Minneapolis greenprint

2007 Environmental Report

Minneapolis greenprint

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Minneapolis greenprint

Creating a safe, healthy and environmentally friendly city is a top priority for the City of Minneapolis. In 2003, the Minneapolis City Council and Mayor R.T. Rybak launched the City's Sustainability Initiative, integrating these priorities into City decision making. At the heart of this commitment are 24 sustainability indicators, providing a blueprint upon which we will build a more sustainable city. Each of these indicators contains benchmarks and targets, allowing us to measure progress and match actions with goals.

The *Minneapolis GreenPrint* takes stock of 2006 work on the City's 10 environmental indicators and gives an account of where we are compared to our goals in reducing our environmental footprint.

We have many accomplishments to celebrate. The City:

- Achieved its first targets, exceeding two of the City's goals for Permeable Surfaces, implementing practices that protect the quality of our lakes, streams and the river.
- Had the lowest amount of combined sewer overflow on record.
- Greened its fleet by expanding the use of biofuels, car sharing and hybrid vehicles.
- Completed its third solar installation on City-owned buildings.
- Passed a new ordinance requiring all new City-owned buildings be built to LEED (Leadership in Energy and Environmental Design) national green building standards.
- Planted more than 6,000 trees and seedlings with community partners.
- Launched the Minnesota Energy Challenge, with Minnesota Center for Energy and the Environment and other partners, encouraging community members to save energy.
- Expanded the city's network of bike routes to 96 miles.

There is more to do. Global warming presents a real and serious challenge. The City is committed to reducing its impact upon this global climate crisis. Many actions within the *Minneapolis GreenPrint* help us reduce global warming pollution. We must continue building our tree canopy, improving our air quality, increasing bike routes and transportation alternatives, increasing our use of renewable energy, and decreasing the amount of energy we use.

Building upon our *GreenPrint,* the City of Minneapolis is creating a healthier, more sustainable future. This progress is only possible by working in partnership with our community. We are grateful to the many dedicated people who have made this report possible and who work towards a sustainable city. Thank you to the members of the Citizens' Environmental Advisory Committee, the Environmental Coordinating Team, City staff, Minneapolis Mayor R.T. Rybak, members of the Minneapolis City Council and our many public, nonprofit and community partners for your leadership, contributions and commitment.

Learn more about *Minneapolis GreenPrint* and join us in achieving its vision.
www.ci.minneapolis.mn.us/sustainability

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 – solar, wind, biomass 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.

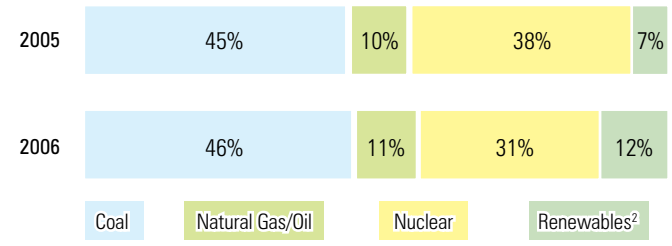
Target

- 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

Xcel Energy is increasing its renewable power sources. Additional information on renewable energy use within Minneapolis is not currently available.

Xcel Energy electric power sources[1]
in percent



Source: Xcel Energy 2006

1 owned and purchased from other companies

2 Xcel Energy's renewables are wind, hydro, refuse-derived fuel and biomass. A significant portion of Xcel Energy's renewable energy comes from one large hydroelectric plant in Manitoba, Canada.

The Currie Maintenance Facility's solar array is one of three owned by the City of Minneapolis. The three photovoltaic systems produced 12,500 kWh of electricity last year.

Recent City and Community Activities

- Installed City operations' third solar project at Currie Equipment Facility www.ci.minneapolis.mn.us/sustainability/currie.asp. The City's three solar projects produced a total of 12,500 kWh of energy, saved the City $1,250 on its electricity bill and reduced carbon dioxide by 21,400 pounds last year.
- Purchased 46 new E85 flex-fuel vehicles for a total of 99 City-owned cars that can use 85 percent ethanol fuel. Currently using B10 (10 percent biodiesel) for City diesel vehicles and equipment.[3]
- Southeast Como Improvement Association implemented an innovative solar hot water pilot program. Twelve of the solar water heaters, each saving about 120 therms of natural gas each year, were installed in Minneapolis. The City assisted by waiving the permit fees. www.secomo.org
- Almost 6,300 Minneapolis customers participated in Xcel Energy's Windsource program, buying electricity from wind power. Southeast Como and Seward neighborhoods and others have encouraged more than 800 new participants. www.xcelenergy.com
- In 2006, Temple Israel, St. Joan of Arc Catholic Church and Upper Midwest Gourmet installed photovoltaic solar systems, reducing their reliance on coal-burning power plants
- More than 100,000 tons of garbage from Minneapolis homes and businesses went to the Hennepin County Waste Incinerator and was converted into electricity. www.hennepin.us keyword HERC
- See related activities under Global Warming and Air Quality.

