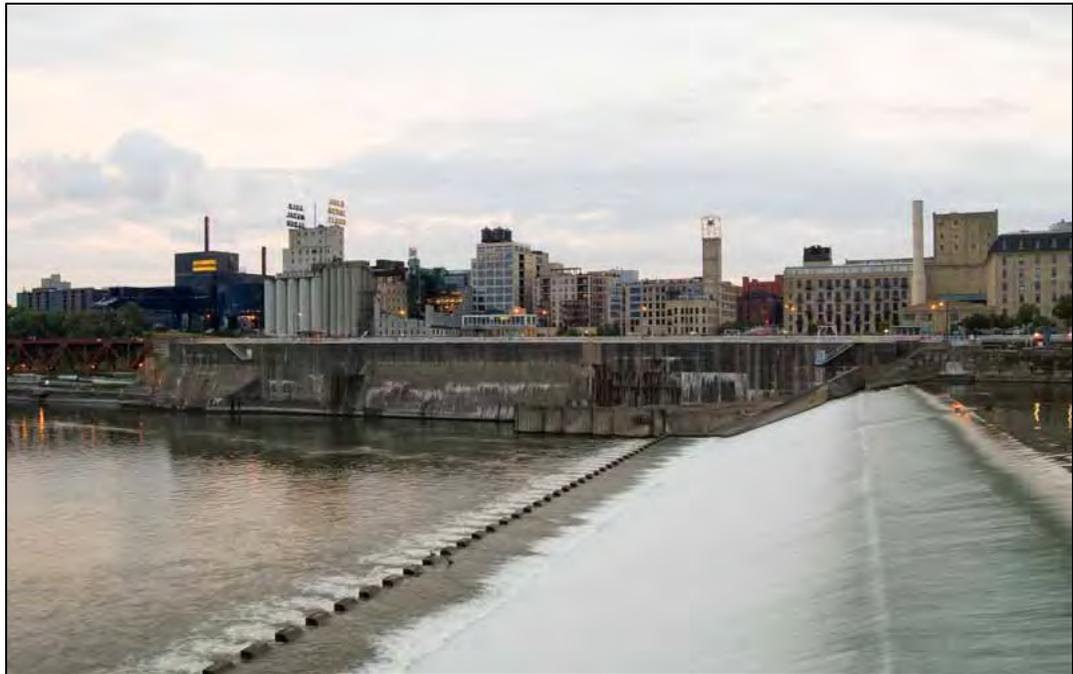


6. Environment

Minneapolis will promote sustainable design practices in the preservation, development, and maintenance of its natural and built environments, provide equal access to all of the city's resources and natural amenities, and support the local and regional economy without compromising the needs of future generations.



Minneapolis is recognized for its commitment to sustainability by government agencies like the US Environmental Protection Agency and by consumer groups like move.com, a real estate and home improvement organization.

Minneapolis is a national leader in sustainability, pursuing an agenda to minimize its ecological footprint, use of natural resources conservatively, and continue to build a healthy economy. The City adopted [Sustainability Indicators](#) as a means of focusing and measuring its efforts.



The City promotes environmental stewardship in a variety of ways:

- Revising and ensuring compliance with ordinances and policies.
- Researching and implementing best practices.
- Providing incentives to the market to encourage environmentally-beneficial practices.
- Providing information and outreach to residents, businesses, developers and other organizations.
- Implementing sustainable operation and maintenance practices, such as fleet management.
- Integrating environmental, social and economic objectives for sustainable growth and development into city policies.
- Encouraging partnerships with other organizations within the city to make public buildings, operations and maintenance sustainable.
- Advocating at various government levels on sustainability issues.
- Leading by example.

This chapter addresses City policies and implementation steps related to City operations, global warming, climate change, resource conservation and air quality, renewable energy, sustainable sites, the urban tree canopy, water resource, noise, indoor environmental quality, and social equity.

City Operations

The City of Minneapolis is committed to sustainable practices. With over 3,600 employees, 150 facilities, 1,063 miles of roadways, 832 miles of sanitary sewers, 556 miles of storm drains and 1,000 miles of water mains, the City is in a unique position to implement and influence approaches to achieving a balance between the environment, the economy and the community. That unique position is reinforced by its direct purchasing impacts and indirect impact of transferring its knowledge to others. As early adopters, the City can demonstrate and showcase applications of new technologies, such as green roofs, rain gardens, porous-pavement surfaces, and the use of environmentally friendly cleaning products.

Policy 6.1: Integrate environmental, social and economic goals into decision-making processes at all levels.

