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North American Agreement on Environmental Cooperation

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The Honorable Michael S. Regan
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Administrator Regan:

The U.S. National Advisory Committee (NAC) to the U.S. Representative to the North American Commission for Environmental Cooperation held its 60th meeting on December 7, 2023, in Washington, DC. This letter represents our advice resulting from that meeting. The main objective of our meeting was to provide advice to the EPA Administrator on exemplary cities in North America with strong climate governance, nature-based solutions, environmental justice engagement and promotion of Indigenous engagement and leadership.

Our meeting included presentations on: 1) *U.S. Priorities* from Mark Kasman, on behalf of Jane Nishida, Assistant Administrator for EPA's Office for International and Tribal Affairs (OITA), 2) *CEC Updates*, from Jorge Daniel Taillant, Executive Director of the Commission for Environmental Cooperation in Montreal, Canada, 3) *JPAC Report-out* from Octaviana Trujillo, Chair of the Joint Public Advisory Committee (JPAC), and 4) *Innovative Solutions in Climate Champion Cities in US and North America*, from Kate Johnson, Head of U.S. Federal Affairs, C40 Cities, and David Miller, (former Mayor of Toronto), Managing Director, C40 Centre for City Climate Policy and Economy.

The meeting was opened with opening remarks from Federal Advisory Committee Management and Oversight Division (FACMOD) Director Robbie Young-Mackall, who provided an overview of FACMOD activities and responsibilities. The NAC appreciates the dedicated support provided by the FACMOD and thanks Director Young-Mackall, Oscar Carrillo our Designated Federal Officer, and all the FACMOD staff for their support in ensuring our meeting was a success. We hope our advice is useful to you in your work with the CEC, and wish you continued success in your position.

Sincerely,

Vincent R. Nathan
Chair, National Advisory Committee

cc:

Jane Nishida, Assistant Administrator, Office of International & Tribal Affairs (OITA), EPA

Rafael DeLeon, Deputy Assistant Administrator, OITA, EPA

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National Advisory Committee
(NAC) to the U.S. Representative to the
Commission for Environmental Cooperation (CEC)

Advice 2024-1 (January 10, 2024)

*Question #1 – Exemplary cities in North America that serve as examples of
successful climate adaptation practices*

The December 7, 2023, Charge Questions to the National Advisory Committee (NAC) included: Identifying exemplary cities in North America that serve as examples of successful:

1. Climate governance that advances urban climate adaptation;
2. Employment of nature-based solutions that increases community resilience;
3. Environmental justice solutions and community engagement processes.

Before answering the questions above, the NAC would like to highlight a report by the United Nations to contextualize climate adaptation and its critical importance to the health of our planet and specifically in the United States.

The Climate Adaptation Issue

The United Nations has provided a new and stark update on its progress toward mitigating climate change. Simply put, the report says global warming is set to surpass the goals that countries agreed to in 2015.

The Paris Climate Accord was signed originally with the goal of preventing catastrophic warming. Nearly 200 countries made a legally binding promise to reduce their greenhouse gas emissions. The reality is that not only did we not cut, but emissions from burning coal, oil, and gas rose as high as 1.3% last year. The annual report from the U.N. Environment Programme lays out how far behind the world is on controlling planet-warming pollution, most of which comes from burning oil, gas and coal. The numbers are sobering and arrive again before more U.N. climate negotiations. Emissions need to fall as quickly as possible to avoid catastrophic climate impacts such as runaway sea level rise, unsurvivable heat in some areas and mass extinction of plants and animals, some scientists warn.

This year's report includes a variety of findings.

- Mountain glaciers are swiftly shrinking. Natural landscapes, like forests and wetlands, may soak up less carbon dioxide as the planet warms, causing more pollution to linger in the atmosphere. Compound climate events — multiple extreme weather disasters

happening at the same time or in rapid succession — are a growing threat.

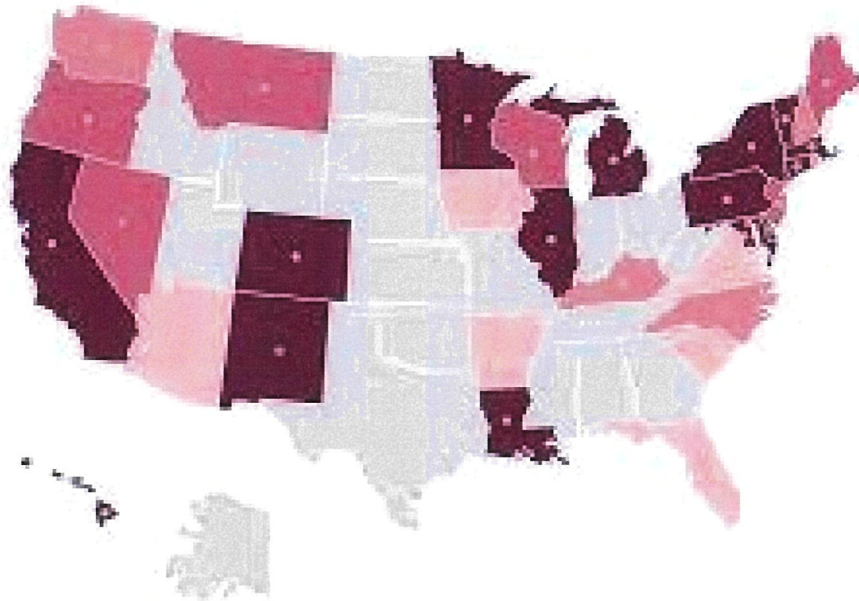
- The report also includes insights on the links between climate change and biodiversity loss, the role that food systems can play in reducing carbon emissions, the plight of global populations that lack resources to relocate in the face of worsening climate impacts, and the importance of just and equitable climate adaptation efforts.

But its findings on the 1.5-degree target are among its starkest conclusions.

U.S. Climate Adaptation

A total of 33 states have either introduced a climate action plan or are currently in the midst of revising or crafting one. This count comprises 32 states that have already unveiled their plans and one state currently in the process of updating its existing plan. Typically, climate action plans encompass specific objectives for reducing greenhouse gas (GHG) emissions and offer a comprehensive outline of the measures the state intends to implement to achieve those targets. Additionally, these plans may encompass other essential elements like strategies for enhancing resilience, setting clean energy objectives, and establishing economic and social priorities. The unique economic characteristics, resource availability, and political framework in each state create distinct avenues for addressing the challenges posed by climate change. The Center for Climate and Energy Solutions Updated December 2022: <https://www.c2es.org/about/#whatwedo>.

The Center for Climate and Energy Solutions. *Last updated December 2022.* <https://www.c2es.org/about/#whatwedo>



In the U.S. Gulf Coast States, it is crucial to implement climate adaptation practices, strategies, and tools to mitigate the region's susceptibility to the consequences of climate change, which encompass rising sea levels, heightened hurricane intensity, and extreme heat. Although there is no one-size-fits-all solution, here are **several noteworthy practices, strategies, and tools** that have demonstrated effectiveness in these Gulf Coast States:

1. **Elevated Buildings and Infrastructure:** Raising buildings, roads, and other critical infrastructure above expected flood levels is a common adaptation strategy in the Gulf Coast. This helps reduce damage during storm surges and flooding.
2. **Floodplain Management and Zoning:** Implementing and enforcing strict floodplain management regulations and zoning codes can help prevent new development in high-risk areas and protect natural flood buffers.
3. **Wetland Restoration and Conservation:** Restoring and conserving wetlands can serve as a natural buffer against storm surges and help improve water quality.
4. **Hurricane Resilient Building Codes:** Updating building codes to incorporate hurricane-resistant construction techniques and materials can make structures more resilient to strong winds and storm damage.
5. **Stormwater Management:** Implementing green infrastructure, like permeable pavements and rain gardens, can help manage stormwater, reduce flooding, and improve water quality.

6. **Early Warning Systems:** Developing and improving early warning systems for hurricanes and flooding can help residents and local authorities prepare for and respond to extreme weather events.
7. **Community Education and Engagement:** Increasing public awareness about climate change risks and the importance of adaptation is crucial. Engaging with the community can foster better preparedness.
8. **Resilient Transportation Networks:** Strengthening transportation networks to withstand extreme weather and ensuring evacuation routes are well-maintained is crucial for public safety.
9. **Climate-Resilient Agriculture:** Implementing adaptive agricultural practices, such as crop diversification and water conservation, can help farmers in the Gulf Coast adapt to changing climate conditions.
10. **Insurance and Risk Mitigation Programs:** Encouraging or mandating flood insurance and creating programs that help property owners mitigate risks can provide financial protection in the event of climate-related damage.
11. **Coastal Erosion Mitigation:** Developing and implementing strategies to combat coastal erosion, such as beach nourishment and dune restoration, can help protect coastal communities.
12. **Climate Adaptation Planning:** Developing comprehensive climate adaptation plans at the city and regional levels that consider long-term climate projections and identify specific vulnerabilities and adaptation measures.
13. **Green and Resilient Infrastructure:** Promoting green building practices, such as green roofs and urban tree canopies, can help reduce heat islands and improve urban resilience.
14. **Data and Technology:** Using advanced technology and data analytics to monitor climate impacts and support decision-making in real-time can be invaluable.
15. **Cross-Sector Collaboration:** Encouraging collaboration between different sectors, including government, academia, private industry, and nonprofits, is crucial for a coordinated and effective approach to climate adaptation.
16. **Investment in Research and Development:** Funding research and development efforts focused on climate resilience and adaptation solutions can lead to innovative tools and technologies.

