics that warrant further research and analysis and will shape the work in Phase II.



Discovery Areas may be designed to:

- **Further understand and analyze the city's vulnerability to a shock.** Such as flooding or earthquakes
- **Explore how shocks and stresses interact.** For example, how public transit disruptions impact transit dependent people's ability to get to work, school or shopping
- **Integration and prioritization of existing planning efforts.** Are we leveraging strategic partnerships to accomplish similar goals?
- **A focus on a specific part of a shock or stress which requires deep articulation.** Such as the need for a spectrum of affordable housing solutions to address homelessness and the working poor

Berkeley

Focus Area 1

Assess and improve the community's ability to prepare, care for and shelter vulnerable and displaced residents in the event of a disaster.

Berkeley

Focus Area 2

Assess and improve the energy assurance of critical City government and non-City government facilities that serve vulnerable populations

Berkeley

Focus Area 3

Understand and strengthen the community's ability to mitigate the impacts of climate change, including extreme weather events and slower-moving stresses such as drought and sea level rise.

Norfolk

- Explore what resilient coastal development looks like in face of increased frequency of flooding and sea level rise
- Assess the community's information needs with regard to flooding
- Better understand who is at risk and options for better protecting residents during an event
- Further understand and assess the city's economic baseline
- Better understand how to attract and retain talent
- Better understand and assess community physical and social assets and social cohesion

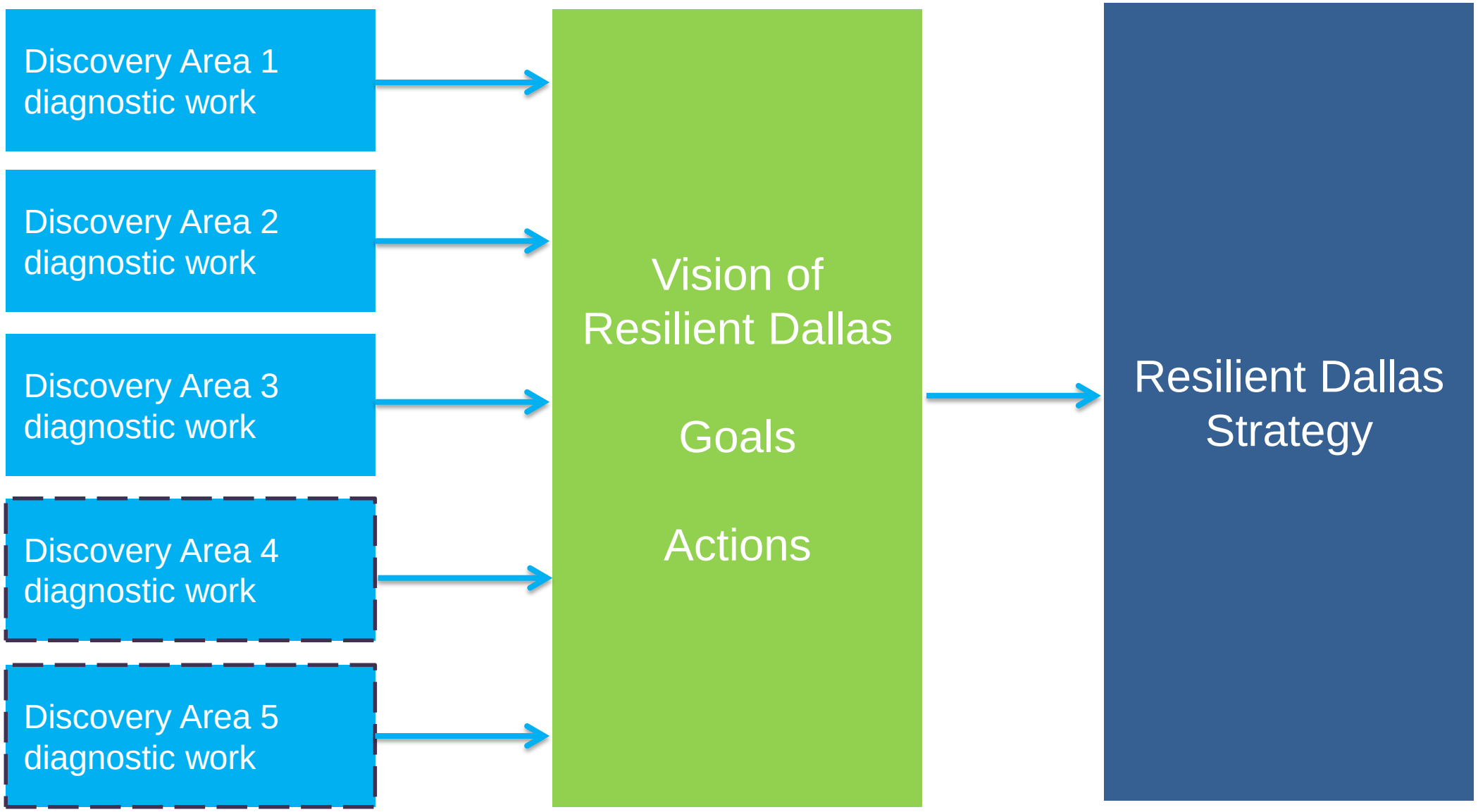
San Francisco Discovery Areas

- Strengthen the community's ability both to respond to a disaster and the capacity to recover after a disaster.
- Understand the vulnerability of the existing housing stock and work to improve the ability for residents to return to their homes after a disaster.
- Further assess community understanding of climate related threats and ability to adapt to changing environment.
- Further understand and assess the vulnerability and risk of the city's critical infrastructure to natural hazards.
- Understand how resilient design can help address San Francisco's housing needs for the 21st century.

