Memorandum

DATE August 5, 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**

Today's presentation will provide an update on the 100 Resilient Cities Program and a review of the progress to date. We will brief the Committee on the work accomplished during Phase I of the strategy development process. We will also cover the upcoming Phase II work program, and next steps for civic partnership and involvement.

Please do not hesitate to contact me if I can provide any additional information.

Theresa O'Donnell
Chief Resilience Officer
214.670.3309

c: Honorable Mayor and Members of the City Council
    A.C. Gonzalez, City Manager
    Christopher D. Bowers, Interim 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
    Jeanne Chipperfield, Chief Financial Officer
    Sana Syed, Public Information Officer
    Elsa Cantu, Assistant to the City Manager – Mayor & Council

Introduction

- Update on the 100 Resilient Cities Program and a review of the progress to date

- Discuss the development of the Discovery Areas and Scope of Work for Phase II

- Discuss next steps and opportunities for additional stakeholder engagement

100 RESILIENT CITIES

100 Resilient Cities

All 100 have now been selected.
Dallas and El Paso are the only 2 Texas Cities.

100 **RESILIENT** CITIES

URBAN RESILIENCE
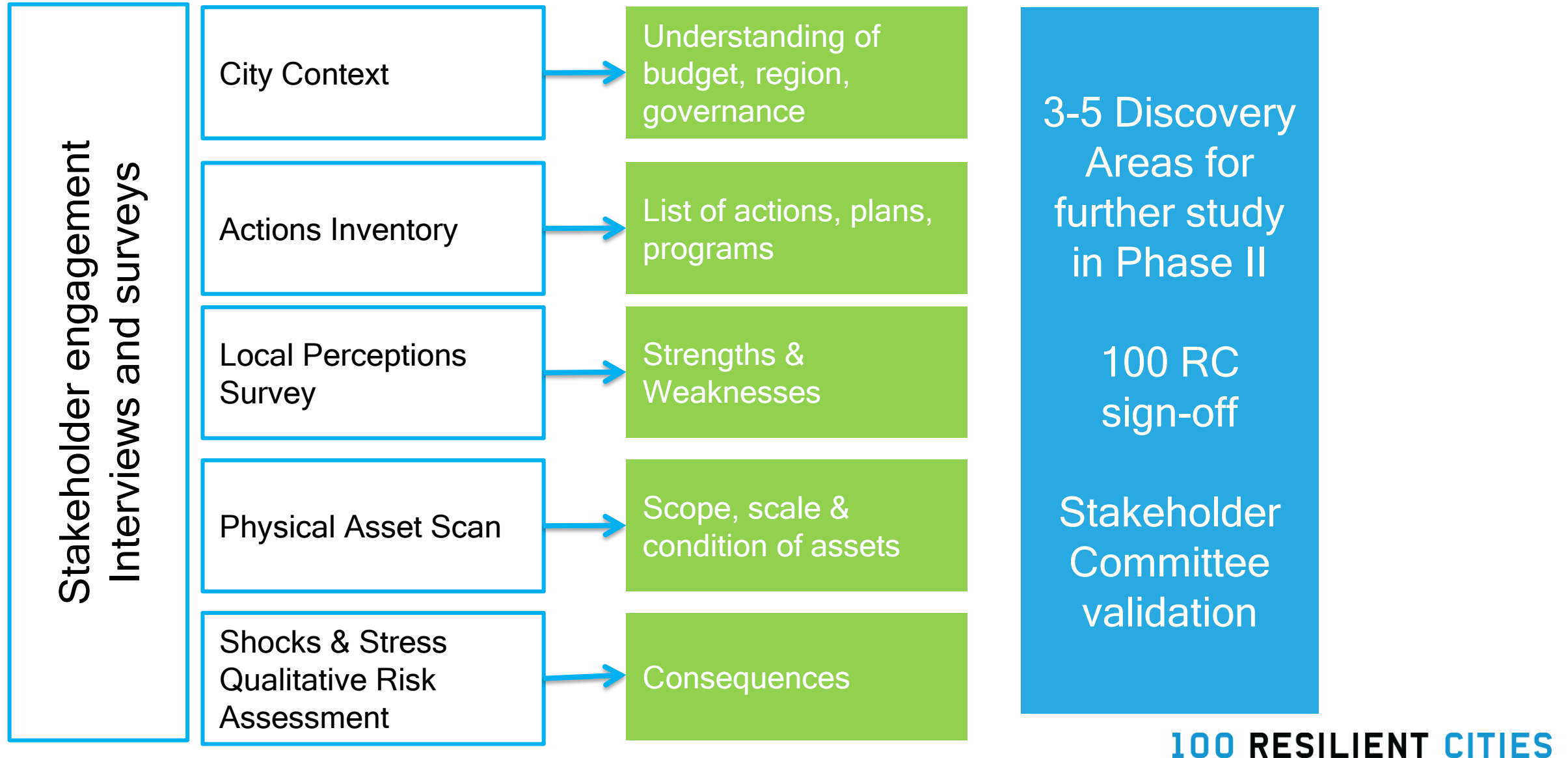
The capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kind of chronic stresses and acute shocks they experience.

5

City Resilience Framework

Phase I – Preliminary Resilience Assessment

Stakeholder engagement Interviews and surveys

City Context	→	Understanding of budget, region, governance
Actions Inventory	→	List of actions, plans, programs
Local Perceptions Survey	→	Strengths & Weaknesses
Physical Asset Scan	→	Scope, scale & condition of assets
Shocks & Stress Qualitative Risk Assessment	→	Consequences

3-5 Discovery Areas for further study in Phase II

100 RC sign-off

Stakeholder Committee validation
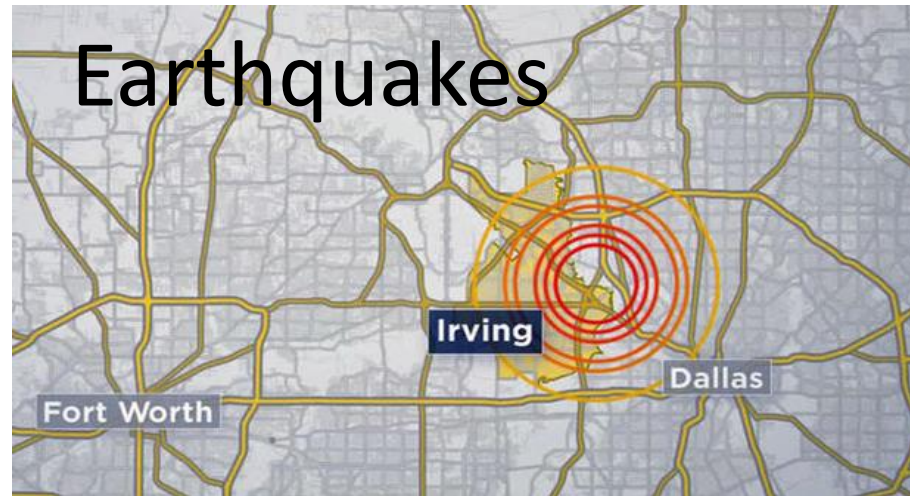
100 RESILIENT CITIES
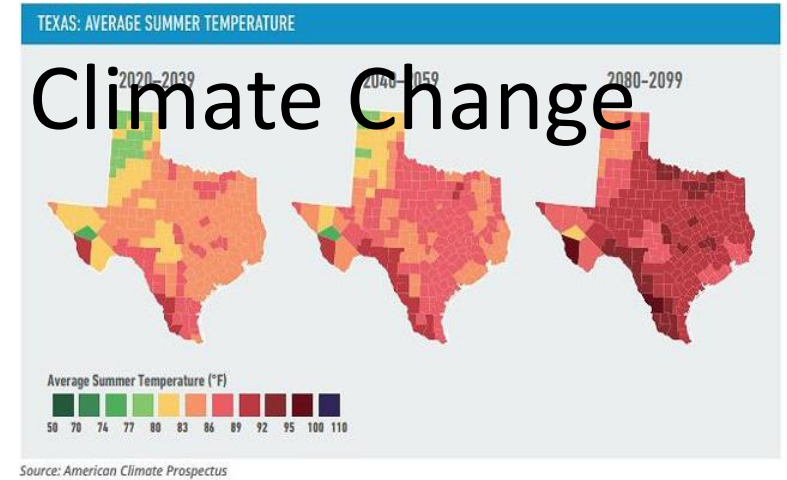
Phase I – work completed to date

