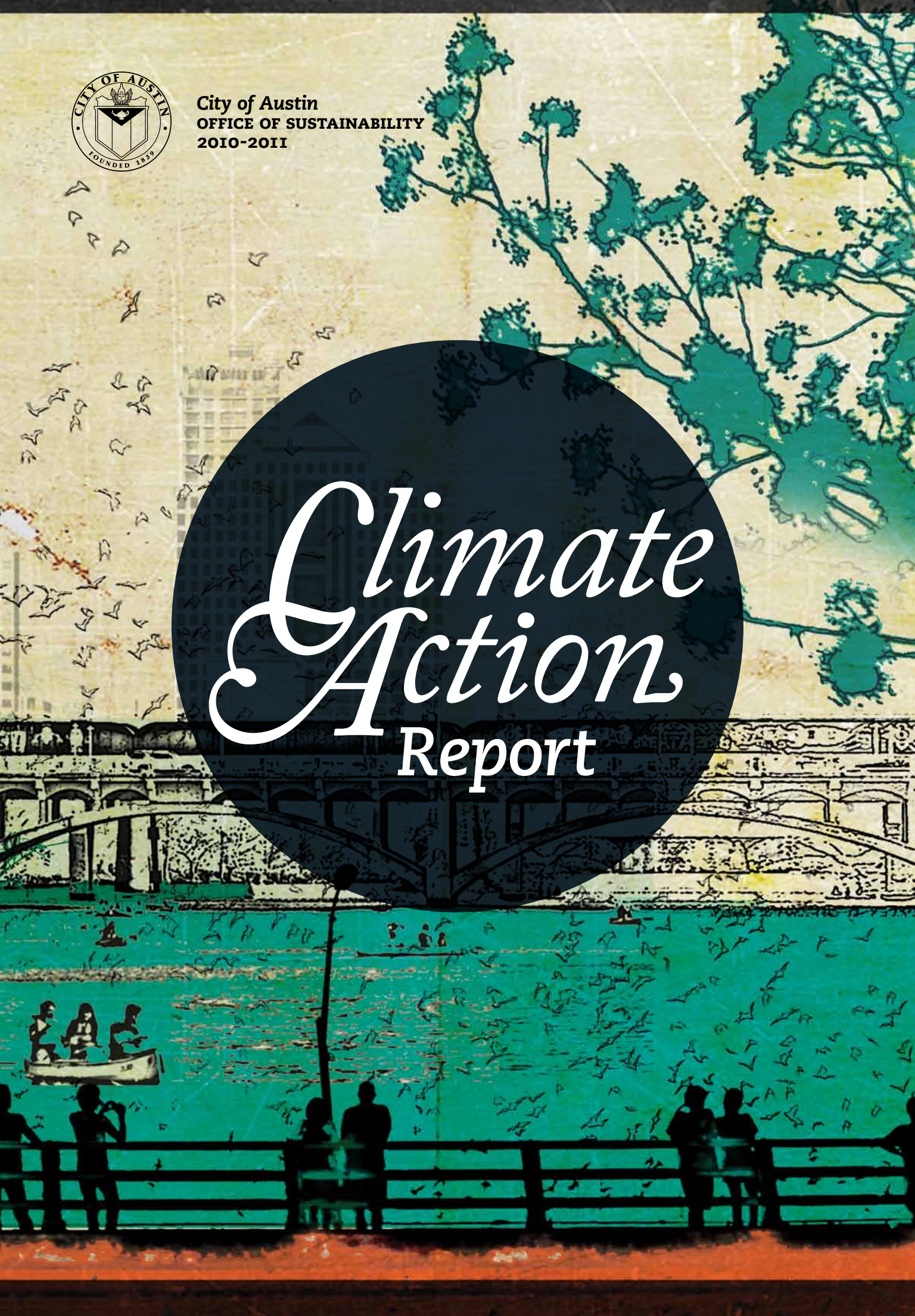
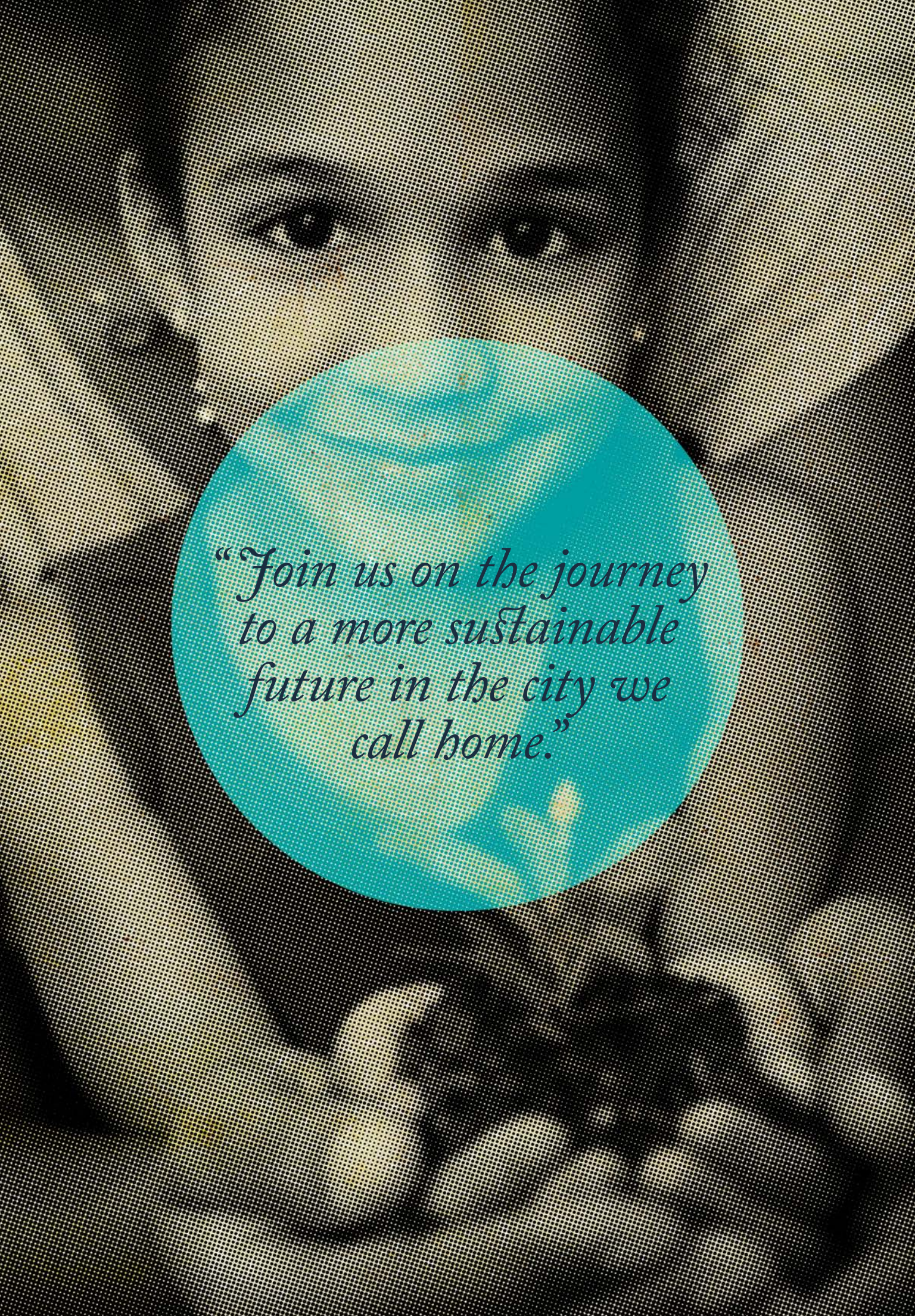




City of Austin
OFFICE OF SUSTAINABILITY
2010-2011

Climate Action Report





*“Join us on the journey
to a more sustainable
future in the city we
call home.”*

A Message from the Chief Sustainability Officer



I am proud to present the 2011 City of Austin Climate Action Report. We are recognized both nationally and internationally for our sustainability leadership and aggressive climate protection goals.

2011 was a year of milestones and accomplishments. To cite a few: Austin Energy Green Building celebrated its 20th anniversary. Voters passed the City's first mobility bond package focused on multi-modal livability. The City, along with regional partners, is using a \$3.7 million federal Sustainable Communities grant to pursue a regional Sustainable Places Project. We're one of 10 pilot cities now refining a new national sustainability benchmarking tool, the STAR Community Index. And shortly before this report went to press, the Austin Convention Center earned a Gold certification under the LEED for Existing Buildings rating system.

Since joining the City as its first Chief Sustainability Officer last September, I have spent my days listening and learning, and have spoken to more than 2,000 people. In June, I represented Austin at the C40 Cities Climate Leadership Summit in São Paulo, Brazil, alongside our new Climate Program Manager, Zach Baumer. Learning from the actions of other major global cities reinforces our sense of urgency about planning for the future. Fortunately, the Imagine Austin Comprehensive Plan coming forward has sustainability as its central theme.

In the days ahead, the Office of Sustainability will continue working to advance green initiatives across the City and the community. Those include helping local businesses trim operating expenses by conserving resources, and releasing a broad sustainability agenda including more than 30 of the City's most vision-

ary initiatives. Healthy food and sustainable urban agriculture is a new City focus, and we've developed a downtown self-guided tour and map featuring Austin's "green gems."

It's heartening and inspiring to see first-hand the many steps Austinites are taking to lower their carbon footprints and help secure a sustainable future. Of course, there is much more to be done. If you are already part of the important work of climate action, I thank you for your efforts. If you have yet to take part, please join us on the journey to a more sustainable future in the city we call home.



Lucia Athens. Photo: Jeff Wilson

AUSTIN CLIMATE PROTECTION PROGRAM JOINS THE OFFICE OF SUSTAINABILITY

2010 SEPTEMBER

New Office of Sustainability launched as part of City Manager's Office, sending a clear signal from executive leadership that sustainability is a core value.

DECEMBER

City Manager Marc Ott moves the Austin Climate Protection Program within the City's new Office of Sustainability to position it for greater citywide impact.

2011 FEBRUARY

Austin Climate Protection Program leader Ester Matthews retires from Austin Energy after 23 years of service.

MAY

Zach Baumer begins leadership role as new Climate Program Manager, after a national search.

FUTURE ONGOING

Climate action is integrated into the Office of Sustainability's work to connect and amplify green initiatives citywide, as part of a foundation for Austin's enduring prosperity.

