Memorandum



DATE January 10, 2019

Honorable Members of the Quality of Life, Arts & Culture Committee: Sandy Greyson (Chair), Mark Clayton (Vice Chair), Rickey D. Callahan, Jennifer S. Gates, Scott Griggs, B. Adam McGough, Omar Narvaez

SUBJECT City Environmental & Climate Planning Efforts and Federal Carbon Fee & Dividend Resolution

On Monday, January 14, 2019, you will be briefed on both the City Environmental & Climate Planning Efforts and the Federal Carbon Fee & Dividend Resolution.

The briefing materials are attached for your review.

Please feel free to contact me if you have any questions or concerns.

Joey Zapata

Assistant City Manager

youtaris

c: T.C. Broadnax, City Manager
Chris Caso, City Attorney (I)
Carol Smith, City Auditor (I)
Bilierae Johnson, City Secretary
Preston Robinson, Administrative Judge
Kimberly Bizor Tolbert, Chief of Staff to the City Manager

Majed A. Al-Ghafry, Assistant City Manager Jon Fortune, Assistant City Manager Nadia Chandler Hardy, Assistant City Manager and Chief Resilience Officer M. Elizabeth Reich, Chief Financial Officer Directors and Assistant Directors

City Environmental & Climate Planning Efforts

Quality of Life, Arts, and Culture

James McGuire Susan Alvarez Office of Environmental Quality & Sustainability

January 14, 2019



City of Dallas

Purpose

- Background
- Greenhouse Gas (GHG) Emission Inventory
- Comprehensive Environmental & Climate Action Plan (CECAP)
- Citizens' Climate Lobby Federal Carbon Fee & Dividend Proposal
- Recommended Actions



Background

- 2016 Quality of Life Committee briefed on air quality and resolution of support subsequently passed
- 2017 Transportation Committee briefed on City's air quality and emissions reduction initiatives
- 2018 Multiple efforts:
 - March first North Texas Climate Change Symposium
 - August Council adopts Resilient Dallas Plan
 - September Realignment to Dallas Environmental Quality & Sustainability and efforts/funding for Comprehensive Environmental & Climate Action Plan



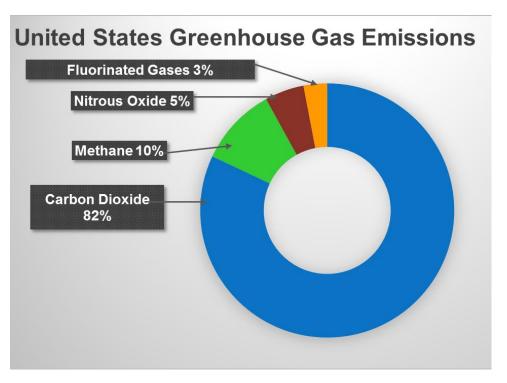
Background – GHG Inventory

- City began inventorying GHG in 2005 using data back to 1990
- Strategic goal of reducing GHG emissions from City operations 39% from the 1990 level by 2017 (Council Strategic Plan FY15-17)
 - Co-benefits of cleaner air, reduced energy usage, environmental leadership, climate action
 - No community-wide emissions reduction goals
- We began a comprehensive inventory of emissions from City and community operations in 2017



What is a Greenhouse Gas (GHG)?

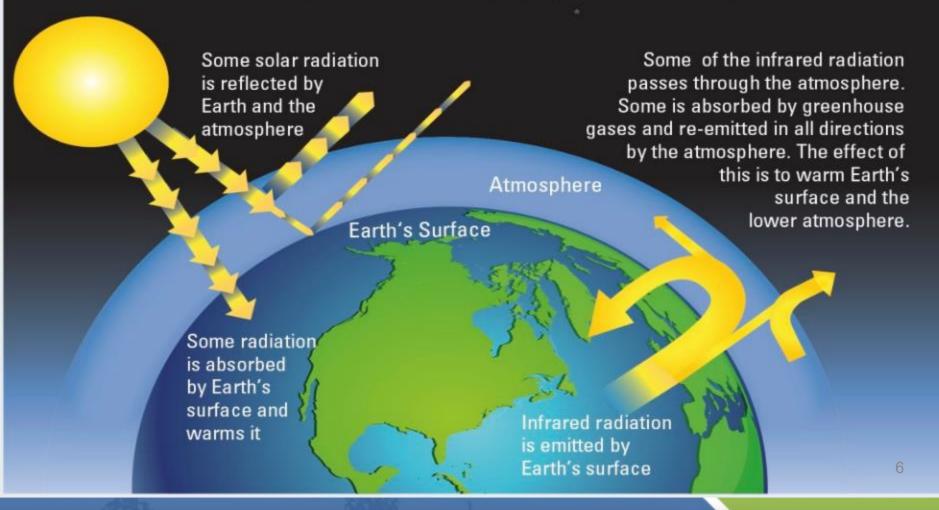
- The most common greenhouse gases include:
 - Carbon Dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous oxide (N₂O)
 - Fluorinated Gases (HFCs)



