



Minneapolis
greenprint

2008 Environmental Report

Minneapolis *greenprint*

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Minneapolis
City of Lakes

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Minneapolis



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Creating a safe, healthy, environmentally friendly city is a top priority for the City of Minneapolis. In 2003, the Minneapolis City Council and Mayor R.T. Rybak set a road map for making Minneapolis truly sustainable by launching the City's Sustainability Initiative. In 2006, the City Council adopted [six Citywide goals](#), throughout which sustainability is woven and in which the "Enriched Environment" goal specifically integrates these priorities into City decision-making processes. At the heart of this commitment are 24 sustainability indicators, providing a blueprint upon which we are building a more sustainable city. Each of these indicators contains benchmarks and targets, allowing us to measure our progress and match actions with goals.

For the third year in a row, the City of Minneapolis takes stock of work on our 10 environmental indicators and gives an account of where we are compared to our goals in reducing our impacts on the environment.

We have many 2007 accomplishments to celebrate. The City:

- Integrated its sustainability efforts into *The Minneapolis Plan for Sustainable Growth*, the City's comprehensive plan. The plan provides a policy framework for all the City's planning, development and investment decisions.
- Awarded 25 climate change micro grants to support grassroots activities that motivate residents and businesses to take action to reduce global warming.
- Received the federal Environmental Protection Agency's Clean Air Excellence Award for a wide range of actions designed to improve air quality.
- Met water quality improvement goals at Lake Calhoun, Cedar Lake and Lake Harriet.
- Achieved no combined sewer overflows during rainstorms for the first time ever.
- Reached a settlement agreement with the Metropolitan Airports Commission, creating the largest program in the country addressing airport noise impacts beyond the level approved by the Federal Aviation Administration. The program will begin in 2008, decreasing noise levels for 9,500 homes – 80 percent of them in Minneapolis.
- Formed the Mayors' Initiative on Green Manufacturing with leaders from environmental, labor, business and nonprofit organizations to examine how to attract more green manufacturers and jobs to Minneapolis and Saint Paul. The first report will be released in 2008.

During 2007, the City also faced the Interstate 35W Bridge collapse tragedy. In its wake, the City advocated to secure a design for a replacement bridge that will incorporate foresight on environmental and quality of life matters with improved bike and pedestrian connections, enhanced access for on-ramps and off-ramps and readiness for light-rail transit.

There is more to do. Adapting as quickly as possible to the environmental challenges we face requires the extensive, ongoing effort now taking place through strong intercommunity partnerships and the combined efforts of numerous individuals. Our special thanks go to the City's Citizen Environmental Advisory Committee and the Environmental Coordinating Team, City staff, Minneapolis Mayor R.T. Rybak, the Minneapolis City Council, businesses, nonprofits, other organizations and to every resident exercising daily efforts toward creating a sustainable city. It is your effort that makes all of the accomplishments listed above and in the following report possible.

To learn more about the Minneapolis GreenPrint and join us in achieving its vision, visit www.ci.minneapolis.mn.us/sustainability

Reduce Carbon Dioxide Emissions

The science is clear – global warming is real, we are responsible, and it is a threat to our society. Carbon dioxide collects in the atmosphere, trapping the sun’s heat and causing our planet to warm up. Vehicles and coal-burning power plants are the largest sources of carbon dioxide pollution in the United States.

Target

- Reduce carbon dioxide emissions from City operations by 12 percent by 2012 and by 20 percent by 2020.
- Reduce citywide carbon dioxide emissions by 12 percent by 2012 and by 20 percent by 2020.



www.mnenergychallenge.org

Find out what you can do to slow global warming. Take the Minnesota Energy Challenge.



© istockphoto.com/anika Salsera

The Southeast Como Improvement Association used a City micro grant to promote clotheslines – they save money and energy by minimizing use of clothes dryers.



Reduce, reuse, recycle MORE and lower your global warming impact. www.ci.minneapolis.mn.us/solid%2Dwaste/garbage-zero-hero.asp

Trend Analysis

It is estimated that consumption of goods and services, including electrical use and vehicles, resulted in the emission of 29 metric tons of carbon dioxide per Minnesotan in 2005. This is higher (worse) than the national average of 24 metric tons per person per year. The City started updating its carbon dioxide emissions data in 2007 and will finalize the work in 2008.

Recent City & Community Activities

- Hired an energy manager to improve energy conservation and renewable energy use in City buildings and operations.
- Updated the electrical, heating and cooling systems in 100-year-old City Hall, saving money and reducing global warming impact.
- Became the first city in the nation to award 25 micro grants to support grassroots activities that motivate residents and businesses to take action to reduce global warming. www.ci.minneapolis.mn.us/sustainability/ClimateChangeMicroGrant2007.asp
- Incorporated green building training and Leadership in Energy and Environmental Design (LEED) accreditation for City employees, increasing capacity to integrate sustainable design into building and economic development options.
- Obtained commitments from two developers purchasing City property to make three projects LEED-certified.
- The Minnesota Energy Challenge now has more than 2,500 Minneapolis businesses and residents pledging to reduce carbon dioxide emissions compared to 700 in 2006.
- See related activities under Renewable Energy, Air Quality, Downtown Transportation Alternatives, Bikeways and Tree Canopy.

