

Urban Forest Management Plan

City of Binghamton, NY



August 2010



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Urban Forest Management Plan

for

City of Binghamton
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Binghamton, New York 13901

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Introduction

In 2009, the City of Binghamton received a New York State Department of Environmental Conservation Urban and Community Forestry Grant to complete an urban forestry management plan. In April of 2010, the City hired Urban Forestry, LLC (UFLLC) to assist in developing the City's first Urban Forest Management Plan.

This document is the culmination of that work as well as the efforts of the City of Binghamton and its Shade Tree Commission (STC) over the last 3 years to improve the City's urban forest management operations. The Plan will serve as a road map to improve the City's urban forest management efforts with the goal of enhancing the quality of living for the city residents.

History of Urban Forestry in Binghamton

The benefits of urban trees are many. Trees in cities reduce storm water runoff and topsoil erosion, preserve water quality, cut heating and cooling costs for homes and workplaces, moderate air temperature, clean the air and water produce oxygen, and provide habitat for wildlife. Trees also increase property values, enhance economic vitality of business areas, and beautify our community. The City of Binghamton has long recognized the importance of maintaining a healthy urban forest and committed resources for that effort. The creation of the City's Urban Forest Management Plan is an important step toward further improving the urban forest while increasing efficiencies to keep costs manageable.



Circa 1950's Postcard. Depicts circa early 1900's Court Street lined with American elms that later were claimed by Dutch elm disease.

Like many urban communities, Binghamton has seen a significant decline in tree canopy coverage since the 1930's. The spread of the Dutch elm disease led to the loss of a large percentage of Binghamton's street trees, as they had been widely planted for their beautiful shape and wonderful shade. Reviving an urban forest requires leadership and dedicated resources.



The City of Binghamton has undertaken a number of activities and initiatives that demonstrate its commitment to developing and maintaining a vibrant urban forest. For the last three consecutive years and ten years total, the City of Binghamton has received the title of "Tree City USA" which the Arbor Day Foundation awards to municipalities who have demonstrated a strong commitment to community forestry. The criteria to receive this title include having a Tree Board or Department, a tree care ordinance, a comprehensive community forestry program, and an Arbor Day observance and proclamation. The City has not only fulfilled these criteria but has gone further to adopt additional best practices from the Arbor Day Foundation, including involving the City's Shade Tree Commission in planning and zoning site plan reviews, developing a community volunteer pruner program, and establishing a Tree Planting Donation Fund to allow the City to more easily accept private donations to help purchase and plant more trees. In addition, the City has been successful in securing competitive grant funds through the New York Department of Environmental Conservation (NYSDEC) Urban and Community Forestry Grant Program in 2005 and 2008 to help improve the City's urban forestry efforts. The earlier NYSDEC grant funded the City's 2006 Urban Tree Census, and the recent grant is funding the creation of this Urban Forest Master Plan and will help fund tree planting in 2010.

The City's forestry program is overseen by the Department of Parks and Recreation (DPR). DPR manages the City's Street Tree Planting Program, handles tree removal, and oversees tree pruning activities. Through the Street Tree Planting Program, residents are able to request a tree be planted in the utility strip in front of their property at no charge. The program is funded in part by the City's Tree Planting Donation Fund, Community Development Block Grant (CDBG) funds, and tax dollars. Mayor Ryan set a goal in 2007 of increasing the number of trees planted by 10% each year, and the DPR has been able to achieve that goal nearly every year. In addition, DPR plays a critical role in developing and carrying out successful annual Arbor Day celebrations. For the 2010 Arbor



Arbor Day 2008: Youth Planting a Tree with Mayor Matthew T. Ryan



Arbor Day 2010 at the River Trail

Day celebration, the City involved over 40 community volunteers in planting 40 trees and landscaping nearly a half mile of the Binghamton River Trail.

The City of Binghamton Shade Tree Commission is an advisory board for the City of Binghamton made up of seven members, who are charged with studying the problems and determining the needs of the City of Binghamton in connection with its tree planting programs. The Commission is also responsible for helping

the Department of Parks and Recreation determine what type of trees will be planted in the City and for assisting with the dissemination of news and information regarding selection, planting, and maintenance of trees within the City limits.

Though the Shade Tree Commission was originally created in 1978, it had become inactive in 1988 and did not operate for nearly twenty years. In 2007, Mayor Ryan and City Council reinstated the Commission, whose dedicated community volunteers had already been meeting on an ad-hoc basis for a year. Since its reinstatement, the role of the Commission has been strengthened to take advantage of the expertise of Commission members and to allow for greater community input in City operations related to tree planting and management. In 2008, the Commission worked with the City to develop the Yard Tree Coupon Program, which provides a \$35 coupon to eligible property owners for the purchase of a tree that will be planted on their land. The STC and City Staff are working to increase the popularity of the program, which has been modeled on other successful programs across the country.

While the City is proud of the achievements listed above, it recognizes that there is always room for improvement. Through the process of developing this Urban Forest Management Plan, the City has had the opportunity to critically evaluate its current operations and to develop goals that will help create a more successful and efficient management system while building a more resilient, vibrant urban forest that will provide benefits to all of our residents.

Urban Forestry Challenges in the City of Binghamton

The definition of a successful urban forestry program varies from community to community. However, urban forestry managers and scholars agree key common factors exist within communities where successful urban forestry programs are in place. Robert Miller, author of *Urban Forestry, Planning and Managing Urban*

*Greenspaces*¹ writes: "Communities where forestry has continued to do well were those communities where good management was supported by a long-term program of maintaining public support through information and education programs. Nighswonger (1982) describes a successful community forestry program as one that is cost-effective, involves people in the community, stimulates community pride, is well planned and is educational."

The City of Binghamton with the assistance of an Urban Forestry, LLC completed a detailed review of Binghamton's urban forest resource information and management practices. The objective of the review was to identify the strengths and challenges of the City's urban forestry program and develop a plan to enhance its efforts and address deficiencies. The plan will guide the City's urban forest management efforts to preserve and enhance the quality of the urban forest resource and thereby the quality of living for the residents of the City of Binghamton.