U.S. EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016 (2018) (EPA430-R-18-003)

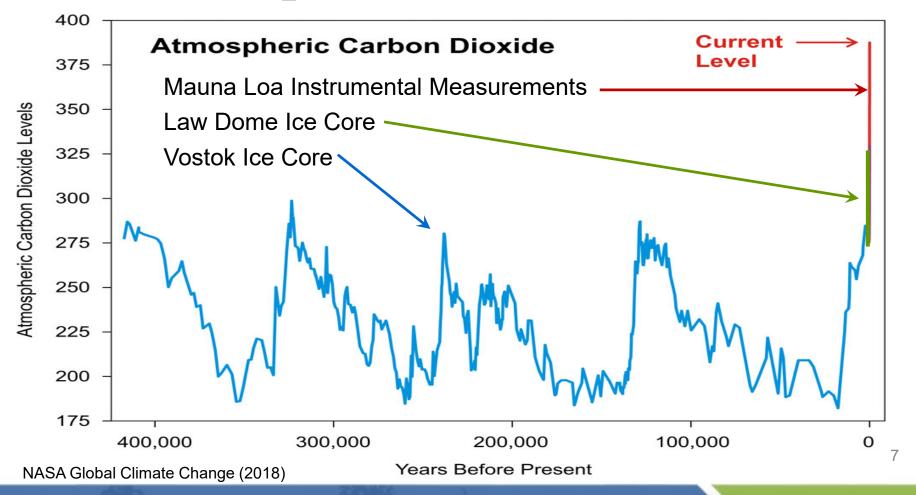


THE GREENHOUSE EFFECT





Historic CO₂ Levels





Reason for Concern



- International Panel of Climate Change (IPCC): "Major impacts from climate change will begin as early as 2040 without imminent actions"
- At the current rate, global temperature will increase by ~2.7° F by 2040

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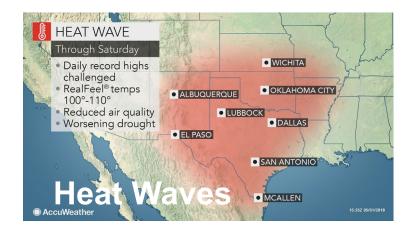
IPCC 2018 Special Report: Global Warming of 1.5° C



Climate Impacts







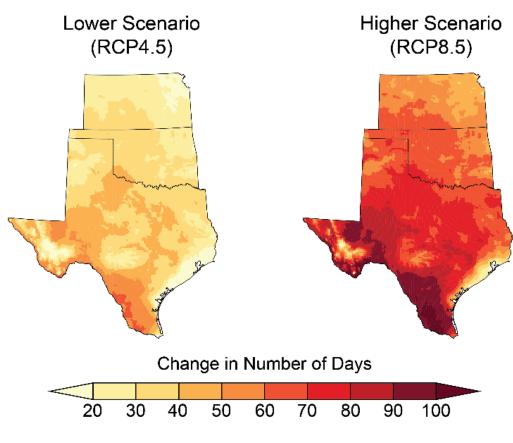




Heat Waves

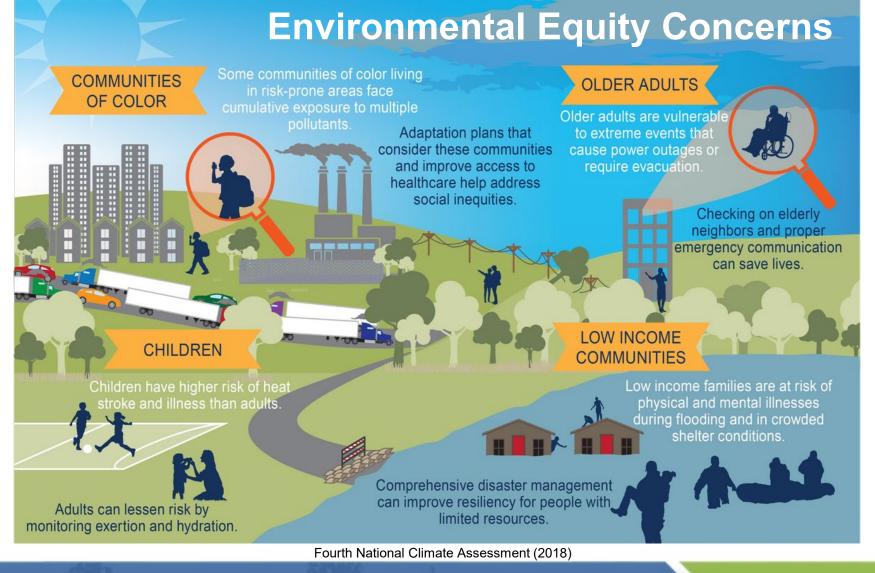
- Increasing U.S. temperatures based on statistical modeling
- Number of days exceeding 100°F in Dallas will increase by 40 to 60 days