The success of these practices and strategies may fluctuate based on the unique circumstances and local environment. Climate adaptation within the Gulf Coast States typically necessitates a comprehensive approach, addressing both immediate and long-term measures to safeguard communities and ecosystems from the repercussions of climate change. Moreover, active involvement of local stakeholders, particularly vulnerable and marginalized communities, is imperative to ensure that adaptation endeavors are fair and encompassing.

The NAC hopes that the information provided above highlights the general strategies cities need to implement to adapt to the changing climate.

NAC Response: Charge Question 1: Identifying exemplary cities in North America that serve as examples of successful: Climate governance that advances urban climate adaptation.

CLIMATE ADAPTATION PRACTICES, STRATEGIES, AND TOOLS IN THE STATE OF TEXAS AND THE GULF COAST REGION

Climate adaptation practices, strategies, and tools in the State of Texas are essential to address the various climate-related challenges that the region faces, including extreme heat, drought, hurricanes, and flooding.

Water Management:

- Improve water conservation and efficient use of water resources.
- Implement integrated water management strategies, such as rainwater harvesting and greywater recycling.
- Invest in water infrastructure upgrades to address water scarcity and manage flood risks.

2. Drought Preparedness:

- Develop and implement drought contingency plans.
- Promote the use of drought-resistant crops and efficient irrigation techniques in agriculture.
- Encourage responsible water use and conservation practices.

3. Flood Risk Reduction:

- Invest in floodplain management and early warning systems.
- Enhance floodplain zoning and regulations to minimize development in high-risk areas.
- Implement nature-based solutions like wetland restoration and floodplain reforestation to reduce flood impacts.

4. Heat Resilience:

- Develop urban heat island mitigation strategies, such as increasing green spaces and cool roofs.
- Create cooling centers and public health programs to protect vulnerable populations during extreme heat events.

5. Coastal Resilience:

- Implement coastal erosion control measures and beach nourishment.
- Develop and enforce building codes and land-use regulations in vulnerable coastal areas.
- Utilize living shorelines and oyster reef restoration to enhance natural coastal defenses.

6. Infrastructure Resilience:

- Retrofit critical infrastructure to withstand extreme weather events and flooding.
- Promote decentralized energy systems and microgrids to enhance energy resilience.

7. Emergency Response and Preparedness:

- Enhance disaster preparedness and response plans for hurricanes, floods, and other climate-related events.
- Invest in emergency communication systems and shelters.
- Educate communities on evacuation routes and disaster preparedness.

8. Climate Data and Modeling:

- Utilize climate data and modeling to better understand local climate impacts and plan accordingly.
- Access resources like the Texas Climate Toolkit to gather climate-related information.

9. Community Engagement:

- Involve communities in the development of adaptation strategies and raise awareness about climate risks.
- Establish local climate action plans and sustainability initiatives.

10. Funding and Grants:

- Seek federal and state funding opportunities for climate adaptation projects.
- Access grants and resources from agencies like the Texas Commission on Environmental Quality (TCEQ) and FEMA.

11. Research and Education:

- Support climate research and education institutions in Texas, such as universities and research centers.
- Promote public awareness and education about climate change and adaptation.

It's important to note that climate adaptation efforts should be tailored to the specific needs and challenges of different regions within Texas, as the state's climate impacts can vary significantly. Collaboration between government agencies, local communities, non-profit organizations, and the private sector is crucial for the successful implementation of these strategies.

CITY OF HOUSTON, TX

Climate adaptation practices, strategies, and tools in Houston, TX are crucial to address the

city's vulnerability to extreme weather events, such as hurricanes, flooding, and extreme heat, exacerbated by climate change. Here are approaches and resources that can help mitigate these challenges:

1. Flood Resilience:

- Elevate homes and buildings to reduce flood risks.
- Implement green infrastructure, like permeable pavement and rain gardens, to absorb excess water.
- Invest in improved drainage systems and stormwater management.
- Use floodplain maps and resources from the Federal Emergency Management Agency (FEMA) to understand flood risks.

2. Hurricane Preparedness:

- Develop and regularly update hurricane preparedness plans for families and businesses.
- Stay informed about hurricane forecasts and warnings through local weather services.
- Invest in hurricane-resistant building designs and materials.
- Utilize evacuation plans and shelters during hurricane threats.

3. Heat Resilience:

- Increase tree planting and green spaces to provide shade and cool urban areas.
- Promote cool roof technologies and reflective pavements to reduce heat absorption.
- Create heat action plans to protect vulnerable populations during heatwaves.

4. Water Management:

- Invest in sustainable water management practices like rainwater harvesting and water recycling.
- Promote water conservation through public education and incentives.
- Monitor and maintain water infrastructure to prevent leaks and wastage.

5. Community Engagement:

- Involve local communities in the development of climate adaptation plans.
- Raise awareness about climate change impacts and the importance of adaptation.
- Encourage citizen involvement in initiatives like neighborhood resilience and emergency preparedness.

6. Infrastructure Upgrades:

- Reinforce critical infrastructure (e.g., bridges, roads, and power lines) to withstand extreme weather events.
- Upgrade sewage and wastewater systems to prevent flooding and contamination.
- Enhance transportation systems to ensure accessibility during floods and storms.

7. Data and Monitoring:

- Utilize climate modeling and data from organizations like the National Oceanic and Atmospheric Administration (NOAA) for planning.
- Implement early warning systems for extreme weather events.

- Monitor climate-related trends to adapt strategies as needed.
- 8. Policy and Regulations:**
- Develop and enforce land use and building codes that account for climate resilience.
 - Create incentives for developers to build sustainable, resilient structures.
 - Promote zoning regulations that reduce flood and hurricane risks.
- 9. Collaborative Initiatives:**
- Partner with local, state, and federal government agencies, as well as non-profit organizations and academic institutions, to share knowledge and resources.
 - Collaborate with neighboring regions to address shared climate challenges.
- 10. Grants and Funding:**
- Seek grants and funding opportunities from federal and state sources to support adaptation projects.
 - Allocate resources from municipal budgets to climate adaptation efforts.

Houston continually updates and adapts its strategies in response to changing climate conditions. Community engagement and cross-sector collaboration are essential for effective climate adaptation in the city. Additionally, staying informed about the latest developments and resources in climate adaptation is critical for success.

HOUSTON, TX CITY PLANS AND POLICIES THAT SUPPORT CLIMATE ACTION PLANS:

- Houston Active Living Plan
- Houston Airport System
- Sustainable Management Plan (2018)
- Houston Bike Plan (2017)
- Long-Range Solid Waste Plan
- Plan Houston (2015)
- Resilient Houston (2020)
- Vision Zero Action Plan
- Water Conservation Plan (2019)

POLICIES AND ORDINANCES:

- Anti-Idling Ordinance (2015)
- City Energy Efficiency Policy A.P. No. 7-1 (2011)
- City Transit Corridor Ordinance (2009)
- Green Building Resolution No. 2004-15 (2004)
- Proposed Walkable Places and Transit-Oriented Development Ordinance Amendment (2020)
- Resilient Houston Executive Order No. EO 1-66 (2020)

DALLAS, TEXAS COMPREHENSIVE ENVIRONMENTAL AND CLIMATE ACTION PLAN

The Dallas Comprehensive Environmental and Climate Action Plan (CECAP) is a roadmap developed by the City of Dallas, Texas, and community stakeholders that outlines steps the city can take to reduce its greenhouse gas (GHG) emissions while enhancing climate resilience. The plan provides an overview of the environmental and climate challenges that Dallas faces, recommends actions to improve the environmental quality of the city, build resilience, and reduce greenhouse gas emissions, and identifies funding and partnership opportunities to support plan implementation.

The plan outlines 8 goals (shown below) and 97 corresponding action items that the city aims to achieve in order to reduce GHG emissions, build resilience, and enhance the environmental quality of Dallas:

- Make buildings more energy-efficient and climate resilient.
- Generate and encourage renewable, reliable, and affordable energy.
- Ensure Dallas communities have access to sustainable and affordable transportation options.
- Transform Dallas into a zero-waste community.
- Protect water resources and communities from flooding and drought.
- Protect and enhance the city's ecosystems, trees and green spaces.
- Provide all communities with access to healthy, locally grown and sustainable food.
- Ensure all Dallas communities breathe clean air.