Two companion documents were created as part of the Management Plan development process: the Urban Forest Resource Analysis and the Urban Forest Management Analysis. These documents detail the findings of these analyses. The following is a summary of those findings.

Urban Forest Resource Analysis

The Urban Forest Resource Analysis reviewed the findings of the 2006 Tree Census and the 2006 Tree Cover Map and compared those findings to other New York state municipalities. The most significant finding of the analysis was the need for accurate data regarding tree health and management needs, as well as opportunities to plant trees in the City.



Emerald Ash Borer

Effective management of any resource requires accurate and timely information. Knowing the numbers of trees and their maintenance needs facilitates the development of work plans and budgets. Knowledge of the tree species composition and their numbers quantifies the risk an insect or disease pest represents to the urban forest. For example the emerald ash borer is lethal to ash trees and has been recently found in New York State and

¹ Miller, Robert W. Urban Forestry, Planning and Managing Urban Greenspaces. Englewood Cliffs: Prentice- Hall, 1988.

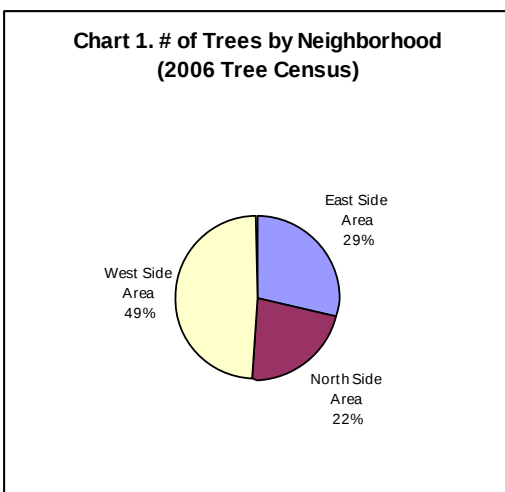
near the City of Binghamton.² A high population of ash trees in the city may represent a significant management challenge for the City.

2006 Tree Census

In the summer of 2006, a census of trees was completed in three neighborhoods of the City: the West Side, North Side, and East Side. The neighborhoods were selected based on median household income as shown by the census tracts in the City (Appendix 1:2006 Tree Census Areas Map).³ Inventory work was completed by Binghamton University interns and volunteers from the community and Binghamton High School. Information collected included: street and address, tree species, diameter, condition and tree lawn width.

The areas selected for surveying were not selected using statistically valid random sampling methodologies. As a result, the data cannot be used to accurately estimate tree conditions for the City as a whole. The results can provide some general insight into the condition of the trees in the each of the neighborhoods and the City, however, the questionable accuracy should be considered given the limitations of the census methodologies. As a result, the City needs to complete a statistically valid sample inventory or complete inventory of street and park trees.

There were approximately 2,700 trees inventoried in the three neighborhoods. The West Side neighborhood has the most trees and the North Side the fewest (Chart 1).



There is an average of 61 trees per mile in these areas. These areas represent approximately 14.4% of the total number of street miles in the city. There is an estimated 19,000 street trees if we apply the average of 61 trees per mile to the total 312 street miles in the City.

Urban Forestry, LLC has completed eight complete street tree inventories in municipalities across New York State (NYS). If we apply the statistics of those communities to the City of Binghamton, there would be an estimated 22,100 to

35,500 street trees. The accuracy of the 2006 Tree Census is in again in

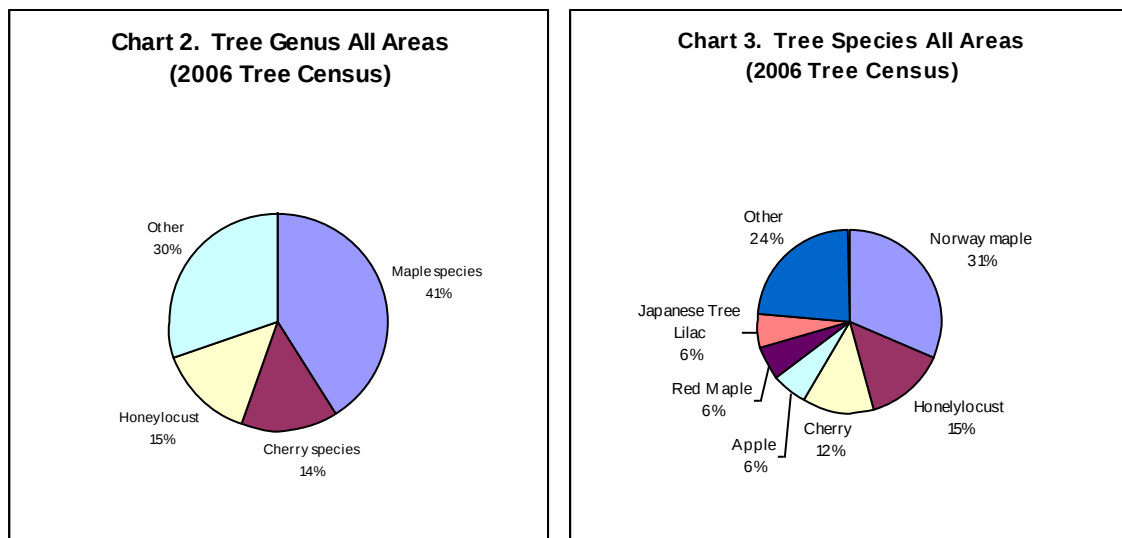
² For more information, visit <http://www.emeraldashborer.info>.

³ The City Of Binghamton Urban Tree Census Report is available on the Greening Binghamton page of the City's website (www.cityofbinghamton.com).

question given the Census estimates for the City are outside the NYS municipalities estimates.

Tree Species

The Census identified 40 different species of trees within 24 different tree genus within all of the tree census areas. Maples represent the highest percentage of the population at approximately 41% followed by cherry and honeylocust (Chart 2). Norway maple, at 31% represents the highest percentage of tree species in these areas and four additional trees species are over 5% of the population.