San Francisco Diagnostic Questions

Focus Area #5: Understand how resilient design can help address San Francisco's housing needs for the 21st century.	• What are San Francisco's housing needs for the 21st century? How are these needs influenced by the expected shocks and stresses of the next 100 years? • What changes to the building codes are necessary to ensure that our housing stock is more resilient and efficient? • How do we build a housing stock that provides equity across the spectrum of different income levels?

Phase II


Discovery Area 1 diagnostic work
Discovery Area 2 diagnostic work
Discovery Area 3 diagnostic work
Discovery Area 4 diagnostic work
Discovery Area 5 diagnostic work
Vision of Resilient Dallas
Goals
Actions
Resilient Dallas Strategy

Resilience Strategy

ADAPT TO THRIVE

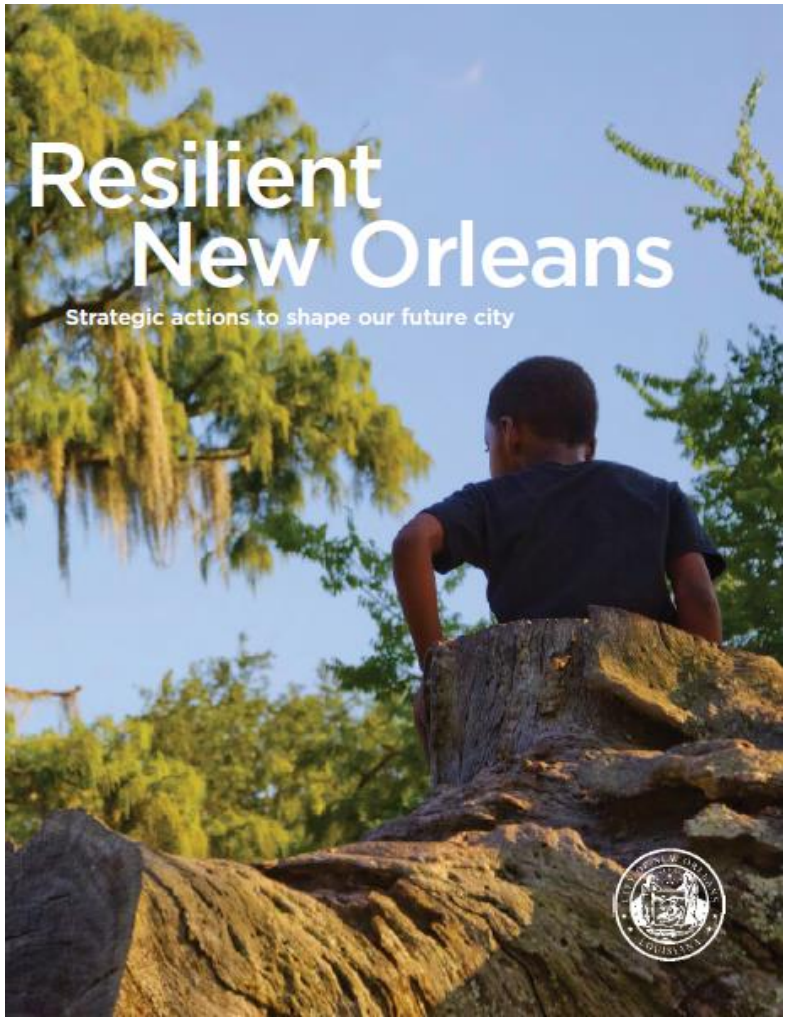
We are a city that embraces our changing environment.

CONNECT TO OPPORTUNITY

We are an equitable city.

TRANSFORM CITY SYSTEMS

We are a dynamic and prepared city.



