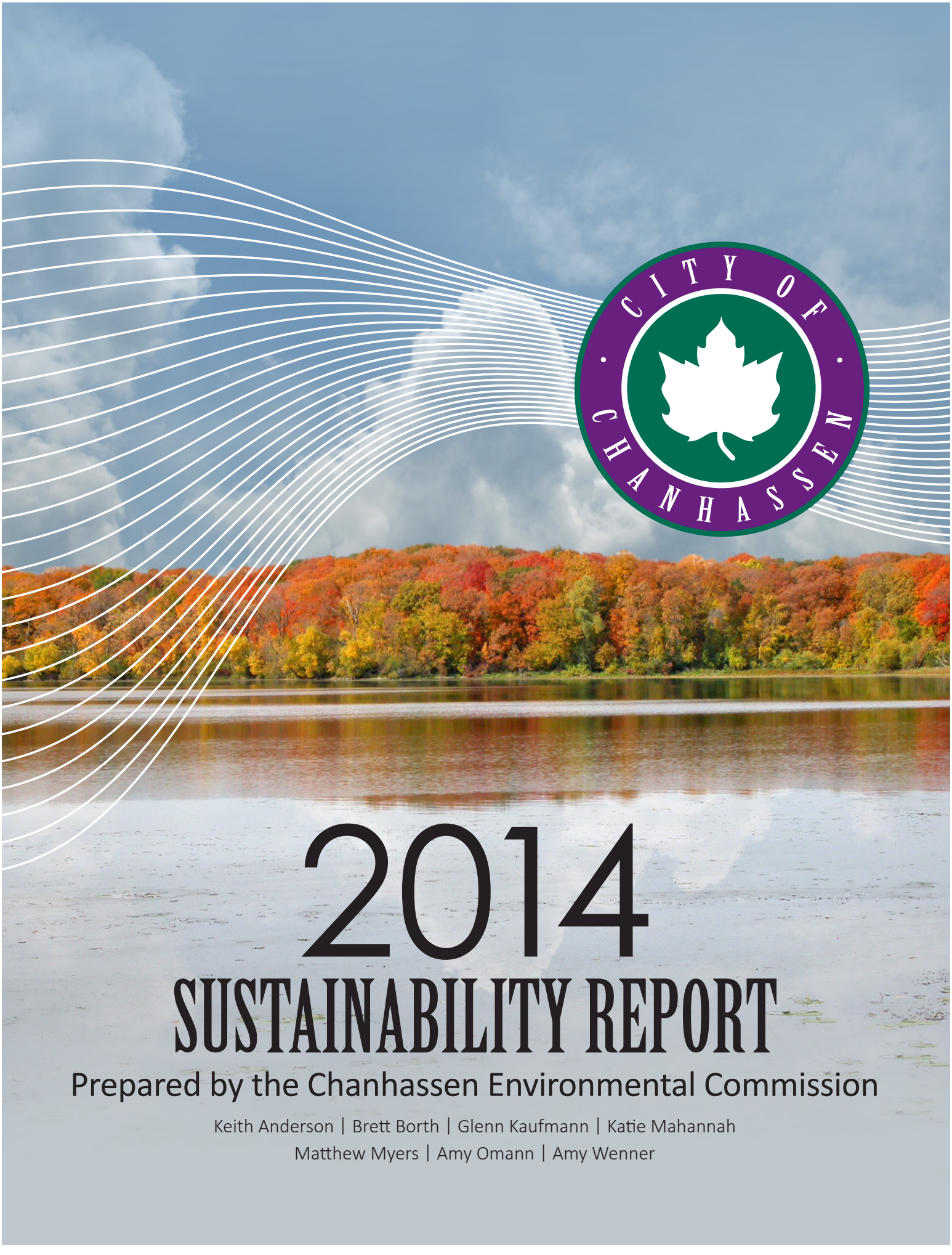

2014
SUSTAINABILITY REPORT

Prepared by the Chanhassen Environmental Commission

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2014 Chanhassen SUSTAINABILITY REPORT

The City of Chanhassen is committed to protecting its natural resources now and into the future. To ensure the continuation of this effort, the city strives to develop sound policies, take advantage of new technologies, and engage the community in environmental topics. Sustainable management of our natural resources is endeavored through protection, conservation and best management practices.

