

CITY OF AUSTIN

Heat Resilience Playbook



OFFICE OF
RESILIENCE

Keeping Austin Cool

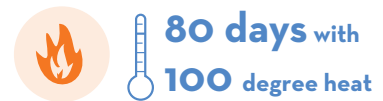
Austin's mild climate has provided a haven for communities for time immemorial. This region has now become home to almost 2 million people who live, work, and play in the traditional and ancestral homelands of the Indigenous Peoples, the original stewards of this land.¹

Our mild climate is changing, but the effects of climate change are not new. Austinites have lived through extreme weather events such as intensifying droughts, freezes, floods, wildfires, and heat waves over the years. Winter Storm Uri (2021) and Mara (2022) are some of the recent reminders that climate change will continue to disrupt our way of life and threaten our infrastructure and ecosystems. More frequent and intense extreme weather – paired with increased flooding and high wildfire risk – stresses our resources and daily lifestyle.



Deadly extreme heat events are projected to become longer-lasting, more severe, and more frequent.² This past summer was Austin's hottest meteorological summer on record, with over 80 days with 100-degree heat, and of those 80, 40 days saw temperatures of 105 degrees or higher. Not only did the city experience extreme heat, but the heat was unrelenting – lasting for weeks or months at a time.³ The science is clear that it is only going to get hotter, and what's worse, not everyone will be impacted equally. By the end of this century, Austin's average heat index, the 'real-feel' outside calculated by adding temperature and humidity together, is projected to rise by an additional 2-10 degrees Fahrenheit.⁴

2023 HEAT-RELATED RECORD



2023 HEAT-RELATED RECORD

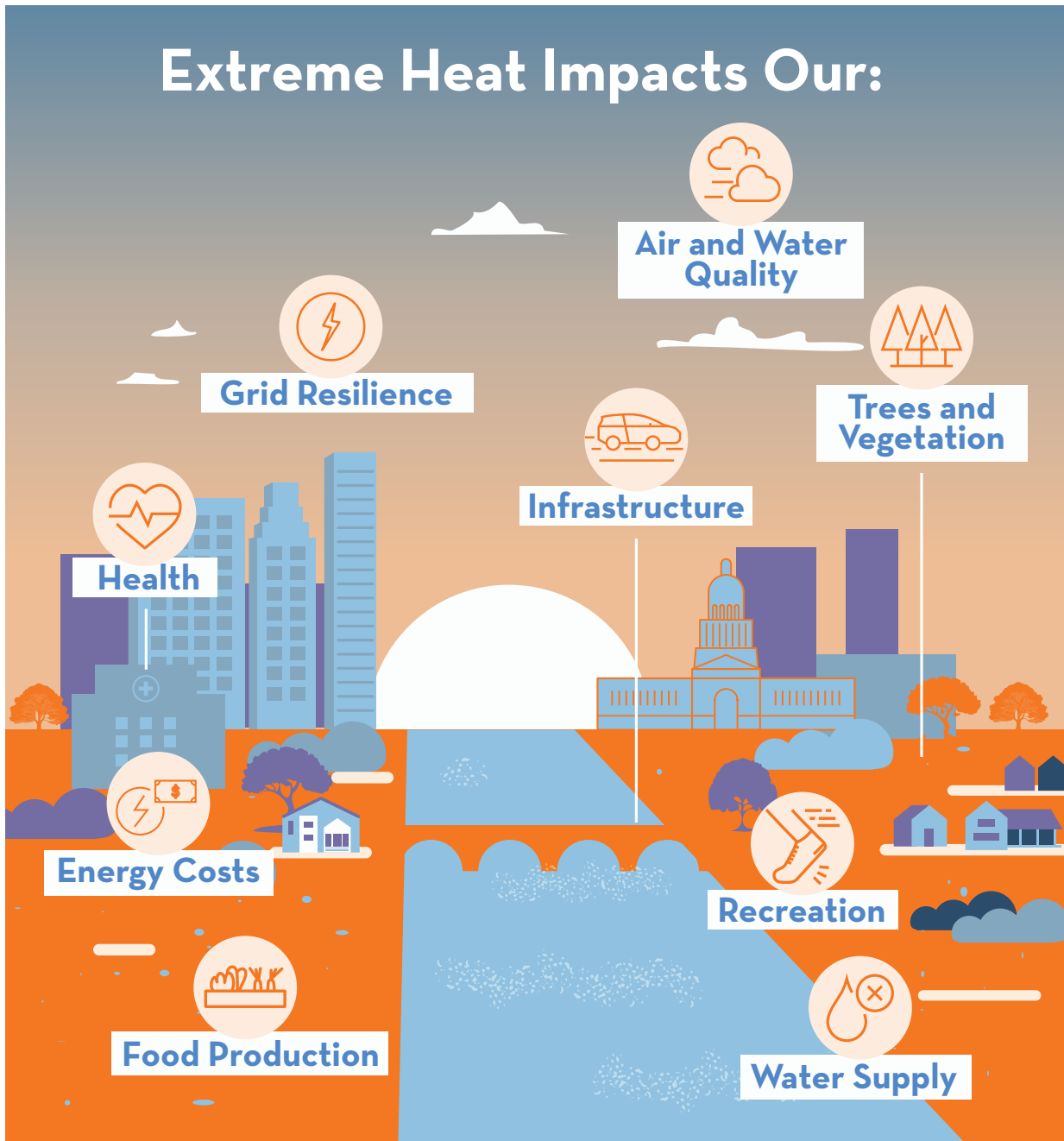


compared to the past 6-years, with at least 10 of our residents suffering from heat related mortalities.

Extreme heat conditions – often made worse when prolonged for a period of time and extended throughout the night – are defined by weather that can lead to illness, death, and major disruptions to our ecosystems and the built environment.

- 1 To read our full land acknowledgment, please visit page two of One Austin: Our Resilience Framework for Action: <https://www.austintexas.gov/sites/default/files/files/Resilience/Austin-blueprint-report.pdf>
- 2 <https://www.cdc.gov/climateandhealth/pubs/extreme-heat-guidebook.pdf>
- 3 <https://www.austintexas.gov/news/city-closes-extreme-heat-resources-summer#:~:text=Central%20Texas%20experienced%20its%20hottest,Heat%20Warning%20for%2038%20days>
- 4 To learn more about the climate projections - check out: www.austintexas.gov/page/climate-projections-austin

Austinites have reported that extreme heat already impacts their ability to enjoy both indoor and outdoor activities due to heat exhaustion, and exacerbates existing illnesses, such as headaches and asthma. Extreme heat is not just bothersome, it is the deadliest of climate disasters.

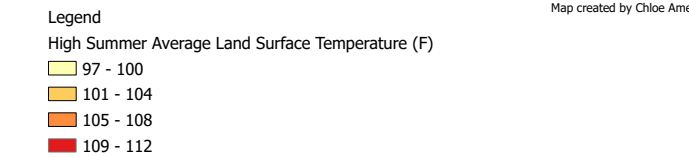
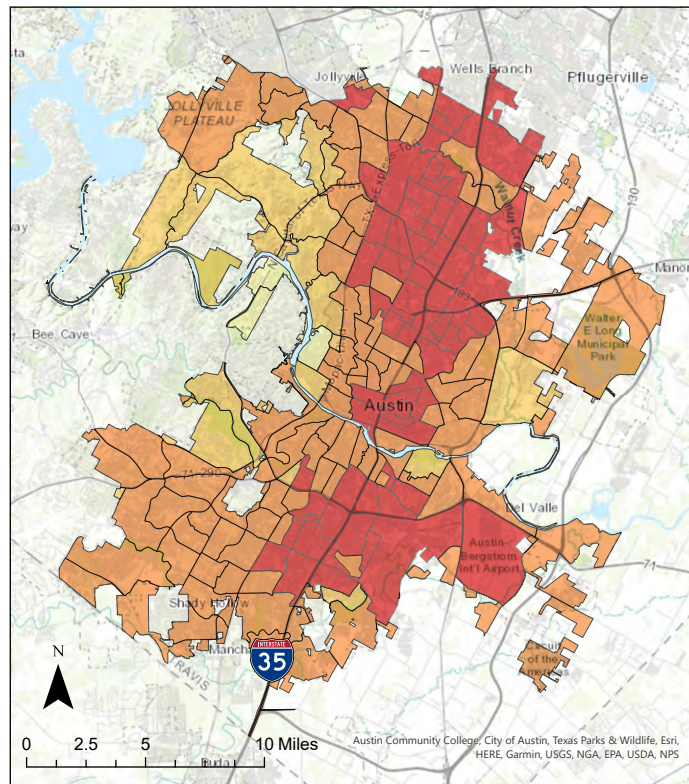


Now, we have the opportunity to intervene and make changes to avert some of the worst impacts of extreme heat while prioritizing an equitable, affordable, and climate-ready future for all.

