City of Grand Rapids
Urban Forestry Plan
March 2009

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City of Grand Rapids
Urban Forestry Plan
Contents

Executive Summary

Grand Rapids' urban forest offers significant economic, environmental and quality of life benefits to our community. A canopy of 85,000 to 100,000 public trees beautifies our parks, streets, and neighborhoods. Trees also enhance property values, reduce storm water runoff, remove pollutants and carbon dioxide from the air, and save energy costs.

As Grand Rapids strives to create a more sustainable community, we need to manage our urban forest as a key green infrastructure investment. With a present canopy cover of 34.6%, well within reach of the 40% canopy target recommended by American Forests, we have a solid foundation on which to build.

Critical issues facing the urban forest in Grand Rapids include canopy threats such as development, invasive species, and diseases. In addition, insufficient data about the City's public trees, inadequate Forestry Division funding and staffing, lack of community support and involvement, and the current economic climate challenge our capacity to manage this resource adequately.

Addressing these critical issues will require taking advantage of opportunities, including leveraging the growing awareness of and interest in environmental issues, integrating urban forest issues with key City priorities such as Green Grand Rapids, and involving new partners, including residents, neighborhood associations, and funders.

The blueprint for the future of Grand Rapids' urban forest includes a vision, guiding principles, and goals.

Vision
- Grand Rapids' urban forest is a thriving financial, environmental, and quality of life asset to the City.
- Grand Rapids' urban forest program has broad public support.
- Grand Rapids' Forestry Division is recognized for its proactive approach, responsiveness to citizens, expertise in addressing urban forest issues, and effective use of resources.

Guiding Principles
- Our urban forest represents a significant infrastructure investment that provides critical economic, environmental, and quality of life benefits.
- We can increase the return on our investment in public trees through a proactive approach to tree maintenance.
- Community support from individuals and organizations providing advocacy, volunteer assistance, and funding, is crucial to the success of our forestry program.
- Since a majority of the trees in Grand Rapids are on private property, it is critical for the City to involve residents in maintaining and enhancing our urban forest.

Goals

- Adopt a 40% urban canopy goal,
- Develop a database of information about the City's urban forest,
- Enact public policy changes to maximize incentives for tree preservation and planting,
- Provide adequate personnel and budget resources to ensure effective, proactive functioning of the Forestry Division, and
- Increase public awareness and involvement as the foundation for developing broad public support for urban forest issues.

The Planning Process

In October 2008, the City of Grand Rapids Urban Forestry Committee created a task force charged with developing an urban forest plan for the City. Task force participants included:

   Landon Bartley, Planner
   Rosalynn Bliss, City Commissioner
   Pat Bush, Public Works Director
* Dotti Clune, Social Issues Research Consultant
   Rick DeVries, Assistant City Engineer
   Jay Fowler, Downtown Development Authority Executive Director
* Vic Foerster, West Michigan Tree Services
* Karen McCarthy, Consumers Energy
* Bob Paasche, Forestry Supervisor
* Jay Steffen, Director of Parks and Recreation
   Greg Sundstrom, Acting Deputy City Manager
* Darrell VanderKooi, Streets and Sanitation Superintendent
   Lee Weber, Dyer-Ives Foundation
* Members of the Urban Forestry Committee

The Urban Forestry Plan Task Force met six times between November 2008 and March 2009. They focused on the development of a strategic plan emphasizing broad direction and goals. The Task Force sought to develop a plan that will:

- Make the case for a strong urban forest component, from financial, environmental, and quality of life perspectives,
- Outline a vision for the City's urban forest, including an urban forest canopy goal,
- Include steps to involve the community and address urban forest issues, from both public and private property perspectives,
- Include steps for getting the information needed to create a management plan, e.g., an inventory of street and park trees,
- Integrate into the Green Grand Rapids plan, and
- Focus on these goals for the next one to three years.

The group agreed to develop the plan without involving an outside urban forestry consultant, but with the understanding that consultants may be involved in assisting with the implementation of the plan and/or with developing a subsequent management plan.

The Task Force's discussions focused on the history and current situation of the Grand Rapids urban forest, critical issues and opportunities, an urban forest vision, principles to guide the City's approach to its urban forest, and goals and strategies.

Introduction: The Urban Canopy

Cities have traditionally managed individual trees in the public domain for their care, health, and replacement. It followed that tree resources were assessed primarily as a cost factor, and their management relegated to a low priority. Over the years, many cities have experienced significant declines in tree canopy due to inadequate maintenance and planting efforts. For each tree planted in U.S. cities, four urban trees are dying—leading to a 21 percent increase in the tree deficit over a 10-year period, according to American Forests.
www.americanforests.org/resources/urbanforests/treedeficit.php and www.americanforests.org/news/print.php?id=120

In recent years, cities around the country have begun to place increasing emphasis on greening, sustainability, and environmental issues. In this context, the perspective has shifted from an emphasis on individual trees to an understanding of the multiple values inherent in the urban forest as a whole – that the urban forest, in fact, plays a significant role in addressing high-priority sustainability issues by reducing storm water runoff, removing pollution and carbon dioxide from the air, and saving energy costs. More cities are now focusing on maximizing the benefits from the City's investment in its urban forest, i.e., generating the greatest possible environmental, financial, and aesthetic return on this green infrastructure investment.

Cities with pro-active approaches to urban forest issues view their tree resources collectively as a valuable asset to be managed in a way that optimizes its benefits. This management approach involves:

- Assessing the current state of the urban forest,
- Minimizing loss of mature trees,
- Identifying tree replacement goals and implementing plans for achieving these goals,
- Educating and involving residents in enhancing the urban forest,
- Maximizing incentives for private property owners to preserve existing trees and plant new trees, and
- Involving City departments, nonprofit organizations, and utility companies in collaborative efforts to optimize the urban forest.

Value of Tree Resources

- **A single street tree returns thousands of dollars of direct benefits** e.g., reducing storm water runoff and treatment costs, reducing pollution, increasing pavement life, not including aesthetic and social benefits. Examples include:
  - Trees absorb the first 30% of precipitation through their leaf systems. A typical medium-sized tree can intercept as much as 2,380 gallons of rainfall per year.
  - Trees cool city heat islands by 10-20 degrees, thus reducing ozone levels and helping cities meet air quality standards required for federal highway dollars.
  - Streets with little or no shade need repaving twice as often as those with 30% tree cover.

- **Large trees return five times the average annual net benefit of small trees**.

Sources: *22 Benefits of Urban Street Trees*,Dan Burden,Glatting Jackson, Walkable Communities, Inc.; *Fact Sheet #4: Control Stormwater Runoff with Trees*, Center for Urban Forest Research, USDA Forest Service; *Trees Make Dollars and Sense*, Home Depot Foundation; *Midwest Community Tree Guide*, USDA Forest Service.

Grand Rapids Urban Forest

Background

Resources devoted to Grand Rapids' public trees peaked in the 1970s and have been declining since then. According to the City Forester:

- Augmented in the 1970s through federal employment programs, Forestry staffing declined from 22 positions in the late 1970s to 12 positions in 2008.

- Tree planting dropped from up to 2,000 trees annually in the 1970s to 500 trees annually between 2000 and 2006. This level of planting makes up for natural die-off; it fosters little growth in the urban canopy.

- Tree maintenance declined from a seven to eight year pruning cycle in the 1970s to little pruning in recent decades.

- Services provided by the Forestry Division shifted from 80% proactive and 20% reactive in the 1970s to 80% reactive and 20% proactive currently.

Municipal budget reductions have clearly played a role in the downward trend in forestry resources. Unfortunately, as resources have declined, threats to the urban forest including drought conditions and invasive insects such as the emerald ash borer have escalated.

Grand Rapids' sustainability initiatives have garnered national attention, including *Fast Company* magazine's 2008 citation of the Grand Rapids as "America's Greenest City." Unfortunately, urban forest issues have been largely absent from local efforts to address sustainability and environmental issues. However, the Green Grand Rapids planning process is bringing much-needed attention to the vital role that trees play in the City's financial and environmental well-being.

Several developments that occurred in 2007 and 2008 are indicative of growing attention to tree-related matters and have raised the visibility of urban forest issues.

- The City established an Urban Forestry Committee to provide advice on urban forestry issues.

- The City renewed its participation in the Tree City USA program of the National Arbor Day Foundation.

- Participants in the Green Grand Rapids planning process identified trees as important components of the City's efforts to become more walkable, greener, and more sustainable.

- Several neighborhood groups initiated community-based street tree planting programs, with funding from the Michigan Department of Natural Resources, Dyer-Ives Foundation, and Grand Rapids Community Foundation.

- The West Michigan Environmental Action Council launched its *Save Your Ash!* campaign, with funding from the Dyer-Ives Foundation.

- Concerned citizens worked with the City to develop a pilot emerald ash borer treatment program.

- The City appropriated dedicated funding to address the emerald ash borer.

The Current Situation

Tree Canopy

In 2008, the Green Grand Rapids initiative contracted with Grand Valley State University's Annis Water Resources Institute (AWRI) to conduct a study of the City's tree canopy. Building on AWRI's findings, JJR Associates, the consulting firm managing the Green Grand Rapids initiative, provided additional analysis of canopy levels by land use categories. Key findings of the study include:

- Grand Rapids has a 34.6% tree canopy.
- To reach a 40% canopy over the next 30 years, the City would need to plant an estimated 185,000 trees.

The analysis indicates that canopy percentages differ significantly among types of neighborhoods and land uses in the City.

- The City center has the lowest canopy cover at 4%; while low-density residential areas have the highest canopy cover at 51%.
- Canopy cover in the City center, commercial areas, and traditional business districts averages less than 10%.
- Residential area canopy cover ranges from 34% in medium density residential areas to 51% in low-density residential areas.