Fourth National Climate Assessment (2018)







Lack of National and State Action

- Federal executive branch favors coal and other fossil fuels over renewable energy
- The Governors' November 2018 Rebuild Texas Report recommended eight measures to "future proof" the state, but did not address climate change or mitigation



Paris Agreement (COP21)

- 196 countries met in 2015 for the common cause of undertaking ambitious efforts to combat climate change and adapt to its effects
- Decision to follow scientific consensus that most severe impacts of climate change may be avoided if we limit temperature increases to 1.5° C (2.7° F)
- Key aspects include measuring and reporting emissions and establishing reduction targets consistent with 1.5° C (2.7° F) increase



Cities as Policy Leaders

- Cities consume majority of worldwide energy, and generate 70% of the world's GHG emissions
- Many mayors worldwide pledged to meet commitments of Paris Agreement
- Mayor Michael Rawlings signed pledge in June 2017, along with 5 other Texas mayors



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City Actions to Meet Commitment

- GHG emission inventory is an essential step towards meeting any commitment under Paris Agreement
- It provides data necessary to determine focus and actions to reduce emissions
- It is used to develop effective strategies to reduce emissions and mitigate climate impacts





Five Step Process





Emissions Inventory Methodology

- Based on "The Global Protocol For Community-Scale Greenhouse Gas Emission Inventories", developed by the International Council for Local Environmental Initiatives (ICLEI)
- Protocol uses detailed requirements to identify emissions within scope, sector, & specific GHG
- Approach provides more detailed information than previous inventories
- Results under this protocol allow for more effective planning and better emission reduction strategies



Scopes in GHG Emissions Inventory

Scope 2 -**Electricity**

Generation

Grid-supplied energy





Agriculture, forestry, and other land use



processes and product use



In-boundary waste and wastewater



fuel combustion



In-boundary transportation

Scope 3 - Other Indirect Sources



Out-of-boundary waste and wastewater







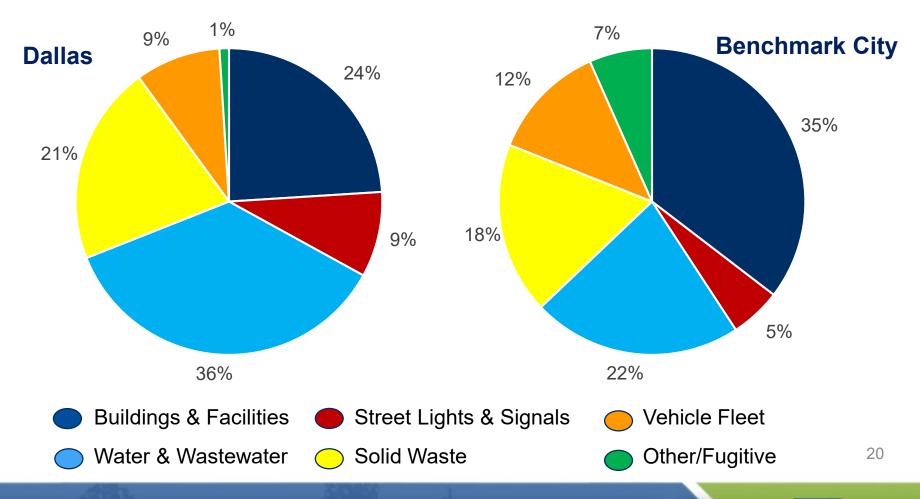


Data Enhancements

- Comprehesive calculation of actual municipal (City operations) and community (within city limits) emissions
- Wastewater plant/system emissions
- Transmission and distribution losses for electric and natural gas
- Emissions from travel in and out of the City
- Emissions from industrial processes and solid waste within city boundary
- Benefits from mass transit use and carbon sequestration (trees)



