

2015 SUSTAINABLE CHICAGO

ACTION AGENDA





OFFICE OF THE MAYOR CITY OF CHICAGO

121 N. LASALLE STREET • CHICAGO, ILLINOIS 60602
www.cityofchicago.org • @chicagosmayor

Dear Friends,

A sustainable Chicago is a city that spends less on energy use with each passing year, creates good-paying jobs in up-and-coming industries, responsibly maintains and upgrades its infrastructure, and ensures every Chicagoan has the opportunity to live a healthy and active lifestyle. Over the past year and a half my administration has directed historic investments in energy efficiency, transportation, and infrastructure that will create jobs and foster opportunities for Chicagoans to make sustainability a part of their lives and their experience of the city. Now is the time to plan for the next set of innovations and investments that will further our leadership on these issues.

The Sustainable Chicago action plan offers concrete initiatives, metrics, and strategies aimed at advancing Chicago's goal of becoming the most sustainable city in the country. From improving citywide energy efficiency and promoting diversified transit options, to launching citywide recycling, the roadmap is robust and comprehensive, touching upon the full spectrum of life for Chicagoans, whether at home, at work, on our streets or in our parks.

To secure Chicago's global competitiveness we must invest in our future in a manner that creates economic and job opportunities now. This roadmap not only sets the goals that will shape our priorities for years to come, but establishes a swift course of action that will challenge us to create jobs, foster new industries, and reduce costs for residents and businesses.

You can learn more and share your thoughts with us online at www.chicagosustainability.org.

Sincerely,



Rahm Emanuel

Rahm Emanuel
Mayor

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SUSTAINABILITY COUNCIL

The Sustainability Council is a group of department leaders, chaired by Mayor Emanuel, committed to achieving the goals laid out in this roadmap and delivering a more sustainable Chicago.

Chairman

Rahm Emanuel, Mayor

Chief Sustainability Officer

Karen Weigert

Chicago Department of Aviation

Rosemarie S. Andolino, Commissioner

Department of Buildings

Michael Merchant, Commissioner

Department of Fleet and Facility Management

David Reynolds, Commissioner

Department of Housing and Economic Development

Andrew J. Mooney, Commissioner

Department of Procurement Services

Jamie Rhee, Chief Procurement Officer

Department of Streets and Sanitation

Thomas G. Byrne, Commissioner

Department of Transportation

Gabe Klein, Commissioner

Department of Water Management

Thomas H. Powers, P.E., Commissioner

Office of Budget and Management

Alexandra Holt, Budget Director

INTRODUCTION

Sustainable Chicago outlines the specific challenges we face and opportunities we can realize when we work together to make Chicago a healthier, more livable and more prosperous place. It focuses on the choices, commitments and actions that will deliver immediate results over the next few years and will continue to pay dividends for our people, businesses and environment for years to come.

Sustainable Chicago is organized into seven categories critical to the sustainability of the city. It sets twenty-four specific goals and identifies key actions to take to reach those goals by 2015. It is a clear commitment of what government needs to and will do. It is also a roadmap for how Chicagoans, at home and at work, can get involved.

The seven sustainability categories are related and reinforce each other – success in one can lead to or amplify success in another.

- 1. Economic Development and Job Creation**
- 2. Energy Efficiency and Clean Energy**
- 3. Transportation Options**
- 4. Water and Wastewater**
- 5. Parks, Open Space, and Healthy Food**
- 6. Waste and Recycling**
- 7. Climate Change**

Sustainable Chicago begins with a specific focus on the economic development opportunities that are inherent in the public and private sustainability investments that will be made in Chicago. Major investments over the next several years will improve the bus and rail transit system, upgrade the water system, modernize Chicago's electrical infrastructure, and drive energy efficiency retrofits for public and private assets in every neighborhood in Chicago. We need to ensure that Chicago is innovative, building lasting companies and filling the jobs that will be created by these investments.

By tapping into energy efficiency as a resource, we will meet the energy demands of a growing city, invest in our infrastructure, save money, and reduce our environmental impact. Through energy saving retrofits for our businesses, residences, and government buildings, and investments in renewable energy sources, Chicago will improve citywide efficiency by 5 percent, and create at least an additional 20 MW of renewable energy.

Chicago will diversify transportation options, reduce traffic congestion, improve air quality, and enhance quality of life by increasing the number of protected bike lanes to ensure that Chicagoans feel safe on our streets, by establishing a bus rapid transit network to greatly improve travel times, by providing an extensive bike sharing program, and by rebuilding the Red Line—Chicago's busiest “L” line.

Building on the legacy and lesson of our protected lakefront we will focus on the promise of the Chicago River as Chicago's second waterfront; protecting and enhancing both resources is directly connected to addressing issues of combined sewer overflows and basement flooding.

We will make sure that Chicagoans contribute to resource conservation and sustainability efforts by extending blue cart recycling to all of the 600,000 households served by the Department of Streets and Sanitation. We will do our part by increasing the recycling rates of City construction projects and green practices of City operations.

We recognize that urban life is richer when we have inviting and beautiful public spaces to gather and connect with each other and with nature. *Sustainable Chicago* focuses on the actions and investments that will increase open space and access to healthy food for all Chicagoans.

Sustainable Chicago advances the long-term commitment of our city to a better environment evidenced four years ago by the Chicago Climate Action Plan (CCAP). That plan proactively responded to the challenges of climate change with local actions that had global resonance. Through CCAP, Chicago committed to reducing greenhouse gas emissions by 80% by 2050 and preparing the city for the impacts of climate change. *Sustainable Chicago* accelerates progress towards the goals of CCAP and establishes initiatives that reinforce Chicago's dedication to the quality of life of all residents today and tomorrow.

As we work toward a more sustainable future, we build on the accomplishments of forward-thinking Chicagoans who, through their commitment and dedication, have contributed to a record of global leadership on sustainability and innovation. Chicago ranks #1 in buildings certified under the LEED (Leadership in Energy and Environmental Design) rating systems, has 26 miles of public lakefront and is home to a growing cluster of clean energy companies. Chicago was recently named the most sustainable large community in America by Siemens and the U.S. Chamber of Commerce. *Sustainable Chicago* continues the work that has already begun by setting clear goals, ambitious timelines, and a renewed determination to engage all Chicagoans in shaping the future of our city.



1

ECONOMIC DEVELOPMENT AND JOB CREATION

BUILDING A VIBRANT ECONOMY ON 21ST CENTURY INFRASTRUCTURE



Chicago has always flourished by creating innovative technologies and charting new opportunities. A bustling merchant's city in the 19th century and an industrial and manufacturing center through much of the 20th century, Chicago today continues this rich economic legacy by focusing on the opportunities of a sustainable economy. Future Chicagoans will be poised to prosper as today's choices encourage industries of tomorrow to set up shop and thrive in a sustainable Chicago. » » »



GOALS

- ① ESTABLISH CHICAGO AS A HUB FOR THE GROWING SUSTAINABLE ECONOMY
- ② ACCELERATE THE ECONOMY IN CHICAGO BY ASSISTING PEOPLE AND COMPANIES IN ADOPTING SUSTAINABLE PRACTICES

Building a healthier, more livable, and economically vibrant city will be aided by more than **\$8 billion** in public and private investments being made over the next decade. The following sustainability-related projects are underway, and will ultimately support nearly 40,000 jobs:

- » Over **\$3 billion** investment in Chicago's aging water and sewer infrastructure to reduce water waste.
- » Over **\$1.5 billion** in investments supporting sustainability as part of a larger investment plan at O'Hare and Midway International Airports including runways, airport transit system expansion, and other airport developments that allow Chicago to maintain its competitive position as a global airport hub for the 21st century.
- » A **\$1.1 billion** investment from ComEd to upgrade Chicago's electrical infrastructure, giving customers greater control of energy savings through smart grid enhancements.

» A **\$1 billion** project to rebuild the Chicago Transit Authority (CTA) Red and Purple Lines from federal, state, and local funding, to improve transit for 79 million CTA riders annually.

» Over **\$630 million** available through Energy Efficiency Portfolio Standard programs administered by ComEd, Peoples Gas, and the Illinois Department of Commerce and Economic Opportunity.

» A **\$290 million** investment to increase parkland, upgrade recreational opportunities, and enhance natural spaces in Chicago parks.

» Plans for **\$225 million** of investments in energy efficiency projects at public assets will be proposed to the Infrastructure Trust.

» A portion of **\$1.4 billion** for upgrades at public schools, City Colleges, and other public facilities will be for sustainability and energy efficiency improvements.

MAJOR JOB SECTORS IN CHICAGO

TOTAL CHICAGO JOBS: 1.3 MILLION

JOB SECTORS WITH LINK TO SUSTAINABILITY AND CLEAN ENERGY

EDUCATION AND HEALTH SERVICES

280,000 JOBS

Environmental Researcher

BUSINESS SERVICES

195,000 JOBS

Energy Auditor

MANUFACTURING

133,000 JOBS

Battery Assembler

TRANSPORTATION & UTILITIES

81,000 JOBS

Rail Construction Worker

Brookings Institution, Sizing the Clean Economy, 2011

1.3 MILLION JOBS

JOB GROWTH IN RENEWABLE ENERGY 2007 TO 2010

12.25%

773

NEW HIGH-TECH FIRMS BETWEEN 2009 AND 2010 IN ILLINOIS

CHICAGO AND U.S. JOB GROWTH BY INDUSTRY SEGMENTS

Job growth 2007–2010:  Chicago  United States

ENERGY & RESOURCE EFFICIENCY



POLLUTION REDUCTION



ENERGY-SAVING BUILDING MATERIALS



PUBLIC MASS TRANSIT



RECYCLING AND REUSE



RENEWABLE ENERGY



WIND



Brookings Institution, Sizing the Clean Economy, 2011

By addressing the goals outlined in this roadmap, Chicago will further its position as a sustainable place to live, work and play, while creating jobs and fostering growing industries. Over the next three years Chicago will make broad investments in infrastructure. Extensive improvements of the bus and rail transit system, upgrades of the water and sewer infrastructure, and retrofits of public and private assets, will generate thousands of jobs making a positive impact throughout the region. Building a New Chicago, a \$7 billion infrastructure improvement program, will create 30,000 jobs over three years while laying the groundwork for a 21st century economy built on 21st century infrastructure.

New and enhanced educational and training programs offered by the City, its sister agencies, partners, and community groups will enable residents and businesses to embrace and utilize the latest technologies. These efforts will ensure that Chicagoans are prepared and ready to seize future opportunities.

CHICAGO SUSTAINABLE INDUSTRIES

The Chicago Sustainable Industries: A Business Plan for Manufacturing is the City's first effort to coordinate the economic, social, and environmental aspects of Chicago's manufacturing sector. The plan, launched in 2011, will create a formal government strategy to maximize public resources in targeting existing manufacturing sectors and sub-sectors that demonstrate an enduring, positive influence on Chicago's economy.

SPOTLIGHT

LEADERSHIP

SUSTAINABILITY LEADERSHIP

From corporations to startups, businesses are coming to Chicago to deliver sustainability solutions to the world. Veolia Environment, the world's largest environmental services company, made Chicago home to its North American headquarters in 2008. Former president and CEO Michel Gourvennec said "The City of Chicago's many environmental initiatives mirror our focus on sustainable development and our interest in providing leading-edge environmental programs for our municipal, industrial and commercial customers." In 2012, for many of the same reasons, Coyote Logistics, a growing provider of low-carbon freight delivery solutions, moved into Chicago's Green Exchange (pictured) and announced plans to add 400 new positions for a total of over 1,000 employees.



Photo courtesy of Green Exchange

\$500 BILLION

2010 GROSS REGIONAL PRODUCT

40%

INCREASE IN VENTURE CAPITAL FUNDING FOR
ILLINOIS COMPANIES IN 2011

20th

LARGEST ECONOMY IN THE WORLD
(CHICAGO REGION)

ECONOMIC DEVELOPMENT AND JOB CREATION » GOALS

GOAL 1

ESTABLISH CHICAGO AS A HUB FOR THE GROWING SUSTAINABLE ECONOMY

Chicago has the third-largest concentration of sustainable jobs in the country, according to the 2011 Brookings Institution report, *Sizing the Clean Economy, A National and Regional Green Jobs Assessment*. These jobs continue to grow as new private sector companies are established and existing companies create or develop sustainable practices and products. Chicago's historic strengths in manufacturing, research, and technology make it well-positioned to grow and meet the clean technology and sustainable economy demands of the 21st century.

Key actions:

- » Increase investment and research through activities including a Chicago clean tech summit and sharing of sustainability-related data.
- » Implement new technologies to advance sustainable solutions by using smart grid and clean energy applications.
- » Recruit companies and individuals with the most innovative clean energy and sustainability solutions to Chicago; start by convening or hosting a major clean energy and sustainability conference in Chicago every year.
- » Increase demand for sustainable products and approaches by adopting a green procurement policy.