- 6.1.1 Increase usage of renewable energy systems consistent with adopted city policy.

- 6.1.2 Promote efficient use of natural and limited resources when renovating, constructing or operating city facilities and in general city operations.
- 6.1.3 Apply the city-adopted [US Green Building Council's LEED \(Leadership in Energy and Environmental Design\) standards](#) and the [State of Minnesota Sustainable Building B3 Guidelines](#) as tools for design and decision-making when developing, renovating or operating city facilities.
- 6.1.4 Invest in energy efficient heating ventilation and air conditioning (HVAC) and lighting systems, controls and sensors that minimize emission and noise, use of renewable fuel sources, and utilization of best available control technology to minimize particulate emissions.
- 6.1.5 Continue to modify and improve processes to replace chemicals, vehicles, equipment, and fuels with safer alternatives to reduce emissions, noise and other pollutants resulting from city operations.

Global Warming, Climate Change, Resource Conservation, and Air Quality

The City of Minneapolis is in attainment for air quality through the Federal Clean Air Act. This is due in part to the geographic location of the city, and in part to the range of businesses located in the city. Air quality in Minneapolis is among the best of large urban areas in the country. Most of outdoor environmental pollution stems from the use of fossil fuels by vehicles and the energy sources for heating, cooling and powering buildings. Making conscious decisions and lifestyle choices can help to reduce demands on natural resources so that air quality in Minneapolis remains among the best of large urban areas in the country.

Policy 6.2: Protect and enhance air quality and reduce greenhouse gas emissions.

- 6.2.1 Work at the state and regional level to encourage analysis and implementation of sustainable energy generation within the city, including energy produced by renewable fuels, co-generation facilities, and clean alternative fuels.
- 6.2.2 Support energy efficiency and resource conservation.
- 6.2.3 Minimize carbon dioxide and other emissions and other impacts from small gasoline engines and recreational equipment.



Alternative modes of travel, such as bicycling, can contribute to air quality improvements.

- 6.2.4 Endorse the use of alternative modes of transportation such as walking, bicycles, public transit, car and bike share programs, and carpools, as well as promote alternative work schedules.
- 6.2.5 Implement traffic control measures to minimize delay and vehicle emissions on roadways.
- 6.2.6 Support the development of multi-modal transportation networks.
- 6.2.7 Promote the development of sustainable site and building standards.

Energy conservation practices can minimize impacts on global climate change, reduce dependency on non-renewable fossil fuels and minimize the need for utility companies to build additional coal and nuclear energy plants. Well over half of the nation's energy demands are used to heat, cool and light the spaces where people live and work. Encouraging everyone to participate in state and national initiatives such as local utility sponsored energy design programs can help implement energy efficient systems, appliances and fixtures, and protect natural resources.

Policy 6.3: Encourage sustainable design practices in the planning, construction and operations of new developments, large additions and building renovations.

- 6.3.1 Encourage developments to implement sustainable design practices during programming and design, deconstruction and construction, and operations and maintenance.
- 6.3.2 Ensure that developments use storm water BMPs (Best Management Practices).
- 6.3.3 Encourage developments to use life-cycle assessments, commissioning and post-occupancy evaluations.
- 6.3.4 Encourage developments to utilize renewable energy sources, including solar, wind, geothermal, hydro, and biomass.
- 6.3.5 Support the development of sustainable site and building standards on a citywide basis.
- 6.3.6 Incentivize compliance with adopted city sustainability standards in projects that receive financial assistance from the City.



Rain gardens can provide effective stormwater management functions and contribute to the visual appeal of an area.

- 6.3.7 Inform developers, businesses, and residents about utility-sponsored energy conservation programs, and sustainable design deconstruction and construction practices.
- 6.3.8 Promote businesses, goods and services that implement an environmentally friendly reuse and recycling system.
- 6.3.9 Develop regulations to further reduce the heat island effect in the city by increasing green urban spaces for parks and open spaces, including shading of parking lots, sidewalks and other impervious surfaces, promoting installation and maintenance of green roofs and utilization of highly reflective roofing and paving materials.
- 6.3.10 Promote climate sensitive site and building design practices.

Renewable energy sources such as biomass, geothermal, solar, water and wind are from regenerative natural energy sources and are constant in supply over time. The City of Minneapolis, in partnership with utilities, state and federal agencies, businesses and citizens, can utilize renewable energy sources readily available in the area to promote sustainable living.

Policy 6.4: Expand the use of renewable energy.

