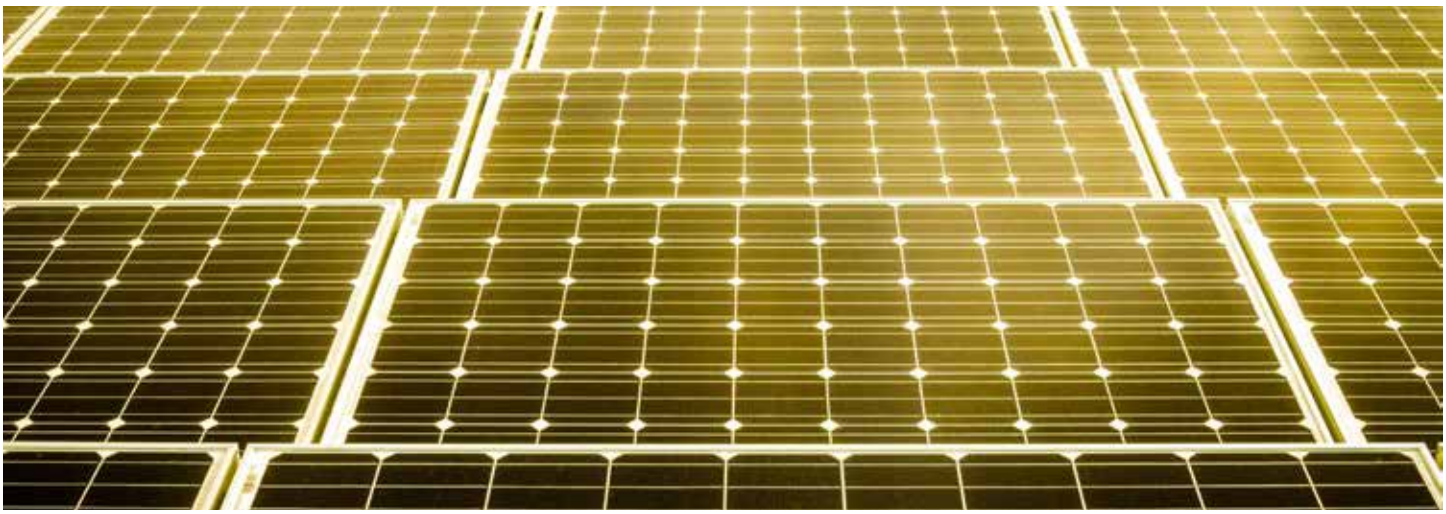
BROWARD CLIMATE ACTION

RESILIENCE UNDER THE SUN

BROWARD COUNTY FLORIDA

2020 BROWARD COUNTY CLIMATE CHANGE ACTION PLAN

What's Inside



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A special thanks to the staff, community leaders, and students who assisted by leading focal areas workgroups and actively engaged in discussions to develop the content of this plan.

Logo design adapted from Visit Lauderdale

Letter from the Co-Chairs of the Climate Change Task Force

Senator Nan Rich, Co-Chair

Commissioner Beam Furr, Co-Chair

June 1, 2021

Dear Mayor and Fellow Commissioners,

As Co-Chairs of the Broward County Climate Change Task Force, we are pleased to present the 2021 Broward County Climate Change Action Plan (CCAP). The CCAP is an update to the second iteration of the Broward Climate Change Action Plan (2015), and it builds upon the 2015 CCAP's recommendations for a progressive county-wide climate program to reduce greenhouse gas emissions and increase the resilience of the community, infrastructure and natural systems.

Broward County has taken a deliberate approach to mitigate climate change and strengthen the resilience of our community to its impacts. There is no single solution to the climate crisis; therefore, our strategies include modeling vulnerabilities and analyzing risks, thoughtful planning, developing sound public policies, convening support through stakeholder involvement, and implementing projects and economic investments. Solar energy and vehicle electrification have been prioritized as lead internal operations strategies for combating climate change. Collaboratively and collectively, continued support is necessary to advocate for a Central and South Florida Project Resiliency Study to identify and prioritize investments needed to ensure continuous functioning of the region's flood control system, organize funding for resilient transportation projects and engaging community partners to maintain quality of life as impacts are realized.

Therefore, with the next five to 50 years in mind, the Task Force is proud to present 125 actions to reduce carbon pollution and strengthen our resilience to the effects of global climate change. The Plan reflects a considerable effort on the part of the Task Force members, community participants, staff and experts who all lent support throughout the process. On behalf of the Broward County Government and the residents of Broward County, we would like to thank them for their extensive contributions.

It has been our pleasure to serve co-chairs of the Task Force and we look forward to continuing in this capacity as the community works together to implement the new Climate Action Plan.

Introduction

The Broward Climate Change Action Plan (CCAP) consists of nearly 125 strategic actions for addressing the economic, environmental and social impacts of climate change. The CCAP is a county-wide strategy, to be implemented by local government, community partners and residents alike. The actions are focused on reducing local greenhouse gas emissions, increasing community resiliency and planning necessary adaptation measures to address local impacts. By implementing these actions, Broward County moves forward on building a greener, more sustainable, and climate-resilient community.

Summary of CCAP 2020 Action plan adopted in 2021

Completing the actions in this plan will work toward building stronger communities and infrastructure, protecting critical sectors of our industry, government and natural resources; using sound science to better understand and address climate impacts. The CCAP addresses the impacts of climate change on our community.

Policy: Climate change will impact our community for years to come. Policies and regulations can have a substantial influence on the rate of climate change. Broward has the responsibility for making policies to address climate change at the local level. The CCAP actions will create collaborative intergovernmental practices by developing joint legislative policies which raise the awareness at State and Federal levels on the vulnerability of Southeast Florida and advocate for increased state and federal funding for mitigation and adaptation projects.

Healthy Community: Climate change poses a significant economic risk to all sectors and communities. To successfully prepare for climate change, communities must have the capacity to recognize, understand and assess relevant climate-related hazards, risks and impacts. The CCAP actions will deliver climate change educational information to all audiences, engage stakeholders to collectively address climate impacts and increase community resilience.

Transportation: Over half of the County's emissions are generated by transportation operations. The CCAP actions will reduce emissions by increasing the use of multi-modal systems and supporting electric vehicle use. Resilience will be increased by optimizing connectivity across transportation sectors and modes of transportation and assessing and addressing system vulnerabilities through projects.

Built Environment: Climate change poses a significant threat to the safety and reliability of critical infrastructure systems. The CCAP actions support sea-level rise and future conditions adaptation planning, development of resilient design standards, modeling and monitoring, encouraging septic to sewer connections and increased coordination for the advancement of infrastructure resilience.