- Stakeholder committee meetings
- Stakeholder interviews
- Dallas Resilience website
- City Context
- Actions Inventory
- Perceptions Survey (open)
- Physical Asset Scan
- Qualitative Shocks and Stresses Assessment
- Scenario Planning

Top Shocks for Dallas

Civil unrest
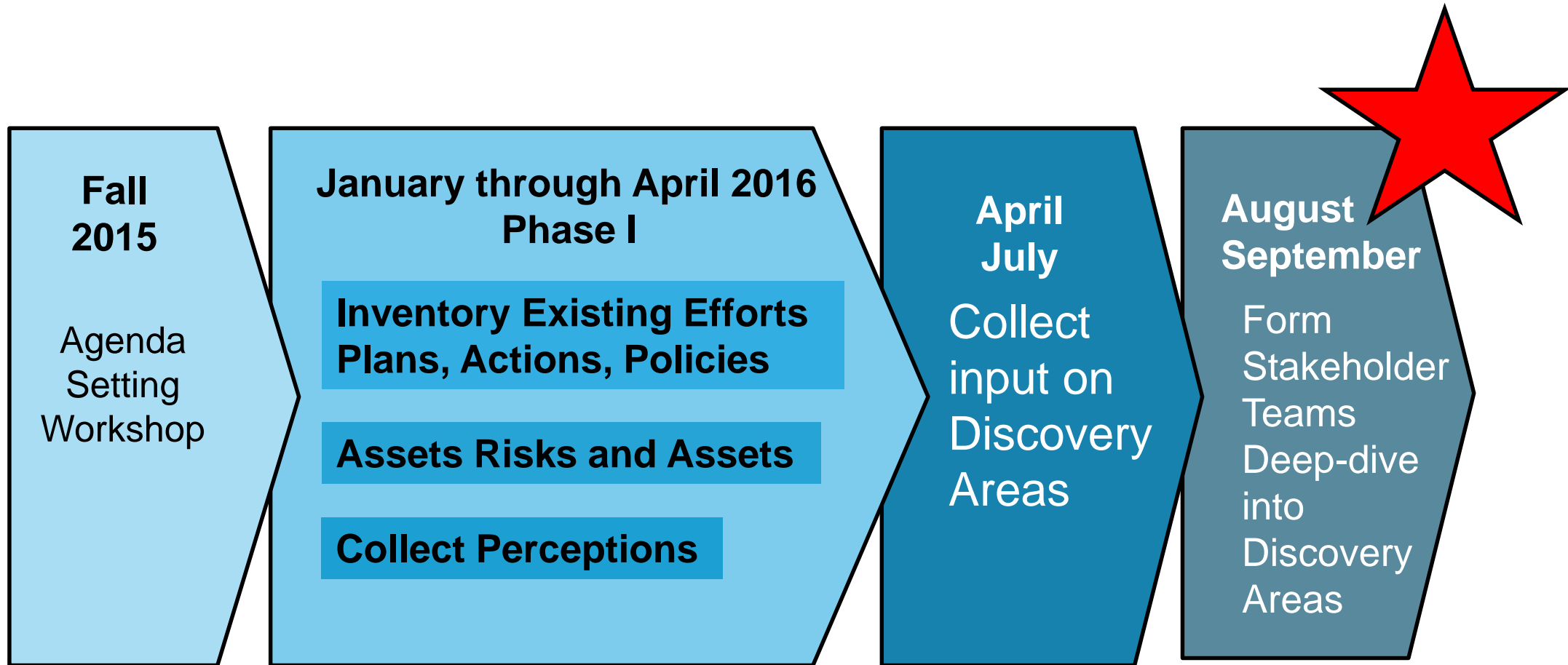

Flooding

Disease Outbreak

Tornados

Earthquakes

Irving

Fort Worth

Dallas

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Top Stresses for Dallas

Education

Poverty

Climate Change

Income Disparity

Blight

Drought

Considerations during Phase I

- What are the important linkages between shocks and stresses?

- What strengths and successful actions should we build on?

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

- What aspects of resilience is the city not yet addressing?

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Process timeline

Fall 2015

Agenda Setting Workshop

January through April 2016 Phase I

Inventory Existing Efforts Plans, Actions, Policies

Assets Risks and Assets

Collect Perceptions

April July

Collect input on Discovery Areas

August September

Form Stakeholder Teams Deep-dive into Discovery Areas

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Building an Equitable 21st Century Dallas

- Recognize the current equity issues in our community and the diversity our population

- Build upon a foundation of strength – maximize the resources, assets and energy available to us

- Leverage the myriad partners and stakeholders already doing good work

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Building an Equitable 21st Century Dallas

- Understand the interrelationships of shocks and the long-term stresses that increase Dallas' vulnerability

- Understand the cascading impacts of shocks and stresses on vulnerable populations

- Explore the role of technology in bringing new solutions to old problems

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Discovery Areas

- Harnessing the power of the robust North Central Texas economy to be more inclusive and create economic resilience for Dallas residents

- Exploring opportunities to improve Public Health outcomes and decrease health disparity

- Understanding the impacts of climate change on the natural and built environment and assessing the infrastructure in Dallas neighborhoods

- Preparing for a 21st century Urban Mobility and leveraging the region's transportation investment to expand mobility options, build mobility infrastructure, and improve transportation equity
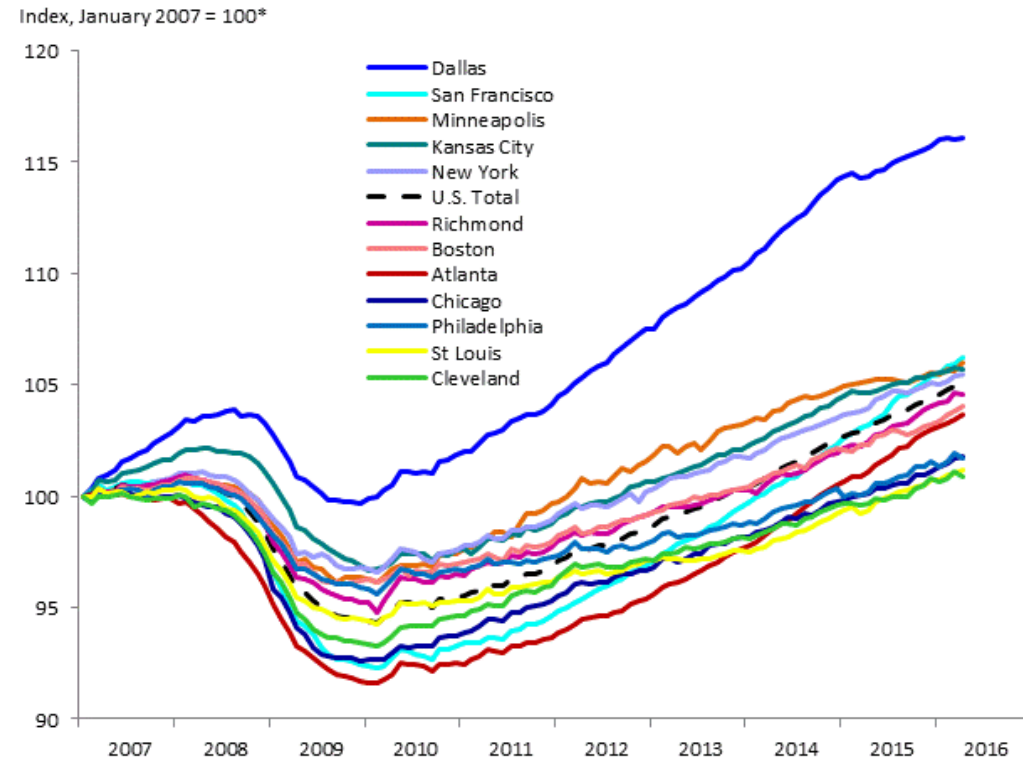
Robust North Texas Economy