Grand Rapids' tree canopy compares favorably to that of other Michigan cities. Among Michigan cities, urban forest canopy averages 29.7%. However, the City lags behind the standard set by American Forests, which recommends a 40% canopy to maximize the urban forest benefits for Michigan's climate. Achieving a 40% canopy over the next 30 years will require planting an estimated 185,000 trees.

Current Canopy (2008)	Total Acres in Grand Rapids	Acres of Canopy	Additional Acres of Canopy Needed to Reach 40% Cover	Additional Trees Needed to Reach 40% Canopy
34.6%	29,020 acres	10,029 acres	1,520 acres	185,000

Public Trees

The urban forest includes public trees—street trees and trees in parks, as well as, trees on privately-owned residential and commercial property. For most cities, the majority of a community's trees are on private property. For example, street trees, those planted on the strip of land between the sidewalk and street, can comprise only 10% of a city's urban forest.
American Forests, www.americanforests.org/resources/urbanforests/treedeficit/php.

However, public trees play a critical role because they are a key indicator of the vitality of the urban forest and the environmental health of a city and its neighborhoods. Grand Rapids has an estimated 70,000 to 80,000 public street trees and 15,000 park trees. This figure is based on a rough count done in the late 1980s.

Management Resources

There is broad agreement that Grand Rapids' forestry program lacks adequate staffing and financial resources to manage effectively the City's urban forest. Forestry staffing has declined from 22 in the late 1970s to 11 employees, with one unfilled position in 2008. Although Grand Rapids is Michigan's second largest city and the City is responsible for more than 80,000 public trees, the City Forester position includes significant non-forest related duties, primarily snowplowing.

The current annual Forestry Division budget is $1.3 million. Funding comes entirely from revenues from state gas and weight taxes. A portion of these taxes is allocated to municipalities under a state formula enacted many years ago. The budget does not currently include any General Operating Fund support.

In 2007, the City increased its refuse millage to address the need to remove and dispose of ash trees infested with the emerald ash borer. Funds derived from the millage can be used only for tree removal and disposal, not for replacing removed trees. The millage increase should generate about $1.5 million over a three-year period.

Between 2000 and 2006, the Forestry Division removed approximately 500 trees annually and planted roughly the same number each year. Removals increased significantly in 2007 and 2008, with the City's emerald ash borer plan calling for removing 1,000 ash trees annually. Between May 2007 and November 2008, the City removed 1,200 ash trees. In 2008, the City increased tree planting to 900 trees to address the ash tree removals.

The Forestry Division plants 1-1/2" caliper bare root trees. It lacks appropriate equipment to plant larger trees. Planting costs are approximately $91 per tree, including the cost of equipment, labor, topsoil, and the tree. On average, 23% of newly planted trees do not survive and must be replaced.

The Forestry Division contracts services including ash tree removal and disposition, tree acquisition, and downtown area tree plantings. The City handles tree planting related to street improvement projects such as combined sewer overflow projects as part of the contract for the street improvement work. This generally involves larger trees than those planted by the Forestry Division.

Standard urban forestry practices call for regularly scheduled pruning, e.g., on a five to seven year cycle. However, because of its limited staffing, the Forestry Division no longer has a pruning cycle. As a result, a growing number of trees are lost to insects, diseases, and storm damage. Also reflective of inadequate maintenance resources is that the Forestry Division's work is primarily (80%) reactive, i.e., in response to citizen requests, rather than proactive. Inadequate maintenance also increases the City's liability related to hazardous trees.

Community Resources

Many cities around the country are benefiting from the involvement of community residents and organizations in helping to support urban forest initiatives. Organizations such as Casey Trees in Washington, DC.; the Savannah (Georgia) Tree Foundation; the Sacramento (California) Tree Foundation; and TreeVitalize in Pennsylvania generate public awareness, involvement, and support through activities such as tree tours and educational programs, neighborhood-based tree planting initiatives, and volunteer-driven tree maintenance programs.

Some organizations, such as the Mary Elizabeth Street Tree Endowment in Providence, RI, provide funding to support city tree planting efforts. These groups generate significant funding from local, state, and national sources including individual donors, local and national foundations, and government grants to support their urban forest work.

Grand Rapids does not have the benefit of a nonprofit organization or endowment focused solely on trees, but it has the potential to draw on the resources of other groups, such as the recently established Friends of Grand Rapids Parks, West Michigan Environmental Action Council (WMEAC), and neighborhood associations. The Friends of Grand Rapids Parks could play a significant role in strengthening the significant portion of the City's tree canopy that is located in City parks.

WMEAC, which leads the *Save Your Ash!* campaign, could be a valuable partner in the City's urban forest efforts. Neighborhood associations, including East Hills, Oakdale, and Ottawa Hills are already involved in tree planting initiatives and could play a much larger role, particularly in planting and maintaining street trees, as well as encouraging residents to plant trees on private property.

Grants from local foundations and from the Urban and Community Forestry Program of the Michigan Department of Natural Resources could augment funding for urban forest efforts in Grand Rapids. For example, over the past three years, the East Hills neighborhood has raised nearly $40,000 from local foundations, the Michigan Department of Natural Resources, and residents for its tree inventory, planting, and maintenance projects.

Grand Rapids can also learn from other communities that have created strong working relationships with utility companies to strengthen urban forestry initiatives.

Ultimately, the success of the City's efforts to create and maintain a thriving urban forest will depend on its ability to involve community partners—individuals and businesses, neighborhood associations, groups focused on the environment, and funders to generate broad support for urban forest initiatives. Resident involvement is particularly important for two reasons: first, the majority of trees in the City are on private property, and second, the City depends on residents to care for the street trees in front of their homes.

Critical Issues

- Ongoing threats to the canopy
  - Continued development has reduced the City's canopy.
  - The City may lose 10% to 20% of its large trees to diseases and invasive insects, i.e., emerald ash borer, asian longhorn beetle, oak wilt disease.
  - Lack of a pruning cycle results in increased tree mortality from storm damage.
  - Street construction projects result in loss of mature trees, but an increase in the number of trees.
  - Tree planting is not keeping up with losses.

- Insufficient financial and personnel resources to maintain and enhance the urban forest
  - Inadequate budget for tree maintenance and planting
  - Inadequate staffing

- Insufficient data about our public trees
  - Without an up-to-date tree inventory, it is difficult to:
    - Assess the status of the urban forest, i.e., age and species diversity, tree conditions and maintenance needs,
    - Prioritize tree maintenance and planting to maximize the effectiveness of the urban forest program,
    - Monitor the effectiveness of tree planting and maintenance activity, and
    - Make a compelling case for funding from local, state, and national funders.

- Lack of community support and involvement

  There are no organized, well-publicized opportunities for individuals, businesses, funders, and neighborhood organizations to become aware of and involved in urban forest issues, including providing advocacy and financial support.

- Current economic climate

  The economic recession has impacted the potential for funding from local, state, and national public and private sources, including government and foundation funding.

Opportunities

We can leverage the growing awareness of and interest in environmental issues. We can help people make the connection between trees and environmental issues and energy savings, as well as, the economic and quality of life benefits of trees.

🐞 Urban forest issues are consistent with the City's priorities.
- Sustainability/Green Grand Rapids
  - Environmental benefits
  - Energy savings
  - Storm water retention
  - Walkability
- Street reconstruction/combined sewer work
- Maintaining property values and quality of life to retain homeownership base and attract new residents
- Reforesting and beautifying parks.

🐞 Many resources are available to support urban forest initiatives.
- Funders on the local, state, and national levels, i.e., foundations, government programs
- Community residents and businesses
- Utility companies
- Community organizations, i.e., neighborhood associations, WMEAC, Friends of Grand Rapids Parks, universities, tree services, nurseries, garden centers, faith-based organizations
- New technologies, i.e., tree inventory and mapping tools, technology support for communicating with the public, maintaining donor databases

🐞 The emerald ash borer infestation makes urban forest issues more visible.

🐞 We have a starting point: the urban forest canopy study.

🐞 We have an experienced forestry crew.

A Blueprint for the Future

A Vision for the Grand Rapids Urban Forest

🍂 Grand Rapids' urban forest is a thriving financial, environmental, and quality of life asset to the City.

- The tree canopy meets or exceeds recognized canopy standards.

- The urban forest is diverse in both species and age.

- The urban forest is a green trademark, recognized for its critical role in the City's leadership on sustainability issues.

- Public trees are proactively maintained to ensure public safety and to protect and enhance the City's urban forest investment.

🍂 The Grand Rapids Urban Forest program has broad support from the public**.**

- Residents, property owners, and businesses are educated about the value of the urban forest and involved in maintaining and enhancing the City's tree canopy.

- The City, in partnership with community organizations, offers a variety of opportunities for citizens to learn about urban forest issues and to provide financial and volunteer support to improve the City's tree canopy, including tree planting and maintenance on both public and private property.

🍂 The Grand Rapids Forestry Division is recognized for its proactive approach, responsiveness to citizens, expertise in addressing urban forest issues, and effective use of resources**.**

- The Division's operational plan includes strategic priorities for tree planting and maintenance.

- The Division enhances its urban forest program by accessing volunteer, financial, and technical assistance resources available locally and at the state and national levels.

Guiding Principles

🍂 Our urban forest represents a significant infrastructure investment that provides critical economic, environmental, and quality of life benefits.

🍂 We can increase the return on our investment in public trees through a proactive approach to tree maintenance.

🍂 Community support from individuals and organizations providing advocacy, volunteer assistance and funding is crucial to the success of our forestry program.