The plan also includes performance targets for each of these goal areas. For example, for the goal of enhancing ecosystems, trees, and green spaces, the plan identifies incremental 2030, 2040, and 2050 targets to: increase citywide tree canopy, decrease urban heat island index, and increase access to parks and trails.

Several action items are focused on adaptation and resilience efforts are integrated into the CECAP. The plan includes action items to establish potential sites for resilience hubs in the city and update existing and new buildings to enhance their climate resilience. The CECAP also includes objectives to encourage residents to plant drought-tolerant vegetation to reduce water consumption for irrigation, complete the implementation of ongoing infrastructure projects that will improve community resilience to flooding, and continue to establish contingency plans to protect vulnerable water facilities from extreme weather events. Other action items that focus on climate resilience and adaptation include the goal to increase green spaces among vulnerable communities to reduce the urban heat island effect and install blue-green infrastructure in communities that are most at-risk of flooding.

The CECAP notes that climate change will not affect all residents equally and aims to prioritize solutions that center equity and help address past environmental injustices. The city focused community engagement efforts during the planning process on reaching communities that historically have not been engaged in planning efforts, particularly in neighborhoods of southern and western Dallas. In the plan development process, each potential action was assessed based on equity considerations (how an action would benefit or burden vulnerable communities) and evaluated based on ability to deliver social equity benefits and other co-benefits. Many of these considerations are identified in the final plan; for example, Action EG4 (which recommends expanded tree planting), highlights the equity consideration that property values might rise as a result of implementation and therefore robust affordability and neighborhood stabilization strategies should be considered to prevent the displacement of existing residents. The CECAP identifies opportunities to prioritize under-invested neighborhoods during the implementation phase through pilot projects or other means.

The goals, action items, and objectives of the CECAP were developed through extensive community engagement. A Stakeholder Advisory Committee (SAC) was convened and included representatives from the public health, environmental justice, education, neighborhood, housing, and businesses sectors. City staff formed an Environmental Planning Task Force to ensure that city departments were meeting to discuss the goals of the plan. Outreach efforts included formal community meetings, over 180 individual meetings with community groups, two surveys, and media campaigns. In addition, staff met with over 6,000 stakeholders and reviewed over 9,000 community suggestions for the plan. Input was received from every zip code in Dallas.

AUSTIN, TEXAS

The state's capital leads the way in local climate action in Texas. In September 2021, the Austin Climate Equity Plan (<https://www.austintexas.gov/page/austin-climate-equity-plan>) committed the city to net-zero community-wide greenhouse gas emissions by 2040, emphasizing reducing emissions by 2030.

The Climate Equity Plan sets goals in five areas: Sustainable buildings, transportation and land use, transportation electrification, food and product consumption, and natural systems. The plan builds on goals and strategies set by the 2015 Austin Community Climate Plan. It strongly emphasizes improving health and quality of life outcomes for people of color as part of the strategies to reduce emissions. The city's Office of Sustainability coordinates the plan's implementation, but specific actions are the responsibility of various city departments. The Office of Sustainability runs the Community Climate Ambassadors Program.

LOUISIANA CLIMATE ACTION PLAN

The people of Louisiana are facing substantial risks due to climate change, and the evidence indicates that these impacts have been worsening and are projected to intensify in the future.

Nevertheless, addressing the fundamental causes of climate change presents an opportunity for Louisiana to capitalize on its existing strengths and maintain competitiveness across various sectors like energy, manufacturing, and maritime transportation, particularly as the world transitions to cleaner energy sources. Taking action to combat climate change also offers the prospect of enhancing the health, equity, and overall quality of life for Louisiana residents, preserving the environment and cultural heritage, and promoting economic growth and diversification, all while providing secure and meaningful employment for the state's workforce.

Governor John Bel Edwards' Climate Initiatives Task Force has unanimously approved Louisiana's inaugural Climate Action Plan. This plan comprises a well-balanced set of recommendations designed to curb the severity of climate change while positioning the state to remain economically competitive in a low-carbon future. The plan, grounded in scientific findings, aligns with the governor's target of achieving net-zero greenhouse gas (GHG) emissions by 2050, in harmony with commitments made under the Paris Agreement, federal government objectives, as well as those of 25 other states and numerous private sector companies.

The Louisiana Climate Action Plan encompasses 28 strategies and 84 specific actions aimed at reducing GHG emissions throughout the state's economy. It was meticulously developed through a bottom-up approach, involving a 15-month process that included 49 public meetings. The Task Force comprises members representing various perspectives, including government, private sector, academia, and environmental and community advocates. Their work was augmented by volunteers from diverse backgrounds who formed six sector committees, each focusing on different aspects of the state's economy, and four advisory groups concentrating on equity, science, legal, and financial considerations.

The Climate Action Plan contains recommendations spanning eight sections:

- Clean Energy Transition
- Industrial Decarbonization
- Actively Managed Methane Emissions
- Transportation, Development, and the Built Environment
- Natural and Working Lands and Wetlands
- An Inclusive, Low-Carbon Economy
- Collaboration and Partnership to Ensure Successful Implementation
- Accountability and Adaptability to Ensure Lasting Success

The web version of the 2022 Louisiana Climate Action Plan can be accessed here: [Climate Action Plan FINAL 3.pdf \(louisiana.gov\)](#)

The web version of the Executive Summary to the Climate Action Plan can be accessed here: [CAPExecutiveSummaryFinalWEB.pdf \(louisiana.gov\)](#)

CITY OF NEW ORLEANS

Located where the Mississippi Delta meets the Gulf of Mexico, New Orleans is arguably more affected by climate change than any other U.S. city, and while it must adapt to these risks, it also shares a responsibility to mitigate its contribution to this growing and increasingly urgent problem.

New Orleans recently adopted its updated Hazard Mitigation Plan in September 2021, which outlines the city's climate and associated infrastructure risks in great detail. For New Orleans, climate change is a current reality. South Louisiana is already facing many challenges caused or worsened by climate change due to its unique geography.

Sea level rise and a projected increase in the intensity of weather events are expected to accelerate coastal land loss—increasing storm surge exposure while adding greater stresses to the levee and flood protection systems.

Climate change is projected to cause greater intensity in storm events, including hurricanes and severe storms, that can cause flood and wind damage. Flooding due to intense rainfall and the limited capacity of pipes and pumps causes direct damage to roadways, homes, businesses, and infrastructure, and can hamper both emergency response and recovery efforts. As the city's soft soils become saturated and the drainage network reaches capacity during severe storms, the interdependencies of the City's utilities mean that effects can spread across multiple systems. More extreme heat episodes will directly threaten the health of residents and the reliability of infrastructure systems that supply us with energy and water. The record heat New Orleans has experienced over the past few years causes higher concentrations of air pollutants and greater amounts of ozone in urban areas and accelerates the spread of allergens, exacerbating respiratory illnesses and allergy problems alongside the increased threat of heat stroke. A study from Climate Central further showed that some areas of the city act as "heat islands", sometimes up to eight degrees hotter than other areas of the city due to a lack of green space and shade. In addition, a sustained warmer climate also increases the risk of vector-borne diseases such as malaria, dengue fever and Zika virus.

For New Orleans, climate change is not a future scenario, but a current reality. The environment of South Louisiana is changing rapidly, from its eroding coastal marshes to subsiding land in the urban neighborhoods. Sea level rise and a projected increase in the intensity of weather events are expected to accelerate coastal land loss—increasing storm and surge exposure while adding greater stresses to its levee and flood protection systems.

Adaptation

In order to be responsive to the changing environment, the City of New Orleans is preparing for climate change impacts including sea level rise and more intense storms with a multiple lines of defense approach:

- advancing coastal protection and restoration
- investing in comprehensive and innovative urban water management
- incentivizing property owners to invest in risk reduction
-

The city is now better prepared for the threat of storm surge than ever before with a massive hurricane risk reduction levee and surge barrier system surrounding much of New Orleans. This \$14.5 billion federal investment, which also includes improvements to drainage pumping stations, and outfall canals, has already served to lower modeled flood risk from major storms and reduce insurance premiums across the city.

However, infrastructure alone does not define major storm readiness for the city. Integral to preparedness in New Orleans is an efficient evacuation system. The City of New Orleans has established a city assisted Evacuation (CAE) system to offer help to those who cannot otherwise leave the city during a mandatory evacuation order and works with partners such as the non-profit Evacuteer. Evacuteer.org recruits, trains and manages evacuation volunteers to assist with New Orleans's City Assisted Evacuation Plan (CAEP).

New Orleans has worked to implement many of the “non-structural” elements of the Louisiana Coastal Master Plan, including home elevations and building code improvements to better prepare its built environment for the threats of an uncertain future.

The city is aware that the adaptation must be both physical and behavioral and that we must create a culture of environmental awareness at every stage of life. We are also preparing for the risks of the future—improving the redundancy and reliability of its energy infrastructure, investing in pre-disaster planning for post-disaster recovery, and developing the preparedness of its businesses and neighborhoods. These adaptation actions will help the city survive, and even thrive, in the face of climate change.