MARC A. OTT

City Manager

SUE EDWARDS

Assistant City Manager

LUCIA ATHENS

Chief Sustainability Officer

ZACH BAUMER

Climate Program Manager

Office of Sustainability & the Austin Climate Protection Program

Marc Coudert

Katherine Gregor

Leah Haynie

Kate Krueger

Melissa Martinez

Jenell Moffett

Nathan Paulson

Mary Priddy

Dylan Siegler

Technical Advisers

Austin Energy

Sarah Fusco

Carol Harwell

Scott Jarman

Dennis Lilley

Karl Rábago

Austin-Travis County EMS

Mary Ann Carney

Ernesto Rodriguez

Austin Water

David Greene

Jill Mayfield

Joe Smith

Central Texas Clean Cities

Stacy Neef

Communications & Public Information Office

David Matustik

Samantha Park

Fleet Services

Jennifer Walls

Parks and Recreation Department

Jake Stewart

Austin Resource Recovery

Aiden Cohen

Jennifer Herber

Gena McKinley

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Transportation Department

Pharr Andrews

Cover art by Lauren Jones
Adapted from original works
including photography by
Michael Knox, ASLA

TABLE OF CONTENTS

A Message from the Chief Sustainability Officer I

THE BIG PICTURE 01-05
Zach Baumer Takes the Helm at the Austin Climate Protection Program 01
Austin’s Climate Action Leadership 02
Preparing Austin for the Unpredictable: *Becoming Resilient to a Changing Climate* 02
MAP: Extreme Drought Persists in Central Texas 03
GRAPH: City Government Emission Reduction Targets Around the World 04
Going Climate Neutral: *How We’ll Reach our 2020 Goals* 05

CITY GOVERNMENT IMPACTS 06-10
City Departments Work to Shrink Carbon Footprints 06
GRAPH: City Departments’ Greenhouse Gas Emissions 06
City of Austin Departments & Facilities switch to 100% GreenChoice® 07
GRAPH: City of Austin Total Energy Consumption 07
GRAPH: City Operations Emissions Reductions 2007-2010 08
GRAPH: City Operations Emissions Breakdown 08
Reducing Emissions through Renewable Energy & Alternative Fuels 09
Ambulances Tap the Sun for Power 09
Follow the Fleet: *City Adopts Alternative Fuels* 10
GRAPH: City Government Fuel Use 10

COMMUNITY CLIMATE ACTION 11-21
Bringing Climate Cool to School: *Educating Austin’s Kids on Climate Action* 11
Survey Gauges Priorities for Austin’s Future 11
Austin is a Heat Island, and Trees are Part of the Solution 13
UT Architecture Students Design for Climate Resilience 13
Keep Austin Edible: *Encouraging Austin-Grown Foods* 14
City Staff Investigate Biochar for Carbon Sequestration 14
Change is in the Air: *Assessing Austin’s Air Quality* 15
GRAPH: Ozone Trends in the Austin Area 15
Comparing our Community’s Carbon Footprint 16
GRAPH: Travis County Greenhouse Gas Inventory 16
GRAPH: Greenhouse Gas Emissions per Capita 16
How We Take Stock of Community Emissions 17
Community Climate Action: *City Builds on Stakeholders’ Bright Ideas* 18
A Local Way to Offset your Carbon is Coming 18
New City Program Recognizes Local Companies that Go Green 19
Business Climate: *Green Jobs are a Reality in Austin* 19
Sustainability by the Numbers 20
City Map Locates Austin’s Sustainable Sites 21

A Message from the City Manager 22

MORE INFORMATION

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OFFICE OF SUSTAINABILITY:
AustinTexas.gov/Sustainability

Zach Baumer takes the helm at the Austin Climate Protection Program



Zach Baumer. Photo: Sarah Fusco

IN MAY 2011, the Austin Climate Protection Program gained fresh, energetic new leadership. After a national search, Austinite Zach Baumer was tapped as Climate Program Manager. Skilled with both data and people, Zach brings to the program a wealth of real-world experience as a consultant working with private industry and public sector clients on greenhouse gas inventories, protocols, reporting and reduction plans, and broader sustainability strategies. Zach earned an MBA in Sustainable Management from the Presidio Graduate School in San Francisco and holds dual undergraduate degrees in Chemistry and Chemical Engineering from Purdue University in Indiana. We took this opportunity to ask him a few questions.

Tackling climate change: Are we there yet?

Over the past few years, the City of Austin has made great strides in addressing climate change and have

established a nationally recognized program with a great foundation. We have a long way to go toward our goals, but I am confident that we are on the right track and making progress. I am overwhelmed by the positive energy that we have around environmental issues both inside and outside the City. I'm also excited by the opportunity that this change presents us to not only improve the environment, but save money and make our city a healthier and happier place.

What does a typical day in the life of Zach Baumer consist of?

I'm an early bird, which is a good thing because my newborn daughter Zoe is as well. I start the day by taking Zoe on a walk with my dog Cosmo, and then I get into the office early. As the voice of mitigation and adaptation for climate change within the City of Austin, I often present on our programs and progress and spend a lot of my time working with departments and external groups to complete a report, a study or a project. I am an engineer by training and am often called upon to help with technical issues and calculations behind our efforts on climate change.

What inspires you most about your new position?

Having spent the majority of my career in the private sector as a consultant, I am energized by the commitment of the City to making Austin the most livable city in the country. To me, a livable city is one that is safe, environmentally healthy, economically strong, artistic and creative, and most importantly has friendly neighborhoods to raise our children and children's children. Fossil fuel resources are finite and limited, but I'm excited about Austin being sustainable for the long term so we need better solutions. Climate change is a global problem, and this presents a perfect chance to show the world what a leader we are in technology, water efficiency, renewable energy, zero waste and transportation solutions.

CARBON SINK • |kär-bən sɪŋk

Anything that absorbs more carbon than it releases. Natural carbon sinks are trees, soil and the oceans.

AUSTIN'S CLIMATE ACTION LEADERSHIP

IN 2011, the global scientific evidence and consensus is clear: The world is undoubtedly warming. Recognizing a responsibility to help contain climate change, as well as the local risks and impacts of rising temperatures, in 2007 the Austin City Council passed a resolution that led to creation of the Austin Climate Protection Program. The resolution committed the City to enact “policies, procedures, timelines, and targets as are necessary to make Austin the leading city in the nation in the effort to reduce and reverse the negative impacts of global warming.”

Today, scientists report that the measurable climate change now occurring—caused primarily by carbon dioxide and other greenhouse gases (GHG) from human activities—is advancing even faster than projected in 2007. The Intergovernmental Panel on Climate Change has projected temperature increases by 2100 averaging two to 11.5 degrees Fahrenheit globally, with warming in the U.S. about 50 percent greater, according to the Pew Center on Global Climate Change.

No one city can avert climate change alone. Austin is proud to be one of over 1,000 U.S. cities that have committed to collective effort by signing the U.S. Conference of Mayors Climate Protection Agreement, and launching into action. By setting a strong example for municipal climate action, Austin can lead the way and inspire others with innovative solutions.



PREPARING AUSTIN FOR THE UNPREDICTABLE

CENTRAL TEXAS has just had a brutally hot summer and is experiencing one of the worst droughts on record, leading to tragic wildfires that burned more than 30,000 acres, killed two people, and destroyed approximately 1,600 homes. The drought has killed trees, plants and wildlife and affected our entire ecosystem. Stressed wildlife must compete for scarce food and water: the drought affects the entire food chain.

No one can say definitively global warming caused any single event. What we do know is that a pattern of increasing extreme weather events is consistent with climate change projections. 2011 has given us a taste of the future predicted by climate science. In Central Texas, we can learn from this year's record heat wave and drought to assess our vulnerabilities and take positive steps to manage risks in the decades to come.

As global warming is already occurring, and the sources of GHG emissions continue, some future temperature rises are unavoidable. Lower Colorado River Authority modeling predicts that climate change is very likely to increase net evaporation and reduce stream flows in the Colorado River within this century. Extended drought conditions and water shortages are projected in the decades ahead as Texas warms. The City of Austin must begin planning to adapt to a changing climate in Central Texas.

By teaming up with the U.S. Environmental Protection Agency and the Centers for Disease Control, the Climate Protection Program is looking at how climate change will impact health, food, emergency rescue, water, electricity and a host of other issues. How might emergency vehicle routes be impacted by flooding? Are vulnerable populations located within walking distance of food sources? Is Austin ready to receive disaster refugees from neighboring regions? Proactively working with other agencies to develop models and share information will help prepare us for the unpredictable.

Working with other agencies to develop models and share information will help prepare us for the unpredictable.

CLIMATE ADAPTATION • \klī-mət a-dap-tā-shən\

Efforts to anticipate and respond to likely climate change impacts such as shifts in temperature and rain patterns, viable crops, and the spread of diseases. Climate adaptation activities lead to climate resiliency.

NEWSWEEK:

May 29, 2011

"In the U.S. alone, nearly 1,000 tornadoes have ripped across the heartland, killing more than 500 people and inflicting \$9 billion in damage. The Midwest suffered the wettest April in 116 years, forcing the Mississippi to flood thousands of square miles, even as drought-plagued Texas suffered the driest month in a century. Worldwide, the litany of weather's extremes has reached biblical proportions.

The 2010 heat wave in Russia killed an estimated 15,000 people. Floods in Australia and Pakistan killed 2,000 and left large swaths of each country under water. A months-long drought in China has devastated millions of acres of farmland. And the temperature keeps rising: 2010 was the hottest year on earth since weather records began."