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

Web Links & Resources

Fresh Energy www.fresh-energy.org

Clean Energy Minnesota www.cleanenergyminnesota.org

Minnesota Energy Info Center
www.commerce.state.mn.us

Global Warming

Reduce Carbon Dioxide Emissions

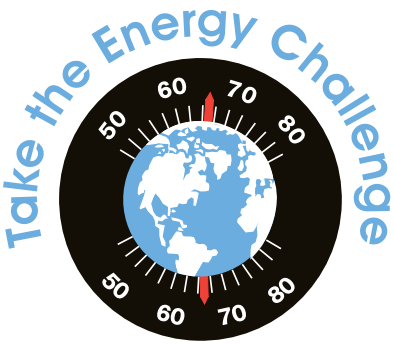
The science is clear – global warming is real, we are responsible, and it is a threat to our society. Carbon dioxide and other air pollution collects in the atmosphere, trapping the sun's heat and causing our planet to warm up. Coal-burning power plants and vehicles are the largest sources of carbon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

Target

- Reduce CO_2 emissions from City operations by 12 percent by 2012 and by 20 percent by 2020.
- Reduce citywide CO_2 emissions by 12 percent by 2012 and by 20 percent by 2020.

Trend Analysis

The 1988 baseline for Minneapolis is 22.3 tons of carbon dioxide per person per year. Updated information will be collected this year.



Find out what you can do to slow Global Warming.
Take the Energy Challenge
www.mnenergychallenge.org

A new City ordinance will increase taxi fuel efficiency by 35 percent. More than 370 taxis are licensed in Minneapolis; in total they travel close to 15 million miles a year.

Recent City Activities

- Required all taxis licensed by the City to be more fuel-efficient within 10 years.
- Partnered with the Center for Energy and Environment and others to launch the Minnesota Energy Challenge. More than 700 Minneapolis residents and businesses have committed to reducing more than 8.3 million pounds of global warming pollutants annually. Take the challenge at www.mnenergychallenge.org.
- Required all new City-owned buildings to be built to a Leadership in Energy and Environmental Design (LEED) Silver level of quality – a national benchmark for high performance green buildings. www.usgbc.org
- Tested use of energy-saving LED lights for holiday tree and street decoration.
- Redesigned the lighting in downtown Parking Ramp A to increase efficiency and visibility, saving more than 1.6 gigawatt hours annually – enough electricity to power 190 homes[1].
- The new Central Library exceeds the state energy code by 40 percent by using natural light and energy-efficient lighting. This saves enough electricity to power almost 300 homes annually[1]. www.mpls.lib.mn.us/centralinfo.asp
- More than 220 Minneapolis residents and businesses, including the City of Minneapolis, have joined HOURCAR, a car-sharing program with highly efficient hybrid vehicles. www.hourcar.org
- Wellstone Apartments has easy access to public transportation and will have Energy Star appliances, low-water-use appliances and a solar water heating system. www.greencommunitiesonline.org/minnesota/default.asp?id=67
- See related activities under Renewable Energy, Air Quality, Downtown Transportation Mode Split, Bike Lanes and Tree Canopy.

1 Xcel Energy

Web Links & Resources

U.S. Environmental Protection Agency
www.epa.gov/climatechange/index.html

Minnesota Pollution Control Agency
www.pca.state.mn.us/hot/globalwarming.html

Intergovernmental Panel on Climate Change www.ipcc.ch

Air Quality

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, pulmonary disease and heart disease. Most air pollution comes from the use of fossil fuels.

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 healthy levels by 2015.

Trend Analysis

The number of "moderately unhealthy" days increased by 23% from 2005 (80 days) compared to 2006 (98 days). At the same time, the number of days that had even worse air quality decreased from 4 days in 2005 to 0 days in 2006.

The Minnesota Pollution Control Agency found the yearly average benzene levels to be within the health benchmarks for 2006. But the Minneapolis Air Quality Study, which measures pollutants at ground level, found benzene and tetrachloroethylene levels outside of health standards in some locations. Formaldehyde has exceeded health benchmarks in previous years, but 2006 data are not yet available.

