

Dallas' Comprehensive Environmental & Climate Action Plan

NCTCOG/ GDPC/ RISE

Regional Climate Policy Workshop

Susan Alvarez, PE, CFM
February 27, 2020

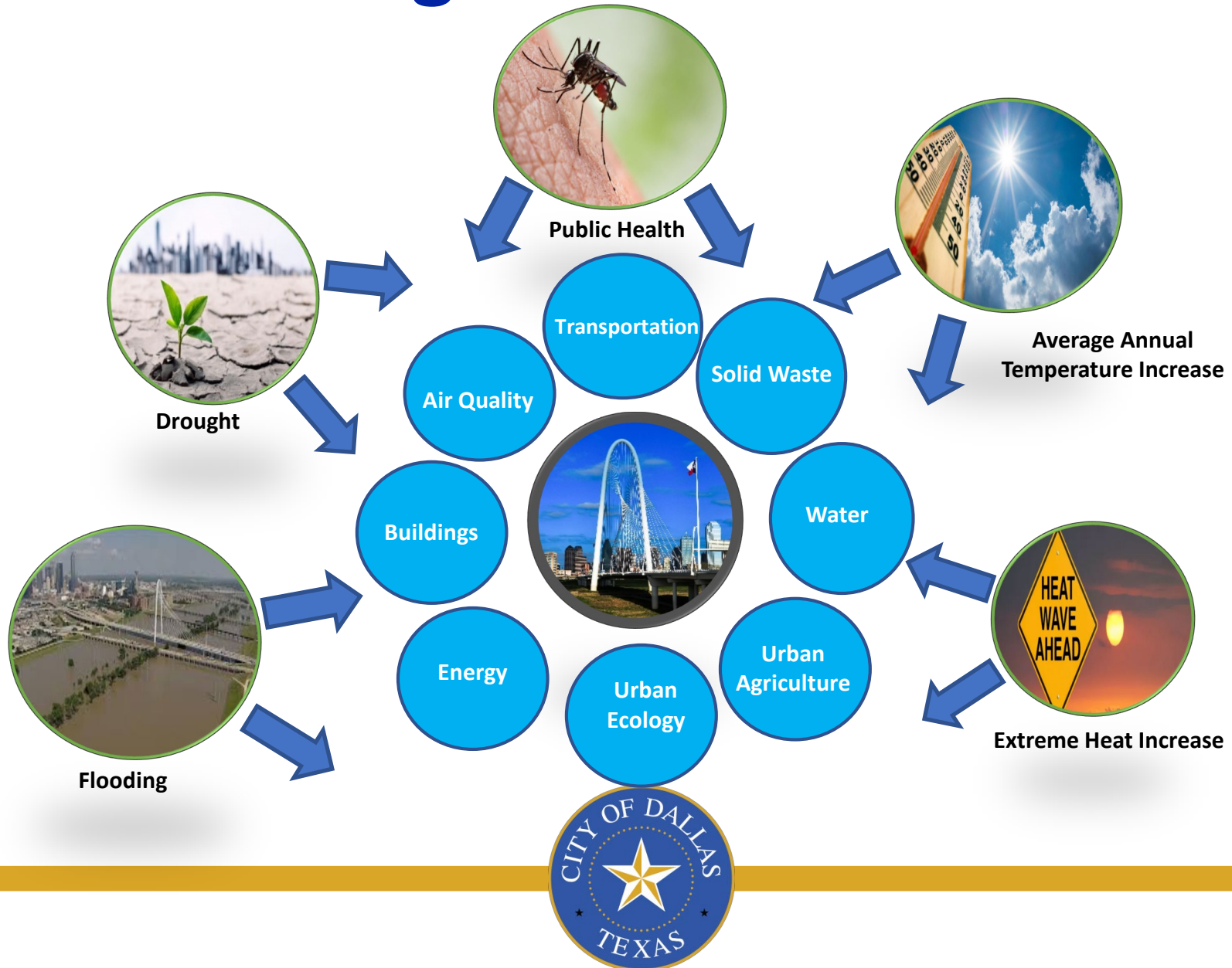


Overview

- Climate Change in North Texas
- Business Case for Climate Planning
- “CECAP”
- Status on Dallas climate planning efforts



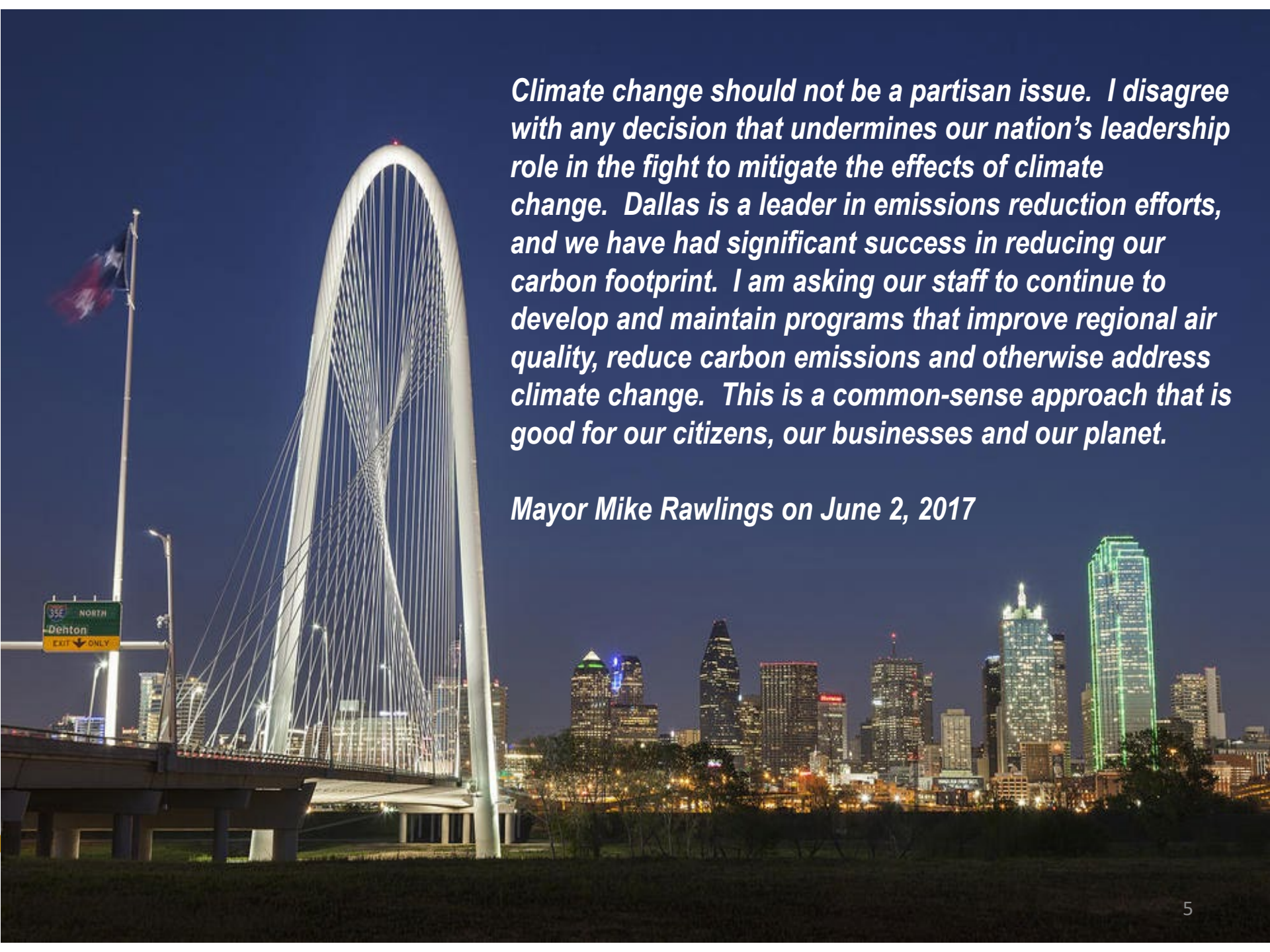
Climate Change in North Texas



Opportunities For Cities to Lead the Way

- **Cities consume 2/3** of the energy worldwide
- **Cities generate 70%** of the world CO₂ emissions
- **Urban population increasing**
- Actions taken at the city level can have major impact
- City leaders are generally more directly accountable to the public.



A night photograph of the Margaret Hunt Brown Bridge in Denver, Colorado. The bridge's white, arched pylon and numerous stay cables are illuminated. To the left, a Texas state flag flies on a tall pole. In the background, the Denver skyline is visible with several skyscrapers lit up, including one with a prominent green light display. A highway sign for I-25 North towards Denton is visible on the left side of the bridge.

Climate change should not be a partisan issue. I disagree with any decision that undermines our nation's leadership role in the fight to mitigate the effects of climate change. Dallas is a leader in emissions reduction efforts, and we have had significant success in reducing our carbon footprint. I am asking our staff to continue to develop and maintain programs that improve regional air quality, reduce carbon emissions and otherwise address climate change. This is a common-sense approach that is good for our citizens, our businesses and our planet.