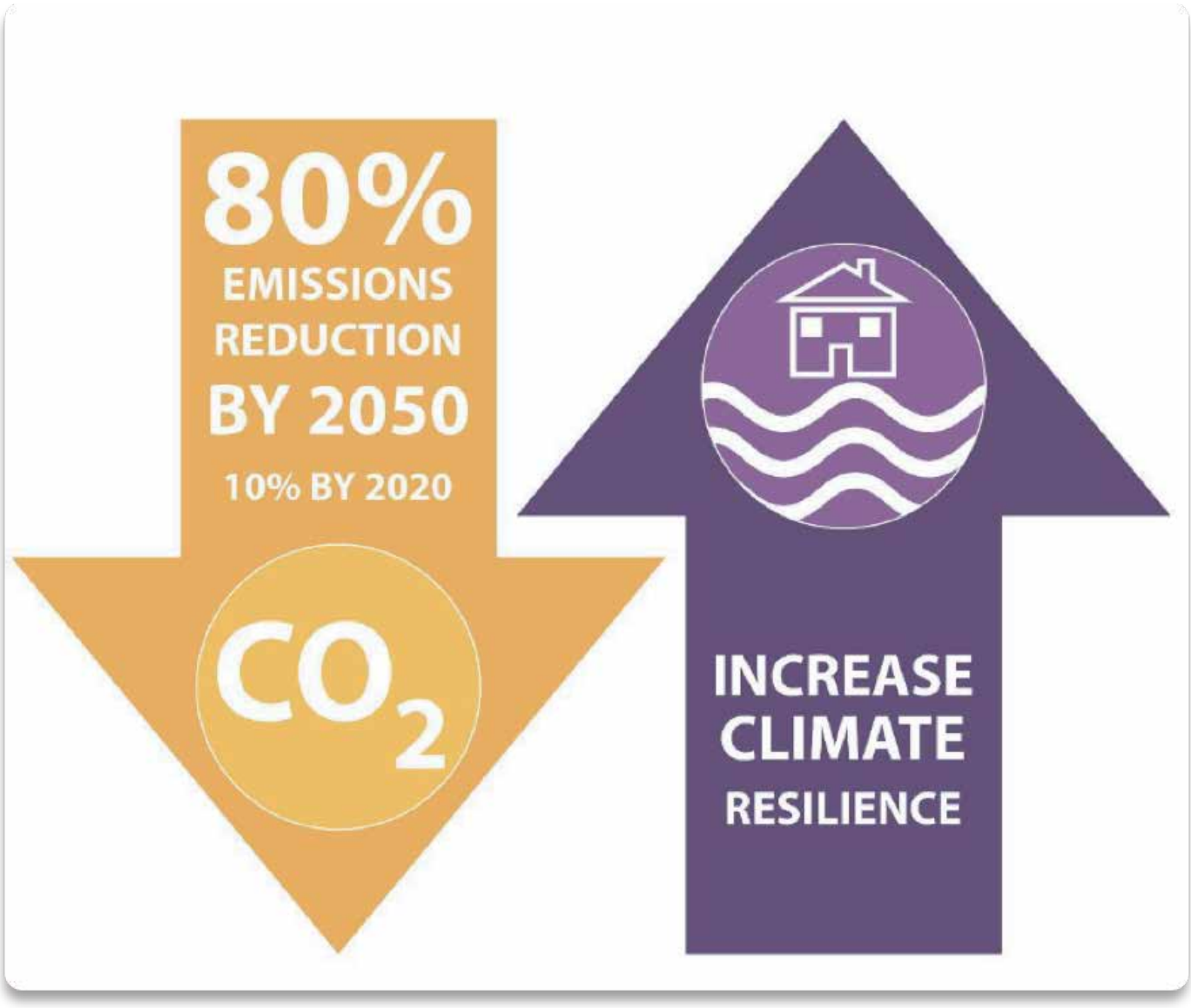
Energy Resources: The CCAP actions will move the community toward an energy-efficient future by increasing the energy efficiency of buildings, expanding renewable and alternative energy accessibility, electrifying transportation operations, creating incentive programs for solar and electric vehicles, reducing waste and supporting weatherization of homes to reduce energy burden.

Natural Systems: Climate change poses a significant threat to our critical natural infrastructure and ecosystems. Natural Systems CCAP actions concentrate on increasing the resilience of parks, natural areas, shorelines and reefs through plastic and pollution reduction and building the natural adaptation capacity.

Water Resources: Climate change puts our vital natural resources at risk, and for Broward County in particular that means our drinking water supply. Rising sea levels threaten our freshwater supply by forcing saltwater into our underground freshwater aquifer. The CCAP actions safeguard the water supply through conservation, reuse and adaptation, including future climate in planning, and promoting green infrastructure and flood mitigation.

Climate Change Action Plan

The CCAP is meant to be simple and clear in order to support implementation. There are two overarching goals for this plan. **1. Mitigate the effects of climate change by reducing greenhouse gas emissions by 2% per year,** ultimately leading to an 80% reduction by 2050, and **2. Increase the resiliency of our community to the effects of climate change.**



In each of the seven following sections, the CCAP has an objective and a series of actions that ultimately support the above two goals. Broward County will track and report on progress made in the implementation of the actions, as well as meeting specific benchmarks. Implementation of the CCAP is an evolving process, actions may be expanded and developed as needed.

Icons Legend

There are various icons throughout the action plan used to help the reader visualize which overall goal(s) the action relates to, the level of commitment needed to complete the action (county government operations, municipal/community/regional, state, or federal), and whether the action is high priority.

ICON	DESCRIPTION
	Plan actions which relate to the plan's goal to reduce Broward's carbon footprint are designated by this icon.
	Plan actions which relate to the plan's goal to increase the resiliency of the community are designated by this icon.
	Plan actions in which Broward County governmental operations are responsible for ensuring completion of the action are designated by this icon.
	Plan actions in which regional efforts, municipalities, and community partners are required to complete the action are designated by this icon.
	Plan actions in which state resources and/or partners are required to complete the actions are designated by this icon.
	Plan actions in which national resources and/or partners are required to complete the actions are designated by this icon.
	Plan actions determined high priority by the Climate Change Task Force are designated by this icon.

Plan Element: Policy

The actions under Policy advocate for public policies supporting regional resilience and for the advancement of transformative policy changes which will reduce emissions, build climate resilience, and align government objectives and partners (i.e.), community, industry, research institutions and others.

Policy Objective

Implement the following 18 actions to:

- Enact policies and legislation to reduce emissions from transportation, buildings, and increase community resilience through adaptation.

1. **Contribute to local, regional and state climate planning efforts.**
   Support the development of regional tools and planning documents, inclusive of Broward County and Southeast Florida, which integrate regional climate change mitigation and adaptation goals into their planning processes.
   

2. **Continue support for the Southeast Florida Regional Climate Compact (Compact).**
   Assist in the coordination, development and implementation of Compact resources. Work with the Compact to formalize increased municipal participation. Ensure the Compact continues to serve as a regional resource, collaborates regionally on legislative policies and collaborates broadly on mitigation and adaptation policies.
   

3. **Lead advocacy for climate change policies and legislation.**
   Advocate for climate change action and legislation to the National Association of Counties, the Florida Association of Counties, the Florida League of Cities and federal and state government.
   

4. **Maintain Climate, Energy & Sustainability Programming.**
   Maintain a program within County operations to oversee the implementation of the Climate Action Plan. Coordinate with the Compact. Provide staff assistance to the Climate Change Task Force. Coordinate resilience and sustainability initiatives across County agencies and operations.
   

5. **Continue Climate Change Task Force.**
   Continue the Broward Climate Change Task Force to advise elected officials and the County on the implementation of climate actions. The Task Force should be comprised of County and municipal elected officials, scientists knowledgeable in the field of climate change, representatives of local environmental, community advocacy, public health, financial, real estate and property development and facilities management organizations, regional transportation and planning authorities, water and energy utilities, and other knowledgeable individuals, guided by a staff liaison.
   

6. **Engage technical support of state and federal agencies.**
   Engage the support of state and federal agencies, such as the National Oceanic and Atmospheric Administration (NOAA), the United States Geological Society (USGS), the Federal Emergency Management Agency (FEMA), the United States Department of Interior, the United States Army Corps of Engineers (USACE), the Environmental Protection Agency (EPA), the Department of Energy (DOE),

the Florida Department of Transportation (FDOT) and the Florida Department of Environmental Protection (FDEP) that can provide technological and logistical support and work with state, county and local planning bodies to develop regional scenarios for planning, vulnerability assessments and adaptation strategies.

7. **Adopt adaptation standards that consider climate change and sea-level rise.**
   Ensure that public and private infrastructure, such as streets and bridges, water and wastewater treatment plants, stormwater drainage systems, seawalls, hospitals, city halls, police and fire stations and power generation facilities, are built or rebuilt considering impacts from climate change, including rising sea levels.

8. **Support adaptation of at-risk infrastructure and facilities**
   Identify and coordinate with the owners and managers of vulnerable facilities and services regarding adaptation needs as part of the implementation of the County-wide Risk Assessment and Resilience Plan.

9. **Address mitigation and adaptation policies in the Land Use Plan.**
   Ensure the County's Land Use Plan addresses mitigation and adaptation policies. Maintain and update the Priority Planning Areas Map for Sea-evel Rise and Future Conditions Map Series in accordance with updates to the regional sea-level rise projection. Support linking local and state infrastructure investments to improved integration of multimodal transportation and land use, expanding transportation choices, encouraging a reduction in single-occupancy vehicle trips and greenhouse gas emissions, improving energy efficiency, providing affordable housing proximate to employment centers, and otherwise furthering progress toward sustainability and a higher quality of life.