GOAL 2

ACCELERATE THE ECONOMY IN CHICAGO BY ASSISTING PEOPLE AND COMPANIES IN ADOPTING SUSTAINABLE PRACTICES

In November 2011, United Airlines made the first U.S. commercial airline trip powered by biofuel, landing at O'Hare Airport. This is just one example of a Chicago-based company leading an emerging industry. To create further opportunities, the City will partner with organizations throughout Chicago to support the development of sustainable practices within companies and prepare people to fill and create the associated jobs.

Key actions:

- » Double the number of offices and businesses making operations more sustainable through efforts like the Green Office Challenge and Chicago Sustainable Industries.
- » Support sustainability and green building education for the public through programming at the Chicago Center for Green Technology and other partnerships.
- » Determine training gaps based on planned investments, and expand educational and training opportunities in environmental programs at City Colleges, Chicago Public Schools and Greencorps Chicago along with departments' and sister agencies' work with the community.
- » Identify, prioritize, and eliminate code barriers to sustainable practices.

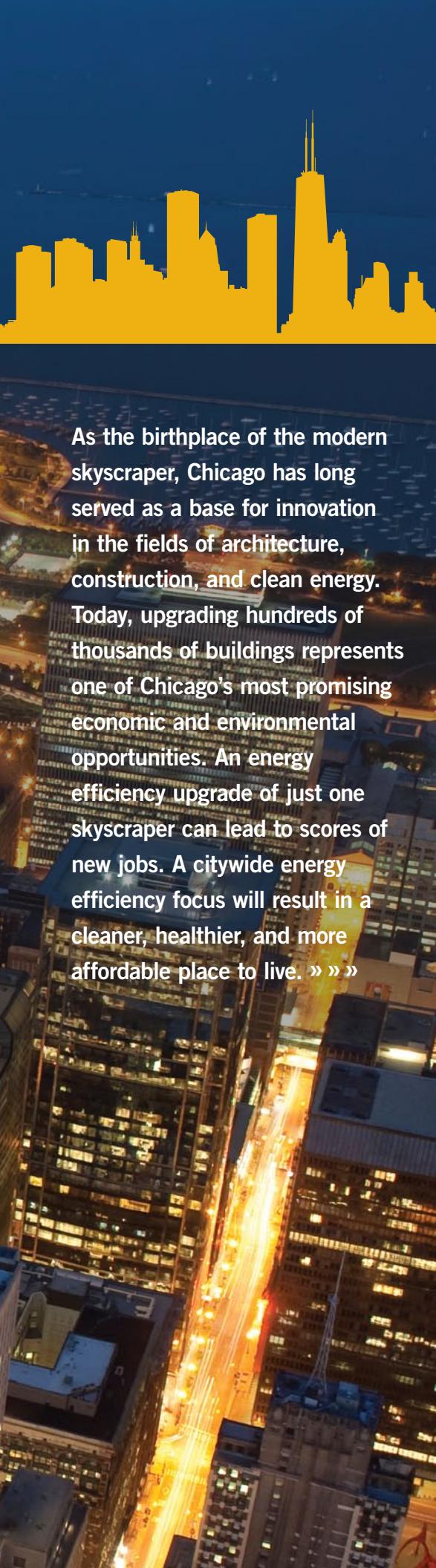
CHICAGO GREEN OFFICE CHALLENGE

The Chicago Green Office Challenge launched in 2009 to engage office tenants and building managers in a voluntary program to reduce carbon emissions. It has since expanded to 10 other U.S. cities and gained a national sponsor. In 2011, the challenge helped over 140 participants in Chicago save \$17.5 million.



2 | ENERGY EFFICIENCY AND CLEAN ENERGY

PROMOTING CLEAN, AFFORDABLE AND EFFICIENT ENERGY



As the birthplace of the modern skyscraper, Chicago has long served as a base for innovation in the fields of architecture, construction, and clean energy.

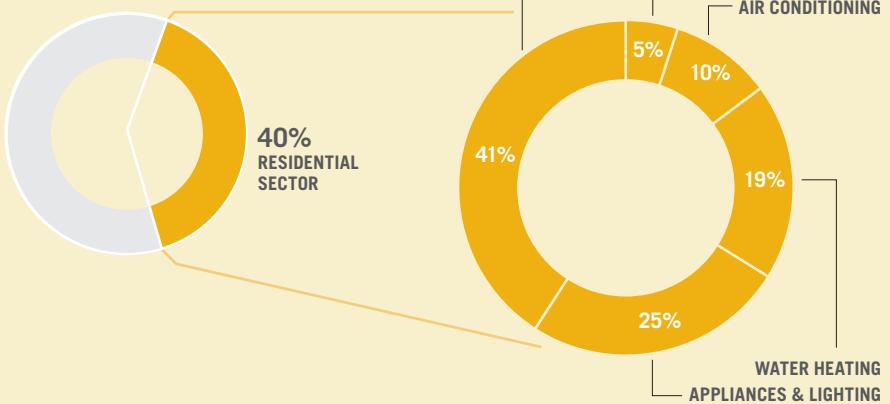
Today, upgrading hundreds of thousands of buildings represents one of Chicago's most promising economic and environmental opportunities. An energy efficiency upgrade of just one skyscraper can lead to scores of new jobs. A citywide energy efficiency focus will result in a cleaner, healthier, and more affordable place to live. » » »

GOALS

- 3 IMPROVE CITYWIDE ENERGY EFFICIENCY BY 5%
- 4 IMPROVE OVERALL ENERGY EFFICIENCY IN MUNICIPAL BUILDINGS BY 10%
- 5 CREATE AN ADDITIONAL 20 MW OF RENEWABLE ENERGY, CONSISTENT WITH THE ILLINOIS RENEWABLE PORTFOLIO STANDARD

ENERGY USE BREAKDOWN IN THE RESIDENTIAL SECTOR

TOTAL ENERGY USED IN CHICAGO:
223,011 MILLION kBTDUs



National Averages from EIA 2003 CBECS data

600,000

BUILDINGS

276,000

STREETLIGHTS

71%

OF CARBON EMISSIONS

42%

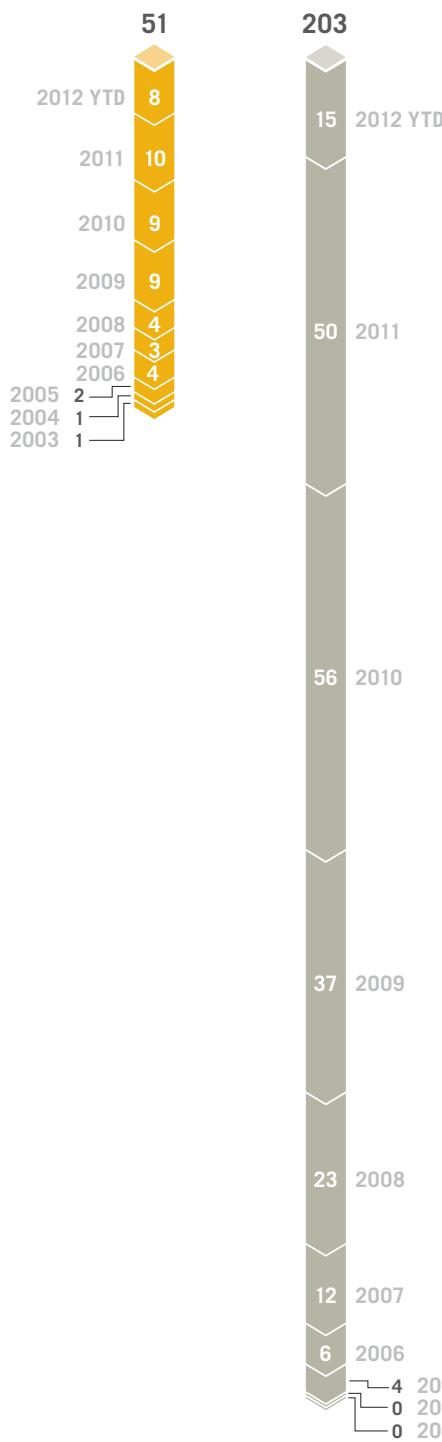
OF ELECTRICITY GENERATED BY COAL

1,600

MUNICIPAL BUILDINGS

LEED-CERTIFIED BUILDINGS IN CHICAGO AS OF JUNE 2012

City-owned Other ownership



Energy efficiency holds the potential to address the long-term energy needs of a growing city while fostering economic development and job creation. In Chicago, approximately \$3 billion is spent on energy each year, and energy used by buildings creates 71% of the city's carbon emissions. Reducing Chicago's energy demand and carbon emissions will require a historic investment in infrastructure that will save money for families and businesses while generating local job opportunities.

As we work to use energy more efficiently, we must also respond to the need for new, clean energy sources. By shifting to clean energy, such as solar power, we can increasingly meet our needs locally without polluting the air we breathe. Chicago is already home to significant solar generating capacity, including the nation's largest urban solar field. Plans are underway to expand the coverage of solar panels throughout the city, generating more local, clean energy.

ECONOMIC DEVELOPMENT PROFILE RETROFIT CHICAGO

In March 2012, Mayor Emanuel announced a proposal to create the Chicago Infrastructure Trust. The first series of projects to be brought before the Trust will likely be for investments of approximately \$225 million for energy efficiency at City assets, such as buildings. The City and sister agencies, currently spend \$170 million on energy in buildings and related assets annually, and this proposal can lead to savings of more than \$20 million each year. It is anticipated that this investment will generate up to 2,000 jobs, and reduce carbon dioxide emissions equivalent to removing 30,000 cars from the road annually. In June 2012, privately owned buildings were invited to participate in a separate energy efficiency program, the Retrofit Chicago Commercial Buildings Initiative. This effort will save more than \$5 million a year in

energy costs and create over 100 new jobs (see next page for details).

CLIMATE IMPACT

Energy use in buildings makes up 71% of Chicago's carbon emissions. Based on the 2010 emissions inventory, Chicago is 22% toward the 2020 emissions reduction goal related to energy efficient buildings. This is largely because Chicago is becoming more energy efficient and its electricity is becoming cleaner.

SPOTLIGHT

WATER PUMPING STATIONS

The Lexington water pumping station was built in 1992 as an electrified pumping station to distribute water to 730,645 suburban customers. In 2010, a solar field consisting of 5,000 solar panels, covering over 2.3 acres, was completed on top of the 30-million-gallon underground reservoir. This roof generates over 1MW of electricity annually on-site while greatly reducing the carbon footprint. Four additional pumping stations will be upgraded based on this model, including the Springfield Pumping Station. This station was built in 1901 and used steam power to distribute water to Chicago and suburban customers. Steam-driven pumps at this station will be converted to electric-powered pumps with variable speed drives, saving nearly \$4 million annually. A solar array will also be installed on the site.





ENERGY EFFICIENCY AND CLEAN ENERGY » GOALS

GOAL 3

IMPROVE CITYWIDE ENERGY EFFICIENCY BY 5%

Chicago's buildings represent a great opportunity to reduce energy cost and reinvest in the city's infrastructure. Residential buildings will be the focus of energy efficiency target zones that deliver substantial savings for residents. Large commercial buildings will be the focus of the Retrofit Chicago Commercial Buildings Initiative, a voluntary program for buildings to increase energy efficiency by 20% over five years. Already 14 buildings with over 14 million square feet of space are participating.

Key actions:

- » Support homes and businesses to achieve 20% energy efficiency improvements through Retrofit Chicago, including residential energy efficiency zones and the Commercial Buildings Initiative.
- » Support and advance the installation of smart meters in Chicago's businesses and households.
- » Double the number of LEED-certified buildings.
- » Include energy efficient technologies in all street lighting replacements.

- » Enhance local policies to support greater transparency in energy use and building energy performance.
- » Update the energy code for new construction and significant renovations.

GOAL 4

IMPROVE OVERALL ENERGY EFFICIENCY IN MUNICIPAL BUILDINGS BY 10%

From committing to LEED certification for all new buildings to developing the first LEED Platinum municipal building to installing a green roof on City Hall, Chicago has a long history of leading by example with its own municipal buildings. Now, the City will invest to accelerate energy efficiency gains in municipal buildings.

Key actions:

- » Target 10 million square feet of municipal buildings for energy reduction of 20%.
- » Achieve at least 10% improvement in energy efficiency in all CPS school operations, targeting a 50% school participation rate through the shared energy savings program.
- » Double the number of LEED-certified public buildings.
- » Track and report energy consumption at City facilities.

GOAL 5

CREATE AN ADDITIONAL 20 MW OF RENEWABLE ENERGY, CONSISTENT WITH THE ILLINOIS RENEWABLE PORTFOLIO STANDARD

Chicago may be known as the Windy City, but it is also well-suited to produce solar energy throughout the year. Chicago already has over 1 MW of solar capacity installed on publicly-owned properties, and over 10 MW of solar panels installed on privately-owned properties. Chicago aims to more than double these numbers by 2015 by removing hurdles to private installations and installing renewable energy generation on publicly owned properties.

Key actions:

- » Install 10 MW of renewable energy on City properties.
- » Explore locally-produced, renewable energy opportunities as part of new approaches to procuring power.
- » Cut the solar permit approval time in half, and reduce the complexity of zoning for local solar installations.
- » Work with ComEd, the State of Illinois, and other partners to assist in achieving the Illinois Renewable Portfolio Standard goals of 9% of electricity coming from renewable energy by 2015 and 25% by 2026.