Urban forestry professionals recommend a single species of tree should not exceed 10% of the total population in an effort to minimize the potential impact of disease or insect pests on the urban forest. The high maple population is well above the 10% threshold and thus is reason for concern. Presently, there is an exotic pest that threatens maples and one that threatens ash trees in NYS that were imported from Asia. The emerald ash borer, mentioned earlier, is lethal to ash trees and has been found in New York State. Fortunately the City has few ash trees in these neighborhoods to raise concern; however planting ash trees should be avoided and the City should complete an inventory of the location of ash trees on public property. The tree population in these neighborhoods is susceptible to losses from Asian long horned beetle which preys on maples.⁴ Mitigation measures have been in place in the outbreak areas of New York City and Chicago for a number of years with some success and infestations do not appear to be expanding. Early detection of insect and disease pests and reducing the numbers of high populations of trees in the public tree population by

⁴ Information on the Asian long horned beetle is available at: www.na.fs.fed.us/fhp/alb/

increasing tree species diversity as trees are removed is the first line of defense followed by culling of infected trees after detection.

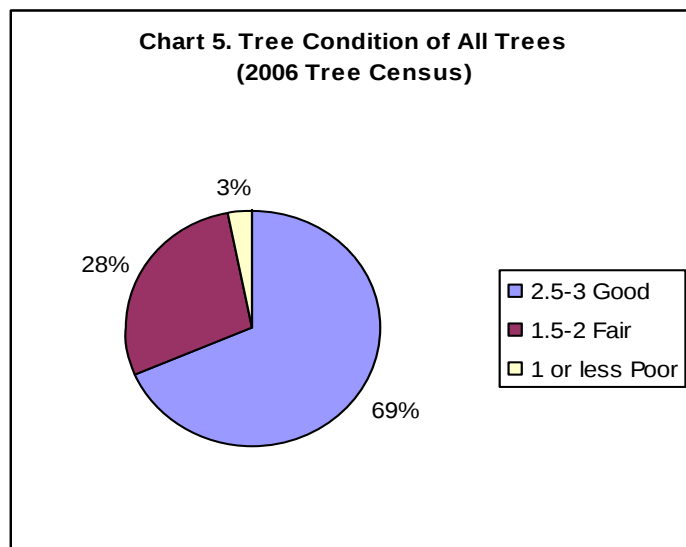
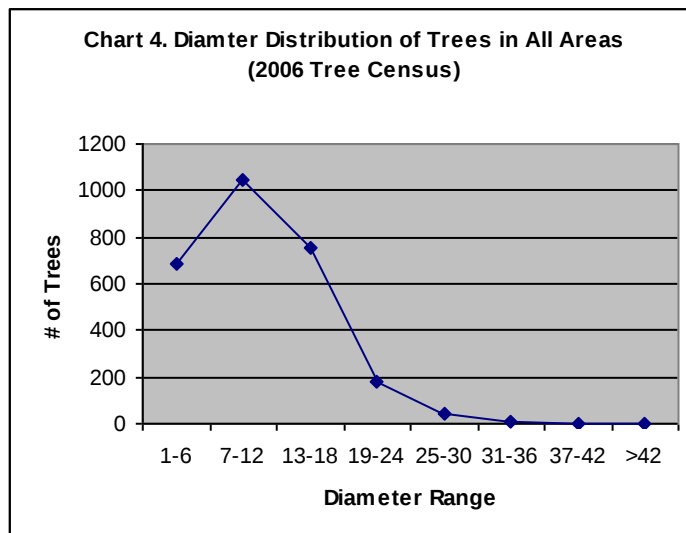
Tree Diameter

Trunk diameter is an indicator of tree age. There are relatively few large trees in the study areas (<3%) as indicated by number of trees that are 25 inches in diameter or larger (Chart 4). Large trees are more costly to maintain however they also provide the most environmental benefits such as reducing storm runoff, air pollution and buffering temperature extremes. Dedication resources to maintain and enhance the condition and lifespan of large and mature trees helps maximize these benefits. Implementing a regular pruning program of public trees is a practice the City should employ to improve tree health and longevity.

Ideally, we would like to see the highest percentage of trees population of trees in the 1-6 inch diameter representing a strong planting program, a higher and consistent number of larger trees through the 30 inch diameter ranges, and ending with a slow decline in the numbers of very large diameter trees. The large proportion of young and semi-mature (1-12 inches in diameter) population of trees in these areas indicate an active tree planting program. It can also be that there is a high population of small stature trees and/or a high proportion of restricted growing space such as narrow tree lawns.

Tree Condition

Condition scores were grouped into poor, fair and good condition classes for presentation and discussion.



Sixty-nine percent of the trees are in good condition and 3% are in poor or worse condition including 10 dead trees (Chart 5). Provided these evaluations are accurate this is exceptional. The UFLLC NYS community's average for the percentage of trees in poor condition is 15%.

Park Trees

The 2006 Tree Census did not include inventorying trees on city park lands. Park trees are a lower priority for maintenance versus street trees. Trees in



Large mature and over-mature oaks in Recreation Park.

parks are typically healthier due to better growing conditions. The City has approximately 620 acres of park land. Using a conservative estimated of 10 trees per acre, there may be an estimated 6,200 park trees.

The risk of personal injury and property damage is generally lower in park areas. However, there are areas in parks such as playgrounds and other high use areas that should be regularly inspected for risk trees.

2006 Tree Cover Map

Trees on public property only represent a small percentage of the total number of trees or tree cover in a municipality. Some estimates suggest a street tree population only represents 10% of the trees in an urban area. As a result, trees on private property are providing the majority environmental benefits in an urban area. Identifying areas of low tree cover can assist in focusing efforts to improve the quality of living in the City as a whole and in localized areas. There are more opportunities to plant trees on private property and in particular the most beneficial large tree species of trees.