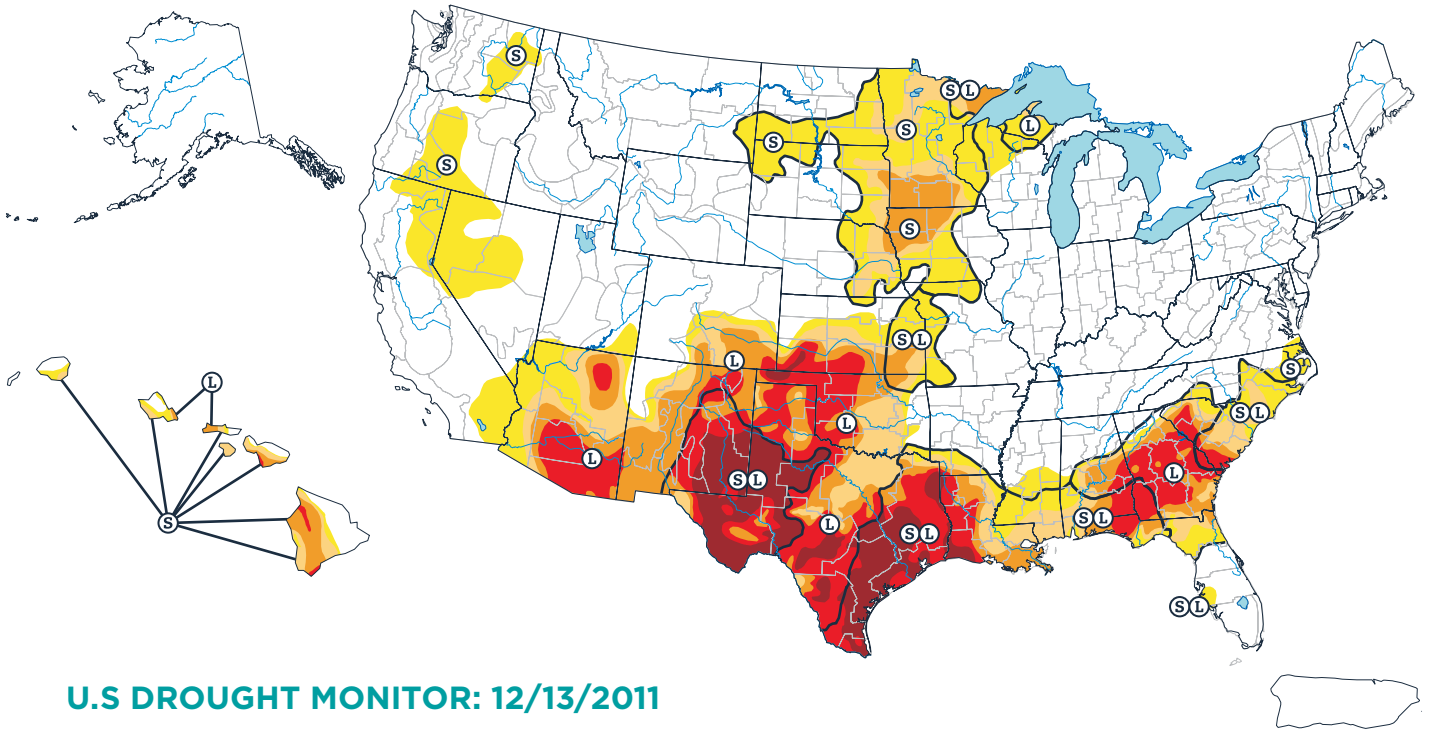
NEW YORK TIMES:

December 5, 2011

Carbon dioxide "emissions rose 5.9 percent in 2010, according to an analysis released Sunday by the Global Carbon Project, an international collaboration of scientists tracking the numbers. Scientists with the group said the increase,

a half-billion extra tons of carbon pumped into the air, was almost certainly the largest absolute jump in any year since the Industrial Revolution, and the largest percentage increase since 2003."

EXTREME DROUGHT CONDITIONS PERSIST IN CENTRAL TEXAS



U.S DROUGHT MONITOR: 12/13/2011

| | |
|---|--|
| <p>INTENSITY:</p> <ul style="list-style-type: none"> D0 Abnormally Dry D1 Drought-Moderate D2 Drought-Severe D3 Drought-Extreme D4 Drought-Exceptional | <p>DROUGHT IMPACT TYPES:</p> <ul style="list-style-type: none"> Delineates Dominant Impacts S Short-Term: typically <6 months (e.g. agriculture, grasslands) L Long-Term: typically >6 months (e.g. hydrology, ecology) |
|---|--|



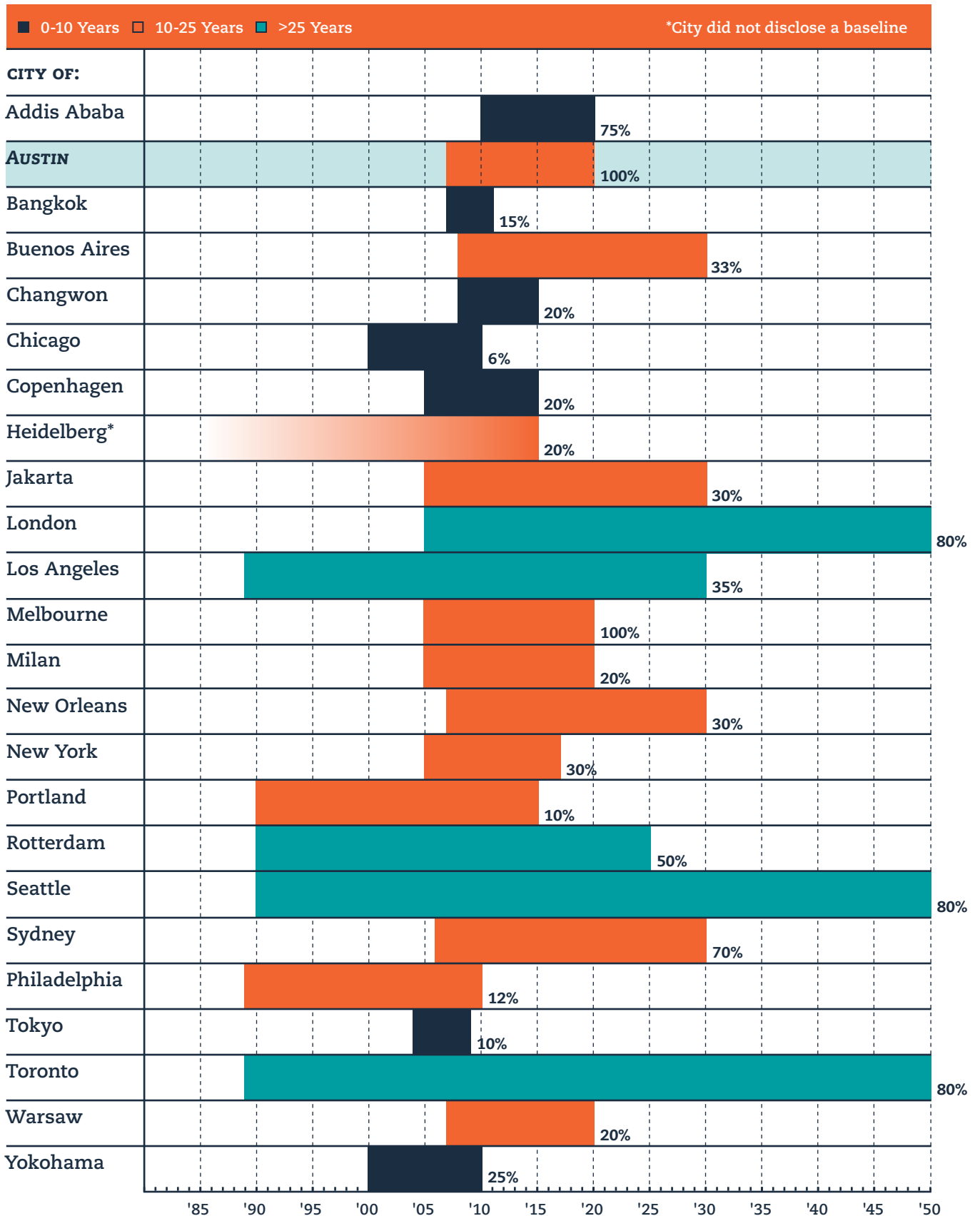
<http://droughtmonitor.unl.edu/>

RELEASED: THURSDAY, DECEMBER 15, 2011
AUTHORS: MATTHEW ROSENCRANS, National Oceanic & Atmospheric Administration (NOAA) / National Weather Service (NWS) / National Centers for Environmental Prediction (NCEP) / Climate Protection Center (CPC)

WORLD CITIES' GOALS

CITY GOVERNMENT OPERATIONS EMISSION REDUCTION TARGETS AROUND THE WORLD

Adapted from Carbon Disclosure Project Cities 2011: Global Report on C40 Cities. The cities listed below have reported specific greenhouse gas reduction targets to the Carbon Disclosure Project, with the exception of Seattle.



GOING CLIMATE NEUTRAL

REACHING OUR GREENHOUSE GAS REDUCTION TARGETS



800
MW



2012

All City Facilities
Powered by Renewable
Energy

2020

800 MW of New Energy
Savings through
Energy Efficiency &
Conservation

2020

35% Renewable
Energy in the Utility's
Portfolio

2020

All City of Austin
Facilities, Fleets, &
Operations Totally
Carbon Neutral

ONLY ONE other major city in the world—Melbourne, Australia—has a municipal climate action target as aggressive as the City of Austin's. Other major U.S. cities with reduction targets are shooting for less improvement within a longer timespan. Average targets equate to approximately 2.3 percent per year, according to the Carbon Disclosure Project. Our 2020 goal sets a tone of leadership and innovation in everything we do to address climate change. In the four years that the Austin Climate Protection Program has shepherded Austin's pursuit of that goal—by developing

Austin's greenhouse gas inventories, leading the reduction efforts of City staff, and reaching out to the community—it has become clear that solutions to climate change are the same ones that keep our air breathable, our water clean, our economy vibrant and our communities healthy. When we have reduced our emissions as much as technology allows, we'll focus on maximizing our natural carbon sinks as well as investing in carbon reduction projects in Central Texas—building local jobs and regional prosperity.



Solutions to climate change are the same ones that keep our air breathable, our water clean, our economy vibrant and our communities healthy.

Adapted from original photo by Michael Knox, ASLA

MtCO₂e • Metric Ton Carbon Dioxide Equivalent

The unit of measurement used as an international reporting standard for greenhouse gas emissions. There are 2204.62 lbs of CO₂ in one metric ton.