The continent’s largest river, its deltaic plain, and the coastal wetlands tie the greater New Orleans region together physically and economically. A future healthy coast is critical to the economic infrastructure of the country: 25% of U.S. waterborne exports are shipped through Louisiana’s five major ports. To protect the coast and the vital economic and environmental benefits it yields, New Orleans is working with the State of Louisiana’s Coastal Master Plan to address accelerating rates of coastal land loss, with which come a loss of critical hurricane and storm buffers.

New Orleans is also building upon the research and vision of the Greater New Orleans Urban Water Plan, which offers a comprehensive approach for adapting urban areas throughout the region to live with water. The city is now embarking on an ambitious green infrastructure implementation program that focuses on adapting current systems to retain water as an asset in the landscape, increase safety, beautify neighborhoods, filter pollutants, and provide spaces and places for recreation and social gathering. The city’s adaptation efforts are also focused on its ability to be prepared for future crises, so plans include the addition of redundancy and reliability improvements to the electric grid, and the development of microgrids and backup power for its

most critical assets, including water and pumping infrastructure.

Climate Action

Climate Action for a Resilient New Orleans 50% by 2030: outlines its commitment to slowing climate change with actions to reduce local greenhouse gas pollution. As the city mitigates its own contribution to climate change, it is also taking direct action locally to battle its most existential threat to the city: catastrophic sea level rise.

Many of the actions the city takes to adapt to climate change also serve to reduce the greenhouse gas pollution and may provide other social and quality of life benefits such as connecting the communities, improving the utility services, or upgrading the infrastructure.

The City's green infrastructure implementation program is ambitious because it does not seek to achieve only one benefit. Green infrastructure, including new tree plantings, water storage, and green spaces, helps to manage water, but it also reduces the effects of the urban heat island effect—cooling down hotspots. In addition, trees and green infrastructure also have the ability to capture and store carbon emissions, which helps mitigate the contribution to climate change. Even greater carbon sequestration benefits will likely be achieved through the coordinated and comprehensive restoration of coastal marshes.

Improving the efficiency and reliability of the electric grid improves the preparedness, but also can reduce the amount of effort it takes to power the homes and businesses—reducing the GHG pollution along the way. The transition of the power to renewable electricity such as solar panels, and distributed energy such as fuel cells and combined heat and power, along with ancillary technologies such as battery storage and microgrids, can make the energy supply more resilient in the event of crisis while reducing the overall GHG pollution during steady state operations. New Orleans' waste management contributes significant GHG pollution to the atmosphere, so reducing the amount of waste generated and increasing the reuse of materials will ultimately reduce the contributions to climate change.

Transportation is critical to almost every aspect of urban living, so improving the efficiency, reliability, and accessibility of the transportation infrastructure—and making it easy to choose forms of travel other than cars—will improve conduits for economic and community development, while reducing the large amount of pollution. The climate action has resilience value. Urban resilience is an expansive vision of the capacity of individuals, communities, institutions, businesses, and systems to survive, adapt, and grow despite the chronic stresses and acute shocks we experience. Climate change is certainly one catalyst for both chronic stresses and shocks, and the community also suffers from many other chronic stresses including poverty, unemployment, and violence, as well as systemic racial inequity. Taking action on climate can help address some of those stresses with the opportunity to alleviate poverty and unemployment while improving neighborhoods and community connections. How New Orleans takes action on climate change can also help address racial inequity in the community and support the population's resilience. The city commits to prioritizing equity in the implementation of this

strategy and will work with neighborhood leaders and community organizations to foster coordinated action from which we all can benefit. For example, New Orleans is developing initiatives to support low- and moderate-income families going solar and exploring ways community organizations can support solar installation and job-development programs. The city also has a focus on making transit more useful for city residents who do not have cars and making the community bicycle-share program accessible to low-income workers.

Resilience is rooted in the knowledge that the future is uncertain, which means actions today are critical. If the city implements the actions outlined in its strategy, it will reduce its contribution to climate change, reduce its dependence on fossil fuels, reduce waste, increase the options for active transit, increase jobs in the community from low-carbon technologies, increase the city's competitiveness, improve the air quality, and better the overall quality of life.

Greenhouse Gas Emissions

In 2014, the city conducted a baseline inventory using the Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC) and recently, it worked with Climate Action for Urban Sustainability (CURB), a tool developed by C40, the World Bank, and AECOM. A data-driven scenario planning tool designed to assist cities in pursuing climate action across their energy, buildings, transport, waste and water systems to evaluate proposed actions and estimate how they will help meet the C40 goal of 50% reduction by 2030. If New Orleans does nothing to address this pollution, it will have an estimated 4.3 million metric tons of pollution by 2035, while with its goal of 50% reduction below 2014 levels, it is aiming to have about 1.8 million. This goal is ambitious and achievable. In addition to the community-wide inventory, the city evaluated its own carbon footprint and continues to explore ways to reduce the climate change impact of the municipal operations.

Save energy and understand use.

The city has been benchmarking its energy consumption at high-use facilities and is currently piloting efficiency improvements and providing education for facility managers for new and recently retrofitted buildings. Using funds provided by the American Recovery and Reinvestment Act, the City converted more than 75% of the streetlights to energy-efficient light-emitting diodes (LEDs). In 2018, we will continue to benchmark buildings, expand energy efficiency improvements and more comprehensive energy management, and explore a shared savings program for City departments to invest in energy efficiency and make savings part of their operations.

Build capacity in City staff

The City will hire management and staff to centralize coordination of City energy investments, reduce energy expenses, and work with City Council to support the City's regulation of utilities as directed by the City Charter and City Code. This staff will also explore development of energy projects to increase the City's efficient use of energy and reduce its greenhouse gas emissions.

Facility managers will be trained in energy management and energy-efficient operations of buildings and facilities will be a performance requirement of those positions.

Explore ways to make water operations less energy-intensive

The City's water delivery and drainage operations currently comprise the single largest source of emissions for municipal operations. Since most of the city is at or below sea level, we rely on 24 drainage pumping stations and 13 underpass stations to pump and discharge rainwater over the levee systems to keep the city from experiencing major flooding. These operations rely heavily on energy to operate the extensive pumping system. The Sewerage and Water Board of New Orleans (SWBNO) has already begun to explore making operations more efficient and will make increased use of green infrastructure and more efficient energy technologies.

Determine feasibility of distributed generation and waste to energy

City facilities provide a significant opportunity to incorporate distributed energy generation with the installation of technologies such as rooftop solar, combined heat and power, and fuel cells. The city's vacant properties may hold even more renewable energy generation potential. We will explore the potential of solar and other distributed generation on City property and consider ways to capture methane and potentially create renewable gas at waste and wastewater treatment facilities.

Improve fuel efficiency of city fleet

The City's fleet is sizeable and aging and has a significant impact on the GHG pollution. To reduce costs and improve efficiency, the city has already initiated development of a fleet management plan and will complete it by 2018. The plan will include comprehensive data collection to maximize efficiency and cost-savings and reduce fuel consumption. As part of the plan, the city will identify and execute an alternative fuels strategy and will reduce idle time and emissions through behavior changes and idle reduction technologies. Several departments, such as the NOPD and EMS, use a substantial amount of diesel fuel or gasoline by idling, and EMS is testing an idling reduction initiative in 2017.

Implement recycling in City buildings

The City of New Orleans is working on increasing recycling in its own operations. By 2018, we will institute recycling pick-up at all City facilities and measure departments against the recycling targets. We will aim to recycle 30% of the waste by 2020, 40% by 2025, and 50% by 2030. Implement sustainable contracting and procurement policies by 2019, the City will develop climate action compliance guidelines for its own contracting. The City relies on multiple contracts with outside agencies in order to perform essential public services. We will identify opportunities for energy, fuel, and waste efficiency through the development of evaluative criteria and bid requirements for prospective vendors, contractors, and service providers and will include these directives in solicitations upon their approval by 2019. The City has already included these practices in some instances, including an alternative fuels requirement in sanitation contracts for residential and small business waste and recycling.

Modernize the City's Energy Use

By investing in energy efficiency, New Orleans can lower customer bills, make its properties more valuable, make the city more resilient, and reduce the need to add new power generation. We can hold the buildings to standards of performance like cars and appliances, reducing their pollution and making them more comfortable, valuable, and healthier at the same time. Nuclear power, which accounts for nearly 60% of New Orleans' energy supply, has one of the lowest carbon impacts. Sustained energy savings via energy efficiency can be considered a zero-emission power source. Waste-to-energy emissions vary by technology used.

Strategies

- Reduce the reliance on carbon intensive fuels
- Save energy and make the savings a sustainable resource
- Increase resilience of the energy, water, and sewer infrastructure

FLORIDA EMISSIONS REDUCTIONS APPROACHES

APPROACH 1: BENCHMARK, RETUNE, AND RETROFIT EXISTING BUILDINGS:

According to the 2019 Census, out of the 1.3 million housing units in Miami-Dade County, 82% were built before 2000, which is before the Florida Building Code entered into force in 2002. This means that the existing housing stock offers tremendous opportunities for energy efficiency and energy savings. Given South Florida's hot and humid climate, the building envelope and cooling systems are the main areas of interest. There are three strategies to enhance building performance and tackle energy waste: benchmarking, retuning or retro-commissioning, and comprehensive retrofits.