Web Links & Resources

City of Minneapolis simple steps to reduce global warming www.ci.minneapolis.mn.us/energychallenge/SimpleSteps_EnergyChallenge.asp

Minneapolis Building Options www.ci.minneapolis.mn.us/mdr/GreenBuildingOptionsChecklist.asp

The Center for Energy and Environment www.mncee.org

Intergovernmental Panel on Climate Change www.ipcc.ch

Artic explorer Will Steger’s Global Warming 101 www.globalwarming101.com

Renewable Energy

Increase the Use of Renewable Energy

In the face of global warming and harmful levels of pollution created by our current energy consumption, it is critical to increase our use of renewable energy including solar, wind, biofuels and hydropower. This means setting a good example as a City, and it means urging the state and federal government, industry and residents to do their part.

Target

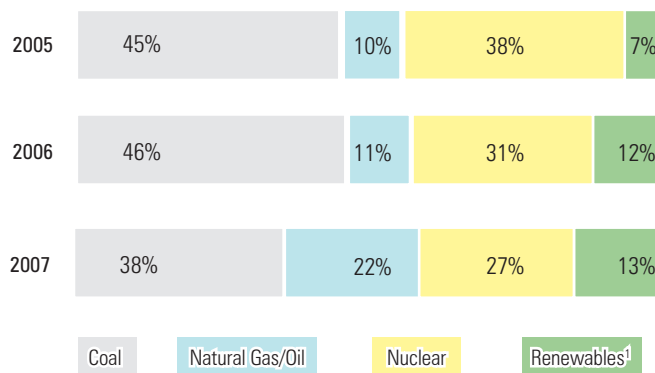
- In City operations, by 2008 increase use of electricity from renewable sources to 10 percent above the renewable electricity supply provided by Xcel Energy.

- Citywide, by 2015 increase renewable energy use to 10 percent above state and federal mandates.

Trend Analysis

Three City buildings now have solar photovoltaic systems helping to supply their electricity. Xcel Energy slightly increased the amount of renewable energy used to furnish electricity in Minnesota. New Minnesota regulations require Xcel Energy to obtain 30 percent of its electricity from renewable resources by 2020 – with most of it coming from Minnesota-generated wind power.

Xcel Energy electric power sources



Source: Xcel Energy



This north Minneapolis home has both a solar photovoltaic (electrical) and a solar thermal (hot water) system that meets about 25 percent of its residents' energy needs.

Recent City & Community Activities

- Minneapolis received a grant to equip a City building with the largest solar photovoltaic system in the upper Midwest with support from Xcel Energy's Renewable Development Fund. www.ci.minneapolis.mn.us/news/120071210SolarArrayGrant.asp
- Updated the zoning code to allow wind turbines under specific circumstances. There are currently no wind turbines in the city.
- Over the last few years, 67 solar energy systems have been installed on homes and businesses in Minneapolis. (Source: Minnesota State Energy Office)
- More than 7,600 Minneapolis customers participated in Xcel Energy's Windsource program, buying enough wind-generated electricity for almost 2,800 homes for a year. This is an increase from about 5,100 customers in 2005. This ensures additional Minnesota-produced wind power, which helps our economy and environment. www.xcelenergy.com
- The Linden Hills Co-op installed a 54-panel solar photovoltaic system with the help of more than 300 volunteers.
- The University of Minnesota's steam plant is expected to burn 15,000 tons of oat hulls and save about \$600,000. This represents about 7 percent of the heat required for the use of campus steam.
- The University of Minnesota's Initiative for Renewable Energy and Environment continues to be nationally recognized in development of bio-based and other renewable resources and processes as an economic engine for the region. www1.umn.edu/iree/index.html
- See related activities under Climate Change and Air Quality.

Web Links & Resources

City Goes Solar
www.ci.minneapolis.mn.us/sustainability/solar.asp
 Minnesota Renewable Energy Society
www.mnrenewables.org
 Fresh Energy
www.fresh-energy.org

Improve Air Quality Levels

Air quality in Minneapolis is among the best of major metropolitan areas in the United States. Still, the area has air quality issues that contribute to health problems such as asthma, lung disease and heart disease. Most air pollution comes from the use of fossil fuels, especially by cars and trucks.

Target

- Reduce moderately unhealthy days in Minneapolis to fewer than 35 per year by 2015, with more reductions after that.
- Reduce all monitored air toxins to levels within state health guidelines by 2015.

Air Quality Index for Minneapolis and surrounding metro area¹

Year	Good days	Moderately unhealthy days	Unhealthy for sensitive groups days	Unhealthy days
2003	161	191	13	0
2004	187	172	7	0
2005	166	191	5	3
2006	193	169	3	0
2007	178	178	9	0

Source: Minnesota Pollution Control Agency

¹ Please note: data for a Minneapolis-only air quality index do not exist.



A City of Minneapolis employee fills up using E85, cutting emissions of air toxins.



Fluorescent lamps use 70 percent less energy than conventional incandescent lamps, saving you money and protecting our air by reducing the need for coal-fired power plants.

Trend Analysis

The number of moderately unhealthy days increased by 5 percent from 169 days in 2006 to 177 days in 2007 in the metro area. At the same time, the number of days that had even worse air quality increased from three days in 2006 to nine days in 2007.

The yearly average levels of benzene, a dangerous air toxin, have been within health benchmarks citywide for the past five years and have declined citywide by 27 percent since 2003.