CITY CLIMATE ACTION TEAM: 23 DEPARTMENTS STRONG



THE CITY of Austin's operational carbon footprint is shrinking. Twenty-three departmental plans; five building plans; 1,500 strategies; 219,111 metric tons of CO2 equivalent to go; nine more years: All are part of the complex calculation the City of Austin is working to make its operations, facilities

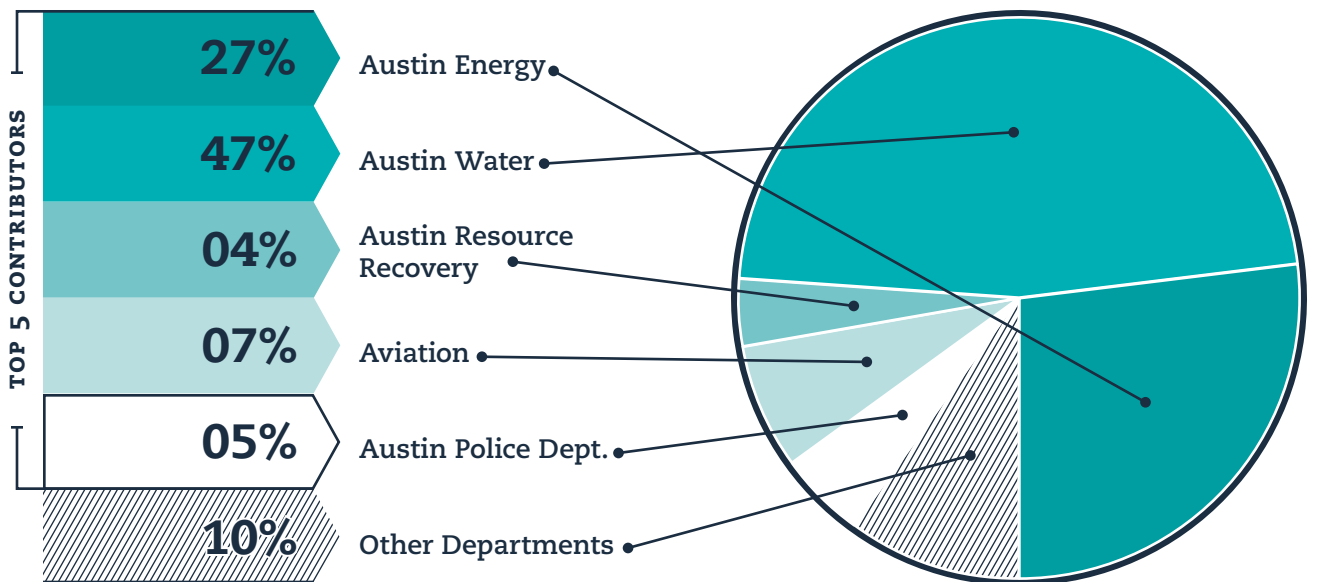
and vehicle fleets carbon neutral by 2020. Led by the Austin Climate Protection Program, a cross-departmental group of City of Austin staff has identified strategies that may look small on their own—buying renewable energy, powering down computers and monitors, switching out inefficient lighting, eliminating plastic foam cups and vehicle idling—but will equal significant carbon reductions when implemented at the scale of the City of Austin's 11,000-plus staffers and scores of facilities. Since 2007, departmental teams have watched the overall municipal carbon footprint fall by more than 49,000 metric tons of CO2 equivalent.



Photo: Jody Horton

2010 CITY DEPARTMENT GREENHOUSE GAS EMISSIONS

220,000 MTCO₂e



MAKING THE GREENCHOICE® FOR CITY DEPARTMENTS & FACILITIES

City of Austin departments and facilities are now 100% powered by renewable energy

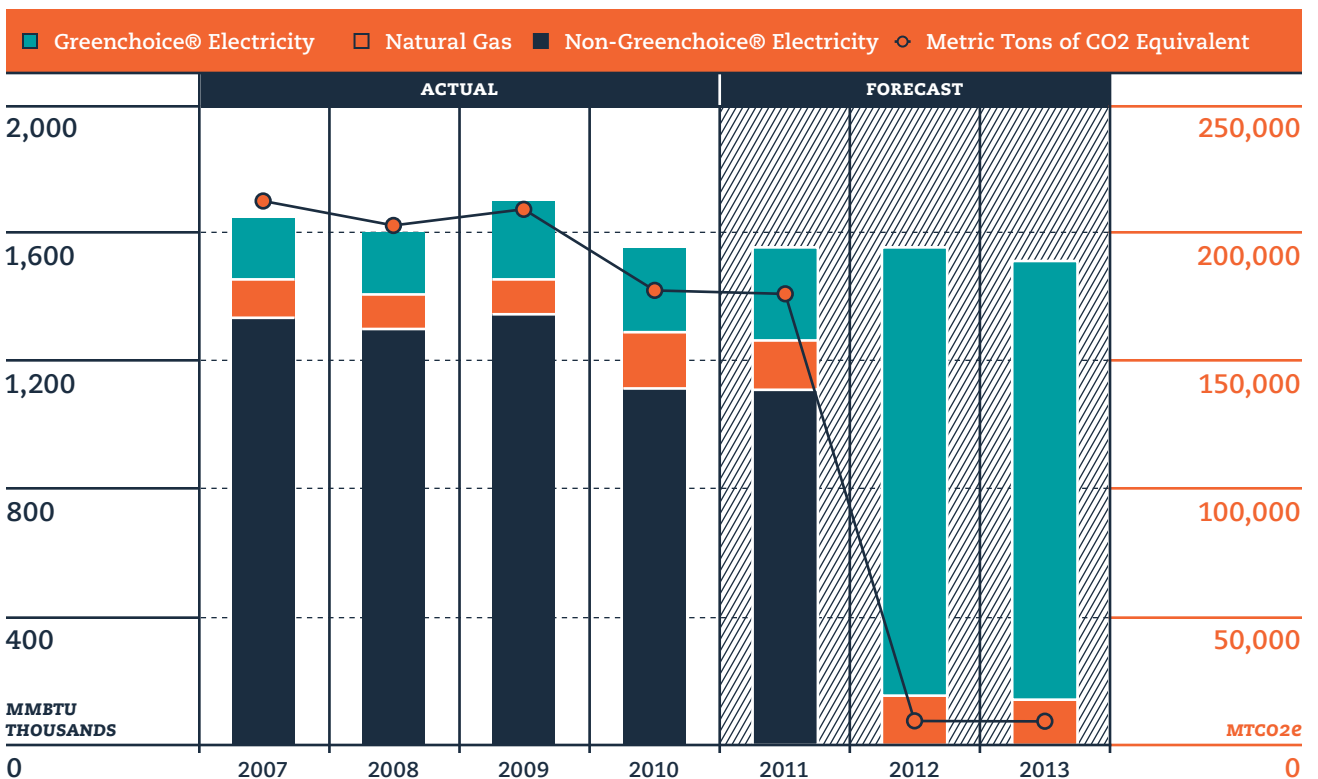
comes from Austin Energy's GreenChoice® program. Subscribers to the program are buying energy produced from entirely renewable sources like wind power and methane gas from landfills. The City of Austin is now the No. 2 city on the U.S. EPA's Top 20 Local Government list of green power purchasers—ranked by annual green power usage—and sells more renewable energy through a utility-sponsored, voluntary green-pricing energy program than any of the 850 other programs in the nation. (The City of Houston ranked No. 1, for purchasing 438,000,000 kWh. However, that represents only 34% of that city's energy usage. Austin's purchase of 406,000,000 kWh represents 100% of municipal energy usage.)

AS OF October 1, 2012, 100 percent of the electricity used to power city facilities

In the last fiscal year, 55 percent of City of Austin electricity accounts—19 percent of total kilowatt hours (kWh) purchased—subscribed to GreenChoice. With the switch to 100 percent for the fiscal year that began October 1, 2011, the City will avoid more than 100,000 metric tons of CO2 emissions per year, which is by far the largest GHG reduction activity it has yet undertaken. The move makes good on City Council's 2007 commitment to power all City facilities with renewable energy by 2012—making a positive impact on health outcomes and health-care costs by improving air quality.

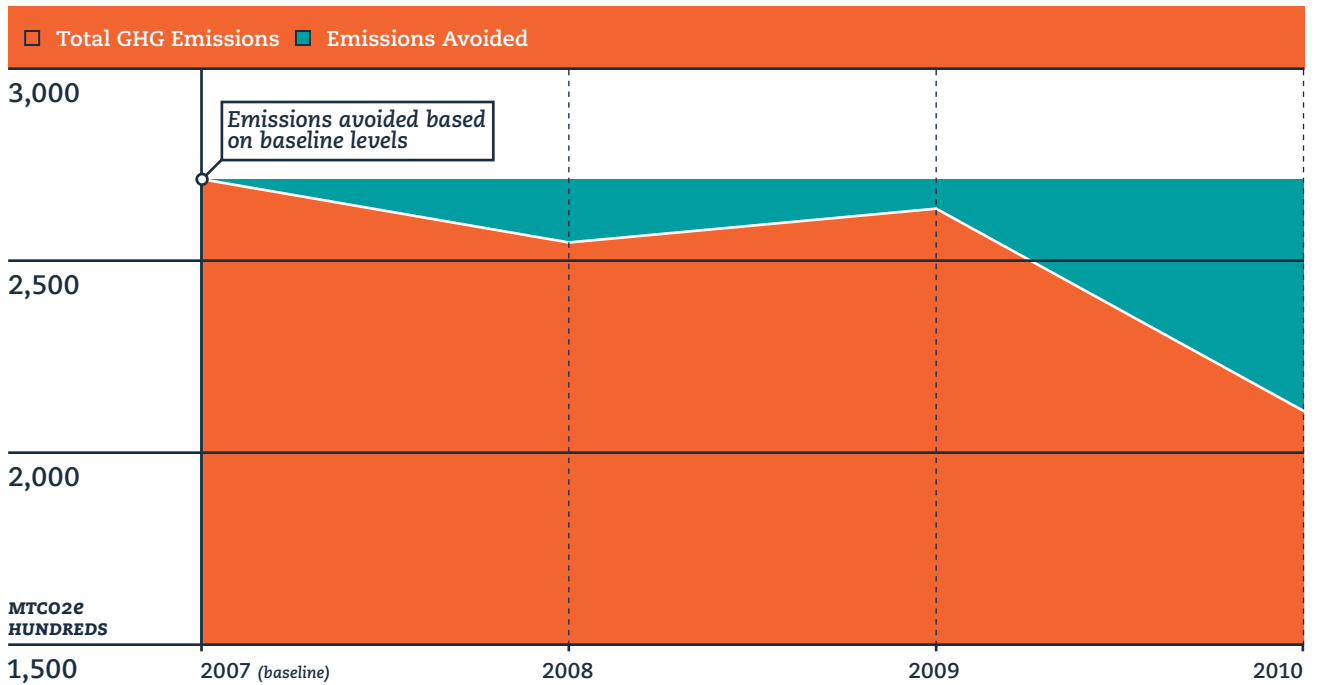
Does it cost more? Yes, for the moment, but probably not over the long haul. The current fuel charge of just over 3 cents per kWh rises to 5.7 cents per kWh with GreenChoice Batch 6, the sixth offering of GreenChoice power. The good news is, the City will be locked into this rate for years into the future, reducing risk to future City budgets due to rising fossil fuel prices. In fact, subscribers to four of the six GreenChoice batches—including some City accounts—saved money when the regular fuel charge rose above their GreenChoice rate.