- 6.4.1 Partner with others, including research institutions, to explore the feasibility of alternative energy sources for Minneapolis government operations, and for use by residents and businesses.
- 6.4.2 Encourage use and generation of renewable energy systems in the city.
- 6.4.3 Educate and inform residents and business about opportunities to increase utilization of renewable energy sources.
- 6.4.4 Take measures for the protection and development of access to sources of renewable energies, especially solar and wind power.



Hydro-electric power is a renewable energy resource. Hydro-electric generation does not use fossil fuels that emit greenhouse gasses.

Sustainable Sites

Minneapolis will strive to become a sustainable place to live and conduct business by supporting the efficient use of land through appropriate distribution of density and

transit, preservation initiatives, environmental remediation, effective policy, education, and beautification. Land use decisions focused around sustainability are essential if the city is to conserve its resources and preserve its assets for future generations. Furthermore, education, incentives and regulations all have a critical role in improving the quality of the present and future urban environment.

Policy 6.5: Support the efficient use of land and development that reduces the reliance on fossil fuels.

- 6.5.1 Support transit-oriented development, mixed-use projects and other multi-modal development patterns.
- 6.5.2 Encourage development projects that maximize the development capacity of the site while at the same time reducing non-renewable energy needs.
- 6.5.3 City participation in a project (land assembly, financing, environmental remediation) shall favor projects that maximize the development capacity of the site.
- 6.5.4 Educate citizens about the environmental, economic, and equity implications of land use and transportation decisions, and enlist the partnership of citizen and advocacy organizations in moving toward more sustainable patterns of development.



The Midtown Exchange Building was originally the site of a Sears store. There are now offices, commercial businesses, ethnic restaurants, and residences.

Maximizing energy efficiency and adopting policies that influence sustainable lifestyle choices and conservation practices are some of the first steps a community can take in educating individuals and communities about the costs of wasteful resource use. The City has taken steps to lead this cause by implementing a sustainability plan which institutes policies on a citywide basis.

Policy 6.6: Advocate for federal, state, metropolitan and county policies and programs that support sustainable development.

- 6.6.1 Support finance programs and tax policies that foster intensive redevelopment projects in central cities.
- 6.6.2 Support policy changes that help to minimize environmental externalities and that shift the public infrastructure costs associated with inefficient development patterns that increase urban sprawl to the responsible

developers and governments.

Rehabilitation of contaminated land is crucial for safe and productive land use. It is also important to plan for present and future pollution prevention and remediation. City policies must be devised to ensure that future businesses are not contaminating or having adverse impacts on an individual site or community as a whole.

Policy 6.7: Preserve and protect land from pollution and encourage the remediation of contaminated sites.

- 6.7.1 Support the environmental cleanup and remediation of brownfields and other contaminated sites to enhance the availability of urban land for redevelopment.
- 6.7.2 Support implementation controls that prevent and minimize toxic releases and waste disposal.
- 6.7.3 Require projects that receive city assistance to disclose efforts to minimize toxic releases and waste disposal.
- 6.7.4 Educate and inform developers on the use of nontoxic, safe products and materials, and the impact of toxic releases and waste disposal.

Urban Tree Canopy

An important aspect of overall improvements to the quality of the air, water, neighborhoods and public spaces is the presence of mature, healthy trees, gardens, and wetlands in the city. The urban forest serves many purposes and provides many economic and ecological benefits. Strategic tree planting on a citywide basis is a proven complementary approach to environmental conservation and urban living.

Policy 6.8: Encourage a healthy thriving urban tree canopy and other desirable forms of vegetation.

- 6.8.1 Enforce and educate the public on the City’s Urban Forest Policy.
- 6.8.2 Achieve, at a minimum, no net loss of the urban tree canopy by maintaining and preserving existing trees and planting new trees on public and private property.



Despite years of losing trees to disease, there are over 220,000 trees in Minneapolis; tree lined streets are common throughout the City of Minneapolis.

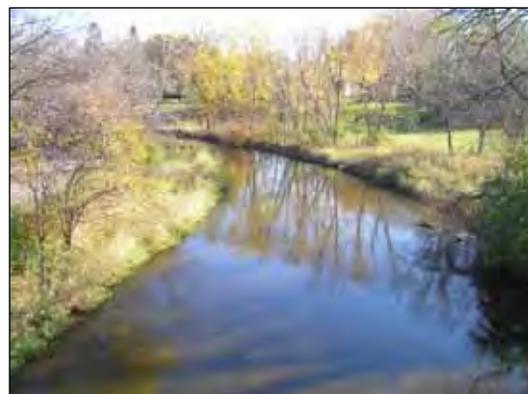
- 6.8.3 The city’s built infrastructure will support a healthy thriving urban tree canopy through street and sidewalk guidelines and other means.
- 6.8.4 Protect the city’s critical ecosystems.
- 6.8.5 Continue to invest in the health of the urban forest and other vegetated areas by avoiding monocultures and planting a variety of native and other hardy, non-invasive species.
- 6.8.6 Continue to recognize the functions and values of the urban forest and tree canopy which provide many economic and ecological benefits such as reducing storm water runoff and pollution, absorbing air pollutants, providing wildlife habitats, absorbing carbon dioxide, providing shade, stabilizing soils, increasing property values and increasing energy savings.