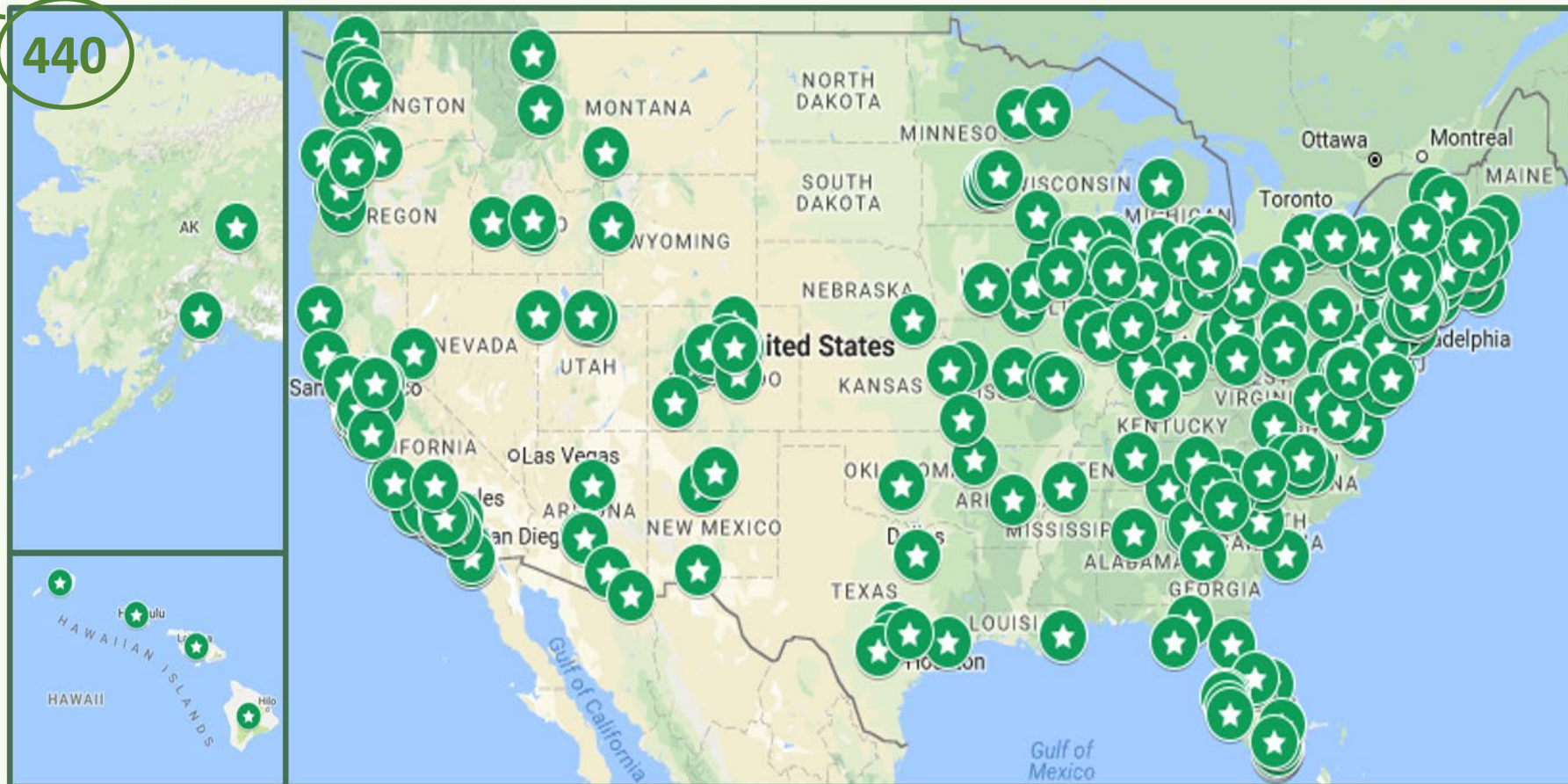
Mayor Mike Rawlings on June 2, 2017

407 US #ClimateMayors, representing 70⁺ million Americans, have committed to adopt, honor and uphold the climate goals of the Paris Agreement



CLIMATEMAYORS.ORG

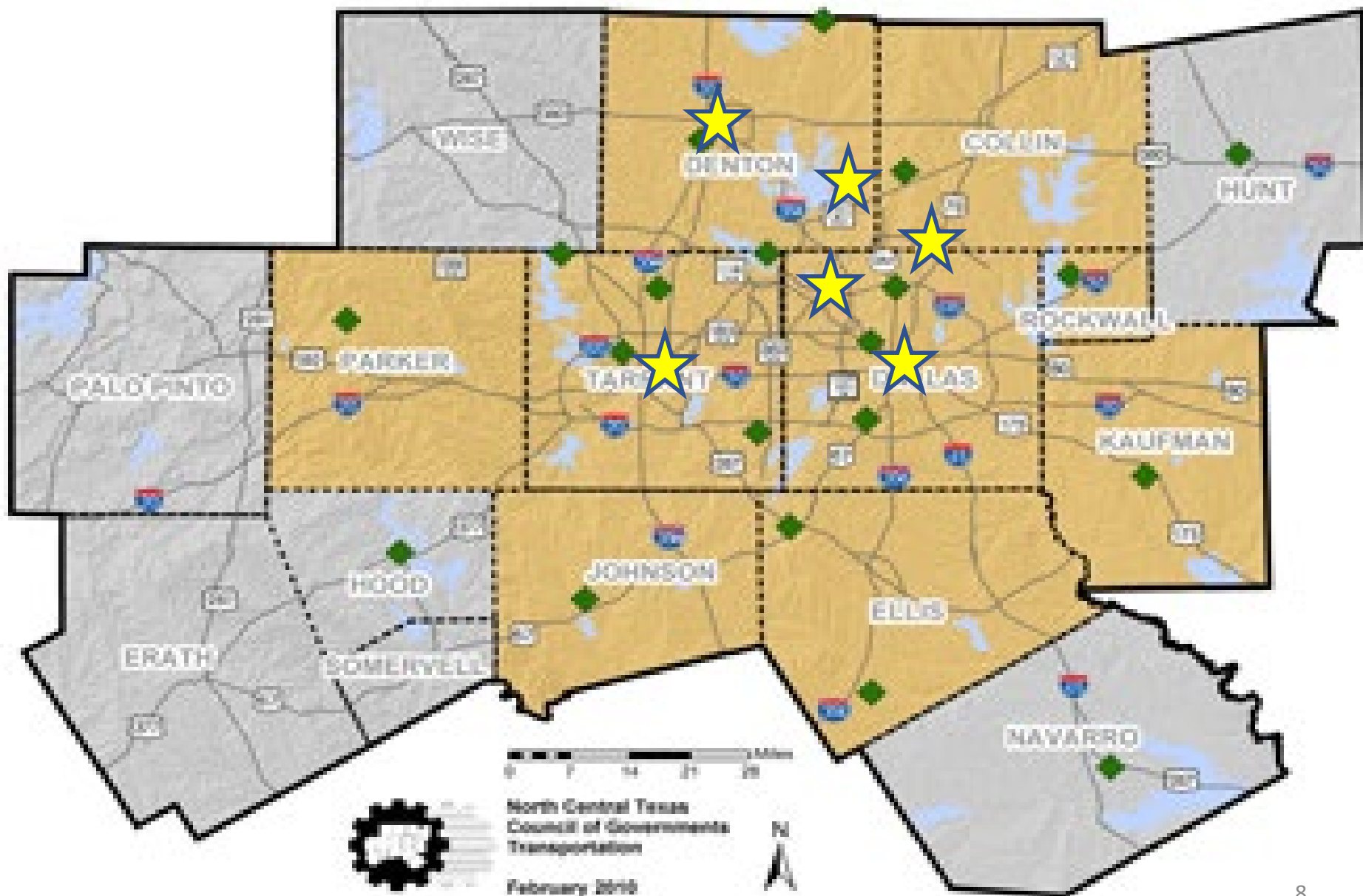
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Texas Climate Planning



North Texas Climate Planning



The Business Case...

- Managing Risk
- Costs for prevention v costs for cleanup
- Trends
- Impacts to GDP over time

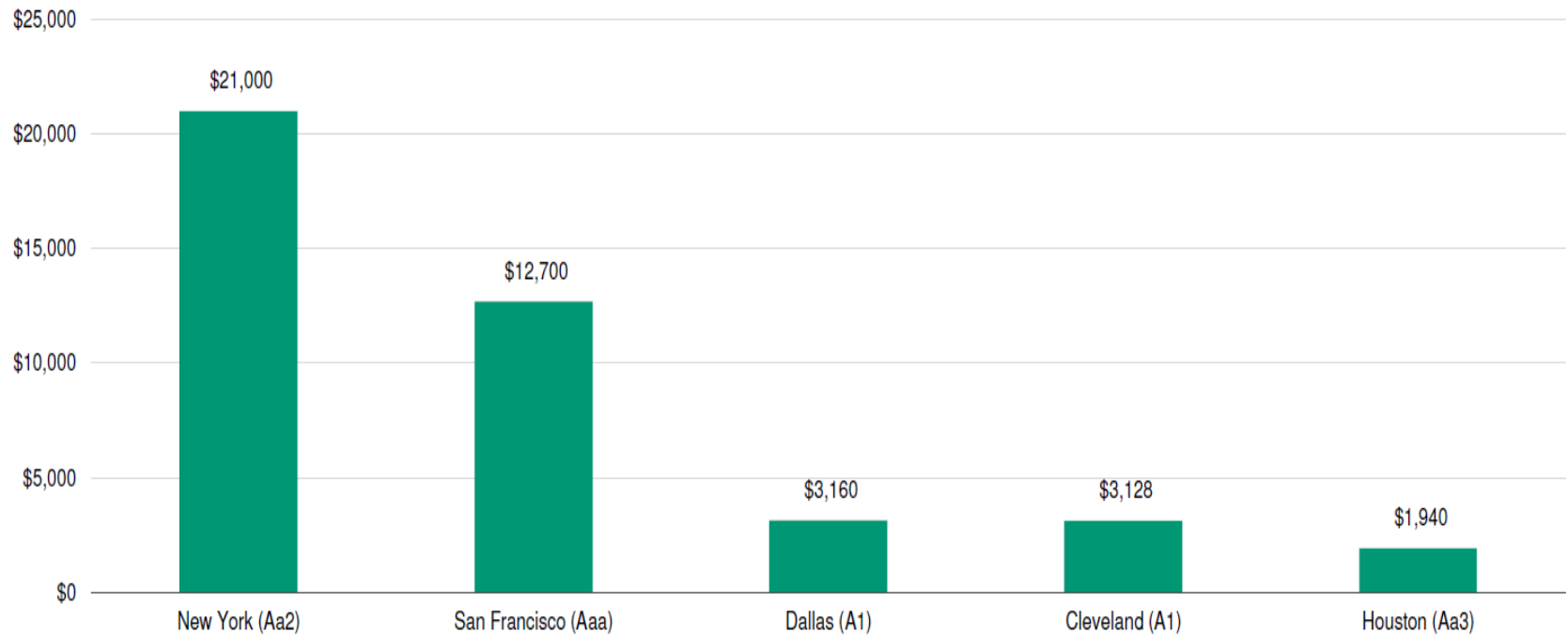


Moody Investors Series Inquiry

Exhibit 4

Cities with largest investment in climate mitigation projects planned or underway