DFW Economic Overview

- 4th largest population in U.S.
- 6th largest economy by output
- 5th largest by personal income
- 5th largest employment market
- Unemployment rate of 3.7%

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Strength of the Job Market

Payroll Employment by Federal Reserve District

Index, January 2007 = 100*

*Monthly, seasonally adjusted.
Last data entry April 2016.
SOURCES: Bureau of Labor Statistics; Federal Reserve Bank of Dallas.

National payroll employment by Federal Reserve District 2009 - 2016

- Economic downturn began in 2008
- Turnaround began in 2009
- Job recovery in the 11th District outpaced all other areas of the country
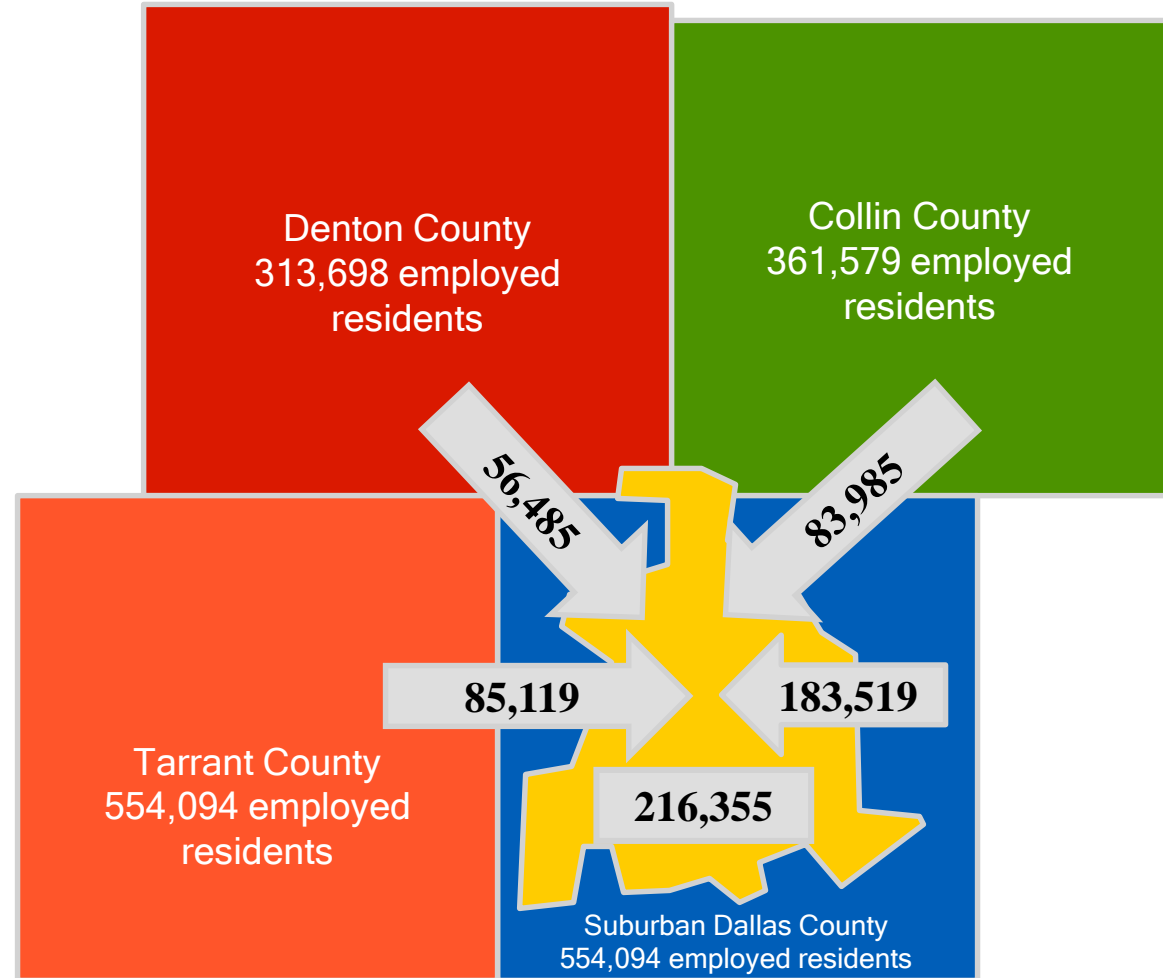- Texas and the Dallas Metro area continue to experience strong growth

* Dallas Federal Reserve Bank, District 11, includes all of Texas and some portions of Louisiana and New Mexico

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Dallas is the vibrant, urban core