Recent City & Community Activities

- Purchased 18 new hybrid-electric vehicles for a total of 25 and 34 new E85 flex-fuel vehicles for a total of 132.¹ The mayor's Prius hybrid was converted to a plug-in hybrid expanding its fuel efficiency to more than 70 miles per gallon.
- Installed a new E85 fuel tank at a City maintenance facility in partnership with Hennepin County. www.ci.minneapolis.mn.us/news/20070523E85FuelStn.asp
- Reduced idling times and vehicle emissions by removing No Turn on Red signs at 60 intersections. www.ci.minneapolis.mn.us/traffic/NTOR.asp
- Received the 2006 Air Quality Excellence Award from the U.S. Environmental Protection Agency for the City's sustainability efforts. www.ci.minneapolis.mn.us/newsroom/200705/20070509-nr_CleanAirAward.asp
- Implemented neighborhood-based inspections using remote office/telecommuting technology to reduce inspector vehicle trips.
- The newly released Minneapolis Air Quality Study measured pollutants at ground level and found benzene and trichloroethylene levels outside of health standards at a number of locations. www.ci.minneapolis.mn.us/airquality/docs/AirQualityReport_July2007.pdf
- Made use of transit more attractive by adopting new zoning standards for the future light-rail transit station near the University of Minnesota.
- See related activities under Renewable Energy, Climate Change, Downtown Transportation Alternatives, Bikeways and Tree Canopy.

¹ The City of Minneapolis supports policies, funding and research for the next generation of clean fuels using Minnesota-grown perennial crops.

Web Links & Resources

City of Minneapolis, Air Quality
www.ci.minneapolis.mn.us/airquality

Minnesota Department of Health, Air Quality
www.health.state.mn.us/divs/eh/air/index.htm

Increase Bicycle Lanes and Trails

Nearly 15,000 people bicycle within the City of Minneapolis on an average spring, summer or fall day. Approximately 25 percent bike year-round, which is remarkable given Minnesota winters. Minneapolis has the highest number of bicycle parking spaces per capita of any city in the United States. Bicycling is good for our health, economy and environment. The City encourages bicycling through promotion and education and by constructing additional miles of bicycle lanes and trails.

Target

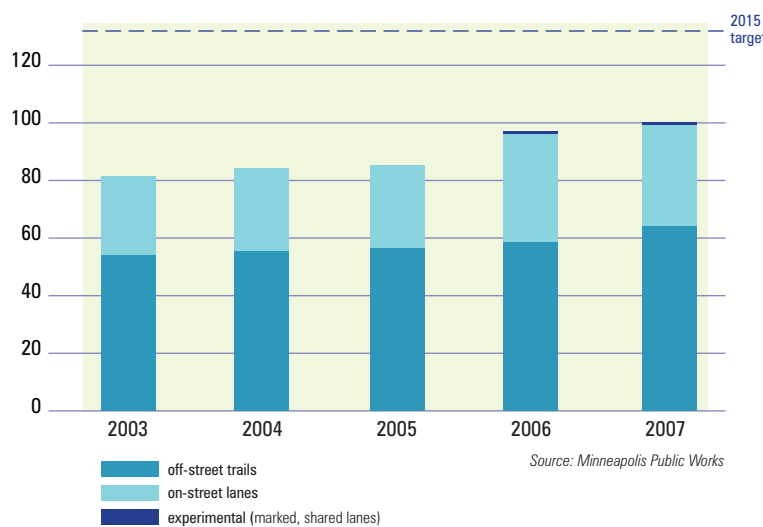
Add 44 miles of bicycle lanes and trails to 2004 levels by 2015, 14 miles of on-street lanes and 30 miles of off-street trails.

Trend Analysis

Minneapolis has steadily added bicycle lanes and trails and has moved bicycle-related capital projects ahead of schedule in recent years. The City has increased on-street lanes by nine miles and off-street trails by six miles from 2004 levels for a total of 100 miles and is on track to meet or exceed its 2015 goals.

Recent City & Community Activities

Bikeway¹ mileage in Minneapolis



1 Bikeways are multi-use paths, bike lanes and marked shared lanes.

- Completed the Midtown Greenway bridge over Hiawatha Avenue in partnership with Hennepin County. www.ci.minneapolis.mn.us/cip/mg_pedbridge
- Installed more than 200 new bicycle racks through an innovative cost-sharing program. www.ci.minneapolis.mn.us/bicycles/bikeparking-rack.asp
- Secured more than \$7 million for 2008-2010 for the Bicycle Program through Transit for Livable Communities' Non-Motorized Transportation Pilot Program. www.ci.minneapolis.mn.us/bicycles/NTP-funded-projects.asp
- Partnered with the City of St. Anthony, Three Rivers Park District, Hennepin County and the City of Roseville to construct the Northeast Diagonal Trail corridor. www.ci.minneapolis.mn.us/public-works/cip/ne-diag/index.asp
- Conducted citywide bicycle counts at 57 locations with the help of community volunteers. www.ci.minneapolis.mn.us/bicycles/bicycle-counts.asp
- Published the City's first online cycling map. www.ci.minneapolis.mn.us/bicycles/bikemap-sharedlanes.pdf
- The U.S. Census Bureau reported that Minneapolis has the second highest percentage of people biking to work among the 50 largest cities. www.ci.minneapolis.mn.us/news/20080116TopinAlternateTransit.asp
- Bicycle events included the Minneapolis Park and Recreation Board (MPRB) Minneapolis Bike Tour; Great River Energy Bicycle Festival; Bike/Walk to Work Day; Bike-In at the Bell; Bicycling, Travel and Fitness Expo; and Midtown Greenway Arbor Day.
- Bike On, a local nonprofit, used a Minneapolis climate change micro grant for multilingual urban bicycling training with immigrant women.
- The MPRB constructed a trail link along the Mississippi River from Plymouth Avenue to 22nd Avenue North.
- Hennepin County constructed park and trail access ramps at 10th and 11th avenues South from the Midtown Greenway to the Midtown Exchange.