10. **Promote transit-oriented development.**
    Promote functional, walkable mixed-use development designs and projects around transit stations by providing flexibility in development review for these projects and revising the zoning and land development codes to allow and encourage these projects. Work with municipalities to establish incentives for this type of development.

11. **Incorporate resilience criteria into the Broward County surtax project review process.**
    Utilize the agency-developed resilience criteria checklist to review Penny for Transportation surtax projects and guide the inclusion of resilience components.

12. **Utilize resiliency checklists.**
    Work across County, municipal and agency partners to develop, refine, share and utilize screening/

scoping checklists for infrastructure projects, reviews of applications for (re)development, or other purposes, paired with ready-to-use tools or GIS datasets, that support identification and documentation of known or potential climate vulnerabilities and adaptation elements/strategies. Such checklists may focus solely on resilience or address multiple topics including resilience.

13. Implement and promote Dark Skies outdoor lighting policy model ordinance.

Encourage municipal adoption of County adopted model outdoor lighting ordinance and interagency implementation of County administrative code to discourage light trespassing.

14. Pursue amendments of local and state codes to advance resilient design.

Coordinate efforts to make necessary amendments. Implement and enforce changes to zoning, land use and building codes that support resilient construction and operations. Develop a model climate-resilient building code. Advocate for local changes to building codes and building code appendices.

15. Adopt environmentally preferable purchasing policies and practices.

Employ the collective buying power of local governments to purchase products and services that conserve energy, reduce greenhouse gas emissions, have a low carbon or environmentally certified supply chain, and use recycled materials and/or minimal packaging. Provide models for businesses and other organizations.

16. Abate the potential for climate gentrification.

Encourage long-term housing affordability and equitable investment in infrastructure and social services to build resilience in historically disadvantaged neighborhoods. Raise community awareness of the value of non-flood-prone, high elevation and transit adjacent property. Implement strategies to support and sustain low and moderateincome communities in Broward County. Encourage net zero carbon emissions redevelopment with sufficient affordable housing to support the local workforce.

17. Set plastic waste reduction goal.

Set a plastic waste reduction goal and set a policy to reduce single-use plastics and polystyrene foam, on County property, in County contracts and at County events. Advocate permitting of local regulation of single-use plastics and polystyrene foam.

18. Re-evaluate the feasibility of shore power at Broward County's Port Everglades.

Coordinate with Florida Power & Light (FPL) and Broward County's Port Everglades stakeholders to update the port Master/Vision Plan to include available power capacity, cost estimates of power distribution infrastructure and the feasibility of shore power by the terminal.

Plan Element: Healthy Community

The actions under Healthy Community provide broad community outreach and education on such climate change-related topics as mitigation and adaptation strategies, the expected cost of inaction and promotion of sustainable choices. Also, the actions deliver climate change educational information to all audiences to increase awareness and mobilize action on climate change.

Healthy Community Objective

Implement the following 20 actions to:

Deliver climate change educational information to all audiences, engage stakeholders to collectively address climate impacts and increase community resilience.

19. Pursue grants for community education projects.

Pursue grants for climate, energy and sustainability program initiatives. Collaborate with other local agencies and nonprofits in the community on grant proposals and specifically target grants for underserved communities which address areas of interest (e.g. food supply initiatives, septic systems, community gardens, recycling, cooling stations, tree canopy and maintenance).

20. Educate the community on climate change.

Develop and deploy curricula and programs working with public and private schools. Develop short educational videos, and use high-profile media to raise awareness of climate change impacts and preparedness actions. Create multilingual communications. Install public demonstration sites. Develop and deploy 3D-visualization tools for the communication of flood risks. Engage public health partners to communicate climate risks. Continue support for the Southeast Florida Regional Climate Change Compact's Annual Leadership Summit.

21. Educate residents on climate risk.

Develop a toolkit to educate homeowners, landlords and renters on climate change risk and adaptation containing, floodproofing, elevation data, sea-level rise information, etc., to help residents prepare for impacts, make sound investments, prepare for seasonal flooding and reduce property hazard insurance premiums. Ensure rental housing has adequate air conditioning, window screens, and weatherization to provide safe living conditions.

22. Engage volunteer corps.

Develop key partnerships with local volunteer networks and request assistance with climate outreach goals. Educate a volunteer force, including seniors, that can act as "climate ambassadors" for the community. Prioritize engagement with vulnerable populations. Identify and develop partnerships with community, youth, and school groups to encourage participation with the Climate Change Task Force. Expand attendance at the Annual Youth Climate Summit.

23. Educate and prepare for public health impacts.

Distribute climate-related public health information, including risks of heat stress, through call centers and media campaigns. Provide alerts about extreme heat and locations of open cooling centers. Encourage training programs to incorporate response protocols for heat stress. Engage the Coordinating Council of Broward, first responders and community service providers to distribute climate-related health information to vulnerable populations.

24. Encourage dialogue among elected officials, staff and socially vulnerable populations about local climate impacts and community priorities to inform leaders of community needs.

Identify vulnerable populations and survey their needs. Encourage community participation in public meetings regarding climate impacts. Prioritize engagement with cities with senior-living communities and vulnerable populations.

25. Build local food systems.

Evaluate sufficiency of local food systems county-wide using GISmapping. Determine what infrastructure is necessary to address food scarcity, identify gaps in food supply and establish sustainable and equitable food systems with community input. Stimulate local food production through the community's agriculture network to reduce the transportation carbon footprint of produce, also known as food miles. Increase the resilience of infrastructure used by the Urban Health Partnership, Food for All Broward and similar entities.

26. Enhance the urban tree canopy to protect pedestrians, transit riders and bicyclists from heat and pollution.

Using GIS mapping and other tools; evaluate shade and cooling available at pedestrian, transit (train and bus) and bicycle facilities, and assess whether the urban tree canopy is sufficient to protect people from heat and pollution. Work with community and governmental partners to identify needs and involve community members in the policy and planning process. Establish support for tree maintenance to encourage long-term canopy growth and tree retention. Enhance the tree canopy equitably county-wide.

27. Address social vulnerabilities through local government programs.

Appropriately apply social vulnerability information from the South Atlantic Coastal Study and other initiatives for affordable housing, transportation and adaptation planning. Incentivize, encourage and fund residential improvements through existing programs or available grants to increase compliance with the building code, local floodplain ordinances and future conditions including landuse policies that will help mitigate future flooding. After severe weather, promote equitable recovery efforts.

28. Engage academia in research.

Collaborate, encourage and enhance partnerships with public and private universities, colleges, technical schools, and community members in the region to develop research, assessment tools and educational programs. Report environmental and relevant trends. Collaborate with academic institutions to identify, evaluate and prepare proposals for research grants and other funding opportunities.

29. **Engage and educate private sector stakeholders and community members about resilience strategies for the built, natural and social environment.**
Focus engagement and education efforts on projections for future changes in natural hazards, future heat projections, risks and mitigation strategies. Identify various communication platforms (social media, town halls andtraditional media) that target stakeholders (private sector, business owners, farmworkers, homeowners, renters, landlords and residents). Ensure flood risk and natural hazard information is distributed to the public.

30. **Reduce urban heat island effect.**
Increase the urban tree canopy to at least 40% county-wide. Perform a tree canopy study every five years. Require solar reflective roof materials and encourage green roofing where feasible. Partner with the Broward County School District to advance cool roof practices. Ensure cooling stations at parks to reduce health risks. Solicit state and federal grants for weatherization (i.e. supplies, windows) and increase access to affordable air conditioning.

31. **Support community hubs that enable economic mobility, health, mental health, and safety for all community members.**
Establish community hubs to be used as immediate response centers, charging stations, information centers, storage facilities and internet access providers.

32. **Ensure beneficial social equity and health outcomes in considering the impacts of land use policy, public infrastructure, public service and post-disaster recovery decisions on vulnerable populations.**
Implement strategies for attainable, affordable, workforce and climate-resilient housing. Communicate flood risks with stakeholders. After a climate crisis, prioritize equitable recovery efforts.

33. **Review the effectiveness of regulations related to fertilizer pollution, total maximum daily loads, septic systems, pollution discharge and recommend the improved regional approach.**
Communicate the regulations to community partners and specify the ways of notifying government agencies when problems arise in local areas. Update messaging to the community when regulations change.