RETROFIT CHICAGO COMMERCIAL BUILDINGS INITIATIVE

Retrofit Chicago's Commercial Buildings Initiative launched Chicago's participation in the Better Buildings Challenge, a national program that encourages public and private organizations to commit to energy savings. Hailing the Initiative, U.S. Secretary of Energy Steven Chu said, "by joining the Better Buildings Challenge, Chicago is not only leading by example, but is also better positioning the city in the global economy by saving millions in energy costs." Partners in the Commercial Buildings Initiative include: ComEd, Natural Resources Defense Council, C40 Cities Climate Leadership Group, Chicago Building Owners and Managers Association, Civic Consulting Alliance, Joyce Foundation, Peoples Gas, World Business Chicago. Fourteen initial participants in the private sector will increase energy efficiency by 20% in the next five years are listed below.

- » Santa Fe Building, 224 South Michigan Avenue
- » 515 North State Street
- » The AT&T Building, 225 West Randolph Street
- » CNA Headquarters, 333 South Wabash Avenue
- » Fifth Third Center, 222 South Riverside Plaza

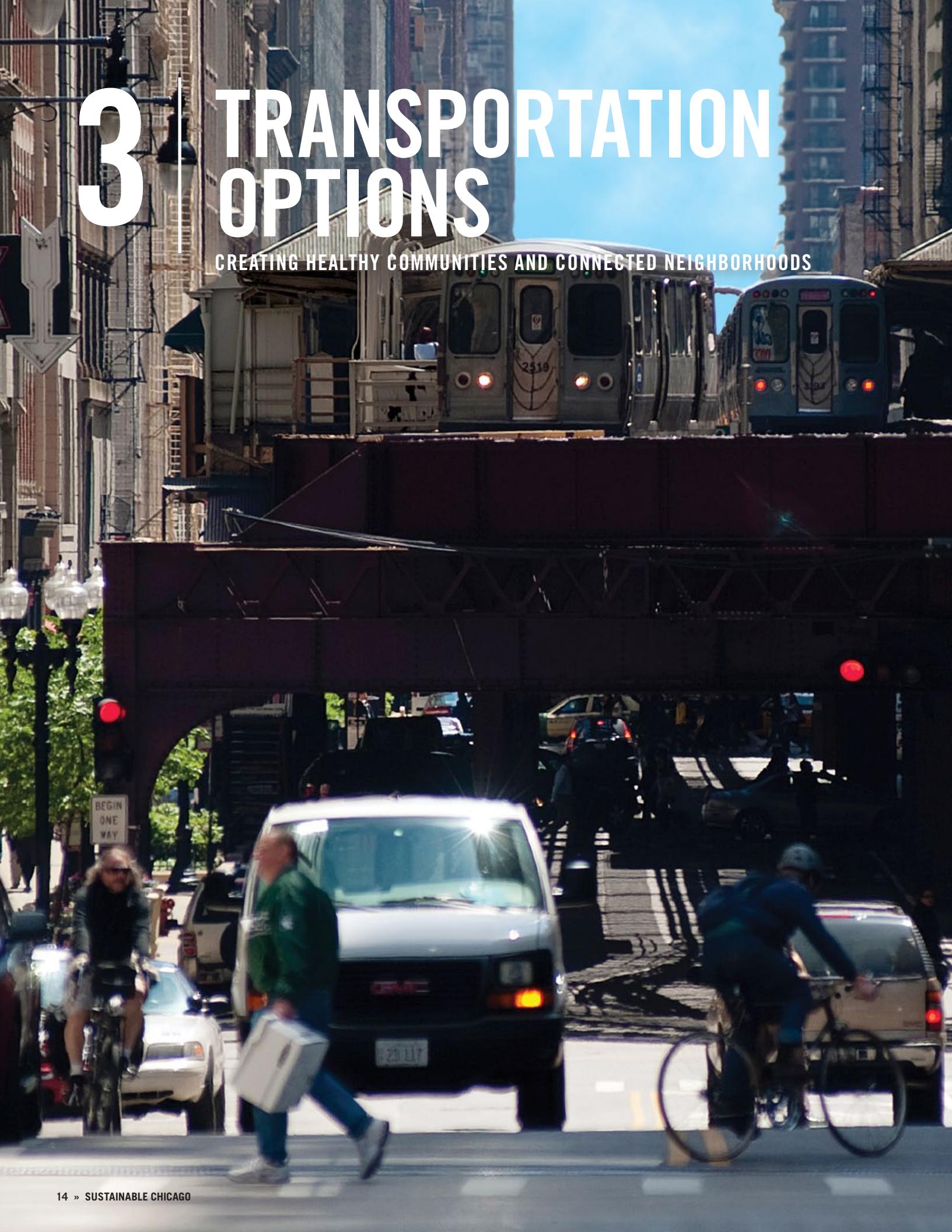
- » 333 North Michigan Avenue
- » Franklin Center, 227 West Monroe Street & 222 West Adams Street
- » Hyatt Center, 71 South Wacker Drive
- » NBC Tower, 454 North Columbus Drive

- » InterContinental Chicago Magnificent Mile, 505 North Michigan Avenue
- » The Marquette Building, 140 South Dearborn Street
- » One Financial Place, 440 South LaSalle Street
- » The Wrigley Building, 400-410 North Michigan Avenue
- » Sheraton Chicago Hotel & Towers, 301 E. North Water St.

3

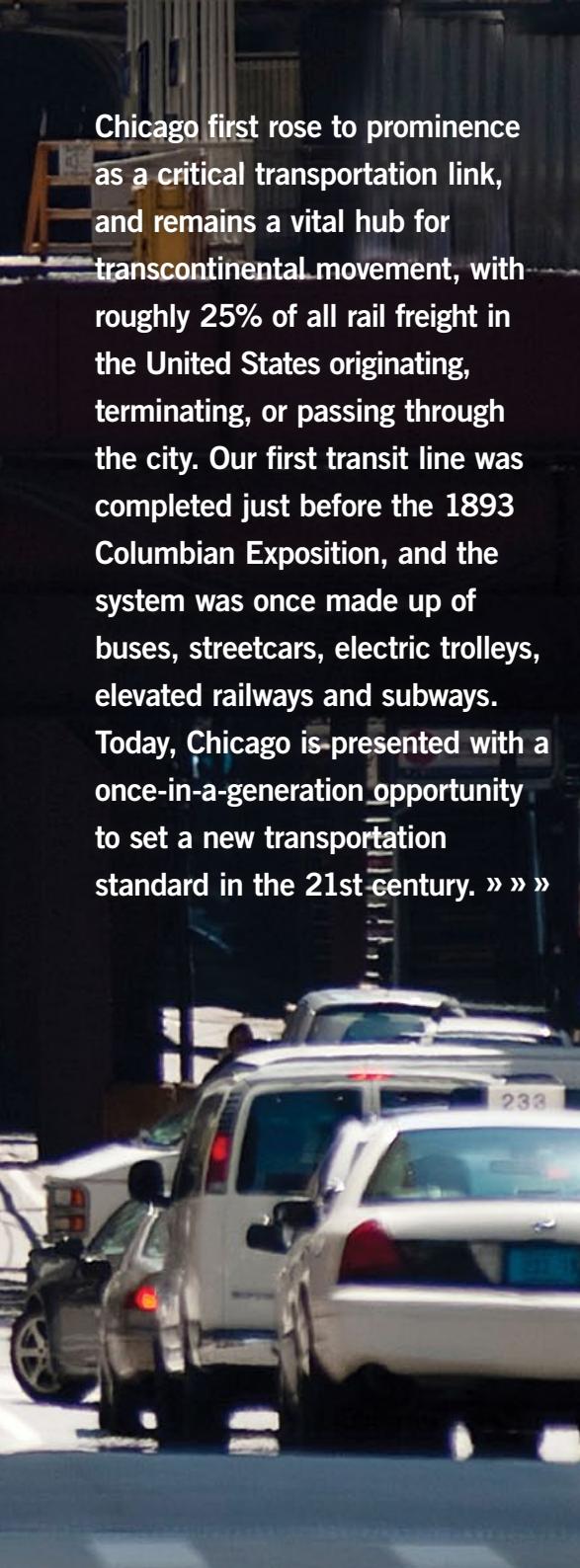
TRANSPORTATION OPTIONS

CREATING HEALTHY COMMUNITIES AND CONNECTED NEIGHBORHOODS





Chicago first rose to prominence as a critical transportation link, and remains a vital hub for transcontinental movement, with roughly 25% of all rail freight in the United States originating, terminating, or passing through the city. Our first transit line was completed just before the 1893 Columbian Exposition, and the system was once made up of buses, streetcars, electric trolleys, elevated railways and subways. Today, Chicago is presented with a once-in-a-generation opportunity to set a new transportation standard in the 21st century. » » »

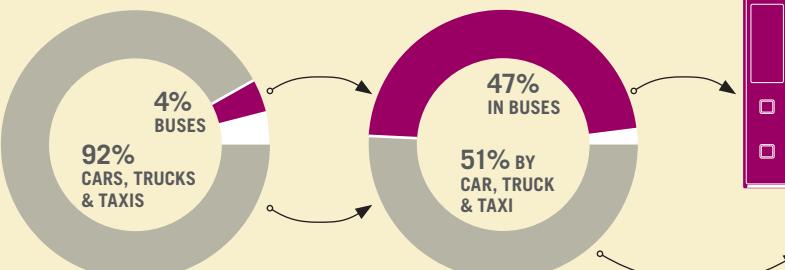


GOALS

- ⑥ INCREASE AVERAGE DAILY TRANSIT RIDERSHIP
- ⑦ ACCELERATE TRANSIT-ORIENTED DEVELOPMENT AROUND TRANSIT STATIONS
- ⑧ MAKE CHICAGO THE MOST BIKE AND PEDESTRIAN FRIENDLY CITY IN THE COUNTRY
- ⑨ IMPROVE FREIGHT MOVEMENT AND ACCELERATE HIGH-SPEED PASSENGER RAIL PROJECTS
- ⑩ ADVANCE SUSTAINABILITY LEADERSHIP AT CHICAGO'S AIRPORTS
- ⑪ STRENGTHEN THE INFRASTRUCTURE TO ADVANCE VEHICLE EFFICIENCY
- ⑫ REDUCE MUNICIPAL FOSSIL FUEL CONSUMPTION BY 10%

EFFICIENT TRANSPORTATION TO REDUCE CONGESTION

VEHICULAR TRAFFIC ON THE ROAD* PEOPLE IN VEHICLES*



BUSES TRANSPORT NEARLY HALF OF THE PEOPLE ON THE ROAD.
BUSES DOWNTOWN CARRY AS MANY PEOPLE AS 23 CARS »

*Average traffic and passenger capacity observed on Washington & Madison between Clark & LaSalle
Chicago Department of Transportation, 2012

1,200 CTA RAIL CARS

224 MILES OF "L" TRACK

23% OF CARBON EMISSIONS

500 FREIGHT TRAINS DAILY

145 "L" STATIONS

People who live in walkable neighborhoods weigh 6-10 pounds less than those who don't¹, and households that are likely to use public transportation on a given day save more than \$10,000 every year². Diverse and affordable transportation options are essential to the quality of life for all Chicagoans. Walkable streets and development near transit are critical attributes for a sustainable Chicago. In addition, freight rail and air traffic are crucial drivers of Chicago's economic growth, creating jobs and facilitating the movement of people and goods throughout the city and nation.

By increasing ridership of our dense public transit network, creating new protected bike lanes, promoting walkable neighborhoods, improving rail connectedness, and enhancing global airports, Chicago will reduce air pollution, improve health, decrease traffic congestion, and save money for residents and businesses.

TRANSPORTATION OPTIONS » GOALS

GOAL 6

INCREASE AVERAGE DAILY TRANSIT RIDERSHIP

To make transit the preferred mode of transportation for more Chicagoans, the Chicago Transit Authority (CTA) is rebuilding core infrastructure and enhancing service. The rebuilding of the Red Line is expected to shave up to 20 minutes off riders' daily commute. In addition, Bus Rapid Transit corridors will be added to Chicago streets to provide faster, more efficient, and reliable service.

Key actions:

- » Complete full reconstruction of the Dan Ryan (southern) branch of the Red Line, complete facelifts for seven stations on the north Red Line.
- » Continue progress on full Red and Purple Line modernization. Complete reconstruction of Wilson station and structure.
- » Complete renewal of 100 train stations with work focusing on lighting, painting, masonry and waterproofing, ensuring they are "safe, dry, and bright."
- » Replace or rehabilitate more than 1,500 CTA buses with new, low-emission buses and replace or rebuild nearly 1,000 CTA rail cars.
- » Install Bus Tracker LED signs at 400 bus shelters and turnarounds. Install Train Tracker signage, announcement systems, and other technological amenities in all rail stations.
- » Launch Bus Rapid Transit with a pilot route on Jeffery Corridor and a full route downtown. Plan for additional corridors.
- » Implement a travel demand management program to connect people with commuting options.