Dallas must import talent to fill top jobs

- Dallas has well over 1 million jobs

- 625,000+ workers commute into Dallas every day to work

- 263,00 workers leave Dallas everyday to fill low-skill jobs

Denton County
313,698 employed residents

Collin County
361,579 employed residents

56,485

83,985

85,119

183,519

216,355

Tarrant County
554,094 employed residents

Suburban Dallas County
554,094 employed residents

Economic Opportunity Gap

Despite the robust economy, the poverty rate in Dallas **increased by 42%** from 2000 - 2014
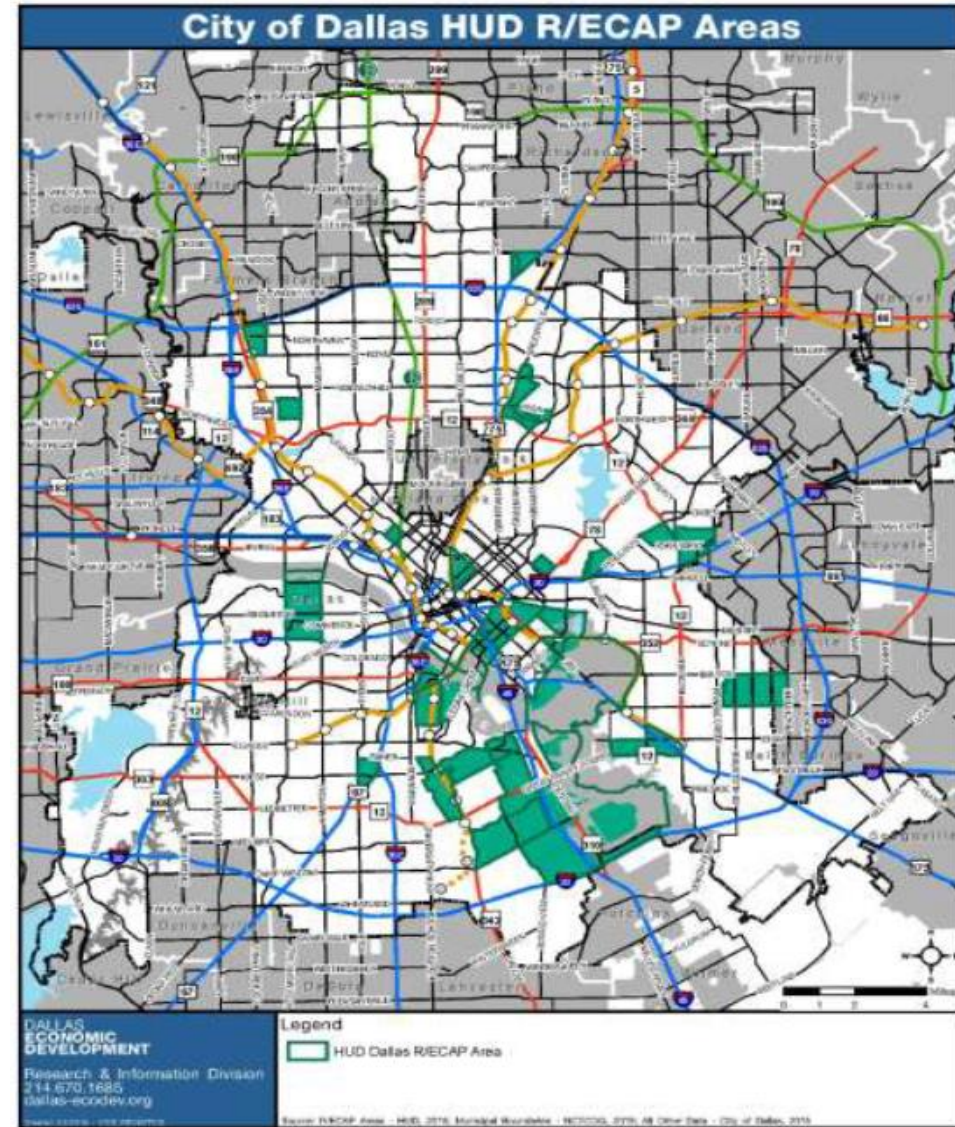
Strong economy has left many residents behind

- 39% of households in Dallas live in asset poverty
- 45% of households with children live in asset poverty

Unemployed and underemployed people often lack the skills/training necessary to prosper in this strong economy
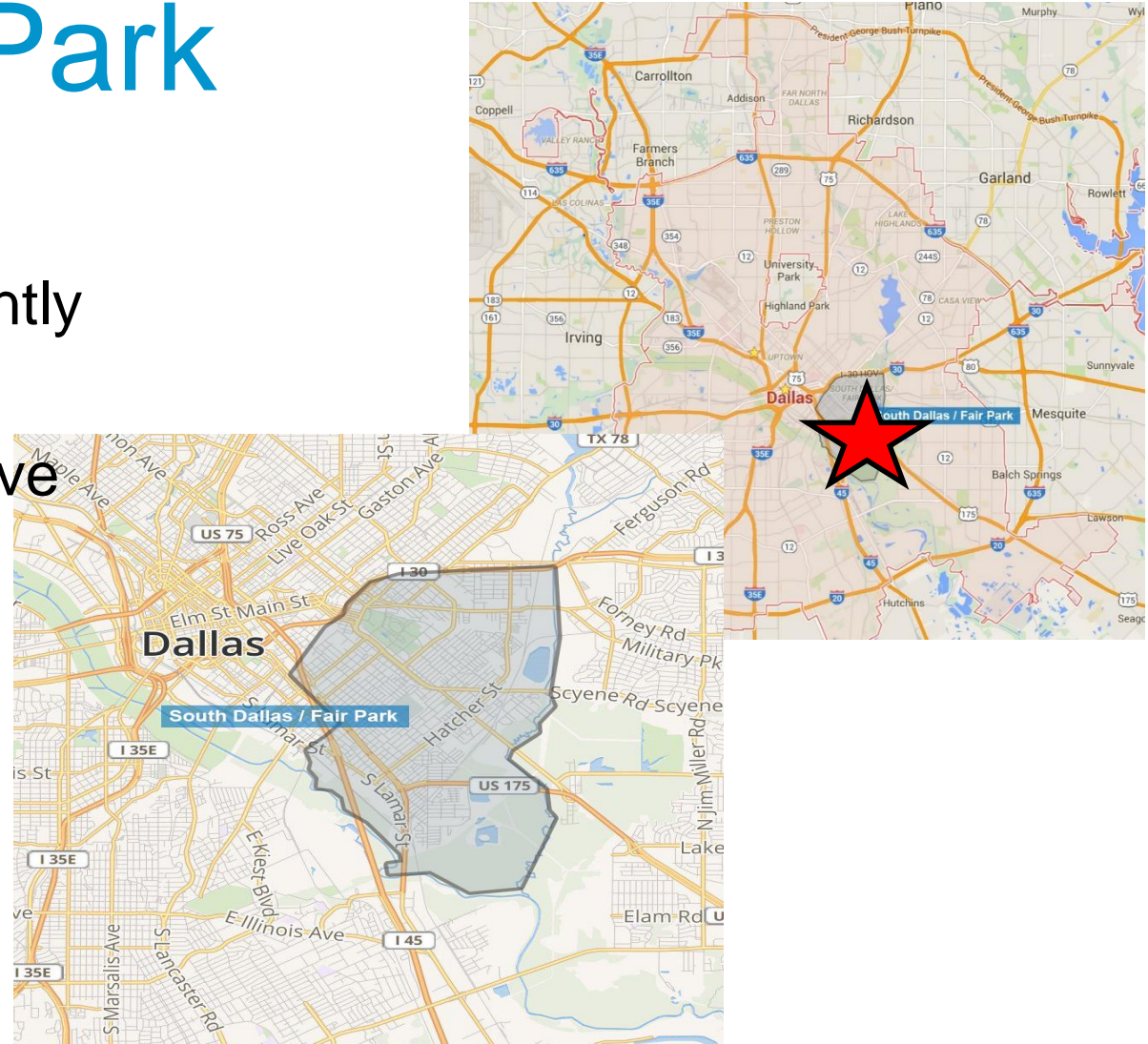
HUD R/ECAP

- 122,330 people, 55% are families
- Unemployment rate is 13%
- Adults not in the workforce can exceed 30% in some census tracts
- Per capita income is $12,291

Challenges of education attainment, skills gap, language barriers, limited transportation options, and childcare costs have left many Dallas residents behind

City of Dallas HUD R/ECAP Areas

DALLAS ECONOMIC DEVELOPMENT
Research & Information Division
214.670.1685
dallas-ecodev.org

Legend
HUD Dallas R/ECAP Area

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South Dallas/Fair Park

- Unemployment rate of 18.5%

- Over 60% of adults are not currently employed

- Less than 8% of the residents have a bachelor's degree or higher

- Per capita income is $12,263

- 35% of families with children live below the poverty level

- Population decline of 24% from 2000 - 2014

Discovery Area – Inclusive Economy

Understand how the robust North Central Texas economy can be more inclusive and provide market-driven opportunities to residents who have been left behind during this remarkable period of prosperity.

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Proposed Diagnostic Questions

- What are proven, best practices for Dallas to consider for building an inclusive economy?