With almost 15,000 cyclists and 100 miles of bicycle lanes and trails, Minneapolis is one of the best places to ride in the nation.

Web Links & Resources

City of Minneapolis biking information
www.ci.minneapolis.mn.us/bicycles/index.asp

Minnesota State Bicycle Advisory Committee
www.mnsbac.org

Increase Use of Downtown Alternative Transportation

Getting around using transportation other than driving is good for our hearts, lungs and pocket-books. Today in Minneapolis, alternative transportation can mean anything from light-rail and bus transit to bicycling and walking. The City plays an important role in making transit affordable and convenient, promoting its use and creating dynamic urban corridors that are safe and convenient for pedestrians and bicyclists.

Target

Increase the percentage of people who enter downtown via alternative transportation (bus, light rail, bicycle, walking, carpool) to 67 percent by 2013.

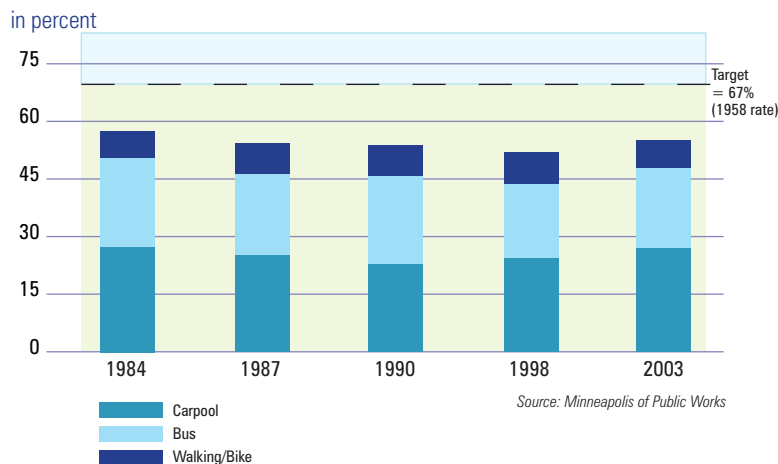
Trend Analysis

Because the last comprehensive count of downtown transportation use was conducted in 2003 (see graph), the total number of people carpooling, biking or walking is unknown, but public transit use and bicycling downtown has increased.

A 2007 count of bicycles at selected locations in downtown showed a 51 percent increase over 2003 levels.

Light-rail ridership grew 1.5 percent despite closure of the Humphrey Terminal for part of 2007. Systemwide bus ridership grew 5.1 percent, resulting in Metro Transit's highest annual ridership since 1982.

People traveling downtown by car pool, bus, bike or walking



Recent City & Community Activities

- Increased City employee Metropass use by 20%.
- Registered 1,811 carpools and vanpools for free or discounted parking in City owned or operated facilities.
- Completed and adopted the Downtown Transportation Action Plan. www.ci.minneapolis.mn.us/public-works/trans-plan/Downtown_Final_Adopted_062907.pdf
- Began developing the City's first pedestrian master plan and updated the City's bicycle plan. www.ci.minneapolis.mn.us/pedestrian www.ci.minneapolis.mn.us/bicycles/bicycle-plans.asp
- Worked with regional partners to secure a \$133 million grant from the U.S. Department of Transportation to mitigate traffic congestion in the Twin Cities region. This project includes construction of double-width bus lanes and new bus shelters. Funding is dependent on 2008 state legislative action. www.dot.state.mn.us/funding/upa
- Advocated for transit capacity and improvement of bottlenecks and livability in the on- and off-ramp areas of the new Interstate 35W Bridge. www.ci.minneapolis.mn.us/minneapolisrebuilds/index.asp
- Counted bicyclists and pedestrians in a number of downtown locations. www.ci.minneapolis.mn.us/news/20071023MplsTopBikeandWalkPaths.asp
- Metro Transit purchased 19 of a planned 172 hybrid-electric buses, which will result in a 100 percent hybrid-electric vehicle fleet on Nicollet Mall within five years. www.metrotransit.org/news/stories/04_07_gogreener.asp
- More than 250 Minneapolis residents and businesses were members of HOURCAR, an innovative hybrid car-sharing program with 10 hub locations. www.hourcar.org/index.html
- See related activities in Bikeways, Climate Change and Air Quality.



Photo courtesy of Metro Transit

A new hybrid-electric bus moves through downtown Minneapolis.

Web Links & Resources

Downtown Minneapolis Transportation Management Organization www.mplstmo.org

Reduce Airport Noise and the Environmental Impacts of the Airport

The Minneapolis-St. Paul International Airport (MSP) plays an important role in our region's economy and livability. But the airport also changes the environment, producing noise and air pollution, affecting the quality of life for nearby residents.

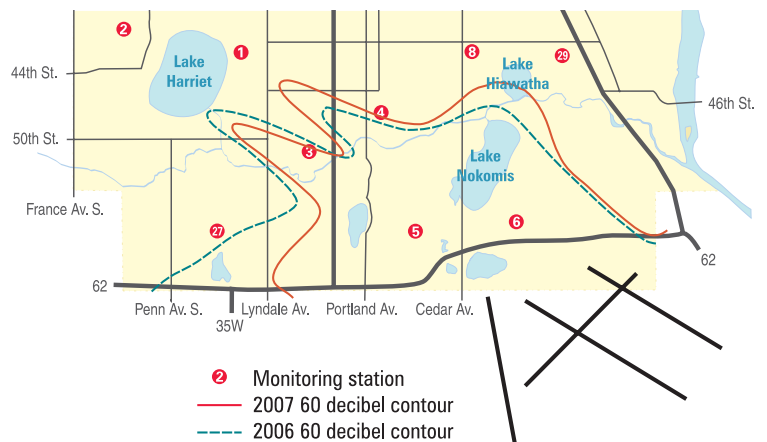
Target

Reduce the average noise levels by at least three decibels, the minimum change that is perceptible to the average person's ear, from 2004 levels at all nine monitored locations in Minneapolis.