COMPLETE STREETS GUIDELINES CREATE A SAFE AND CONVENIENT TRANSPORTATION SYSTEM FOR ALL PEOPLE

TRANSIT USER

Bus Rapid Transit, Real time bus arrival signs, Traffic Signal Priority improve rush hour travel.

PEOPLE BIKING

Protected and buffered bikeways increase bicyclist safety.

PEOPLE IN CARS

Improved signal timing for smoother traffic flow makes travel time more predictable.

NATURAL FEATURES

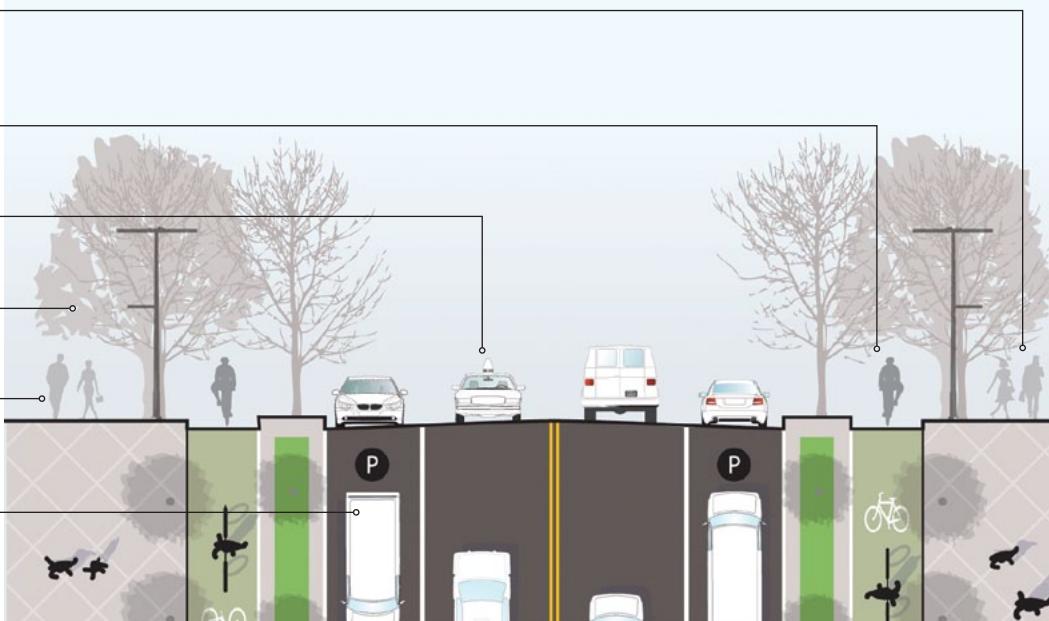
Tree canopies reduce the urban heat island effect and create a healthier environment.

PEOPLE WALKING

Countdown signals, mid-block crossings, signs, refuge islands and crosswalks reduce pedestrian crash injuries and fatalities.

TRUCK/ FREIGHT

More efficient loading/unloading time and zones reduce traffic delays.



¹American Journal of Preventive Medicine, September 2008 ²American Public Transportation Association, 2012

4,000

MILES OF STREET

532 MILLION

CTA RIDES IN 2011

6

NATIONAL RAIL LINES CONVERGE

36%

OF TRANSIT RIDERS ARE CAR-FREE

GOAL 7

ACCELERATE TRANSIT-ORIENTED DEVELOPMENT AROUND TRANSIT STATIONS

Prioritizing development around transit stations will encourage more people to walk or take public transit, better link workers to jobs, reduce transportation costs, relieve traffic congestion, and spur economic development.

Key actions:

- » Amend the Chicago Zoning Ordinance by adding a definition for Transit Oriented Development to enable and encourage more development near transit stations and to ensure that bulk, density, and parking ratios of the Ordinance meet the needs of those developments.
- » Identify additional “pedestrian streets” (as defined in the zoning code) around CTA stations.
- » Coordinate transit improvements with streetscape improvements and complete street implementation.

GOAL 8

MAKE CHICAGO THE MOST BIKE AND PEDESTRIAN FRIENDLY CITY IN THE COUNTRY

Bicycling and walking are healthy, effective, and affordable ways of getting around the city. Making it easier for Chicagoans to bike and walk will help foster connections between communities, boost our local economy, and facilitate healthy lifestyles.

Key actions:

- » Add 100 miles of protected bicycle facilities.
- » Launch a bike sharing system with 4,000 bicycles and 400 stations.
- » Release a pedestrian master plan to improve health and safety.

- » Enhance, adopt and use the revised Complete Streets Guidelines to ensure enjoyable, safe, attractive, pedestrian-friendly streets. Complete Irving Park Road and Lawrence Avenue pilots.
- » Reduce bicycle and pedestrian fatalities by focusing improvements on the top crash locations.

GOAL 9

IMPROVE FREIGHT MOVEMENT AND ACCELERATE HIGH-SPEED PASSENGER RAIL PROJECTS

To be the transportation hub of the 21st Century, Chicago will advance implementation of the Chicago Region Environmental and Transportation Efficiency (CREATE) program, launch and lead a regional freight bottleneck solutions committee, finish the citywide viaduct improvements funded by the federal TIGER Program grant in 2012, and work to line up funding for the remaining projects.

Key actions:

- » Coordinate efforts with Metra as the Englewood Flyover project begins construction for completion in 2014.
- » Identify additional available funding sources and work with CREATE partners to apply for grants, as appropriate.
- » Modernize Union Station to expand its role as a transportation hub.

SPOTLIGHT

REAL-TIME TRANSIT INFORMATION

In 2009, the Chicago Transit Authority (CTA) launched “Bus Tracker” at a system-wide level so that customers could know when the next bus was arriving in real time. The CTA followed in 2010 by launching “Train Tracker” to provide the same information to those taking the train. Now, customers can access the information in a multitude of ways via the CTA website, smartphone applications, text messaging, and on-street displays. Some businesses and commercial buildings are even displaying the information in their lobbies. Recent research has demonstrated that Bus Tracker increases customer satisfaction and ridership.



1,900

MILES OF PUBLIC ALLEY

60

OF RESIDENTIAL STREETS RESURFACED ANNUALLY

26%

HOUSEHOLDS ARE CAR-FREE

1,780

CTA BUSES

TRANSPORTATION OPTIONS » GOALS

GOAL 10

ADVANCE SUSTAINABILITY LEADERSHIP AT CHICAGO'S AIRPORTS

From raising bees on vacant land to launching the Sustainable Airport Manual to opening the world's first aeroponic garden in an airport, the Chicago Department of Aviation is delivering innovative approaches to sustainability at Midway and O'Hare airports. Chicago's airports aim to continue their leadership with ambitious sustainability strategies.

Key actions:

- » Pursue significant infrastructure investments to reduce airport emissions, enhance multi-modal connections, generate regional revenue, and improve travel experience for millions of Chicago visitors.
- » Advance strategies to reduce airport energy consumption by 15%, divert 50% of airport waste, and maintain a fleet with 20% low-emission vehicles and develop innovative approaches to airport operations such as a large-scale solar development, alternative fueling infrastructure, a green concessions program, and sustainable land management practices.
- » Promote partnership opportunities to support innovations in aviation, including biofuels development through the Midwest Aviation Sustainable Biofuels Initiative, and through continued expansion of the Airports Going Green movement.

GOAL 11

STRENGTHEN THE INFRASTRUCTURE TO ADVANCE VEHICLE EFFICIENCY

Motorized vehicles will always be an important component of Chicago's transportation and economic system. Recognizing the value vehicles provide along with the impacts on health and quality of life, Chicago will increase vehicle efficiency to save money, reduce fuel consumption, and lower air emissions.

Key actions:

- » Improve traffic signal timing for cars and buses to reduce idling time.
- » Achieve a taxi fleet comprised of 75% - 80% hybrid or compressed natural gas vehicles.
- » Install a dense network of electric vehicle charging stations.
- » Encourage the use of clean fuels, clean vehicle technologies and develop alternative fuel infrastructure in partnership with the Chicago Area Clean Cities Coalition.

GOAL 12

REDUCE MUNICIPAL FOSSIL FUEL CONSUMPTION BY 10%

Chicago will continue reducing fuel consumption in City operations by purchasing more efficient vehicles and by using its fleet more effectively. By doing so, the City will save money for taxpayers and help reduce citywide transportation emissions.

Key actions:

- » Reduce the number of vehicles in the City's fleet.
- » Increase efficiency of garbage services with street grid-based pick-up routing.
- » Replace 3% of on-road fleet vehicles with green fleet annually.
- » Reduce the energy intensity of CTA rail service by 12% from 2011 levels.

NAVY PIER FLYOVER

Navy Pier is the most popular tourist destination in Illinois, but the existing lakefront path is insufficient to meet demand from people walking and biking and includes dangerous intersections. An upcoming Navy Pier "flyover" will deliver a wider path for bikes and pedestrians and minimize potential conflicts with motorized traffic.



67,026,191

ANNUAL AIRPLANE PASSENGERS AT O'HARE IN 2010

183

MILES OF ON-STREET BIKEWAYS

42.3

MILES OF SHARED USE TRAILS

ECONOMIC DEVELOPMENT PROFILE RED LINE UPGRADE

The Red Line is the backbone of the CTA rail system, with nearly 250,000 riders on an average weekday. Opened in 1969, the Dan Ryan Branch tracks and track bed are beyond their expected lifespans. This means longer commutes and less reliability for more than 80,000 commuters each day. Currently, 40 percent of the Dan Ryan Branch requires slow zones for safe operation. As part of the Building a New Chicago Program, the CTA will rebuild these tracks to provide faster commutes, a smoother ride, improved stations and accessibility, and a better passenger experience. The project will also create hundreds of jobs.

CLIMATE IMPACT

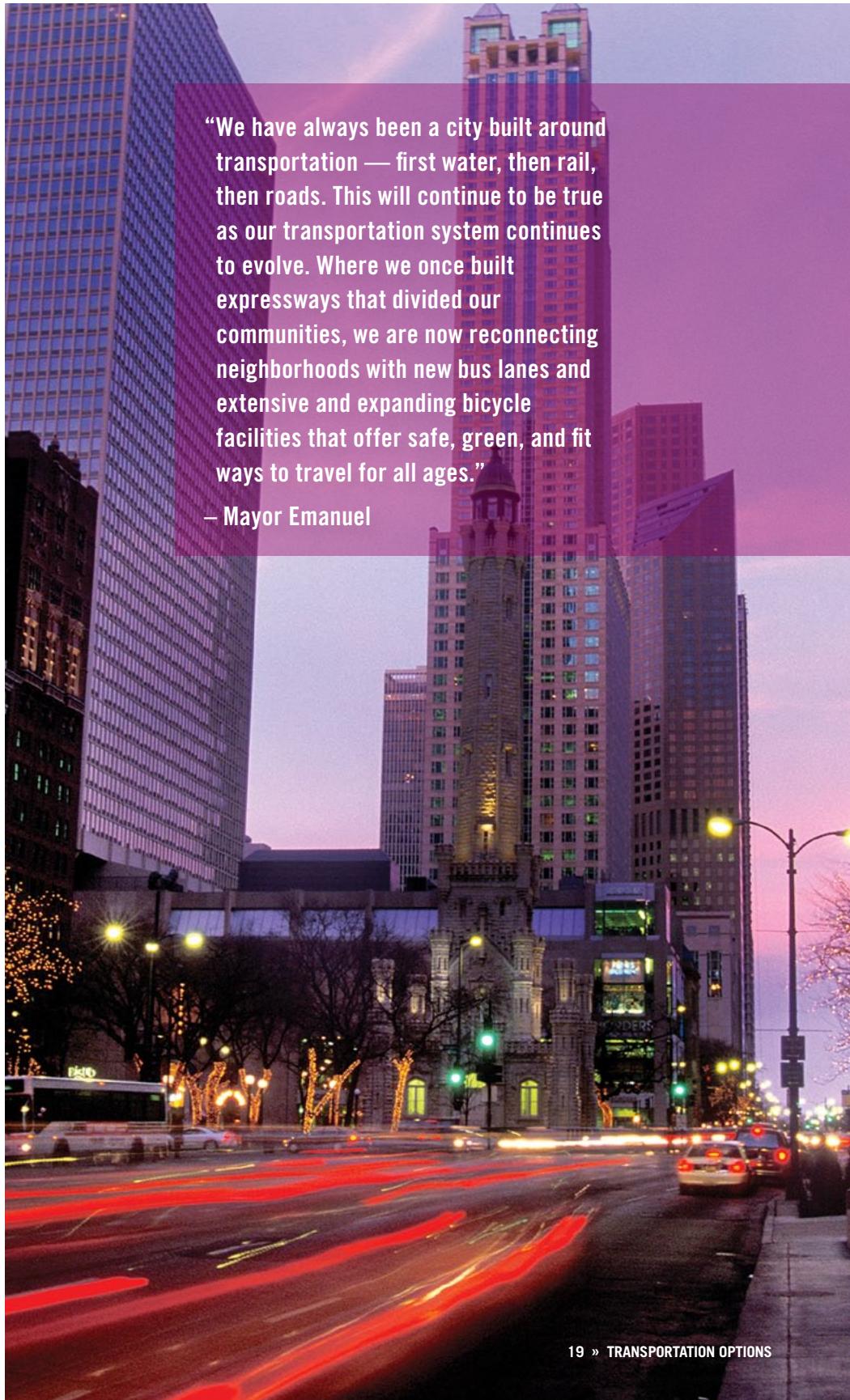
The 2010 emissions inventory shows that Chicago is 13% of the way toward its 2020 goal for transportation, which represents 23% of overall carbon emissions. Total vehicle miles traveled decreased by 3.7% from 2005 to 2010 while CTA ridership increased by 5.5%.