- What are the barriers and impediments that prevent some Dallas residents from finding living wage employment opportunities?

- How can we improve or adjust our existing practices, policies and funding priorities to expand economic opportunity and build economic resilience for Dallas residents?

- What programs, partnerships and collaborations can we build on to ensure all residents who want to obtain living wage employment have the skills and training opportunities necessary?

Health care in Dallas

Improving Public Health

3 essential factors for improving public health

- Health literacy - knowing when to go to a doctor and how to care for yourself or your family

- Access to healthcare through insurance coverage

- Having a medical home - doctors and clinics available in your neighborhood or in a location accessible by transit

Disparity in Health Care

Report: Texas has the highest number of uninsured Hispanic kids in the country

About two out of three of uninsured Hispanic children are eligible for Medicaid or CHIP but not enrolled.
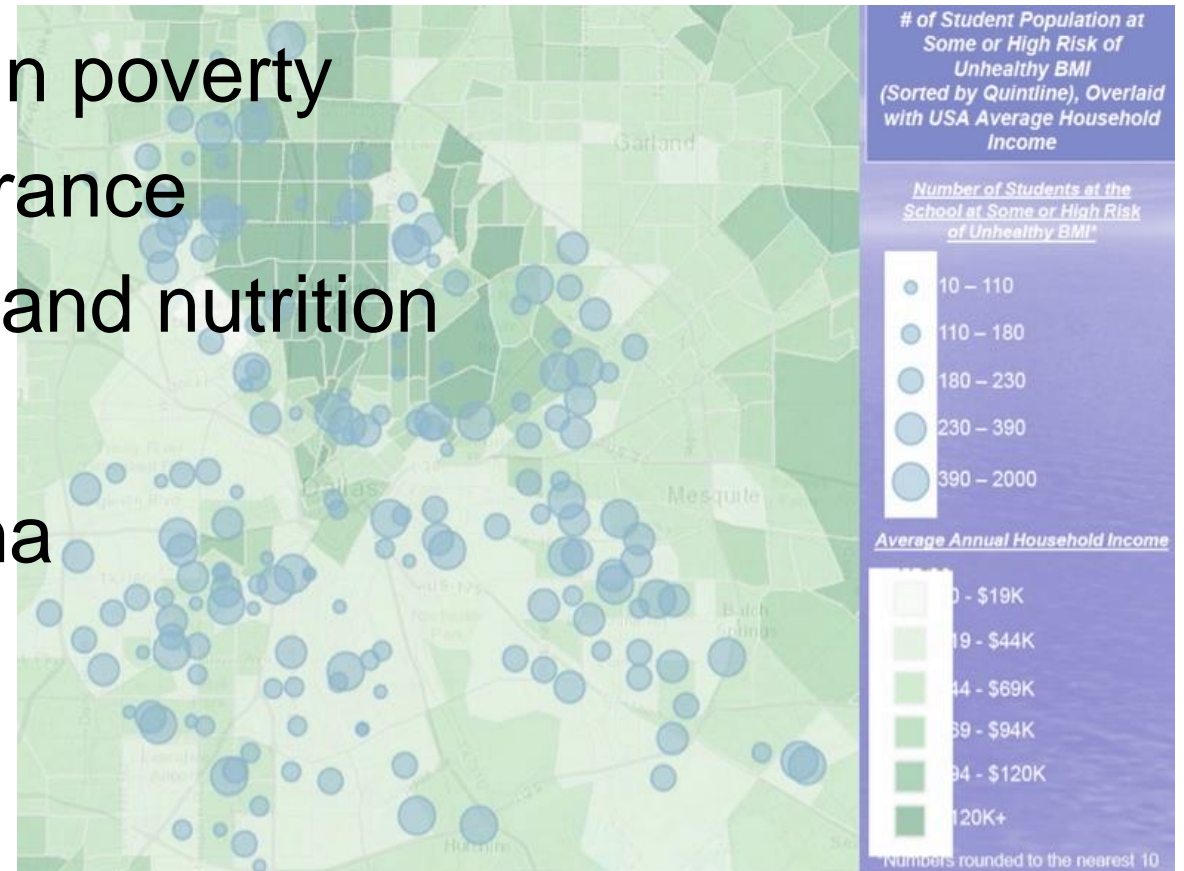
Learn more: http://bit.ly/1ZvbIUz

Community Need Index
Aggregates a number of socioeconomic risk factors

- **Poverty**
- **Educational attainment**
- **Racial/ethnic minorities**
- **Limited English proficiency**
- **Unemployment**
- **Lack of health insurance**

Growing up poor in Dallas

- 38% of Dallas children live in poverty
- 20% don't have health insurance
- 28% have inadequate food and nutrition
- 160,000 children are obese
- 60,000 children have asthma

# of Student Population at Some or High Risk of Unhealthy BMI (Sorted by Quintline), Overlaid with USA Average Household Income

Number of Students at the School at Some or High Risk of Unhealthy BMI*

- 10 – 110
- 110 – 180
- 180 – 230
- 230 – 390
- 390 – 2000

Average Annual Household Income

- 0 - $19K
- 19 - $44K
- 44 - $69K
- 69 - $94K
- 94 - $120K
- 120K+

Numbers rounded to the nearest 10

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Dallas Fire and Rescue

- $250M annual operating budget
- 83% of calls for service are not fires

Dallas Fire and Rescue

First line of defense in health care

- 1,200 highly-trained paramedics
- 43 ambulances
- 202,000 runs a year
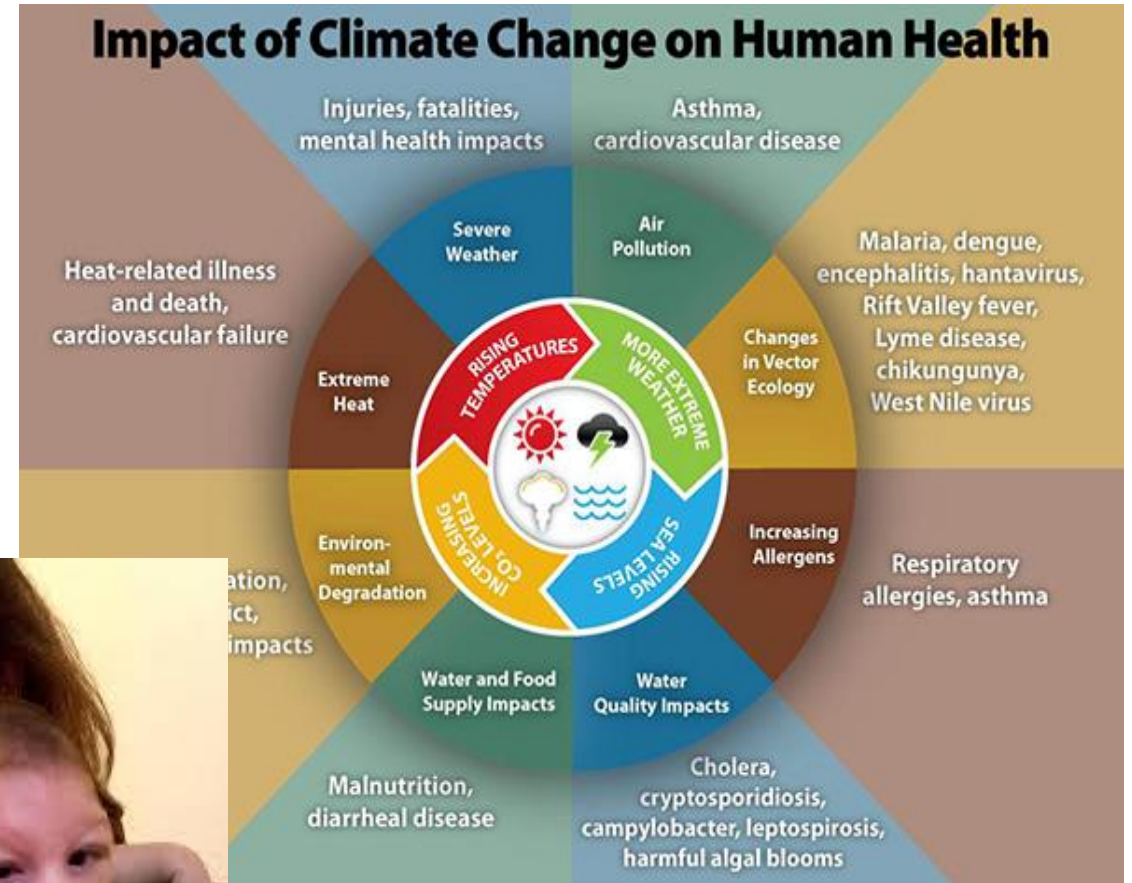- 69,000 runs to Emergency Rooms
- Average cost is $1575