Water Resource Management

Minneapolis has a tradition of valuing its lakes, streams, wetlands and the Mississippi River. As it is defined by its surface waters, the city manages its water resources to maintain the quality of life of the city’s residents, support the city’s continued economic prosperity, and address emerging and existing regulatory challenges. The health and vitality of the city’s lakes, urban streams and groundwater are linked to how each resident and business owner manages their property as well as to how the City manages its infrastructure systems. Through integrated efforts on a watershed scale, the City is working toward a future free from flooding and water quality degradation.

Policy 6.9: Be a steward of clean water by protecting and enhancing its surface and groundwater systems.

- 6.9.1 Continue to invest in maintaining excellent water quality for consumption, and ensure delivery of safe drinking water to customers.
- 6.9.2 Continue to implement the city’s floodplain and shoreland Ordinances, and the Mississippi River Critical Area plan.
- 6.9.3 Accomplish the guiding principles of the city’s [Local Surface Water Management Plan](#), which are to protect people, property and the environment; maintain and enhance infrastructure; provide cost-effective services in a sustainable



Open space and parks provide places for recreation and also serve the environment.

manner; meet or surpass regulatory requirements; educate and engage the public and stakeholders, and enhance livability and safety.

- 6.9.4 Encourage consumer use of the municipal water supply to reduce reliance on bottled water and the waste stream water bottles generate.
- 6.9.5 Support pollution prevention programs as an important first step in maintaining a healthy physical environment.
- 6.9.6 Manage pollutants at the source in order to prevent degradation of water bodies.
- 6.9.7 Preserve and enhance the strategic placement of pervious surfaces within the city to decrease the rate and volume of stormwater runoff.
- 6.9.8 Eliminate combined sewer overflows and reduce the volume of stormwater that inflows into sanitary sewers to reduce the total volume for treatment.

Solid Waste and Recycling

Businesses and individuals are making tremendous inroads in recycling and reducing the solid waste that goes to area landfills. Through its own example, and by educating residents, workers, and business owners about best practices and best available technologies in waste management, the city will encourage others to reduce waste whenever possible.

Policy 6.10: Coordinate and operate waste management programs that focus on reducing, reusing and recycling solid waste prior to disposal.

- 6.10.1 Operate waste management practices consistent with the state approved waste management hierarchy.
- 6.10.2 Follow source reduction criteria in all City operations for new construction, demolition and renovation activities.
- 6.10.3 Educate citizens about the risks associated with using products that generate hazardous waste.
- 6.10.4 Minimize use of products in City operations that generate hazardous waste.
- 6.10.5 Strongly emphasize and promote reduction, reuse and recycling, including the purchase of recycled materials in residential, business and industrial and government operations and building practices.



- 6.10.6 Encourage deconstruction and construction waste management plans in development proposals and projects to minimize the amount of waste going to landfills and promote sustainable building practices.
- 6.10.7 Encourage reuse of existing materials or use of products with recycled content materials for city purposes, including new construction or renovation projects.
- 6.10.8 Encourage standards for product purchase decisions based on selecting products that have high post-consumer and pre-consumer recycled material content, long product life expectancy, and product life cycles with minimal environmental impacts, and high potential for reuse or recycling.
- 6.10.9 Educate residents and property owners about the benefits of recycling, and of properly composting and reusing yard wastes and organic plant-based food waste.
- 6.10.10 Provide seasonal yard waste collection services from spring through fall.
- 6.10.11 Assign waste that cannot be reused, recycled or composted to facilities that recover some of the energy value in garbage.
- 6.10.12 Use landfilling as a last alternative for waste disposal.