FUEL-EFFICIENT TAXIS

Chicago's hybrid and natural gas ("green") taxi fleet is competitive and growing. On average, there are 6700 to 6800 active taxicabs on any given day. In 2011, green taxis were added to the fleet as a result of the Department of Business Affairs and Consumer Protection's Green Taxi Program. Today, 40% of the fleet is green. At Chicago's airports, green taxis move to the front of the passenger line, thanks to a 12-month pilot to encourage alternative-fuel vehicle use. And, in 2012, a new rate structure was introduced to encourage fleet owners to buy more fuel efficient taxis.

"We have always been a city built around transportation — first water, then rail, then roads. This will continue to be true as our transportation system continues to evolve. Where we once built expressways that divided our communities, we are now reconnecting neighborhoods with new bus lanes and extensive and expanding bicycle facilities that offer safe, green, and fit ways to travel for all ages."

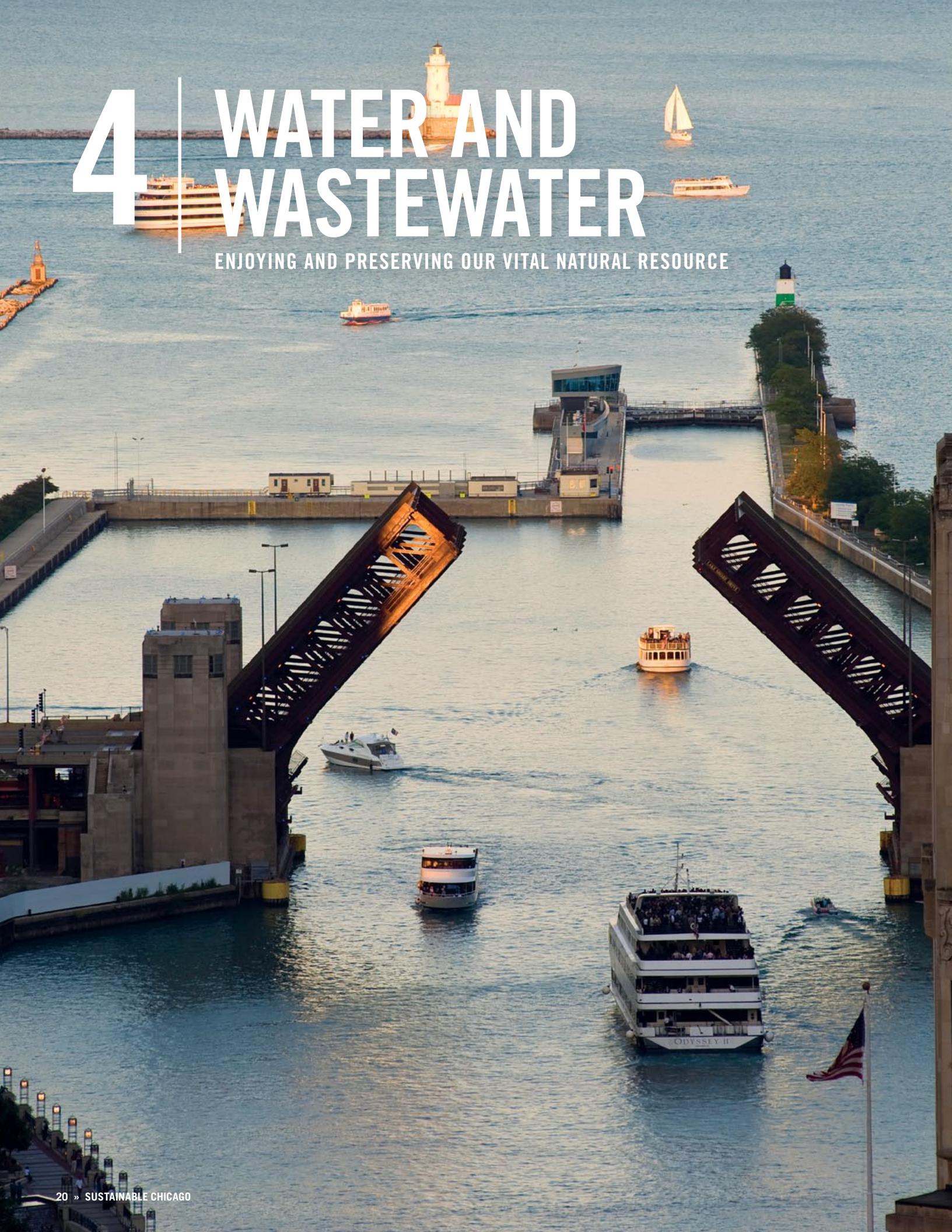
— Mayor Emanuel

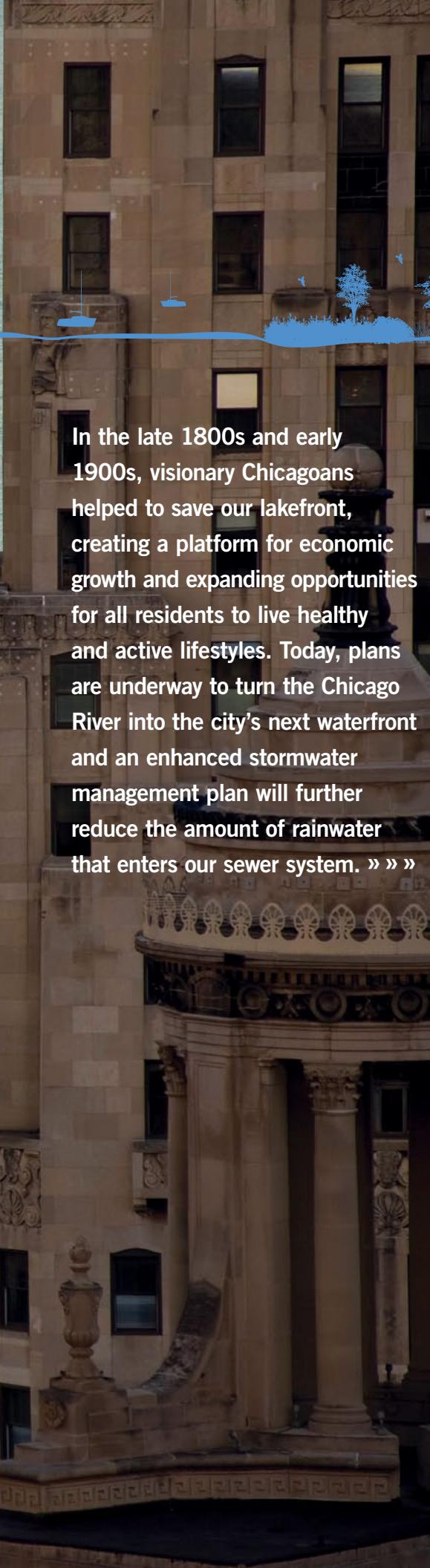


4

WATER AND WASTEWATER

ENJOYING AND PRESERVING OUR VITAL NATURAL RESOURCE





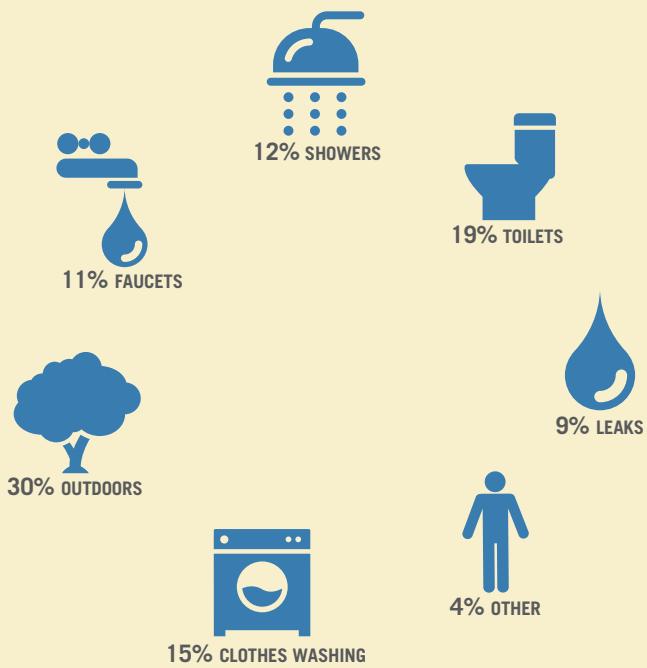
In the late 1800s and early 1900s, visionary Chicagoans helped to save our lakefront, creating a platform for economic growth and expanding opportunities for all residents to live healthy and active lifestyles. Today, plans are underway to turn the Chicago River into the city's next waterfront and an enhanced stormwater management plan will further reduce the amount of rainwater that enters our sewer system. » » »

GOALS

- ⑬ DECREASE WATER USE BY 2% (14 MILLION GALLONS PER DAY) ANNUALLY
- ⑭ ENHANCE STORMWATER MANAGEMENT TO REDUCE SEWER OVERFLOWS AND BASEMENT FLOODING
- ⑮ TRANSFORM THE CHICAGO RIVER INTO OUR SECOND WATERFRONT
- ⑯ PROTECT WATER QUALITY AND ENHANCE ACCESS TO LAKE MICHIGAN

RESIDENTIAL WATER USE

400 GALLONS PER DAY: AVERAGE WATER USE OF A HOUSEHOLD OF FOUR



U.S. Environmental Protection Agency using data from Water Research Foundation

\$0.8 BILLION

SPENT ON WATER ANNUALLY

56

MILES OF RIVERBANK

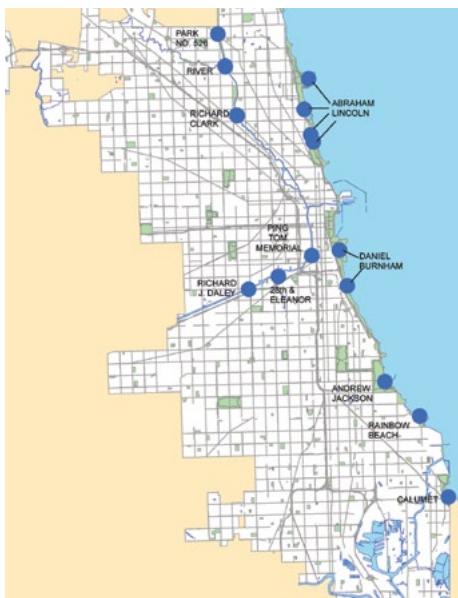
770

MILLION GALLONS PER DAY FROM LAKE MICHIGAN
FOR CHICAGO REGION

26

MILES OF PUBLIC LAKEFRONT

EXISTING AND PROPOSED PUBLIC BOAT LAUNCHES



Chicago is shaped economically and culturally by Lake Michigan, the Chicago River and the multitude of wetlands, creeks and lagoons that surround the city. Throughout our history, we have utilized these resources and natural attractions to grow and attain world-class status, and to provide reliable drinking water and recreational activities to visitors and residents.

Chicago is blessed with abundant water, and we must preserve and protect our greatest natural resource for generations to come. As stewards for water conservation and quality, the City will be taking significant steps to reduce its own water use and improve water quality for our lake and rivers. By collaborating on water policies, advancing a Great Lakes agenda, and launching conservation and green infrastructure plans, the City will help all Chicagoans to better conserve this precious resource.

ECONOMIC DEVELOPMENT PROFILE WATER MAIN REPLACEMENT

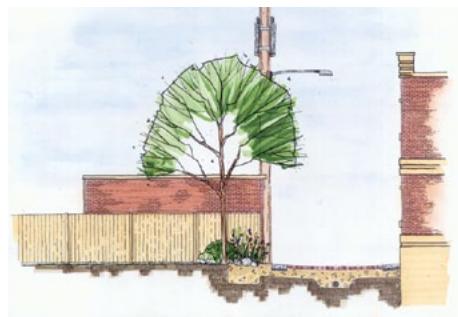
Repairing and replacing Chicago's water mains will reduce main breaks and wasted water while increasing employment in the Chicago region. The replacement of 900 miles of century-old water mains and 275 miles of sewer mains and the lining of 160,000 catch-basins and 700 miles of sewer mains over the next decade will create over 1,800 jobs annually.