Among survey respondents, \$ millions

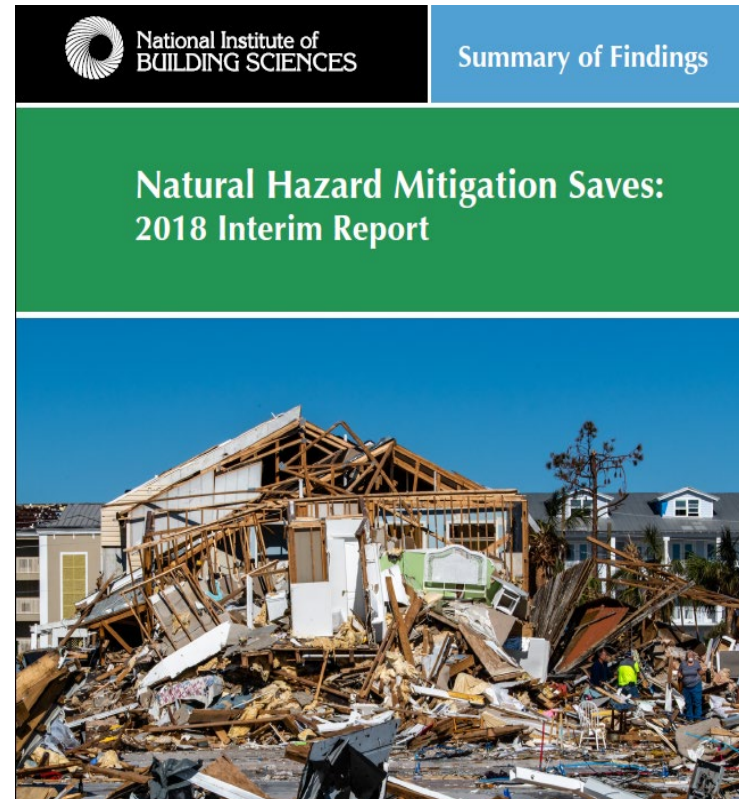


Source: Moody's Investors Service



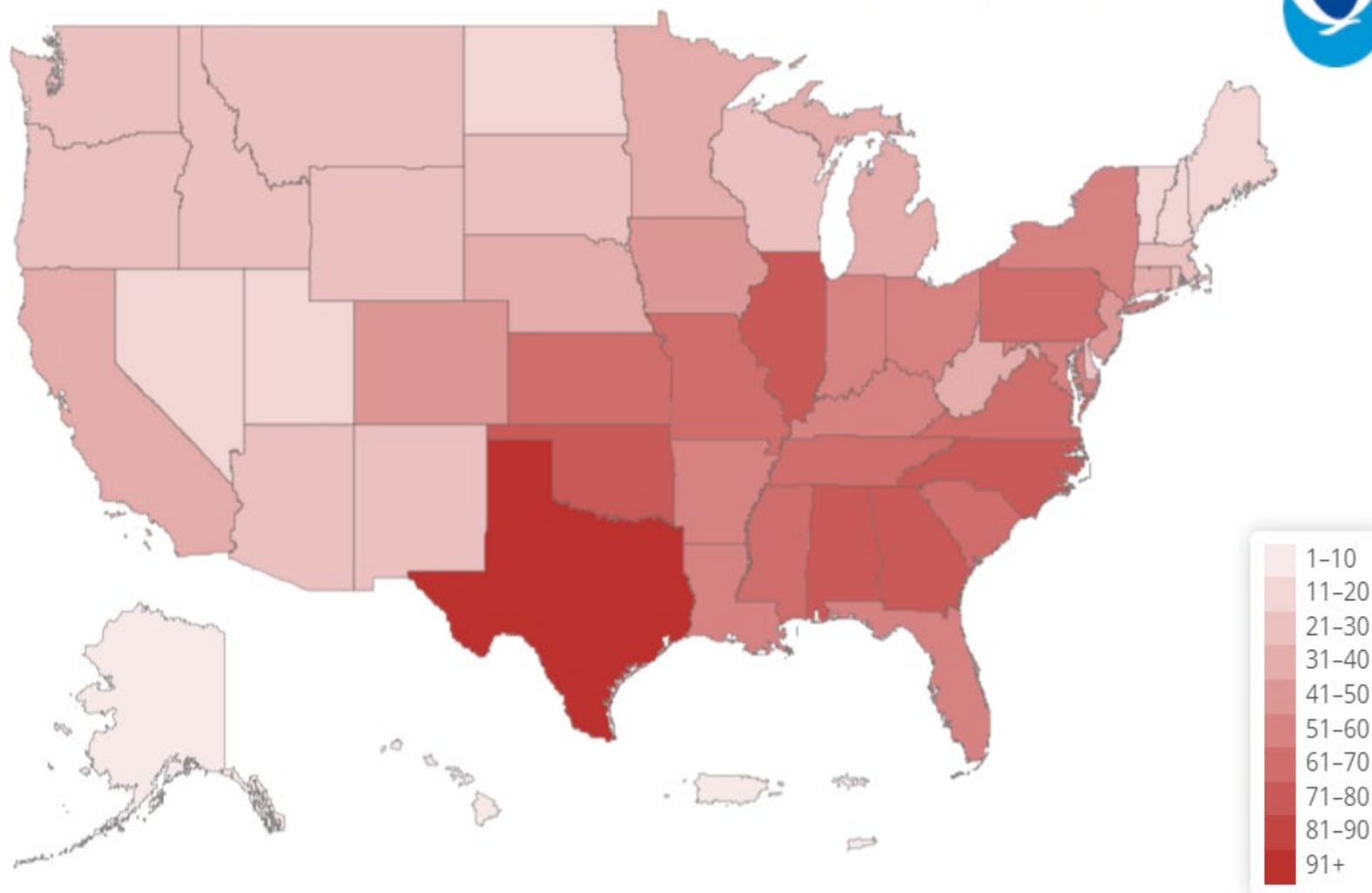
National Institute of Building Sciences (NIBS)

- Multi-year effort funded by FEMA, HUD, EDA, ICC, AIA, NFPA, Insurance Institute for Business & Home Safety (IBHS), and others
- The project team found a **national benefit of \$11 for every \$1** invested in Code updates.
- FEMA, HUD and U.S. Economic Development Administration (EDA) found hazard mitigation funding **can save the nation \$6 in future disaster costs, for every \$1 spent.**



https://cdn.ymaws.com/www.nibs.org/resource/resmgr/docs/NIBS_MitigationSaves2018-Sum.pdf

1980-2018 Billion-Dollar Weather and Climate Disasters (CPI-Adjusted)



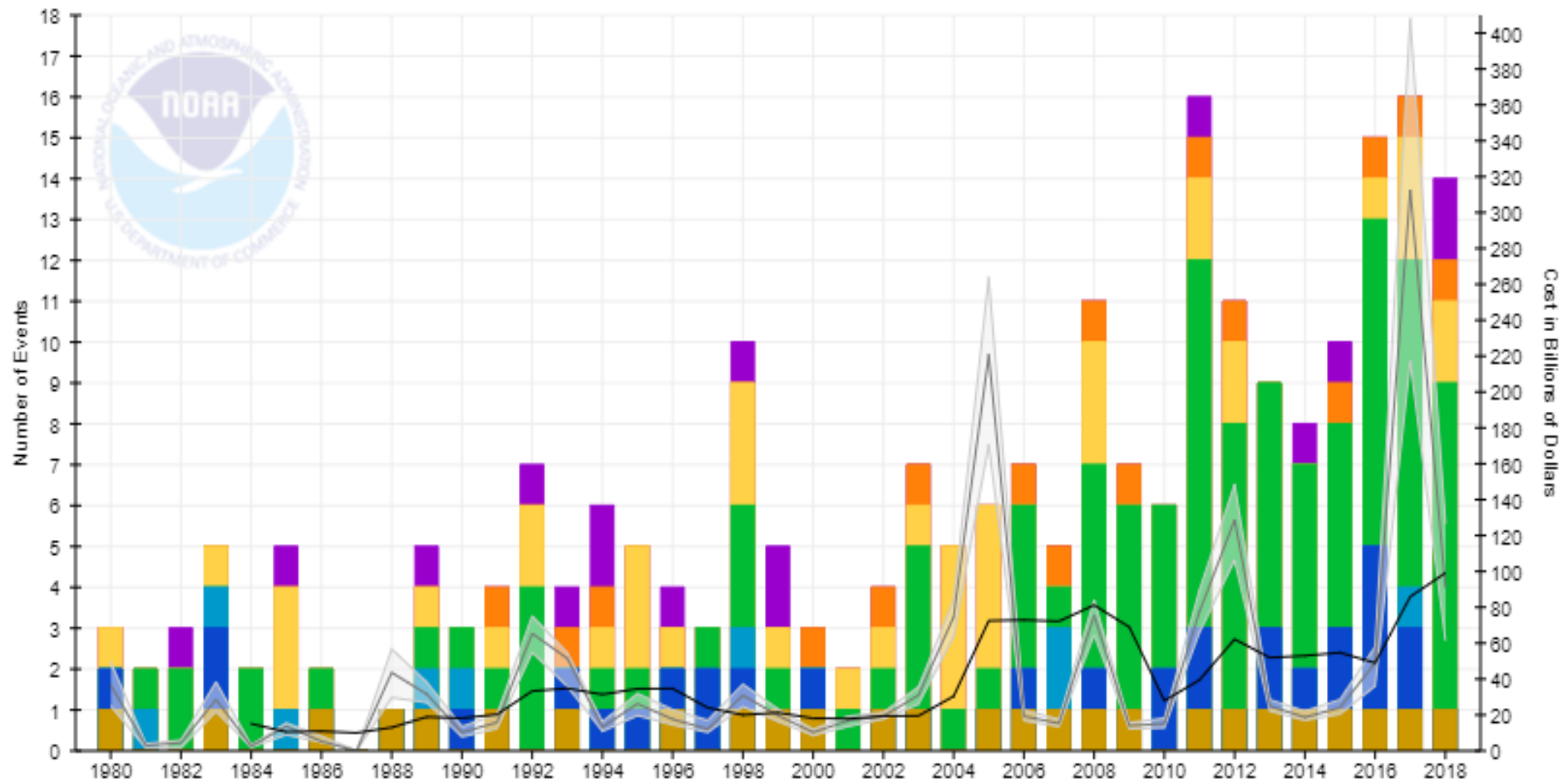
United States

Drought:	26	Flooding:	29	Freeze:	9	Severe Storm:	103
Tropical Cyclone:	42	Wildfire:	16	Winter Storm:	16	All Disasters:	241