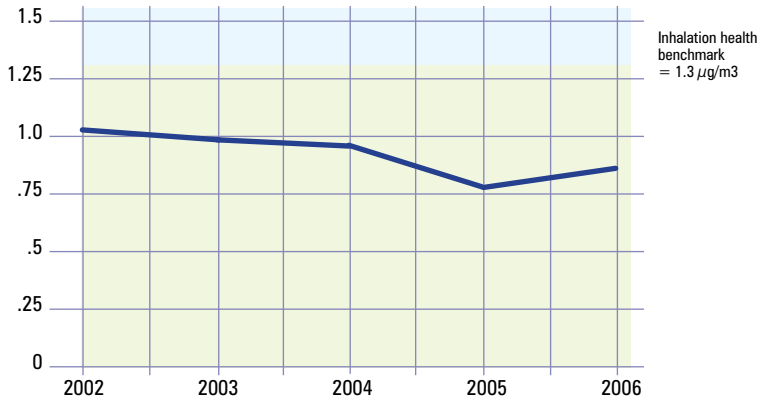
Air Quality Index for Minneapolis

Year	Good days	Moderately unhealthy days	Unhealthy for sensitive groups days	Unhealthy days
2003	289	75	1	0
2004	297	66	2	0
2005	281	80	3	1
2006	267	98	0	0

Source: Minnesota Pollution Control Agency

Average benzene concentrations at monitoring stations in Minneapolis

in μg/m3



Source: Minnesota Pollution Control Agency

Ambient average levels of benzene in the air have been below health benchmarks and have declined overall since 2002.

Recent City Activities

- Purchased three new hybrid-electric, for a total of eight hybrids including two for the Library Board.
- Removed *No Turn on Red* signs at 40 intersections, reducing idling times and vehicle emissions. www.ci.minneapolis.mn.us/traffic/NTOR.asp
- Banned the purchase and sale of mercury in thermostats and medical devices and for use in schools. Required crematoria to report mercury emissions. Mercury vapor is a potent nerve toxin that can be inhaled directly. Because mercury also can settle into lakes and rivers, it can be ingested by eating fish.
- The Minneapolis Park and Recreation Board is providing cleaner air and a quieter environment in Eloise Butler Wildflower Garden by replacing a gas tractor with an electric battery tractor.
- Metro Transit announced it will replace 314 buses with 150 next-generation hybrid electric buses that deliver 22 percent better fuel mileage and half the exhaust soot of the existing fleet.
- See related activities under Renewable Energy, Global Warming, Downtown Transportation Alternatives, Bike Lanes and Tree Canopy.

Web Links & Resources

Minnesota Pollution Control Agency, Air Quality
www.pca.state.mn.us/air/index.html

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

Bicycle Lanes

Increase Bicycle Lanes and Trails

In spite of our winters, Minneapolis boasts 10,000 cyclists and has one of the highest numbers of bicycle parking spaces of any city in the United States. Bicycling is good for our health, economy and environment. The City encourages bicycling by advocating for and constructing additional miles of bicycle lanes and trails.

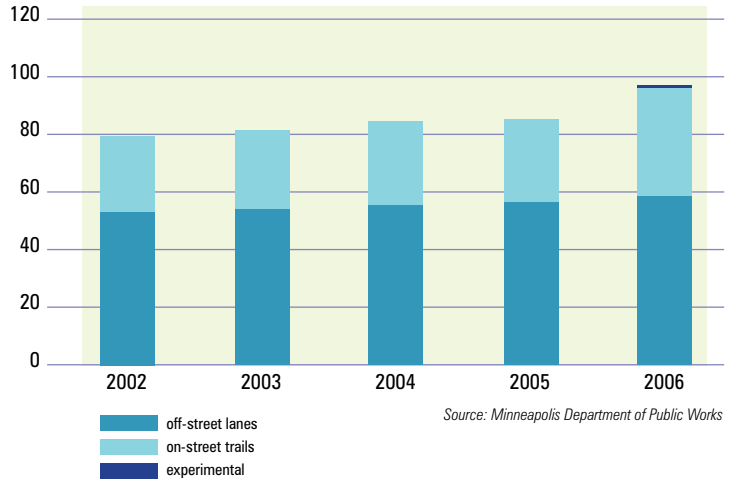
Target

Add 44 miles of bicycle lanes and trails to 2004 levels by 2015, including 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 two miles from 2004 levels for a total of 96 miles and is on track to meet or exceed its 2015 goals.

Bike trail mileage in Minneapolis
in miles



Source: Minneapolis Department of Public Works

With 10,000 cyclists and almost 100 miles of bicycle lanes and trails, Minneapolis is a great place to ride.