City of Dallas' Municipal Emissions





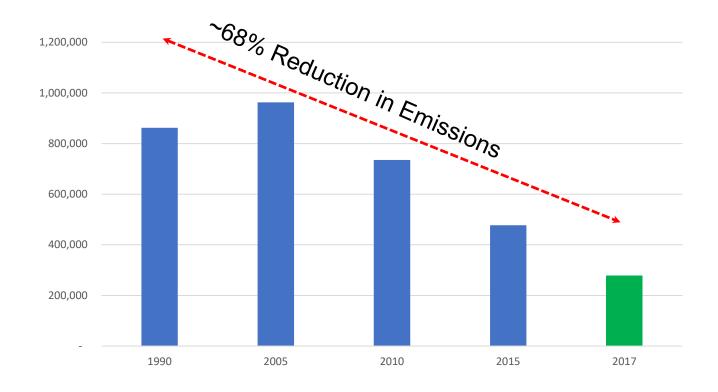
Current City Emission Reduction Efforts

- 100% Renewable Energy Purchase
- Co-generation at DWU's Southside Wastewater Treatment Plant
- McCommas Landfill gas capture and re-sale
- ~1/2 of the total City fleet runs on alternative fuels or electricity (2,415 vehicles)
- LED lighting retrofits
- Love Field achieved Level 2 Carbon Accreditation from ACI and ACA
- Implementing nature-based solutions to mitigate urban heat island effects





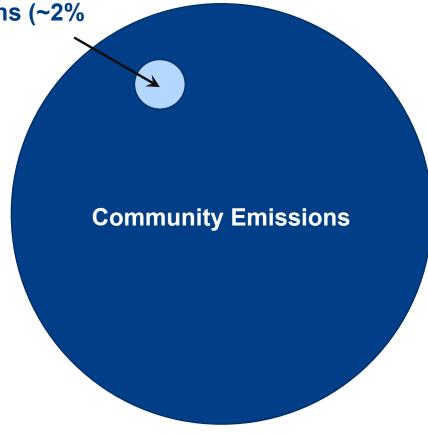
Dallas Municipal Emission Trends





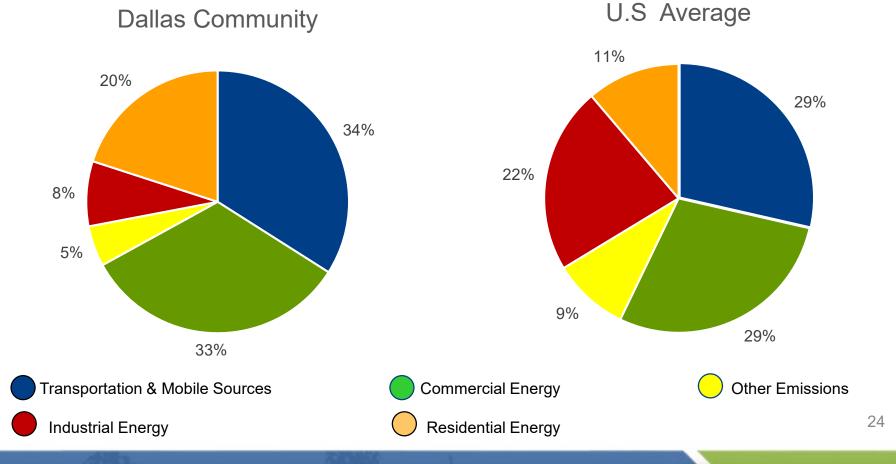
Municipal vs. Community Contribution

Municipal Emissions (~2% of Total)