CLIMATE IMPACT

Conserving water and improving water use efficiency is expected to save 0.04 MMTCO₂e. Since pumping water is energy-intensive, water saved will also help reduce our carbon impact. Therefore, the City's 10-year water and sewer capital program, combined with effective water pricing, will lead to reduced carbon emissions.

GREEN ALLEYS

Chicago has approximately 1,900 miles of public alleys, more than any other city in the world. This adds up to 3,500 acres of paved impermeable surface area. In 2006, the City piloted an innovative program to reduce basement flooding and sewer overflows by converting the pavement in its alleys into permeable surfaces. Since 2006, over 175 green alleys have been installed. A green alley captures 80% of stormwater falling on it during one year.



SAVINGS SPOTLIGHT CHICAGO HOUSING AUTHORITY

The Chicago Housing Authority (CHA) is the largest owner of rental housing in Chicago, providing homes to more than 50,000 families and individuals. By installing 17,000 high efficiency aerators and showerheads in 14,500 housing units, the Chicago Housing Authority is improving showers and saving an estimated 35 million gallons of water and 1.3 million therms of gas annually. This is an annual savings of approximately \$1 million.



38%

WATER USE REDUCTION AT CITY FACILITIES OVER THE PAST DECADE

4,300

MILES OF WATER MAIN

4,400

MILES OF SEWER PIPES

28

MILES – LENGTH OF CHICAGO RIVER IN CHICAGO

WATER AND WASTEWATER » GOALS

GOAL 13

DECREASE WATER USE BY 2% (14 MILLION GALLONS PER DAY) ANNUALLY

Chicago will enhance water conservation by replacing leaky, century-old water pipes and assisting businesses and residents in managing water consumption. By wasting less water, Chicagoans will help to preserve Lake Michigan as a vital resource and reduce the amount of energy needed to pump the water.

Key actions:

- » Meter 50% of all water accounts.
- » Replace 320 miles of water main (to achieve replacement of 900 miles within the next decade).
- » Collaborate on greywater policy, including codes, to allow for expanded uses.
- » Pilot water reduction programs and technologies at City-owned facilities.
- » Track and report water use at City facilities.
- » Launch a water conservation strategic plan that lays out Chicago's plans to meet water conservation goals.

GOAL 14

ENHANCE STORMWATER MANAGEMENT TO REDUCE SEWER OVERFLOWS AND BASEMENT FLOODING

In 1856, Chicago built a vast underground sewer system that sent wastewater and stormwater to treatment plants. Today, Chicago is committed to improving this system, and in the process, will reduce combined sewer overflows and basement flooding that result after heavy storms.

Key actions:

- » Create a comprehensive green infrastructure plan that is embedded in the capital budgeting process.

- » Explore partnerships with the Metropolitan Water Reclamation District to implement neighborhood-level green infrastructure pilots focused on reducing basement flooding.
- » Convert 1.5 million square feet of impermeable surface into pervious surfaces every year.
- » Replace or reline 275 miles of sewer main and line 56,000 structures (to achieve a total replacement or relining of 700 miles of sewer main, and total relining of 160,000 catch basins within the next decade).

- » Support the completion of the first stage of the Tunnel and Reservoir Plan.
- » Increase opportunities to return rainwater to Lake Michigan.

GOAL 15

TRANSFORM THE CHICAGO RIVER INTO OUR SECOND WATERFRONT

From the downtown riverwalk to the north and south branches, the Chicago River touches 33 of Chicago's 77 communities, representing a valuable asset for enhancing Chicago's quality of life. The river has always played a crucial role in the economic development of Chicago, and today it holds the potential of becoming a second waterfront for Chicago's residents and visitors.

Key actions:

- » Add to riverfront trail where gaps exist and continue to identify additional opportunities to create connections.
- » Create new recreational opportunities along the river, including the construction of four new boathouses.
- » Support disinfection of sewage discharged into the Chicago River.
- » Collaborate with key stakeholders to advance Chicago River revitalization efforts.

GOAL 16

PROTECT WATER QUALITY AND ENHANCE ACCESS TO LAKE MICHIGAN

Over 150 years ago, Chicagoans chose to keep the lakefront forever open, clear and free. Today, millions of visitors and residents enjoy Chicago's public lakefront and recognize the priceless value of Lake Michigan. We aim to enhance both the use of Lake Michigan and the protection of our waters.

Key actions:

- » Create better lakefront access with infrastructure improvements such as the Navy Pier bicycle and pedestrian flyover.
- » Decrease bacteria sources into the Lake to reduce swim advisory days.
- » Use the latest technology to provide faster, more accurate information about beach water quality to the public, including real-time weather and water data.
- » Reduce salt usage in all snow removal programs.

REAL-TIME WATER QUALITY MONITORING

In May 2012, the Park District launched an innovative technology to monitor and sample water quality at 16 beaches. Real-time results are obtained using predictive modeling, and will improve accuracy of information provided to the public. Results will now reflect current conditions rather than data collected from the previous day's testing.

5 | PARKS, OPEN SPACE, AND HEALTHY FOOD

EXPANDING CONVENIENT ACCESS TO OPEN SPACES, NATURAL RESOURCES,
AND HEALTHY FOOD OPTIONS





In 1837 Chicago adopted “Urbs in Horto” (City in a Garden) as its motto, and in the 175 years since, has remained committed to preserving land for public enjoyment. Renewing this historic responsibility over the next few years, the City will create more than 180 acres of new parkland, build a 3-mile elevated trail, re-design Grant Park to add ice skating and rock climbing facilities, and double the number of acres dedicated to urban agriculture. New spaces will support outdoor activities and community interaction. » » »



GOALS

- ⑯ INCREASE THE NUMBER OF PUBLIC SPACES AND PARKS ACCESSIBLE FOR CHICAGOANS
- ⑰ INCREASE OPTIONS FOR ACCESSING LOCAL OR HEALTHY FOOD IN EVERY NEIGHBORHOOD
- ⑱ IMPROVE AND PROTECT CHICAGO'S NATURAL ASSETS AND BIODIVERSITY



* Illustration excludes the acquisition of 518 acres in the Calumet area in 2011. The Calumet area is included in the total acres to date.
Chicago Park District, 2012

ACRES OF PARKS ADDED IN THE PAST 12 YEARS



Chicago is home to 58 parks, 26 miles of public lakefront, the nation's largest municipal harbor system, the world-class Lincoln Park Zoo, the stunning Millennium Park, and much more. It also serves as a stopping point for over 250 species of migratory birds each year. These natural and built assets have helped make Chicago one of America's most livable big cities. Chicago is committed to protecting and building upon this legacy by expanding outdoor opportunities for all residents, ensuring healthy food options and preserving our natural assets.

Although Chicago boasts a thriving world-class restaurant scene and residents enjoy fruit and vegetables from all over the world, many neighborhoods experience monumental health challenges and a retail environment that offers few healthy food choices. The City will work to improve food accessibility in our neighborhoods, thereby strengthening our communities and improving the health of Chicagoans by expanding healthy, affordable and convenient food options.

ECONOMIC DEVELOPMENT PROFILE OPEN SPACE

The improvement and expansion of Chicago's open spaces and parks will increase property value. These assets provide valuable services to residents and businesses as people gain faster access to high-quality recreational opportunities. Under-utilized plazas, parking spaces and even streets will soon be transformed into vibrant gathering spaces through the Chicago Department of Transportation's innovative Make Way for People programs.

Chicago will also work to improve and protect its urban forest, which is worth over \$2.3 billion in structural value and captures \$6.4 million worth of pollution annually. Trees are valuable to the environment as well as to residents, who can benefit from 20-50% savings in summer cooling costs and up to 10% increase in property value from enhanced presence of birds and wildlife.

CLIMATE IMPACT

It is estimated that an urban tree captures 48 pounds of CO₂ per year, on average, depending on the type and location of the tree. In 2009, the USDA Forest Service estimated that Chicago's urban forest stores and sequesters over 700,000 tons of carbon annually.

BLOOMINGDALE TRAIL

By fall 2014, Chicagoans will be able to wander the 2.65-mile elevated Bloomingdale Trail and explore Chicago's neighborhoods from a different angle. This abandoned elevated freight line, which saw train traffic as recently as a decade ago, will become a vibrant park with areas for strolling, biking, and playing.



SUSTAINABLE BACKYARD PROGRAM

The City of Chicago offers rebates to Chicago residents for up to 50% off their next local purchase of trees, native plants, compost bins or rain barrels. This incentive program promotes environmentally-friendly landscapes and encourages residents to install rain barrels and native species in their own backyards.

NATURE SPOTLIGHT NORTHERLY ISLAND

The Chicago Park District, in partnership with the U.S. Army Corps of Engineers, will develop new habitat, nature areas and urban camping opportunities on Northerly Island as part of implementation of the District's long-term master plan for the park. Thanks to federal funding and a Great Lake Fisheries Ecosystem Restoration grant, the work will restore lake, coastal wetland and other coastal plant communities in support of Great Lakes fishes, amphibians, reptiles, and migratory bird species. The restoration will primarily occur on the south side of the island and encompass approximately 40 acres of land. Northerly Island's unique location and vicinity within Lake Michigan provides an ecological refuge to a variety of organisms in an urban environment.



\$2.3 BILLION

ANNUAL ENVIRONMENTAL AND HEALTH BENEFIT OF CHICAGO'S URBAN FOREST

8,196

ACRES OF PARKLAND

250

SPECIES OF MIGRATORY BIRDS

PARKS, OPEN SPACE AND HEALTHY FOOD » GOALS

GOAL 17

INCREASE THE NUMBER OF PUBLIC SPACES AND PARKS ACCESSIBLE FOR CHICAGOANS

In the 1909 *Plan of Chicago*, Daniel Burnham laid out the dream of a “City Beautiful” – an urban landscape full of parks and broad avenues, a city that integrates its multiple systems of transportation and recreation. Today, Chicago is expanding this vision to provide residents with more parks, greater opportunities for recreational activities, and new, innovative civic spaces, so that every Chicagoan lives within a 10 minute walk of a park, recreation area or open space.

Key actions:

- » Invest in innovative new public spaces, including the Make Way for People initiative, to create open active streets.
- » Increase the number and varieties of programs for residents through the Chicago Park District, community groups and other partnerships.
- » Increase Chicago Park District acreage by more than 180 acres.
- » Open Bloomingdale Trail, open North Grant Park (a 16-acre innovative and environmentally sustainable park) and open new LEED-certified field houses in at least two parks.
- » Support the access to, integration and promotion of cultural elements in public spaces.

GOAL 18

INCREASE OPTIONS FOR ACCESSING LOCAL OR HEALTHY FOOD IN EVERY NEIGHBORHOOD

Access to healthy, local food is essential to a person's well-being. Nearly 400,000 Chicagoans lack this nearby access. Chicago has committed to partnering to find innovative solutions to ensure that healthy food options are available and convenient in every neighborhood. From Mobile Market buses and increased farmers markets, to increasing residents' ability to participate in urban agriculture, Chicago is creating a new food culture that improves resident health while creating economic opportunity.

Key actions:

- » Double the number of acres of urban agriculture.
- » Provide LINK card assistance at all farmers markets.
- » Create partnership opportunities for regional businesses and farms that deliver healthy food into the city.
- » Encourage more individual production of healthy food on public and private spaces.

GOAL 19

IMPROVE AND PROTECT CHICAGO'S NATURAL ASSETS AND BIODIVERSITY

The Chicago region is home to numerous native species of flora and fauna, and is located in one of the major North American bird migration routes – the Lake Michigan Flyway. Access to the local natural habitat is in many ways threatened by invasive species, pollution and urban development. Chicago will work to ensure nature protection in the region and to deliver a better natural environment for all residents.

Key actions:

- » Drive habitat restoration and public engagement in the Calumet region.
- » Increase and protect habitat that is friendly to bird and other species. Restore at least 40 acres of land on Northerly Island in support of this effort.
- » Protect the tree canopy in the public right of way; support tree canopy work on other land.
- » Continue to enforce the terrestrial and aquatic invasive species ordinance and work with state and federal partners on regional coordination on prevention.

CHALLENGE OF THE EMERALD ASH BORER

The 91,000 ash trees that line Chicago's streets, and an estimated 500,000 more ash trees on private and other land, are under attack by the emerald ash borer. Emerald ash borer is a beetle that first arrived in the U.S. in 2002, has spread to over 13 states and Canada and has now killed tens of millions of ash trees. Without treatment, most ash trees will become infected and die. The first sign of infection is usually dieback at the top one-third of the canopy. The whole canopy will die within two years of exhibiting symptoms. This is a regional challenge shared by cities and states across the Midwest and the City is collaborating with local and national groups to help find solutions for Chicago's ash trees.

6

WASTE AND RECYCLING

REDUCING WASTE AND MAXIMIZING RESOURCES 





The principles of waste reduction and recycling – in energy, in water, and in resource use – sit at the core of all sustainability initiatives, and remain one of the most accessible ways for every Chicagoan to contribute, on a daily basis, to Chicago's future.