34. **Construction Waste Management: Require recycling of construction and demolition waste.**
Encourage construction companies, haulers and contractors to recycle and reuse items per United States Green Building Council and Florida Green Building Council standards. Provide recycling incentives to haulers. Promote and incentivize construction with recycled and reused materials. Ensure public health and environmental justice are considered in the evaluation of new waste site locations.

35. Organic Waste Management: Implement on-site organics (food waste and yard waste) collection in commercial, single-family and multifamily properties, including food waste collection in high-volume locations.

Pilot on-site composting and on-site recycling stations at Broward County Parks and Broward County Public Schools. Engage community volunteers to educate the public/students on proper waste disposal.

36. Inform the public on climate indicators.

Eleven climate indicators were selected as quick, simple and visual tools to show what climate change means in Southeast Florida. Support the maintenance and evolution of the region's climate indicators including other public education activities and materials.

37. Increase connection to nature and the community.

Provide nature-based educational experiences and promote physical and emotional well-being. Collaborate with Broward Addiction Recovery Center, Rebuilding Together, Broward Sherriff's Office Community Service Program, community redevelopment agencies, schools and hospitals. Natural elements that promote well-being include trees, diverse vegetation, local biodiversity, water features, parks, natural playscapes and community and school gardens.

38. Collaborate on air quality monitoring, education and health risk outreach.

Expand and improve air quality monitoring and public information programs. Adopt standardized air health risk communication strategies. Improve outreach and education. Improve coordination among governmental agencies at all levels and non-governmental health care organizations. Educate the community on regulations and engage them in citizen science projects. Expand access to air quality data and reporting to the public. Increase airquality monitoring of industrial, utility and landfill applications.

Plan Element: Transportation

The actions to provide transportation support include the reduction of emissions from single-occupancy fossil fuel-powered vehicles by increasing the use of multi-modal systems, expanding electric vehicle use and increasing access to charging infrastructure. Resilience will be increased by optimizing the connectivity across transportation sectors, modes of transportation and assessing and addressing system vulnerabilities through projects.

Transportation Objectives

Implement the following 20 actions to:

- Increase the resilience of the transportation system and infrastructure, and reduce emissions.
- Electrify the County vehicle fleet by 2030.
- Reduce transportation emissions by 2% each year.

39. Increase trips made by public transit by prioritizing intermodal centers/mobility hubs/stations, first and last-mile access and local bus/shuttle services. Provide high-capacity transit supported by complementary land use in and across communities.

Proactively plan for and invest in intermodal centers/mobility hubs/stations, improved local bus and shuttle services and high capacity transit services to help foster affordable, expanded and flexible use of transit as supported by transit-oriented land use.

Specifically:

- Increase the frequency and improve travel times of existing transit services, mainly for regional corridors and east-west corridors feeding into regional transit services (serving established transit markets).
- Expand the transit network to serve new and developing transit markets and fill in the gaps to provide accessibility.
- Align and implement local government and transportation agency plans to expand transportation options and connect communities.
- Coordinate with neighboring counties and transportation agencies on regional high-capacity transit.
- Make public transit an attractive choice for more people who are traveling locally and regionally, by funding rail and other high-capacity transit operations, construction of transit facilities and vehicle acquisition and improved fare systems.
- Address the first and last-mile of transit trips by using micro-mobility, enhanced networks of pedestrian and bicycle facilities, and other means that increase equitable access and emphasize connectivity.
- Plan and redevelop, with an emphasis on safety, in ways that support the use of public transit and more non-motorized trips (e.g., public transit-oriented development/public transit-oriented communities).

40. Optimizeport function.

Ensure adequate truck and rail access to Broward County's Port Everglades, especially via US-1 and I-595 for distribution of petroleum products. Continue timely resilience adaptations port infrastructure.

41. Invest in port/airport/rail connections.

Improve the multi-modal connection between Broward County's Port Everglades and Fort Lauderdale-Hollywood International Airport (e.g., people mover, light rail), expanding transportation options, improving resilience through redundancies and managing traffic congestion.

42. Implement complete streets serving pedestrians, bicyclists, transit riders, motorists, and freight handlers.

Continue to implement context-sensitive complete street strategies as the default approach to transportation planning and projects as a group of partners (County, MPO, FDOT, RPC, municipalities and private sector). Aim for a complete network of streets, where each street contributes to the transportation system's ability to serve all users.

43. Perform a network study to identify transit market opportunities.

Undertake a county-wide study of transit-supportive redevelopment opportunities to support high-capacity transit, intermodal centers/mobility hubs/stations and complete street strategies. Consider transit-related studies and scenario testing undertaken as part of the County's Transit Systems Plan and those completed for 2045 transportation plans.

44. Implement Transportation Demand Management (TDM) strategies including the expansion and encouragement of telework opportunities.

Implement TDM strategies to reduce peak-period and single-occupant vehicle travel, including coordination with South Florida Commuter Services. Encourage the permanency of telework options as a proven and viable means to manage traffic congestion and reduce greenhouse gas emissions from commuter's trips. Evaluate emissions from shifts in demand.

45. Operate and manage transportation systems and services efficiently.

Implement coordinated Transportation System Management and Operations (TSM&O) strategies to maximize efficiency and reduce greenhouse gas emissions (e.g., traffic signal prioritization, adaptive signalization, queue jumps for public transit, freight signalization and optimization and roundabouts).

46. Coordinate with public and private sector partners to expand the use of electric vehicles and no carbon fuel.

Continue engagement with the Southeast Florida Clean Cities Coalition to review lessons learned, share resources, and seek partnerships to expand EV investment and related infrastructure improvements (e.g., charging infrastructure) that serve short- and long-range travel and emergency evacuations. Identify and consider emerging clean energy opportunities.

47. Establish a clean fuel fleet.

Continue to prioritize funding needed to meet the County's 2030 clean fleet commitment. Support transition of the County fleet to EV, including the advancement of plans and investments in charging infrastructure, at the level needed with EVs serving as the default replacement vehicle for passenger vehicles such as sedans, vans and light-duty trucks.

Continue to make additional investments in infrastructure to support the full transition of the transit fleet to low/no emission transit vehicles. As the transit fleet is transitioning to low/no emission transit vehicles, ensure equitable operational distribution, especially in historically disadvantaged portions of the transit service area.

48. Electrify buses and fleet and install EV infrastructure.

Encourage the use of electric buses to reduce the carbon footprint. Work with Broward County Transit and Broward County Public Schools to ensure the purchasing of electric buses. Establish electrifying bus stations at bus depots. Establish efficient, accessible and affordable bus routes to encourage the use of public transit. Engage the community and partners including the Southeast Florida Clean Cities Coalition in educational EV efforts.

49. Maximize partnerships to further public EV knowledge, adoption, equitable access and utilization.

In coordination with municipal and agency partners, undertake a county-wide EV outreach campaign and delivery of grant or County- funded incentives to encourage and accelerate EV-related investments by individuals, employers, commercial centers and multi-family residential developments.

50. Coordinate on EV-charging infrastructure.

Support the planning and implementation of EV charging infrastructure in a coordinated, systematic way to fill gaps and maximize accessibility. Explore shared use of EV charging infrastructure that could accelerate the transition to clean fleets by local governments and agencies, and potentially the public. Establish a formal planning effort involving agency, utility and private sector partners to advance large-scale infrastructure investments. Establish a strategy for autonomous vehicles that leads to lower greenhouse gas emissions.

51. Update and advance assessments of the vulnerability of transportation infrastructure.

Build upon the assessments of transportation infrastructure vulnerability by agency partners to include a combined analysis of integrated hydrology as part of county-wide future conditions assessments to guide transportation infrastructure investments.

52. Integrate dynamic adaptive approaches into processes leading to transportation and other investments.

Identify or establish adaptive approaches that support a scenario-based, incremental and flexible approach to a coordinated and holistic adaptation of transportation infrastructure/systems. Use related assets and investments, recognizing the importance of infrastructure and adjoining land use harmonization, partnerships and collaboration.

53. Coordinate to achieve resilience across transportation planning and investments.

Coordinate across local governments and agencies to identify or update resilience-related criteria to be used in the selection, design, review and approval of transportation investments. Pursue better alignment and integration of transportation and other plans.