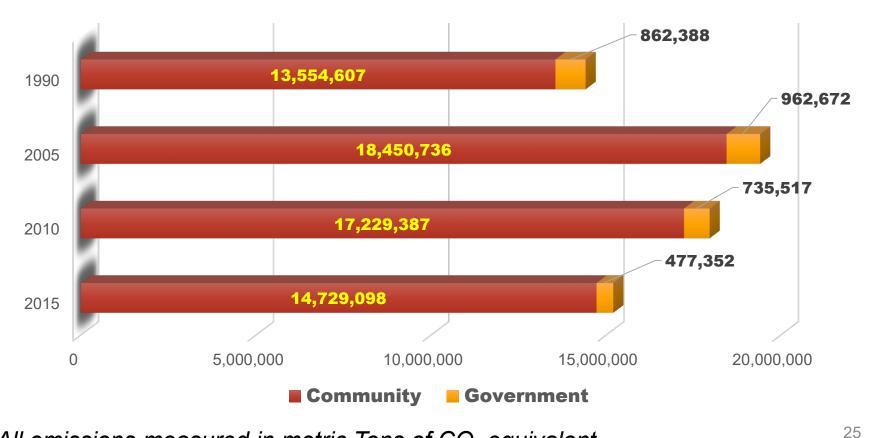


Dallas' Community Emissions





Inventory Results – Total Emissions



All emissions measured in metric Tons of CO₂ equivalent



Next Steps

- Use GHG emissions inventory data in development of Comprehensive Environmental & Climate Action Plan (CECAP)
 - Actionable steps and goals building on the Resilient Dallas plan adopted by Council on August 8, 2018
 - Unified approach to environmental planning that will better serve our community and strategic priorities
- Continue to encourage City emissions reduction initiatives and conduct emissions monitoring
 - Revisit GHG emissions inventory using 2020 data



Next Steps – Comprehensive Environmental & Climate Action Plan

Compile Plans/ Data

Initiate Working Groups Initial Public
Outreach re:
Visioning/Goals

Brief
Committee
& Working
Groups

February, 2019

March, 2019

April, 2019

June, 2019

Develop & Model
Concepts for
Effectiveness

Draft Environmental & Climate Action Plan

Brief
Committee
& Working
Groups

Summer, 2019

Early Fall, 2019

Late Fall, 2019

Public Outreach re: Proposed Actions

Finalize
Environmental &
Climate Action Plan

City Council & Public Presentation

January, 2020

Spring, 2020

April, 2020



Next Steps – Community Engagement

- Second annual North Texas
 Climate Change Symposium
 on February 4, 2019 at the
 Belo Mansion in downtown
 Dallas
- Keynote speaker is Dr. Katharine Hayhoe
- Livestream available from greendallas.net







AMERICA'S CLIMATE SOLUTION

S. 3791 / H.R. 7173

Senate



Chris Coons (D-DE) Original Sponsor



(R-AZ) Original Cosponsor

House of Representatives



(D-FL-22)





(D-MD-06)



Francis Rooney (R-FL-19)



(D-FL-13)



(R-MI-11)



Anna Eshoo (D-CA-18)



(D-CA-27)



(D-IL-03)



(D-CA-52) Coponsor



Energy Innovation AND Carbon Dividend Act



Carbon Fee



How It Works





Limited Regulatory Adjustment



Energy Innovation AND Carbon Dividend Act

1. Carbon Fee

Places a fee on coal, oil, and gas. It starts low, and grows over time.





2. Carbon Dividend

Promotes equity and benefits communities by rebating 100% net revenue to households every month.





Energy Innovation AND Carbon Dividend Act

3. Border Carbon Adjustment

A border carbon adjustment will protect U.S. jobs and industries.





Energy Innovation AND Carbon Dividend Act

Effective

 Reduce America's emissions by at least 40% within 12 years.



Energy Innovation AND Carbon Dividend Act

Good for People

- Improve health and save lives by reducing air pollution.
- Put spending money into people's pockets every month, helping low and middle income Americans.





Energy Innovation AND Carbon Dividend Act

Creates Jobs

 Generates additional jobs as the dividend stimulates the local economy.

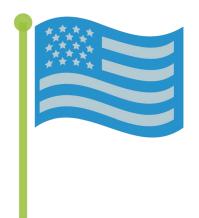




Energy Innovation AND Carbon Dividend Act

Bipartisan Support

- Republican and Democratic cosponsors
- Majority of Americans support Congress acting on climate change.



Requested Actions

- Request the committee send the contract with AECOM for the Comprehensive Environmental & Climate Action Plan to Dallas City Council on January 23, 2019 for authorization
- Request the committee to send a resolution supporting Dallas' environmental leadership towards meeting local climate goals, City participation in C40 Cities, and also a carbon fee and dividend to Dallas City Council for authorization