Austin's Heat Equity

When there are major heat events, our residents who are most vulnerable feel it the worst. While all of Austin is expected to experience increases in extreme heat, not all residents face the same impacts. People with the least amount of resources or who spend time outdoors are most at risk – including outdoor workers, infants, elderly, incarcerated people, individuals experiencing homelessness, low-income communities, and people with chronic or mental illness.⁵

Factors like systemic racism and legacies of disinvestment in communities of color have exacerbated inequities and resulted in disparate health, economic, environmental, and social outcomes for our city. When combined with persistently rising housing costs, increasing cost burden, and the impacts of climate change, many Austin families have limited access to resources to help them prepare for, respond to, and “bounce back” from climate extremes, like heat.

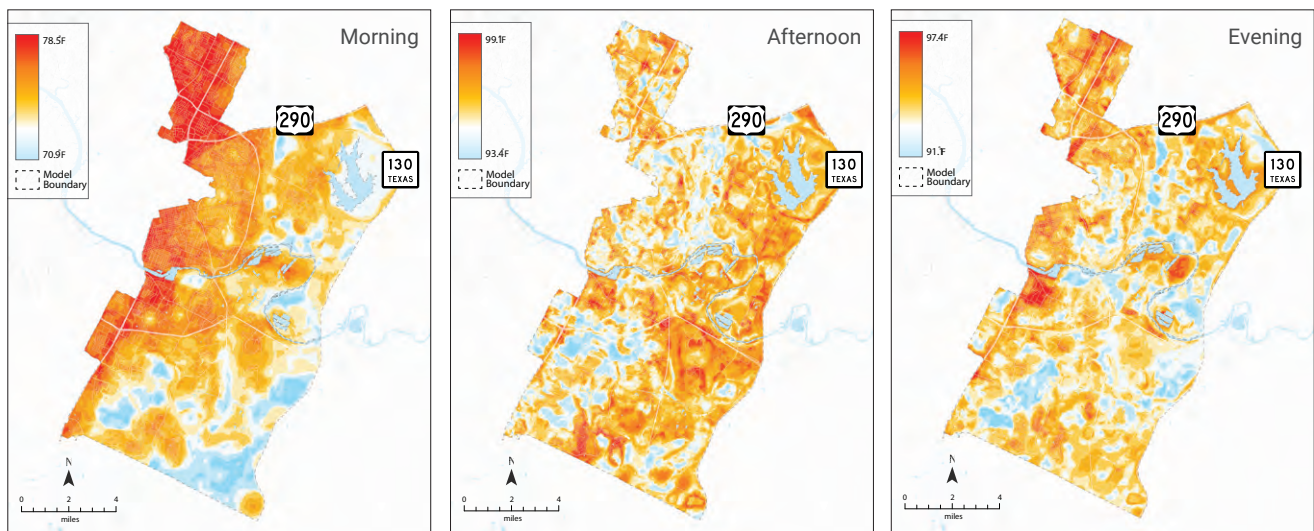


Map of Austin, TX based on high summer average surface temperature

5 <https://ephtracking.cdc.gov/indicatorPages?selectedContentAreaAbbreviation=35&selectedIndicatorId=172>

There are several hotspots in Austin – areas where heat is felt more intensely – including within the Eastern Crescent. In 2020, the City partnered with the National Oceanic and Atmospheric Administration (NOAA) and the University of Texas at Austin to map areas that are most exposed to extreme heat in Austin’s Eastern Crescent. Areas of the city with the highest social vulnerability also experience the highest heat impacts, feel hotter, and have the poorest air quality.⁶ Yet, these are also areas of the city where people have less access to or cannot afford air conditioning, are dependent on public transportation, and have outdoor jobs.

To ground-truth these maps with lived experiences, Go Austin / Vamos Austin, a community organization in Austin’s Eastern Crescent, worked with Austin residents in the Eastern Crescent to document heat impacts and incorporate resident’s experiences into the heat maps. Not only were these exercises important to document lived experiences of extreme heat, especially amongst communities of color and low-income communities, but the recommendations from this community engagement also informed Austin’s Heat Resilience Playbook.⁷



The maps above depict the heat index in Austin’s Eastern Crescent at three distinct points of the day – morning, afternoon, and evening – to uncover associated heat-related challenges by neighborhood.

The actions in this Playbook are based on localized climate data, lived experiences, and community-informed recommendations to advance equitable, sustainable, long-term, and Austin specific heat resilience strategies. The following actions aim to prioritize unique community experiences and needs, and will continue to incorporate community input throughout their implementation.

6 https://www.austinindicators.org/wp-content/uploads/2020/02/Austin-Climate-Vulnerability-Report_Bixler-and-Yang-2020.pdf

7 GAVA report: <https://www.austintexas.gov/sites/default/files/files/GAVACommunity%20Heat%20Report%202022-2023.pdf>

Austin's Heat Resilience Playbook

Austin's first Heat Resilience Playbook identifies neighborhood-based and citywide projects, programs, and policies that can be leveraged to combat extreme heat. This Playbook seeks to uplift existing City-led heat resilience efforts and outline a series of high-impact actions that the City of Austin can take, with additional funding and resources, to build heat resilience.

The actions outlined in this Playbook are structured through a three-pillar approach that focuses on individuals, neighborhoods, and our built and living environment. Strategies and actions identified are informed by Austin's most recent localized extreme heat data and the latest international best practices. The strategies and actions are also a result of workshops, departmental meetings, office hours, and individual review efforts in collaboration with and consultation from City departments and Austin community members. Each action has associated champions assigned based on interest, capacity, and alignment with existing jurisdiction and responsibilities.



1

Support Healthy and Prepared Austinites

- 1.1 Heat Risk and Mitigation Communications
- 1.2 Enhanced Outreach During Extreme Heat
- 1.3 Safety Measures and Policies
- 1.4 Data and Evaluation



2

Prioritize Cooling Investments and Programming in High-Heat Neighborhoods

- 2.1 Cool Homes
- 2.2 Cool Community Spaces
- 2.3 Outdoor Cool Oases
- 2.4 Cool Connections