For every dollar a city invests in trees, it receives benefits of up to $3.74

Trees Make Dollars and Sense, Home Depot Foundation

Grand Rapids Urban Forestry Goals and Strategies Work Plan
Appendix A

Goals	Strategies	Leadership, Potential Partners, and Timeline
Adopt a goal of 40% urban forest canopy	▪ Incorporate 40% urban forest canopy goal in Green Grand Rapids plans ▪ Identify canopy goals for specific land uses	Planning Department, Landon Bartley Completion: 2009
Develop a database of information about the City's urban forest in order to develop prioritized maintenance and planting plans	▪ Short term: Develop a sample-based inventory profiling of several areas of the City and identify maintenance and planting priorities for each area. ▪ Long-term: Develop a complete inventory of the City's public trees, as the basis for creating Citywide tree maintenance and planting plans	Public Works, Pat Bush Completion: First round of sampling, FY 2010
Enact public policy changes to maximize tree preservation and planting incentives	▪ Update the tree ordinance, planning and zoning policies, and other tree-related City policies, based on a review of the existing ordinance and policies and promising practices from other communities	Planning Department, Landon Bartley Urban Forestry Committee, Dotti Clune Completion: December 2009
Provide adequate personnel and budget resources to ensure effective, proactive functioning of the Forestry Division	▪ Devote 100% of the forestry supervisor position to forestry-related duties ▪ Develop an urban forest management plan ▪ Provide adequate funding to implement the management plan, including resources to support outside fund development and community/volunteer involvement	City Commission, Rosalynn Bliss City Services, Greg Sundstrom Public Works, Pat Bush Completion of management plan: 2009-2010
Increase public awareness and involvement as the foundation for developing broad public support for urban forest issues	▪ Create opportunities for public education and volunteer involvement in urban forest issues, including tree tours, workshops, planting and maintenance projects ▪ Create opportunities for public and private sector financial support	Parks and Recreation, Tom Zelinski Urban Forestry Committee, Dotti Clune WMEAC, MSU Extension, Land Conservancy, Universities, Kent County, Foundations, Trade Associations (Arboricultural Society of Michigan, Michigan Nursery and Landscape Association) Completion: 2010
Explore opportunities for increasing collaboration with other jurisdictions	▪ Engage in discussions with neighboring municipalities and Kent County about collaborative efforts, including cost savings through joint efforts	Public Works, Pat Bush Parks and Recreation, Tom Zelinski Completion: 2009

Grand Rapids Forestry Program

Declining Budgets, Reduced Personnel	*Service Shift from* **Proactive to Reactive**	Continuing Canopy Loss (e.g., EAB, development)

1950-1979	**1980-1999**	**2000-2007**	**2008**

| 1950s-1960s | 1980s | **Planting**: 500 trees annually | **Budget:** $1 million, plus |

1950s-1960s
- Post WWII housing developments with tree planting requirements
- Dutch Elm disease: Significant loss of trees, related costs

1970s
- Federal programs help fund personnel and street tree planting
- **Personnel**: Ice storm of 1975 drew attention to tree maintenance issues—more forestry positions added
- **Planting**: City committed to replacing trees that are removed; 1,500-2,000 trees planted annually; spring & fall plantings, new development plantings, target areas
- **Services**: 80% proactive, 20% reactive, with 7-8 year pruning cycle

1980s
Personnel: 19 positions, including two forestry supervisors. Supervisory staffing reduced to 1 position with both forestry and snowplowing responsibilities.

1986 Tree Count: 67,000 street trees and 15,000-20,000 park trees (rough estimate)
1989 Operational Review calls for added personnel, tree inventory, more staff training, updated policies & practices

1990s
- Forestry Division transferred from Parks & Recreation to Public Works, from general operating funding to gas funding
- Forestry competes with streets, refuse, etc. for gas funds

Planting: 500 trees annually (+ 100-200 new/replacement trees in CSO street construction projects annually, resulting in net gain in tree numbers & diversity but loss of mature trees)

Services: Increase in service calls (result of reactive program, more avenues of communication for citizens)

EAB - 2007
- Ash trees inventoried (GIS); 7,000 ash street trees, 1,500 in parks and cemeteries
- EAB plan developed, calling for removal of 1,000 trees annually
- EAB issues consume .50 position

Budget: $1 million, plus $500,000 for ash removal and disposal (from refuse millage increase); no General Fund
Personnel: 11 positions + vacancy and seasonals. (Tree acquisition, ash removal, downtown tree plantings contracted)
Planting: 1,200 trees, including ash replacements
Services: 80% reactive, 20% proactive, no pruning cycle; 400 stump removals backlog
Canopy study: 35% canopy in Grand Rapids
EAB
Pilot treatment program implemented (137 trees)
1,200 ash trees removed in 18 months (May 2007-Nov. 2008), combination of infested trees and thinning
Ash replacement plantings target areas of large-scale removal (Shawnee, Lyon, College)

City of Grand Rapids Forestry Program
Appendix B

Grand Rapids Forestry Program Background

1950s-1960s
- After World War II, many trees were planted in new developments (where tree planting was required)
- Dutch Elm disease resulted in significant loss of trees and significant costs to address the disease and plant replacement trees

1970s
Personnel
- Serious ice storm of 1975 drew attention to tree maintenance issues; as a result, forestry staffing was increased.
- CETA and other federal programs provided funding for personnel

Planting
- City committed to replacing trees that were removed (at no cost to residents; previously residents had to pay for replacement plantings).
- Federal funding (Community Development Block Grants) helped pay for tree plantings in neighborhoods (Heritage Hill, West Side). Trees were planted wherever there was an 18-20" opening
- 1,500-2,000 trees planted annually (typically 1700-1800), with spring and fall plantings, new development plantings and target area plantings

Services
- 80% proactive, 20% reactive, with 7-8 year pruning cycle (late 1970s)

1980s
Budget cuts…

Personnel
- 19 positions (FY 1981), including two forestry supervisors
- Supervisory staffing reduced to 1 position with both forestry and snowplowing responsibilities.

1986 Tree Count
- 67,000 street trees, 15,000-20,000 parks & cemeteries (rough estimate)

1990s
Budget
- Forestry transferred from Parks and Recreation to Streets and Sanitation in 1990; moved from general funding to gas funds.
  - Advantage: Additional personnel resources to react to storm damage, e.g., 1998 wind damage, limb pickup
  - Disadvantage: Forestry competes with streets, sanitation for funding

City of Grand Rapids Forestry Program
Appendix B

2008

Budget
- $1 million, plus $500,000 for EAB. The EAB funds come from increasing the refuse millage by ½ mill—which pays for ash removal and disposal, but not replanting.
- All of forestry funding comes from gas funds, none from the general fund.
- Budget stagnant or decreasing.
- Now need to look to other funding sources.

Personnel
- 11 permanent positions, 1 vacancy, + seasonal
- Less than 1 supervisory position (the position includes snowplowing responsibilities); EAB consumes almost ½ position.

Planting
- Have been averaging 500 trees annually, but with EAB, 1,200 planted in current year; this is not sustainable unless the millage increase is extended (millage money funds ash removal and replacement, freeing up some funds for replanting). EAB replacement plantings target areas where there have been large scale ash removals, e.g., Shawnee, Lyon, College.
- 1,200 ash trees have been removed since May 2007 (under the goal of 1,000/year); most were infested, some were remove and replace/thinning (e.g., Richmond).
- 100-200 trees planted annually for the past several years in connection with street construction (for combined sewer work). These are larger trees (2-1/2" caliper), some are replacing trees damaged in construction, others are new plantings—there's a net gain in numbers and diversity but loss of canopy as large trees are replaced by 3-4 times as many smaller trees.
- Spring and fall plantings scheduled, but personnel issues and lack of funding to buy trees create problems
- Opportunities for residents to request trees (for which they pay part of the cost) are not publicized; about 80 requests are received annually.
- The memorial tree planting program has also not been publicized; at its peak there were about 18 participants a year.

Services
- 80% reactive, 20% proactive, no pruning cycle per se
- Increased calls for service over the past five years: the longer the program is reactive, the more calls there are for service; also there are more opportunities for residents to communicate with the city now.
- Identification of hazard trees is a priority
- Backlog of 400 stumps to be removed
- Most of the requests for service are for trimming or removals (see above re lack of publicity about tree planting)

Contracted Services
- Ash removal—90% of contract work + work on private property, which is charged back to code enforcement, etc. (Contracting work on private property avoids liability issues.)
- Some plantings: street construction plantings, the current project involving planting 70 trees in the downtown area—trees acquired from contractors.

Record-Keeping
- Currently records are maintained by address (computerized system)
- The only records by individual trees are the ash trees, which have been inventoried and mapped (GIS); only location and diameter have been documented, no other information such as condition.
- There is no systematic inventory, because an inventory is costly to implement and manage—difficult to keep current.

City Nursery Concept
- Idea was explored when the EAB plan was created; decided it wouldn't be cost effective; it's less expensive to purchase trees from contractors
- What about exploring possibilities for working with the county, other governmental units, schools, and other potential partners?

Parks and Recreation
- The Bicentennial celebration included a give-a-tree program. There was a good response, but the record-keeping was problematic, there were location issues, and problems with plaques being stolen. Plaques are no longer used because of theft issues.
- Parks and Recreation used to have 4 landscape architects, during the period when there was a growth of parks and schools. The focus was on diverse, interesting plantings in parks and cemeteries. In the 1960s and 1970s there was even a TV show.
- Now there are no landscape architects on the Parks and Recreation staff. For the past 10-15 years there's been no plan for trees and shrubs.
- Now more focus on natural stands vs. developing all park land.
- Interest in trees tends to increase around Arbor Day. Some interest from businesses (e.g., MidTown Green).