54. Pursue shared drainage and water management infrastructure.

Consider strategies for meeting stormwater management (including water quality and quantity goals) through shared use of infrastructure for conveyance, storage and water quality treatment.

55. Use local and regional data and tools to inform resilience planning.

Coordinate to foster the consistent application of county-specific and regional future conditions models and data in coordinated resilient infrastructure planning, including references to sea-level rise, groundwater elevations, flood elevations, storm surge and rainfall.

56. Maintain, update, and share high-resolution elevation data.

Coordinate with agency partners to ensure the coordinated acquisition of, access to, and informed use of LiDAR and other high-resolution elevation data for resiliency/adaptation planning, studies, stormwater modeling, asset management and other purposes.

57. Expand the use of technology and data analytics.

Lead in the collection, sharing and use of real-time data and integration of innovative technology to assist with managing and operating transportation systems, providing services, and informing the public (e.g., real-time traffic management, traffic routing under flood conditions, and monitoring of event-specific impacts on drainage system performance).

58. Pilot technologies and services.

Encourage the piloting of technologies and services, including public-private partnerships, relating to increasing resilience, provision of transportation services, sharing of information and performance of transportation systems and services.

59. Partner on data and performance measurement.

Continue to foster early communication and collaboration to improve the value and economics of transportation-related data collection and analysis, with an emphasis on big data with various applications.

Plan Element: Built Environment

The actions under Built Environment build stronger communities and infrastructure, protect critical sectors of our industry, government and natural resources and use sound science to better understand and address climate impacts.

Built Environment Objective

Implement the following 30 actions to increase the resilience of the built environment:

- Assess the impacts of climate change on the built environment.
- Provide tools for climate resilience and support climate-resilient investments.
- Reduce risk through pro-active planning for transportation, energy and natural infrastructure.

60. Sea level rise adaptation planning.
Align the County's sea-level rise adaptation planning efforts with regular updates of the Unified Sea Level Rise Projection for Southeast Florida prepared by the Southeast Florida Regional Climate Change Compact.

61. Improve inundation mapping capabilities.
Improve analysis and mapping capabilities for identifying areas of the County vulnerable to sea-level rise by utilizing the most recent LiDAR data. Update maps of potential impacts of sea-level rise to the natural and built environments at 2-ft and 3.3-ft levels and consider this information in long-term planning.

62. Encourage FEMA to consider sea-level rise in flood map updates.
Request that the Federal Emergency Management Agency (FEMA) take into consideration sea-level rise projections for at least 50 years for use in hazard mitigation planning, mapping of future flood risk, and as the basis for creditable flood risk reduction strategies as part of the Community Rating System and National Flood Insurance Program.

63. Adopt new 100-year storm maps.
Set new parameters for water management by adopting new 100-year storm elevation projections in the Broward County 100-year flood map for use in stormwater management permitting which reflect current and projected conditions for sea-level, seasonal high tides, groundwater level rise and rainfall intensification.

64. Update design storm criteria.
Update design storm standards for 72-hour, 24-hour, and lesser duration rainfall events to account for future conditions rainfall intensification. Conduct sensitivity analyses to evaluate the effect of antecedent conditions on flood levels, and extent. Coordinate with local, regional and state planning agencies to ensure consistency in planning and application of appropriate change factors to all stormwater management and drainage-system projects.

65. Incorporate a combined sea-level rise/storm surge impacts in hazard mitigation and adaptation planning.

Incorporate sea-level rise and increasing storm surge impacts into maps of hazard areas in coastal zones and climate vulnerability analyses and risk assessments. Revised hazard area designations should better reflect the risks to communities associated with climate change and allow the re-evaluation of suitability for development in these areas.

66. Re-evaluate CCCL and CHHA for climate change impacts.

Determine whether existing construction-siting and design requirements for the Coastal Construction Control Line (CCCL) Program and the Coastal High Hazard area sufficiently address avoidance of "significant adverse impacts" due to climate change. If found to be insufficient, revise programs and design requirements to address the potential impacts.

67. Expand Tidal Monitoring.

Identify funding and partnerships to expand local tidal monitoring stations in Broward County to provide operationally sound observations and monitoring capabilities.

68. Provide and dedicate funding for long-term and regional monitoring and modeling.

Provide and/or participate in the long-term continuous data collection and regional monitoring of critical parameters to support related modeling efforts and climate indicator tracking including evapotranspiration in the urban areas, water quality (especially temperature), hydrologic, geologic, and groundwater quality, and levels, precipitation, and groundwater withdrawals. Encourage dedicated county, state and federal funding for modeling efforts that improve our knowledge of climate change impacts.

69. Support research on the vulnerability of the built environment.

Promote partnerships for connecting research with applications for the adaptation of the built environment, focusing on the vulnerability of building structures to climate change and adaptation methodologies.

70. Collect LiDAR data.

Update the County's LiDAR database with the 2018 USGS data set. Continue to partner with municipal, state and federal agencies to collect and maintain LiDAR data refinements to support county-wide planning. Use LiDAR elevation data in the development of land-use policies and modeling.

71. Research water resources adaptive technologies.
Participate in combined academic/private sector collaborative research programs for resilient adaptation technologies for the region's water resources, including expanded use of sensors and other innovative technologies to monitor hydraulic and hydrologic conditions that influence infrastructure and system performance.

72. Analyze sea-level rise, rainfall, drainage and hurricane impacts.
Coordinate with other Southeast Florida counties, academia, and government agencies in the combined analysis of sea-level rise, storm surge, precipitation changes, water table rise, and hurricane impacts for the planning of adaptation measures.

73. Analyze level of service and compounded flooding.
Coordinate with academia and the private sector to better explore the compounding effects of sea-level rise, precipitation changes, water table rise, storm surge, and basin runoff on local flooding and water quality and the appropriate level of service standards under these conditions.

74. Develop dynamically adaptive management strategies.
Amend comprehensive plans that set short-, intermediate-, and long-range goals, develop policies and establish adaptive management strategies for water resources that address potential impacts of climate change and are consistent with the recommendations of the Lower East Coast Water Supply Plan.

75. Apply models to develop resilient design standards. Develop, update and apply regional integrated hydrologic and climate models to support the development and application of updated infrastructure and design standards and adaptive response plans with regional partner support.

76. Enhance the resiliency of County-owned infrastructure and properties.
By the year 2025, complete an evaluation of all county properties and facilities for future flood risk under conditions of compounding flood factors, with identification of vulnerabilities, general adaptation needs, and the timeline for addressing. County agencies (and agencies that receive County funding for significant infrastructure or built investments) should assess impacts on the agency's or entity's responsibilities. Incorporate assessments into the infrastructure master planning processes. Identify vulnerabilities to guide strategies for mitigation and adaptation. Determine as to whether, when and where projected impacts might be significant.

77. Improve the resilience of buildings and structures.
Establish an ongoing process to address local zoning and building code requirements, and make recommendations regarding optimization for the resilience of existing and proposed structures in areas at risk to inundation and climate change.

78. Protect systems from infiltration and inflow.

Work in coordination with all utilities and municipalities to prioritize and protect underground pipe systems from groundwater infiltration and to minimize runoff into sewer systems, resulting in additional wastewater treatment needs and impacts to service levels. Pursue utility-specific update of sewer system evaluation study (SSES), including reassessment of treatment and disposal costs, to guide prioritization of investments and timelines.

79. Maintain beaches.

Continue the appropriate use of beach nourishment and sand bypassing at Broward County's Port Everglades and the Hillsboro Inlet. Target application of erosion control structures, such as seawalls, dunes, groins and breakwaters. Revisit redevelopment policies with the objective of providing additional coastal buffer areas between developed areas and the shoreline.

80. Retrofit flood control structures for sea-level rise.

Advocate for and engage in a resilience study of the Central and South Florida Flood Control Project under conditions of sea-level rise and other likely climate change effects, to include the identification of adaptation needs, leading to construction. Pursue joint consideration of water management impacts on upstream and downstream communities.

81. Coordinate local water management improvements.

Develop strategies, cost/benefit analyses, and schedules for raising or retrofitting and building flood control structures within the secondary canal network and associated flood control system in anticipation of sea-level rise and other potential effects of climate change. Plan adaptation improvements for flood control infrastructure at high risk.