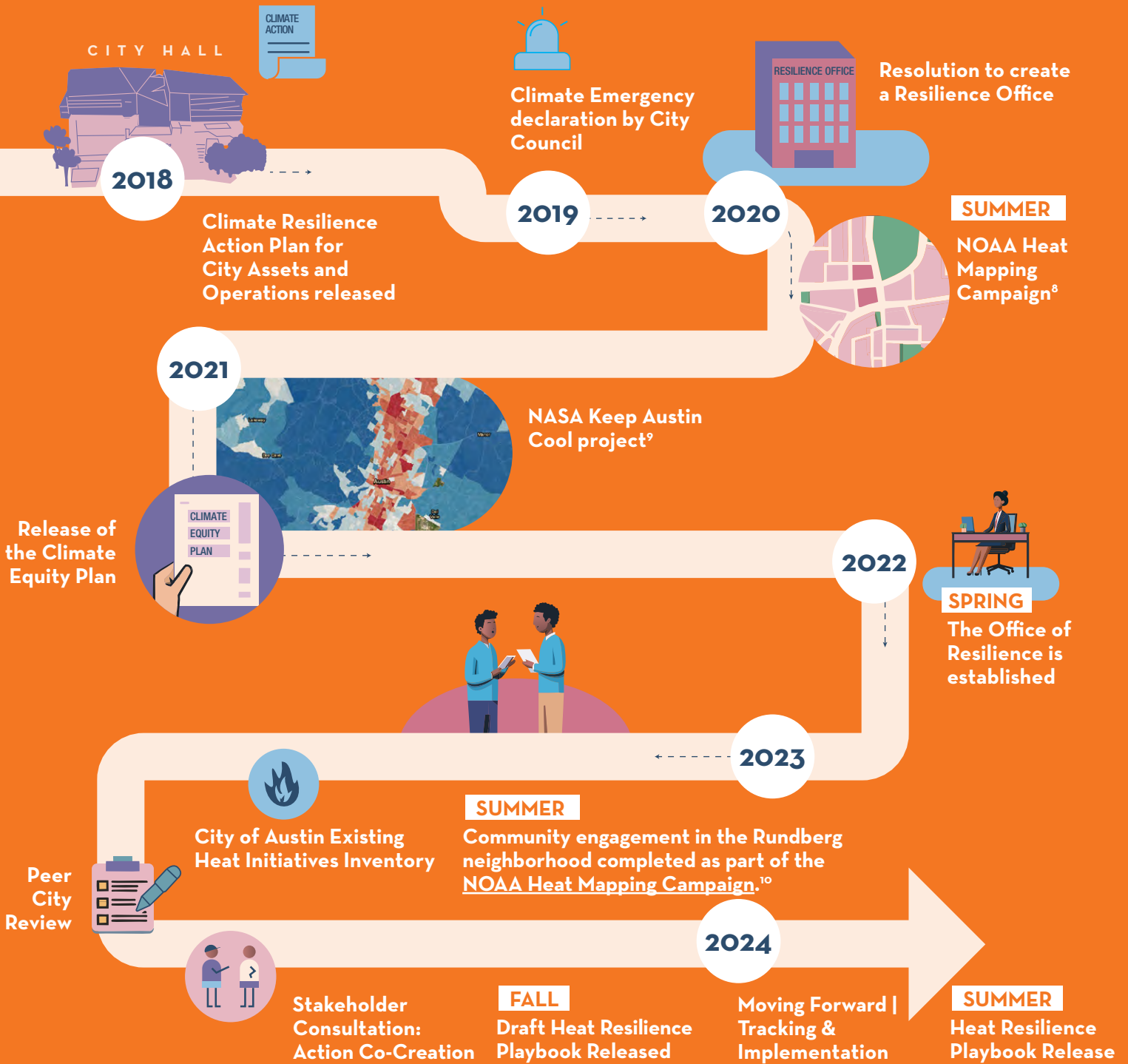


3

Enhance the Capacity of Our Infrastructure and Ecology to Adapt to the Impacts of Extreme Heat

- 3.1 Cool Buildings
- 3.2 Tree Planting and Maintenance
- 3.3 Parks and Green Space
- 3.4 Resilient Energy System
- 3.5 Heat Resilience Planning

Heat Resilience Playbook Timeline



8 Partners include Go Austin/Vamos Austin (GAVA), University of Texas at Austin, and City of Austin departments.

9 <https://arcg.is/9W4X51>

10 <https://www.austintexas.gov/sites/default/files/files/GAVACommunity%20Heat%20Report%202022-2023.pdf>

How to Read This Playbook

THE ACTIONS WITHIN THE PLAYBOOK FOLLOW A CONSISTENT FORMAT AND ARE ORGANIZED BY PILLAR AND STRATEGY.

Pillars

Pillars are proposed goals that will lead to a more heat-resilient Austin.

Strategies

Strategies are identified methods of achieving those pillars.

1

Support Healthy and Prepared Austinites

1.1 HEAT RISK AND MITIGATION COMMUNICATIONS
Advance inclusive and effective communications methods to educate and empower Austinites around extreme heat risk

1.1.1 Expand City-led heat risk education campaigns
 The City will build greater awareness around heat risk and safety precautions before and during high-heat months by deploying innovative and culturally appropriate extreme heat education campaigns in high-traffic city locations – such as libraries and recreation centers – and other public spaces.
CHAMPIONS: AUSTIN PUBLIC HEALTH, HOME LAND SECURITY AND EMERGENCY MANAGEMENT

1.1.2 Partner with communities to share unified heat risk messaging with more residents
 The City will coordinate with community organizations and other entities across the region to disseminate unified heat preparedness response information. The City will also build off its community ambassador programs and Community Health Workers initiatives to reach more Austinites with critical information on extreme heat risk and tactics for weathering heat emergencies to engage with more Austinites – especially in heat-vulnerable neighborhoods.
CHAMPIONS: AUSTIN PUBLIC HEALTH, HOME LAND SECURITY AND EMERGENCY MANAGEMENT, TRAVIS COUNTY

Actions

Actions are the concrete steps to advance each strategy.

Champions

Champions represent a cross-departmental cohort of City and external partners involved in initiative implementation. **Champions are listed alphabetically.**

1

Support Healthy and Prepared Austinites



1.1 HEAT RISK AND MITIGATION COMMUNICATIONS

Advance inclusive and effective communication methods to educate and empower Austinites around extreme heat risk

1.1.1 Expand City-led heat risk education campaigns

Build greater awareness around heat risk and safety precautions before and during high-heat months by deploying equitable, innovative, and culturally appropriate extreme heat education campaigns in high-traffic city locations – such as libraries and recreation centers – and other public spaces.

CHAMPIONS: AUSTIN 3-1-1, AUSTIN PUBLIC HEALTH, AUSTIN PUBLIC LIBRARY, HOMELESS STRATEGY OFFICE, HOMELAND SECURITY AND EMERGENCY MANAGEMENT, PARKS AND RECREATIONS

1.1.2 Share unified heat risk messaging with more community members through expanded partnerships

Coordinate with community organizations and other entities to develop and disseminate unified heat preparedness response information. Partnering with the City's community ambassador programs and Community Health Workers initiatives to reach more Austinites with critical information on extreme heat risk and tactics for weathering heat emergencies to engage with more Austinites – especially in heat-vulnerable neighborhoods.

CHAMPIONS: AUSTIN PUBLIC HEALTH, TRAVIS COUNTY



1.1.3 Ensure City of Austin employees are educated on heat risk and mitigation

Train City employees – with a focus on those at most risk of heat exposure and those working with vulnerable Austinites – on extreme heat risk to protect Austinites and enhance preparedness. Leveraging existing City department channels, the City may consider consistently communicating risk and mitigation measures taken during extreme heat events to ensure the City’s workforce is aware and prepared during heat emergencies.

CHAMPIONS: HUMAN RESOURCES

1.1.4 Coordinate City resources ahead of and during extreme heat events pursuant to the heat emergency response plan

Seek funding to activate a network of diverse assets and resources to help keep Austinites informed during extreme heat events. In addition, continue to incorporate heat warning alerts utilizing the current emergency warning systems in the lead-up to extreme heat events. Aim to increase usership of the resources currently available.

CHAMPIONS: AUSTIN PUBLIC HEALTH, CAPMETRO, HOMELAND SECURITY AND EMERGENCY MANAGEMENT, OFFICE OF RESILIENCE, PARKS AND RECREATION



1.2 ENHANCED OUTREACH DURING EXTREME HEAT

Support Austinites through enhanced outreach programming, especially those disproportionately impacted by heat

1.2.1 Focus City outreach efforts on Austinites experiencing homelessness

Provide augmented heat risk mitigation support to people experiencing homelessness during excessive heat days through focused outreach, resources, and connections to cooling services and spaces, water access, and heat risk information.

