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**Illinois Urban and Community Tree Programs:
an update of the protection, care, and
management of our urban forests**

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Executive Summary

The purpose of Illinois' Urban and Community Forestry program is to assist communities and local units of government in the development and growth of local community forestry programs. Citizens benefit by living in a high quality urban forest managed for aesthetics, health, and safety that will provide oxygen, air conditioning, pollution reduction, wind breaks, and habitat. In the face of impending exotic invasions such as the Emerald Ash Borer (EAB) and other invasive insects and diseases, having a solid knowledge base of where Illinois' communities stand in their management, care, and protection of their urban trees is imperative. The Illinois Department of Natural Resources Urban Forestry Section's mission is to provide high quality assistance to municipalities for tree programs and care.

This report presents the results from a survey conducted by polling communities across Illinois. In 1995 and 1999, Illinois small and large communities were surveyed (hereafter collectively referred to as Green's surveys) to obtain information on the status and needs of tree programs and to recommend ways to support small communities in developing these programs (Green et al. 1998, Green et al. 2002). Since these surveys, the population in Illinois has grown from 12,419,293 to 12,910,409 with a large percent of the population living in urban areas. This report reflects the changes and progress made in large and small Illinois communities concerning tree care attitudes, programs and practices. The purpose of this survey was to readdress some of the previous questions posed by Green's surveys and also to add questions addressing current practices and response preparedness to current urban forest threats.

This executive summary highlights the major topics covered by the survey, the main findings, and recommendations based on those findings.

Responding Communities and Tree Care Programs Overview

When compared with Green's surveys, tree care and urban forestry programs have increased. Not only has significant increases been seen in the number of cities with urban forestry programs, but also in program components such as a full time tree care staff, tree care plans and ordinances, tree inventories as well as an increase in the number of Tree City USA communities. It is evident that IDNR has achieved significant accomplishments in this improving the health of Illinois' urban forests and this survey provides a clearer picture of the new and continuing challenges presented to the Agency.

A total of 398 communities were surveyed for this project; 180 of which hold Tree City USA status. Of the responding communities, 123 were Tree City communities and 103 non-Tree City communities responded for a total response rate of 68% and 47%, respectively and an overall response rate of 57%. Geographically 124 responses were from Northeastern Illinois, 61 from central Illinois and 41 were from southern Illinois. This demographic is similar to the municipal composition within the state of Illinois. In Tree City USA communities 84% of survey respondents were the person directly responsible for the trees within their community, while only 61% were the responsible parties from the non-Tree City USA communities.

Appendix B (continued). Tables of Responses Broken Down by Community Size

In 81% of the communities, the population was under 25,000 (i.e., a “small” community). For these communities, the public works department or chief local elected official, either the mayor or the village board president, was often the one in charge of tree care. In large communities (>25,000 people), the trees were more likely to be taken care of by a forestry department or by a city forester or arborist. This reflects the fact that small communities are still less likely than large communities to have staff with specialized training in tree care.

In Green’s surveys, 18 % of the communities responded that they had a tree commission or board. Currently, 31% of the responding communities have a municipal tree commission or board and 47% reported having a tree care/management plan.

Attitudes Towards Urban and Community Trees and Tree Care

In general, Illinois communities felt strongly about the value and benefits of urban and community trees. This study asked several attitudinal questions. Some of these questions were longitudinal in nature, asked exactly as in Green’s surveys. This allowed an opportunity to see if the current state of the economy has had an impact on attitudes about municipal tree care and trees within communities in general or if attitudes have changed over the past 10 years. In our study, Tree City communities tended to hold stronger and more positive attitudes about the benefits of trees to their communities than did non-Tree City communities, especially in southern Illinois.

The attitudes provided were generally favorable toward the importance and benefits of trees to the community. Green et al. (2002) found municipal officials from Illinois communities of all sizes had very strong positive attitudes about the value of community trees. They found 90% of survey respondents felt trees improve the appearance of a community and that it is important to maintain a healthy community environment for enhancing the quality of life in a community, compared to 98% of respondents in the current survey. Respondents also agree that trees help maintain a healthy community environment and help enhance the quality of life. Fewer, but still over 86% of respondents also agreed that trees in business districts help to attract customers to an area. This is an 8 percentage point increase over the 78% respondents that the Green surveys found to agree with the same statement.

Respondents were less likely to agree with the statement that their community forest provides major ecosystem services to their residents with only 67% agreeing with the statement (this question was not asked by Green’s survey); though a majority of Tree City respondents (86%) agreed that trees in a community do provide ecosystem benefits. More communities (97% overall) agreed with the statement that trees help control soil erosion and reduce air pollution, but fewer (68%) agreed that community trees help reduce global warming. This may reflect a lack of understanding the terms “ecosystem services” and “global warming”, which are fairly new concepts to the discipline.