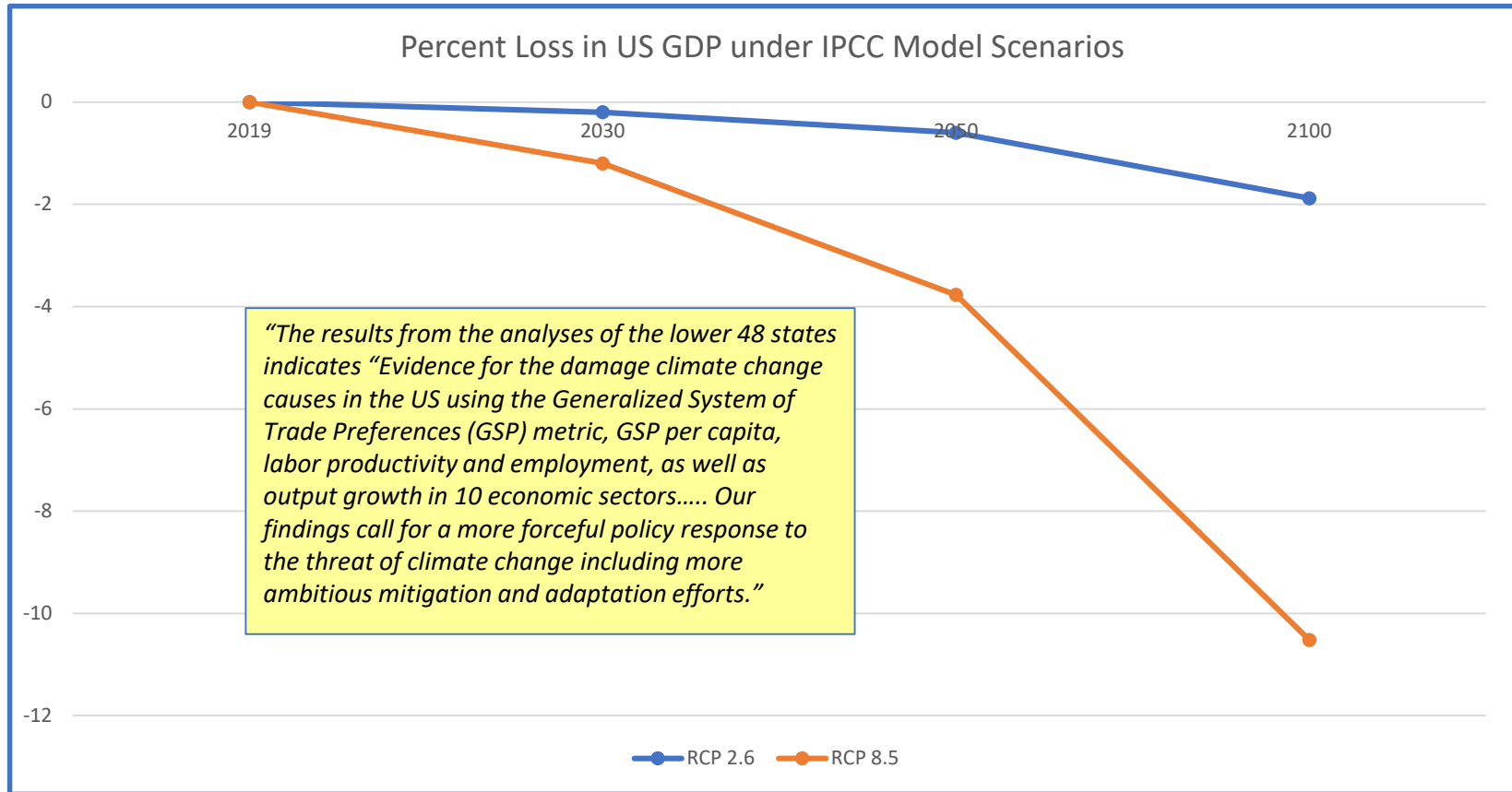
Please note that the map reflects a summation of billion-dollar events for each state affected (i.e., it does not mean that each state shown suffered at least \$1 billion in losses for each event).

Billion-Dollar Disaster Event Types by Year (CPI-Adjusted)

■ Winter Storm ■ Wildfire ■ Trop Cycl ■ Severe Storm ■ Freeze
■ Flooding ■ Drought — Cost w/ 95% CI — 5-Year Mean



Long-Term Macroeconomic Concerns



Data Source: ME Kuhn et al, Long-Term Macroeconomic Effects of Climate Change: A Cross Country Analyses; Prepared for Federal Reserve Bank of Dallas. (<https://doi.org/10.24149/gwp365>)





“Dallas is a healthy, safe and economically vibrant city. But to be a truly resilient city, Dallas must prepare for the effects of climate change. I want Dallas to continue to be a leader in efforts to reduce emissions and improve our air quality. Through our collective efforts and a focus on common-sense, data-driven solutions, we can ensure that our great city continues to thrive in the decades to come.”

– Mayor Eric Johnson

Comprehensive Environmental & Climate Action Plan (CECAP)

- Resilient Dallas Plan directed OEQS to measure emissions and identify reduction and climate mitigation strategies (2018)
- City Council called for OEQS to create equitable and effective CECAP in climate change resolution (2019)
- Mayor Johnson established Environment & Sustainability Council Committee to:
 - (1) ensure Dallas is a global leader in addressing climate change; and
 - (2) create and oversee creation and implementation of CECAP



Introduction to the CECAP

Objectives:

- To develop a **cohesive path forward** to achieve environmental compliance, social equity, environmental justice and resiliency
- Develop climate action and adaptation actions consistent with goals of **Paris Climate Agreement** and **Mayors Climate Agreement**.
- Develop infrastructure to create resilient neighborhoods, particularly:
 - Invest in **neighborhood infrastructure** to revitalize historically **underserved neighborhoods**
 - Promote environmental **sustainability** to **improve public health** and alleviate adverse environmental conditions



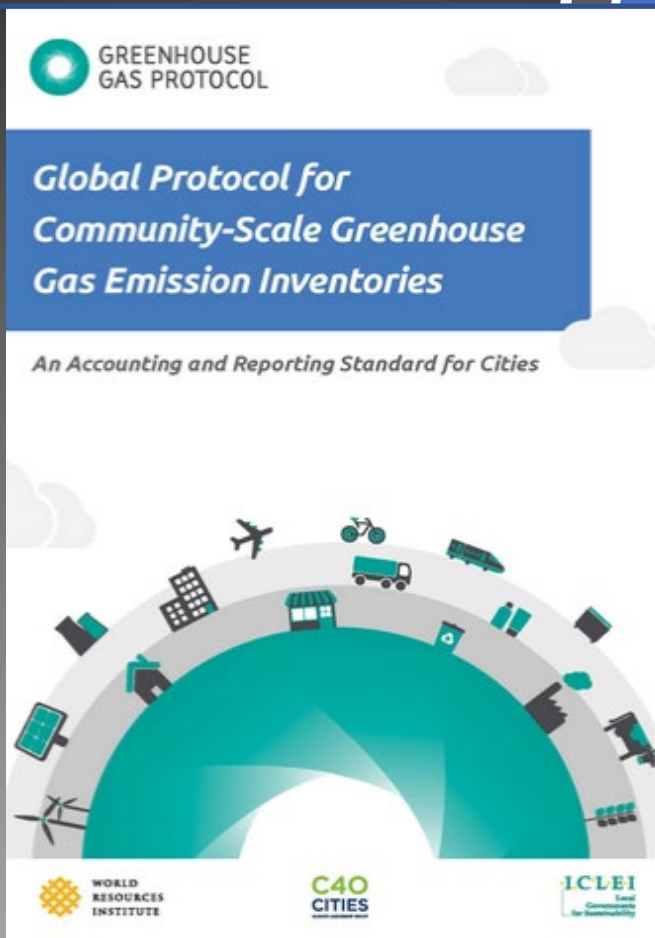
Overarching Goals

What will a successful plan do for the City?

- An **actionable** plan that meets the Paris Agreement
- An **innovative** plan that sets the bar high
- An **equitable** plan that works for all districts
- A plan that is **data driven**, but comprehensible to the public
- A plan that improves **resiliency** to extreme weather
- A plan that sets up **realistic accountability** for city departments that can have an impact
- A plan that addresses air quality non-attainment challenges (eg **improves public health**)