City of Grand Rapids Average Cost to Plant a Tree
Appendix C

The following information is in regard to the request of tree planting costs for the City of Grand Rapids. Below are the fees included in planting a city tree, this includes labor fees, equipment fees, tree fees and the percentage rate of replacing the dying trees in Grand Rapids. This information is based on our standard production rate of 60 trees being planted a day.

The equipment costs are as follows:

Back Hoe =	$42.39
Dump Truck =	$41.97
Post =	$5.46
Chipper Truck =	$9.83
Chipper Truck =	$9.83
Flat Bed to Water Wagon =	$17.05
Flat Bed to Water Wagon =	$17.05

Equaling a total of: $143.58

The direct labor costs are as follows:

3 Tree Trimmer I @ $17.54 an hour =	$52.62
3 Tree Trimmer II @ $19.56 an hour =	$58.68
4 MA II @ $16.81 an hour =	$67.24

Equaling a total of: $178.54

The equipment and labor cost per day equals: $2,576.96

The equipment and labor fees per tree equals: $42.95

The average cost of a tree is: $47.32

The cost for topsoil, support posts,
handling fees for placing in the nursery
would add per tree $1.00

The average total cost to plant a tree is: **$91.27**

The average replacement (die off) rate is 23%.

Parks and Cemeteries Ash Tree Inventory
Appendix D

Park Name	Number of Ash Trees	October, 2007
6th Street Bridge Park	15	
Aberdeen Park	18	
Ah-Nab-Awen Park	13	
Belknap Park	19	
Burton Woods Park	54	
Cambridge Park	9	
Canal Street Park	16	
Clemente Park	6	
Coit Park	17	
Fairplains Cemetery	49	
Fuller Park	18	
Fulton Street Cemetery	3	
Fulton Street Market	4	
Garfield Park	32	
Greenwood Cemetery	35	
Harrison Park	4	
Heritage Hill Park	4	
Highland Park	7	
Hillcrest Park	12	
Huff Park	16	
Indian Trails Golf Course	257	
Joe Taylor Park	9	
Lincoln Park	18	
Martin Luther King Park	22	
Mary Waters Park	18	
Mid Town Green Park	3	
Mooney Park	1	
Mulick Park	7	
Oakhill Cemetery	74	
Richmond Park	31	
Riverside Park	589	
Shawmut Hills Park	1	
Southern Little League Park	87	
Sullivan Field	23	
Westown Commons Park	8	
Wilcox Park	9	
Woodlawn Cemetery	31	
TOTAL	**1539**	

Total Ash Trees by Size
Appendix E
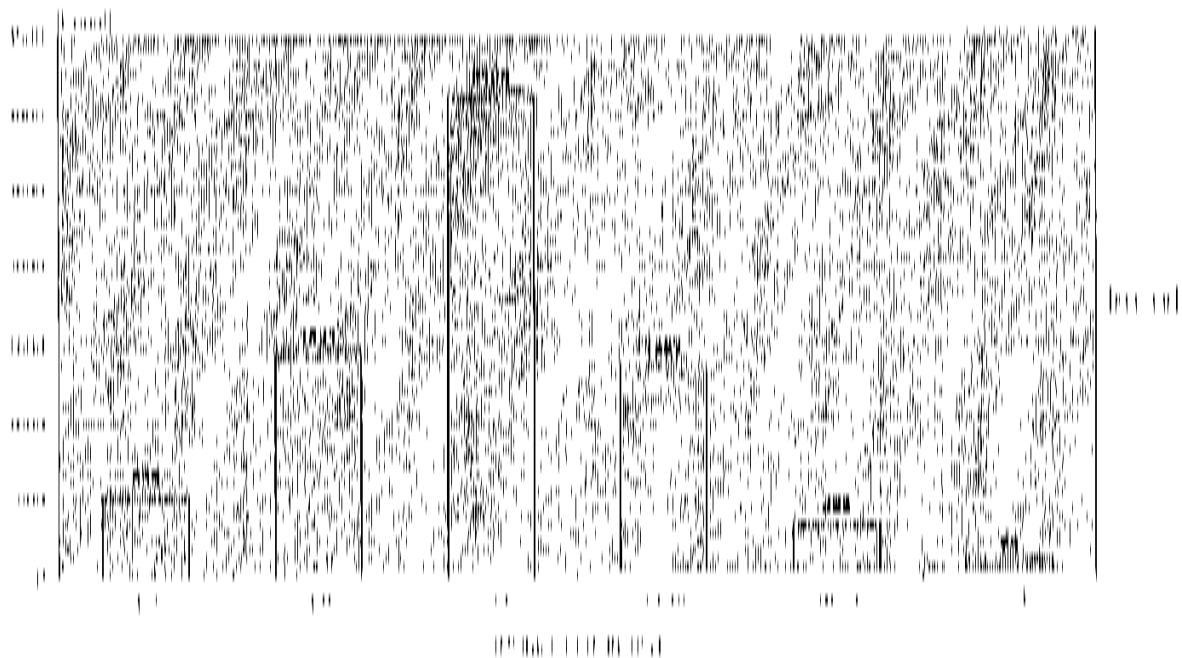
Urban Forest Ecological Services Assessment
City of Grand Rapids, Michigan

Rod Denning, Research Associate
Ben Sanborn, Student Intern

Annis Water Resources Institute
Grand Valley State University
Lake Michigan Center
Muskegon, MI

City of Grand Rapids
Kent County, Michigan

Sept. 2008

TREE CANOPY ASSESSMENT

Total Area (City): 29,020 Acres (45.3 sq. miles)
Total Tree Canopy Cover: 10,029 Acres (15.7 sq. miles)

Percent Tree Canopy: 34.6%

NOTE: The tree canopy is the layer of leaves, branches, and tree trunks that covers the ground when viewed from above.

<u>Tree Canopy data development method</u>

The tree canopy data layer was created using Feature Analyst (Visual Learning Systems, Inc. – Overwatch Geospatial, Textron Systems), an assisted feature extraction software that integrates machine learning technology into the GIS database creation workflow. The extraction was based on the use of a one meter resolution, true color, leaf-on, 2005 orthophoto from the National Agriculture Imagery Program, U.S. Department of Agriculture.

After the final extraction, manual editing procedures were also included to identify missing target trees and to remove false identifications. An effort was also undertaken to remove the portion of the tree canopy that has been eliminated as a result of EAB tree removals. The final data layer resulted in a very accurate mapping of individual trees and extensive forested areas throughout the City of Grand Rapids.
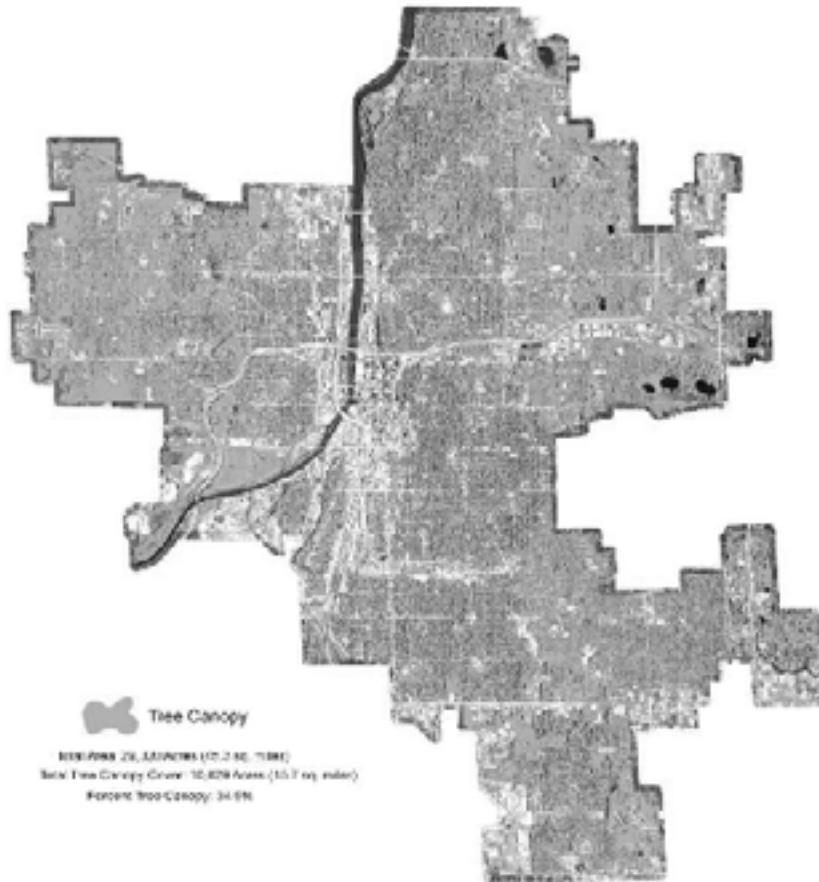
Map 1 on the next page shows the distribution of the urban forest canopy within Grand Rapids.

Sept. 2008

Map 1.

Urban Forest Canopy
City of Grand Rapids
Kent County, Michigan

Sept. 2008

Required for input into the CITYGreen model is a detailed data layer of the land cover and use distribution within the City. Map 2 on the next page shows this data layer generalized into 11 categories. Table 1 shows the area for each cover/use class. This data layer was created by combining the urban forest canopy data and existing land use data for the City.

Table 1. Land Cover and Use Data (required as an input to the CityGreen model)

COVER AND USE CLASS	ACRES	% Cover
Commercial/Business/Institutional	3376	11.6
Industrial	1623	5.6
Open Space w/ Grass Cover	1635	5.6
Parking Lots - Impervious	264	0.9
Residential	7126	24.6
Roads & Road ROW	4354	15.0
Shrubs w/ Ground Cover	156	0.5
Trees - Mostly Natural	4629	16.0
Trees w/ Grass & Turf Understory	3947	13.6
Trees w/ Mostly Impervious Understory	1452	5.0
Water Area	457	1.6
Total Area	**29020**	**100.0**

Table 2 below indicates the percent tree canopy for existing land use categories as identified by City of Grand Rapids existing land use data.