The Binghamton Neighborhood Project developed a tree cover map in 2006 that estimates the percent tree cover in each of the census blocks in the City (Appendix 2: 2006 Tree Coverage Map). The findings of this map can be useful for planning purposes. Specifically, efforts should focus on residential neighborhoods with low tree cover. Improving tree cover in these neighborhoods will improve the quality of living for the residents and the environmental quality of the City as a whole.

Tree Management Needs

The Tree Census did not identify the management needs of the trees or sites available to plant trees. This is an important objective of a tree inventory. Knowing the numbers of trees that require priority maintenance to reduce tree related risks as well as routine maintenance facilitate identifying funding needs, budgets and work plans. A professionally completed inventory would provide management need figures. Identifying and mitigating the risk of tree failures is the first priority of an urban forestry program. A tree risk survey is the most efficient methodology to mitigate tree risk. A tree risk survey should be completed first to identify mitigate risk trees present on public property.

Urban Forest Management Analysis

The Urban Forest Management Analysis reviewed the City's urban forest management practices including policy, funding, staffing, work organization and community involvement. The analysis found the City is doing an excellent job in community involvement and education; however, there are some challenges in planning, management and funding.

Policy

The foundation of a good program begins with sound policy. Policies define the legal authority of the City to manage its urban forest and inform citizens of the terms and conditions of service delivery. Policies also represent a sense of strong leadership, commitment and professionalism. These policies are expressed in the form of city legislation (City Code), administrative and operation policies and standards and specifications.

In general, the city code should only define issues that will not or should not be changed in the future. This includes what City department, board and/or job position has the authority to set policy and manage trees on public property and dangerous or diseased trees on private property. It may also provide protection measures for trees on private property. The City Code is adequate as written, however, could use strengthening with regard to protection of trees on private property.

The City needs to develop and adopt administrative and operational policies as well a standards and specifications.

There should be written policies for tree removal, tree pruning, tree planting, tree protection and service delivery. The City code defines many of these policies. These policies should also be presented in a form that is easily disseminated to

the public such as brochures. Binghamton's policies should detail the conditions under which service will be delivered and timeframes for service delivery.

Planning and Management

One of the government's charges is to use public resources in the most effective and efficient manner possible. The methodologies employed by government to identify and complete work dictate whether resources are being used in the most efficient and effective manner.

Proper planning leads to efficient and effective management. An efficient urban forestry program is a function of how work is identified, organized, distributed and completed. The program's efficiency and effectiveness must also be measurable.

Currently Binghamton's work is identified through requests from the public, other City units or happenstance. The work is then distributed to crews for completion immediately if the situation warrants. There is no systematic program to identify tree removals or priority pruning needs throughout the City on a regular basis. There is not a tree inventorying program.

Work can be completed by City staff or contractors. While in-house staff or contractors can effectively complete forestry work tasks, some activities are better suited for one or the other. Expertise, required equipment as well as the workload of in-house staff also needs to be evaluated to assist in making decisions on whether to complete work in house or to hire contractors for certain work. Work can be divided into three types; management, inspection and work tasks. Inspection tasks include; tree inspections, work surveys, inventorying and contract monitoring. Work tasks include; pruning, planting and removal.

The Department of Parks and Recreations (DPR) is responsible for managing the City trees with the advisory assistance from the Shade Tree Committee. DPR should take clear leadership in meeting its responsibilities. It should also appoint a representative to the staff vacancy on the Shade Tree Commission.

The City currently assigns two staff positions, the Assistant Supervisor and a Tree Trimmer position which is vacant, some tree management activities on a part-time basis. . The City also contracts with a Consulting Forester. These positions and time allocated to forestry inspection and work activities are insufficient to meet the City's urban forestry workload. Their roles should be evaluated in the context of developing a plan to meet the City's forestry workload, other obligations and budget.

Volunteers are a valuable asset to meet the objectives of community involvement and education. However, it is difficult to rely on the use of volunteers to meet

forestry workload demands. Volunteers have limited time, knowledge and experience. Utilizing their time efficiently and effectively will result in a more rewarding experience and help ensure continued participation. Volunteers can assist in closing the gap in meeting the forestry workload, however, the assigned tasks should be a well defined project that is short in duration and will be completed within the project timeframe. The following tasks are projects that are suitable for volunteers:

- Organize volunteer efforts and project development.
- Tree planting project on a single street or in a park.
- Train pruning trees in a single neighborhood, on a street or in a park.
- Inventory sites to plant trees in a single neighborhood, on a street or in a park.

Work reporting and maintaining accurate records are administrative functions that are important to an efficient and cost effective urban forestry program. The method used for work reporting should be simple to use and facilitate the collection of relevant work history information. Maintaining accurate records requires procedures for logging information to ensure consistency of reporting and quality control procedures to identify errors.

Activity procedures should be written for the work activities. Written procedures are needed to help ensure consistency in data collection and recording. They also provide a road map to meet standards and specifications. Finally, they allow for more than one person to complete a task and maintain consistency and accuracy.

Accurate records allow the City to measure the efficiency and effectiveness of management programs over time. Urban forestry work activities and costs should be tallied on an annual basis.

Community Involvement & Education

The Shade Tree Committee is an invaluable asset to the City. It is clear, by its formation, that the City values the participation of its residents in the activities of City government.

The tree planting projects, young tree pruning program, Urban Shade Tree publication and the Yard Tree Coupon Program are outstanding examples of community involvement and education. These accomplishments and opportunities create venues to educate the community about the City's program and activities and educate the public in proper tree care. The City's community involvement and education efforts are a model for other municipalities. Building

on these on the successes will only enhance the Urban Forestry programs and the City's quality of living.

Funding

Estimated workloads (Table 1) and budgets were developed based on other similar NYS municipalities. It is estimated the City would need an annual budget of \$352,000 to \$582,000 to manage the urban forest at an ideal level. The City presently allocates between \$125,000 and \$150,000 per year for forestry management and work activities. There is clearly a deficiency in funding.