In 2011, the Chanhassen Environmental Commission was interested in knowing if our city was growing and functioning in a sustainable fashion. This report is the result of that curiosity. The City Council assigned the commission four key focus areas: Surface Water Quality, Stormwater, Water Conservation and Urban Forestry. In each of these areas the group investigated the current goals established by the city's comprehensive plan. Then they selected the three most important goals from each area. Through interviews with city employees, they determined the current status of those goals along with trends and improvements or challenges and any recent activities. Ultimately, the commission documented a baseline inventory for each of the topic areas.

This 2014 version of the Sustainability Report includes the ongoing goals and provides annual updates and recent activities. Information about these activities was collected from interviews with City staff and publicly available information. The report achieves the goal of educating Chanhassen residents in the Environmental Commission's target areas.

SURFACE WATER

Goals

The initial goals for surface water were based primarily on maintaining and improving water quality and have largely been met. New priorities are being developed to address changes in land use, aging of infrastructure, new data on surface water resources, and changes in watershed science. The city will continue to monitor and improve water quality of lakes and streams and manage aquatic vegetation.

Community Resources

Chanhassen contains 356 wetlands, 4 creeks, and 12 lakes, 7 of which are recreational and 5 that are natural environment lakes.

The city is also home to a rare and unique calcareous fen, a state protected Scientific and Natural Area. Efforts to preserve all of these important natural resources require partnerships between the city, county, watershed districts, Met Council, MNDNR, and MPCA.

Portions of four major watersheds exist within the city: Carver County Watershed (1.9%), Lower Minnesota River Watershed (8.4%), Minnehaha Creek Watershed (18.8%), and Riley-Purgatory-Bluff Creek Watershed (70.9%).

Over 26% of Chanhassen's 24 square miles are covered by lakes, streams, ponds and wetlands. Water quality, lakeshore preservation, lake level variability, and flood management are some of the important issues that impact the quality of life enjoyed by all residents. Maintaining, protecting and improving water resources is a high priority for the city which is currently preparing its third Surface Water Management Plan (SWMP). The plan outlines goals for managing these resources and implementation recommendations to achieve them.

Recent City and Community Activities

- The City continues to monitor its waters for temperature, dissolved oxygen, pH, and turbidity through monitoring stations, grab sampling, and the Citizen Assisted Lake Monitoring Program.
- A spent lime treatment system was installed on the eastern side of Lake Lucy after a 2012 assessment reported both Lucy and Ann were negatively impacted by runoff from the surrounding watershed and the release of phosphorus from the sediment (internal loading).
- A wetland restoration project is currently underway on the southwest corner of Lake Susan as a remediation option to help reduce phosphorus levels in the lake, which was added to the Minnesota Pollution Control Agency's (MPCA) impaired waters list for nutrients in 2010.

SURFACE WATER

Get Involved!

We all have a role to play in the management of water resources for the health of our community and for the benefit of wildlife ecosystems that rely on them. Whether through direct use of Chanhassen's many lakes, streams, ponds, and wetlands or through runoff from yards, driveways, and streets, pollutants find their way into the water and degrade these valuable resources.

City Assisted Monitoring Program (CAMP) for lakes:
www.ci.chanhassen.mn.us/index.asp?NID=595

Surface Water Resources page:
www.ci.chanhassen.mn.us/index.aspx?NID=153

Aquatic Invasive Species:
www.ci.chanhassen.mn.us/index.aspx?NID=156

Learning Opportunities:
www.ci.chanhassen.mn.us/index.aspx?NID=558

Landscaping with Native Plants
www.rpbcwd.org/files/4913/9032/3379/Landscaping_with_Native_Plants_reduced_size.pdf

If you own property on a lake, consider shoreline stabilization methods to prevent erosion and to filter runoff:
files.dnr.state.mn.us/publications/waters/shoreline_alterations_riprap.pdf

Monthly tips to keep our water clean
www.rpbcwd.org/monthly-tips/

LakeFinder:
www.dnr.state.mn.us/lakefind/index.html

Recent City and Community Activities cont.