Table 2. Existing Land Use – Percent Urban Forest Canopy

Land Use	Acres	Tree Canopy - Acres	UTC %
Commercial	1345	130	9.7
High Density Residential	128	36	28.1
Industrial	1756	203	11.6
Medical Facility	225	74	32.9
Mixed Commercial/Residential	50	8	16.0
Multi-Family Residential	2090	701	33.5
Office	315	75	23.8
Parking Lot	276	22	8.0
Parks	1857	959	51.6
Public/Quasi Public	3016	803	26.6
Single Family	10146	4681	46.1
Vacant Lots	1448	789	54.5
	22652	8481	

Note: the extent of the existing land use data does not include water areas, roads, and road right-of-ways.

Sept. 2008

Map 2.

Land Cover and Use
City of Grand Rapids
Kent County, Michigan

Sept. 2008

Map 3 on the next page shows the urban tree canopy coverage that overhangs the road and road right-of-way network for the principal arterial roads within the City. Table 3 below indicates the "greenest" principal arterial roads within the City.
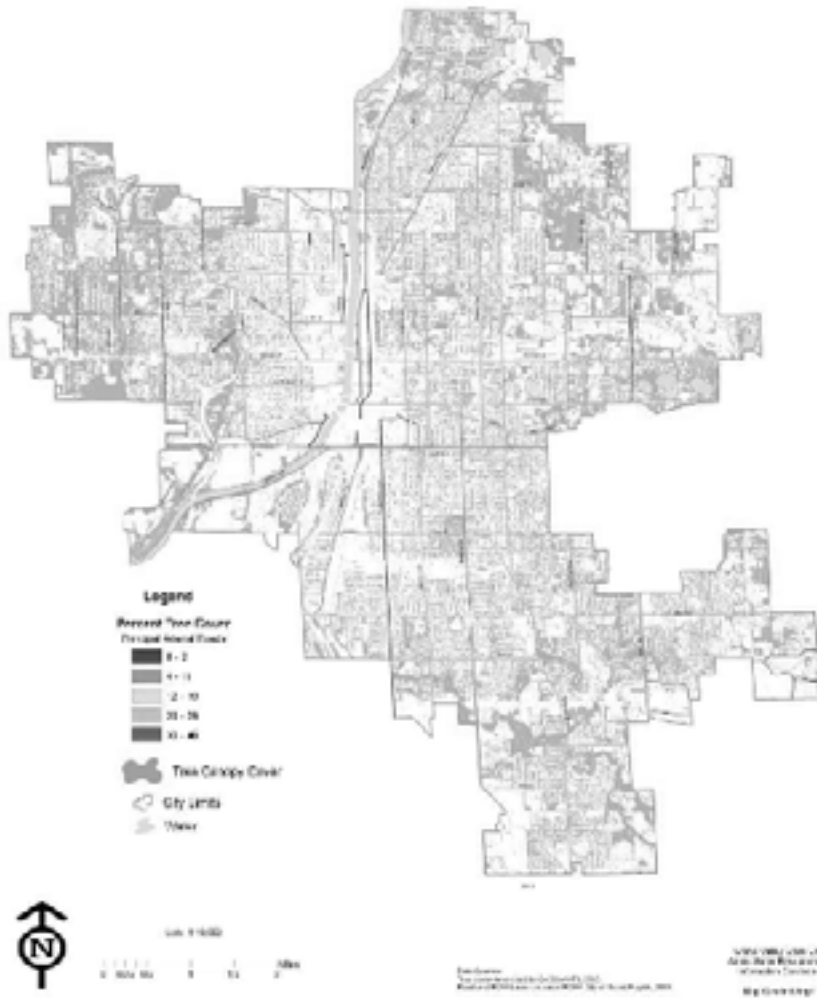
Table 3.

Road Name	Tree Canopy (Acres)	% - Tree Canopy
7th St	3.5	46.1
Collindale Ave	4.0	44.6
Elmridge Dr	1.8	44.3
Oakleigh Rd	5.2	43.9
O'Brien Rd	2.0	43.9
Perkins Ave	3.2	40.3
Bristol Ave	2.2	36.0
Camelot Dr	1.8	34.0
Maryland Ave	5.4	33.9
Covel Ave	6.4	33.0
Dean Lake Ave	1.3	31.7
Colt Ave	7.6	28.7
Aberdeen St	3.7	27.2
Ball Ave	4.4	26.8
3 Mile Rd	5.9	25.0
Walker Ave	4.0	23.8
Richmond St	6.5	22.7
Valley Ave	3.2	22.3
Robinson Rd	1.2	21.8
Diamond Ave	6.0	21.7
College Ave	4.2	21.6
6th St	1.2	20.6

Sept. 2008

Map 3.

Road & Road ROW - Tree Canopy Coverage
City of Grand Rapids
Kent County, Michigan

Sept. 2008

Table 4 below indicates the percent of urban tree canopy by organized neighborhood associations within the City.

Table 4.

Neighborhood Association	Total Acres	UTC Acres	% UTC
Cherry Run	220	124	56
Westside Connection	3176	1607	51
Michigan Oaks	820	371	45
Highland Park	439	180	41
Eastgate	268	107	40
Creston	3591	1428	40
Millbrook	863	336	39
North East Citizens Action	2597	953	37
Ridgemoor	474	173	36
Fulton Heights	239	87	36
Eastown	391	139	36
Ottawa Hills	79	28	35
Baxter	158	56	35
Auburn Hills	17	6	35
John Ball Park	779	273	35
Breton Village	241	84	35
South East End	989	340	34
Alger Heights	524	178	34
Madison Area	397	134	34
Garfield Park	1461	469	32
Heritage Hill	302	93	31
Fuller Area Neighbors	148	44	30
East Hills	236	68	29
Oakdale	196	56	29
Midtown	357	102	29
Black Hills	257	73	28
South Hill	65	18	28
West Grand	1926	443	23
Belknap Lookout	602	134	22
South East Community	473	103	22
Roosevelt Park	447	89	20
South West Area Neighbors	671	118	18
Heartside	396	17	4

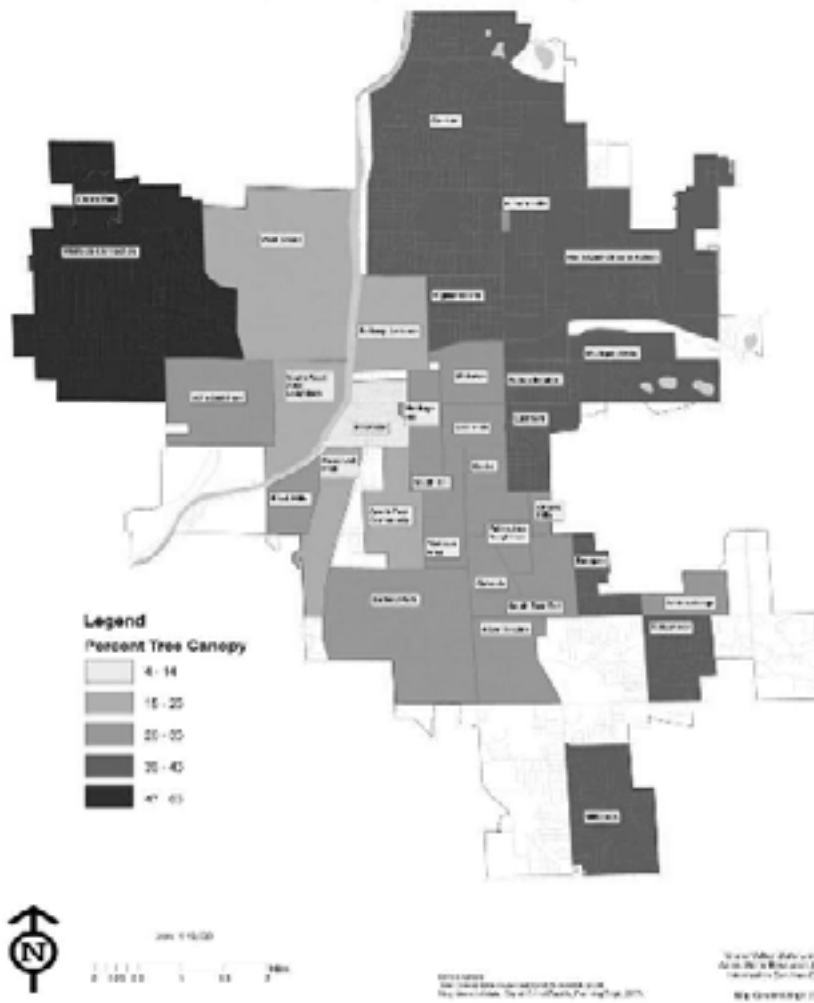Map 4 on the next page shows the percent of urban tree canopy by neighborhood associations within Grand Rapids.

Sept. 2008

Map 4.

Percent Urban Tree Canopy
By Neighborhood Associations
City of Grand Rapids - Kent County, Michigan

Urban Forest Ecological Services Assessment
Appendix F

Sept. 2008

FINAL CITYGreen MODEL RESULTS – City of Grand Rapids

Based on a Total Tree Canopy of: 10,029 Acres (34.6%)

Air Pollution Removal Results – Table 1.