Table 1. Current Workload Estimate		
	Low Estimate	High Estimate
Street Trees		
Tree/Sites/ Mile	108	131
Stocking Rate	47%	74%
Trees	15,800	30,200
Planting Sites	17,900	10,700
Tree & Stump Removals 1-5%	158	1,510
Priority Prunes 3-10%	474	3,020
Routine Prune 7 year rotation	15,168	25,670
Park Trees		
Trees		6,200
Tree & Stump Removals 6%		186
Priority Prunes 3-10%		372
Routine Prune 10 year rotaion		564
Planting		195

Summary of Analysis and Recommendations

The findings outlined in the Urban Forest Resource Analysis and the Urban Forest Management Analysis, detail the challenges and issues for the City in managing the urban forest. The City needs more accurate information regarding its urban forest resource and opportunities to plant trees. The City's code is well written and could use only minor changes. Forestry policies should be developed for all activities as well as arboricultural standards and specifications.

The absence actual tree management information regarding the City's forestry workload limits City's ability to effectively manage its community forest with a high level of confidence. The estimates developed in this analysis provide potential tree counts and needs, possible workloads and budget implications. However, most importantly they demonstrate the need for accurate



Cheri Lindsey Park

management information. The City should develop a plan to gain more accurate management information through work surveys, a sample tree inventory or complete tree inventory.

There are opportunities to improve the planning and management of the City's urban forest. Organizing and prioritizing the workload will lead to efficiencies. There are challenges in deciding how work will be completed such as the deficiencies with the in-house crew and meeting the inspection workload. Developing administrative procedures and tracking work activities will facilitate measuring the progress of the implementation of the forestry plan.

The City's community involvement and education efforts are model for other municipalities. Building on these on the successes will only enhance the program and the City's quality of living.

As with all municipalities, funding is and will always be a challenge. Implementing management strategies to improve how work is identified, organized and completed will stretch limited funds. Seeking and securing outside funding sources will assist in fill the shortfalls the present City funding.

These challenges provided the information necessary to develop the following goals and objectives to guide the City's urban forestry management efforts and ultimately improve the quality of living for the residents of the City of Binghamton.

Comprehensive Goals, Current Challenges, Goals, Objectives & Action Steps

The following goals and objectives detail a five year plan developed to address the challenges identified in the planning process. Comprehensive goals represent the long range vision for a particular management element in order of priority. Current challenges identified in the planning process are limiting the City's ability to achieve the comprehensive. Goals are listed with objectives designed to address the challenge and fulfill the comprehensive goal. The comprehensive goals and the objectives for each goal are listed in the priority they should be addressed.

Comprehensive Goals

1. Binghamton's management of the urban forest resource will be organizationally and fiscally efficient.
2. Binghamton's urban forest will be healthy and will not threaten the welfare of the residents and visitors.
3. Binghamton will have sufficient human and financial resources to sustain the urban forestry program.
4. Binghamton's residents will be informed and recognize the value of the urban forest resource, the city's urban forestry program and participate in its management.
5. Binghamton's urban forest resource will provide many environmental and social benefits for the residents of the city and will be reasonably protected from careless or malicious damage.
6. Binghamton's urban forest will grow in number, be more diverse and have a variety of proven, well-adapted tree species.

Comprehensive Goal #1

Binghamton's management of the urban forest resource will be organizationally and fiscally efficient.

Goal (Years 5-10)

- Review and update the management plan at the end of year 5.

Annual Objectives

- ✓ Provide regular training for staff in professional development and management. (ongoing)

- ✓ Conduct an internal review of the management plan and evaluate the implementation of objectives (DPR will conduct the review with the assistance of the Department of Planning, Housing & Community Development).

Challenges, Goals & Objectives

Current Challenge 1A

The lack of forestry operational and planning leadership in the DPR limits the implementation of the forestry program.

- Assign Staff within DPR with duties of managing the forestry work activities in year 1.
- Assign a DPR representative serve as an ex-officio member on the Shade Tree Commission by year 1.

Current Challenge 1B

The lack of accurate data of the staff time spent working on forestry activities and annual forestry workload figures limits the City's ability to determine workload demand, develop budgets, and measure the effectiveness and efficiency of the forestry program.

- Develop annual workload indicators for forestry activities by year 1.

Including:

- ✓ # of forestry service requests
 - ✓ # of tree removals & cost
 - ✓ # of stump removals & cost
 - ✓ # of mature tree pruning & cost
 - ✓ # of train tree pruning and cost
 - ✓ # of priority pruning⁵ & costs
 - ✓ # of tree plantings & cost
- Develop administrative and operation procedures to prioritize and report forestry work activities by year 1.

Including:

- ✓ Prioritize forestry service requests and work based on need.

⁵ Priority Pruning – Tree pruning to remove dangerous or defective branches.

- ✓ Develop a service request inspection/work order forms that report the completion of work based on the annual forestry work load indicators.
- Assign the Department of Public Works Data Coordinator to assist the development of a data tracking system for DPR.

Current Challenge 1C

There is insufficient qualified City staff to meet the forestry workload demands. Tree work and inspection roles are not defined for City or contract labor. The effectiveness, efficiency and safety of the in-house forestry crew are limited by the lack of skilled forestry worker positions.

- Tree work activities are assigned to in-house and/or contract labor by year 1.
 - Complete an evaluation of the merits and cost effectiveness of using contractors versus staff positions to fulfill forestry work activities needs.
 - Survey other comparable cities for methodologies and costs of fulfilling inspection needs, forestry crew composition and equipment.
 - Develop a list of safe and productive forestry crew components.
 - Inventory the City's equipment and develop a list of equipment deficiencies and costs to acquire and maintain.
 - Investigate Civil Service titles for titles and job descriptions that will fulfill the forestry worker needs.
 - Determine the wage and benefits for two of these positions.
 - Calculate the annual cost to field an in-house forestry crew.
 - Solicit estimates from qualified tree work contractors for hourly crew rates for emergency tree work.
 - Solicit estimates from qualified tree work contractors for unit price costs for scheduled tree removal and pruning.
- Tree inspection and management needs are assigned to in-house staff and/or a consulting forester by year 2.
 - Complete an evaluation of the merits and cost effectiveness of using urban forestry consultants versus staff positions to fulfill forestry inspection and management needs.