Trend Analysis

MSP experienced a 10.6-percent reduction in airplane flights from 2005 to 2006 and a further reduction of 4.6 percent in 2007. Total operations in 2007 were 453,566 compared to the peak of 541,093 in 2004. This is largely attributed to Northwest Airlines and its partners reducing capacity. Combined with a continued phasing out of older planes, noise levels in Minneapolis declined slightly at six of the nine monitors (1, 3, 4, 5, 6 and 27) while three monitors showed slight increases over 2004 levels (2, 8 and 29). The increases at the three monitors are likely attributable to increased traffic on the north parallel and flights to and from the north during reconstruction of the south parallel runway. Neither the increases nor the decreases are of a value considered "normally discernable" (greater than three decibels) to the average person's hearing.

Airport noise monitoring stations in Minneapolis



Source: Metropolitan Airports Commission data

The north/south runway and the crosswind runway were used extensively during a two-month reconstruction of the south parallel runway, shifting additional flight traffic over north Minneapolis. Some neighborhoods had higher noise impacts while neighborhoods normally under the paths associated with the south parallel runway received temporary relief.



© CG Stock Photos/Bob Firth

Recent City & Community Activities

- The cities of Minneapolis, Richfield and Eagan and the Minneapolis Public Housing Authority reached a settlement agreement with the Metropolitan Airports Commission (MAC) to provide noise mitigation to the approximately 9,500 homes in the area most affected by airport noise – the 60 to 64 “day-night level” (DNL) noise impact area. Implementation will start in 2008 and finish in 2012. Approximately 80 percent of the homes are located in Minneapolis. This settlement results in the largest program in the country addressing airport noise impacts beyond 65 DNL, the Federal Aviation Administration’s defined level of significant noise exposure. Settlement maps and details can be found on the City’s Web site at www.ci.minneapolis.mn.us/airportnoise.
- Continued advocating with the MAC for measures to help manage day-to-day noise at the airport, resulting in greater compliance with noise abatement procedures such as increased use of the Eagan-Mendota Heights corridor for night operations and the Minnesota River Valley for westbound departures.
- Continued advocating at the Minnesota Legislature for a statewide aviation strategy, which ultimately died with the Omnibus Transportation Bill.

Web Links & Resources

Metropolitan Airports Commission
www.msairport.com/mac

To file a noise complaint call (612) 726-9411.
www.macnoise.com/complaint

Residents Opposed to Airport Racket (ROAR) and South Metro Airport Action Council (SMAAC)
www.quiettheskies.org

City of Minneapolis Airport Noise
www.ci.minneapolis.mn.us/airportnoise

No Net Loss to the Urban Tree Canopy

Our urban forest cleans the air, shelters wildlife, catches water runoff, cools our homes and makes our city more beautiful. Insects, disease and increasingly construction are taking a toll on our trees, decreasing our urban tree canopy. An impending threat is the emerald ash borer. Since its discovery in Detroit in 2002, this insect has devastated ash trees in Michigan, Indiana and Ohio.

Target

- No net loss of citywide tree canopy cover by 2015.
- Plant at least 2,500 trees on public land annually through 2015.

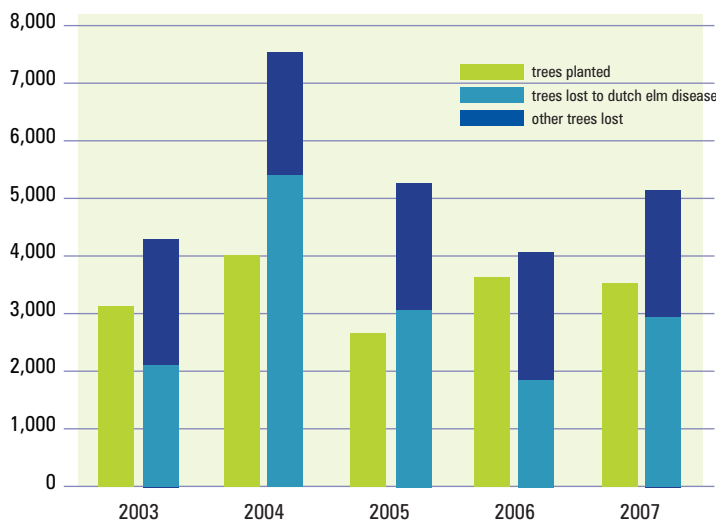
Trend Analysis

The baseline tree canopy, measured in 2004, covers 26 percent of the city¹. Tree canopy information has not been updated since 2004. Since then, however, more than 13,000 public elm trees have died from Dutch elm disease. Because of their age and large stature, their loss has a disproportionately negative impact upon the city's tree canopy.

The Minneapolis Park and Recreation Board (MPRB) planted an average of 3,385 trees per year along streets and in parks from 2003 to 2007. In 2007, more than 1,800 additional trees were planted by the City and its partners on public and private land. There has still been a net loss of more than 9,000 public trees in the city over the past five years.