By adsorbing and filtering out pollutants in their leaves, urban trees perform a vital air cleaning service that directly affects the well-being of urban dwellers. CITYgreen estimates the annual air pollution removal rates of trees within a defined study area for the pollutants listed below. To calculate the dollar value of these pollutants, economists use "externality" costs, or indirect costs borne by society such as rising health care expenditures and reduced tourism revenue. The actual externality costs used in CITYgreen of each air pollutant is set by the each state Public Services Commission.

Table 1.

Air Pollution Removal		
Air Pollutant	Pounds Removed per year*	Money Saved from Removal
Carbon Monoxide	17,880	$7,631
Ozone	295,023	$906,375
Nitrogen Dioxide	107,281	$329,591
Particulate Matter: Less then 10 microns	196,682	$403,428
Sulfur Dioxide	44,700	$33,546
Total	**661,566**	**$1,680,570**
*Nearest Air Quality Reference City – Milwaukee, WI		

TOTAL VALUE OF SERVICES: $1,680,570 annually

Sept. 2008

Carbon Removal and Sequestration Results – Table 2.

Trees remove carbon dioxide from the air through their leaves and store carbon in their biomass. Approximately half of a tree's dry weight is carbon. For this reason, large-scale tree planting projects are recognized as a legitimate tool in many national carbon-reduction programs. CITYgreen estimates the carbon storage capacity and carbon sequestration rates of trees within a defined study area.

Table 2.

Amount of Carbon Stored in the Trees	438,494 Metric Tons
CCX – CFI @ $3.60 metric ton	$1,578,578
Additional Amount Stored Each Year	3414 Metric Tons
CCX – CFI @ $3.60 metric ton	$12,290

Note: Dollar values based on market value established by the Chicago Climate Exchange, Aug. 28, 2008.

TOTAL VALUE OF SERVICES: $1,578,578

TOTAL VALUE OF SERVICES ANNUALLY: $12,290

Sept. 2008

Stormwater Runoff Results – Table 3.

The CITYgreen software calculates the volume of runoff generated from a 2-year 24-hour storm event. For the City of Grand Rapids such a storm event would be 2.37". The runoff generated from this storm event would need to be contained by stormwater facilities if all of the trees were removed from the city. This volume multiplied by local construction costs (per cubic feet) calculate the dollars saved by the urban tree canopy.

CITYgreen uses the TR-55 model developed by the Natural Resource Conservation Service (NRCS) which is very effective in evaluating the effects of land cover/land use changes and conservation practices on stormwater runoff. The TR-55 calculations are based on curve number which is an index developed by the USDA, NRCS to represent the potential for stormwater runoff within a drainage area. Curve numbers range form 30-100. The higher the curve number the more runoff will occur. CITYgreen determines a curve number for the existing land cover condition and generates a curve number for the condition if the trees were remove and replaced by additional impervious surfaces. The change in curve number reflects the increase in the volume of stormwater runoff.

Table 3.

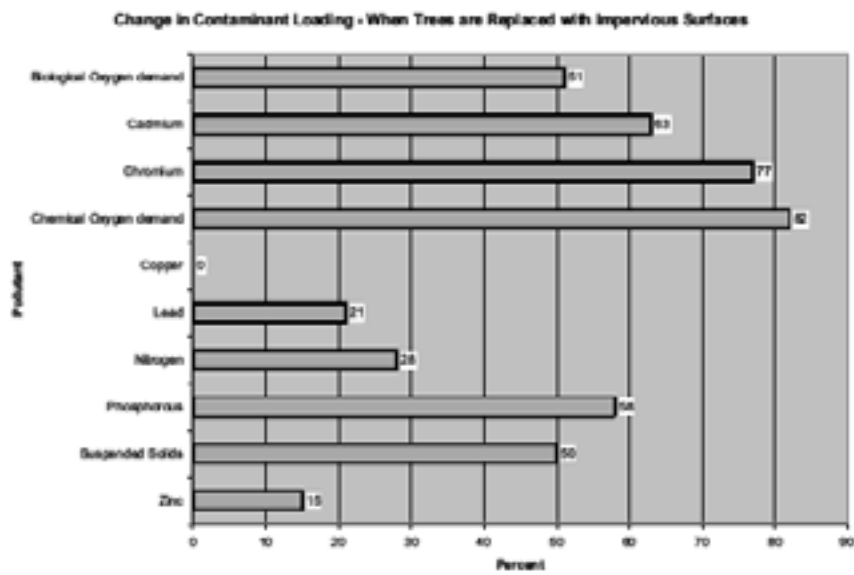| Runoff	
2-year, 24-hour Rainfall event	2.37 inches
Curve Number of existing conditions:	78
Curve Number if the trees were replace with new impervious surfaces:	89
Additional Stormwater storage volume needed if the trees were replaced with impervious surfaces:	67,075,658 ft^3
Construction cost per ft[*]	$5.50
Total Stormwater Savings:	$368,916,122
Annual costs based on payments over 20 years at 6% interest	$32,163,789 per year
* Construction costs based on the cost to build an ADS Storm Tech underground pipe detention system to handle the additional stormwater.	

TOTAL VALUE OF SERVICES: $368,916,122

Sept. 2008

Water Quality Results – Table 4.

Trees filter surface water and prevent erosion, both of which maintain or improve water quality. Using values from the US Environmental Protection Agency (EPA) and Purdue University's L-thia spreadsheet water quality model, American Forests developed the CITYgreen water quality model. This model estimates the change in the concentration of the pollutants in runoff during a typical storm event given the change in the land cover.

Table 4.

Change in Contaminant Loading - When Trees are Replaced with Impervious Surfaces

Note: No dollar amounts are calculated for this.

Sept. 2008

FINAL RESULTS SUMMARY – Grand Rapids

Air Pollution Removal: $1,680,570 annually

Stormwater Runoff Mitigation: $368,916,122 or $32,163,789 per year

Carbon Storage: $1,578,578 (presently stored in the trees) or $12,290 worth of storage per year

Water Quality Benefits: $unknown

The City's 35 percent tree canopy provides total dollar ecological benefits of: $372,175,270!

Sept. 2008

FINAL CITYGreen MODEL RESULTS
Downtown Development Authority Area

TREE CANOPY ASSESSMENT

Total Area DDA: 846 Acres (1.3 sq. miles)
Total Tree Canopy Cover: 36 Acres (0.06 sq. miles)

Percent Tree Canopy: 4.2%

Air Pollution Removal Results – Table 1.

Air Pollution Removal		
Air Pollutant	Pounds Removed per year*	Money Saved from Removal
Carbon Monoxide	64	$27
Ozone	1,054	$3,239
Nitrogen Dioxide	383	$1,178
Particulate Matter: Less than 10 microns	703	$1,442
Sulfur Dioxide	160	$120
Total	2,364	$6,006
*Nearest Air Quality Reference City – Milwaukee, WI		

TOTAL VALUE OF SERVICES: $6,006 annually

Carbon Removal and Sequestration Results – Table 2.

Amount of Carbon Stored in the Trees:	1567 Metric Tons
CCX – CFI @ $3.60 metric ton	$5,641
Additional Amount Stored Each Year	12.2 Metric Tons
CCX – CFI @ $3.60 metric ton	$44

Note: Dollar values based on market value established by the Chicago Climate Exchange, Aug. 28, 2008.

TOTAL VALUE OF SERVICES: $5,641

TOTAL VALUE OF SERVICES ANNUALLY: $44

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Stormwater Runoff Results – Table 3.

If the 4.2% tree cover canopy were replaced with new impervious surface you would need new stormwater infrastructure to handle an additional 270,383 cu.ft. (based on a 2 year storm event) of stormwater volume, @ $5.50 per cu. ft. this would require about $1.5 million dollars worth of new infrastructure to manage this additional runoff.
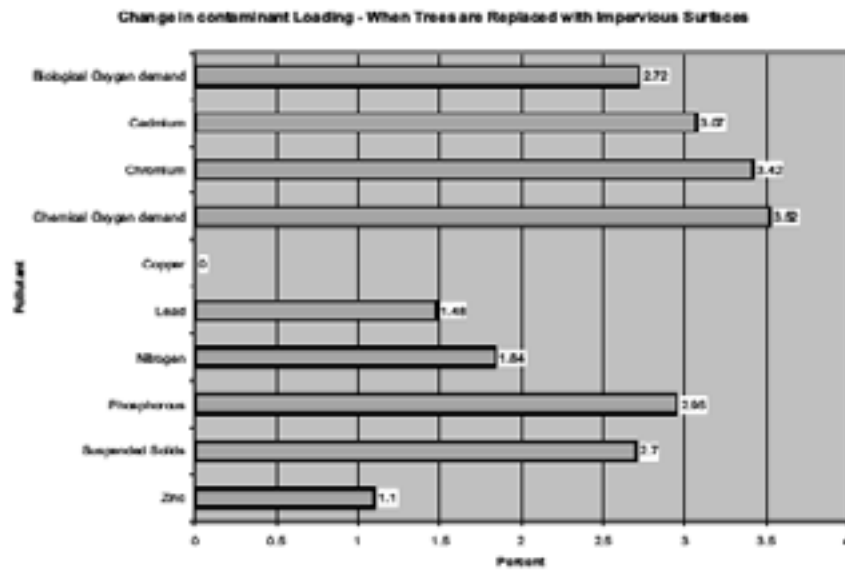
Runoff	
2-year, 24-hour Rainfall event	2.37 inches
Curve Number of existing conditions:	93
Curve Number if the trees were replace with new impervious surfaces:	94
Additional Stormwater storage volume needed if the trees were replaced with impervious surfaces:	270,383 ft³
Construction cost per ft³*	$5.50
Total Stormwater Savings:	**$1,487,108**
Annual costs based on payments over 20 years at 6% interest	$129,653 per year
* Construction costs based on the cost to build an ADS Storm Tech underground pipe detention system to handle the additional stormwater.	