- Evaluate the current qualifications of the consulting forester's and the Assistant Supervisor of DPR to fulfill the needs identified in the Management Analysis.
- Evaluate the Assistant Supervisor of DPR's ability to meet the time requirements to fulfill the needs identified in the Management Analysis.
- Solicit estimates from qualified consulting arborists to fulfill the deficiencies identified in the evaluations above.

Current Challenge 1D

The lack of geographical forestry management units and an annual forestry activity work schedule limits the efficiency of the urban forestry program.⁶

- Develop an annual work schedule by year 1.
- Develop forestry management units by year 2.

Comprehensive Goal #2

Binghamton's urban forest will be healthy and will not threaten the welfare of the residents and visitors.

Challenges, Goals & Objectives

Current Challenge 2A

The City does not have a program to systematically identify and mitigate tree risk.

Long Range Goals

- Annual tree removals will fall below one-percent of the total tree population.
- Annual priority pruning needs will fall below five-percent of the total tree population.

Plan Goals

- The City will complete a street tree risk survey by year 3.

⁶ Work is completed more efficiently if grouped geographically and by work activity.

- The City will complete a park tree risk survey by year 5.
- A systematic inspection of the city's street trees to identify and mitigate potential tree related risks will be complete on a regular scheduled basis by year 5.

Current Challenge 2B

The City does not have accurate management information regarding the City's public trees.

- Complete a statistically valid sample inventory of street trees by year 4.
 - Develop an RFP for a sample street tree inventory.
- Complete a statistically valid sample or complete inventory of park trees by year 5.
 - Develop an RFP for a sample park tree inventory.

Current Challenge 2C

Frequent "train" pruning of young trees improves the branching structure of a tree resulting in prolonging a trees life span, reducing the potential for storm damage as well as reducing future maintenance costs. Regular periodic pruning of mature trees prolongs a trees lifespan by reducing the potential for storm damage as well as maintaining clearance over the street, sidewalks and from permanent structures. The City does not have an annual schedule to prune young or mature trees.

Once tree risk pruning and removal needs have been met, develop a schedule to train prune young trees on a 3 year rotation, mature street trees on a 5 to 7 year rotation and mature park trees on a 10 year rotational basis.

- Explore utilizing the in-house crew to train prune trees by year 1.
- Expand the Volunteer Pruner Program to train prune young trees by year 5.
- Develop annual costs estimates to implement a mature tree rotational pruning program by year 5.

Current Challenge 2D

Insect and disease pests can threaten the health and longevity of individual trees as well as a large number of trees in the urban forest. A severe pest infestation can lead to significant tree losses and mitigation costs for the City.

The City does not have a program to identify potential insect and disease threats to the urban forest.

- Monitor forestry literature for potential insect and disease threats to the urban forest and develop management plans if a pest represents a significant risk. (annual)
- Based on tree inventory data avoid planting tree species that exceed 5% of the population or are the host of a significant tree pest. (ongoing)
- Conduct a survey to identify the location of ash trees in the urban forest to quantify the potential risk of emerald ash borer by year 2.

Current Challenge 2E

Damaging storm events are occurring with regular frequency. The City does not have a forestry emergency response plan.

- Develop an emergency response plan that will help ensure sufficient in-house and contract work force needs for various intensities of storm events by year 3.

Comprehensive Goal #3

Binghamton will have sufficient human and financial resources to sustain the urban forestry program.

Challenges, Goals & Objectives

Current Challenges 3A

There is insufficient staff or assistance to meet the demands for work surveys and inspections. The effectiveness, efficiency and safety of the in-house crew are limited by the lack of skilled forestry worker positions.

- There is a fully functioning forestry crew by year 2 (if approved in Goal #1).
- Staffing or consulting foresters are fulfilling forestry management and inspection needs by year 5.

Current Challenges 3B

The City's current forestry budget is not sufficient enough to address the urban forest management needs identified in the Management Analysis.

- Seek and apply for grants to fund tree planting and management needs (ongoing).
- Publicize the Tree Planting Fund and solicit donations to fund tree planting (ongoing).
- Secure funding (if required for in-house crew) for two skilled forestry worker positions and one laborer position by year 1.
- Donations are being received from corporations, businesses and individuals to fund tree planting by year 1.
- Secure funding to complete a street tree risk survey by year 2.
- Secure funding for to complete a statistically valid sample street tree inventory by year 3.
- Secure funding to address the needs identified in the street tree risk survey by year 4.
- Secure funding to complete a park tree risk survey by year 4.
- Funding for forestry activities is sufficient to meet the management needs of the ideal forestry program identified in the Resource Analysis by year 10.

Comprehensive Goal # 4

Binghamton's residents will be informed and recognize the value of the urban forest resource, the City's urban forestry program and participate in its management.

Challenges, Goals & Objectives

Current Challenge 4A

The foundation of a good program begins sound policy. Policies define the legal authority of the City to manage its urban forest and inform citizens of the terms and conditions of service delivery. Policies also represent a sense of

strong leadership, commitment and professionalism. There are no written policies for tree removal, planting, pruning, public notification, service requests and service delivery.

- Develop and adopt policies for tree removal, planting, pruning, public notification, service requests and service delivery by year 1.
- ✓ Consult with the Shade Tree Commission in the development of the policies.
- ✓ Survey other cities about their urban forest management policies by year 1.

Current Challenge 4B

The residents of Binghamton have limited knowledge of the City's urban forestry program and proper tree care.

- Develop brochures that educate the public regarding the City's urban forestry program by year 2.
- Forestry service and program information is available on the City's web site by year 2.

Annual Objectives

- ✓ DPR and the Department of Planning, Housing & Community Development coordinate to maintain the City's Tree City USA status and hold annual Arbor Day celebrations (ongoing).
- ✓ Continue to support the Yard Tree Coupon program.