Health Deserts

60% of Emergency Room visits could be more appropriately handled by a primary care physician

Is Dallas vulnerable to a disease outbreak?

Impact of Climate Change on Human Health

Injuries, fatalities, mental health impacts

Asthma, cardiovascular disease

Heat-related illness and death, cardiovascular failure

Severe Weather

Air Pollution

Malaria, dengue, encephalitis, hantavirus, Rift Valley fever, Lyme disease, chikungunya, West Nile virus

Extreme Heat

Changes in Vector Ecology

RISING TEMPERATURES

MORE EXTREME WEATHER

INCREASING CO2 LEVELS

SEA LEVELS RISING

Environmental Degradation

...ation, ...ict, ...mpacts

Increasing Allergens

Respiratory allergies, asthma

Water and Food Supply Impacts

Water Quality Impacts

Malnutrition, diarrheal disease

Cholera, cryptosporidiosis, campylobacter, leptospirosis, harmful algal blooms

Discovery Area – Public Health

How can Dallas make a meaningful contribution to improving public health outcomes for Dallas residents?

What are the opportunities for partnerships and collaborations to improve public heath outcomes for Dallas residents?

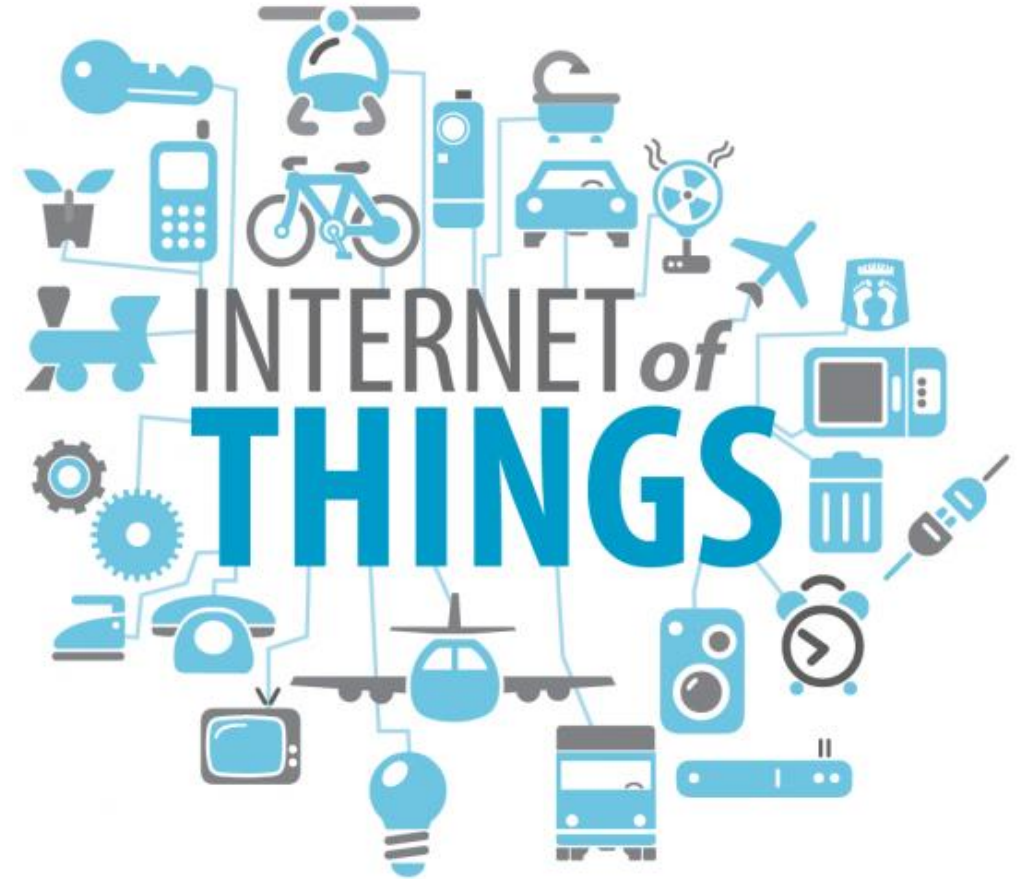**100 RESILIENT CITIES**

Proposed Diagnostic Questions

- How can our resources and assets be used to improve health care literacy in neighborhoods with inadequate health care services?

- How can emerging best practices, such as those in tele-medicine and virtual care, be utilized in areas with inadequate health care services?

The 21ˢᵗ Century Infrastructure

The Internet of Things (IoT)

The network of physical objects—devices, vehicles, buildings and other items—embedded with electronics, software, sensors, and network connectivity that enables these objects to collect and exchange data.
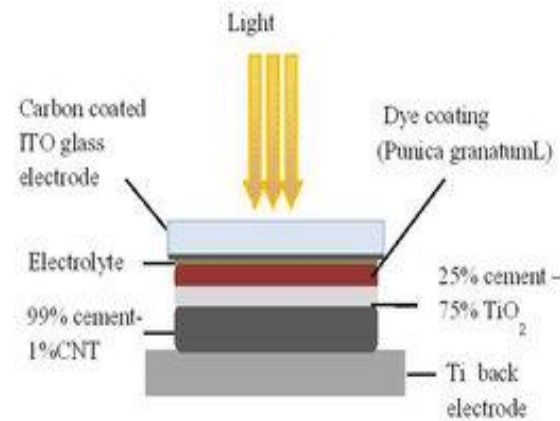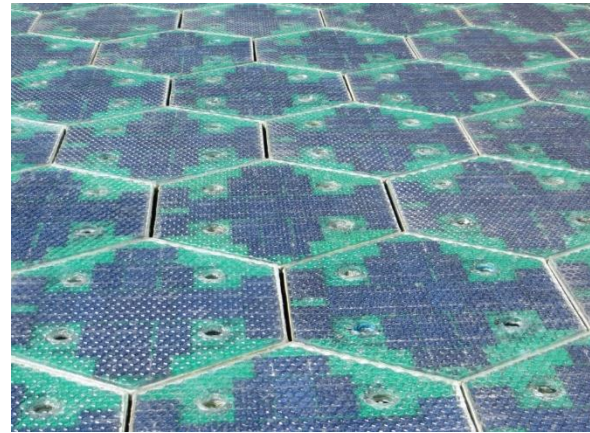
The Edge in Amsterdam
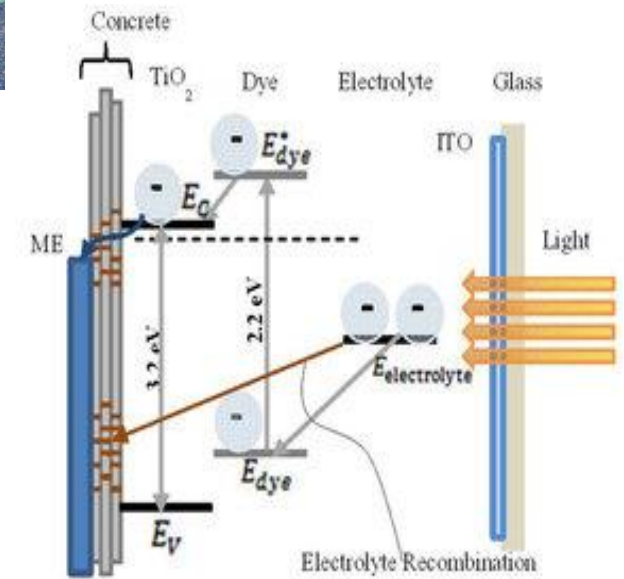
Sensors in bridges and infrastructure