TOTAL VALUE OF SERVICES: $1,487,108

Sept. 2008

Water Quality Results – Table 4.

Change in contaminant Loading - When Trees are Replaced with Impervious Surfaces

Pollutant	Percent
Biological Oxygen demand	2.72
Cadmium	3.07
Chromium	3.42
Chemical Oxygen demand	3.52
Copper	0
Lead	1.46
Nitrogen	1.84
Phosphorous	2.95
Suspended Solids	2.7
Zinc	1.1

Note: No dollar amounts are calculated for this.

The Urban Forest Canopy in Grand Rapids

GREEN GRAND RAPIDS

Steering Committee Meeting
September 22nd, 2008

Green Grand Rapids

JJR

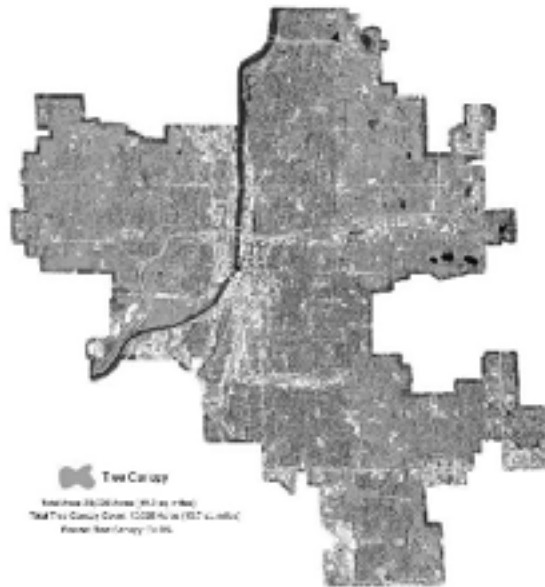## Urban Forest Study: City-wide Results

- Worked with Rod Denning (GVSU) to conduct the tree canopy analysis.

- Grand Rapids = 34.6% tree canopy

    10,029 acres of canopy
    29,020 acres in the city

- Average Michigan city's urban forest canopy is 29.7%.

- American Forest recommends 40% as an ideal tree canopy target for our climate to maximize benefits.

- Grand Rapids would need an additional 1520 acres of canopy to reach 40% cover.

Green Grand Rapids

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Urban Forest Canopy: Analysis

- Urban Forest by Neighborhood Type and Zoning Map

- Mid-Century Neighborhoods (46.86%)
- Modern Neighborhoods (42.88%)
- Special Districts (30.34%)
- Traditional Neighborhoods (30.15%)
- Right-of-Way (23.59%)

Green Grand Rapids

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Urban Forest Canopy: Analysis

- Current zoning types and % canopy cover.

Use Type	ZONING	% of City	% Cover
Transitional City Center	TN-TCC	2.42%	8.34%
Traditional Business District	TN-TBA	1.57%	9.19%
Medium Density Residential	TN-MDR	2.14%	33.75%
Low Density Residential	TN-LDR	15.65%	37.26%
City Center	TN-CC	1.28%	4.07%
Planned Redevelopment District	SD-PRD	2.52%	34.20%
Open Space	SD-OS	7.02%	44.22%
Neighborhood Office Service	SD-NOS	1.43%	26.45%
Industrial - Transportation	SD-IT	6.88%	12.11%
Institutional Campus	SD-IC	1.08%	33.59%
ROW	ROW	20.10%	23.59%
Medium Density Residential	MON-MDR	3.42%	34.79%
Low Density Residential	MON-LDR	9.03%	51.39%
Commercial	MON-C	1.35%	6.50%
Traditional Business District	MCN-TBA	0.07%	5.02%
Medium Density Residential	MCN-MDR	0.96%	41.34%
Low Density Residential	MCN-LDR	22.72%	46.24%
Commercial	MCN-C	0.76%	16.47%

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Urban Forest Canopy: Goal Setting

- Established cover goals by zoning type to meet **40% city-wide goal**.
- Trees / acre (based on Seattle study)
- "Burden" refers to the proportion of new trees a zoning type contributes to the overall goal.
- Cover goals from American Forest recommendations by land use.

Use Type	% Cover	Cover Goal	% Increase	New Acres	Burden	Tree/Acre	# of trees
Transitional City Corridor	8.34%	15.00%	79.96%	46.74	3.04%	130	6075.78
Traditional Business District	9.19%	15.00%	63.23%	26.52	1.73%	130	3448.17
Medium Density Residential	33.76%	42.00%	24.46%	61.40	3.84%	130	8681.62
Low Density Residential	37.26%	46.00%	26.76%	351.54	22.87%	90	31635.78
City Center	4.07%	15.00%	268.50%	40.57	2.64%	130	5274.56
Planned Redevelopment District	34.28%	37.00%	7.95%	19.93	1.30%	130	2590.42
Open Space	44.22%	60.00%	35.68%	321.37	20.90%	225	72307.83
Neighborhood Office Service	26.46%	27.00%	2.07%	2.27	0.15%	100	227.63
Industrial - Transportation	12.11%	15.00%	23.82%	49.27	3.20%	130	6405.17
Institutional Campus	33.09%	36.00%	7.19%	11.76	0.77%	100	1175.22
ROW	23.59%	30.00%	27.16%	373.78	24.31%	60	22426.72
Medium Density Residential	34.79%	42.00%	28.75%	71.54	4.65%	130	9305.61
Low Density Residential	51.36%	52.00%	1.26%	16.77	1.09%	90	1609.57
Commercial	6.50%	15.00%	130.87%	33.26	2.16%	130	4322.44
Traditional Business District	8.02%	15.00%	87.09%	1.49	0.10%	130	194.25
Medium Density Residential	41.54%	42.00%	1.01%	1.85	0.12%	130	239.89
Low Density Residential	48.24%	50.00%	3.66%	116.07	7.56%	90	10446.46
Commercial	16.47%	17.00%	3.22%	1.17	0.08%	130	152.33

1537.30
Acres to Plant

184416.26
Trees to Plant

Green Grand Rapids

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Urban Forest Canopy: Value of new Trees

- Over a 30-year time frame, planting ~185,000 trees yields:
  - Net Present Benefits = $17,129,272
  - Net Present Cost = $14,164,803
  - NET BENEFIT = $2,954,469 → $3-million!

Benefits of Trees	1 Acre	Future Acres = 1037.3	Net Present Value of Benefits
Air Pollution, annually	$167.67	$267,506.97	$3,060,060.47
Stormwater, one-time	$50,784.54	$50,549,401.94	$13,064,274.05
Carbon Storage, one-time	$157.40	$241,973.07	$65,987.11
Carbon Storage, annually	$1.23	$1,883.88	$28,959.83
Discount Rate	0.05	TOTAL BENFITS	$17,129,272.26
Average Cost per Tree	$150.00		
Time Frame (years)	30	TOTAL COST	$14,174,803.07
Trees Needed	94415.36	NET BENEFIT	$2,954,469.19
Trees / Year	3147.275213		
Yearly Cost	$922,091.28		
Cost over 30-years	$14,174,803.07		

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Expanding the Urban Forest

- Where are the greatest opportunities for increasing canopy?
  - Parks/open space
  - Low-density residential
  - Medium-density residential

- Where is the greatest need for increasing canopy?
  - Center City – 4.07% ex. coverage
  - Modern neighborhood commercial – 6.5%
  - Transitional City Center – 8%
  - Traditional and mid-century neighborhood traditional business district – 8-9%
  - Industrial – 12%
  - Mid-century neighborhood commercial 16.5%
  - ROW – 23.6%

Green Grand Rapids

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City of Grand Rapids Tree Ordinance
Appendix H

Chapter 42 TREES*

_____

*Editor's note: Ord. No. 2003-44 § 1, adopted Nov. 18, 2003, amended ch. 42 in its entirety. Formerly, said chapter pertained to similar subject matter. See the Code Comparative Table for a detailed analysis of inclusion.

Charter references: Director of Public Welfare, Title VI, Sec. 1.

Cross references: Vision clearance at intersections, § 4.61 et seq., trimming or removal of trees and shrubs damaging dwellings, § 8.569.

City of Grand Rapids Tree Ordinance
Appendix H

ARTICLE 1. IN GENERAL

Sec. 3.31. Purpose, Interpretation and Application.

The provisions of this Chapter shall be deemed to be the minimum requirements necessary and which are adopted for the promotion of the public health and safety and general welfare of the people of Grand Rapids. It is the intent of the Chapter to promote and maintain a vibrant and healthy urban treescape and canopy. Among other purposes, such provisions are intended to provide for the requiring of a permit to plant trees or shrubs or plants in any of the streets of the City of Grand Rapids, to prohibit the planting of certain kinds of trees, plants and shrubs in certain places, to authorize the removal, replacement or removal and replacement of diseased trees, plants or shrubs, or in such cases where the existence of such trees, plants or shrubs can be proven to cause serious prolonged health conditions, and to authorize the Director of Streets and Sanitation to promulgate rules and regulations relative to such planting, subject to the approval of the City Commission.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.32. Scope.

The provisions of this Chapter shall govern the planting, removal or replacement of trees, plants and shrubs in any of the streets, avenues, alleys, sidewalks and boulevards of the City of Grand Rapids, particularly that space between the public sidewalk and the curb line, so-called. The word "street" or "streets" shall be deemed to include any public right-of-way, or other public area used for street or sidewalk purposes.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.33. Jurisdiction and Supervision Enforcement.

The responsibility for the enforcement of this Chapter shall be vested in the Director of Streets and Sanitation and that Director's duly authorized assistants or agents.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.34. Jurisdiction.