Questions and Comments





City Environmental Planning Efforts

Quality of Life, Arts, and Culture

James McGuire Susan Alvarez Office of Environmental Quality & Sustainability

January 14, 2019



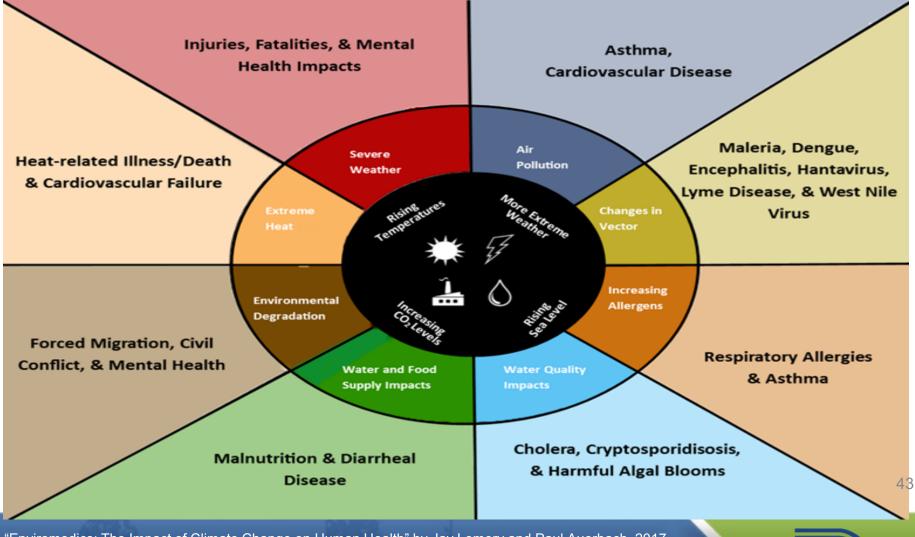
City of Dallas

APPENDIX





Impacts of Climate Change on Human Health



"Environmedics: The Impact of Climate Change on Human Health" by Jay Lemery and Paul Auerbach, 2017 (Rowman & Littlefield).



Dallas Impacts

- Cost of Living: higher heating and cooling costs for homes & businesses
- Public Health: more heat related problems; higher incidences of respiratory illness, increase in vector borne illnesses
- Public Safety: increased property damage from severe weather, decreased water access and water quality, infrastructure damage
- Food Security: food costs and availability impacted by climate-related agricultural impacts



Health Risks

- Health threats, including heat illness and diseases transmitted through food, water, and insects, will increase as temperature rises
- Weather conditions supporting these health threats are projected to be of longer duration or occur at times of the year when these threats are not normally experienced
- Extreme weather events with resultant physical injury and population displacement are also a threat
- These threats are likely to increase in frequency and distribution and are likely to create significant economic burdens
- Vulnerability and adaptation assessments, comprehensive response plans, seasonal health forecasts, and early warning systems can be useful adaptation strategies



Scope: Comprehensive Environmental & Climate Action Plan

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









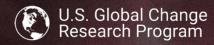


With little state and federal action on climate change, local governments must step forward to shoulder the burden. The City of Dallas accepts this responsibility and has actively been working towards building a greener, more resilient city, and improving the quality of life in the region....

Environmental and health threats like climate change are ignored at the peril of our health and future prosperity. We will work to improve regional air quality, tracking and reducing carbon emissions, and otherwise addressing climate change in line with current science. Dallas will continue to be a leader in those efforts and in ensuring that our community is engaged every step of the way.

Councilmember Sandy Greyson, March 9, 2018





Fourth National Climate Assessment, Vol II — Impacts, Risks, and Adaptation in the United States

Chapter 23 | Southern Great Plains

- Food, Energy, and Water Resources Quality of life in the region will be compromised as increasing population, the migration of individuals from rural to urban locations, and a changing climate redistribute demand at the intersection of food consumption, energy production, and water resources.
- Infrastructure The built environment is vulnerable to increasing temperature, extreme precipitation, and continued sea level rise, particularly as infrastructure ages and populations shift to urban centers.
- Ecosystems and Ecosystem Services Terrestrial and aquatic ecosystems are being directly and indirectly altered by climate change.
- Human Health Health threats, including heat illness and diseases transmitted through food, water, and insects, will increase as temperature rises.

C40 City Comparison



Note: Dallas data is draft pending QA/QC



C40 Cities - Benefits

- Maintain Dallas position as leader/innovator for climate action and environmental quality
- Data-driven approach to measuring program effectiveness
- Peer-to-peer assistance towards climate adaptation and resilience
- Potential financial assistance towards implementation for innovative approaches towards resilience with emphasis on equity



C40 Cities - Participation Standards

- Mayoral Commitment (√ Mayor signed on the Mayor's Climate Compact in 2017; attended 2018 Buenos Aires as an observer)
- **GHG Inventory** ($\sqrt{\ }$ completed in December 2018)
- Target for reducing GHG emissions (in process based on 2015 GHG Inventory; CECAP in development)
- Develop climate action plan with concrete initiatives to meet the target (CECAP in development)
- Actively sharing best practice examples with other cities throughout the C40 networks (engaging with other C40 Cities in Texas and abroad)