Recent City and Community Activities

- Completed Phase 3 of the Midtown Greenway (South Minneapolis) connecting Hiawatha Avenue to the Mississippi River. www.ci.minneapolis.mn.us/bicycles/midtown.asp
- Completed Central Avenue Trail (Northeast Minneapolis).
- Completed Phase 2 of the Loring Bikeway (downtown), which included new landscaping and public art. www.ci.minneapolis.mn.us/public-works/cip/loringbike2
- Added seven miles of bicycle lanes along Plymouth Avenue, 26th Avenue North, 42nd Avenue North and Second Street North (North Minneapolis) www.ci.minneapolis.mn.us/public-works/cip/northside
- Installed dozens of new bicycle racks at local businesses, schools, parks and cultural centers.
- Completed a citywide bicycle parking inventory that will help the City better meet the parking needs of cyclists. www.ci.minneapolis.mn.us/bicycles/bikeparking-rackinventory.asp
- Began work on a new Safe Routes to School Initiative in partnership with the Minneapolis Public Schools.
- Created an experimental bike route in partnership with the CARAG neighborhood organization. Instead of a separate bicycle lane, this experimental route is designed to direct bicyclists to smaller side streets, allowing for both automobile and bicycle traffic.
- Transit for Livable Communities, a local nonprofit, in partnership with the City received a $21.5 million grant for a pilot program to increase biking and walking in Minneapolis and surrounding areas. www.tlcminnesota.org/Resources/NTP%20Program/ntp.html
- See related activities under Downtown Transportation Alternatives.

Web Links & Resources

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

Minnesota State Bicycle Advisory Committee
www.mnsbac.org

Metropolitan Council Metro Commuter Services biking program
www.metrotransit.org/serviceInfo/bikesOnTransit.asp

Downtown Transportation Alternatives

Increase Use of Downtown Alternative Transportation

Getting around using transportation other than driving is good for our hearts, lungs and pocketbooks. 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.

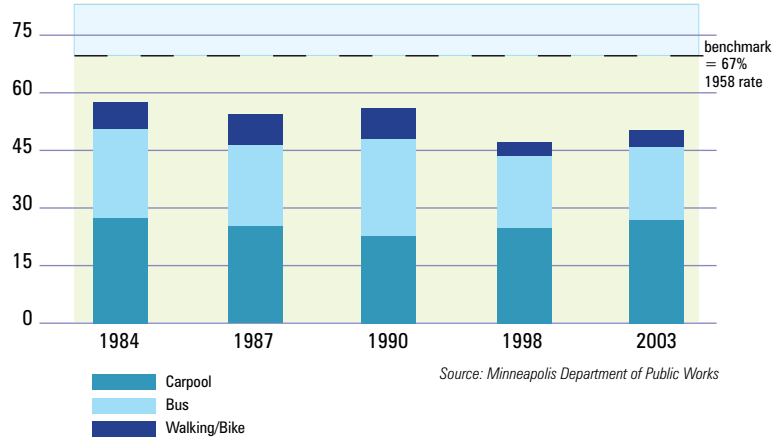
Target

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

Trend Analysis

The Hiawatha light-rail line began service in 2004 and has higher-than-projected ridership. In 2006, light-rail ridership grew 19 percent and system-wide bus ridership grew 4 percent, resulting in Metro Transit's highest annual ridership since 1984. Because the last comprehensive count of downtown transportation use was conducted in 2003 (see chart), the total number of people carpooling, biking or walking is unknown, but public transit use downtown has increased.

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



Source: Minneapolis Department of Public Works

In 2006, ridership on the Hiawatha light-rail line grew 19 percent over 2005, providing 9.4 million rides.[1]

Recent City and Community Activities

- Began developing a new downtown Transportation Action Plan in partnership with Metro Transit, Hennepin County, Minnesota Department of Transportation (MnDOT), the downtown business community and downtown neighborhoods. www.ci.minneapolis.mn.us/public-works/trans-plan

  Elements of the proposed plan include:

  - o Consolidating bus service onto priority streets.
  - o Reducing bus congestion and converting to all-hybrid buses on Nicollet Mall.
  - o Expanding and completing bike routes and bike racks.
  - o Improving sidewalks.
  - o Converting selected one-way streets to two-way streets.
- Rezoned a large portion of downtown to support higher density housing and mixed uses along the Hiawatha light-rail corridor. www.ci.minneapolis.mn.us/lrtrezoning/tod-haiwatha.asp
- Advocated at the state Legislature. Priorities included the North Star Commuter Rail Corridor connecting northern suburbs with downtown, the Central Corridor Light Rail Transit connecting Minneapolis and Saint Paul, the Interstate 35W and Cedar Avenue Bus Rapid Transit facilities, and dedicated funding for transit.
- Offered Metro Pass, the pre-tax bus and light-rail farecard, to City employees. Since the end of 2004, the number of participating employees has increased 42 percent to 344.
- Provided transit passes instead of parking vouchers for Planning Commission members.
- See related activities in Bike Lanes, Global Warming and Air Quality.