Composting bins for yard waste and free mulch are available at sites across the city. Mulch is better for controlling weeds in flower beds than chemicals, which can run off into storm drains and leach into groundwater sources

Noise

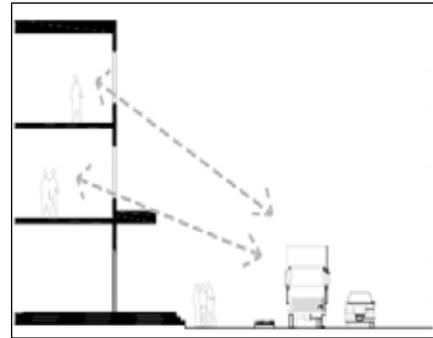
Numerous sources of noise are found throughout the City of Minneapolis, ranging from household appliances and lawn mowers to roadway noise and airplanes. Noise pollution can affect human health and community livability. Noise pollution can be mitigated through awareness and education, better building design, regulations such as noise mitigation requirements along freeways and highways, and enforcement.

Policy 6.11: Take measures to reduce noise pollution at point and non-point sources.

- 6.11.1 Work with other governmental units, owners and developers to identify and implement ways to buffer and reduce noise originating from businesses, industries, railroads and rail corridors, freeways and highways, and airports.
- 6.11.2 Encourage acoustic attenuation in all new construction, large additions and renovations to reduce interior noise level transfers by enhancing acoustical

performance from interior to interior and exterior to interior point sources.

- 6.11.3 Seek stricter enforcement of noise standards for businesses, vehicles (especially motorcycles, trucks and buses), small engines (leaf blowers, lawnmowers, snow blowers and chain saws) and sound systems.

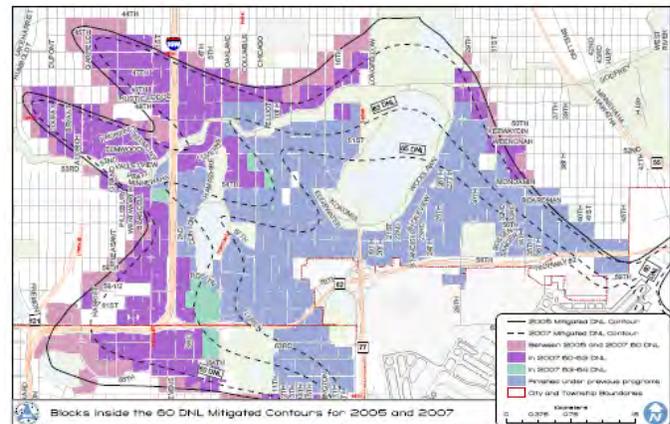


Acoustic attenuation is used to reduce interior noise levels.

Operational activities of the Minneapolis-St. Paul (MSP) International Airport conflict with neighborhoods located in its vicinity. These neighborhoods were developed before the airport, thus there are few preventive measures available to ensure a greater degree of land use compatibility with the airport. The city has and will continue to aggressively advocate for corrective measures to mitigate noise impacts on residents.

Policy 6.12: Minneapolis recognizes the economic value of the Minneapolis-St. Paul (MSP) International Airport but will advocate for measures to reduce its noise impacts.

- 6.12.1 Advocate for alternative airport strategies to meet increased demand and continue opposition to any future development of a third parallel runway at MSP.



Map showing the 60 DNL line

- 6.12.2 Advocate for the extension of the sound insulation program to the Minneapolis Airport Commission's (MAC) 60 DNL line.

- 6.12.3 Advocate for conversion of the entire MSP fleet to manufactured Stage 3 (reduced noise impact) aircraft or better by the year 2015.

- 6.12.4 Advocate for maximizing use of the north-south runway, 17-35 as a more equitable noise distribution measure.

- 6.12.5 Advocate for operational measures that minimize noise and other environmental impacts on neighboring communities and for procedures

which equitably distribute noise in nearby communities.

- 6.12.6 Advocate for measures and state participation which allow for a greater degree of community enhancement, stabilization and redevelopment in the airport influence area.
- 6.12.7 Continue working with other neighboring communities to advocate measures to reduce the total noise footprint at MSP.

Indoor Environmental Quality

A sense of place is influenced in the design of the homes people live in and buildings they occupy. Indoor environmental quality can have a major affect on the health, well-being and productivity of the occupants of a building since a majority of the population spends at least two thirds of their time indoors. Incorporating sustainable design practices achieves optimal indoor environmental quality and ensures the wellness of all occupants.

Policy 6.13: Promote optimal indoor environmental quality.

- 6.13.1 Provide adequate ventilation and optimal thermal comfort.
- 6.13.2 Use environmentally friendly materials, products, and finishes that contain low or no VOCs (volatile organic compounds) and no added urea-formaldehyde.
- 6.13.3 Minimize sources and concentrations of pollution such as air pollutants, noise, hazardous particulates and chemical pollutants.
- 6.13.4 Provide access to natural daylight and views.
- 6.13.5 Use environmentally friendly cleaning and maintenance products.
- 6.13.6 Promote the use of environmentally friendly operations and maintenance plans.
- 6.13.7 Continue to prohibit smoking in public places and in places of work.