A Standard Protocol Is Required For Consistent Results



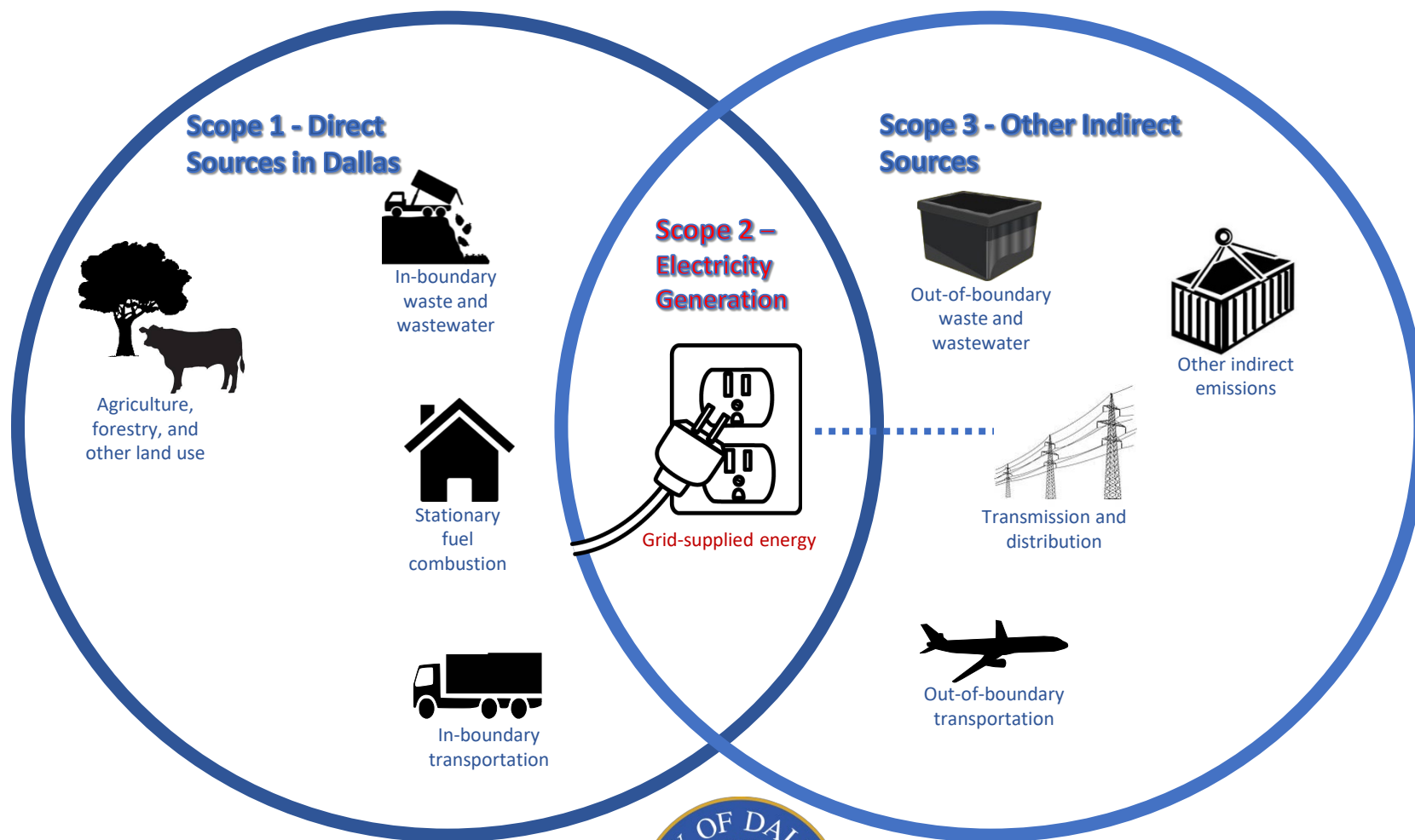
The International Council for Local Environmental Initiatives (ICLEI) is one commonly accepted protocol

ICLEI offers the “Clear Path” online tool to assist with the inventory

Any city that uses the ICLEI protocol can compare GHG emissions directly to other cities