Solar Energy

Solar Panels

German researchers studying photovoltaic concrete

Proposed Diagnostic Questions

- What is the 21st century standard for basic infrastructure in Dallas neighborhoods?

- What are the long-term financial commitments, funding mechanisms, and policies necessary to build and maintain a 21st century Neighborhood Standard?

- How can city and other governmental resources be prioritized and strategically deployed to serve as a catalyst for private investment and development?

Proposed Diagnostic Questions

- How does climate change affect our most significant natural resources and other critical infrastructure, such as the Great Trinity Forest, flood control systems and water resource supply?

- What are the latest studies, best practices, and emerging technologies that Dallas can examine to understand how our natural and built environment must adapt to the changing climate?

Progress towards Urban Mobility

Mobility options are expanding

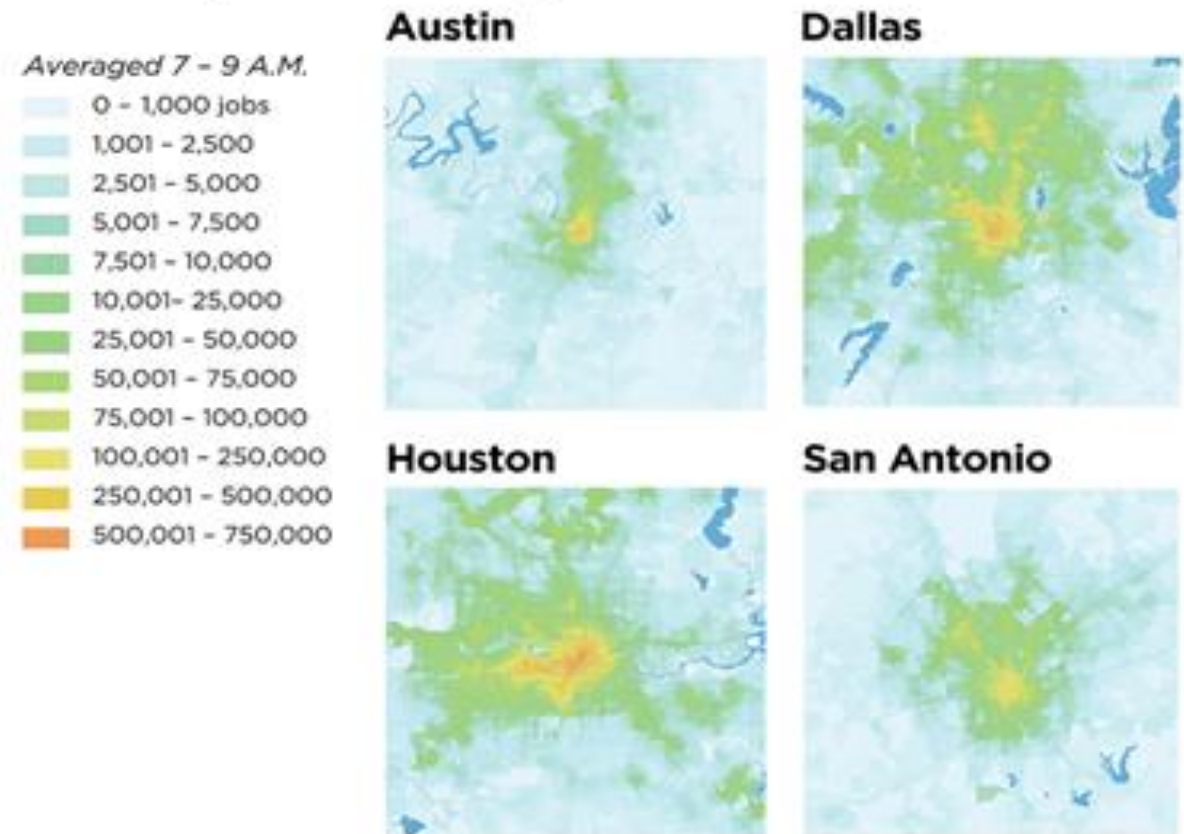**The Region has invested over $10 B in DART since 1984**
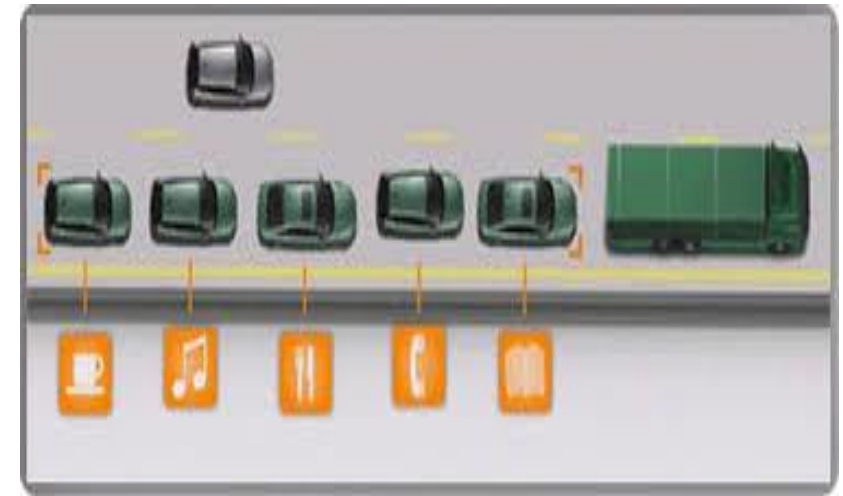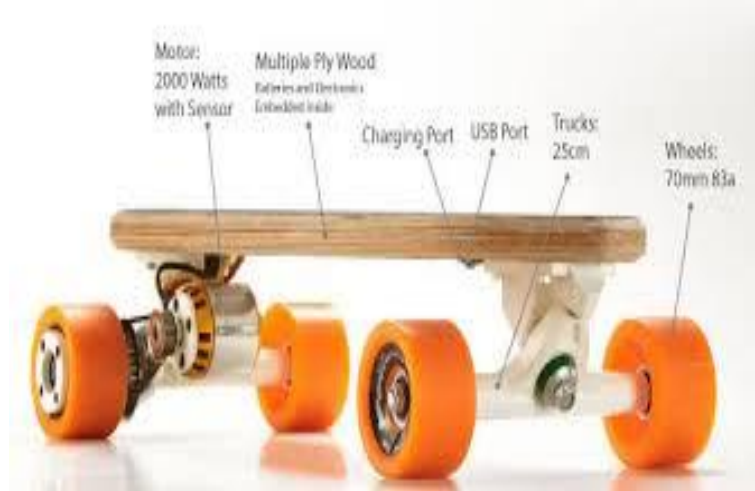
Mobility, Jobs and Housing

- The Metroplex ranks 5th nationally in jobs
- Less than 20% of jobs are accessible by transit in less than 90 minutes
- More than 70% of HUD assisted properties are considered **unaffordable** when housing costs and transportation costs are combined

Jobs within 30 minutes by transit

Most of Dallas' jobs accessible by transit within 30 minutes are in downtown and surrounding areas, though some suburbs have job centers near public transportation routes. But while the Dallas-Fort Worth region as a whole ranks fifth nationally in terms of the number of jobs, it ranks 21st in how many of them can be reached by transit in under one hour.