CHAMPIONS: AUSTIN PUBLIC HEALTH, HOMELESS STRATEGY OFFICE

1.2.2 Strengthen existing City engagement programs to expand the reach of response resources

Launch a pilot initiative that provides the opportunity for Austinites conducting outreach to vulnerable populations during heat waves to earn credentials such as the Texas Department of Health and Human Services' *Community Health Worker, Promotor(a) Training and Certification Program*, and Austin Public Health's *Continuing Education Unit Program* that can build their skill sets and open the door to additional career opportunities.

CHAMPIONS: AUSTIN PUBLIC HEALTH



1.3 SAFETY MEASURES AND POLICIES

Promote safety measures and explore new policies that support safety during an extreme heat event

1.3.1 Raise awareness of heat safety for at-risk workers and standardize best practices for City departments

Support outdoor and indoor workers vulnerable to extreme heat in their understanding of heat safety and rights. By compiling and promoting a comprehensive and easy-to-read digest of heat safety tactics and rights, the City can standardize best practices and educate its own workforce and workers across Austin on approaches for staying safe during extreme heat events.

CHAMPIONS: HUMAN RESOURCES

1.3.2 Expand water access for all at City facilities

The City can implement a water accessibility policy in Chapter 25-2 in the site plan, whereby water is provided at City facilities, at no cost, to Austinites who request it. By leading through example and communicating the benefits of such a policy, the City may encourage the private sector to voluntarily participate as well.

CHAMPIONS: AUSTIN WATER, DEVELOPMENT SERVICES, OFFICE OF RESILIENCE



1.4 DATA AND EVALUATION

Support continuous learning and decision-making through heat dashboards, maps, and indices

1.4.1 Conduct a comprehensive and innovative heat mapping exercise across the City

In collaboration with the University of Texas at Austin Climate CoLab, the City will collect, update, and expand on existing urban heat maps and associated data sets from diverse federal, state, and local – as well as academic and private – sources to build a deeper understanding of local ‘hot spots’ and areas acutely impacted by increasing temperatures. These heat maps should be validated through community science at a small, local scale.

CHAMPIONS: AUSTIN PUBLIC HEALTH, OFFICE OF RESILIENCE, PLANNING, UNIVERSITY OF TEXAS AT AUSTIN

1.4.2 Develop a city-wide heat vulnerability index to support decision-making

Building on the comprehensive heat mapping undertaken in 1.4.1, the City and the University of Texas at Austin Climate CoLab will create a heat vulnerability index that combines data on underlying vulnerabilities that exacerbate heat’s impacts (e.g., race, age, income, etc.) with proximity and access to cooling infrastructure, including tree canopy cover or parks. The heat vulnerability index will help the City to better define the disproportionate impacts of heat and also serve as a tool to prioritize investments in areas of high risk and toward Austinites in greatest need as it relates to extreme heat.

CHAMPIONS: AUSTIN PUBLIC HEALTH, OFFICE OF RESILIENCE, PLANNING, UNIVERSITY OF TEXAS AT AUSTIN

1.4.3 Establish a heat dashboard to understand the impacts of heat interventions and programming

Create a centralized heat dashboard that helps measure progress, learning, and increases transparency around City-led heat resilience programs and projects. Aligning around a targeted list of key performance indicators for which data is already available or could reasonably be collected. Then collect, monitor, and evaluate these data through the dashboard in an effort to articulate the impact of and continuously learn from its heat resilience interventions through inter-departmental collaboration and partnerships with local academic institutions.

CHAMPIONS: AUSTIN PUBLIC HEALTH, OFFICE OF RESILIENCE, PLANNING, UNIVERSITY OF TEXAS AT AUSTIN

Many cities — including New York, Miami, and Washington D.C. — have layered socioeconomic vulnerability with access to cooling spaces and heat index to determine which communities are most at risk in extreme heat events. Leveraging this data, Cities can direct heat resilience interventions to priority communities.



2

Prioritize Cooling Investments and Programming in High-Heat Neighborhoods



2.1 COOL HOMES

Promote and support strategies that keep Austinites cool in their homes

2.1.1 Promote air conditioning rebates and incentives

Promote existing incentives and programs that support Austinites in upgrading air conditioning units to energy-efficient units, by partnering with local community groups and other City of Austin departments to cross-promote these incentives and programs. These interventions may make more Austinites aware of existing benefit programs while continuing to optimize this benefit for usage by those in high-heat neighborhoods.

CHAMPIONS: AUSTIN ENERGY, OFFICE OF RESILIENCE

2.1.2 Develop and implement climate resilience standards for new affordable housing

With the help of Austin Energy Green Building, integrate existing and develop appropriate climate resilience standards, including heat resilience, for new single- and multi-family affordable housing developments.

CHAMPIONS: AUSTIN ENERGY GREEN BUILDING, HOUSING, OFFICE OF RESILIENCE

2.1.3 Retrofit existing affordable housing for climate resilience

Continue to promote the retrofit of existing multi-family affordable housing units to be more resilient to climate change, including extreme heat. Retrofits can include increased insulation, access to solar and backup power connections, increased shading and cooling benefits, flood resilience, water conservation, and green infra-

structure as outlined in the Austin Energy Green Building rating system, a component of S.M.A.R.T. Housing certification.

CHAMPIONS: AUSTIN ENERGY GREEN BUILDING, HOUSING, OFFICE OF RESILIENCE

2.1.4 Promote weatherization programs

Promote and educate Austinites on the heat resilience benefits of existing weatherization programs.

CHAMPIONS: AUSTIN ENERGY, HOUSING, OFFICE OF RESILIENCE

2.1.5 Explore regulations for indoor building temperature maximums

Explore the feasibility of instituting a maximum indoor air temperature regulation. Maximum temperature standards are a tool that would require building owners to provide air conditioning and could protect the most vulnerable Austinites from heat-related illness and death. The Office of Resilience can support Austin Energy and the Development Services Department in identifying national best practices to help shape Austin's policy and strategies while ensuring that this is developed equitably and considers the needs and impact on the most vulnerable Austinites.

CHAMPIONS: AUSTIN ENERGY GREEN BUILDING, DEVELOPMENT SERVICES, OFFICE OF RESILIENCE

2.2 COOL COMMUNITY SPACES

Increase cooling in indoor community spaces

2.2.1 Enhance and expand City Cooling Centers

During the summer months, City facilities like Austin Public Library and Austin Parks and Recreation facilities are available as Cooling Centers. Community members and visitors can utilize these facilities as a temporary reprieve from the heat and take advantage of the air conditioning. In high-heat neighborhoods, the City may explore complimentary programming at Cooling Centers through additional resources for expanded hours, diversified locations, and culturally appropriate programming to ensure an enjoyable environment for all.

CHAMPIONS: AUSTIN PUBLIC HEALTH, AUSTIN PUBLIC LIBRARY, OFFICE OF RESILIENCE, PARKS AND RECREATION

2.2.2 Grow Austin's Resilience Hub Network

Leverage the Austin Resilience Hub Network to ensure they provide cooling benefits to community members on high-heat days. The City is working to uplift 14 Resilience Hubs in East Austin, with plans to build a future network of Hubs to serve the greater community.

CHAMPIONS: AUSTIN PUBLIC HEALTH, AUSTIN PUBLIC LIBRARY, OFFICE OF RESILIENCE

2.2.3 Catalyze cooling partnerships

Explore expanding the City's cooling network to other private and non-profit facilities. This could include providing incentives to private partners – including churches, local businesses, and institutions – to increase access to indoor private cooling spaces during high-heat days.

CHAMPIONS: OFFICE OF RESILIENCE



Austin Public Library

2.3 OUTDOOR COOL OASES

Pilot cooling innovations and programming in outdoor spaces within neighborhoods disproportionately impacted by heat

2.3.1 Pilot shade interventions in private and public parks

Design and deploy pop-up built shade, tree shade, and shaded “nature play” in parks, including pocket and button parks, in heat-vulnerable neighborhoods. Pocket parks are smaller parks that serve high-density areas that are not well served by other parks and are less than 2 acres. Button parks are even smaller parks that are one-quarter of an acre or smaller. Funding and resources are needed to expand any interventions.