CITY OPERATIONS TOTAL ENERGY CONSUMPTION

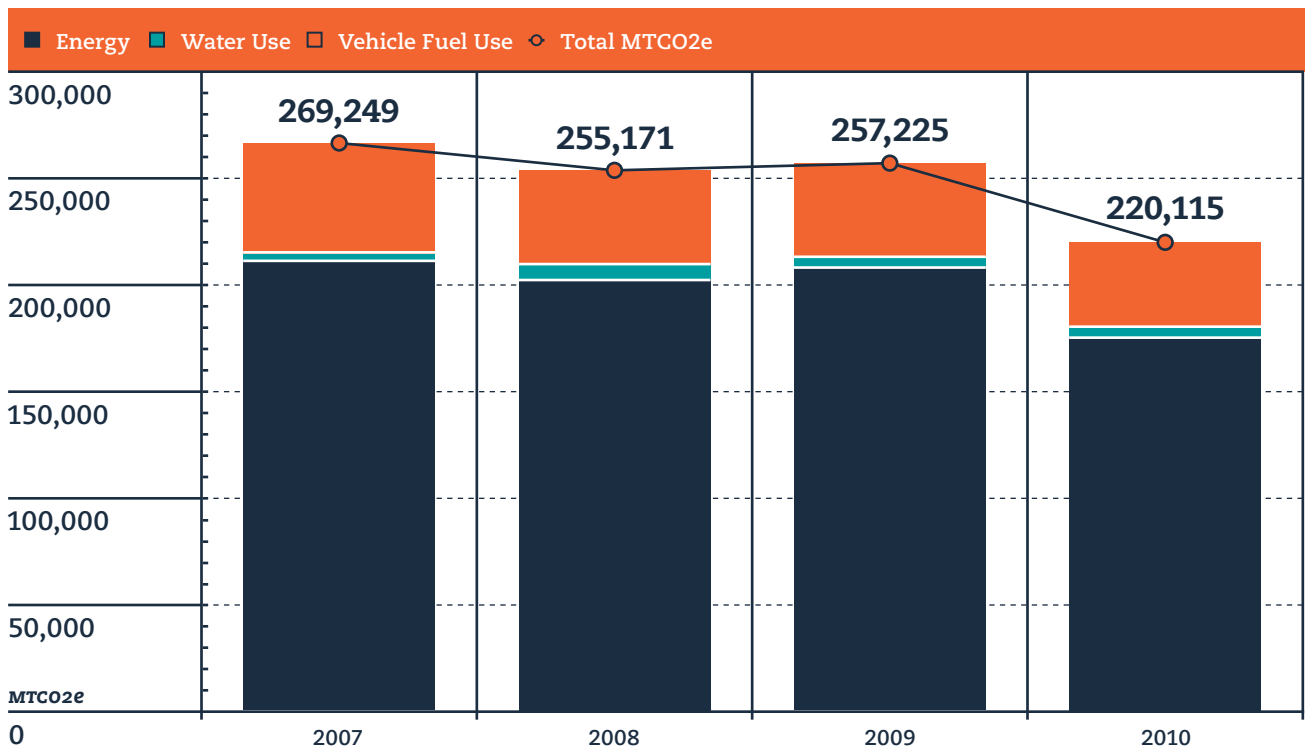


GREENHOUSE GAS EMISSIONS REDUCTIONS 2007-2010

CITY OF AUSTIN DEPARTMENTS, FACILITIES AND FLEET



GOVERNMENT OPERATIONS GREENHOUSE GAS EMISSIONS BREAKDOWN



REDUCING EMISSIONS THROUGH RENEWABLE ENERGY AND ALTERNATIVE FUELS

The Austin Climate Protection Program prepares an annual greenhouse gas inventory for City of Austin municipal operations, which excludes Austin Energy power generation, wastewater treatment fugitive emissions, and the FM 812 landfill. The inventory provides a platform to evaluate and prioritize climate protection initiatives, and functions as a progress report in Austin's effort to reduce its greenhouse gas emissions. The 2010 municipal carbon footprint shows a reduction in GHG emissions since the baseline inventory conducted in 2007 that's equal to taking nearly 10,000 cars off the road for a year. The drop is due primarily to a large reduction in City of Austin vehicle emissions through hybrids and less carbon-intensive fuels, as well as purchase of renewable energy at City of Austin facilities through the Austin Energy GreenChoice® program.

AMBULANCES TAP THE SUN FOR POWER



WHEN AUSTIN-Travis County EMS leaders learned that vehicle use made up more than 90 percent of their operational carbon footprint, sirens went off. Director Ernesto Rodriguez knew they could do better. "Our rationale was, we can lead the way in protecting the climate—let's experiment and become the model," he says. The department purchased new, more fuel-efficient ambulances that, have led to a 47 percent improvement in ambulance miles per gallon and a 31 percent reduction in annual ambulance CO2 emissions (from 45.5 to 31.3 metric tons per ambulance) since October 2010, with no loss in speed or quality of care. The equipment paramedics use to care for patients (plus all those flashing lights) use a lot of energy to function properly. New solar panels

on ambulances—13 have them so far—charge batteries so ambulances idle less at hospitals, meaning each uses 560 fewer gallons of gas per year. "Then we realized, hey! You can save money doing that," says Rodriguez. "For us, nothing is cast in stone. We are always looking for better ways to do things, and luckily we have a lot of creative people."



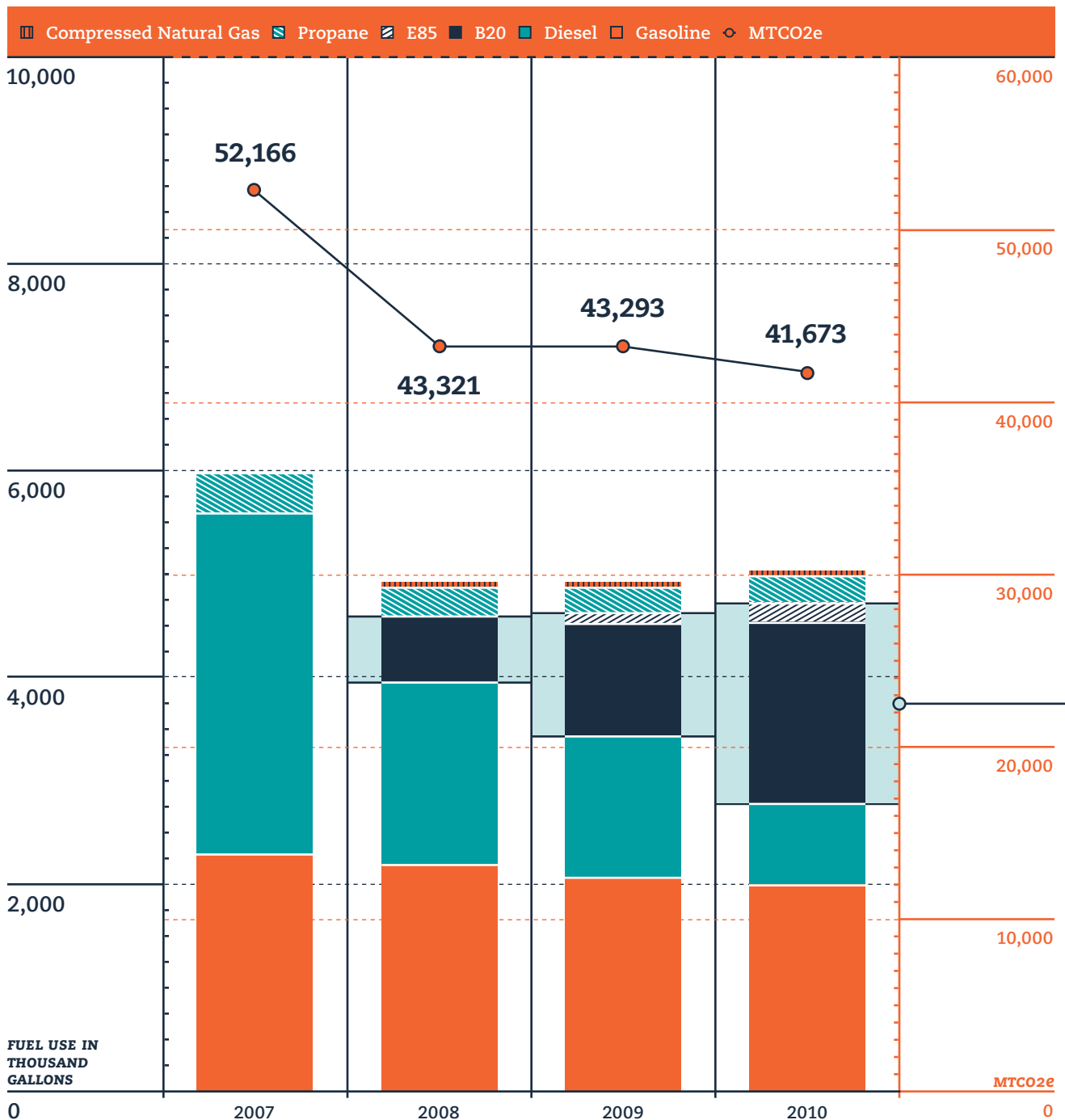
FOLLOW THE FLEET

AS OF 2010, 58 percent of the City's fleet was hybrid, electric or alternative fuel capable. That includes more than 200 gasoline/electric hybrids, more than 500 flex-fuel ethanol vehicles, more than 200 propane vehicles, more than 30 all electric vehicles, and more than 1,800 diesel vehicles and equipment using B20 biodiesel blend.

Since 2007, the City has increased purchases of E85 (ethanol) fuel to more than 220,000 gallons per year and B20 to more than 1.7 million gallons per year.

E85 and B20 replaced traditional gasoline and diesel purchases by 300,000 gallons and 2.4 million gallons per year, respectively, in 2010.

CITY GOVERNMENT FUEL USE: 2007-2010



Bringing Climate Cool to School

EDUCATING THE NEXT GENERATION OF CLIMATE STARS

MARY PRIDDY of the Office of Sustainability brings the climate protection message to classrooms and assembly halls all over the Austin area. More than 1,350 students in kindergarten through 12th grade in Austin-area schools participated in Climate Protection outreach activities in the first six months of 2011. We gave Mary a pop quiz about her job.

Why is it important to reach out to kids about climate protection?

Kids are so open to ideas and change. Every kid's favorite question is "why?" If they understand the positive or negative impacts their actions may have on the planet, they'll be more inclined to make a positive choice.

What is the most inspiring part of your job?

Seeing just how ingrained conservation is in kids' daily actions at a young age. They recycle, for instance, because it is what they've always done and they will likely pass these practices off to their own children someday. That gives me hope.

Any favorite anecdotes to share?

I ran into a child whose school I had recently visited, and his mother greeted me with "Oh, you're that Mary." Apparently, after my lesson on unplugging appliances to avoid "vampire loads"—electricity being used by appliances while they're plugged in but not in use—the child was unplugging everything...whether it was in use or not.



Mary Priddy.



SURVEY SAYS...

In spring of 2010 more than 1,300 Austinites responded to a City of Austin survey about priorities for our region's future. The following percentages of respondents agreed that the identified elements should be a part of Austin's future.