Averaged 7 – 9 A.M.

- 0 – 1,000 jobs
- 1,001 – 2,500
- 2,501 – 5,000
- 5,001 – 7,500
- 7,501 – 10,000
- 10,001 – 25,000
- 25,001 – 50,000
- 50,001 – 75,000
- 75,001 – 100,000
- 100,001 – 250,000
- 250,001 – 500,000
- 500,001 – 750,000

Austin

Dallas

Houston

San Antonio

Defining a 21ˢᵗ Century Urban Mobility

Role of Technology in Mobility

THE INTERNET OF CARS

1 You call your (autonomous driving) car to pick you up

2 You enter your destination and are dynamically routed to work based on traffic flows through the system

3 Your car travels down an automated roadway with platooned vehicles

4 You are connected to everything you need while you travel in a car personalized for you

5 You are dropped off at the doorstep and the car parks itself

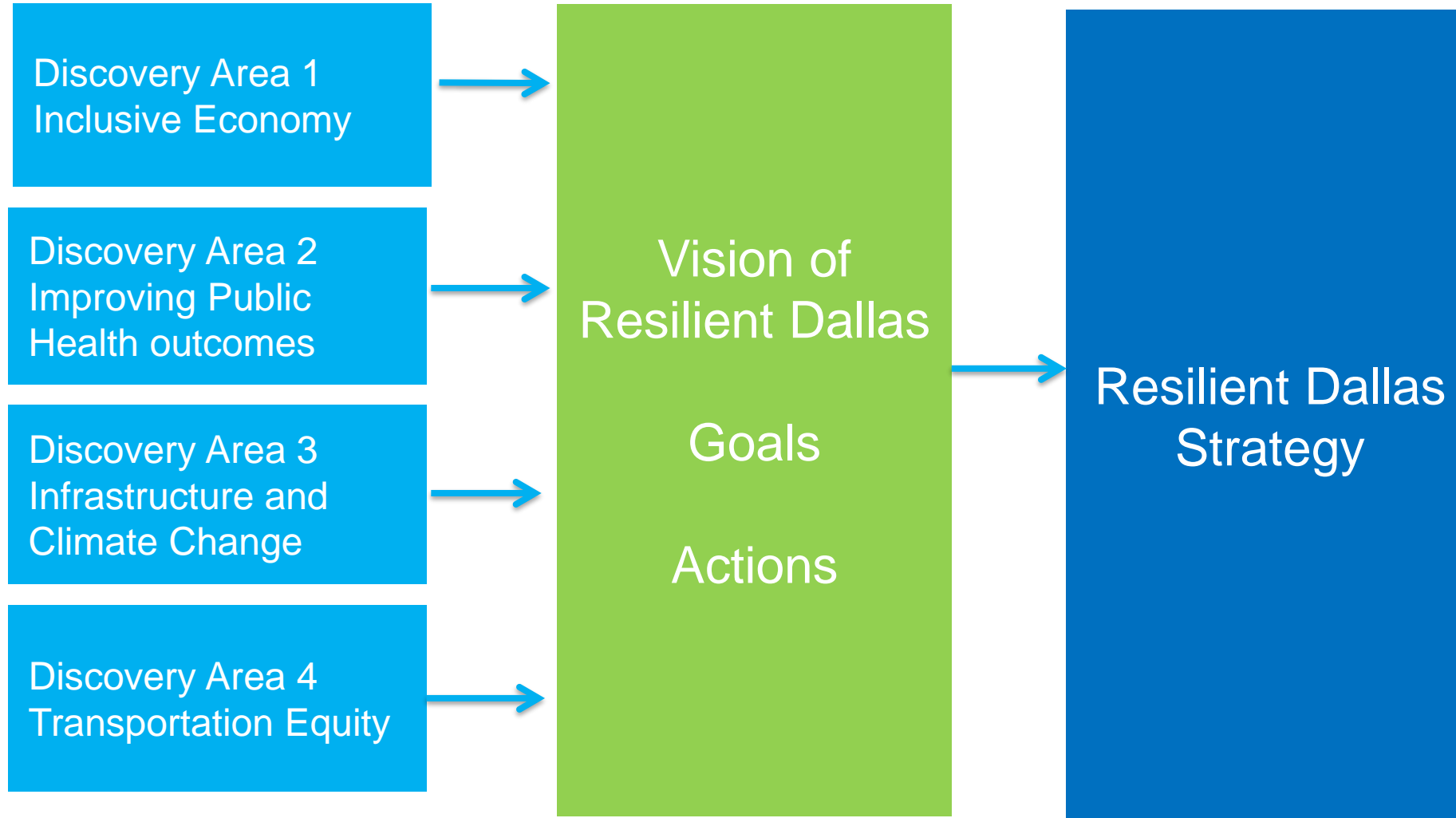# Discovery Area – Urban Mobility

What is the 21st century Urban Mobility for Dallas and the Metroplex?

How can we leverage the regional transportation investments to build mobility infrastructure, expand mobility options, improve transportation equity?

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What happens during Phase II?

Discovery Area 1
Inclusive Economy

Discovery Area 2
Improving Public
Health outcomes

Discovery Area 3
Infrastructure and
Climate Change

Discovery Area 4
Transportation Equity

Vision of
Resilient Dallas

Goals

Actions

Resilient Dallas
Strategy

Phase II - Leadership and Workgroups

- **Building an Inclusive Economy**

   Office of Economic Development and Housing Department

- **Improving Public Health outcomes**

   Office of Emergency Management and Dallas Fire and Rescue

- **Infrastructure and Climate Change**

   Public Works and Office of Environmental Quality

- **Transportation Equity**

   Transportation Planning and DART

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Discovery Areas
Possible methodologies and approaches

- **A facilitated focus group**. Understand the public perception and current status of a particular stress or shock
- **Expert consultation**. Seek external research and analysis
- **Data gathering or interpretation**. Synthesis and analysis of existing data and facts
- **Scenario or situational analysis**. Test a hypothesis to identify and refine choices
- **Comparative analysis**. Study best practices from regional or global examples
- **A time-bound study**. Longitudinal study of a risk or a hazard assessment

Next Steps

- Work with 100 Resilient Cities to refine Discovery Areas and Scope of Work

- Identify research methodologies, technical assistance, and partners for each Discovery Area

- Convene Stakeholder Group for each Discovery Area

- Goal is to complete study and develop recommendations by the end of the year

Get involved!

- If residents or organizations would like to contribute their time, resources or expertise to a Discovery Area, please let us know

- Help us identify other people or organizations that should be involved

- Please complete the survey

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www.100resilientcities.org

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

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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

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