A healthy and efficient building is especially critical for those experiencing a high energy burden and sub-par housing structures.

Objectives:

- Benchmark 1.3 billion square feet communitywide by 2026
- Retune 100.7 million square feet of County buildings by 2030 Targets
- Conduct deep retrofits communitywide to save 48 million kWh by 2030

Co-Benefits

- Create jobs
- Save money
- Lower energy burden
- Clean air
- Improve health
- Storm and energy resilience

Actions

Present to the Board of County Commissioners the Building Performance Ordinance to benchmark and retune and retune large existing buildings (43% of built space) countywide. Conduct deep retrofits of buildings communitywide, with a focus on Low and Middle Income (LMI) housing.

APPROACH 2: Expand On-Site and Off-Site Renewable Energy Generation

In 2020 Florida is ranked 3rd nationally for solar installed capacity and most of the growth in solar installation is due to utility investments in clean energy. Current options for the community to source renewable energy locally are through FPL's Solar Together Program, solar cooperatives, solar leasing, or independently installing solar systems at buildings. Solar installations will have to dramatically increase to meet buildings' energy needs.

Objectives

- Install 61,725 kW of solar energy by 2030 on County buildings equivalent to 12,200 homes' electricity use for one year
- Install 722,000 kW of solar energy by 2030 on commercial buildings equivalent to 94,600 homes' electricity use for one year
- Install 134,000 kW of solar energy by 2030 on residential buildings equivalent to 26,500 homes' electricity use for one year

Co-Benefits

- Grow the economy
- Create jobs
- Save money
- Lower energy burden
- Storm and energy resilience
- Clean air

Actions

- Install solar on as many County buildings, open lands, and lakes as possible
- Support installation of 850,000 kW of solar on private homes and businesses

APPROACH 3: Build Ultra-Low Energy Buildings

New construction built today will last several decades. Since 2010, in Miami-Dade County, an average of 10.5 million square feet of floor space was added while the average increased to 13.9 million square feet from 2015 to 2019. Thus, incorporating energy efficiency in the design phase is essential to lock in energy savings from year one. Although retrofits are possible, it is cheaper to design structures that have energy conservation features holistically integrated into the building where all the various building systems work in synergy. Extremely efficient structures are called Ultra-Low Energy (ULE) or Zero Energy Buildings (ZEB). New construction has to transition towards ULE or ZEB standards by 2030.

Objective

- Reduce the energy use intensity of new buildings 20% by 2030 below 2020 levels

Co-Benefits

- Save money
- Lower energy burden
- Clean air
- Improve health
- Storm and energy resilience
- Reduce heat

Actions

- Have 50% of new buildings meet Ultra-Low Energy performance goals by 2030

CHARGE QUESTION 1 – BULLET 2: Identifying exemplary cities in North America that serve as examples of successful: Employment of nature-based solutions that increases community resilience

U.S. CITIES THAT EMPLOY NATURE-BASED SOLUTIONS THAT INCREASES COMMUNITY RESILIENCE

Several cities in the United States have embraced nature-based solutions to bolster community resilience. Here are a few notable examples:

<https://resilientcitiesnetwork.org/member-cities/>

1. **New York City, New York:** NYC has implemented green infrastructure initiatives, including the use of green roofs, bioswales, and park enhancements like Brooklyn Bridge Park, to manage stormwater, reduce flooding, and enhance community resilience against climate change impacts.

Initiative 1: Adapt the region's infrastructure system

- The city commits to repairing critical infrastructure systems damaged or destroyed by Hurricane Sandy, while mitigating future climate risks through billions of dollars in funds from FEMA's public assistance grant program. The city is providing a required local match of funds to secure these resources.
- Working with other regional partners, the city will invest in the resiliency of its transportation infrastructure, including ferries, tunnels, movable bridges, traffic signals, and streets, through the elevation or dry-proofing of facilities and systems, the hardening of conduits, enhanced continuity of operations planning, and mitigation strategies, such as hardening of street ends and green infrastructure for storm water management.
- The city will work to ensure the resiliency of its freight network in the face of climate change by hardening its ports, rail, staging areas, and warehouses. The city is undertaking planning exercises to identify vulnerabilities to the freight network, improve redundancy, and provide resiliency strategies for at-risk infrastructure through partnerships with City agencies and the private sector.
- The city is planning for green infrastructure installations across the five boroughs, including bioswales, rain gardens, permeable pavement, and green roofs to reduce the amount of stormwater entering the sewer system, thus helping to keep the sewers from exceeding their capacity. The city is also investing in the resiliency of its wastewater treatment plants and pumping stations by implementing measures such as elevating and flood-proofing equipment, constructing barriers, and installing backup power supplies to ensure continued service in the event of a major storm.
- Upstate reservoir dams are critical to the City's drinking water sources. Given the increased variability in the frequency and magnitude of storms associated with climate change, DEP will go beyond the level of protection currently required by New York State. This guidance requires existing dams to be capable of safely passing half of the probable

maximum flood, a standard already meet. Beyond these requirements, we will commit to ensuring the dams safely pass the full probable maximum flood when capital improvements are done. Finally, while the science suggests New York City's upstate water supply watersheds will experience increased precipitation due to climate change, we are also preparing for the risk of the opposite extreme: drought. The City commits to protecting its freshwater resources, managing demand, increasing infrastructure investments for greater flexibility, and maintaining a steady supply of water during all weather conditions.

- The City's ability to function during a disaster depends on a resilient information technology infrastructure that keeps critical agency applications running, data accessible and secure, and telecommunications networks operating. The city will do so by populating its backup data center with replication and backup of critical applications and incorporate this data center into its continuity of operations plans for city agencies. It will also continue hardening network and infrastructure assets to withstand both storm-related power outages and power grid outages and strengthen the City's support of mission-critical operations for first responders and essential city services.
- The city will develop strategies to promote and enforce resiliency for telecommunications providers through the franchise renewal process and other agreements with the City. DoITT's newly created Telecommunications Planning and Resiliency Office is facilitating an ongoing dialogue with telecommunications providers to discuss resiliency initiatives and address barriers to implementation.
- The city will also work with wireless carriers to ensure cell sites and networks are hardened and resilient. In some cases, technology upgrades made at cell sites have improved battery backup time (e.g., newer equipment does not draw as much power). We also helped facilitate discussions between one wireless carrier and the Fire Department of New York City that ultimately lead to approval of an alternate fuel source option for backup power. The carrier plans to deploy at least two of these units in New York City. And we have also advocated for strong backup power requirements in proceedings before the Federal Communications Commission. Further, LinkNYC will increase access to affordable broadband through a network of public Wi-Fi and is a model for incorporating resiliency requirements into franchise agreements, ranging from enhancing cyber-security to submitting an annual resiliency plan.
- The city will proceed with the retrofit of critical buildings, such as healthcare, hospitals, and long-term care facilities, and other critical municipal assets for long-term resiliency and to help the critical buildings withstand the risks posed by climate change. The city has secured nearly \$1.7 billion from FEMA to execute a comprehensive resiliency program across four HHC facilities: Bellevue Hospital, Coney Island Hospital, Metropolitan Hospital, and Coler Rehabilitation and Nursing Care Center. Resiliency upgrades to these facilities will include the installation of backup power systems, the elevation and hardening of building systems, and floodproofing of lower levels. The city is also working to secure funds from FEMA's Hazard Mitigation Grant Program for the resiliency of long-term care facilities located in the 100-year floodplain.