Federal Carbon Fee & Dividend

115th Congress has several draft carbon fee bills with the proceeds allocated to infrastructure including:

HR 7173 – Energy Innovation & Carbon Dividend Act of 2018 (Rep. Theodore Deutch (D-FL) most closely describes the approach discussed by CCL:

- Amends the Internal Revenue Code to impose a fee on the carbon content of fuels, including crude oil, natural gas, coal, and derivative products, including fluorinated greenhouse gases
- Fee imposed on the producers or importers of the fuels
- Fee equal to the greenhouse gas content of the fuel multiplied by the carbon fee rate.
- The rate begins at \$15 in 2019, increases by \$10 each year, and is subject to further adjustment based on GHG reductions



Federal Carbon Fee & Dividend

HB 7173 includes:

- Exemptions for fuels used for agricultural or non-emitting purposes
- Rebates for facilities that capture and sequester carbon dioxide
- Border adjustment provisions that require certain fees or refunds for carbon-intensive products that are exported or imported
- Fees deposited into a Carbon Dividend Trust Fund to be used for administrative expenses & dividend payments to U.S. citizens or lawful residents
- Fees must be decommissioned when emissions levels and monthly dividend payments fall below specified levels
- Amends Clean Air Act to suspend regulations that limit greenhouse gas emissions (with suspensions expiring if emission targets not reached)



Memorandum



DATE January 9, 2019

TO Joey Zapata, Assistant City Manager, Majed Al-Ghafry, Assistant City Manager

SUBJECT C40 City Program Information

This memorandum provides information concerning the C40 Cities organization, an international organization that was started to support cities towards addressing environmental stewardship, resiliency, and urban equity.

The C40 Organization was started in 2005 and represents membership of 96+ cities across the globe who have committed to meeting the goals of the Paris Agreement. The group was organized around the recognition that cities form "the primary incubator of cultural, social and political innovations that shape our planet." C40 is focused on tackling climate change and driving urban actions that reduce greenhouse gas emissions and climate risks, while increasing the health, well-being and economic opportunities of urban communities. C40's work is made possible by three strategic funders: Bloomberg Philanthropies, Children's Investment Fund Foundation, and Realdania.

As of 2018, Ann Hidalgo Mayor of Paris, serves as the Chairwoman. The former Mayor of New York City, (Michael R. Bloomberg) serves as President of the Board and Mark Watts is as the Executive Director of the C40 Cities. All three works closely with the 13-member Steering Committee, the Board of Directors and professional staff. The rotating Steering Committee of C40 mayors provide strategic direction and governance. Participating U.S. cities include: Boston, Chicago, Washington, DC, Los Angeles, New Orleans, New York, San Francisco and Seattle; Austin and Houston are the only Texas cities that currently participate.

The C40 organization convenes technical networks that provide member cities with services across multiple sectors including: providing direct technical assistance; facilitating peer-to-peer exchange; and supporting research, knowledge management and communications. C40 works to position cities as a leading force for climate action around the world. The benefits to the City of Dallas from participating in the C40 Organization include:

- 1. Maintaining position as leader/innovator relative to environmental quality and climate action
- 2. Using standard data-driven approach to measure program effectiveness
- Obtaining and providing peer-to-peer assistance towards climate adaptation and resilience
- 4. Potential financial assistance towards implementation for innovative approaches towards resilience and equity

C40 membership standards include the following mandatory requirements:

- 1. **Mayoral commitment** (Mayor signed on the Mayor's Climate Compact in 2017)
- 2. **Developing a greenhouse gas inventory** (Dallas now has GHG Inventory)
- 3. **Setting a target for reducing GHG emissions** (Dallas has targets in process)
- 4. **Developing a climate action plan** (Dallas has climate plan in process; contract goes to Council on 1/23/2019); and
- 5. **Actively sharing best practices** with other cities throughout the C40 networks underway

C40 membership is by invitation only through three types of membership categories to reflect the diversity of cities that are working to address climate change. The categories consider such characteristics as population size, economic output (Gross Domestic Product (GDP) and/ or purchasing power parity (PPP), environmental leadership, and the length of a city's membership. C40 City membership categories are:

1. Megacities:

- Population: City population of 3 million or more, and/or metropolitan area population of 10 million or more, either currently or projected for 2025; OR
- *GDP*: One of the top 25 global cities, ranked by current GDP output, at purchasing-power parity (PPP), either currently or projected for 2025.
- 2. Innovator Cities (Austin is an Innovator City, and one of the original forming cities)
 - Category used for cities that do not qualify as Megacities but have shown *clear leadership* in environmental and climate change work.
 - An Innovator City must be internationally recognized for climate work, a leader in environmental sustainability, and regionally recognized metropolitan "anchor city".
- 3. Observer Cities (Houston is currently an Observer City)
 - A short-term category for new cities applying to join the C40 for the first time; all cities applying for membership will initially be admitted as Observers.
 - A longer-term category for cities that meet Megacity or Innovator City guidelines and participation requirements, but for local regulatory or procedural reasons, are unable to approve participation as a Megacity or Innovator City expeditiously.