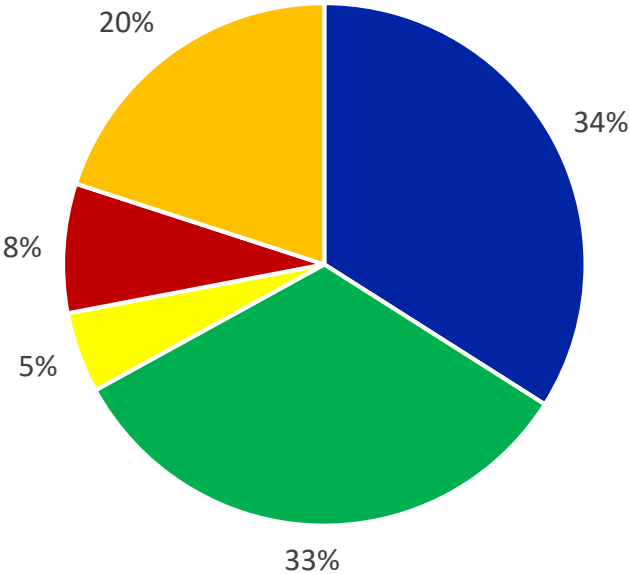


Primary Scopes in Emissions Inventory

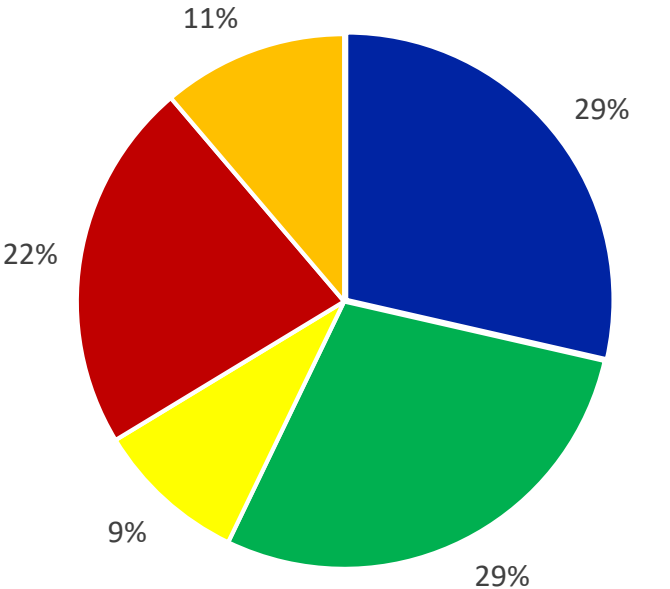


Dallas Community Emissions

Dallas Community



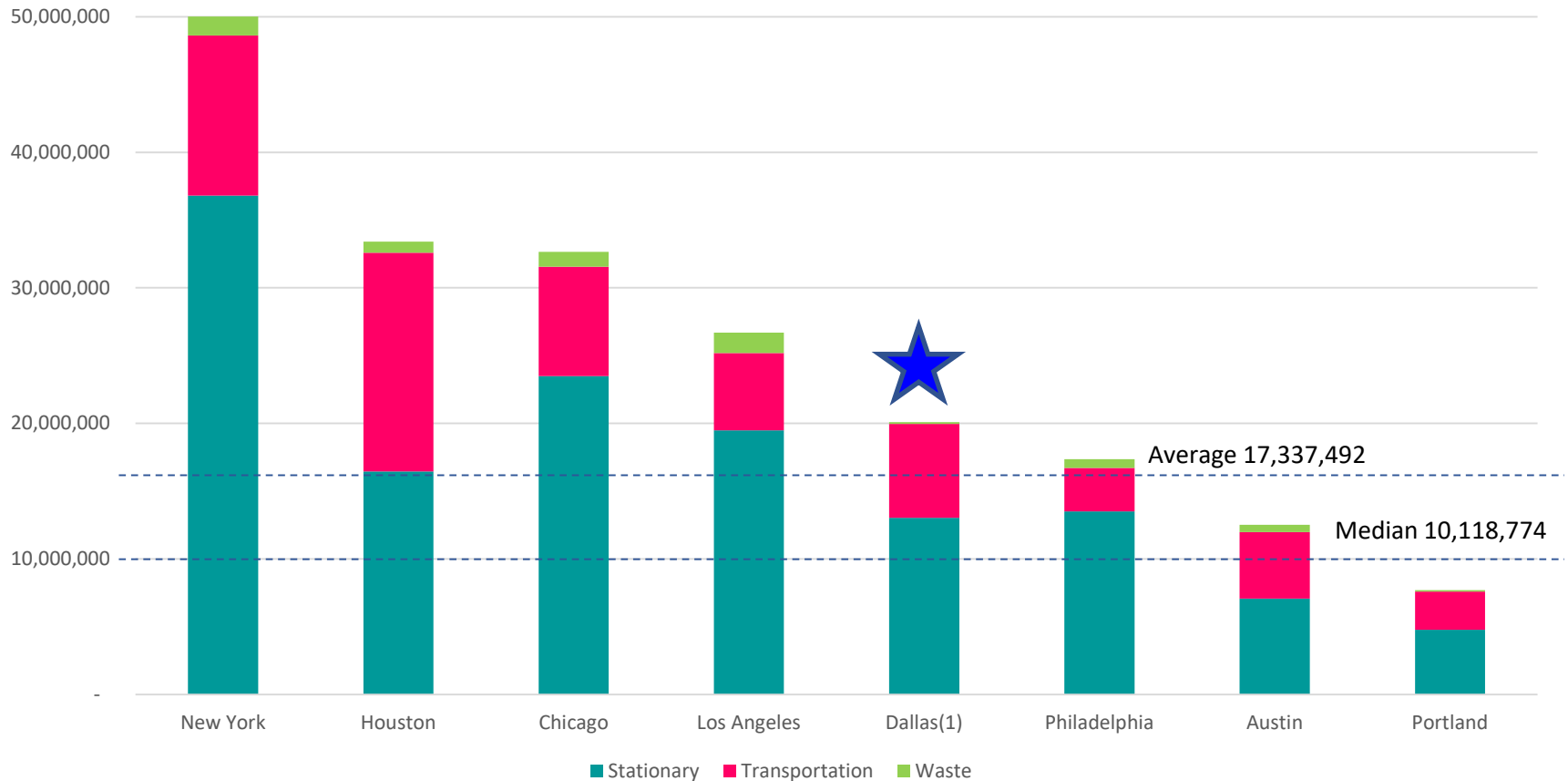
U.S. Average



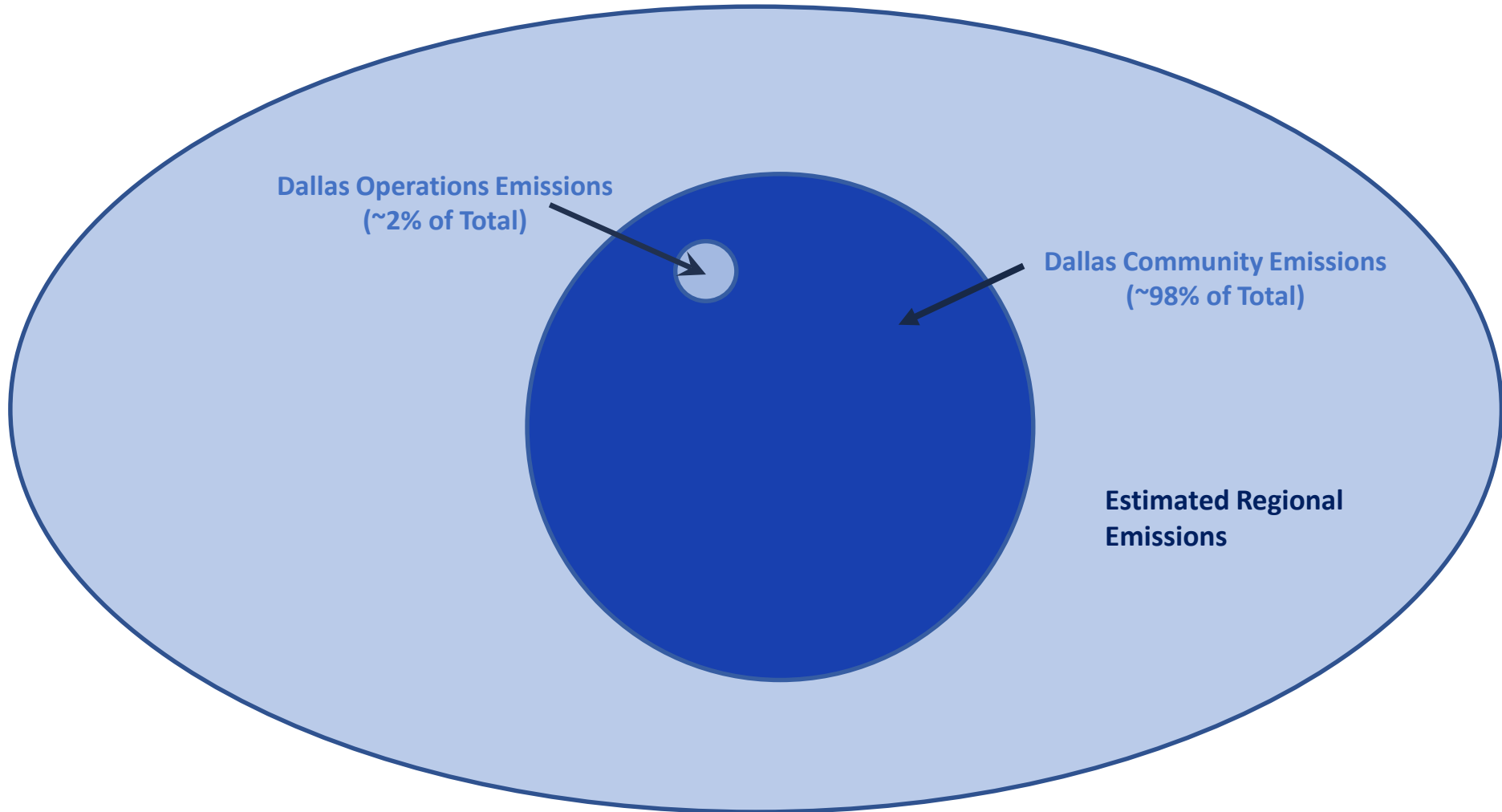
-  Transportation & Mobile Sources
-  Industrial Energy
-  Commercial Energy
-  Residential Energy
-  Other Emissions



C40 City Comparison



Theory of Relativity...



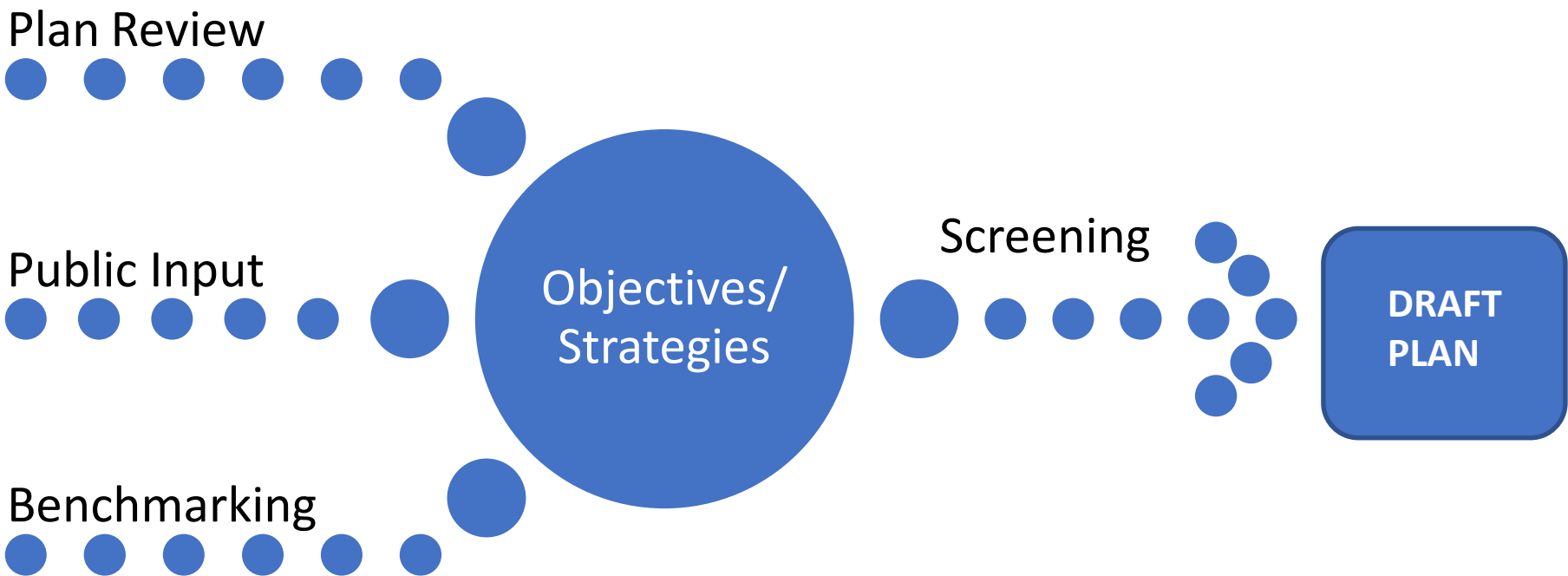
CECAP Contract Scope

Project Scope includes:

- Compile & review City plans/data
- Benchmark best management practices & identify Dallas options
- Develop internal/external City working groups
- Robust public outreach & engagement
- Perform modelling to assess effectiveness
- Develop & vet Dallas plan



Action Development Process



APPROACH TO PLANNING

MITIGATION: Reduce emissions that cause climate change



Clean Energy
Sustainable Transportation
Energy Efficiency

ADAPTATION: Manage risks of climate change impacts



Disaster Management
Flood Protection
Infrastructure Upgrades

Urban Forest Management
Water Conservation
Water Quality
Local Food Production
Food Access
Food Recovery



ENVIRONMENT: Improve Quality of Life + Public Health



Robust Stakeholder Input

Stakeholder Advisory Group



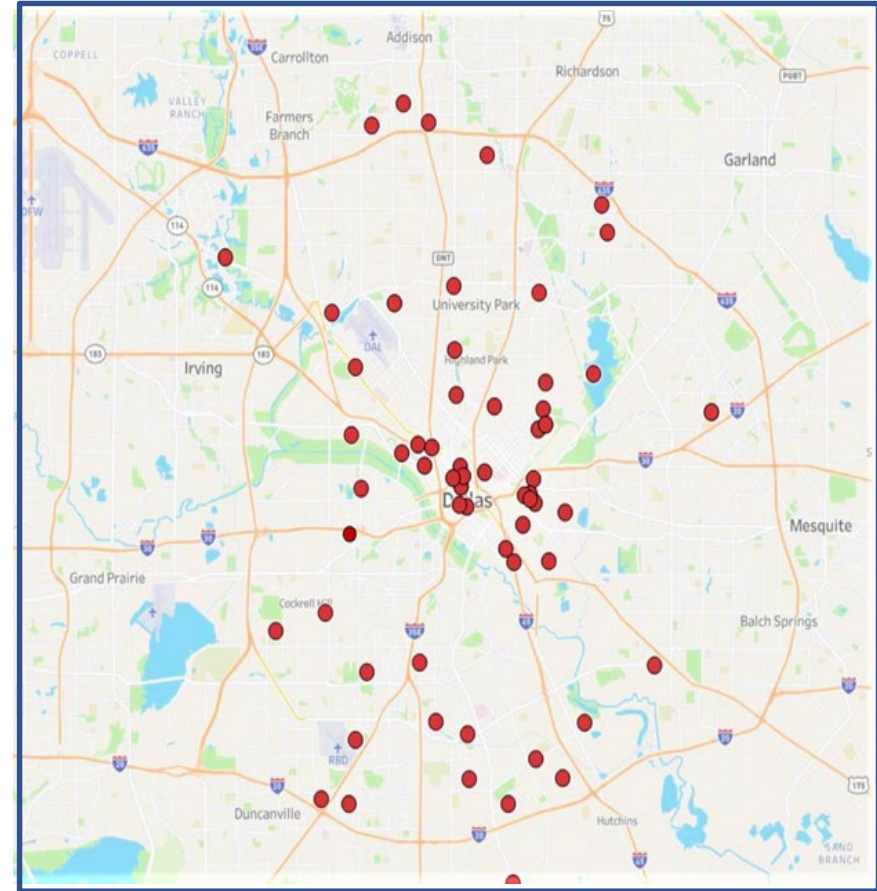
City Environmental Task Force

- Transportation
- Sustainable Development
- Dallas Water Utilities (Water, Wastewater, Drainage)
- Planning + Urban Design
- Park & Recreation
- Public Works
- Economic Development
- Fleet
- Aviation
- Building Services
- Housing/Fair Housing
- And others!