As a result of Bluff Creek being listed as impaired for turbidity in 2002 and for low fish biological scores in 2004, a Total Maximum Daily Load Report and Implementation were finalized and approved. There is a protected natural corridor around the creek and plans are in place to repair culverts and banks.

The city and watershed district are updating their Stormwater Pond Protocol and Prioritization project to identify ponds that may be contributing excessive amounts of phosphorus to our natural water bodies. Once identified, these high risk ponds may be rehabilitated to minimize the impact.

Salinization of waterways from winter salt applications is a major issue in Minnesota, and Chanhassen has upgraded and recalibrated all salt augers on city trucks to use less; five trucks have been outfitted with brine tanks to pre-wet roads before storms.

The watershed district installed aeration systems in Lake Susan and Rice Marsh Lake to increase dissolved oxygen and prevent a fish kill in the winter.

Boat inspections for invasive species continued at Lakes Ann, Lotus and Minnewashta.

Carp harvesting from area lakes continued in 2013. The harvest is a result of an endeavor by Sorenson Labs at the University of Minnesota to minimize populations of this abundant fish and encourage the reestablishment of native plant and fish populations.

Lake level variability can erode shorelines and impact property values. The watershed has installed a data logger at the outlet of Lotus Lake to monitor flow rates in and out of the lake.

Resources

City of Chanhassen "Second Generation Surface Water Management Plan" www.ci.chanhassen.mn.us/index.aspx?NID=588
Bluff Creek TMDL—Turbidity and Fish Biota www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/tmdlprojects/minnesota-river-basin-tmdl/project-bluff-creek-turbidity-and-fish-biota.html
https://mnchanhassen2.civicplus.com/AgendaCenter/ViewFile/Item/103?fileID=82
Lake Lucy & Lake Ann Use Attainability Assessment (UAA) Update, September, 2013:
www.rpbcwd.org/files/7213/8426/4821/LakeLucy_LakeAnn_UAAUpdate_September2013_FINAL.pdf
Lake Susan Use Attainability Assessment (UAA) Update, July 2013: www.rpbcwd.org/files/4013/8426/4706/Lake_Susan_Report_FINALred1.pdf
Riley Purgatory Bluff Creek Watershed District www.rpbcwd.org
Minnehaha Creek Watershed District www.minnehahacreek.org/
Carver County Water Management Organization www.co.carver.mn.us/departments/lws/water_managment.asp
Lower Minnesota River Watershed District www.watersheddistrict.org/index.html

STORMWATER

Goals

The City of Chanhassen strives to ensure that development projects minimize soil erosion, sedimentation, and stormwater runoff. City personnel manage this task by maintaining primary responsibility for managing water resources at the local level but continue coordination with other agencies and organizations. In an effort to engage the public, the city provides information and educational resources to improve knowledge and promote an active public role in managing water resources.

Resources

Metro Blooms
www.metroblooms.org/workshops.php

Bluff Creek Watershed Total Daily Load Implementation Plan
www.pca.state.mn.us/index.php/viewdocument.html?gid=19803

Minnesota Pollution Control Agency
www.pca.state.mn.us

Clean Water Minnesota
www.cleanwatermn.org

At large drops in the stream where fish passage is not possible, adding a fish ladder would encourage fish to reach the upper stream and restore a natural cycle.

Stormwater management is crucial to preserving Chanhassen's natural environment and protecting our surface water resources. Stormwater runoff is rain and snow melt that runs off surfaces such as rooftops, paved streets, highways, parking lots and compacted lawns. As water passes over these surfaces, it can pick up pollutants such as soil, fertilizers, herbicides, trash and pet waste. If not treated properly, this polluted water can flow into a local stream, lake, or wetland causing degradation of the resource. Stormwater mitigation seeks to reduce, control, and prevent stormwater runoff through a variety of strategies. Open land in Chanhassen continues to develop and the city looks for every opportunity to incorporate best management practices that minimize the volume and impact of water runoff as well as protect water quality in surface waters.