Adequate Water Supply



Clean Rivers, Creeks and Springs



Climate Protection



Energy Conservation



Environmental and Natural Resources Protection



Increased Local Food Production

*“Austin just won’t be
Austin if it doesn’t
have trees.”*

Trees are the keys

AUSTIN IS A HEAT ISLAND, AND TREES ARE PART OF THE SOLUTION

CITY OF AUSTIN Heat Island program coordinator Leah Haynie is the Austin Climate Protection Program's resident treehugger—not to mention tree planter, educator, and advocate. Haynie works to ensure trees are incorporated in city building projects, and NeighborWoods, which provides free trees to residents in areas with low tree cover. She'll remind you that covering 40% of Austin with trees could lower peak summer temperatures by as much as two degrees—and keep our city a beautiful, livable oasis all year round.

Why is planting and caring for trees an important element of the City's work?

In a nutshell, they reduce localized temperatures and sequester carbon, reduce energy use and stormwater runoff and erosion, and provide habitat as an integral part of our urban ecosystem. Our urban forest has the potential to store more than 100,000 tons of CO₂ per year, according to estimates by the Parks and Recreation Department. These are the tangible reasons why the City is working hard to grow the urban forest. But the softer reasons have to do with love of Austin and its connection with trees. We know that Austin just won't be Austin if it doesn't have trees.

How many trees does the City plant each year?

More than 6,000 trees were planted through City of Austin programs in 2010—in parks, rights-of-way, and on private property throughout Austin. Austin's commercial development requirements also result in extensive tree-planting by the private sector.

What are the challenges involved with growing and maintaining our urban forest?

Drought and an aging tree population are two big challenges. Proper mulching and watering are key to keeping our trees alive; in this drought, even established trees need watering. Continually planting new, hardy native trees to keep our city green in the decades ahead is just as important.



Leah Haynie. Photo: Sarah Fusco

NEXT-GEN DESIGN

Students at the University of Texas School of Architecture draw up plans for our changing climate

got a head start on designing a resilient city through a Fall 2011 design studio focused on applying design principles to the challenge of climate change, taught by professor Fernando Lara with the help of studio advisers Marc Coudert and Dylan Siegler of the

THE NEXT generation of urban designers will face new challenges as our climate changes. Students at the University of Texas School of Architecture

Office of Sustainability. The class looked at Austin's swing between droughts and floods and its impact on how our city is designed and built. Guest lecturers included City staff from the Watershed Protection Department and Austin Water, and staff from Austin/Travis County Health and Human Services and Adaptation International, a local nonprofit focused on climate adaptation. Final student design projects were exhibited at City Hall in an effort to educate the Austin community to inspire action on climate change and adaptation.

KEEP AUSTIN EDIBLE

Don't let your dinner outpace you in airline miles

SEVEN PERCENT of total U.S. greenhouse gas emissions come from agriculture—that's due to its transportation to your plate as well as fertilizer use, livestock and electricity use. And once you include the energy and emissions embedded in the modern factory food system, the greenhouse gas burden is closer to 30 percent. Many Austinites reduce that burden—and save money—by growing their own produce at home or in one of the city's 18 community gardens, which cover more than 100 acres. In August 2011, the New Day Community Garden in East Austin was the first to earn the new City-Endorsed Community Garden designation, which allows gardens to obtain water tap permits, exempts them from paying substantial fees associated with the installation of water infrastructure, and allows the City to recognize community gardens as legitimate entities. Other new City of Austin programs are in the works to further support community gardens helmed by community members, increasing Austin's food security. There are also more than 10 farms in Austin and 114 in the five-county region. Their goods are available at large local farmers' markets throughout the week, neighborhood markets and stands, and community supported agriculture programs all over Austin.



New Day Community Garden. Photo: Mandi Golman Sepulveda



David Greene of Austin Water displays potential biochar feedstocks. Photo: Dylan Siegler

CHARRING A NEW COURSE

City staff investigate an innovative sequestration option

CHARCOAL YOU don't grill over—what's the point? Carbon sequestration, for one. While cutting our carbon emissions will slow the increase in CO₂ levels, reducing existing CO₂ levels to cool the climate may require something more. Plants and trees naturally use CO₂ to grow, and when a plant dies most of the carbon quickly becomes CO₂ again. This cycling of "biological carbon," as it is known, happens on the scale of a few years. But carbon in the form of charcoal, or biochar, is much more stable, taking perhaps centuries to cycle back to CO₂, recent science suggests. City of Austin staff from many departments have formed a working group to better understand how the use of biochar, among other land management strategies, might help Austin biologically sequester more carbon. The working group is "monitoring the research, identifying potential projects, and learning about how biological carbon sequestration might contribute to the overall climate strategy at the City of Austin," says David Greene, who coordinates the climate program for Austin Water.

CHANGE IS IN THE AIR

Assessing Austin's air quality

EVERYONE WANTS clean air to breathe, and many of the same measures that protect air quality also protect the climate. Air quality in Austin is better than in many of our peer cities, but it's not perfect. Ozone is the main air pollutant that threatens public health in the Austin area, and it's regulated through standards set by the U.S. EPA. The Austin area's average ozone levels have been decreasing for more than a decade, primarily due to cleaner emissions from cars and trucks. And research suggests that much of our ozone burden is imported to the Austin area from upwind, meaning many sources of high ozone are beyond local control. But as the Austin-area population grows, more vehicles burden our airshed. City of Austin Air Quality programs are part of the solution. In 2010, Climate Protection Program staff coordinated the Walk, Bike & Roll Challenge, an alternative commute program that rewards City of Austin employees with prizes for when they walk, bike, carpool or take transit to work. It resulted in 25,094 single-occupancy vehicle trips avoided. In 2011, Air Quality programs and staff became part of the City's Transportation Department, to create an even tighter connection to mobility choices.

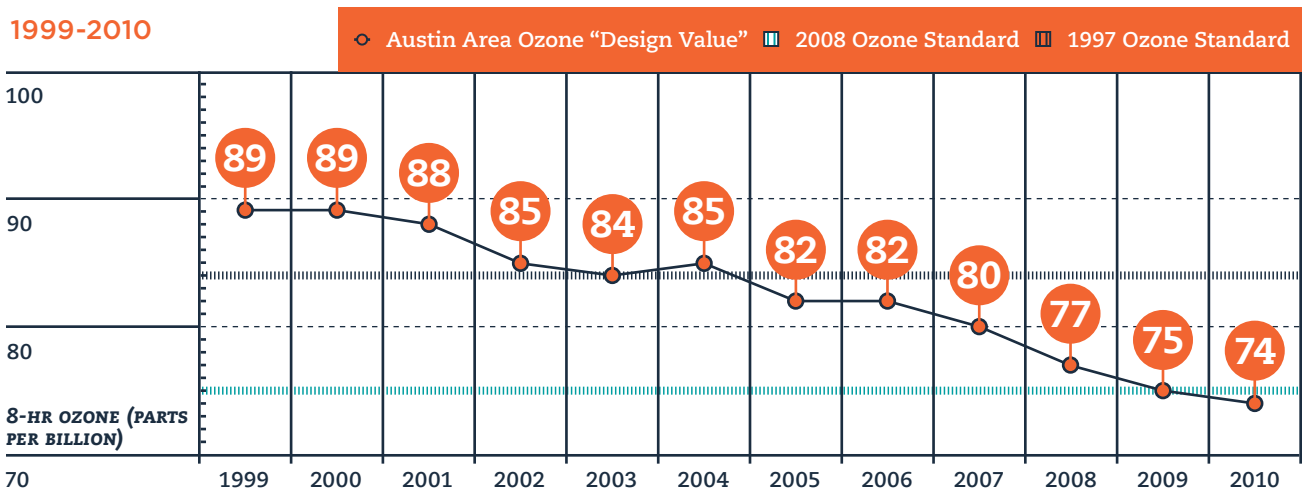


How does air quality affect you?

Young children, the elderly, and people with health problems such as asthma, other respiratory conditions, and heart and lung disease can have serious trouble breathing on high-ozone days. Children and athletes breathe at a faster rate, taking in more pollution than adults at rest. Ozone can also irritate the eyes, nose and throat, and it is linked to illnesses from bronchitis to lung cancer.

OZONE TRENDS IN THE AUSTIN AREA

1999-2010



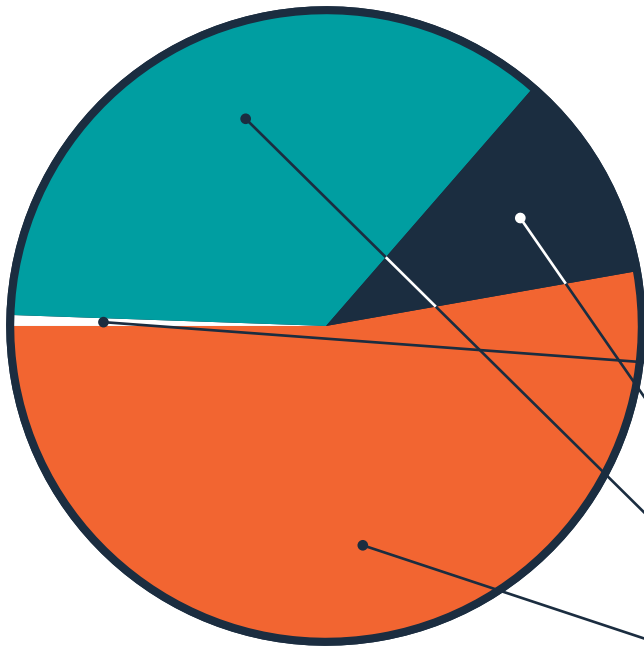
Ozone in Austin's five-county region has been trending downward since 1999, likely due to cleaner cars and trucks in Austin and upwind. Graphed here is Austin's "design value," a statistic that reflects the region's average ozone level. It is compared to the U.S. EPA's health-based standard to determine attainment status. Eight-hour ozone is the surface ozone concentration in parts per billion (PPB) backward averaged over 8 hours.

MEASURING UP

Comparing our community's carbon footprint

ON AVERAGE, each Travis County resident was responsible for approximately 15 metric tons of CO2 emissions from energy use (electricity, natural gas, and transportation fuel) in 2010. Comparatively, the average U.S. resident is responsible for roughly 19 metric tons of energy-related CO2 emissions per year, and the average

age Texas resident emits approximately 25 metric tons of energy-related CO2 per year. Travis County residents' per capita carbon footprints are roughly 21 percent smaller than that of their U.S. counterparts and 40 percent smaller than the average Texan's carbon footprint. Why are we nearly half the Texas average? In part, it's because Texas oil and gas refineries and other heavy industries, operate outside Central Texas.