Initiative 2: Adopt policies to support infrastructure adaptation

- The city will use the best available climate science, as well as robust research, legislative action, advocacy, and regional coordination to adapt the city's infrastructure to be resilient against disruption. It is critical to standardize the process by developing and implementing a set of design guidelines for resiliency to ensure what we build adheres to the highest performance standards. By 2018, we aim to have all New York City agencies adopt standardized resiliency design guidelines for streets, transportation, public spaces, utilities, and other infrastructure.
- The city will call on regional infrastructure providers and operators, such as the MTA, PANYNJ, ConEdison, National Grid, LIPA, and Verizon to make critical resiliency investments in their systems, coordinated through the Climate Change Adaptation Task Force.
- The city will explore, with the State and academic partners, the preparation of a Regional Resiliency Assessment Program with the U.S. Department of Homeland Security. NYC Vision 4 One New York: The Plan for a Strong and Just City Security on the resiliency of the City's supply chain for critical commodities such as food, fuels, materials, and consumer goods. NYC EM and Department of Citywide Administrative Services are in development of operational response strategies to address possible fuel disruptions to New York City. In order to prevent and prepare for such disruptions, these agencies and the Mayor's Office are working in partnership with the Columbia University SIPA Center on Global Energy Policy, as well as state, federal, and private sector partners to develop a liquid fuels resiliency strategy. This may include standardized regulatory waivers, communications protocols, fuel reserves, and hardening of assets for the refinement, storage, and delivery of fuels.
- The City will also conduct an analysis and develop recommendations to enhance the resiliency of the city's food supply chain, which is expected to support further investments at the Hunts Point Food Distribution Center beyond the funds that have already been identified through HUD's Rebuild by Design competition.
- Over the next ten years, the city will strengthen its coastal defenses by completing many vital projects in all five boroughs, including:
 - An integrated flood protection system for the east side of Manhattan and in Lower Manhattan south of Montgomery Street to the northern end of Battery Park City
 - Armored levee and stormwater management on the East Shore of Staten Island, in partnership with USACE
 - Investments on the Rockaway peninsula beaches and in Jamaica Bay, as part of the USACE Rockaway Reformulation, plus further investments in Breezy Point
 - An integrated flood protection system in Red Hook, in partnership with the State
 - Coastal and energy resiliency improvements in Hunts Point to protect the city's food distribution center from flooding and power loss

- Investments to improve low-lying shorelines across the city, including in Coney Island and the South Shore of Staten Island
- Nature-based measures in Jamaica Bay, such as those at Sunset Cove in Broad Channel and Spring Creek in Howard Beach

Other Cities of Interest

2. **Philadelphia, Pennsylvania:** Philadelphia's Green City, Clean Waters program utilizes nature-based solutions like rain gardens, permeable pavement, and tree plantings to manage stormwater, reduce pollution, and improve the city's overall resilience.
3. **San Francisco, California:** The city has integrated various nature-based solutions, such as the "Living Shorelines" project in areas like Crissy Field, to protect against sea-level rise and enhance coastal resilience while preserving natural habitats.
4. **Portland, Oregon:** Portland's emphasis on green infrastructure, including bioswales, eco-roofs, and urban forests, has aimed to manage stormwater, reduce the urban heat island effect, and improve overall community resilience.
5. **Chicago, Illinois:** The city has invested in green initiatives like the Chicago Riverwalk and Millennium Park, incorporating green spaces and sustainable design to enhance community resilience, manage stormwater, and provide recreational areas.
6. **Seattle, Washington:** Seattle's focus on green infrastructure, such as rain gardens, permeable pavement, and restored natural habitats, aims to manage stormwater, prevent pollution, and increase community resilience against climate-related challenges.
7. **Toronto:** The city focuses on energy-efficient buildings and infrastructure resilience, making it a notable example in North America. Initiative: TransformTO, aims at reducing emissions and adapting the city to the changing climate.

CHARGE QUESTION 1 – BULLET 3: Identifying exemplary cities in North America that serve as examples of successful: Environmental justice solutions and community engagement processes

ENVIRONMENTAL JUSTICE SOLUTIONS AND COMMUNITY ENGAGEMENT PROCESSES

Chicago: addresses environmental justice through community-focused programs.

Detroit: grassroots and community-led environmental justice movements. Initiatives: include urban agriculture and air quality improvement.

National Advisory Committee
(NAC) to the U.S. Representative to the
Commission for Environmental Cooperation (CEC)

Advice 2024-2 (January 10, 2024)

Question #2 - Identify cities ready (or able) to develop climate adaptation plans and that would benefit from guidance by cities that have implemented advanced climate adaptation initiatives.

By facilitating knowledge exchange and collaboration between U.S. cities and that have successfully implemented advanced climate adaptation initiatives there is an opportunity to tailor strategies and approaches to address specific regional climate challenges effectively.

City Needing Guidance	Pairing City for Learning	Topic of Guidance
Baltimore	New York or San Francisco	Comprehensive climate adaptation strategies
New Orleans	Toronto	Climate adaptation planning
Houston, Texas	Vancouver	Robust climate adaptation planning
Phoenix	Cities with sustainable water management and urban cooling strategies	Water scarcity and extreme heat management
Miami	Cities with successful sea-level rise action plans and coastal resilience strategies	Sea-level rise and coastal flooding
Atlanta	Cities with effective urban heat island and green infrastructure strategies	Urban heat islands and green infrastructure
Montreal	Cities with advanced climate action plans	Sustainable urban planning and community resilience
Albuquerque	Cities with similar arid climate and water resource challenges	Sustainable water management and climate adaptation

a. Providing examples of good practices for coordinating city pairs programs to obtain the best results.

City Pair	Focus of Collaboration
San Francisco, USA - Barcelona, Spain	Technology and innovation, smart city development, urban sustainability, digital transformation
Copenhagen, Denmark - Melbourne, Australia	Sustainable urban development, climate resilience, green infrastructure, cycling-friendly city planning
Hamburg, Germany - Chicago, USA	Sustainable urban development, green building practices, renewable energy utilization
Amsterdam, Netherlands - Boston, USA	Urban innovation, water management, climate adaptation, smart city technologies
Singapore - Stockholm, Sweden	Sustainable urban planning, public transportation, environmental management
Portland, USA - Curitiba, Brazil	Sustainable transportation and urban planning, public transit systems, green spaces
Vancouver, Canada - Yokohama, Japan	Green energy and sustainability, reducing carbon emissions, clean energy
Seoul, South Korea - Bogotá, Colombia	Urban renewal and transportation, public transit systems, urban regeneration projects
Rotterdam, Netherlands - New Orleans, USA	Water management and flood protection strategies
Bristol, UK - Guangzhou, China	Economic development, urban regeneration, cultural exchange programs

Cities along the U.S. Gulf Coast face specific climate challenges, including sea-level rise, increased storm intensity, and coastal erosion. Some Gulf Coast cities that might be ready to develop climate adaptation plans and could benefit from guidance from other U.S. cities with advanced initiatives include:

Houston, Texas and New Orleans, Louisiana: *Mobile, AL, Galveston, TX, Corpus Christi, TX, Florida coastal cities (e.g., Pensacola, FL, Tampa/St. Petersburg, FL, Miami, FL, etc.), as well as coastal cities in Mississippi and Georgia* could benefit from guidance from New Orleans and Houston due to their vulnerability to hurricanes, flooding, potential sea level rise and subsidence issues. They could also offer insights into managing similar risks. Each Gulf Coast city faces unique

climate-related risks and learning from other cities that have successfully addressed similar challenges can be instrumental in developing tailored and effective climate adaptation plans. Collaboration and knowledge-sharing among these cities can significantly enhance their resilience to climate change impacts.

Several U.S. cities dealing with challenges related to heat, drought, and storms might be ready to develop climate adaptation plans and could benefit from guidance provided by other cities in the U.S. that have implemented advanced initiatives in these areas:

1. **Denver, Colorado:** Facing issues related to drought and water scarcity, Denver could benefit from guidance provided by cities like Los Angeles or Las Vegas, which have implemented innovative water conservation measures and drought resilience strategies in arid environments.
2. **Phoenix, Arizona:** Known for extreme heat and water scarcity, Phoenix could seek guidance from cities like Los Angeles or Miami, which have implemented heat mitigation strategies, urban cooling initiatives, and measures to address water shortages.
3. **Atlanta, Georgia:** Dealing with heatwaves, occasional droughts, and storms, Atlanta could seek insights from cities like Portland, Oregon, or Chicago, which have implemented strategies for urban heat island mitigation, green infrastructure, and climate-resilient urban planning.
4. **Los Angeles, California:** Facing heatwaves, water scarcity, and wildfires, Los Angeles could benefit from guidance provided by cities like San Francisco which have implemented comprehensive plans for heat resilience, water conservation, and wildfire preparedness. The intensifying impacts of a changing climate are irrefutable: increasing heat waves, worsening drought, and regional wildfires that blanket the city in smoke are becoming more commonplace. At the same time, racial, social, and economic inequalities have also become more severe and pronounced. Tackling the interwoven and widening climate, equity, and racial justice challenges we face has been the driving force for the development of it's Climate Action Plan.

National Advisory Committee
(NAC) to the U.S. Representative to the
Commission for Environmental Cooperation (CEC)

Advice 2024-3 (January 10, 2024)

Question #3: Provide examples of good practices for coordinating city pairs programs to obtain the best results.