Current Challenge 4C

Volunteers are a valuable asset for meeting the objectives of community involvement and education. However, it is difficult to rely on the use of volunteers to meet forestry workload demands. Volunteers have limited time, knowledge and experience. Utilizing their time efficiently and effectively will result in a more rewarding experience and help ensure continued participation.

- Evaluate the management needs of the City and develop or enhance programs that will be the most useful and rewarding use of volunteers time as recommended in the Management Analysis by year 2.

Comprehensive Goal # 5

Binghamton's urban forest resource will provide many environmental and social benefits for the residents of the city and will be reasonably protected from careless or malicious damage.

Challenges, Goals & Objectives

Current Challenge 5A

The City does not have an arboricultural standards and specifications document. An arboricultural standard is a statement of quality of service. Standards allow the customer to measure the quality of service. For the service provider the standard defines the expectation. Specifications inform the service provider how to achieve the desired standard and an inspector to evaluate whether the service provider has achieved the standard. The City does have a construction tree protection specification. The specification is too general and mentions dated practices. The specification should be updated and more specific regarding tree protection requirements such as protection fencing root cutting and trenching in proximity to trees.

- Develop an RFP to solicit a consultant to prepare an arboricultural standards and specifications document by year 4.

Current Challenges 5B

Chapter 360-22 of the City code provides for protection of trees on private property under the development approval process. Chapter 360-22 should be strengthened to provide more protection of trees during development.

- Chapter 360-22 of the City code has been updated to provide more protection for trees on public property during development per the recommendations in the Management Analysis by year 3.

Comprehensive Goal # 6

Binghamton's urban forest will grow in number, be more diverse and have a variety of proven, well-adapted tree species.

Challenges, Goals & Objectives

Current Challenge 6A

The 2006 Tree Census revealed that the populations of three tree species are above the recommended threshold of 10% of the population.

Long Range Goal

- No tree species shall exceed ten percent of the total tree population.

Plan Goals

- Annually review and refine the list of acceptable tree species for planting in the city.

Annual Objectives

- ✓ A moratorium on planting Norway maple will be in effect until the population drops below ten percent.
- ✓ Increase species diversity in Binghamton through the use of a variety of proven, well-adapted, but relatively uncommon species.

Current Challenge 6B

The 2006 Tree Census revealed the city's stocking rate is below the NYS average. The 2006 Tree Census revealed that the stocking rate is lowest in the lowest income neighborhoods.

- The number of trees planted will be at least 25% more than the number of trees removed the previous year. (ongoing)
- Based on an accurate inventory of the number of planting sites set an annual planting goal to achieve a desired street tree stocking rate by year 5.
- Tree planting target areas have been developed by year 5.

- A brochure for the tree planting fund is published by year 1.

Current Challenges 6C

The 2006 Tree Cover map reveals the tree cover is very low in some census areas of the City.

Annual Objectives

- ✓ Seek and apply for grants to fund tree planting (ongoing).
- ✓ Continue the Yard Tree Coupon program.

Goals, Objectives and Actions Steps by Year

Annual Objectives

- Provide regular training for staff in professional development and management. (ongoing)
- Conduct an internal review of the management plan and evaluate the implementation of objectives.
- Monitor forestry literature for potential insect and disease threats to the urban forest and develop management plans if a pest represents a significant risk. (annual)
- Based on tree inventory data avoid planting tree species that exceed 5% of the population or are the host of a significant tree pest. (ongoing)
- Seek and apply for grants to fund tree planting and management needs (ongoing).
- DPR and the Department of Planning, Housing & Community Development coordinate to maintain the City's Tree City USA status and hold annual Arbor Day celebrations (ongoing).
- Continue to support the Yard Tree Coupon program.
- A moratorium on planting Norway maple will be in effect until the population drops below ten percent.
- Increase species diversity in Binghamton through the use of a variety of proven, well-adapted, but relatively uncommon species.
- The number of trees planted will be at least 25% more than the number of trees removed the previous year.
- Seek and apply for grants to fund tree planting (ongoing).
- Continue the Yard Tree Coupon program.
- Annually review and refine the list of acceptable tree species for planting in the city.

Year 1

- Assign Staff within DPR with duties of managing the forestry work activities in year 1.
- Assign a DPR representative serve as an ex-officio member on the Shade Tree Commission by year 1.
- Develop annual workload indicators for forestry activities by year 1
- Develop administrative and operation procedures to prioritize and report forestry work activities by year 1
- Assign the Department of Public Works Data Coordinator to assist the development of a data tracking system for DPR.
- Tree work activities are assigned to in-house and/or contract labor by year 1.
- Develop an annual work schedule by year 1.
- Explore utilizing the in-house crew to train prune trees by year 1.
- Secure funding (if required for in-house crew) for two skilled forestry worker positions and one laborer position by year 1.
- Donations are being received from corporations, businesses and individuals to fund tree planting by year 1.
- Develop and adopt policies for tree removal, planting, pruning, public notification, service requests and service delivery by year 1.
- A brochure for the tree planting trust fund is published by year 1.

Year 2

- Tree inspection and management needs are assigned to in-house staff and/or a consulting forester by year 2.
- Develop forestry management units by year 2.
- Conduct a survey to identify the location of ash trees in the urban forest to quantify the potential risk of emerald ash borer by year 2.

- There is a fully functioning forestry crew by year 2 (if approved in goal 1).
- Secure funding to complete a street tree risk survey by year 2.
- Develop brochures that educate the public regarding the City's urban forestry program by year 2.
- Forestry service and program information is available on the City's web site by year 2.
- Evaluate the management needs of the City and develop or enhance programs that will be the most useful and rewarding use of volunteers time as recommended in the Management Analysis by year 2.

Year 3

- The City will complete a street tree risk survey by year 3.
- Develop an emergency response plan that will help ensure sufficient in-house and contract work force needs for various intensities of storm events by year 3.
- Secure funding for to complete a statistically valid sample street tree inventory by year 3.
- Chapter 360-22 of the City code has been updated to provide more protection for trees on public property during development per the recommendations in the Management Analysis by year 3.