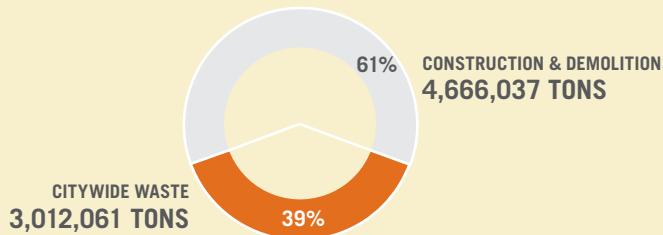
Recycling helps to reduce the need to extract materials from our natural resources. Landfills take up valuable space and are a missed opportunity ecologically as well as economically. » » »

GOALS

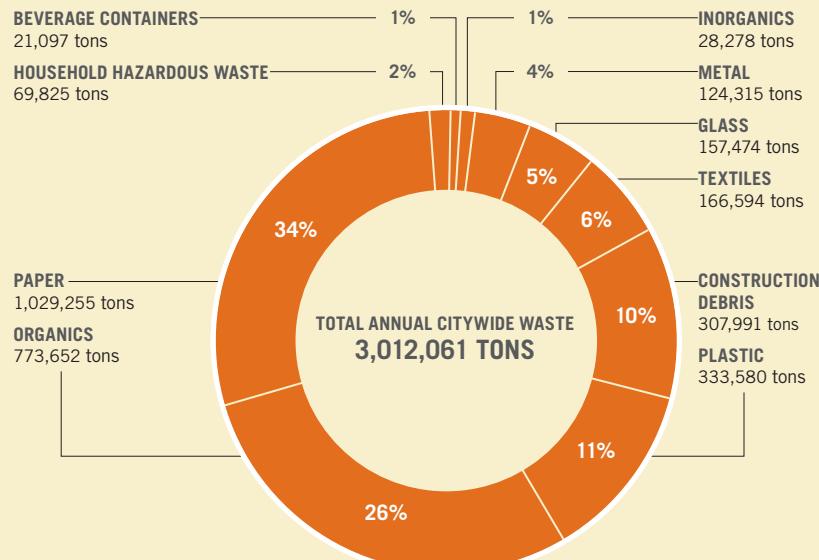
- 20 INCREASE ACCESS TO RECYCLING AND IMPROVE POLICIES TO PROMOTE WASTE REDUCTION AND RE-USE
- 21 INCORPORATE STANDARD GREEN PRACTICES IN ALL CITY OPERATIONS

CHICAGO WASTE STREAM COMPOSITION

TOTAL WASTE STREAM
7,678,098 ANNUAL TONS OF WASTE GENERATED



CITYWIDE WASTE BREAKDOWN



Chicago Waste Characterization Study, 2010

7.67 MILLION

TONS OF WASTE

5%

OF CARBON EMISSIONS

45%

OF WASTE RECYCLED

61%

OF WASTE FROM CONSTRUCTION AND DEMOLITION

Over the next three years, Chicagoans will increase recycling rates as the Blue Cart Recycling Program is expanded to all City-collected households. Efforts in this sector will include the implementation of new waste programs, and improvement of waste policies so that residents are further enabled to participate in waste reduction measures. The City will do its part by incorporating recycling and standard green practices into all City operations.

Studies show that over 60% of the waste generated in the city comes from construction and demolition projects, and the City will lead by example in this sector by reducing construction waste. For example, new construction projects implemented by the Public Building Commission are currently tracking over 90% construction and demolition waste diverted from landfills.

ECONOMIC DEVELOPMENT PROFILE WASTE TO PROFIT NETWORK

The concept of Waste to Profit is that one company's waste can become another

company's resource. Matching of undervalued waste or by-product streams from one facility with users at another creates new revenues or savings with potential social and environmental benefits. In addition, the resulting collaborative network conserves energy, reduces the need for raw materials, and decreases waste, pollution and climate-changing emissions. These are quantifiable benefits to the environment, economy and communities. Since 2006, the Greater Chicago Waste to Profit Network program has diverted 182,000 tons of waste from landfills and saved companies \$17 million in the Chicago region.

CLIMATE IMPACT

Waste represents approximately 5% of Chicago's carbon emissions, and Chicago has currently achieved 17% of its 2020 emissions goal for waste due to an overall reduction in waste sent to landfills. From 2005 to 2010, municipal solid waste disposed in landfills decreased by almost 900,000 tons.

GRID-BASED WASTE PICKUP

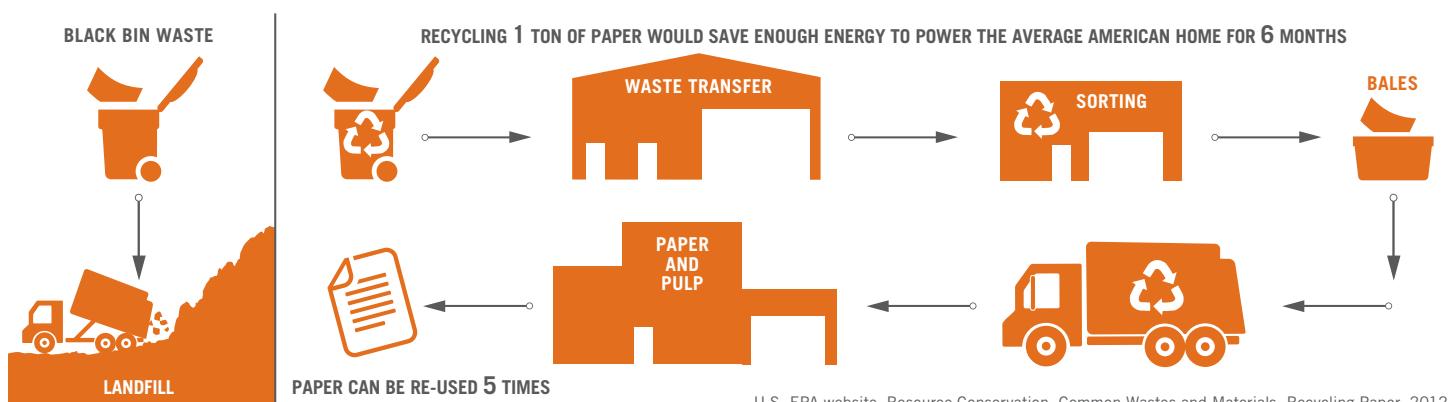
Along with programs for residents, businesses and government, Chicago is increasing the efficiency of waste and recycling collection service. Historically conducted along political boundaries, garbage and recycling pick-up routes will soon conform to the city's street and alley grid, saving 500,000 gallons of diesel fuel annually.

CONSTRUCTION AND DEMOLITION ORDINANCE

Chicago's Construction and Demolition (C&D) ordinance requires contractors to keep 50% of construction and demolition waste out of landfills through recycling or salvaging material. Currently, average recycling rates greatly exceed the 50% minimum thanks to a strong market for recyclable materials. For example, the O'Hare Modernization Program has a 98% C&D waste recycling rate.

The Chicago Park District's upcoming redesign of Grant Park to add an ice skating area, rock-climbing walls, and new hilly areas will be completed with waste reduction in mind: soil from excavation for the park will be re-used to create hills, and fallen trees will become benches.

WASTE LIFECYCLE





WASTE AND RECYCLING » GOALS

GOAL 20

INCREASE ACCESS TO RECYCLING AND IMPROVE POLICIES TO PROMOTE WASTE REDUCTION AND RE-USE

The majority of Chicago's waste can be diverted from taking up space in landfills. Recycling and composting are two paths for turning the waste stream into a resource stream. Reducing and reusing materials, especially construction and demolition debris, can also dramatically reduce the waste stream. Chicago aims to help put programs and policies in place to encourage less waste and promote recycling.

Key actions:

- » Expand the Blue Cart Recycling program to all 600,000 City-collected households.
- » Improve policies to promote recycling, composting, and building material re-use.
- » Pilot and scale best practices for waste reduction at a major festival.
- » Divert 75% eligible municipal construction waste.
- » Meet or exceed recycling goals at 75% of public schools.
- » Promote landscape waste reduction and composting among households.

GOAL 21

INCORPORATE STANDARD GREEN PRACTICES IN ALL CITY OPERATIONS

With 1,600 buildings and tens of thousands of employees, the City of Chicago and its sister agencies have a significant environmental footprint. The City is working to improve its own sustainability by looking at more sustainable purchases and operations. As an example, the Chicago Park District has already implemented paperless procurement to cut expenses and reduce waste.

Key actions:

- » Use some materials with recycled content in every construction project.
- » Make as many City processes as paperless as possible.
- » Implement a sustainable operations plan for City facilities.



“Competitive bidding for recycling services has saved taxpayer money and increased efficiencies while maintaining quality service. These savings and efficiencies will help to make citywide recycling in 2013 a reality and further Chicago’s reputation as leader in sustainability efforts. No longer will Chicago be a tale of two cities when it comes to recycling.”

– Mayor Emanuel



SPOTLIGHT RECYCLING BLUE CART RECYCLING PROGRAM

The Blue Cart Recycling program currently provides bi-weekly curbside recycling to over 240,000 of the households served by the Department of Streets and Sanitation garbage pick-up. This program is being expanded to cover all 600,000 Streets and Sanitation-collected households by the end of 2013. An innovative competitive bidding program is enabling the City to provide a more cost-effective recycling service.



7 | CLIMATE CHANGE

ADDRESSING CLIMATE CHANGE TODAY TO SHAPE THE CHICAGO OF TOMORROW



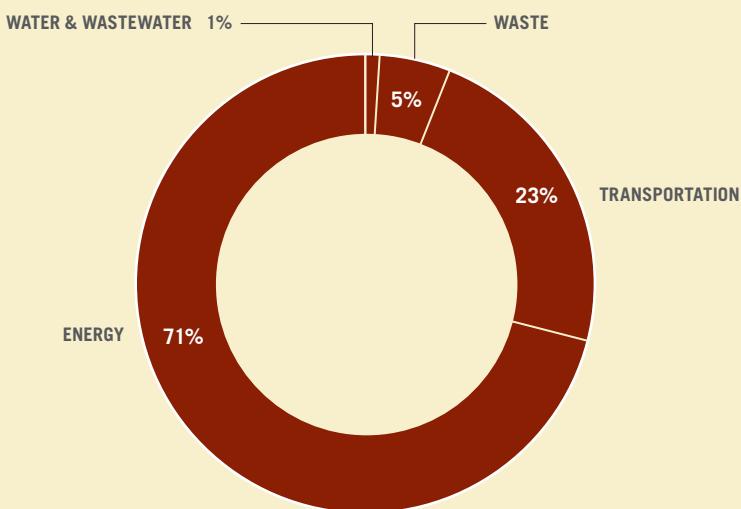
Daniel Burnham's 1909 Plan presented Chicagoans with a bold, broad vision for their city, projecting more than 100 years into Chicago's future. Today, the challenges presented by global climate change require nothing less than the bold, long-term plans that have historically guided Chicago. Every goal put forward to advance a sustainable Chicago will help the city fulfill its role in addressing global climate change. » » »



GOALS

- 22 REDUCE CARBON EMISSIONS FROM ALL SECTORS
- 23 IMPROVE LOCAL AIR QUALITY BY ACCELERATING PERFORMANCE TOWARDS FEDERAL STANDARDS AND DECREASING GREENHOUSE GAS EMISSIONS
- 24 PROTECT THE CITY AND ITS RESIDENTS BY PREPARING FOR CHANGES IN THE CLIMATE

BREAKDOWN OF CHICAGO GREENHOUSE GAS EMISSIONS BY SECTOR



Energy is electricity and natural gas, excluding transportation uses
Chicago 2010 Regional Greenhouse Gas Emissions Inventory

CHICAGO CLIMATE ACTION PROGRESS

The Chicago 2010 Regional Greenhouse Gas (GHG) Emissions Inventory showed that Chicago reduced its emissions by 8% from 2005 to 2010.

700,000

TONS OF CARBON SEQUESTERED ANNUALLY BY CHICAGO'S URBAN FOREST

71%

OF CARBON EMISSIONS FROM ENERGY USE IN BUILDINGS

5%

OF CARBON EMISSIONS FROM WASTE & RECYCLING

Together, all seven areas in this roadmap will help achieve Chicago's climate goals while at the same time creating local jobs and saving money. Energy, transportation, water, waste, and land use are integrated components in addressing climate change. Chicago will build innovative solutions to mitigate carbon emissions and develop local preparations for hotter summers and more severe storms by supporting the industries, policies, and partnerships that will reduce Chicago's climate impact and prepare for changes.