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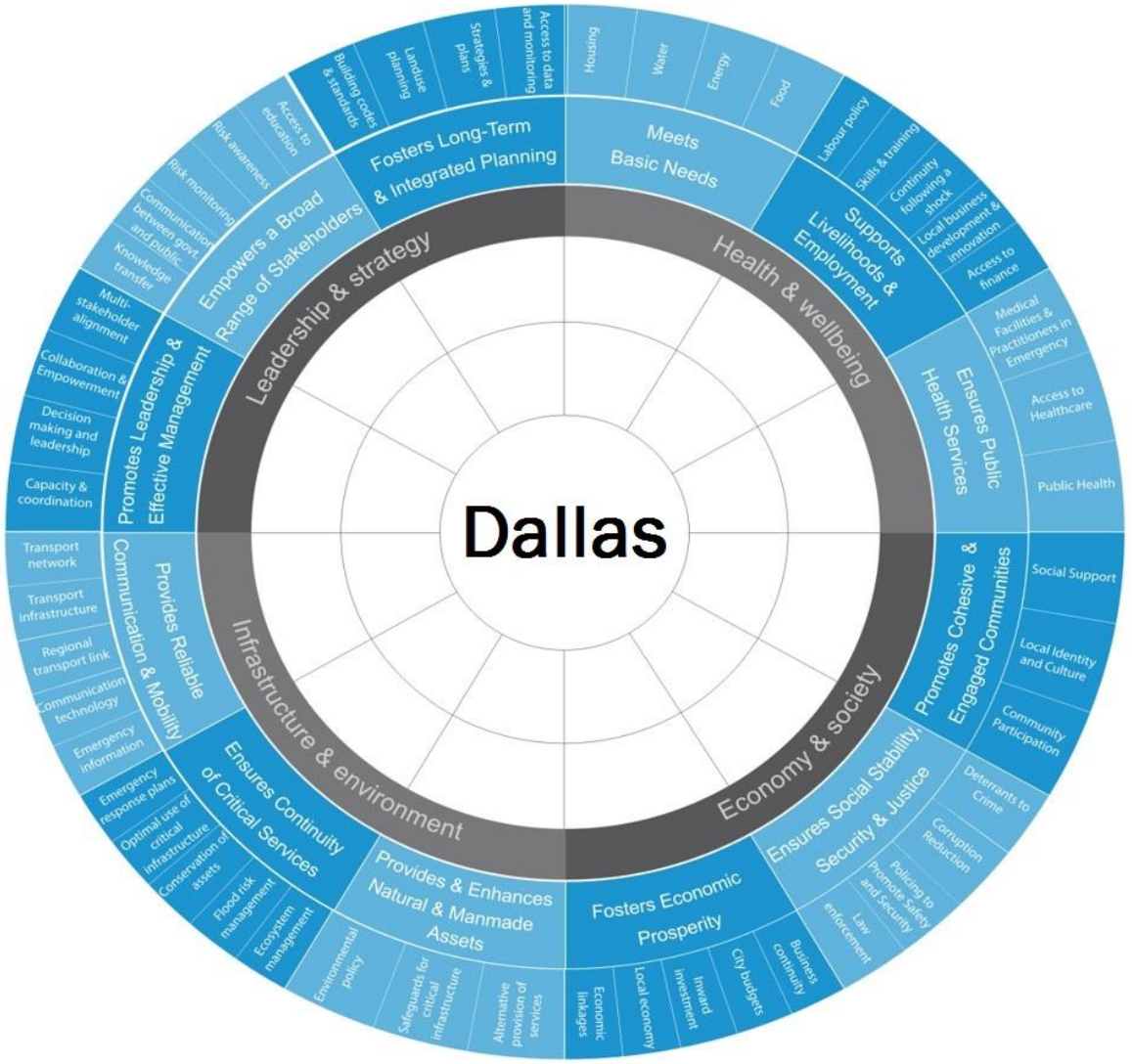
Next Steps

- Convene a second Stakeholder Workshop on April 21st
- Finalize the Preliminary Resilience Assessment by mid-May
- Propose initial Discovery Areas and identify potential partners
- Continue public outreach and engagement



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ROCKEFELLER FOUNDATION

Appendix

Discovery Areas and Strategies for other 100 Resilient Cities

City	Discovery Areas
Berkeley	Build a Connected and Prepared Community
	Accerlerate Access to Reliable and Clean Energy
	Adapt to the Changing Climate
	Advance Racial Equity
	Excel at Working Together within City Government to Better Serve the Community
	Build Regional Resilience
Norfolk	Design the Coastal Community of the Future
	Create Economic Opportunity by Advancing Efforts to Grow Exisiting Industries and New
	Advance Initiatives to Connect Communities, Deconcentrate Poverty, and Strengthen

Appendix

Discovery Areas and Strategies for other 100 Resilient Cities

City	Discovery Areas
New York	Our Growing, Thriving City
	Our Just and Equitable City
	Our Sustainable City
	Our Resilient City
Porto Alegre	Dynamic and Innovative Ecosystems
	A Culture of Peace
	Risk Pervention
	Quality of Mobility
	Land Legality
	Participatory Budgeting and Resilient Management

Appendix

Discovery Areas and Strategies for other 100 Resilient Cities

City	Discovery Areas
New Orleans	Adapt to Thrive: We are a city that embraces our changing environment.
	Connect to Opportunity: We are an equitable city.
	Transform City Systems: We are a dynamic and prepared city.
Vejles	A Co-creating City
	A Climate Resilient City
	A Socially Resilient City
	A Smart City