1 Metro Transit ridership numbers for the Hiawatha light-rail line.

Web Links & Resources

Metro Transit www.metrotransit.org

Tree Canopy

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.

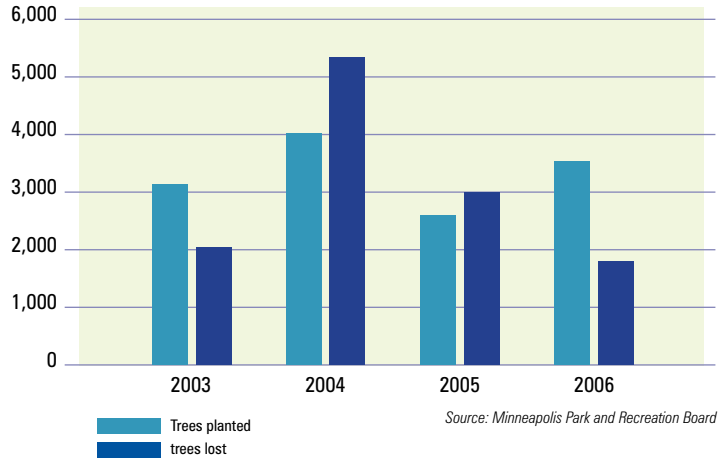
Target

- 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 city[1]. After two years of heavy losses from Dutch elm disease, twice as many trees were planted in 2006 than were lost. Tree canopy information has not been updated since 2004.
- The Minneapolis Park and Recreation Board planted an average of more than 3,300 trees along streets and in parks per year from 2003 to 2006. In 2006, more than 1,800 additional trees and saplings were planted by the City and its partners on other public lands.

Trees on boulevards and in public parks managed by the Minneapolis Park and Recreation Board
in trees



Source: Minneapolis Park and Recreation Board

Photo courtesy of Tree Trust

Boy Scouts from Troop 100 plant a tree in the Marcy-Holmes neighborhood. The City and its partners planted more than 6,000 trees and seedlings last year.

Recent City and Community Activities

- Provided 1,038 trees to residents for planting in their own yards through an innovative partnership with Tree Trust, a local nonprofit. www.treetrust.org
- Created the seven and a half acre Gold Medal Park through a unique public-private partnership. The Park Development Foundation, which designed, built and will maintain the park, planted 300 large trees in this new public space along Minneapolis' downtown riverfront.
- The Minneapolis Park and Recreation Board (MPRB) planted more than 3,600 street and parkland trees in 2006 and removed invasive species with public, private and neighborhood support on parkland. www.minneapolisparks.org/default.asp?PageID=28
- Groundwork Minneapolis planted 1,400 seedlings on City right of way to establish a buffer between homes in North Minneapolis and the railroad.
- Tree Trust, with support from the City, partnered with residents, the MPRB and others to reclaim two abandoned lots and plant 110 trees near Plymouth Avenue in North Minneapolis.
- The MPRB coordinated more than 500 volunteers, including students and teachers from Nellie Stone Johnson Community School, to plant 66 trees as part of National Arbor Day.
- Friends of the Mississippi River and 323 volunteers removed buckthorn and other invasive species to restore oak savannah and maple basswood forest remnants along the Mississippi River gorge. www.fmr.org/stewards.html
- Midtown Community Works planted 85 trees and 219 bushes along the Midtown Greenway. www.midtowncommunityworks.org/ArborDay2006_001.html

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

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

Airport Noise

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.