82. Advance sanitary sewer connections.

Pursue funding and finance strategies to aid and accelerate sanitary sewer connections. Support economic evaluations relating to the shared community benefits that might support the distribution of costs across a customer base. For any new septic tanks or major renovations that require heavy equipment (backhoes, etc. on site), require connection to the sewer. Partner with municipalities to incentivize sewer connection.

83. Phase-out septic systems where necessary to protect public health and water quality.

Perform an assessment to determine how many households have septic systems and current sewer system loads. Identify funding strategies and provide subsidies for phasing out septic systems. Explore the reuse of septic tanks to store rainwater/reuse water for irrigation, etc.

84. Explore partnerships to achieve water management needs.

Explore collaborative opportunities involving public and private lands for coordinated redevelopment strategies to meet water management needs and objectives.

85. Engage the private sector in resilience initiatives.

Partner with the private sector and business leadership on economic resilience initiatives, including implementation of recommendations identified in the 2020 Business Case for Resilience for Southeast Florida and a shared communications strategy.

86. Convene a county-wide forum for coordinated resilience planning.

Host an annual Resilience Roundtable with government, tribal and business leadership to foster the ongoing coordination of county-wide resilience planning as a forum for sharing information and resources, and developing shared priorities and strategies focused on resilience planning, communications and investments.

87. Develop and implement a County-wide Resilience Plan.

Develop and implement a phased, county-wide risk assessment and infrastructure investment plan as part of a coordinated resilience strategy addressing 2- and 3.3- foot levels of sea-level rise through the 2070 planning horizon, including cost-benefit evaluations.

88. Emphasize adaptive pathways.

Develop dynamic and adaptative pathways to support efficient and effective resilience planning and investments.

89. Develop a resilience dashboard.

Develop a county-wide dashboard of resilience planning tools, goals and projects to aid in the shared monitoring, tracking, and communicating of the state and scale of resilience planning and investments on a county-wide basis, inclusive of both mitigation and adaptation needs.

90. Increase resilience and grow the economy in an equitable manner.

Support equitable resilience planning, investments, and economic growth specific to historically disadvantaged communities, employing appreciative inquiry (approach focusing on topics of community interest and areas of strength) and asset-based mapping.

Plan Element: Energy Resources

The actions under Energy Resources increase sustainable consumption through efficiency and conservation efforts, expand renewable and alternative fuel infrastructure accessibility, and create incentive programs and opportunities to reduce energy burden.

Energy Resources Objective

Implement the following seven actions to reduce emissions and increase the resilience of energy infrastructure:

- Reduce emissions from electricity by 2% per year.
- Achieve a renewable energy portfolio of 30% by 2030.
- Reduce waste.

91. Continue to reduce the energy consumption of County operations.
Maximize the use of Energy Service Contracts. Pursue energy efficiency opportunities at Broward County's Port Everglades and Fort Lauderdale-Hollywood International Airport, including implementation of the Port greenhouse gas inventory strategies. Purchase more efficient equipment. Explore options for electrification of fossil-fuel equipment.

92. Promote energy efficiency in the community.
Require large buildings to benchmark and report their energy performance. Recruit municipal and educational buildings to use the ENERGY STAR Portfolio Manager to track energy use and compare usage to similar properties. Collect and publicize energy conservation practices appropriate for the Southeast Florida climate. Provide training for property managers and maintenance personnel on energy efficiency measures. Develop a strategy to deliver energyefficiency improvements to low- and moderate-income households. Require County-funded affordable housing developments to meet strong energy efficiency standards.

93. Expand renewable energy.
Increase solar deployment on County property. Use renewable energy, distributed energy and energy storage technologies for emergency management and disaster recovery. Promote solar adoption in the community, including the development of additional financing mechanisms. Promote solar adoption through permitting incentives and streamlined processes. Work with community partners to increase solar where feasible and continue support for the Solar Co-op program to reduce the energy burden for residents.

94. Advocate for strong climate, energy and resilience policies at the state and federal levels.
Support:

- Clean energy standards at the state and federal level.
- Third-party retail power purchase agreements.
- Stronger energy conservation requirements for electric utilities.
- On-bill financing for affordable housing weatherization and household energy efficiency investments.
- Replacement of utility fossil fuel plants with renewable energy systems.
- Tax policies that promote renewable energy, energy efficiency and electric vehicles.

- Funding for climate and resilience planning, energy conservation and renewable energy investments, vehicle electrification, resilient infrastructure and land and water conservation.
- Priority investments in frontline communities.
- Preservation or enhancement of existing net-metering.

95. Pursue stronger energy conservation and renewable energy standards in the Florida Building Code.

Propose and support stronger energy code standards. Advocate for optional net-zero code appendix. Pursue local amendments through the Board of Rules and Appeals where feasible.

96. Reduce the amount of waste going to landfills.

Set waste reduction targets. Develop interlocal agreements for waste reduction and promote unified municipal participation.

97. Engage the private sector to develop strategies for adapting energy infrastructure.

Encourage energy utilities and providers to develop alternatives for fortifying existing regional power generation facilities, power transmission infrastructure and fuel conveyance infrastructure against the potential impacts of climate change including increased temperature and sea-level rise. Locate new regional power generation facilities, power transmission infrastructure and distribution systems to accommodate future climate change impacts.

Plan Element: Natural Systems

The actions under Natural Systems evaluate and reduce the impacts of climate change on our natural systems and further the integration of natural systems into the urban environment to increase resilience to future climate change impacts.

Natural Systems Objective

Implement the following nine actions to:

- Preserve reefs, natural areas and habitats to help protect native species.
- Integrate natural systems and green infrastructure throughout the community.
- Evaluate current and future impacts of climate change on our natural resources and ecosystems.

98. Increase natural area ecosystem resilience.

Increase natural area ecosystem resilience through regional wildland fire management, exotics removal and the expansion of short-hydroperiod wetlands. Provide education and outreach to local communities promoting fire programs, secure County support; increase resources toward invasive plant management and develop a rapid response; and, expand short-hydroperiod wetlands where feasible.

99. Support ongoing coral reef restoration and resilience activities.

Communicate, support, and the expansion of ongoing coral restoration activities, including coral nurseries and propagation, hubs and outplanting projects, and disease response; outreach and education about the status of reefs and coral health, climate change, and sea-level rise.

100. Prioritize areas for living shorelines.

Coordinate across the County to construct, revegetate and maintain coastal dunes along 80% of the oceanfront shoreline. Identify and prioritize areas for developing living shorelines, including identifying areas of potential retreat and restoration.

101. Resilience planning for parks and open spaces.

Identify parks struggling with sea-level rise and resiliency issues; prioritize, and develop adaptation/mitigation plans for high-priority parks. Encourage the creation of new parks, green spaces, green corridors, and open spaces. Increase the performance of parks and utilize spaces strategically that adapt to climate change impacts. Create public spaces for the creation of community gardens.

102. Increase the availability of native regional plants.

Contract a grower to collect/harvest native seed banks and increase the diversity and availability of plants for native landscaping supply.

103. Assess non-point source pollution fate and transport across the County to the ocean.

Complete a study to evaluate the transport of nutrients and analytes identified in the Florida Department of Environmental Protection offshore water quality monitoring program that are likely to have an impact on the marine ecosystem and corals, and to inform reduction strategies and management.

104. Reduce point source pollution to protect coastal water quality.

Encourage the enhancement and improved management of stormwater treatment systems and tightening of wastewater collection systems. Support the cessation of the use of ocean outfalls by 2025. Support exploration of potentially increasing deepwater injection well capacity to reduce emergency wastewater releases during, and after storms.

105. Connect financing for development with restoration/preservation efforts.

Connect financing for (re)development with restoration/preservation/enhancement of green spaces and natural areas, similar to mitigation banking, within the County.

106. Public outreach and education on the status of coral reefs, and the effects of climate change and sea-level rise.

Create and conduct a public outreach campaign to increase awareness of threats to coral reefs and build support for efforts to restore and protect them.

Plan Element: Water Supply

The actions under Water Supply maintain adequate water supply through efficiency and conservation efforts, develop decision support tools necessary to build community resilience and increase the resilience of natural systems through water resource management.