Year 4

- Complete a statistically valid sample inventory of street trees by year 4.
- Secure funding to address the needs identified in the street tree risk survey by year 4.
- Secure funding to complete a park tree risk survey by year 4.
- Develop an RFP to solicit a consultant to prepare an arboricultural standards and specifications document by year 4.

Year 5

- The City will complete a park tree risk survey by year 5.
- A systematic inspection of the city's trees to identify and mitigate potential tree related risks will be complete on a regular scheduled basis by year 5.
- Complete a statistically valid sample inventory of park trees by year 5.
- Expand the Volunteer Pruner Program to train prune young trees by year 5.
- Develop annual costs estimates to implement a mature tree rotational pruning program by year 5.
- Staffing or consulting foresters are fulfilling forestry management and inspection needs by year 5.
- Based on an accurate inventory of the number of planting sites set an annual planting goal to achieve a desired street tree stocking rate by year 5.
- Tree planting target areas have been developed by year 5.
- Review and update the management plan at the end of year 5.

Long Range Goals

- Annual tree removals will not exceed one-percent of the total tree population and trees will be removed only as needed.
- Annual priority pruning needs will not exceed five-percent of the total tree population.
- Funding for forestry activities is sufficient to meet the management needs of the ideal forestry program identified in the Resource Analysis by year 10.
- No tree species shall exceed ten percent of the total tree population.

Closing

Trees provide a measurable function in the urban environment, similar to our streets and storm sewers. Like other elements of the city infrastructure, trees require maintenance and replacement and thus adequate funding and deliberate and thoughtful planning and management.

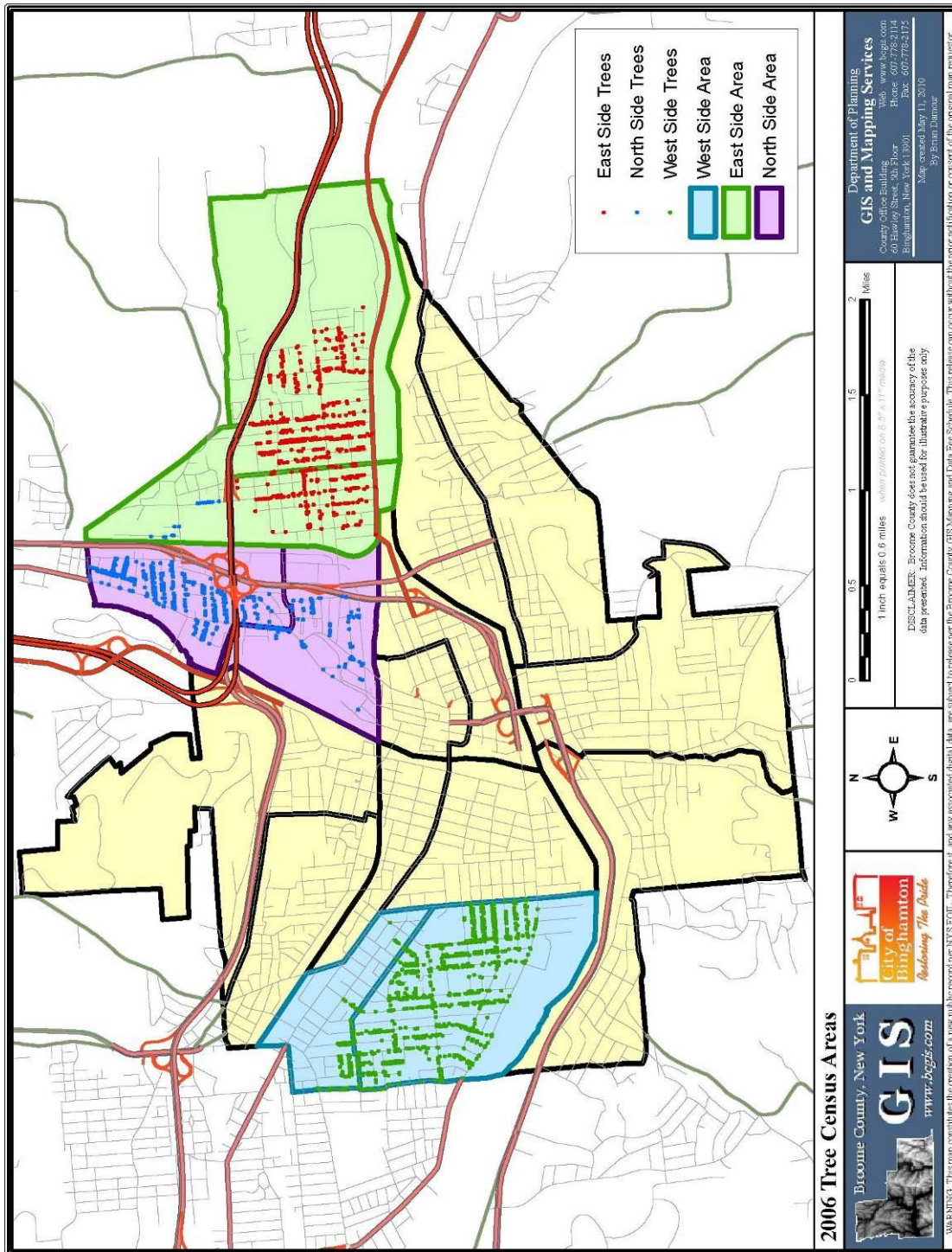
Trees also provide less tangible benefits such as serving as meeting places and linking people with the natural environment. All of these benefits make our city more livable and attract visitors and residents to the City of Binghamton.



2009 Arbor Day Ceremony

The City faces many challenges and priorities for the attention of City government and funding. The Urban Forest Management Plan is a testament to the City's commitment to maximize the functions and benefits the urban forest provides in improving the quality of living for the residents of the City. Implementing the goals and objectives in this Plan will require a concerted effort and commitment of City leadership and the citizens of the City of Binghamton alike.

Appendix 1 – 2006 Tree Census Areas



Appendix 2 – 2006 Tree Cover Map

Percentage of Tree Cover By Census Block
City of Binghamton