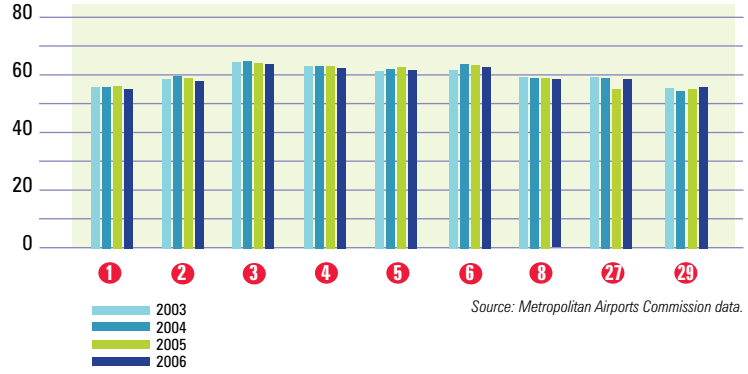
Target

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

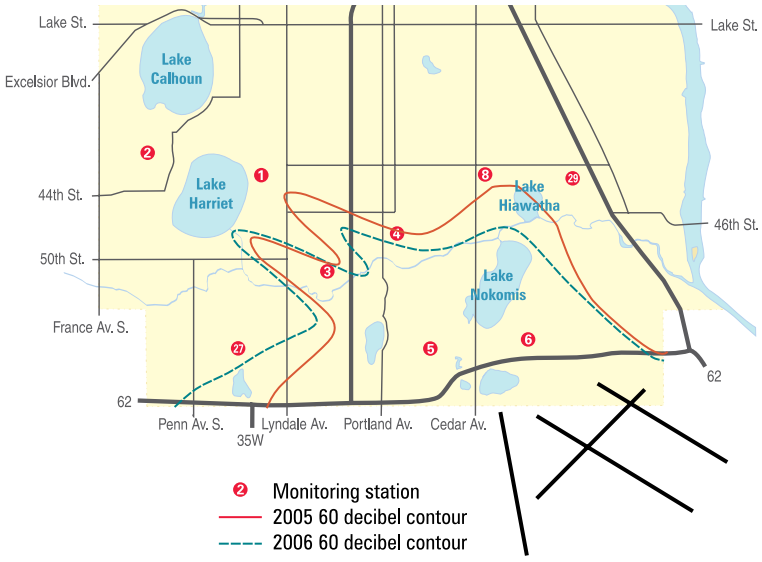
Despite a 10.6-percent reduction in airplane flights from 2005 to 2006 and a continued phasing out of older planes, noise levels in Minneapolis have not significantly declined. Use of the new north-south runway was lower than projected, resulting in heavier use of runways that direct traffic over southwest Minneapolis neighborhoods.

Average noise levels at Minneapolis monitoring stations
in decibels



Source: Metropolitan Airports Commission data.

Airport noise monitoring stations in Minneapolis



Source: Metropolitan Airports Commission data.

Use of the new north-south runway was lower than projected in 2006, resulting in heavier use of runways that direct airplanes and airplane noise over neighborhoods in southwest Minneapolis

Recent City and Community Activities

- Continued litigation to compel the Metropolitan Airports Commission (MAC) to provide sound insulation for homeowners who are impacted by noise levels of 60 to 64 decibels and were promised insulation packages.
- Measured local noise levels with noise consultants in order to separate airport noise from background levels during both the night and day.
- Partnered with other communities to develop and host two "Airport 101" sessions for local and state elected officials.
- Advocated for and gained agreement with the MAC to start monitoring and reporting minutes above certain noise thresholds at each of the MAC's noise monitoring stations. www.macnoise.com/opreports
- Advocated with the MAC for noise abatement measures to help manage day-to-day noise at the airport.
- Advocated for a statewide aviation strategy at the Minnesota Legislature and with the U.S. Congress.

Web Links & Resources

Metropolitan Airports Commission
www.mspairport.com/mac

To file a noise complaint visit
www.macnoise.com/complaint or call 612-726-9411.

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

Combined Sewer Overflow

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.

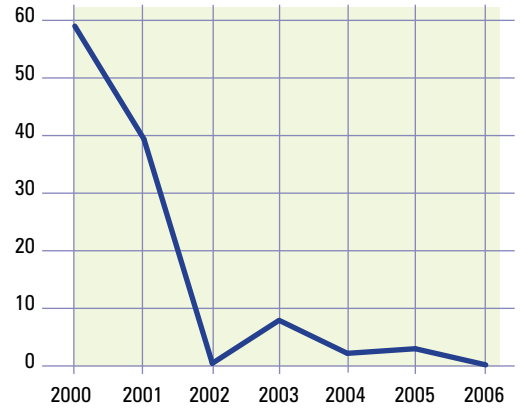
Trend Analysis

The City's earliest sewers were designed for both sewage and rain water. The City began building new systems separately in the 1930s and began separating the combined sewers in the 1960s. A decade-long accelerated sewer separation program began in the 1980s and was highly successful. Upgrades to Minneapolis' sewer system have resulted in a dramatic reduction in CSOs.

However, some overflows still occur during severe rain. The City continues to make improvements, inspecting the entire city parcel by parcel to find any roof and area water drains still connected to the sanitary sewer.