¹ U.S. Forest Service, *Urban Forest Effects Model study, 2004*

Trees lost and trees planted on boulevards and in public parks



Source: Minneapolis Park and Recreation Board

1 The trees counted here do not include trees planted on public property by volunteer groups or other partners.

2 The 2003-2006 figures are corrected from last year's report.

Recent City & Community Activities

- Provided 1,500 trees to city residents for planting in their own yards through a partnership with Tree Trust, a local nonprofit. www.treetrust.org
- Provided sustainable landscaping design information encouraging residents who purchased abandoned lots to convert these underused side yards with trees and sustainable landscaping.
- Received the Outstanding Partnership Award from the Minnesota Shade Tree Advisory Committee for the City's innovative work with Tree Trust. www.ci.minneapolis.mn.us/newsroom/200705/20070517-nr_TreeAwards.asp
- Created licensing requirements and qualifications for companies providing tree maintenance services.
- The Minneapolis Fire Department provided 900 hours watering new trees on public property.
- The MPRB planted more than 3,500 street and parkland trees, controlled the spread of oak wilt disease in the Eloise Butler Wildflower Garden and ground stumps, making way for new trees to be planted. www.minneapolisarks.org/default.asp?PageID=28
- The MPRB dedicated an arborist as forestry preservation coordinator.
- The MPRB coordinated volunteers to plant 200 trees on public land as part of the City's official Arbor Day celebration. The event earned the Minnesota Society of Arboriculture's Award of Merit.
- Friends of the Mississippi River and volunteers removed buckthorn and other invasive species to restore forest remnants along the Mississippi River gorge. www.fmr.org
- Midtown Community Works and volunteers planted 350 trees/shrubs along the Midtown Greenway. www.midtowncommunityworks.org/ArborDay2007.htm



Photo courtesy of Tree Trust

Volunteers help a resident pick up one of the 1,500 trees provided by the City.

Web Links & Resources

- Minneapolis Urban Forest
www.ci.minneapolis.mn.us/sustainability/urbantreecanopy.asp
- Minneapolis Committee on Urban Environment (CUE)
www.ci.minneapolis.mn.us/cue

Eliminate Combined Sewer Overflows

Heavy rains can fill sewer pipes beyond capacity and make them overflow into adjoining stormwater pipes, which then dump raw sewage into the Mississippi River. This is called a combined sewer overflow (CSO), and it can cause serious health and environmental problems.

Target

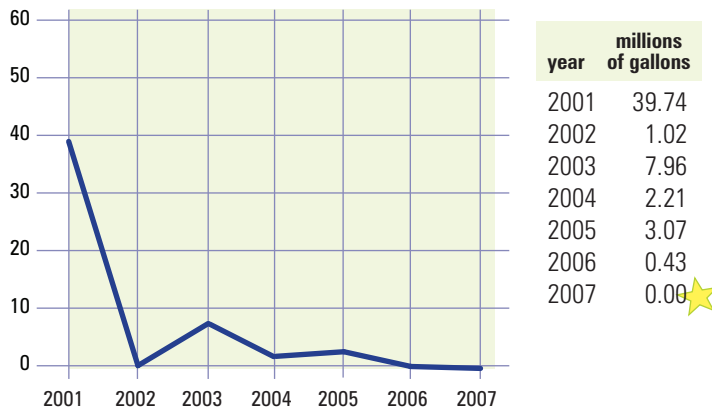
Eliminate combined sewer overflows by 2014.

Trend Analysis

The City's earliest sewers were designed for both sewage and rainwater. The City began building new systems separately in the 1930s and began separating combined sewers in the 1960s. A highly successful, decade-long accelerated sewer separation program began in the 1980s. Upgrades to the sewer system in Minneapolis have resulted in a dramatic reduction in overflows. The separations that remain are generally the toughest to locate or resolve.

For the first time, there were no overflow events in Minneapolis during the year. The five-year trend, the most meaningful measurement for this indicator, continues to show very good progress.

Combined sewer overflows into the Mississippi River



Source: Metropolitan Council

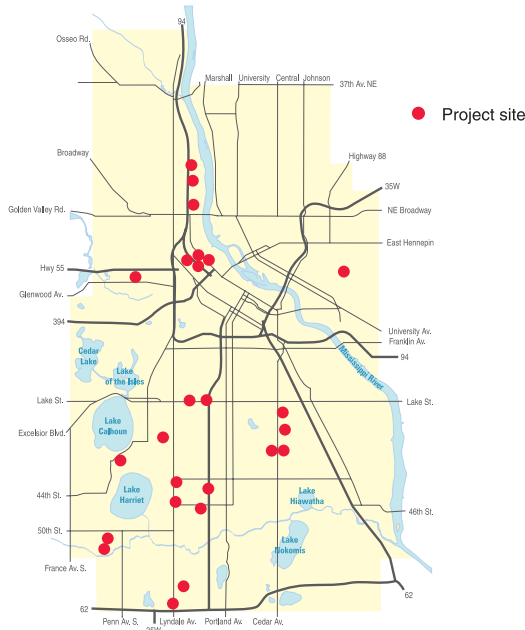
★ Target met

During intense rainstorms, untreated sewage may overflow into the stormwater sewers and discharge into the Mississippi River. The City of Minneapolis has dramatically reduced how often it happens and how much overflow ends up in the river.