Water Supply Objective

Implement the following 18 actions to:

- Ensure existing water resources are protected and remain available through conservation and sustainable management.
- Preserve capacity by diversifying source alternatives.
- Balance the water needs of public consumers and natural systems.
- Mitigate impacts of flooding.

107. Continue local water conservation programs.

Continue the coordination and delivery of local water conservation programs and activities. Provide staff and financial resources to assist municipalities and water providers in implementing regional water conservation strategies as a water supply/demand management tool, and energy conservation strategy and encourage regional partners to do the same. Utilize green infrastructure for requisite hydrant flushing rather than stormwater systems. Explore strategies to require Florida-friendly landscaping for new developments.

108. Include climate change in updates of the Lower East Coast Plan.

Advocate for the inclusion of regional climate scenarios and responsive resilience strategies to address impacts from climate change in future updates of the South Florida Water Management District's Lower East Coast Water Supply Plan, the Central and South Florida Flood Control Project and related water management planning and assessment activities.

109. Seek future conditions analyses in regional water resources planning.

Serve as an agency partner and advocate for the inclusion of and consistent use of future conditions planning scenarios as the basis for all regional water resources and water supply planning and development, from Everglades restoration to basin-level analyses, with a minimum 50-year planning horizon.

110. Investigate regionalization of water supply.

Explore the development and expanded use of regional wellfields, water and reclaimed water facilities to achieve scales of economy county-wide in addressing water supply, wastewater treatment and alternative water supply, as part of climate adaptation and sustainable resource planning efforts.

111. Incentivize integrated water management strategies.

Actively promote the "one water" concept, recognizing the importance of combined water storage, recharge, treatment, reuse and management in a changing environment as part of efficient and sustainable water management systems.

112. Develop alternative water supply strategies.

Work in coordination with all utilities and municipalities and potentially third parties to develop and implement alternative water supply strategies, especially reuse strategies, to mitigate future water shortages as part of Broward's Integrated Water Resource Plan. Coordinate with FPL to deliver and use reclaimed water for FPL facilities.

113. Model the sustainable use of the aquifer.

Continue providing integrated modeling to support the sustainable use of the Biscayne and Floridan aquifers for recharge, storage and potable water supply purposes.

114. Update mapping and monitoring of the soil saturation zone.

Coordinate with appropriate agencies on the technical evaluation and remapping of the soil saturation zone to better understand the potential for contaminant mobilization and changes in hydrology affected by reduced soil storage. Partner with municipalities and academic institutions to evaluate the influence of changes in soil saturation on site-specific conditions.

115. Evaluate the impacts of flooding of contaminated sites.

Evaluate the impacts of flooding and sea-level rise on brownfields and other contaminated sites for potential environmental and public health impacts.

116. Monitor the effects of water table rise on water quality.

Organize ambient and targeted water quality monitoring efforts to identify and evaluate trends in bacterial concentrations and nutrients in freshwater and coastal water systems associated with changes in the groundwater table on septic systems performance for potential public health and environmental impacts.

117. Monitor and protect wellfields.

Expand source-water (wellfield) monitoring and protection programs to mitigate water supply loss due to drought, groundwater contamination from pollutants and saltwater intrusion.

118. Undertake an integrated evaluation of monitoring efforts.

Undertake a comprehensive review of the various hydrologic and environmental monitoring networks as part of an integrated data assessment to help inform and improve monitoring data investments, data use and interpretation.

119. Evaluate reuse water interaction with and impacts to the natural systems.

Collaborate with federal and state agencies to develop the criteria for stormwater, wastewater and consumptive use management decision matrices, concerning the potential impacts on natural areas and to develop mitigation strategies to ensure sufficient fresh water is available for critical natural systems under current and future conditions. Identify opportunities for recharge.

120. Implement stormwater reuse.

Lead in the regional development of stormwater reuse in promotion of flood mitigation, water supply and water quality benefits, and specifically pursue construction of Phase I and II of the C-51 Reservoir as a flood mitigation and alternative water supply project.

121. Implement wastewater reuse strategies.

Encourage coordination and prioritization of funding strategies among all levels of government and private utilities to ensure timely compliance with reuse requirements. Implement the Broward Master Water Reuse Plan.

122. Evaluate reuse considering sea-level rise.

Coordinate with all utilities and municipalities to evaluate the utilization of wastewater and stormwater reuse in order to offset potable water demands, mitigate for the loss of coastal wellfields, and as means for abating saltwater intrusion, with consideration of salinity and water quality requirements of source water for intended applications.

123. Increase the percentage of pervious areas.

Determine the optimum percentage and location of pervious area placement. Complete a cost/benefit analysis of imposing new regulations that require expansion of pervious areas, the capture and reuse of rainwater and recharge of the Biscayne Aquifer. Propose appropriate regulations for new construction, redevelopment, additions, retrofits, or modifications of property that consider economic and environmental factors and climate change.

124. Promote green stormwater infrastructure.

Promote the expanded use of green infrastructure, shared water management systems, storage options and innovative stormwater design as part of redevelopment strategies and public infrastructure projects, including the pursuit of partnerships to pilot green options under varying conditions.

125. Community engagement in flood mitigation programs.

Engage with municipalities to achieve community-wide participation in hazard mitigation activities and programs, including FEMA's community rating system. Emphasize coordinated public outreach regarding flood risk and flood insurance for all properties.

What You Can Do!

The success of this Climate Action Plan also depends on individuals – 1.9 million individuals living, working and playing in Broward County.

You can help by checking off as many of these actions as possible!

- ☐ **Be an informed voter and VOTE!** Also, actively participate in community workshops and commission meetings.
- ☐ **Visit the** Broward County Resilience Dashboard**:** Gain a better understanding of local climate change impacts, climate adaptation and mitigation investments occurring in your community.
- ☐ **Switch to LEDs (Light Emitting Diodes):** LEDs use 75% less energy than regular light bulbs, last up to 10 times longer and pay for themselves in the first four months.
- ☐ **Cool your home at 78^{0}F or warmer with the thermostat fan switched to auto:** For additional savings, raise your thermostat to 82^{0}F when you're away. Savings can be $200-$300 per year. For those that like to keep it cooler, consider installing renewable energy with a solar photovoltaic (PV) rooftop array to help offset the environmental impact of running your AC.
- ☐ **Adjust your water settings:** Turn the hot water heater down to 120^{0}F, and combine that with washing your clothes in cold water and your savings can be $200-$300 per year.
- ☐ **Install a solar thermal water heater or photovoltaic:** Though initially more costly to install, solar water heaters can cut energy bills by 50-80% within the first year.
- ☐ **Buy an electric car:** An electric vehicle would make the greatest reduction to your personal carbon emissions footprint.
- ☐ **Choose and use your appliances wisely:** Maximize your use of water-consuming appliances. Choose high-efficiency appliances, such as Energy Star-rated washers or dishwashers, when replacements are needed.
- ☐ **Make sure every tap in your home has a high-efficiency faucet aerator:** Faucet aerators are the little pieces of hardware that screw into the bottom of faucets, they cost about $6.
- ☐ **Harvest rainwater for irrigation:** Collect and save rainwater from your gutters and use it to water your flowers and plants. Check with your local hardware stores and home improvement centers to purchase and help you install rain barrels.
- ☐ **Replace your showerhead:** High-efficiency showerheads are designed to maintain water pressure while using much less water than the old-fashioned sort. This quick-fix will reduce your shower water use by 20-60%.
- ☐ **NatureScape your yard:** Many beautiful shrubs and plants thrive with far less watering than other species. Native plants will use less water and be more resistant to local plant diseases. Layering with mulch also prevents rapid water loss and, as a result, reduces the frequency of watering.

Learn more by liking our "Broward County Environment" page on Facebook, or by following us on Twitter @ BrowardEnv. Visit **Broward.org/Climate** for information and resources in the climate toolbox.

What We Have Done So Far…

Recent Actions in Preparing for Climate Change

From higher than normal tidal flooding to increasing temperatures and drought, climate change is affecting our community now. Broward County is at the forefront of dealing with these impacts and preparing our community for future changes. The Broward County Board of County Commissioners recognizes the need to plan, invest and act now to protect our community, and are doing so with policies, programs and projects while coordinating with multiple levels of government, industry and community organizations to leverage resources.