Community Engagement Effort

- **60** business survey responses
- **2,292** resident survey responses
- **9,492** unique comments
- Over **170** meetings and events
- **8,139+** people engaged in person
- Meeting notes, presentations, recordings, and memos posted
- **3,071** unique site visitors and **>7,000** visits to website
- **Over 2,000** views on CECAP newsletters and blogs



Draft Plan Focus & Goals

- Dallas uses renewable, reliant and affordable **energy**
- Dallas' **buildings** are energy efficient and resilient
- Dallas communities have access to low to no emission, affordable **transportation** options
- Dallas is a **Zero-waste** community
- Dallas protects its **water** resources and its communities from flooding & drought
- All Dallas communities have access to healthy, local **food**
- All Dallas communities breathe clean **air**
- Dallas protects its **ecosystems** that in turn, protect public health



Dallas buildings are energy efficient and climate resilient

- Increase energy efficiency of existing buildings
- Ensure that new buildings are constructed sustainably and are carbon neutral
- Increase resilience for new & existing buildings



Dallas generates and uses renewable, reliable and affordable energy

- Maintain high degree of reliability during extreme weather events
- Encourage investment in, and greater use of renewable energy
- Ensure reliable access to renewable electricity



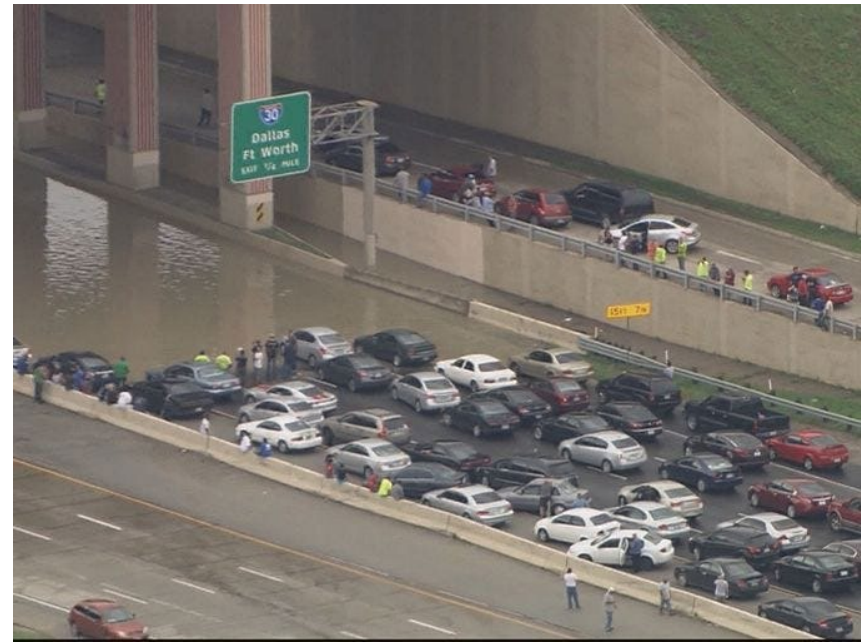
Dallas communities have access to low- to zero emission affordable transportation options

- Shift transportation systems to move people and goods in fuel-efficient vehicles
- Reduce trips where people drive alone
- Synergize land use and housing with transportation to increase access to walking, biking and public transit
- Ensure that walking, biking, public transit, vehicular transportation infrastructure is reliable and safe



Dallas protects its water resources and its communities from flooding, heat & drought

- Conserve and protect water resources through stewardship, education programs and management
- Protect neighborhoods from flooding and prepare them for extreme heat and droughts
- Lead by leveraging innovative approaches, strategies and technologies



Dallas is a zero-waste community

- Minimize single use products and enable community to refuse, reduce, reuse and repair
- Operate a clean, green and efficient waste system
- Generate energy from organics



All Dallas communities have access to healthy, local food

- Build capacity & partnerships to strengthen urban agriculture initiatives & stakeholders
- Reduce distance from farm-to-table
- Improve access in food deserts through effective partnerships
- Prepare the food system to be more resilient to extreme weather events
- Prevent food waste through donations, recovery, diversion and composting



All Dallas communities breathe clean air

- Augment regulatory air quality monitoring
- Reduce trips where people drive alone
- Increase, enhance and maintain healthy forests, parks & green spaces



Dallas protects and enhances its ecosystems and green spaces that in turn improve public health

- Leverage green spaces to provide climate adaptation benefits
- Increase, enhance and maintain healthy forests, parks and green spaces
- Integrate nature-based solutions into the public realm



Overview of 95 Draft Plan Actions

Action Source	Primary Benefit	Scale of Action	Action Type	Time-Line For Initiation
New 71	Mitigation 42	City-Wide 62	Partnership 22	Short 65
Existing 1	Adaptation 20	Municipal 14	Mandate 18	Medium 27
Ongoing 23	Environmental Quality 22	Neighborhood 8	Program 16	Long 3
	Environmental Justice 11	Asset Specific 7	Educational 15	
			Incentive 12	
			Personnel 1	



Screening & Prioritization

Costs

*Financial Impact
Assessment*

Modelling &
Benchmarking

*Technical
Feasibility*

Public Support

*Equity,
Governance &
Administrative*



Modeling & Benchmarking



CURB
Climate Action for Urban Sustainability
is an interactive planning tool designed to help cities take action on climate change to improve...

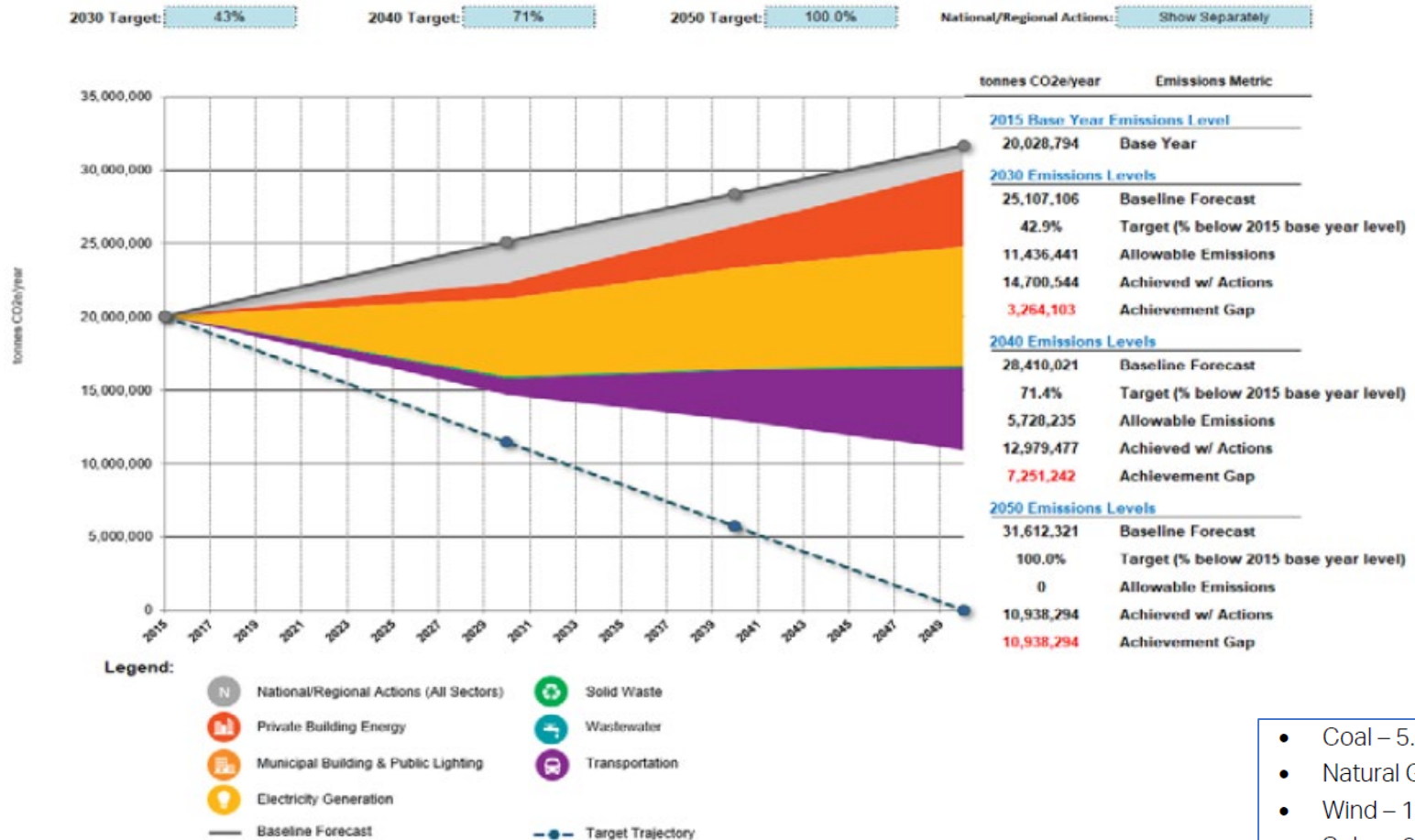
The graphic features a green hill with various icons on top: a sun, solar panels, wind turbines, a person on a bicycle, city buildings, trees, and an electric car. Below the hill, three icons represent different focus areas: a heart with clouds for health and air quality, a trolley for economy and jobs, and wind turbines for energy independence.