Coordinating city pairs programs focused on climate adaptation involves aligning efforts between two cities to share knowledge, resources, and strategies. Here are some good practices for effective coordination:

1. **Establish Clear Objectives:** Define specific, measurable, and achievable goals for the city pair program related to climate adaptation. Both cities should agree on common objectives, ensuring mutual benefit and a shared vision.
2. **Regular Communication and Collaboration:** Maintain open and frequent communication channels between the two cities. This could include regular meetings, video conferences, and online platforms for sharing updates, progress, challenges, and best practices.
3. **Knowledge Exchange and Learning:** Facilitate exchanges of knowledge, experiences, and best practices between the cities. This could involve study tours, workshops, joint research projects, and the exchange of experts to learn from each other's successes and failures.
4. **Data and Information Sharing:** Create mechanisms for sharing relevant data, research findings, and information related to climate risks, vulnerabilities, and adaptation strategies. Shared access to information helps in jointly assessing risks and designing effective adaptation measures.
5. **Joint Planning and Strategy Development:** Collaborate on developing joint climate adaptation plans and strategies. Identify areas of common concern and develop coordinated approaches that leverage the strengths of each city while addressing shared challenges.
6. **Resource Mobilization and Funding Collaboration:** Explore opportunities for joint funding applications, resource pooling, and leveraging each other's strengths to access funding streams specifically aimed at climate adaptation initiatives.
7. **Technology Transfer and Innovation:** Facilitate the transfer of technology and innovative solutions between the cities. This could involve sharing technological advancements, innovative practices, and solutions that have proved successful in addressing climate-related challenges.
8. **Engagement of Stakeholders and Communities:** Involve local stakeholders and communities in both cities in the planning and implementation process. Engaging residents fosters ownership, encourages participation, and ensures that adaptation strategies are inclusive and relevant.
9. **Evaluation and Monitoring:** Establish mechanisms for monitoring and evaluating the progress of joint initiatives. Regular assessments help in identifying successes, challenges,

and areas that require adjustments or additional support.

10. **Documentation and Knowledge Management:** Document the entire process, including lessons learned, best practices, and challenges faced. This documentation serves as a valuable resource for future collaborations and for other cities seeking similar partnerships.
11. **Commitment to Long-Term Collaboration:** Ensure a long-term commitment to collaboration beyond short-term projects. Building enduring relationships between the cities fosters continuous learning, adaptation, and sustained progress in climate adaptation efforts.

By following these practices, city pairs can effectively collaborate on climate adaptation, maximizing their impact and contributing to a more resilient future.

National Advisory Committee
(NAC) to the U.S. Representative to the
Commission for Environmental Cooperation (CEC)

Advice 2024-4 (January 10, 2024)

Question #4: Provide examples of funding mechanisms that cities can access to support climate adaptation actions.

Cities have various funding mechanisms available to support climate adaptation actions. Here are some examples:

1. **Grants and Funding Programs:** Federal and state governments, international organizations, and non-profits offer grants specifically for climate adaptation projects. For instance, <https://texas.grantwatch.com/cat/60/climate-change-grants.html>.
2. **Public-Private Partnerships (PPPs):** PPPs potentially provide a useful framework under which the public and private sectors can pool and coordinate their financial and technological resources more efficiently. Collaborations between city governments and private companies can be beneficial. Cities can partner with businesses to fund and implement climate adaptation projects. These partnerships often bring together resources, expertise, and funding.
3. **Municipal Bonds:** Cities can issue bonds to raise funds for climate adaptation projects. Green bonds are designed specifically for environmental projects, including those focused on climate resilience and adaptation.
4. **Climate Funds and Special Financing Mechanisms:** Some regions have established dedicated climate funds or special financing mechanisms aimed at supporting climate-related initiatives. These funds often involve contributions from multiple stakeholders and specifically earmarked for climate adaptation and resilience.
5. **International Assistance and Development Funds:** Cities in developing countries can access funds provided by international development organizations and foreign aid to support climate adaptation efforts. Programs like the UN's Sustainable Development Goals (SDGs) or bilateral aid from other countries often include provisions for climate resilience.
6. **Insurance and Risk Transfer Mechanisms:** Cities can invest in insurance or risk transfer mechanisms to manage climate-related risks. This might involve catastrophe bonds or insurance products that provide coverage against extreme weather events or other climate-related damages.
7. **Crowdfunding and Community Initiatives:** Some cities leverage crowdfunding platforms or community-led initiatives to raise funds for climate adaptation projects. This approach often involves engaging local residents and businesses in contributing to and supporting these initiatives.

8. **Revenue Generating Projects:** Cities can create revenue-generating projects that also serve climate adaptation purposes. For example, a city might invest in renewable energy infrastructure, which not only helps mitigate climate change but also generates revenue through energy sales or savings.
9. **Carbon Markets and Offsets:** There are a number of key areas of local government competencies that city officials may want to target when implementing carbon trading projects; including town and urban planning, infrastructure development, service provision, waste management, energy provisioning and transportation. It is the objective of this tool to provide environmental, planning and development officials at the local government level with clear guidance on how to develop Clean Development Mechanism and Verified Emission Reduction projects. Participation in carbon markets can generate revenue for cities engaged in climate adaptation actions. Selling carbon credits or participating in offset programs can provide financial resources to fund adaptation efforts.
10. **Government Budget Allocations:** Lastly, the federal government, states and cities can allocate funds from their own budgets toward climate adaptation. Prioritizing climate-resilient infrastructure and initiatives within municipal budgets demonstrates a commitment to adaptation.

Each funding mechanism comes with its own advantages, challenges, and eligibility criteria. Often, a combination of these approaches are used to fund comprehensive climate adaptation plans in cities.

National Institute of Food and Agriculture

Rapidly changing climate is one of the most pressing issues facing farmers, ranchers, landowners, households, and communities.

- Temperatures and drought extremes are recorded nearly every year, which stress crop and livestock systems and make them more susceptible to devastating infestations of native and non-native insects and diseases.
- Devastating wildfires are occurring more frequently and with greater intensity.
- Communities are challenged to maintain adequate and safe food systems while climate change threatens existing supply chains.
- Demands for bio-based and other renewable, non-fossil-based fuels are increasing; and
- Agriculture and forestry systems are increasingly looked to for solutions to reduce greenhouse gas emissions and draw carbon dioxide out of the atmosphere.

To address these climate change challenges, individuals, families and communities need the best available science to plan for and implement climate-smart and resilient practices. Two critically important approaches to managing for climate resilience are adaptation and mitigation. These strategies are inter-related and must be pursued simultaneously as both can potentially improve resilience to the changing climate.

NIFA-funded adaptation science aims to reduce the impact of climate variability and change on the stability and productivity of agriculture and forest ecosystems. Climate adaptation science provides producers and managers the best available science to support decision-making to maintain economic viability and sustainability.

NIFA-funded mitigation science is directed toward reducing atmospheric greenhouse gas emissions from agriculture and forest production. Mitigation practices can include sequestering carbon as well as reducing greenhouse gas emissions. By optimizing greenhouse gas mitigation on the nation's working lands, producers may benefit from carbon and other ecosystem service markets.

Examples of NIFA Climate Change Programs

Capacity Grant Programs: These programs provide funding to eligible land-grant and other institutions on a non-competitive basis to support research and extension programs in the agricultural, food, and natural resource sciences as identified by state and local stakeholders.

- [Hatch Act of 1887 \(Multistate Research\)](#) – Multistate teams from state agricultural experiment stations use these funds to support food and agricultural research programs, including many related to climate change, to generate multifaceted solutions to problems.
- [Hatch Act of 1887 \(Regular Research\)](#) – These funds are provided to state agricultural experiment stations to support in-state food and agricultural research activities, including climate science.
- [Evans-Allen Capacity Grant \(Research\)](#) – These funds support food and agricultural research, including climate science, at the 1890 Land-grant Institutions.
- [Smith-Lever Act Capacity Grant \(Extension\)](#) – This program provides funding to the 1862 land-grant universities to conduct Cooperative Extension programs addressing critical issues identified by stakeholders.
- [Renewable Resources Extension Act Capacity Grant](#) – Distributed among 73 land-grant institutions, these funds support expanded programs in forest and rangeland resources.
- [Agricultural Extension Programs at 1890 Institutions](#) – These funds support agricultural and forestry extension activities at 1890 Land-Grant Universities, including Tuskegee University and West Virginia State University.
- [Tribal College Endowment Program](#) - The 1994 Land-Grant presidents can use these funds at their discretion.

- [McIntire-Stennis Cooperative Forestry Research Capacity Grant](#) – This grant program provides funds to eligible institutions to conduct forestry research in eight broad topical areas, including impacts of climate change on forests.

Competitive Grant Programs

- [Agriculture and Food Research Initiative \(AFRI\)](#) is NIFA’s flagship competitive grants program and funds research, extension, and education through three broad Requests for Applications (RFAs): 1) [Foundational and Applied Science](#), 2) [Sustainable Agricultural Systems](#), and 3) [Education and Workforce Development](#). Many priority programs throughout AFRI RFAs are relevant to climate change across the six priority areas directed by the Farm Bill:
 - Plant Health and Production and Plant Products
 - Animal Health and Production and Animal Products
 - Food Safety, Nutrition, and Health
 - Bioenergy, Natural Resources, and Environment
 - Agriculture Systems and Technology
 - Agriculture Economics and Rural Communities

NOAA’s Climate Ready Workforce for Coastal and Great Lakes States, Tribes, and Territories Initiative - Funding available through the Inflation Reduction Act

Sea Grant and the NOAA Climate Program Office, with support from the NOAA Office of Coastal Management, seek to establish programs aimed at placing people across the country into good jobs that advance climate resilience and assisting employers in developing a 21st-century workforce that is climate literate, informed by climate resilience, and skilled at addressing consequent challenges. NOAA will assist communities in coastal and Great Lakes states, tribes, and territories so they may form partnerships that train workers and place them into jobs that enhance climate resilience.