CHAMPIONS: PARKS AND RECREATION, PLANNING, TRAVIS COUNTY

2.3.2 Advance a Cool School Program

Through continued partnership with the Austin Independent School District, advance increased cooling benefits and shading at school campuses and properties. This can be achieved through the existing Green Schools Parks strategy where

the City of Austin is supporting more greening of school parks through the Cities Connecting Children to Nature program. The City may also explore other types of school partnerships to advance greening and cooling measures.

CHAMPIONS: DEVELOPMENT SERVICES, PARKS AND RECREATION, PLANNING, REGIONAL PARTNERS

2.3.3 Identify funding and resources for equitable access to functioning drinking fountains and hydration stations

The City’s Parks and Recreation Department needs funding and resources to assess, maintain, add, and upgrade water fountains and/or hydration stations in high-trafficked pedestrian areas and parks.

CHAMPIONS: CAPMETRO, PARKS AND RECREATION, TRAVIS COUNTY



Austin City Hall

2.3.4 Enhance access to water features including swimming pools, splash pads, and water misters

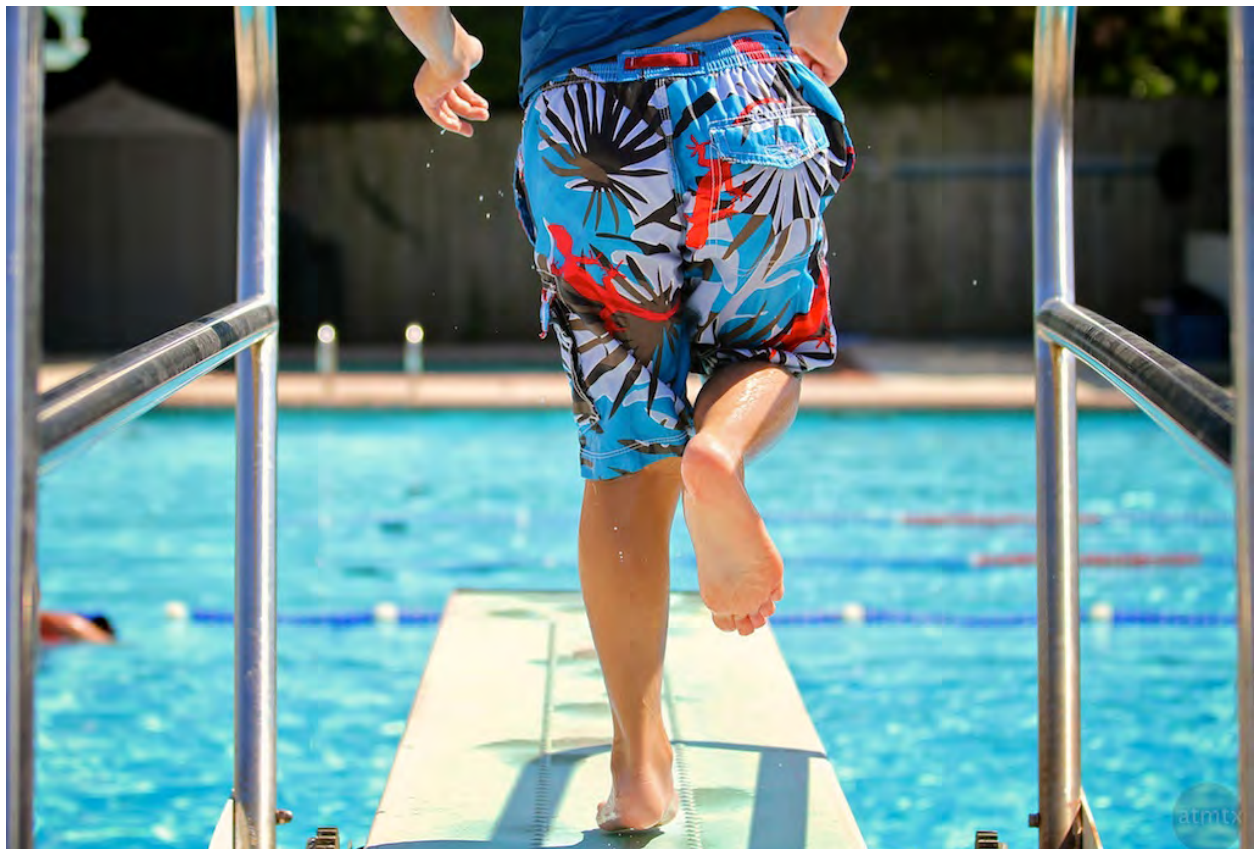
Continue to publicize location and hours of existing water features in high-heat neighborhoods. Additionally, the Parks and Recreation Department needs funding and resources to fix needed upgrades and staffing needs to ensure existing water features are functioning and open. These upgrades include water efficiency measures and water conservation features to mitigate the impacts of drought. The Parks and Recreation Department needs funding and resources to work closely with the community to assess other barriers to accessing water features such as better transit/cooler routes to these spaces and free access to pools while exploring potential new pool and splash pad locations.

CHAMPIONS: AUSTIN WATER, CAPMETRO, PARKS AND RECREATION, TRAVIS COUNTY

2.3.5 Support access to cool spaces during evening hours

Explore opportunities and identify funding sources for extended hours and increased lighting of outdoor spaces in evening hours. As daytime hours become hotter, outdoor spaces are sought at night to provide a cool refuge for Austinites wanting to be outside. To support access to these cool spaces, the Office of Resilience will work closely with relevant agencies to explore increased hours and/or lighting in spaces prioritized by the community.

CHAMPIONS: OFFICE OF RESILIENCE, PARKS AND RECREATION



2.4 COOL CONNECTIONS

Pilot connecting cooling interventions in extreme heat neighborhoods to ensure high-heat neighborhoods receive the maximum benefit from cooling

2.4.1 Identify priority streets/corridors that could benefit from additional cooling

Based on direction from council, update and refine the list of priority streets/corridors that could benefit from added shade and other cool space strategies, prioritizing high-heat neighborhoods.

CHAMPIONS: CAPMETRO, DEVELOPMENT SERVICES, PLANNING, TRANSPORTATION AND PUBLIC WORKS

2.4.2 Co-design cooling pathways to trusted community spaces

Partner with community groups and community members in high-heat neighborhoods to co-design cooling interventions along prioritized pathways to trusted community cooling spaces such as resilience hubs and parks. Cool pathways will be streets and sidewalk sections that are less than a quarter-mile in length and specifically create more shading along a path to key cooling spaces.

CHAMPIONS: CAPMETRO, OFFICE OF RESILIENCE, PLANNING, TRANSPORTATION AND PUBLIC WORKS

2.4.3 Explore a Cool Businesses Program

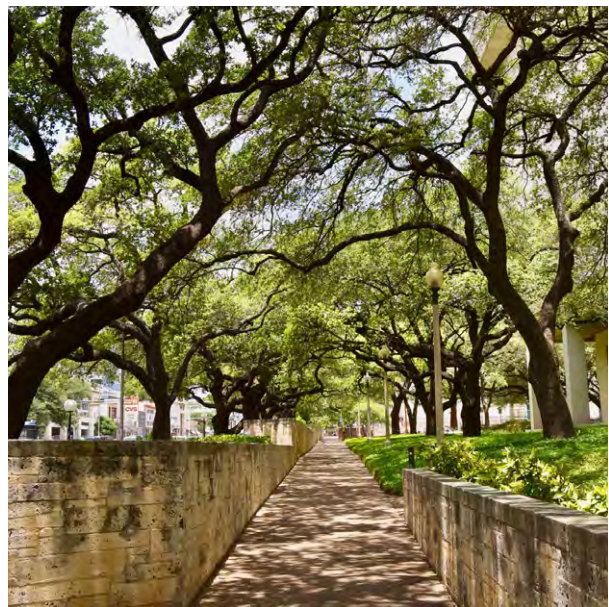
With additional funding and resources, explore working with businesses along prioritized commercial corridors to create more shade and cooling benefits. By collaborating with the business community to increase shading, the City may explore incentivizing and/or adding shading features while improving cooling benefits for pedestrians and customers along the corridor.