Staff are communicating with the C40 organization to obtain additional information concerning our potential participation for your consideration. Please let me know if you have questions or need additional information.

James McGuire

Director, Environmental Quality & Sustainability

WHEREAS, the City of Dallas is committed to protecting the public health, safety, and welfare of its residents and leading the region in addressing climate change and environmental efforts; and

WHEREAS, the City of Dallas remains similarly committed to reducing emissions, improving regional air quality, and addressing the real consequences of climate change through local, state, and federal action; and

WHEREAS, climate change has the potential to lead to disruptions in the City of Dallas' operations and poses risk to infrastructure, built environment, and public health; and

WHEREAS, Dr. Arne Winguth (UT-Arlington) described our region's significant vulnerability to climate change-driven heat and flooding risks in *Climate Change/Extreme Weather Vulnerability and Risk Assessment for Transportation Infrastructure in Dallas and Tarrant Counties* (2015); and

WHEREAS, Dr. Brian Stone (Georgia Tech) found that Dallas' significant urban heat island effect is amplified by climate change, and that Dallas is warming at a rate that is the third highest in the nation in a 2017 report for the Texas Trees Foundation; and

WHEREAS, the Fourth National Climate Assessment – released on November 23, 2018 and the work of over 300 scientists and 13 federal agencies – reports that climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities; and

WHEREAS, 72% of Dallas County residents support regulating CO₂ as a pollutant and 72% of Dallas County residents think that global warming will harm future generations (2016 Yale University community survey); and

WHEREAS, the City of Dallas is a climate leader in the region and reduced greenhouse gas emissions from city operations by 68% from 1990 levels, consistent with the goals of the Paris Climate Agreement and Mayor Mike Rawlings' commitment to the Mayor's National Climate Action Agenda; and

WHEREAS, actions taken to mitigate climate change can also have the effect of improving regional air quality and otherwise providing better quality of life for current and future generations of Dallas residents; and

WHEREAS, the *Resilient Dallas* plan, adopted by Dallas City Council on August 8, 2018, identified efforts to reduce emissions and mitigate the impacts of climate change as part of the strategy to make Dallas neighborhoods and our community thrive; and

WHEREAS, the Dallas City Council directed the Office of Environmental Quality & Sustainability to begin a comprehensive environmental and climate action plan in FY18-19, and OEQS hosted the inaugural North Texas Climate Change Symposium on March 9, 2018, at the historic Belo Mansion in downtown Dallas; and

WHEREAS, the C40 Cities is a network of the world's largest cities committed to addressing climate change, and serves to connect 96 of the world's greatest cities to take bold climate action, leading the way towards a healthier and more sustainable future for the planet; and

WHEREAS, the City of Dallas would benefit from joining C40 Cities because it is similarly committed to delivering on the most ambitious goals of the Paris Agreement at the local level, as well as to cleaning the air we breathe; and

WHEREAS, climate change is a global phenomenon, and the City of Dallas cannot effectively mitigate climate change without legislation from the U.S. Congress; and

WHEREAS, the U.S. Congress has the responsibility to act swiftly and meaningfully on climate change in a manner that does not economically burden the City of Dallas or Dallas residents; and

WHEREAS, a carbon fee and dividend proposal as put forth by Citizen's Climate Lobby greatly helps to address climate change, protects Dallas residents from the effects of climate change, and is a net economic boost to Dallas residents.

Now, Therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

SECTION 1. The Office of Environmental Quality & Sustainability shall continue its efforts to develop a comprehensive environmental and climate action plan with goals that will ensure that the City of Dallas is addressing climate change in a manner that is effective and equitable.

SECTION 2. That the City Manager through the Office of Environmental Quality & Sustainability take actions necessary to join and participate in C40 Cities.

SECTION 3. That the City of Dallas urges the U.S. Congress to enact a carbon fee and dividend that benefits working families, significantly reduces emissions, and employs a carbon-content based border adjustment to protect the competitiveness of American businesses.

SECTION 4. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Charter of the City of Dallas, and it is accordingly so resolved.