Eighty percent of respondents felt that local urban forestry programs are more advanced today than 50 years ago. Overall, 75% of respondents agreed that it was important for those with tree care responsibilities to have tree-related education. Tree City communities (83%) were more likely to agree

than were non-Tree City communities. There were mixed feelings on whether or not volunteers provide local advocacy for local municipal programs with 78% of Tree City communities agreeing, but only 57% of non-Tree City communities being in agreement. Additionally, while 66% of responding communities were agreement, there were mixed reactions regionally as to whether or not volunteerism is an effective way to increase tree care and planting activities within communities, with less agreement in the northeastern part of the state (60%) than in the southern part of the state (79%). This may indicate that different educational outreach approaches are needed for northern vs. Southern Illinois communities. For example, more volunteer outreach and educational training should be provided to central and southern Illinois, while technical training for employees may serve northern communities better.

While regional and landscape initiatives are currently being encouraged at the national program level, only 33% of survey respondents have cooperated with other communities on mutually beneficial tree related initiatives. This indicates a gap between national incentives and community implementation and possibly reflects the lack of funding available to most communities due to the strained economic times. Such collaborations could be encouraged by making it a requirement for grant applications as new monies become available.

Responsibility for Tree Care

Overall 82% of the respondents had municipal staff dedicated to working on trees. Ninety-three percent of Tree City communities and 70% of non-Tree City communities had employees dedicated to working on trees. This percentage is up from Green's studies where 60% of all responding communities had a municipal department or employee assigned tree care responsibilities (Green et al. 1998, Green et al. 2002). This study also found that a smaller percentage of communities in southern Illinois had employees dedicated to tree work. Over 70% of communities with dedicated tree care staff had from 1 to 5 employees with larger communities having greater numbers of employees. Communities without dedicated tree care staff were from smaller communities, but it should be noted that some communities also had active volunteer tree boards or commissions legally authorized with responsibility of tree care for the community. When considering paid and unpaid personnel dedicated to urban and community forest management, this percentage is greater than 82% of Illinois communities.

Compared to Green's surveys, Illinois has seen a 30% increase in the number of urban forestry/city arborist positions and/or forestry departments over the past 20 years. In both Tree City and non-Tree City communities, the public works department was often responsible for tree care in smaller communities (population <25,000). In responding Tree City communities with fewer than 5,000 people the mayor or streets department was second most likely to have tree care responsibility while an urban forester or arborist was second most likely to have responsibility in larger Tree City communities. Non-Tree City communities of all population sizes that had employees dedicated to tree care were most likely to have a public works or streets department in charge of tree care, and much less likely than Tree City respondents to have any type of forestry department, forester, arborist or tree commission/board in charge of tree care.

Appendix B (continued). Tables of Responses Broken Down by Community Size

Levels of education for tree care positions varied across community size and Tree City USA status. Tree care employees from Tree City communities were more likely to have forestry or tree-related education than those responsible for tree care in non-Tree City communities. Respondents from larger communities were more likely to have education than the authorized tree care providers from smaller communities. Overall, 77% of the respondents with the job title Urban Forestry Administrator had either formal (college education in forestry or related fields) or informal training from the International Society of Arboriculture (ISA), USDA FS. The title of Tree Board/Tree Commission member was least likely to have any formal or informal training in tree care, indicating that more resources and technical assistance are needed for communities that have tree boards/commissions providing oversight and decisions for tree care. While previous studies did not look at differences between Tree City and non-Tree City communities, those studies did find a major lack of formal and informal education for trained tree care providers in small communities. That trend continues in this study, yet it is reassuring to know that a larger percent of communities have employees with at least some form of technical training than was evident in Green's surveys. Part of this increase is a result of the annual Tree City USA educational conferences and educational outreach by the Illinois Arborist Association (IAA) and ISA.

The ISA Certified Arborist Program was the most common informal education provided to municipal arborists. Through the TCU program such informal education is provided as well as information to participants about educational outreach available through other professional organizations. Tree City communities had the following percent of employees by title with some level of formal or informal education: Urban Forestry Administrator (79%); Supervisor of Tree Care Crews (73%) and Municipal Tree Crews (61%), whereas, non-Tree City respondent percentages for the same titles were 8%, 13%, and 17% respectively. This indicates that the educational outreach of TCU and other professional urban forestry organizations has been successful. However, with overall percentages continuing to be low, a need is still present for state and federal funds to be used for educational outreach especially in smaller central and southern Illinois communities.