In 2008, the City and hundreds of public, private, and philanthropic partners

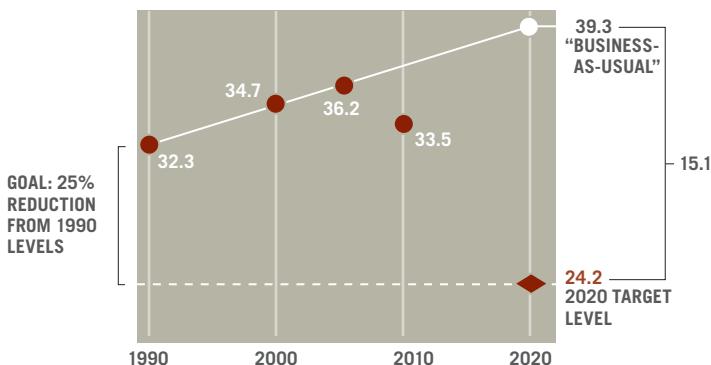
established the goal of reducing Chicago's greenhouse gas emissions by 25% relative to 1990 levels by 2020 and 80% by 2050 with the launch of the Chicago Climate Action Plan (CCAP). Its research showed that Chicago's climate would change in the 21st century moving toward hotter summers and more intense storms. It identified a set of visionary actions to achieve the carbon mitigation and climate change preparation goals. This roadmap will help achieve those long-term goals by focusing on concrete actions and objectives to accomplish by 2015.

GREEN TECH U

As the most comprehensive green design educational resource in the Midwest, and housed in the first municipally-owned LEED Platinum building in the nation, the Chicago Center for Green Technology promotes and advances sustainable homes, workplaces and communities through multiple educational programs. With over 150 events a year, Green Tech U is one such program offering workshops, seminars, and certificates to increase the public's knowledge of sustainability and green building practices. Since 2003 more than 21,000 attendees have participated in the center's programs, enjoying 682 seminars while earning over 500 certificates through Green Tech U.

GREENHOUSE GAS EMISSIONS TREND

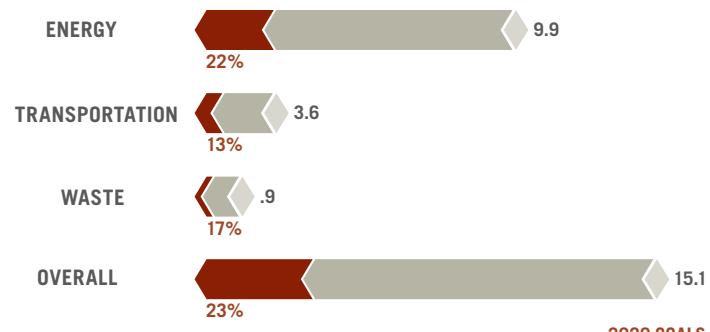
Million Metric Tons of Carbon Dioxide equivalent



Chicago 2010 Regional Greenhouse Gas Emissions Inventory

PROGRESS TOWARDS 2020 GOALS

Million Metric Tons of Carbon Dioxide equivalent



Chicago 2010 Regional Greenhouse Gas Emissions Inventory

SPOTLIGHT

LEADERSHIP GREEN ROOFS AND COOL ROOF ORDINANCE

Chicago has almost 360 green roofs covering more than 5 million square feet. Prominent installations are at City Hall, the Apple Store on North Michigan Avenue and O'Hare Airport, which boasts the largest green roof of any U.S. airport. In the past decade, Chicago has advanced many innovative zoning and financial incentive programs to support the installation of green roofs and the use of reflective materials, also known as cool roofs. In 2005, the City required all construction or repairs to use reflective materials, and in 2008, Chicago established the Sustainable Development Policy, which increased the use of sustainable materials in the urban form. As a result of this work, Chicago has the most green roofs in North America.



23%

OF CARBON EMISSIONS FROM TRANSPORTATION

1%

OF CARBON EMISSIONS FROM WATER AND WASTEWATER

CLIMATE CHANGE » GOALS

GOAL 22

REDUCE CARBON EMISSIONS FROM ALL SECTORS

All the goals and actions in this roadmap will have a positive impact in reducing greenhouse gas emissions. From energy efficiency to recycling, Chicago's future sustainability investments will address climate change. The challenge of global climate requires partnerships across the city and throughout the world. Chicago will do its part to lead, follow, and collaborate with others to meet this challenge.

Key actions:

- » Report updates on carbon emissions.
- » Partner with universities to use Chicago as a laboratory for climate research, and data gathering.
- » Increase community engagement to make Chicago more sustainable.

GOAL 23

IMPROVE LOCAL AIR QUALITY BY ACCELERATING PERFORMANCE TOWARDS FEDERAL STANDARDS AND DECREASING GREENHOUSE GAS EMISSIONS

Cleaner air means fewer respiratory illnesses, fewer days of work missed, more time outdoors and fewer trips to the hospital. For over a century, two major coal-fired power plants operated in two of Chicago's communities. Closing these plants by the end of 2012 will be a significant milestone toward improving air quality in Chicago and signaling Chicago's progress in taking a truly sustainable path.

Key actions:

- » Close Fisk and Crawford generating stations earlier than planned, benefitting the city with reduced air pollution.

- » Reduce Chicago Transit Authority bus particulate matter emissions by 50 percent and nitrous oxide emissions by 30 percent while maintaining bus service levels.

- » Implement the Chicago Clean Diesel Contracting Ordinance's Clean Fleet Score and ban high polluting equipment and vehicles on City projects starting in 2014.

- » Prepare the infrastructure for climate change by reducing the urban heat island effect, managing flooding from high intensity storm events, and strengthening resiliency to extreme weather.

GOAL 24

PROTECT THE CITY AND ITS RESIDENTS BY PREPARING FOR CHANGES IN THE CLIMATE

Research suggests that Chicago could experience a significant shift in climate and increasing frequency of severe storms. High emissions projections show that by the end of the century, Chicago summers will be similar to those in Baton Rouge today. Chicago will work proactively to respond to climate change by advancing policies and solutions to prepare for a changing climate and protect our people, infrastructure and natural resources.

Key actions:

- » Prepare for the human impacts of climate change by supporting people with information and services, such as cooling centers.
- » Prepare the natural environment for climate impacts and maintain biodiversity.

TESTA PRODUCE

In 2011, Testa Produce, a 100-year-old Chicago-based produce distribution company, opened the first LEED Platinum-certified refrigerated food distribution facility in the United States. The 91,000 square foot facility features a barreled green roof along with a 24-story wind turbine and 180 solar panels supplying 30% of the building's energy needs. The site currently has a staff of over 215 and will produce a positive return on investment in a relatively short timeframe. All of the investments are expected to be paid off in 9 years for a building expected to last at least 20 years.



FISK & CRAWFORD

As of September 2012, the Fisk and Crawford power plants have ceased operations. Fisk and Crawford were two coal-based power plants that were located in a dense urban area, where 300,000 people live within a 3-mile radius. These two plants were operating with pollution controls that pre-dated the Federal Clean Air Act, though they were cutting edge when they opened in 1903 and 1924, respectively. Prior to their closure, 90 percent of all carbon emissions from industrial sources in the City came from the power plants. They released soot and other pollutants into the air while emitting five million tons of carbon dioxide annually. The City, Mayor Emanuel and many partners worked to ensure that these plants would close down by the end of 2012, signaling a commitment to healthy neighborhoods and clean energy in Chicago.



CONCLUSION

The road ahead will require collective and individual effort, long-term vision, and immediate action. Because of the foresight of our predecessors, from protecting the lakefront to linking dense neighborhoods with efficient transportation to investing in a robust and diverse economy, Chicago is already well-positioned as a sustainable city.

These foundations, which propelled Chicago's historic ascent and shaped its legacy as America's most dynamic city, have prepared us to look forward to 2015 and beyond, to create a future for Chicago that is sustainable and economically competitive.

The goals set forth here reflect another thread in the fabric of a sustainable city that has been created through the leadership of Chicago's residents, businesses, government, and civic community.

1 ECONOMIC DEVELOPMENT AND JOB CREATION

- 01 Establish Chicago as a hub for the growing sustainable economy
- 02 Accelerate the economy in Chicago by assisting people and companies in adopting sustainable practices

2 ENERGY EFFICIENCY AND CLEAN ENERGY

- 03 Improve citywide energy efficiency by 5%
- 04 Improve overall energy efficiency in municipal buildings by 10%
- 05 Create an additional 20 MW of renewable energy, consistent with the Illinois Renewable Portfolio Standard

3 TRANSPORTATION OPTIONS

- 06 Increase average daily transit ridership
- 07 Accelerate transit-oriented development around transit stations
- 08 Make Chicago the most bike and pedestrian friendly city in the country
- 09 Improve freight movement and accelerate high-speed passenger rail projects
- 10 Advance sustainability leadership at Chicago's airports
- 11 Strengthen the infrastructure to advance vehicle efficiency
- 12 Reduce municipal fossil fuel consumption by 10%

4 WATER AND WASTEWATER

- 13 Decrease water use by 2% (14 million gallons per day) annually
- 14 Enhance stormwater management to reduce sewer overflows and basement flooding
- 15 Transform the Chicago River into our second waterfront
- 16 Protect water quality and enhance access to Lake Michigan

5 PARKS, OPEN SPACE AND HEALTHY FOOD

- 17 Increase the number of public spaces and parks accessible for Chicagoans
- 18 Increase options for accessing local or healthy food in every neighborhood
- 19 Improve and protect Chicago's natural assets and biodiversity

6 WASTE AND RECYCLING

- 20 Increase access to recycling and improve policies to promote waste reduction and re-use
- 21 Incorporate standard green practices in all City operations

7 CLIMATE CHANGE

- 22 Reduce carbon emissions from all sectors
- 23 Improve local air quality by accelerating performance toward federal standards and decreasing greenhouse gas emissions
- 24 Protect the city and its residents by preparing for changes in the climate



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Green Ribbon Committee

Thank you to the Green Ribbon Committee, co-chaired by Hipolito (Paul) Roldan and Steven Koch.

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STUDIO DESIGN

Kevin McGroarty, Pooja Vukosavich

Yours,

A handwritten signature in black ink that reads "Karen Weigert".

Karen Weigert
Chief Sustainability Officer
Office of the Mayor
City of Chicago
@SustainChicago
September 2012

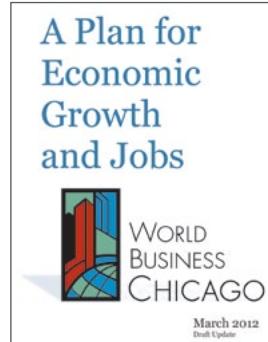
ADDITIONAL RESOURCES

[Mayor's Transition Plan \(2011\)](#)



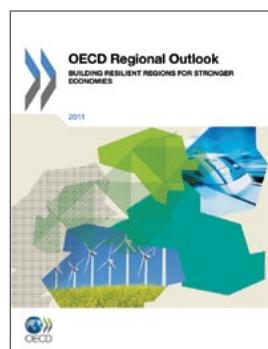
"We have always been the City of Big Shoulders, and always will be. But Chicago is also becoming the City of Big Ideas, a place where new business models take root and revolutionize entire industries. Our city combines unparalleled access to transportation with top-notch talent, affordability, and outstanding quality of life."

[A Plan for Economic Growth and Jobs, World Business Chicago \(2012\)](#)



"Today the Chicago region has emerged as a major hub for advanced business and professional services, and for the corporate headquarters that depend on them."

[OECD Regional Plan \(2012\)](#)

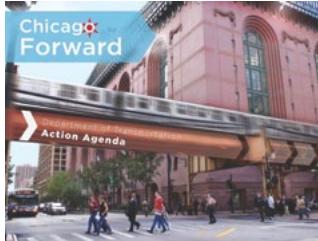


"As one of the richest regions in the world, the Chicago metropolitan area has all the ingredients for a vibrant economy. Chicago must focus on developing innovation-driven growth based on knowledge and skills to reach its full potential."

ADDITIONAL RESOURCES

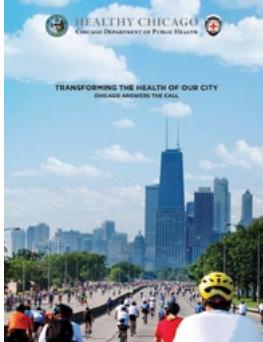
(continued)

Chicago Forward, Department of Transportation Action Agenda (2012)



"Where we once built expressways that divided our communities, we are now reconnecting neighborhoods with new bus lanes and extensive and expanding bicycle facilities that offer safe, green, and fit ways to travel for all ages."

Healthy Chicago (2011)



"Recognizing that good health is based on multiple, complex, inter-related factors, including social and environmental influences, implementation of Healthy Chicago is a multi-disciplinary effort, with all relevant systems sharing the role of assuring population health."

2012-2016 Capital Improvement Plan Chicago Park District (2012)



"Be a leader in park development, including advancing the ways people use parks, ensuring parks are accessible for all users, and providing the best in green technologies. Be a good steward of our existing assets to ensure they can be enjoyed by future generations."

Nature and Wildlife Plan Update (2011)



"Chicago's natural areas provide a multitude of ecosystem services from improved air quality and livability to stormwater management."

Chicago Climate Action Plan (2008)



"Beyond helping to solve a global problem, cities and their residents can immediately benefit from their efforts to reduce emissions. One result will be better air quality, leading to improved health for everyone. Raising the energy efficiency of buildings saves money, lowers housing costs for families and creates jobs, especially for local businesses."

Chicago Sustainable Industries (2011 and ongoing)



"The initiative's first phase establishes a process that will lead to a formal government strategy that maximizes public resources for the sector's long-term viability for local workers, the business community and the urban environment."