Recent City and Community Activities

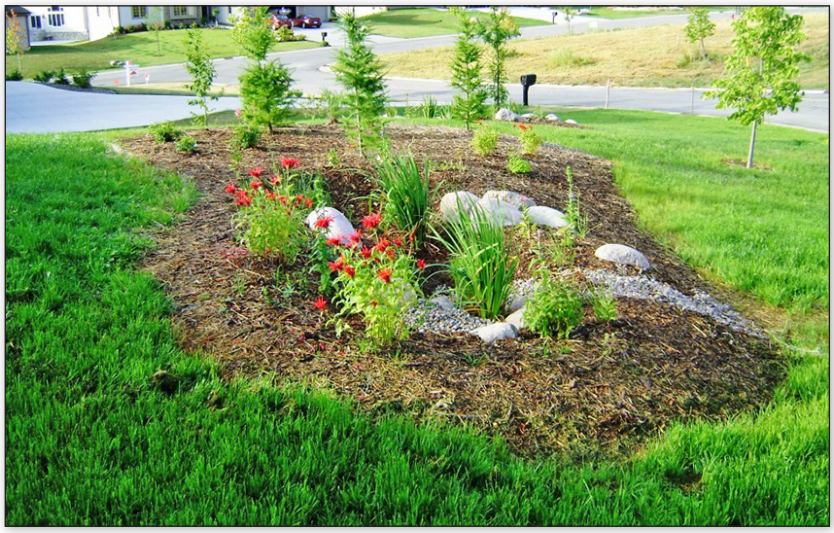
City staff as well as county representatives monitor erosion control measures required at all construction sites. Infractions are dealt with as quickly as possible in order to minimize any impact from runoff.

STORMWATER

Get Involved!

There are opportunities for residents of Chanhassen to get involved with stormwater management. With any road construction project, city staff will continue to educate neighborhood groups about Low Impact Development (LID) installation opportunities and their benefits, such as rain gardens and rain barrels. Residents are encouraged to learn more about incorporating raingardens into their yards. The city also partners with Metro Blooms to provide education on environmentally sound gardening and landscape practices. Additionally, community volunteers continue to install storm drain markers on neighborhood storm drains. Storm drains can lead directly to a city water resource. Marking the drains help raise awareness that anything carried by these storm drains can impact our natural resources.

These highly visible storm drain markers are a first step in public education in stormwater pollution prevention. Rainbarrels and composters can aid in stormwater runoff prevention.



Recent City & Community Activities cont.

A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of pollutant that a waterbody can receive and still safely meet water quality standards. A TMDL management plan for Bluff Creek was approved by the Minnesota Pollution Control Agency and adopted by the city in July 2013. Part of the management plan includes ravine stabilization which is currently underway for one of the ravines in Bluff Creek. In the future, the city plans to continue the same repair plan for other ravines.

A new and exciting plan is also underway to introduce a fish ladder in an area of the creek where passage for fish from the lower to upper section is currently not possible. Once installed, the ladder would provide passage for fish to reach the upper stream. As this occurs, habitat can begin to be restored and improve the quality and environment of Bluff Creek.

The city utilizes cutting edge technologies in treating stormwater runoff. These technologies, developed at the St. Anthony Falls Laboratory (SAFL) at the University of Minnesota, are well suited for northern climates and represent the best management practices of our time. During street reconstruction in the Greenwood Shores neighborhood, the city utilized manhole baffles developed by SAFL to catch sediment inflow from stormwater. The“Minnesota Filter” Iron Filing Filtration System was installed during street upgrades in the Lake Minnewashta watershed. This system should reduce phosphorus loading into the lake by 76%. In 2014 additional filtration projects are to be included in new road construction projects, such as the Bandimere Heights and Minnewashta Shores neighborhoods.

WATER CONSERVATION

Goals

Each year, as presented in the city's comprehensive plan, the city shall review, develop and implement the current water conservation strategies and practices suitable for our community. The city continues to endorse and promote water conservation through the dissemination of educational materials to city residents.