Highlights of Accomplishments from the Last Five Years

☐ 2015 Broward County Climate Change Action Plan

Broward County has completed or initiated 100% of the actions in the initial Climate Change Action Plan.

☐ Broward County Greenhouse Gas (GHG) Emissions Inventory Report

County-wide inventories were developed for emissions generated from 2007 to 2018 with projections to 2050. From 2015-2018, county-wide emissions decreased 10%, predominately due to a change in the type of fuel used for electricity generation by the utility. Transportation emissions increased. To slow climate change, per capita emissions need to decrease from 13 tons to two tons per person.

☐ Broward Leaders Resilience Roundtable

Since 2018, Broward County has convened an annual Broward Leaders Roundtable on Climate and Resilience to foster collective sharing and advancement of communications, planning and investments vital to the resilience of our communities. At the 2019 Roundtable, the assembled leaders agreed on the idea of a voluntary annual survey of municipalities and tribes, to help track the progress being made by these governments and serve as a basis for knowledge exchange. Outcomes have included establishing an annual progress survey and the County Resilience Dashboard, refining the Compact Climate Assessment Tool and Annual Snapshot, coordinating solar information for residents, developing a communications plan, identifying business opportunity derived from resiliency efforts and investment needs and planning to better integrate work of various groups taking climate action.

☐ Youth Climate Summit

Since 2019, Broward County and the Broward County School Public Schools have hosted an annual Youth Climate Summit for students in grades 5-12 to advocate for policy change and give students a voice for promoting environmental sustainability. Students who attend the Summit will have the

opportunity to learn from youth and experts on the global climate change challenge, its regional implications and local actions everyone can take to address the challenge.

☐ Broward Resilience Planning Standards

The Broward County Board of County Commissioners has taken many actions to further resilience planning and investments in Broward County. including:

- o Adoption of the amendment to the Land Use Plan to include resilience criteria for land use plan amendment application review and establishment of Regional Adaptation Action Areas of Regional Significance; and
- o Adoption of the Future Conditions Groundwater Table Map, referenced in Ordinance No. 2017-16, to require drainage infrastructure for major redevelopment projects to be designed for groundwater conditions in 2070; and
- o Adoption of a county-wide resilience standard for seawall top elevations to help protect against high-tide flooding under conditions of two foot sea-level rise. This action not only helps to ensure the performance of individual and community infrastructure improvements but also protects homeowners, with a required real estate disclosure regarding the new standard; and
- o Adoption of an amendment to the County's priority planning area map in alignment with the updated sea-level rise projection and finalizing an update to the County's 100-year flood map to account for future conditions; and
- o Adoption of the Future Conditions 100-year Flood Elevation Map, with future conditions rainfall projections, which will help reduce flood risk with updated finished floor elevations for new construction while providing the basis for county-wide risk assessment and resilient infrastructure improvement plans, in partnership with the municipalities, water control districts and South Florida Water Management District.
- o Initiation of the procurement for a county-wide resilience plan expected to provide a community-wide foundation for coordination infrastructure investment and resilient redevelopment strategies for decades to come.

☐ Southeast Florida Regional Compact Unified Sea-Level Rise Projection

In 2019, the Broward County Commission approved the Southeast Florida Regional Sea Level Rise Projection Update as the basis for county-wide coordination of sea-level rise adaptation planning, extending the 50-year planning horizon to 2070 and planning for 3.3 feet of sea-level rise.

☐ C-51 Reservoir Project

Broward County continued to assume a leadership role in the advancement of the C-51 Reservoir as a regional alternative water supply project that will help protect existing wellfields from saltwater intrusion while expanding and diversifying local water sources and supplies. Collaboration with municipal partners helped achieve commitments for 20 million gallons per day in reservoir capacity, enabling the advancement of this project, and planned ground-breaking was celebrated in February 2021 by the end of the calendar year and planned delivery of the project in just two years. This project represents the first multi-jurisdictional public-private alternative water supply project in the region and a major advancement in helping to ensure sustainable and resilient water supplies for the Broward community.

☐ County Solar Investments

Broward County has made great strides towards leading a clean energy future with more than six megawatts in solar energy project commitments across 15 sites to date, including Port Everglades, Broward Parks, libraries, parking garages and other county facilities including both solar parking canopies and rooftop installations.

Agencies collaborated to finalize a report analyzing labor and costs of outfitting four of the County's largest fleet parking facilities with a maximum amount of electric vehicle chargers. The results serve as the basis for near-term and five-year capital planning to meet the County' clean fleet goal. Broward County is also working to create a "library" of suitable electric vehicle chargers with data-sharing capabilities and open-software functionality to allow the easy purchase of a variety of systems, allowing different charger types and technologies to be deployed and evaluated by the County. County agencies are meeting quarterly to maintain coordination of electric vehicle initiatives.

☐ Broward Solar Co-op

In 2020, Broward County launched its fourth solar co-op initiative to assist residents in realizing cost savings by bulk-purchasing solar installations. Technical assistance and customer service were provided to members throughout the process. The Broward Solar Co-op Program increased solar installations county-wide by over 5%.

☐ County Fleet Electrification

In the effort to meet targets established in the Under2 Coalition's Zero Emissions Vehicle Challenge by 2030, Broward County has prioritized electric vehicles for new single passenger vehicle purchases including seven Nissan Leafs, seven Chevy Bolts and three Tesla electric vehicles while also installing seven Level-two fleet electric vehicle chargers at various County parking facilities. An additional 11 electric vehicles will be added to the County's fleet in 2020. Agencies collaborated to finalize a report analyzing labor and costs of outfitting four of the County's largest fleet parking facilities with a maximum amount of electric vehicle chargers. The results serve as the basis for near-term and five-year capital planning to meet the County' clean fleet goal. EPCRD/EPGMD is also working with the Purchasing Division to create a "library" of suitable electric vehicle chargers with data-sharing capabilities and open-software functionality to allow the easy purchase of a variety of systems, allowing different charger types and technologies to be deployed and evaluated by the County. County agencies are meeting quarterly to maintain coordination of electric vehicle initiatives.

☐ Urban Heat Vulnerability Mapping

Through continued technical assistance provided by Earth Economics and the Urban Green Infrastructure Lab, preliminary urban heat mapping and a high-level analysis of vulnerabilities were completed for Broward County. The public health burden of urban heat islands was confirmed to be disproportionately levied on the lowest income households. Approximately 90,000 residents with income significantly below the poverty level live in neighborhoods where temperatures are higher than the rest of the county. One-third of this population is at higher risk to heat-health impacts due

to their age. The model estimated that 13 to 44 lives are lost in the County annually due to urban heat island effects. The number of days above 88°F has increased 36% since 2000, to 90 days per year. By 2050, the number of hot days is projected to increase to 144 days.

☐ Property Assessed Clean Energy

Since program inception in June 2016 through December 2020, over $ 402 million in hurricane protection, energy efficiency and renewable energy projects have been financed through the Broward Property Assessed Clean Energy program. Over 18,000 projects have been completed saving enough energy to power the equivalent of 5,442 homes a year. Nearly nine MW of solar energy systems have been installed further offsetting electricity costs for residents. As a result of the PACE program and other Broward solar initiatives, Broward County has the most individual solar installations in the state.

☐ Business Case for Resilience Project

During 2019-2020, Broward County managed a contract with the Urban Land Institute for research and development of the Business Case for Resilience in the Southeast Florida study, jointly funded by the Southeast Florida Regional Climate Change Compact and business leadership and a grant from the Florida Department of Environmental Protection. The report analyzed the costs and benefits of both community-wide resilient infrastructure investments (generally public-sector) and building-level investments (generally private-sector) and revealed a benefit-cost ratio of 2:1 for community-wide improvements, and 4:1 for building-level adaptation with investments serving to preserve and generate jobs, economic activity and real estate value. Recommendations focus on raising climate risk awareness, public-private coordination to bolster occupational training, engagement with small businesses and key economic clusters.

☐ Broward.org/climate

The website was established as the clearinghouse for all relevant climate indicators, initiatives and educational resources, and reference points for the Climate Ambassadors Program, the King Tide Science Initiative and the Climate Change Toolbox and Training for Employees.

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