Recent City & Community Activities

- The Rainleader Disconnect Program Team completed a five-year program, physically inspecting every building and parcel within the city for improper connections and is now following up to ensure compliance.
- One of the City's problematic and potentially costly disconnection challenges was solved when the Minnesota Department of Transportation allowed the City to use its storm tunnel for runoff from 116 acres that were previously connected to the sanitary system.
- In the past, it was permissible to connect residential downspouts and open standpipes to the sanitary system. "Rainleader" connections to the sanitary sewer system are no longer allowed in Minneapolis, and a grant from the Mississippi Watershed Management Organization provided materials to help many homeowners redirect the rainwater onto lawns. More than 1,000 homeowners received cement needed to seal their open standpipes, and about 350 homeowners received materials to redirect their downspouts.
- Carried out smoke testing in Bryn Mawr, Lind-Bohanon, Camden Industrial, Webber-Camden, Cleveland, Folwell, McKinley, and Hawthorne neighborhoods. Smoke testing is a technique to identify improper locations where rainwater enters the sanitary sewer system. Eliminating this inflow helps reduce the risk of overflows.
- See related activities in Permeable Surfaces and Water Quality.

2007 projects separating sanitary and storm sewers



Web Links & Resources

- City of Minneapolis combined sewer overflow information www.ci.minneapolis.mn.us/cso
- City of Minneapolis storm and surface water management www.ci.minneapolis.mn.us/stormwater
- City of Minneapolis rainleader ordinance www.ci.minneapolis.mn.us/cso/ordinance.asp

Permeable Surfaces

Increase Permeable Surfaces in Minneapolis

Taking a lesson from nature, the City is working to manage rainwater where it falls. By allowing rain and melting snow to soak into the ground close to its source, the City reduces the rate and amount of water running off, makes the runoff cleaner, replenishes groundwater and reduces erosion at stream banks.

Target

- If feasible, measure the baseline amount of rainwater and melting snow runoff that leaves the city or a pilot area, then set targets for reducing it.
- By 2015, increase the number of large stormwater management amenities (such as ponds and wetlands) that treat multiple properties and large areas to 50, and increase the number of smaller amenities (such as rain gardens) that treat single properties to 500.
- By 2015, increase the number of large underground stormwater treatment chambers (that treat

multiple properties) to 165 and the number of small underground stormwater treatment chambers (that treat single properties) to 200. These include grit chambers and swirl separators.

- By 2015, increase the number of green roofs to 150.

Trend Analysis

The City has made rapid progress by using the stormwater management ordinance, the stormwater utility credit program, and community and neighborhood outreach programs such as the Metro Blooms rain garden workshops.

Progress toward original targets exceeded expectations. Some new aggressive targets were set and some are in progress. After a comprehensive inventory of small area stormwater amenities is completed, a new target for these rain gardens and other amenities will be proposed.

Stormwater management facilities

in cumulative totals, includes private residential, commercial and public projects

	2005	2006	2007	2015 Target
Large area amenities (i.e., ponds and wetlands)	20	28	28	50
Small area amenities (i.e., rain gardens)	327	753	776	500 *
Large area underground treatment chambers	128	142	151	165
Small area underground treatment chambers	93	127	143	200
Green roofs	29	35	39	150

Source: Minneapolis Public Works

* The target for small area amenities will be increased after completion of a new, comprehensive inventory.

 New target

Recent City & Community Activities

- Hosted the Fifth Annual International Greening Rooftops for Sustainable Communities Conference, Awards and Trade Show. www.greenroofs.org
- Partnered with Hennepin County to install a green roof on the approximately 5,800-square-foot area of the historic City Hall Courthouse building. It will be covered with a landscaping system in 2008 that will allow various types of plants to thrive on the roof deck.
- Adopted the Infill Housing Text Amendment (also known as the “monster home” ordinance) to reduce water runoff by decreasing impervious surfaces.
- Under the City’s permitting review process, more than 100 stormwater “best management practices” were implemented on 52 large construction projects.
- Using a grant from the U.S. Environmental Protection Agency, distributed 2,000 rain barrels at reduced cost to Minneapolis residents and provided information on managing rain water through the Green Institute/Re-Use Center and Metro Blooms.
- Metro Blooms, with support from the City, taught 518 Minneapolis residents how to design and install rain gardens. www.metroblooms.org
- See related activities in Combined Sewer Overflow and Water Quality.

Web Links & Resources

Minneapolis Surface Water Management www.ci.minneapolis.mn.us/stormwater

Minnesota Pollution Control Agency Stormwater Manual www.pca.state.mn.us/water/stormwater/stormwater-manual.html



This new development has two rain gardens – one for rooftop runoff and the other for the parking lot. New rain gardens reduce the rate and amount of runoff, improve water quality, promote stormwater awareness, and add habitat and visual interest.

Improve the Water Quality of Lakes, Streams and the Mississippi River

As the City of Lakes, Minneapolis is known for its lakes and waterways. Keeping our lakes, streams and rivers clean is critical to a healthy urban environment and safe recreation. City residents and visitors enjoy swimming, boating, fishing and walking along the lake shores and riverbanks.

Target

Water quality is measured using the Trophic State Index (TSI). The TSI measures water quality based on clarity, phosphorus level and the amount of algae. A lower TSI means clearer water.