Natural light fills the interior of the Pillsbury Center.

Social Equity

Minneapolis will demonstrate its commitment to a safe, sustainable environment by ensuring equal opportunity for human development and growth, achievement of

human potential, and the choice for all residents to live an environmentally sustainable lifestyle. Everyone will have access to all of the city's services, resources, natural amenities, transportation, education and opportunity to ensure social equity, community engagement, development and growth that enhances the fabric of a sustainable city. Through promoting and protecting the civil rights of the citizens of Minneapolis, sources of environmental pollution will not be concentrated in neighborhoods of one race or ethnicity, near sensitive populations, or in economically disadvantaged areas. Social sustainability is an essential component to the success of the city. It is connected to political, human and community development that promotes diversity and cultural and historical connectedness to the natural environment.

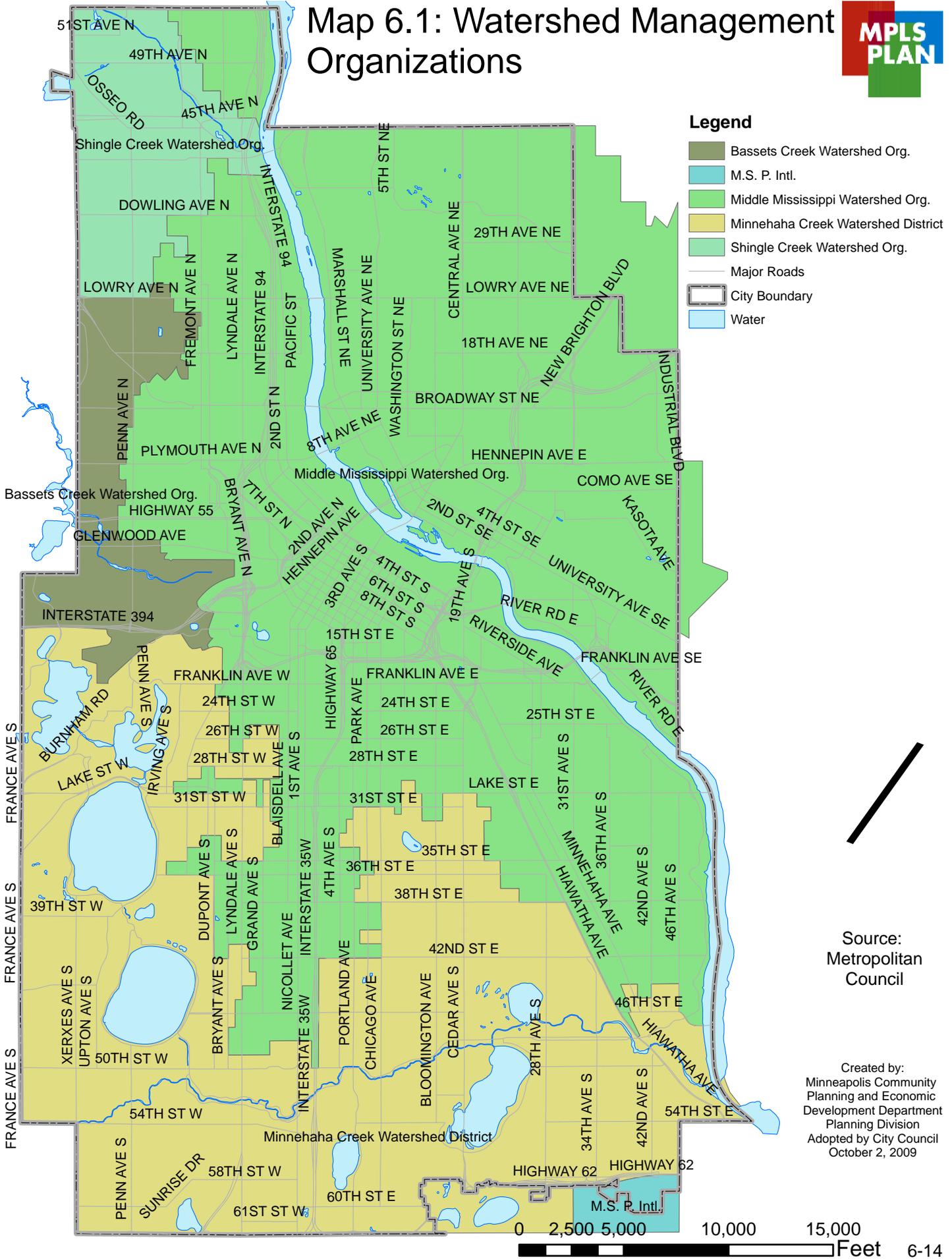
Policy 6.14: Preserve and enhance the quality of the urban environment to promote sustainable lifestyles for its citizens.