CHAMPIONS: ECONOMIC DEVELOPMENT, OFFICE OF RESILIENCE

2.4.4 Pilot cool corridors

Pilot cool corridors by designing and deploying cooling strategies such as trees and built shade on high-heat corridors. The Office of Resilience will work closely with community partners to identify key corridors that could benefit from cooling interventions. Cool corridors will leverage great streets infrastructure elements, such as street trees and bicycle infrastructure, as well as the Strategic Mobility Plan to maximize the benefits of linking cooling strategies together. Pilot projects should track performance and document results to facilitate future guidance and sharing of lessons learned.

CHAMPIONS: CAPMETRO, OFFICE OF RESILIENCE, PLANNING, TRANSPORTATION & PUBLIC WORKS



A concept developed by cities such as Phoenix, Arizona, cool corridors are segments of streets and sidewalks, longer than a quarter-mile, that provide shading and cooling benefits to pedestrians and cyclists. When strategically implemented along pedestrian corridors in heat-vulnerable communities, cool corridors can minimize the impacts of extreme heat.



The University of Texas at Austin, Speedway Corridor

3

Enhance the Capacity of Our Infrastructure and Ecology to Adapt to the Impacts of Extreme Heat



3.1 COOL BUILDINGS

Design for, incentivize, and codify heat resilience building across Austin

3.1.1 Research and prioritize additional heat resilience building design elements

To adapt to extreme heat, the City of Austin can seek funding and resources to conduct a gap analysis of existing design standards and research global best practices, leveraging learnings from cities like Phoenix, for heat resilience elements. These elements will account for Austin-specific needs tied to the city's new reality. Elements could include new technologies, facade upgrades, and building materials among other upgrades that advance heat resilience. As new technologies are being developed, study their potentially harmful secondary impacts on human and/or environmental systems before moving forward on those projects.

CHAMPIONS: AUSTIN ENERGY GREEN BUILDING, DEVELOPMENT SERVICES, OFFICE OF RESILIENCE, PLANNING, WATERSHED PROTECTION

3.1.2 Embed cooling in urban design guidelines

With additional funding, launch a study to understand best practices for urban design geometry/street and building orientation for cooling. Lessons and insights can be incorporated into the Urban Design Guidelines update process, beginning with a focus on downtown buildings and streets.

CHAMPIONS: DEVELOPMENT SERVICES, PLANNING, TRANSPORTATION & PUBLIC WORKS

3.1.3 Incentivize cool and green roofs

The City may explore incentivizing cool roofs and green roofs in new construction. The City

may explore assessing existing incentives and standards and explore benefits provided through existing cool and green roof projects. Then look to build upon existing and explore additional incentives for both cool and green roofs in a Functional Green Toolkit.

CHAMPIONS: AUSTIN ENERGY GREEN BUILDING, DEVELOPMENT SERVICES, HOUSING, OFFICE OF RESILIENCE

3.1.4 Research landscape codes to support Greening

Research landscape and environmental codes, including Functional Green, through additional measures related to shade interventions to support greening across the city.

CHAMPIONS: DEVELOPMENT SERVICES, TRANSPORTATION & PUBLIC WORKS, WATERSHED PROTECTION



Some cities have begun exploring heat resilience design standards or zoning guidelines that take into account temperature. The City of Boston, for example, has considered how temperature analysis like that for wind and shadow could be incorporated into development review processes.

3.1.5 Incentivize heat-resilient design in new developments

Continue building upon and strengthening Austin Energy Green Building ratings to include heat-resilient design for downtown developments, new subdivisions, and Planned Unit Developments to align with updated code.

CHAMPIONS: AUSTIN ENERGY GREEN BUILDING, DEVELOPMENT SERVICES, TRANSPORTATION & PUBLIC WORKS

3.1.6 Embed heat resilience design in city-owned buildings and assess existing standards' effectiveness

Explore City-owned buildings embedding heat-resilient design elements while mitigating climate change. The City can begin analysis by selecting a cohort of buildings in the process of being upgraded to analyze how we might embed

additional heat-resilient design elements in existing projects building on elements embedded in Leadership in Energy and Environmental Design (LEED) and those provided by Austin Energy Green Building.

CHAMPIONS: AUSTIN ENERGY GREEN BUILDING, OFFICE OF RESILIENCE

3.1.7 Incorporate heat resilience into building codes

Assess potential updates to the building technical codes that incorporate heat-resilient design. Explore new updates to build upon and further codify heat-resilient design in all buildings by piloting new innovative credits in the Austin Energy Green Building rating system.

CHAMPIONS: AUSTIN ENERGY GREEN BUILDING, DEVELOPMENT SERVICES



Backyard Family Dwelling with a 5-star Austin Energy Green Building rating.

3.2 TREE PLANTING AND MAINTENANCE

Advance the City's 50% tree canopy goal by protecting existing and planting new trees

3.2.1 Develop a coordinated and comprehensive tree planting and maintenance program

Work with the Urban Forestry Program to build upon its existing programs with a goal of developing comprehensive tree planting and maintenance plans and establishing coordinated public land management. Identify potential funding sources to sustain these efforts.

CHAMPIONS: DEVELOPMENT SERVICES, PARKS AND RECREATION, TRANSPORTATION AND PUBLIC WORKS



3.2.2 Audit and enforce tree preservation policies

Based on recent council direction, conduct an audit of existing policies protecting all trees including policies used to preserve protected trees, those measuring at or exceeding 19-inch diameter, and heritage trees, those measuring at or exceeding 24-inch diameter, and explore opportunities to incentivize protection of non-regulated trees. Following this review, the City can identify funding and additional resources to expand preservation policies for all trees and seek other resources that could be used to enforce preservation.

CHAMPIONS: DEVELOPMENT SERVICES, PARKS AND RECREATION, TRAVIS COUNTY

3.2.3 Pilot connected street trees

Pilot connected street trees through infill tree planting along frequented routes to schools, public transport, and multi-use trails. The City can analyze priority corridors, especially in heat-vulnerable communities, where street trees could be added to improve cooling and shading. Explore innovative irrigation methods, such as rainwater harvesting and curb cuts. Learnings from this type of tree planting can then be used to support cooling connection initiatives. Pilot projects should track performance and document results to facilitate future guidance and sharing of lessons learned.

CHAMPIONS: AUSTIN UTILITIES, DEVELOPMENT SERVICES, PARKS AND RECREATION, TRANSPORTATION & PUBLIC WORKS, WATERSHED PROTECTION

3.2.4 Pilot innovative tree plantings where right of way is limited

Assess existing barriers to tree planting including limited space in the right of way and utility easements. Then explore innovative approaches to overcome these barriers – including through streetscape redesign and alternate tree typologies. Learnings from this type of tree planting can then be used to support cooling connection initiatives.

CHAMPIONS: AUSTIN UTILITIES, DEVELOPMENT SERVICES, PARKS AND RECREATION, TRANSPORTATION AND PUBLIC WORKS, TRAVIS COUNTY, WATERSHED PROTECTION

3.2.5 Accelerate tree plantings in accessible locations, such as parks and publicly owned land

Identify and prioritize feasible locations for quick and straightforward tree plantings. By leveraging these “quick planting” locations on publicly owned property, the City can support the tree canopy goal while quickly providing shade benefits in those communities.

CHAMPIONS: DEVELOPMENT SERVICES, OFFICE OF RESILIENCE, PARKS AND RECREATION

3.3 PARKS AND GREEN SPACE

Design parks and transform underutilized spaces for expanded greening and cooling

3.3.1 Develop culturally appropriate design standards to maximize cooling benefits in neighborhood parks

Increase access to parks and outdoor cooling interventions through design standard revisions within new and existing neighborhood parks: parks typically located in the center of a single neighborhood or in conjunction with an elementary school or a greenbelt. In addition, continue exploring partnerships with community leaders to pilot culturally appropriate cooling interventions in select parks.