By 2014, keep Trophic State Index (TSI) levels at or below:

Brownie Lake	55 TSI	Lake Harriet	47 TSI
Lake Calhoun	47 TSI	Lake of the Isles	57 TSI
Cedar Lake	47 TSI		

Trend Analysis

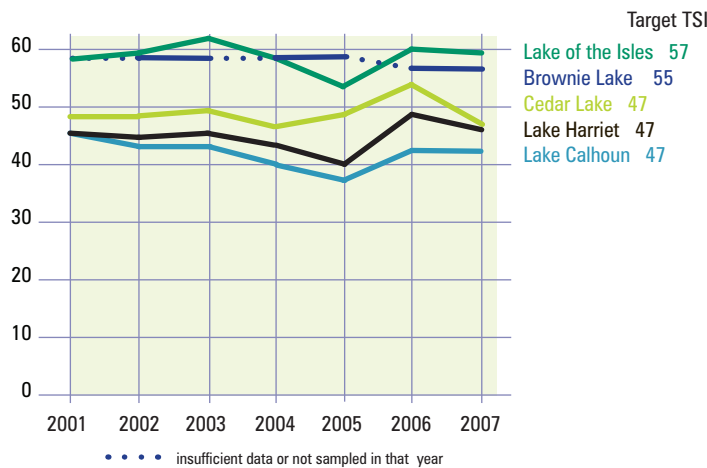
Lake Calhoun, Cedar Lake and Lake Harriet are now within the TSI goals for 2014. The TSI can vary due to a number of factors – climate, timing of rain, wind direction, temperature, aquatic plants, fish, alum treatment, watershed loading and many others.

Recent City & Community Activities

- Along a nearly one mile stretch of the river in north Minneapolis, stabilized the shoreline and installed a large bio-infiltration rain garden to minimize erosion through natural plantings and bioengineering techniques.
- Minnehaha Creek from Chicago Avenue to Bloomington Avenue is being restored to stabilize its steeply eroded banks and enhance wildlife habitat. The two-year project is funded by the Minnehaha Creek Watershed District.
- Protected Mississippi River aquatic life by working with the new Twins ballpark and Gopher stadium designers to ensure that food and drink residue and other organic materials are sent through the sanitary sewer system instead of the storm drain system, avoiding a direct discharge into the river.
- Used innovative stormwater management techniques in developing the Wabun Picnic Area of Minnehaha Park.
- Reopened the Lake Hiawatha beach in 2007 and opened a new beach on the east side of Cedar Lake. Closed for several years for budget reasons, the Lake Hiawatha beach’s reopening also reflects improved water quality from public education and outreach, ongoing beach maintenance, and an extensive shoreline restoration project.
- See related activities in Combined Sewer Overflow and Permeable Surfaces.

Water quality of Minneapolis lakes

in Trophic State Index(TSI¹) units



Source: Minneapolis Park & Recreation

¹ Water quality is measured using the Trophic State Index (TSI). The TSI measures water quality based on clarity, phosphorus level and the amount of algae. A lower TSI means clearer water.



Minneapolis Park & Recreation Board

Minneapolis Park & Recreation Board staff conducting a macroinvertebrate sampling study. Aquatic macroinvertebrates help maintain the health of the water ecosystem by eating bacteria and dead, decaying plants and animals; their abundance is an indication of good water quality.

Web Links & Resources

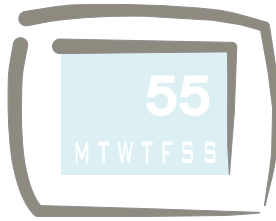
- Minneapolis Park & Recreation Board annual report www.minneapolisparcs.org/default.asp?PageID=942
- Minnesota Department of Natural Resources Lake Finder www.dnr.state.mn.us/lakefind/index.html
- Minnesota Pollution Control Agency Water Resources www.pca.state.mn.us/water/index.html
- Minneapolis Stormwater Utility Fee www.ci.minneapolis.mn.us/stormwater/fee

You can help reduce global warming

Global warming is a real threat to our ecosystems and society and we must take collective action. You can help reduce the pollution that causes global warming by taking these simple steps:

CO₂ pollution prevented annually in lbs (on average in pounds)
Annual household savings in \$

Increase energy efficiency

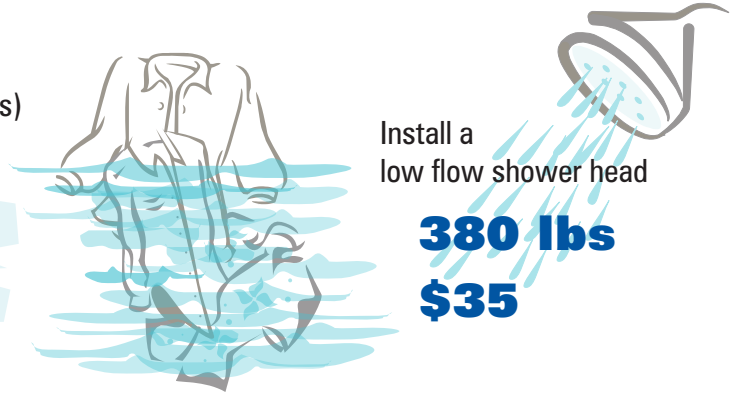


Install a programmable thermostat; turn down to 55 at night and when not home

250 lbs \$25

Replace 5 light bulbs with Compact Fluorescents (CFLs)

530 lbs \$26



Wash your clothes in cold water

1160 lbs \$108

Install a low flow shower head

380 lbs \$35



Drive less, Drive clean



Check tire pressure every month

330 lbs \$40

Obey the speed limit and drive sensibly

1102 lbs \$132



Commute by bus

811 lbs \$97



Go car-free one day a week

811 lbs \$97



More than 2500 Minneapolis residents have taken the

Minnesota Energy Challenge and pledged to reduce their carbon footprint. Join the effort and start reducing carbon dioxide emissions in your own daily life.

For more information on these and other simple steps

www.ci.minneapolis.mn.us/sustainability

www.mnenergychallenge.org