- 6.14.1 Promote environmental stewardship and awareness through education and outreach.
- 6.14.2 Consider the needs of the surrounding population and sensitive populations when engaging in city practices.
- 6.14.3 Work with builders and building managers to minimize nuisance conditions.

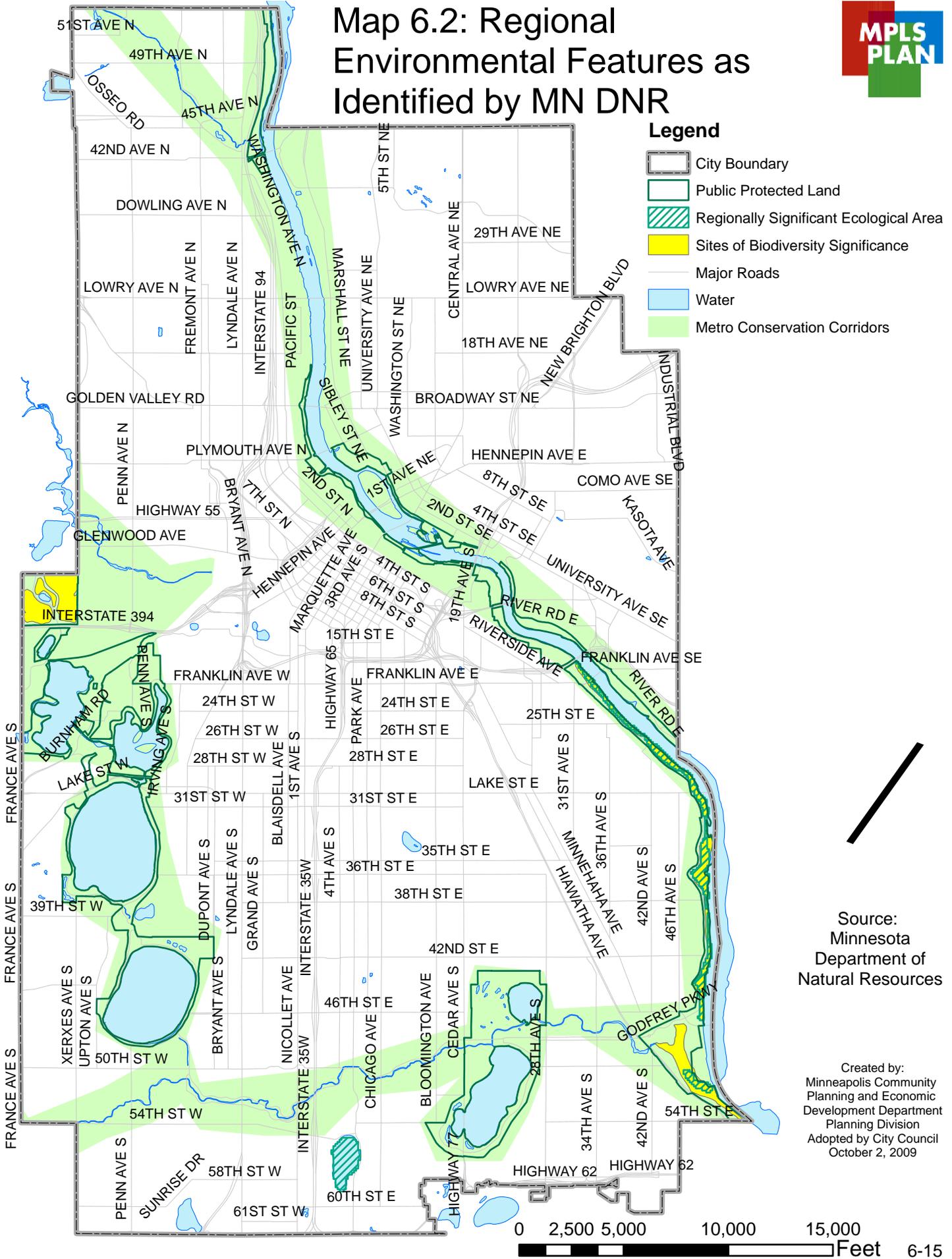
Policy 6.15: Support local businesses, goods and services to promote economic growth, to preserve natural resources, and to minimize of the carbon footprint.