Resources

City of Chanhassen
"2030 Comprehensive Plan,"
Chapter 9: Water
www.ci.chanhassen.mn.us/DocumentCenter/Home/View/134

Metropolitan Council
Water Supply Planning
www.metrocouncil.org/Wastewater-Water/Planning/Water-Supply-Planning.aspx?source=child

WaterSense Tips to Save Water & Money
www.epa.gov/watersense/our_water/start_saving.html

WaterWise
CITY OF CHANHASSEN

Chanhassen's water distribution system is comprised of 13 wells, 3 reservoirs and two water treatment facilities. The distribution system also contains over 148 miles of water main that serves over 7,000 residential and nearly 300 commercial accounts daily. Pipelines and physical facilities, such as wells and reservoirs, are geographically distributed throughout the city. Chanhassen will be adding a new well this year to supplement our city's current water supply.

The Metropolitan Council has found that our region's current approach to water supply is not sustainable. Aquifers are being depleted; lakes, streams, and wetlands are being adversely affected; and in some areas, groundwater levels have declined by as much as 40 feet, since the 1970s. Today in the seven-county region, surface water taken from the Mississippi River provides 30% of the water used in the region. The rest of the metro area, including Chanhassen, relies on pumping groundwater through municipal and private wells to supply the remaining 70%. The effects of aquifer drawdown are visible in our region already and continued unsustainable use will impact generations to come.

Aquifer drawdown is larger than just Chanhassen. It affects the entire metropolitan area. Municipalities in the region are encouraged to promote Water Conservation and Water Conservation Education as the best economical action to manage fresh water as a sustainable resource for current and future human demand.

Recent City and Community Activities

- The city has a tiered billing system in place to incent water conservation. City code limits the use of the city water supply system for lawn and garden sprinkling, irrigation, car washing or other nonpotable uses to odd-even days.
- The City has extensive tree preservation requirements for new subdivisions as well as stringent planting requirements for new site plans. The use of trees in site landscaping assists in the reduction of turf evapotranspiration.
- Newly installed irrigation systems are required to include a rain sensor as part of their operation. Rain sensors signal irrigation systems not to water during wet periods.
- The City offers free toilet leak test kits to homeowners. Toilet leaks can account for as much as 7,000 gallons of wasted water per month.

WATER CONSERVATION

Source: www.nelsonmandelabav.gov.za/Content.aspx?obilD=419

Recent City and Community Activities cont.

- Chanhassen offers irrigation system audits, free of charge, to Homeowners' Associations, businesses, and other organizations as a way to promote water-saving best management practices. The audits are performed by a WaterSense-certified city utility department employee.
- Chanhassen partners with the U.S. Environmental Protection Agency in their WaterSense program. This program seeks to protect the future of our nation's water supply by offering people a simple way to use less water with water-efficient products and services.
- The city provides education and promotes water conservation and stewardship through various local municipal publications. The city utilizes Carver County's educational programming to meet its state permit requirements.

URBAN FORESTRY

Downtown Chanhassen, 1954

Downtown Chanhassen, 2001

Goals

The city's Comprehensive Plan set forth the goal of maintaining a healthy and diverse urban forest. To that end, the city continues to plant a diverse urban forest which helps reduce the impact of pests and disease outbreaks, manage invasive species that threaten our urban forest and increase canopy coverage in the community. Tree cover reduces energy costs, water use and stormwater runoff while also increasing property values and community aesthetics.

Around 30% of Chanhassen's 24 square miles are covered by trees, more than the city's water resources. Urban trees are a renewable resource that are often overlooked when it comes to urban infrastructure, but Chanhassen recognizes the important role that trees play in the health and livability of our community. Trees provide a significant cost savings to the city in terms of energy use, water consumption and stormwater mitigation. It's been documented that a single tree can retain up to 100 gallons of stormwater during an event and trees can reduce winter and summer energy bills by up to 12%. In a community of over 20,000, these savings add up.