Combined sewer overflows into the Mississippi River

in millions of gallons

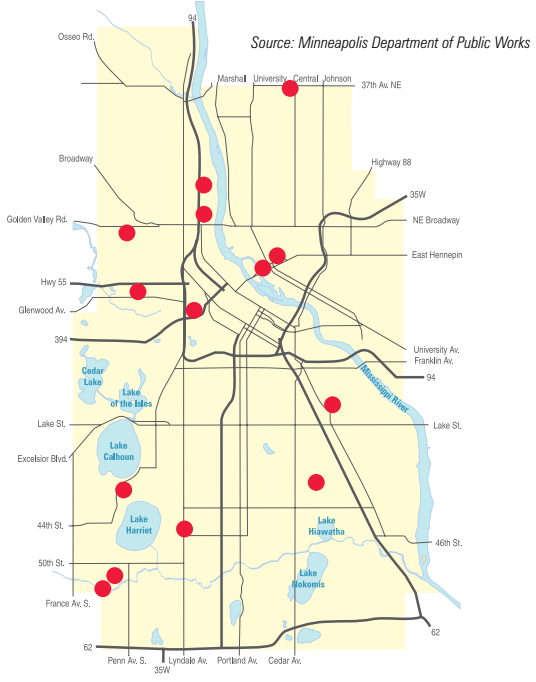


year	millions of gallons
2000	59.36
2001	39.74
2002	1.02
2003	7.96
2004	2.21
2005	3.06
2006	0.43

Source: Metropolitan Council

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

2006 projects separating sanitary and storm sewers



Recent City Activities

- Inspected more than 21,000 properties in 20 neighborhoods and found nearly 1,000 roof and storm drains still connected to the sanitary sewer. City ordinance requires owners to separate any combined drains on their property.
- Inspected six street construction projects to find any combined connections so they could be removed during construction.
- Investigated and resolved two instances of raw sewage flowing into the storm sewer system and removed three storm drains from the sanitary sewer.
- Diverted stormwater flow at six schools into new rain gardens instead of the sanitary sewer system through a partnership with Minneapolis Public Schools.
- Completed six capital improvement projects that stopped stormwater from nearly 20 acres flowing into the sanitary sewer system.
- Established a new community outreach program that educated residents and business owners on how they could help prevent CSOs.
- See related activities in Permeable Surfaces and Water Quality.

Web Links and Resources

City of Minneapolis CSO information
www.ci.minneapolis.mn.us/cso

City of Minneapolis rain leader 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 cleaning and holding rain and melting snow close to its source, allowing it to soak into the ground, the City reduces the rate and amount of water running off, improves the quality of the runoff, 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 within 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 30, and amenities (such as rain gardens) that treat single properties to 500.
- By 2015, increase the number of large underground stormwater treatment chambers treating multiple properties to 150 and the number of small underground stormwater treatment chambers treating single properties to 100. These include grit chambers and swirl separators.
- By 2015, increase the number of green roofs in the city to 100. Green roofs are effective when these planted areas are designed to capture and treat rainwater.

Trend Analysis

The City has surpassed two of its targets and made rapid progress toward others. This success is due to community and neighborhood outreach programs such as the Minneapolis Blooms Rain Garden Workshops, the City's stormwater management ordinance and stormwater utility credit program.

Stormwater management facilities
in cumulative totals, include private residential, commercial and public projects

	2005	2006	2015 Target
Large area amenities (e.g., ponds and wetlands)	20	28	30
Small area amenities[1, 3] (e.g., rain gardens)	327	753	500
Large area underground treatment chambers	128	142	150
Small area underground treatment chambers[1, 3]	93	127	100
Green roofs[2]	8	10	100

Minneapolis Department of Public Works

[1] 2005 figures were corrected and increased from last year's report

[2] City of Minneapolis Development Review – number of permits issued for green roofs

[3] Target exceeded

Folwell School Interpretive Rain Gardens (under construction)
This project removed nearly two acres of asphalt and boosted the school's environmental curriculum. Students will use the rain garden walkway to learn about managing stormwater.

Recent City and Community Activities

- Completed the Mill Quarter regional facility that treats stormwater runoff in the area of the new Guthrie Theater. This underground treatment facility is expected to remove more than 20,000 pounds of suspended solids and 33 pounds of phosphorus annually. www.ci.minneapolis.mn.us/cip/storm-drains
- Created rain gardens at six schools in partnership with the Minneapolis Public Schools. These gardens allow water to soak into the ground instead of running off of hard surfaces into the sewers, reducing localized flooding and improving water quality. The projects will also give schools a beautiful landscape where students can learn about the environment.
- Installed porous pavement in two road projects to reduce surface water runoff. This innovative concrete allows water to pass through it into an underground rock filter and be stored until it soaks into the ground and recharges groundwater, reducing the need for large storm drain pipes to the Mississippi River.
  www.ci.minneapolis.mn.us/public-works/cip/elliot_culdesac
- Minneapolis Blooms, with support from the City, taught 800 residents how to design and install rain gardens in their yards.
  www.ci.minneapolis.mn.us/cue/Mpls_Blooms.asp
- 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