CHAMPIONS: OFFICE OF RESILIENCE, PARKS AND RECREATION

3.3.2 Leverage district parks to increase heat resilience in adjacent communities

Explore how to incorporate heat-resilient elements and climate-resilient enhancements in district parks: sites for major indoor facilities, specialized/large outdoor areas, or facilities where natural features may play a more central role in the park.

CHAMPIONS: PARKS AND RECREATION

3.3.3 Identify and pursue innovative financing mechanisms for green infrastructure in public and private lands

Work across departments and in collaboration with the University of Texas at Austin to explore innovative financing mechanisms to advance green infrastructure on public and private lands including through all levels of government (city, state, federal, and private philanthropy). Options include fees, bonds, subsidized loans, among other alternative financing mechanisms.

CHAMPIONS: AUSTIN WATER, DEVELOPMENT SERVICES, OFFICE OF INNOVATION, WATERSHED PROTECTION

3.3.4 Evaluate and incentivize the transformation of public spaces to areas that mitigate heat

Identify and map empty or underutilized public spaces – including stormwater ponds, medians, public rights of way, trails, easements, and abandoned lots – that could be transformed to better mitigate extreme heat. Leveraging this map, the resilience team will convene departments to evaluate greening and cooling enhancements along with identifying potential funding streams to advance redesign and implementation.

CHAMPIONS: AUSTIN ENERGY, AUSTIN WATER, OFFICE OF SUSTAINABILITY, OFFICE OF RESILIENCE, PLANNING, PARKS AND RECREATION, TRANSPORTATION AND PUBLIC WORKS, WATERSHED PROTECTION



3.3.5 Improve cooling benefits and access to Austin's creeks, lakes, trails, and water bodies

Enhance cooling through tree planting and other interventions along the city's creeks, lakes, trails, and other water bodies. While exploring additional ways to ensure that all Austinites have physical access to these outdoor cooling interventions, knowledge about where they are located, and the amenities available to feel safe and welcome to explore them. In addition, the City will continue to improve water quality to ensure that it is safe for contact recreation.

CHAMPIONS: DEVELOPMENT SERVICES, PARKS AND RECREATION, TRAVIS COUNTY, WATERSHED PROTECTION

3.3.6 Leverage expanded grow zones along creeks for cooling benefits

Additional funding and resources are needed to identify and foster broader greening and creekside restoration to maximize natural cooling and continue to support initiatives like Ready, Set, Plant! and Adopt a Creek, that plant more

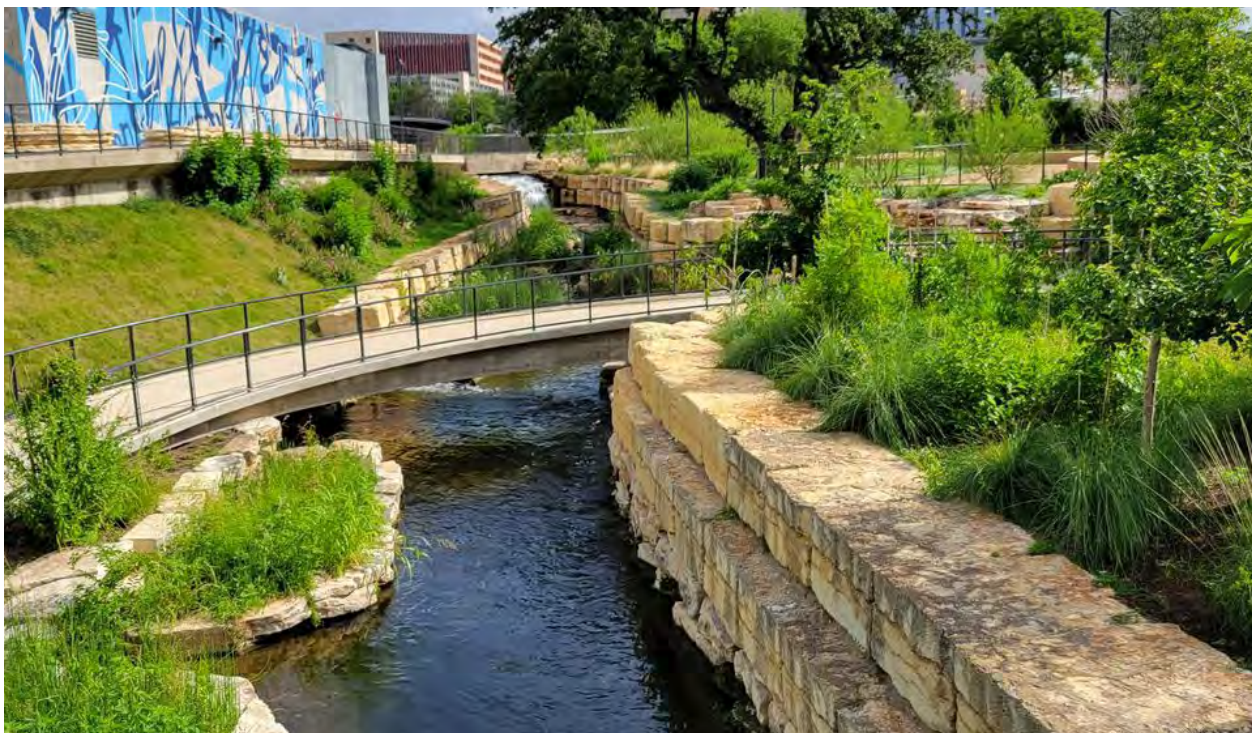
trees along Austin's creeks and rivers. Additionally, exploring other mechanisms and funding to restore creeks such as invasive species removal and stream bank stabilization leveraging Austin's natural creeks and partnerships with nonprofit organizations.

CHAMPIONS: DEVELOPMENT SERVICES, PARKS AND RECREATION, WATERSHED PROTECTION

3.3.7 Reduce the contribution of parking lots and on-street parking to urban heat islands

Through the updated parking ordinance and ongoing code amendments the City will continue to address the oversupply of parking provided. In areas where parking is required, the City may look to enhance greening in new and existing parking lots and on-street parking to minimize its contribution to ambient heat. Consider energy-reflective pavement coatings and pervious (porous) pavements for low-volume pavement applications.

CHAMPIONS: PLANNING, TRANSPORTATION AND PUBLIC WORKS



Waterloo Greenway Waller Creek

3.4 RESILIENT ENERGY SYSTEM

Ensure clean, redundant, and reliable energy systems

3.4.1 Advance a resilient energy grid and just transition to clean energy

Continue to provide resilience and safety to customers and the community through the Resilience as a Service (RaaS) Program that distributes the value of distributed generation assets across the customer base. Explore the potential of new technology to reduce impacts of future load shed.

CHAMPIONS: AUSTIN ENERGY, OFFICE OF RESILIENCE

3.4.2 Advance backup power at Resilience Hubs and other key facilities

Continue to accelerate backup power through the use of generators at prioritized sites and pilot alternative and redundant energy sources, including solar power, at prioritized Resilience Hub locations. These pilots will explore solar battery backup power to support Austinites through power outages and other emergencies. Learning from these and similar pilots, the City may then explore ways to expand backup power to other

critical community facilities. The City may also explore microgrids and other innovations.

CHAMPIONS: AUSTIN ENERGY, OFFICE OF RESILIENCE, PARKS AND RECREATION

3.4.3 Increase awareness of Austin Energy's temperature standards for utility cut-offs and summer moratoriums

Explore innovative and culturally appropriate communication methods regarding Austin Energy's policy for utility summer moratoriums. Currently, utility summer moratoriums are put in place when the heat index is forecast for 102 degrees Fahrenheit or above, which is a lower trigger than that required by the Public Utility Commission of Texas. In addition, exploring enhanced communication with residents in advance of summer to create awareness of past-due balances and provide financial assistance options to prevent service disconnections on high-heat days.