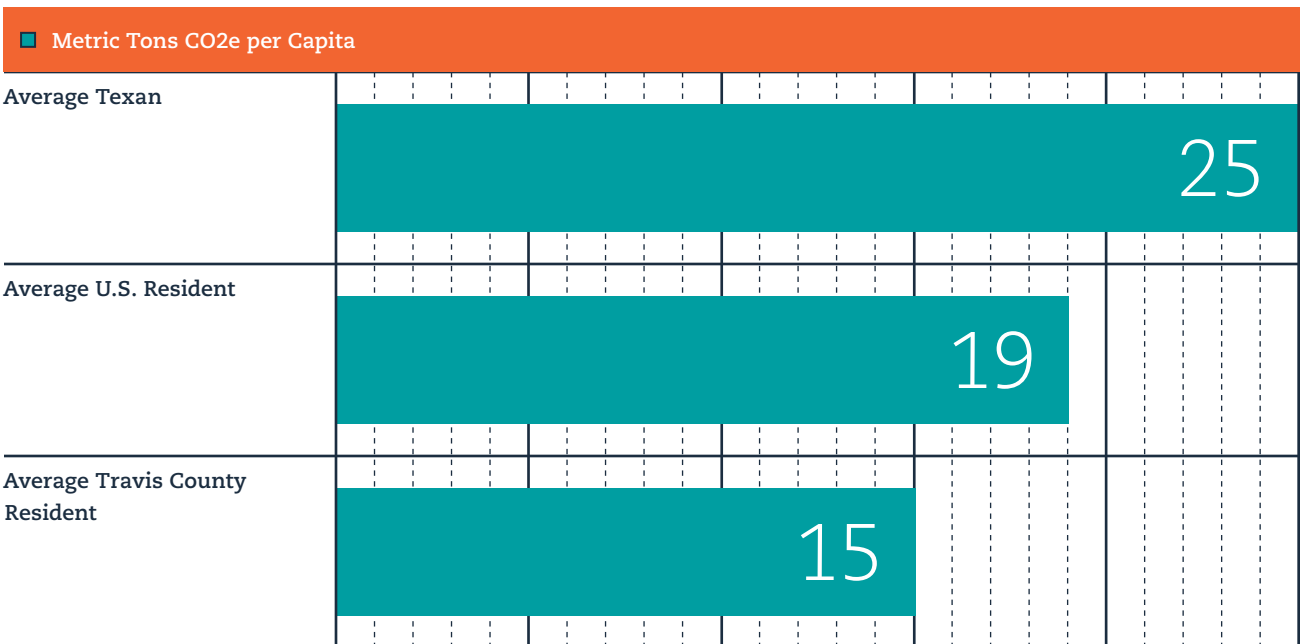


TRAVIS COUNTY GREENHOUSE GAS INVENTORY

est. 14.9 Million MTCO2e

- <1% Wastewater Treatment
- 11% Waste
- 36% Transportation
- 53% Energy

GREENHOUSE GAS EMISSIONS PER CAPITA



Counting our CO2

HOW THE AUSTIN CLIMATE PROTECTION PROGRAM TAKES STOCK OF COMMUNITY EMISSIONS

WHAT GETS MEASURED can get managed, and that's why the Austin Climate Protection Program calculates a community-wide greenhouse gas (GHG) inventory. The inventory takes data from energy, water, transportation, materials and waste emissions sources from the Travis County area and converts them to a CO2 emission equivalent. This includes the City of Austin's municipal operations plus residential, industrial, and commercial entities. Knowing baseline emissions levels allows us to develop emissions reduction strategies for residents, businesses and institutions, and track whether GHG emissions are increasing or dropping. Jenell Moffett of the Austin Climate Protection Program took a break from her spreadsheets to share how she makes the inventory happen.

How do you collect the data for the community greenhouse gas inventory?

We use anonymous electricity use information for Austin homes and businesses provided to us by Austin Energy, as well as modeled data based on population and usage patterns, such as estimates of the number of vehicle miles traveled in Travis County. We are always working to improve the accuracy of the data.

What kind of tools do you use to do your job?

Currently, most of our analysis is done in Microsoft Excel spreadsheets. I use a pink calculator, a notebook, and a mechanical pencil. I keep GHG emission protocols nearby and refer to various conversion and emission factors tables regularly.

What is the hardest part of completing a greenhouse gas inventory?

It is a manual process. You have to add, subtract, multiply, divide, sort, and query thousands of records over and over again to get the data as accurate as possible. Boundaries, emission factors, data sources, contacts,

and protocols are constantly changing. Managing these changes makes it a work in progress.

What's great about being our inventory guru?

The most rewarding part is to see the inventory go to work: plans implemented, targets met, and emissions reduced with the inventory as the foundation. The graphs are fun too—they are my illustration to the story.

Is there anything about the process that would surprise us?

Not much about the process is surprising, but the trends can be very satisfying. Whether it's hybrid cars or renewable power, the evidence of their benefits is in the inventory. It shows that every emission has a source, and we as a community have the power to influence our impacts—our greenhouse gas emissions are something that we control.



Jenell Moffett. Photo: Sarah Fusco

Every emission has a source, and we as a community have the power to influence our impacts.

GREENHOUSE GAS MITIGATION • \grēn-haus gas mi-tə-gā-shən\

Efforts to reduce the production or effects of greenhouse gases such as carbon dioxide and methane.

CLIMATE OF ACTION

Building on the community's bright ideas for a cooler city

MORE THAN 100 Austinites came together in 2010 to answer a seemingly straightforward question:

How can the Austin community reduce its greenhouse gas emissions? The group brainstormed more than 50 actions that residents and businesses can take to reduce their carbon emissions, some of which are already being carried out. Austin Climate Protection Program staff are building on the foundation of that initial set of solutions, ensuring that the Imagine Austin comprehensive plan aligns and developing initiatives designed to make greenhouse gas reductions easier to achieve. Meanwhile, with the help of dedicated stakeholders, the recommended actions have been distilled into a roadmap to continue to guide the reduction of the community's greenhouse gas emissions in Central Texas.



Community participants in a March 2010 Climate Protection work session.

COMMUNITY GREENHOUSE GAS REDUCTION ROADMAP

ENERGY

- Expand energy efficiency programs
- Increase on-site renewable energy systems
- Diversify energy sources
- Incorporate climate change into energy projections
- Provide affordable energy

WATER

- Expand water efficiency programs
- Increase on-site water harvesting
- Advance green infrastructure
- Diversify water sources
- Strengthen flood response
- Consider human health impacts

- Prepare for drought

WASTE

- Advance green purchasing practices
- Divert waste from landfills
- Engage in green economic development
- Insure adequate supply of materials for emergencies
- Emphasize locally sourced materials
- Plan for debris management
- Manage landfills over the term

TRANSPORTATION

- Increase access to public transit
- Encourage walking and biking
- Make available alternative fuels

for transportation

- Plan for emergency transportation
- Match transportation options to residents
- Use new roadway material
- Promote infill and mixed-use redevelopment near services to reduce sprawl
- Preserve undeveloped land and protect sensitive environmental features
- Use compact development to prepare for extreme events
- Decrease the urban heat island

LAND USE

FOOD

- Develop Austin food-growing capacity and local food availability
- Ensure local capacity to meet food needs
- Identify best crops and farming methods in light of predicted climate-related stresses
- Develop transportation routes, lines of communication, and better coordination with other government entities to ensure food security

A LOCAL WAY TO OFFSET YOUR CARBON IS COMING

IF A TREE is planted in the forest but no one's there to see it, does it make a difference? Paying for tree-planting in the rainforest is one way to offset your carbon emissions—a purchase that reduces global CO₂ emissions, to compensate for those we can't yet eliminate ourselves. But it's perhaps more motivating to offset your carbon footprint in a way that also improves Austin tangibly. That's what the Austin Climate Protection Program aimed for when developing a new way to offset your carbon emissions through worthy local projects you can see for yourself. Soon, individuals will be able to support local tree-planting (through the nonprofit TreeFolks), cooling and cleaning our air while beautifying the city. Alternatively, individuals or organizations can support solar panels on the roof of the Yellow Bike Project (YBP) in East Austin, an all-volunteer



Tree planting is one way to offset carbon emissions.

initiative to put bicycles on our streets through bike advocacy and education about bike maintenance. Further offsets will be generated by solar panels atop M Station, a new 150-unit green affordable multifamily community near the MLK MetroRail stop. Austin Energy is funding the projects and verifying the impacts, and you'll be able to register your support in 2012.

Are you an Austin Green Business Leader?

NEW CITY PROGRAM RECOGNIZES LOCAL COMPANIES THAT GO GREEN

THE NUMBER OF businesses in the Austin area has grown despite the limping economy—the number of businesses with 99 or fewer employees grew by 1.5 percent in Austin between 2007 and 2008 (the latest period covered by official statistics), while no other market did better than 0.6 percent. Austin's growth is expected to continue, and our promising economic outlook presents an opportunity for the City of Austin to help new and existing businesses become more sustainable. The Office of Sustainability has convened a core group of City staff from across multiple departments to guide Austin Green Business Leaders, an initiative that will provide local businesses with tools, resources, and assistance through the City's existing sustainability programs. The program will also recognize companies that demonstrate commitment to eco-friendly practices. Marc Coudert of the Austin Climate Protection Program coordinates the group.

How can a local business participate in the Austin Green Business Leaders program?

Starting in 2012, Austin businesses will have the opportunity to commit to actions focused on reducing waste, water, vehicle miles traveled and energy use. They will then document their progress going green, and will be recognized for their success. When we say "green," we mean both in terms of environmental impact and saving money.

Why is this important for Austin right now?

The Austin business community is very active in sustainability and we want to make sure those stories

are heard. The Austin Green Business Leaders will provide public recognition for the great work that local businesses are doing and provide a forum for other businesses to learn from them.

What's the best part of your job coordinating this program?

We are responsible for connecting the dots, making sure the energetic and creative individuals who are working toward the same ends share resources, lessons learned and accomplishments. Austin Green Business Leaders brings together vibrant local businesses with City and Capital Metro experts in areas such as zero waste, energy savings, and alternative commuting. There is such an energetic and creative undercurrent in Austin, and this program taps into it.



Marc Coudert. Photo: Sarah Fusco

BUSINESS CLIMATE

Green jobs are a reality in Austin

CLIMATE CAPITALISTS believe that the best route to building our economy, growing our city and expanding job markets is to solve problems that contribute to climate change while turning a profit. In Austin as in the rest of the country, business leaders are entering the growing markets for renewable energy technologies, sustainable agriculture, green building, and alternative transportation. Others, from start-up entrepreneurs to huge corporations to government offices, are optimizing their use of energy and resources. It makes operational sense, cuts costs, and can boost overall profitability. Research by Goldman Sachs has revealed that the leading companies in envi-


ronment, social and good governance policy have 25 percent higher stock value than their less sustainable competitors. Since 2008, these sustainability leaders also have had the fastest-growing stock value.