NOAA envisions making between 10-20 awards under this competition, at amounts ranging from \$500,000-\$10 million each. NOAA expects projects to range in duration from 24 months to 48 months, beginning no earlier than August 1, 2024. This opportunity is open to state, tribal, territorial, and local governments, institutions of higher education, and non-profit organizations in coastal states or territories. Resources from NOAA’s Climate Program Office, Office for Coastal Management, and National Sea Grant Office and its partners will be available to provide technical assistance to applicants and recipients to support these innovative efforts. Applications are due by February 13, 2024.

National Coastal Zone Management Program - *Funding available through the Bipartisan Infrastructure Law*

This program is soliciting grant proposals from eligible state and territory Coastal Zone Management Programs (CZM Programs) for coastal habitat restoration; coastal habitat restoration planning, engineering, and design; and land conservation projects that support the goals and intent of the Coastal Zone Management Act (CZMA), the Coastal and Estuarine Land Conservation Program (CELCP), and the Infrastructure Investment and Jobs Act.

NOAA anticipates that approximately \$59.6 million will be competitively awarded to approved state and territory Coastal Management Programs. For habitat restoration engineering, design and planning, it is anticipated that projects will range between \$200,000-\$500,000. For habitat restoration, it is anticipated that projects will range between \$2 million to \$6 million. For land conservation, it is anticipated that projects will range between \$1 million to \$4 million. Applicants may propose projects with a federal funding request less than or more than these amounts, up to \$6 million.

National Estuarine Research Reserve System Habitat Protection and Restoration - **Funding available through the Bipartisan Infrastructure Law**

By funding designated Reserve agencies and universities to conduct land acquisition and habitat restoration projects that support the NERRS mission, NOAA will strengthen protection of key land and water areas, improve climate resilience, enhance long-term protection of Reserve areas for research and education, and support the habitat protection goals and priorities of the National Coastal Zone Management Act.

Funding under this opportunity will enable Reserves to protect and restore ecologically significant habitats, including conserving lands that play a critical role in helping coastal communities become more resilient to storms, flooding, inundation, erosion, tsunamis, sea level rise and lake level changes and other natural hazards affecting the U.S. coastlines. Applications are due by January 10, 2024

NOAA Climate Resilience Regional Challenge - **Funding available through the Inflation Reduction Act**

This funding opportunity will support collaborative approaches to achieving resilience in coastal regions with an emphasis on risk reduction, regional collaboration, equity, and building enduring capacity. The Challenge features two exclusive funding tracks designed to meet the needs of coastal communities wherever they are in the resilience and adaptation process.

1. Regional Collaborative Building and Strategy Development (Track One) supports building capacity for, development of, and collaboration on transformational resilience and adaptation strategies for coastal communities.
2. Implementation of Resilience and Adaptation Actions (Track Two) supports

implementation of transformational resilience and adaptation strategies and associated actions for coastal communities anchored in previous planning efforts.

[Climate Resilience Accelerator Program](#) - Funding available through the Inflation Reduction Act

This program seeks to fund accelerator entities that will support businesses navigating commercialization pathways for ocean-based climate resilience solutions that support NOAA's mission to help communities prepare for, adapt to, and build resilience to climate challenges.

NOAA has developed climate resilience theme areas that align with the [U.S. Ocean Climate Action Plan](#), and expects results of this opportunity to support relevant actions, such as:

- Maintain and expand ocean basic and applied research, observing networks, modeling, forecasting, synthesis, and technology development.
- Develop new and innovative technologies and information pathways for ocean climate action.
- Expand coastal mapping, monitoring, observational systems, research, and modeling to inform science-based decision-making capabilities and advance use of nature-based solutions. Notice of Federal Funding.
- Advance research, technologies, and observation systems to support climate-ready marine resources and communities.
- Enhance community resilience to ocean change by developing ocean-based solutions that help communities adapt and thrive in the changing climate.

[National Integrated Heat Health Information System](#) - Funding available through the Inflation Reduction Act

NOAA's Climate Program Office (CPO) is seeking applications for three individual competitions in FY23. These competitions are relevant to one of the [high-priority climate risk areas](#) CPO is focusing on to improve science understanding and/or capabilities that result in user-driven outcomes: Extreme Heat.

This announcement is also supportive of [NOAA's FY22-26 Strategic Plan](#), particularly strategic goals of 1) Building a Climate Ready Nation and 2) Making Equity Central to NOAA's Mission

[Environmental Justice Thriving Communities Grantmaking Program](#)

This program is a competition to select multiple Grantmakers around the nation to reduce barriers to the federal grants application process communities face and increase the efficiency of the awards process for environmental justice grants. Grantmakers will design competitive application and submission processes, award environmental justice subgrants, implement a

tracking and reporting system, provide resources and support to communities, all in collaboration with EPA's Office of Environmental Justice.

U.S. Department of Transportation Thriving Communities Program

Planning, technical assistance, and capacity-building support offered through this program will enable disadvantaged and under-resourced communities to advance transformative infrastructure projects that will increase mobility, reduce pollution, and expand affordable transportation options, connecting communities to the essential opportunities and resources that will help them thrive.

Urban & Community Forestry Inflation Reduction Act Grants

The Forest Service is making up to \$1 billion available in Urban and Community Forestry competitive grants for investments that:

- increase equitable access to urban tree canopy and associated human health, environmental and economic benefits in disadvantaged communities
- broaden community engagement in local urban forest planning
- improve community and urban forest resilience to climate change, pests, and storm events through best management and maintenance practices

Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Formula Program

The Bipartisan Infrastructure Law established the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Formula Program with funds apportioned directly to State departments of transportation to help make surface transportation more resilient to natural hazards, including climate change, sea level rise, flooding, extreme weather events, and other natural disasters through support of planning activities, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure.

Funding opportunities from NOAA's \$2.96 billion in Bipartisan Infrastructure Law funds

The Bipartisan Infrastructure Law is a transformational opportunity to make an impact against the climate crisis across the country through multiple funding opportunities. It provides nearly \$3 billion for NOAA to take action over 5 years in the areas of habitat restoration, coastal resilience, and weather forecasting infrastructure.

American Flood Coalition Flood Funding Finder

This interactive website compiles grant, finance, and technical assistance support opportunities into a user-friendly database that helps communities identify and prioritize opportunities to fund flood resilience.

Partnerships for Climate-Smart Commodities

USDA is committed to supporting a diverse set of farmers, ranchers, and forest owners through climate solutions that increase resilience, expand market opportunities and strengthen rural America. The new Partnerships for Climate-Smart Commodities opportunity provides up to \$1 billion for pilot projects that create market opportunities for commodities produced using climate-smart practices.

Wildlife Conservation Society's Climate Adaptation Fund

This fund supports applied, on-the-ground projects focused on achieving wildlife and ecosystem conservation outcomes in the face of a changing climate. Specifically, they select one to two-year projects that implement science-driven, on-the-ground actions that assist wildlife and ecosystems to adapt to climate change at a landscape scale. The Program Timeline starts with the release of the annual RFP in February.

Drought.gov Competitive Funding Opportunities

This page describes support that may be available through federal agencies for drought research and for building resilience to the short- and long-term impacts of drought. Links on the page lead to information regarding financial and technical assistance, disaster assistance programs, economic injury loans, and assistance in implementing conservation practice.

Kresge Environment Program

The Kresge Foundation Environment Program seeks to help communities build resilience in the face of climate change. They invest in climate resilience through two primary strategies:

1. Accelerating place-based innovation through support to efforts that are anchored in cities and have a strong potential to serve as models.
2. Building the climate-resilience field by supporting activities to disseminate and bring to scale promising climate-resilience approaches.

Open Space Institute Resilient Landscape Initiative

The Resilient Landscapes Initiative, supported by the Doris Duke Charitable Foundation, offers two types of grants for specified locations in the eastern United States. The group's Capital Grants help land trusts and public agencies increase the conservation of resilient landscapes in areas that represent critical climate priorities. The group's Catalyst Grants help land trusts and public

agencies build the knowledge base of key audiences and advance the practical application of climate science.

Georgetown Adaptation Clearinghouse

The Georgetown Climate Center offers links to a large number of current and past opportunities to obtain support for adaptation activities.

National and Regional Climate Adaptation Science Centers

To enable the National and Regional Climate Adaptation Science Centers (NRCASC) to be responsive to the research and management needs of Federal and State agencies by working with partners to provide science and technical support regarding the impacts of climate change in fish, wildlife, plants and ecological processes and the mechanisms for adaptation to, mitigation of, or prevention of those impacts. Center activities will focus on providing national and regional habitat and population modeling and forecasting tools, integrating physical climate models with ecological models, assessing vulnerabilities and forecasting changes, and developing standardized approaches.