Water Quality

Improve Lakes, Streams and the Mississippi River

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

Target

By 2014, keep Trophic State Index[1] (TSI) levels at or below:

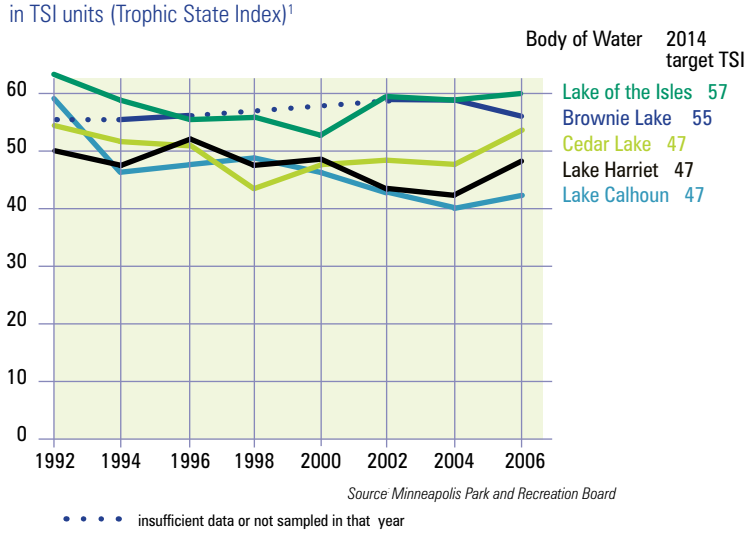
Brownie Lake	55 TSI	Lake Harriet	47 TSI
Lake Calhoun	47 TSI	Lake of the Isles	57 TSI
Cedar Lake	47 TSI		

Trend Analysis

All of the target lakes except Brownie Lake worsened in clarity during 2006. Lake Calhoun is the only lake within its TSI goal for 2014. Longer term trends indicate that even though water quality in the city fluctuates, it may be improving. The TSI can vary due to a number of factors – climate, timing of rain, wind direction, temperature, aquatic plants, fish, alum treatments, watershed loading, and many others. All Minneapolis swimming beaches met health standards for swimming in 2006.

[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.

Water quality of Minneapolis lakes
in TSI units (Trophic State Index)[1]



Source: Minneapolis Park and Recreation Board

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Photo: Minneapolis Park and Recreation Board

A 2003 Powderhorn Lake alum treatment helps clear phosphorus from the water. Multiple water improvement techniques used by the City and the Minneapolis Park and Recreation Board over the past years are producing results. Powderhorn Lake is now clear enough to support aquatic vegetation.

Recent City and Community Activities

- Tested samples of water that runs from storm sewers into the Mississippi River, in partnership with the Mississippi Watershed Management Organization (MWMO), to establish baseline water quality and use the information in the Illicit Discharge Detection and Elimination program. www.mwmo.org
- Implemented a permit program for all water outlets into the Minneapolis storm drain system. The storm drains carry water to the Mississippi River, area lakes and local creeks.
- The Minneapolis Park and Recreation Board (MPRB) reduced algae and improved water quality in Powderhorn Lake with the third year of barley straw treatments. Native aquatic plants were noticeable for the first time in years. www.minneapolisparks.org/default.asp?PageID=708
- MPRB sponsored a team of volunteers who monitor wetlands for Hennepin County www.mnwhep.org
- Seward Neighborhood Group helped residents build 125 rain barrels, while Southeast Como's organic lawn-care program provided organic fertilizer and taught clean-water yard-care techniques.
- Friends of the Mississippi River, with support from the City and other partners, coordinated the stenciling of 1,588 storm drains, distributed 5,500 educational door hangers, presented watershed protection workshops and coordinated 17 water restoration events. http://fmr.org/stencil.html
- See related activities in Combined Sewer Overflow and Permeable Surfaces.

Web Links & Resources

Minneapolis Park and Recreation Board annual report
www.minneapolisparks.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

Minneapolis greenprint

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printed on recycled paper

Minneapolis
City of Lakes

City Coordinator – Sustainability

230 South Fifth.Street. – Room 301M
Minneapolis, MN 55415

www.ci.minneapolis.mn.us/sustainability

English: Attention. If you want help translating this information, call- 612-673-3737

Spanish: Atención. Si desea recibir asistencia gratuita para traducir esta información, llame 612-673-2700

Somali: Ogow. Haddii aad dooneyso in lagaa kaalmeeyo tarjamadda macluumaadkani oo lacag la' aan wac 612-673-3500

Hmong: Ceeb toom. Yog koj xav tau kev pab txhais cov xov no rau koj dawb, hu 612-673-2800

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