Austin is one of the nation's most progressive and proactive entrepreneurial centers, according to Entrepreneur.com. In late 2010, the City's Economic Growth and Redevelopment Services Office negotiated an economic development incentive proposal with SunPower Corp., a leader in commercial and residential solar installations. The company is expected to create approximately 450 jobs here over a 10-year period. The Texas Workforce Commission estimated in 2009 that green industries in Austin—including clean energy tech—employed 45,672 people; in 2010, the Greater Austin Chamber of Commerce tallied 175 clean energy technology companies in the city.


SUSTAINABILITY BY THE NUMBERS


\$7,496,700

Department of Energy funds received by Austin Energy under the American Recovery and Reinvestment Act (ARRA). The federal funds have paid for major mechanical renovations and controls audits and upgrades for City facilities from fire stations to the Mexican American Cultural Center; lighting improvements indoors and out (including the parking garage at City Hall); commissioning—confirming that building systems function correctly—at the City’s 14 largest buildings; and other energy efficiency retrofits. The stimulus dollars also bought a biogas generator for the Hornsby Bend Biosolids Management Plant, which processes the sewage solids from all of Austin's wastewater plants. The generator (part of a larger upgrade of the plant being funded through a separate multimillion-dollar ARRA zero interest loan) will use methane from the sludge treatment process to generate renewable power—more than is needed to run the plant.


5  The number of materials Austin multifamily and commercial properties will be required to recycle beginning in October 2012 under the Universal Recycling Ordinance, including office paper, plastic #1 and #2, glass, corrugated cardboard, and aluminum. Compliance with the ordinance will be phased in by type and size of property.

7,566  Total gallons of 100 percent post-consumer, rebled low-VOC flat paint made from paint collected at the City of Austin’s Household Hazardous Waste facility since July 2010. The paint, known as Austin Reblend, is free to residential or civic projects and comes in two neutral colors. Every gallon made diverts the same amount from the landfill.

90  The number of Austin days with temperatures of at least 100 degrees in 2011. That’s the most 100 degree days in Austin in a year since 1895.


6  Number of greenhouse gases, including carbon dioxide (CO₂), that are known to drive climate change.


6,000  Number of trees planted through City of Austin programs in 2010.

912  City of Austin employees who attended Austin Climate Protection Program-led trainings in 2011. Represented departments included Health and Human Services, the Convention Center, Public Works, the Library, Austin Energy, Communications and Technology Management, and the Parks and Recreation Department.

9,400  Acres of land occupied by farms in Austin’s five county region.

13,611  The number of tons of CO₂ equivalent reduced through alternative fuel vehicle use and other means by Central Texas Clean Cities participating fleets reporting in 2010. Central Texas Clean Cities is a volunteer coalition of public and private fleets that work to reduce petroleum consumption.

163  Gallons of water used per capita per day in Austin, expressed as a five-year rolling average. In 2010 Austin City Council approved a policy to reduce Austin’s per capita water use to below 140 gallons per capita per day by 2020.

469  Number of wildland fires in the Austin Fire Department service territory in the first seven months of 2011.

FINDING GREEN GEMS IN THE ROUGH

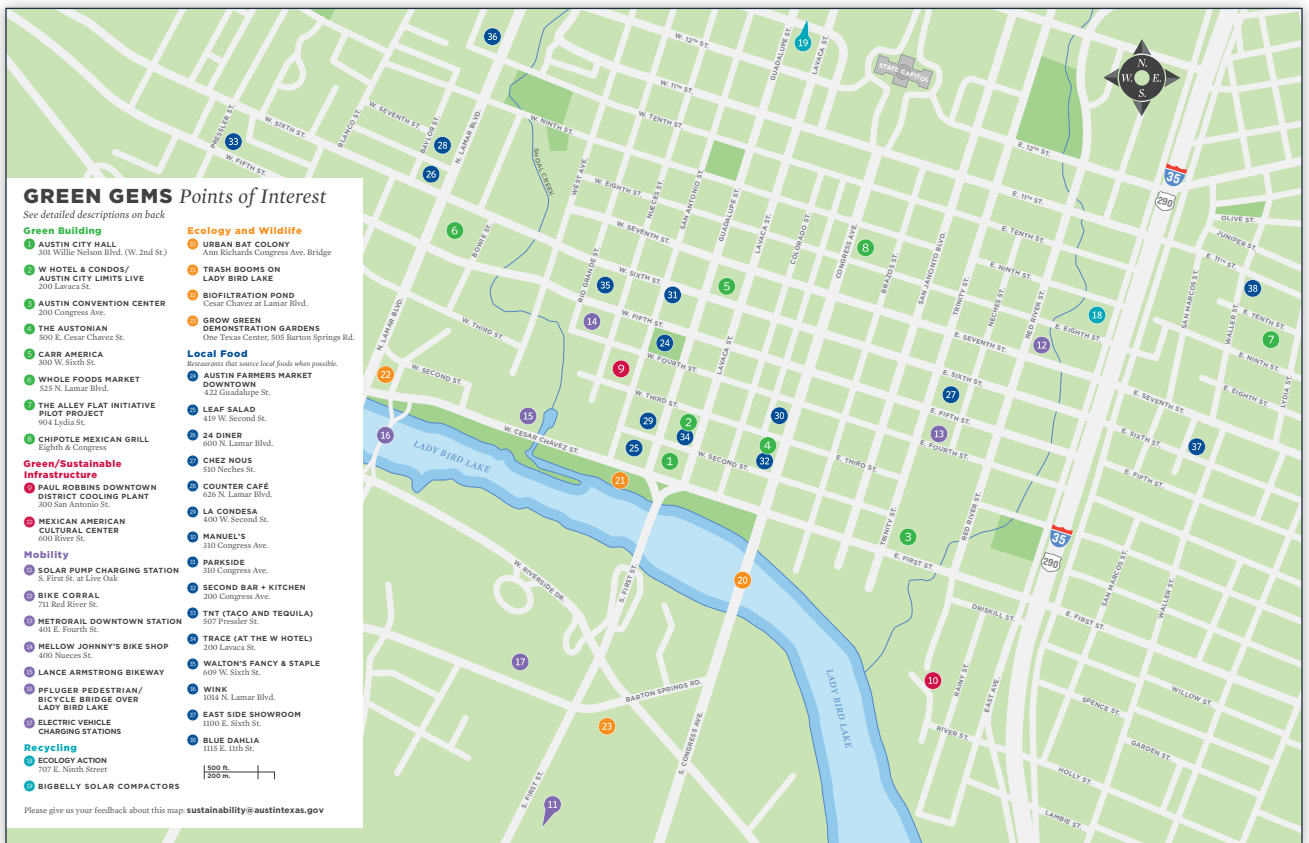
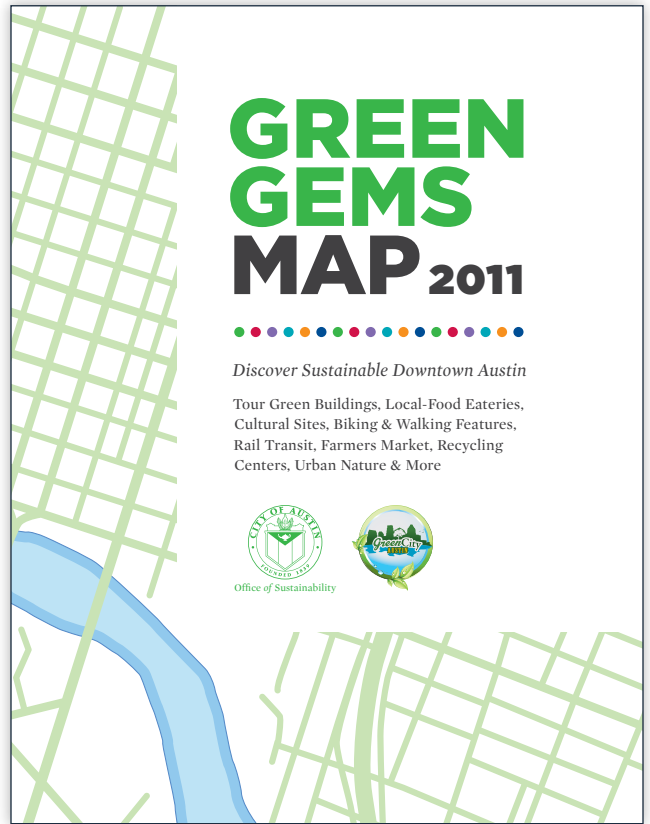
New map locates downtown Austin's most sustainable sites

WHAT MAKES downtown Austin "green"? Grab a 2011 Green Gems Map, hop on your bike or

lace up your walking shoes and find out. This handy street plan and narrative guide includes local-product-focused restaurants, sustainably designed buildings, green infrastructure features, resource recovery spaces, and human-powered, urban nature-oriented ways to get there. Download your complete copy at: www.austintexas.gov/sustainability.



Photo: Michael Knox, ASLA



A Message from the City Manager



WHEN THE Mayor and City Council enacted the ambitious Austin Climate Protection Plan in early 2007, they set one of the highest bars in the world for municipal greenhouse gas reductions by 2020. The City was boldly entering uncharted territory in a fast-changing and uncertain regulatory and energy environment with no real blueprint to follow.

Four years later, I'm proud of how we have tackled that learning curve. Our interdepartmental Climate Action Team has developed detailed plans to lower the carbon footprints of each and every City department. Greenhouse gas emissions from municipal operations have been reduced significantly. For this work, the City received top national recognition in 2010 from ICLEI Local Governments for Sustainability USA.

Even if climate change were not an issue, it just makes good management sense to consume less energy, water and other resources. It's part of being the Best-Managed City.

I'm pleased that our Office of Sustainability, launched in September 2010, is providing strong, centralized leadership, oversight and coordination of the City's environmental, climate and sustainability policies, practices and programs. We're also integrating our comprehensive plan, departmental and mobility long-range plans, and capital improvement project program around a focus on smart investments, livability and sustainability. Those initiatives can help to lower the whole community's carbon footprint.

To meet the requirements of the original City Council Climate Protection resolution, since October 1, 2011 the

City is purchasing enough renewable GreenChoice® power to 100 percent power all municipal departments and operations, making us truly a national climate action leader.

As the Central Texas climate gradually becomes warmer, with more drought and other extreme weather events, prudent risk mitigation requires that we take steps to prepare now.

Let's make sure that your children and mine—and their children too—are able to enjoy the enviable quality of life we enjoy in Austin today.



MARC A. OTT
City Manager | CITY OF AUSTIN



*Climate
Action*
Report



City of Austin
OFFICE OF SUSTAINABILITY
2010-2011

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