The Director of Streets and Sanitation shall have jurisdiction over the planting or removal of any trees, plants or shrubs in the public streets of the City of Grand Rapids.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.35. Permit Required.

No person shall plant, place, trim or remove any shade or ornamental tree, plant or shrub which will, when grown, reach a minimum height of thirty-six inches (36") or more, in any street of the City of Grand Rapids without having first secured a permit as hereinafter provided.

(Ord. No. 2003-44, § 1, 11-18-03)

City of Grand Rapids Tree Ordinance
Appendix H

Sec. 3.36. Application for a Permit to Place, Trim, Plant or Remove.

Application for a permit to place, trim, plant or remove a shade or ornamental tree, plant or shrub with a mature height greater than thirty-six inches (36") in any street of the City of Grand Rapids shall be made to the Director of Streets and Sanitation of the City of Grand Rapids. Such application shall be on forms provided by the Director of Streets and Sanitation. There shall be no application fee for such permit.

(Ord. No. 2003-44, § 1, 11-18-03)

City of Grand Rapids Tree Ordinance
Appendix H

ARTICLE 2. RULES AND REGULATIONS

Sec. 3.37. Promulgation of Rules.

The Director of Streets and Sanitation is hereby authorized and directed to promulgate necessary rules and regulations to carry out the purpose of this Chapter, and to protect the public health, safety, and welfare. The Director shall have the authority to recommend reasonable fees to be applied pursuant to this Chapter, except where this Chapter specifically states that no fee shall be charged. No fees shall be effective until approved by the City Commission.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.38. Approval.

Rules and regulations provided for herein shall be submitted to the City Commission for approval. No such rule or regulation shall become effective until approved by the City Commission.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.39. Rules to be Filed.

Upon approval by the City Commission, copies of the rules and regulations promulgated hereunder shall be kept on file at the office of the City Clerk and the office of the Director of Streets and Sanitation for distribution to interested parties.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.40. Standards.

The rules and regulations provided for herein shall provide for the minimum distance between trees, shrubs and ornamental trees planted or placed in the streets of the City of Grand Rapids, which distance shall be such as will be beneficial to the growth of such tree, plant or shrub; shall prohibit the placing or planting therein of any trees, plants or shrubs that will endanger the public health or safety of the people of Grand Rapids; shall provide for the minimum open space around the trunk of any tree, plant or shrub placed therein, which distance shall be sufficient to encourage the growth of trees, plants and shrubs; shall set rules regarding and standards for removal and replacement of trees; shall set rules and standards for root trimming and cutting; shall prohibit the planting or placing of any tree, plant or shrub in any location that will create a dangerous or hazardous traffic condition, and the Director of Streets and Sanitation is hereby directed to confer with Traffic Engineer, or any other official agency concerned in such cases. The Director of Streets and Sanitation is likewise empowered to vary the minimum distance between trees, plants and shrubs, in accordance with the variety of tree to be placed or planted within said streets of the City of Grand Rapids, and to make reasonable rules and regulations governing the placing of and maintenance of underground and aboveground public utility facilities in or near trees or tree roots.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.41. Modification.

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The Director of Streets and Sanitation is authorized to exercise discretion in the application of any rules or regulations promulgated hereunder, where practical difficulties in carrying out the strict letter of such rule or regulation would result in a personal hardship to someone affected thereby. Such applications, however, must be those of a character which will not impair the overall purposes and intent of this Chapter.

(Ord. No. 2003-44, § 1, 11-18-03)

[Secs. 3.42–3.44. Reserved.]

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ARTICLE 3. INTERFERENCE WITH TREES, PLANTS AND SHRUBS IN PUBLIC WAY

Sec. 3.45. Trees Not to Be Disturbed.

No person shall remove, destroy, break, cut, deface, trim or in any way injure or interfere with any tree, plant or shrub that is or may be hereafter placed or planted in any street by the City of Grand Rapids, without a proper permit from the Director of Streets and Sanitation. Plants or shrubs planted in any right-of-way by adjoining property owners pursuant to a permit acquired herein may be trimmed or cut to properly maintain said plant or shrub without obtaining a permit hereunder.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.46. Not to Apply to Public Improvements.

The provisions of Section 3.45 shall not be construed to apply to the removal of any tree, root, plant or shrub, or any part thereof, wherever the removal of same shall be necessary for the construction of new sidewalk projects, roadways, streets, avenues, alleys, pavements, sewers, watermains, or other public improvements where such public improvement is authorized by any public governmental agency.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.47. Director of Streets and Sanitation to be Notified.

Whenever any tree, plant or shrub must be removed, in whole or in part, because of the placing of a public improvement, the person responsible for the construction of said public improvement shall notify the Director of Streets and Sanitation of such necessity, within a reasonable time (not less than 5 working days) prior to the time work is to be done.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.48. Damage to Trees, Posters, etc., Prohibited.

No person shall attach or place any rope, wire, sign, poster, handbill or any similar object, on any tree now or hereafter planted or placed in any street.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.49. Deleterious Substance.

No person shall deposit or throw upon any street, parkway, avenue, alley, sidewalk, boulevard or gutter any material injurious to trees, plants or shrubs. This includes but is not limited to any poison, pesticide or chemical that is harmful to the tree or its root system.

(Ord. No. 2003-44, § 1, 11-18-03)

[Secs. 3.50--3.52. Reserved.]

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ARTICLE 4. TRIMMING OF TREES

Sec. 3.53. Trimming Required.

The owner or owners of any premises adjacent to a street, avenue, alley, sidewalk or boulevard, or other public property shall trim all branches of any tree, plant or shrub on such premises which overhangs any street, avenue, alley, sidewalk or boulevard, gutter or other public property so that there shall be a clear height of a minimum of fourteen (14) feet above the surface of the street and ten (10) feet above a sidewalk or public property unobstructed by branches.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.54. Dead Limbs and Branches.

The owner or owners of any premises adjacent to a street shall remove all decayed and broken limbs and branches from trees on such property where such limbs and branches overhang a street or public property.

(Ord. No. 2003-44, § 1, 11-18-03)

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ARTICLE 5. DISEASED TREES, PLANTS AND SHRUBS

Sec. 3.55. Power to Examine.

The Director of Streets and Sanitation shall have authority to take such legal action as may be necessary to enter onto any lot or premises within the City of Grand Rapids for the purpose of examining trees, plants and shrubs for infectious diseases which constitute a hazard to the people of Grand Rapids, or to other trees, plants or shrubs in the City of Grand Rapids.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.56. Procedure, if Infected.

If the Director of Streets and Sanitation shall find any tree, plant or shrub that is infected with a disease that constitutes a hazard to the people of Grand Rapids, or to other trees, plants or shrubs in the City of Grand Rapids, the Director shall notify the owner of such tree, plant or shrub in writing and give to such owner thirty (30) days in which to take such action as may be directed in the notice. If such owner fails to comply with the order of the Director of Streets and Sanitation, the Director of Streets and Sanitation shall have power to take such action as may be legally necessary to enter such lots or premises and remove said diseased tree, plant or shrub, and require the owner of such lot or premises to pay the cost of such removal, pursuant to the provisions of Section 24 of Title X of the City Charter of City of Grand Rapids.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.57. Decision Final.

The determination of the Streets and Sanitation Director with regard to any decisions required under this article shall be the final administrative determination of the matter.

(Ord. No. 2003-44, § 1, 11-18-03)

Sec. 3.58. Violation; Enforcement.

Violation of any provision of this Chapter 42 or of the Rules and Regulations promulgated hereunder, shall constitute a Municipal Civil Infraction, with fines as set forth in Section 9.857(a)(3) of the City Code. The Director of Streets and Sanitation, or his or her designees, are authorized to issue municipal civil infraction citations or municipal civil infraction violation notices to enforce the provisions of this Chapter.

(Ord. No. 2003-44, § 1, 11-18-03)

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ARTICLE 6.   URBAN FORESTRY COMMITTEE

Sec. 3.59.   Urban Forestry Committee.

An Urban Forestry Committee of nine members is hereby created. The Mayor shall appoint four members who shall be citizens with a demonstrated interest or expertise in trees, including one member from the membership of the Parks and Recreation Advisory Board and one certified arborist. The City Manager shall appoint three members, who shall be citizens with a demonstrated interest or expertise in trees, including one from the City's Streets and Sanitation Department and one from the City's Utility Departments (Street Lighting, Water or Environmental Services). Consumer's Energy shall appoint a representative to serve as a member on the Committee, and the City Forestry Supervisor shall be a permanent member of the Committee. All members of the Committee, except the City Forestry Supervisor, shall serve three (3) year terms.

(Ord. No. 2003-44, § 1, 11-18-03; Ord. No 2008-22, § 1, 6-24-08)

Sec. 3.60.   Duties and Responsibilities.

The Urban Forestry Committee shall be an advisory committee with the following duties and responsibilities:

(1)   Develop recommendations for a comprehensive tree management program within the City.

(2)   Develop recommendations for tree care, and for guidelines for planting, maintenance and removal of trees.

(3)   Make recommendations on the species of trees to be used in planting.

(4)   Make recommendations on changes or additions to the Rules & Regulations promulgated under Chapter 42 of the Code.

(5)   Develop recommendations for activities and promotions for Arbor Day and for other activities which might promote the planting and proper care of trees.

(6)   Conduct such special studies or projects as the Director, the City Manager or the City Commission may request.

The Committee shall select a chairperson and may adopt such rules of procedure for its meetings as it may deem appropriate. The Committee shall meet at least quarterly at a time and place convenient for its purposes. The Committee shall be subject to the provisions of the Michigan Open Meetings Act. [MCL §15.261 et seq.]

(Ord. No. 2003-44, § 1, 11-18-03)

[Secs. 3.61--3.80. Reserved.]