- 6.15.1 Invest in local businesses, goods and services.
- 6.15.2 Support the growth and development of local businesses.

Map 6.1: Watershed Management Organizations



Map 6.2: Regional Environmental Features as Identified by MN DNR

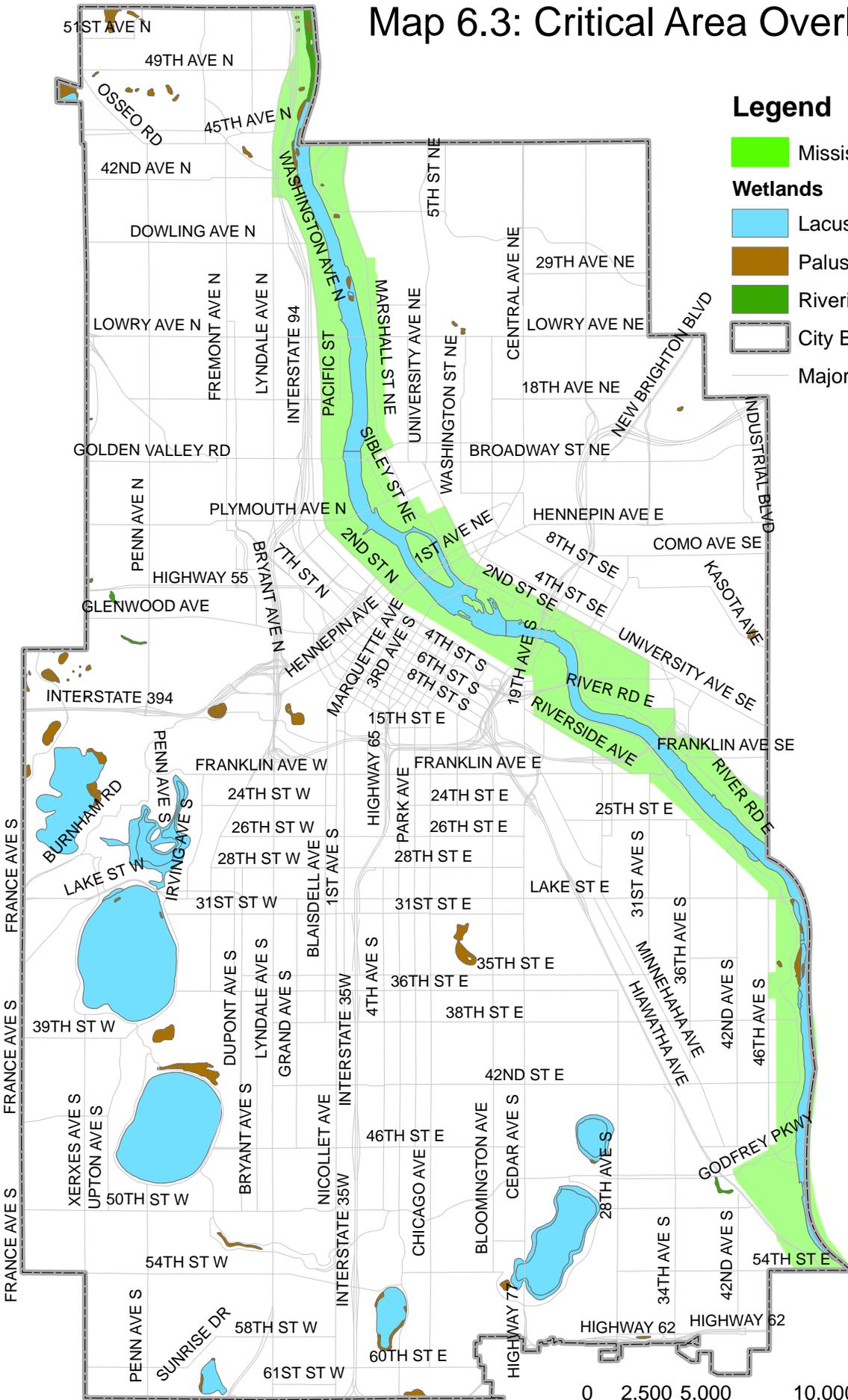


Map 6.3: Critical Area Overlay



Legend

- Mississippi River Critical Area
- Wetlands**
- Lacustrine wetland
- Palustrine wetland
- Riverine wetland
- City Boundary
- Major Roads



Source:
City of
Minneapolis

Created by:
Minneapolis Community
Planning and Economic
Development Department
Planning Division
Adopted by City Council
October 2, 2009

0 2,500 5,000 10,000 15,000

Feet