HEALTH AND AIR QUALITY ECONOMY AND JOBS ENERGY INDEPENDENCE



CURB Model Results – ERCOT Future power

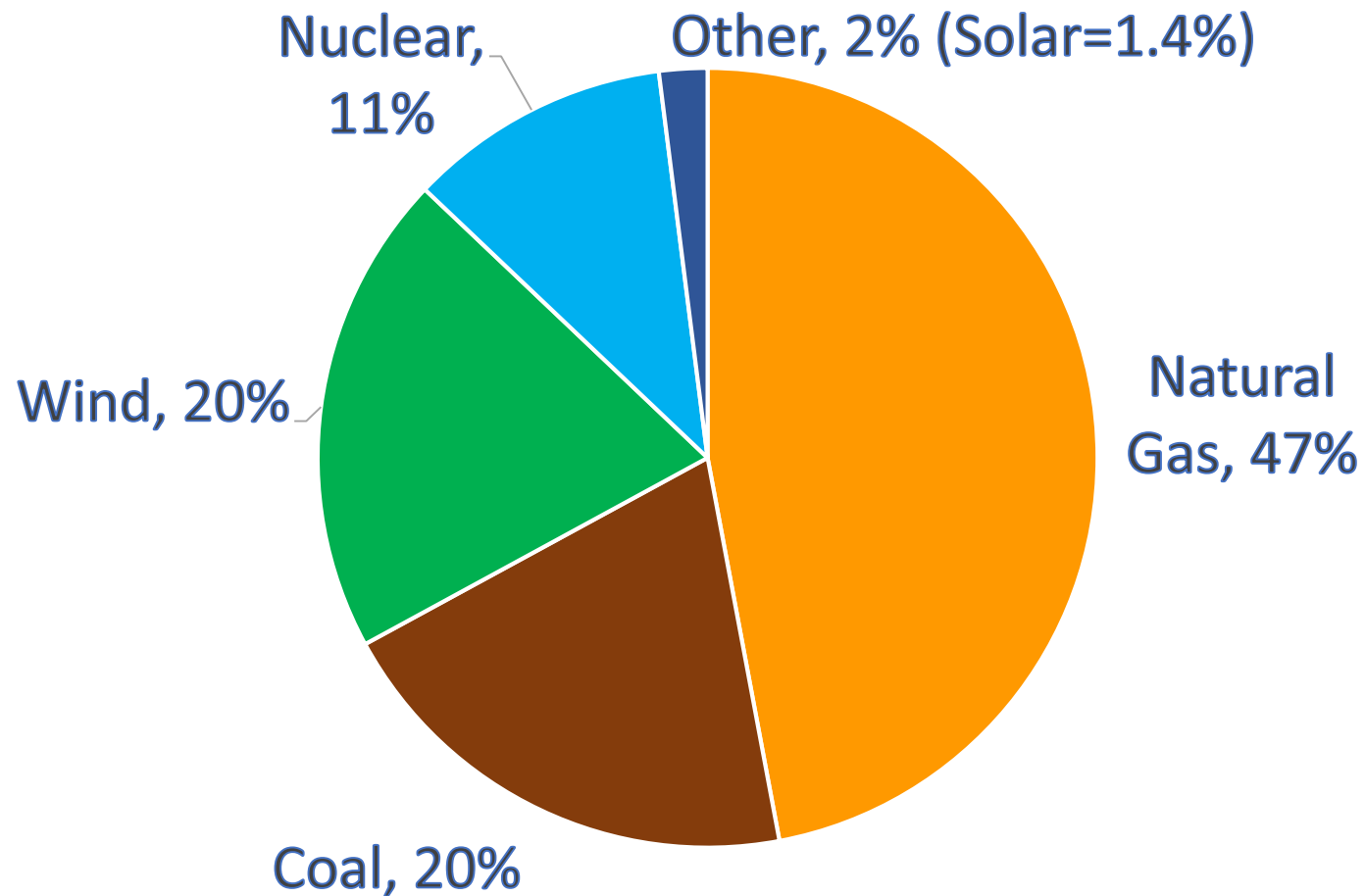
Figure 1 – Scenario 1 GHG Estimates



- Coal – 5.0%
- Natural Gas – 57.5%
- Wind – 19.0%
- Solar – 9.5%
- Nuclear – 9.0%

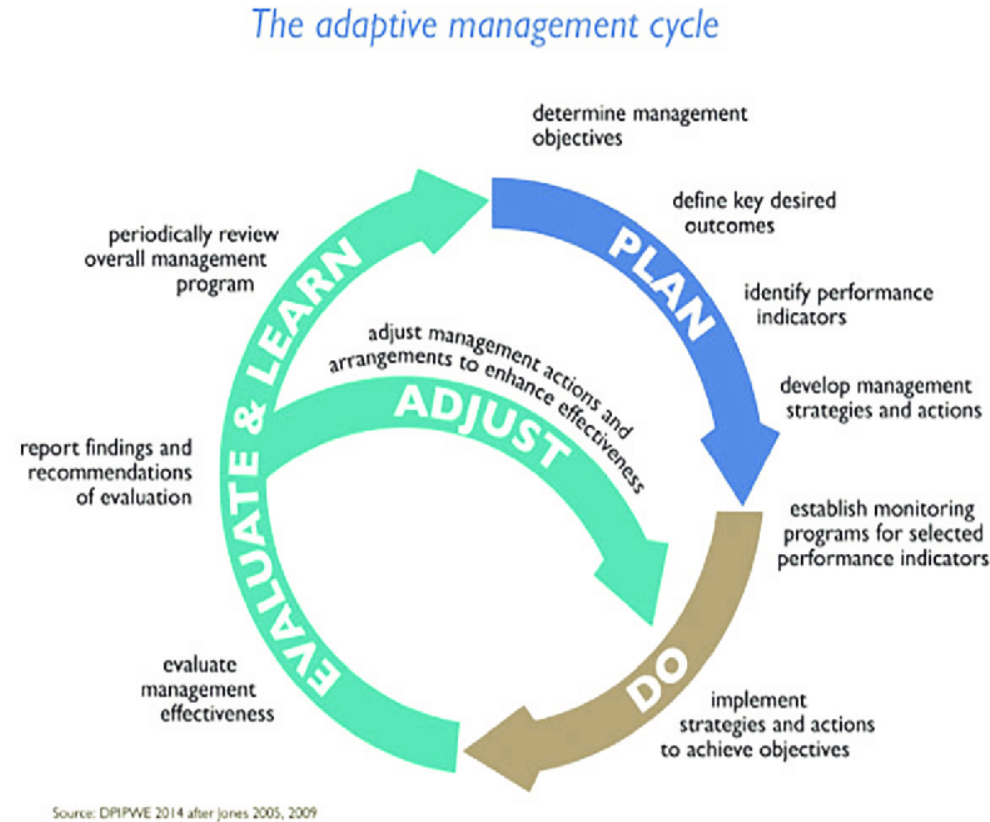


Current ERCOT Fuel Breakdown (2019)



Approach to Implementation

- Update the GHG Inventory in 2021 using 2020 data
- Two-year updates will be included in CECAP
- Re-evaluate ERCOT, NCTCOG, and other data to update estimates
- Re-calibrate actions towards zero emission goals



Next Steps

- February 3, 2020 through February 28, 2020 - Draft CECAP Plan available for public review
- **February 26, 2020 - Regional NCTCOG/GDPC Symposium on Climate Policy**
- March 3, 2020 - Third Annual North Texas Climate Symposium
- April 22, 2020 - Final Plan to Council for Adoption





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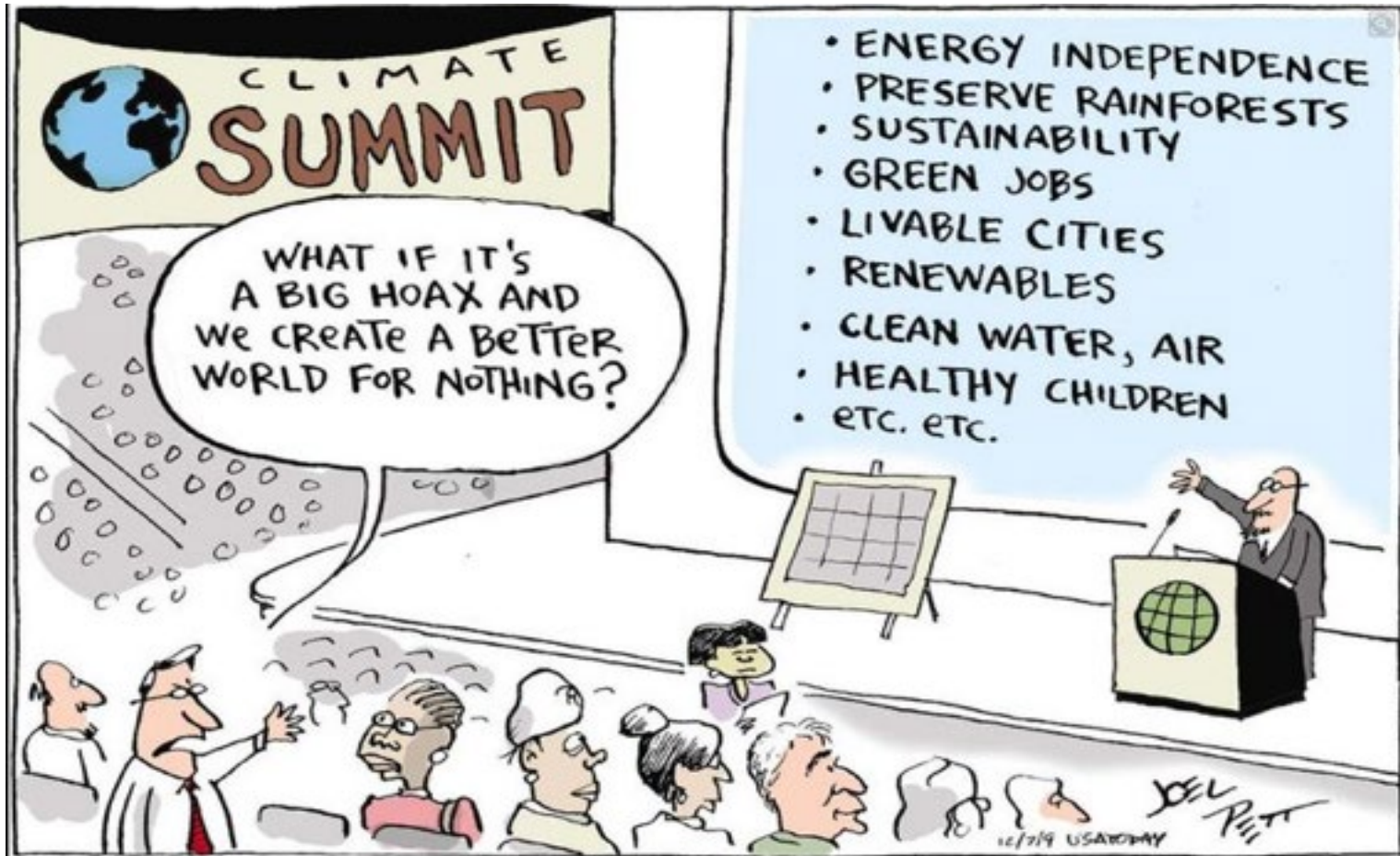
DALLAS CLIMATE ACTION

Creating effective, efficient, and equitable solutions to climate change in Dallas



Let's Chat

QUESTIONS?



Questions and Comments

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Dallas Environmental
Quality & Sustainability