Threats to our urban forest come in many forms. From tree removal for development to tree fatalities due to disease, pests or environmental conditions, our urban forest is under constant attack. City staff and homeowners work hard to insure that the trees in our community are well cared for and that new trees are added on a continual basis. The most recent threat is the Emerald Ash Borer (EAB). All the hard work can be wiped out in a few short years due to this introduced beetle that does irreparable harm to ash trees. The adult beetles nibble on ash foliage but cause little damage. The larvae (the immature stage) feed on the inner bark of ash trees, disrupting the tree's ability to transport water and nutrients. EAB infestations have cleared major cities of their urban forest. It is not a question if EAB will infest Chanhassen, but when. The City has started measures to lessen the impact. A city-wide public tree inventory has been completed and annual plantings focus on replacing ash trees with a diversity of species. As part of the city's EAB management, healthy ash trees will be identified for chemical treatment to protect them from infestation.

URBAN FORESTRY

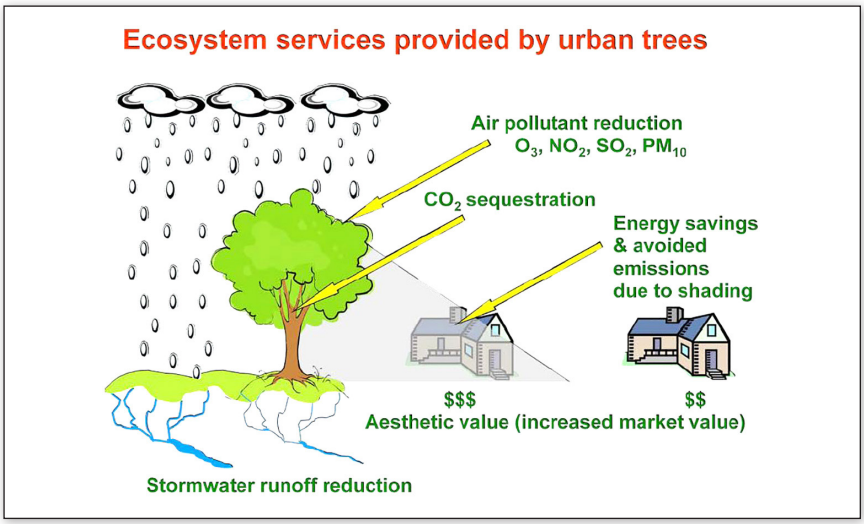
What can homeowners do?

Don't move ash wood in Minnesota, including firewood and cut trees. Firewood certified by the MDA is ok to use anywhere.

Decide on treatment options for the ash trees in your yard. Options include preventative chemical treatment or removal.

Become familiar with the symptoms of EAB. Research them at *http://www.emeraldashborer.info*

If you suspect your trees may have Emerald Ash Borer (EAB), contact Environmental Resources Specialist Jill Sinclair at jsinclair@ci.chanhassen.mn.us



Recent City and Community Activities

- Annual Arbor Day tree planting: The Environmental Commission, city staff and numerous community groups gather on the first Saturday in May to plant trees in city parks.
- Annual public tree planting: The city annually plants and replaces boulevard trees throughout the city.
- Buckthorn symposium: In February, the city hosted a symposium on how to effectively manage buckthorn. The day-long event had over 80 attendees from municipalities and organizations from across the state.
- Ongoing invasive species removal on public property: The city manages nearly 100 acres of forested public property for invasive species such as buckthorn and garlic mustard.
- EAB inspections, diseased tree inspections: The city continues to monitor public and private trees for the first appearance of EAB. In an ongoing effort to control widespread diseases, the city responds to resident reports of Dutch elm disease and oak wilt.
- Tree coupons: In partnership with local nurseries, the city offers discounts to residents on purchasing trees for their yards.
- As part of mitigation efforts to reduce the impact of EAB, the city preemptively removes and replaces ash trees at homeowner's request in conjunction with street reconstruction projects.
- The city is currently developing a management plan/policy for EAB.
- For 18 years, Chanhassen has been recognized by the Arbor Day Foundation as a Tree City USA for its commitment to proper tree care, planting, protection and planning.

2014 ARBOR DAY

Poster Contest Winner: Emily, St. Huberts School