CHAMPIONS: AUSTIN UTILITIES



3.5 HEAT RESILIENCE PLANNING

Integrate heat resilience across City projects and plans

3.5.1 Incorporate heat resilience in the Capital Improvement Program

Ensure all relevant capital projects embed heat resilience elements. With additional funding and resources, use existing tools and resources to explore implementing one or a combination of the following mechanisms: a resilience screening tool, a scorecard, a heat resilience dashboard to monitor the implementation of heat resilience across Austin, which may include a dedicated percentage of project funding for heat resilience, and climate design guidelines, among other pathways.

CHAMPIONS: OFFICE OF RESILIENCE

3.5.2 Ensure the Climate Resilience Action Plan includes heat resilience elements for City assets and operations

Conduct an existing review of the Climate Resilience Action Plan with an eye toward heat resilience. The Office of Resilience will then work to identify other heat resilience elements and look to embed these in future iterations of the Plan. In addition, the City is exploring operationalizing heat resilience across departments through inter-departmental working groups.

CHAMPIONS: OFFICE OF RESILIENCE

3.5.3 Ensure our food system is ready to withstand the impacts of extreme heat

Collaborate with regional partners to ensure extreme heat impacts are considered in the implementation of the Austin/Travis County Food Plan. Additionally, identify opportunities to protect agricultural lands and implement sustainable agricultural production practices to ensure food security for Austinites.

CHAMPIONS: OFFICE OF SUSTAINABILITY

3.5.4 Scale cool connection efforts in coordination with Great Streets and the Strategic Mobility Plan

In coordination with the Planning Department and the Transportation and Public Works Department, learn from the cool connections pilots in high-heat neighborhoods and scale efforts to other priority areas throughout the city. This may include priority streets identified in the Great Streets Plan, Strategic Mobility Plan, and Project Connect, among other identified corridors.

CHAMPIONS: OFFICE OF RESILIENCE, PLANNING, TRANSPORTATION AND PUBLIC WORKS



3.5.5 Integrate climate-resilient design and refine extreme weather operation standards for Austin's Airport system

Integrate heat adaptation strategies within the Austin-Bergstrom International Airport expansion and advance strategies mentioned in the Airport's Environment, Social, and Governance report¹¹ to ensure the Airport operations and staff are ready for extreme weather, including extreme heat.

CHAMPIONS: AVIATION

3.5.6 Embed heat resilience within broader City resilience efforts while also mitigating the impacts of climate change

Building upon the City's existing resilience work, embed heat resilience into broader resilience planning and implementation. In coordination with these efforts, work across departments to ensure that these efforts mitigate and account for the impacts of climate change as outlined in other City planning efforts – including the Climate Equity Plan, Rain to River, Water Forward, the Hazard Mitigation Plan, and Imagine Austin.

CHAMPIONS: ALL DEPARTMENTS, OFFICE OF RESILIENCE

3.5.7 Develop operations and maintenance plans for heat resilience interventions

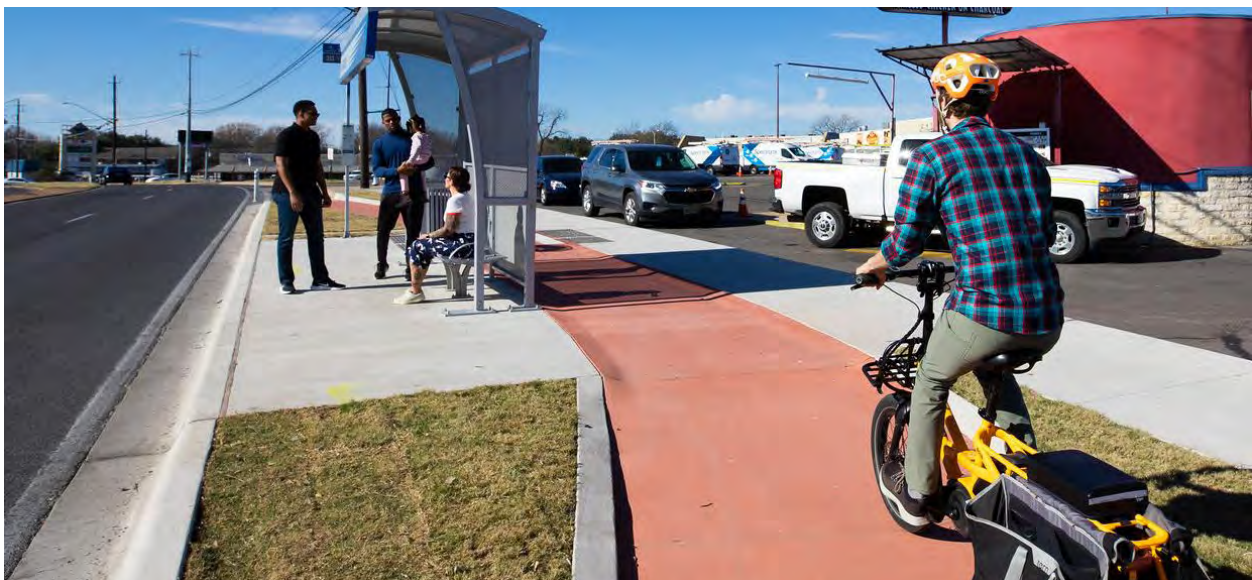
Consider developing an operations and maintenance plan for heat resilience projects. Creating a maintenance plan will develop clear guidelines and expectations between project owners and the Transportation and Public Works Department to ensure projects are well-maintained. Specifically, projects that propose innovative heat mitigation and adaptation strategies that the City may not have previous experience implementing and maintaining will use this to ensure success and track the progress of pilot projects.

CHAMPIONS: ALL DEPARTMENTS, OFFICE OF RESILIENCE

3.5.8 Collaborate with community and external partners for heat resilience

Identify and coordinate with external agencies and community partners – including counties, transit authorities, school districts, community-based organizations, businesses, philanthropy, and more – that are integral to the development, implementation, funding, and support of the Heat Resilience Playbook.

CHAMPIONS: ALL DEPARTMENTS, OFFICE OF RESILIENCE



11 <http://www.austintexas.gov/sites/default/files/files/AUS%20ESG%20FINAL.pdf>



PLAYBOO

Y OF AUSTIN

A U S T I N C I T Y H A L L

CELEBRATE AIR QUALITY AWARENESS WEEK
PARKYATE OUTDOOR - LIMIT ON SO2 - BREATHE LIFE

Acknowledgments

Hundreds of individual hours and thousands of private and public dollars have been leveraged, and will continue to be needed, to move forward Austin’s Heat Resilience Playbook. The City of Austin hopes to bring awareness to all residents around heat risks, develop a collaborative framework within City and community to build heat resilience, and establish a coordinated implementation of heat resilience efforts in Austin.

We thank all City departments and partners that have played an integral role in advancing heat resilience in Austin and assisted in the development of Austin’s Heat Resilience Playbook.

CITY OF AUSTIN DEPARTMENTS

| | | |
|----------------------------------|--|--|
| Austin Energy | Economic Development Department | Office of Sustainability |
| Austin Public Health | Homeland Security and Emergency Management | Parks and Recreation Department |
| Austin Water | Homeless Strategy Office | Planning Department |
| Austin Public Library | Housing Department | Transportation and Public Works Department |
| Climate Adaptation Working Group | Office of Human Resources | Watershed Protection Department |
| Development Services Department | Office of Innovation | And others |

PARTNERS

| | | |
|--------------------------|---|----------------------------|
| Austin City Council | Resilience Community Advisory Committee | Resilient Cities Catalyst |
| CapMetro | Heat Resilience Working Group | JP Morgan Chase Foundation |
| Travis County | University of Texas | |
| Go Austin / Vamos Austin | | |

PEER CITIES BEST PRACTICES

| | |
|-------------|-----------------|
| Boston | Phoenix |
| New York | Tampa |
| Los Angeles | Miami |
| San Antonio | Washington, D.C |



OFFICE OF
RESILIENCE