Provisions for Public Tree Care

Public tree service can encompass several services to local residents such as recycling yard waste, storm clean-up, brush pick-up, mulch to residents, TCU designation, tree cost-share programs, and local Arbor Day events. Such services may be provided by municipal staff, private contractors, utility companies, tree boards and commissions, or volunteers. A portion of this study looked at how Illinois communities were delivering these services. In Illinois, landscape waste removal was most commonly provided by private contractors and municipal employees. Communities with a population under 100,000 people were more likely to use private contractors. Communities with more than 100,000 people often coordinated with their local utility. Storm clean-up was provided mostly by municipal staff except in very small communities where volunteers have also played an important role. Brush pick-up was provided by 80% of the municipalities and was most often done by municipal employees, but in smaller communities volunteers or utilities have helped to provide this service. Free mulch service was more often available in larger communities utilizing municipal staff to provide the service although 10% of this service was provided by private contractors. Municipal employees and tree boards/commissions are

most likely the ones helping a community receive Tree City USA designation. All communities with over 25,000 people provide local tree events or their residents. These services are often provided by the municipality and the local tree board and/or volunteers. Communities with Tree City status often have a cost-share program for planting trees on public land (e.g., the right-of-way) with a few TCU communities having a cost-share program on private land as well.

Status of Community Tree Programs

Tree Boards/Commissions

This study found an increase in the percent of communities with tree boards from 18% (in Green's surveys) to 31% in this survey. This may partially reflect that nearly twice as many communities now participate in the Tree City USA program since the last survey in 1999. The majority of tree boards meet monthly or quarterly and have responsibilities to revise tree-related ordinances and to assist with developing and maintaining management plans. Nearly 45% of the tree boards in responding communities also help with local tree inventories.

Tree Care Ordinances

Of survey respondents 72% felt that street tree ordinances were important for the protection and maintenance of the urban forest and nearly all agreed that they should be updated periodically. Respondents also agreed that the ordinance should designate tree authority and require tree planting and care standards. Non-Tree City respondents were more likely to disagree or not have an opinion with these attitudinal statements.

Green's surveys found that 37% of Illinois communities had tree care ordinances at that time whereas today nearly half (48%) of the municipalities surveyed had tree care ordinances. Larger communities (population >25,000) were more likely to have such a document as were Tree City communities. This was expected since having a tree care ordinance is a TCU program requirement. Only 15% of non-Tree City communities had a tree care ordinance. This study asked about industry standards being included in local ordinances and found that the majority of communities had the following components: assigned tree authority and duties, permits, tree species selection guidelines, hazardous tree removal, Dutch elm disease management, and penalties for non-compliance with the ordinance. However, when asked if the community conformed to specified tree care standards, Tree City communities were much more likely to include standards than were non-Tree City communities. Tree City communities were also more likely to have addressed the emerald ash borer and other invasive pest concerns than were non-TCU communities. This could be a result of outreach and education by the Tree City USA program and annual conference provided to Tree City USA participants. Also, a higher percentage of non-Tree City communities said they address hazardous and declining trees, indicating that these communities address declining trees regardless of (or without identifying) the specific reason for decline.

This study shows that much progress has been made in upgrading Illinois community's' tree care ordinances. Green's survey indicated at that time tree ordinances lacked key provisions of effective public policy for quality tree care. Respondents to the current survey who had tree care ordinances were asked about tree preservation authorities. Over half of the communities did have tree preservation language within their municipal ordinances. Comparing this to earlier studies, Green et al. (2002) found that communities with populations of greater than 50,000 were more likely to have tree preservation ordinances or authorities. This 2010 study found that communities with populations of greater than 10,000 were more likely to have tree preservation ordinances and authorities thus implying that more communities have adopted local laws to preserve both individual trees and groups of trees from either removal or construction damage.

Information of the Number of Public Trees

Survey respondents were asked their opinions concerning tree inventories. Almost all agreed that a tree management plan should be based on a tree inventory. No Tree City respondents disagreed with the statement. Eighty-one percent of respondents agreed that it is important to know the distribution, location, and condition of community trees, and 80% agreed that a tree inventory is needed to help plan for good species diversity in an urban forest.

Overall nearly 60% of respondents had tree inventories. More Tree City communities (75%) than non-Tree City communities (9%) had a tree inventory in spite the strong support for had a tree inventory. This could be due to the cost (financial and time), or lack of funding, or need for assistance (technical or financial) to implement such urban forestry management tools.

Nearly 90% of the respondents have conducted a 100% or total tree inventory. Over half of the communities with tree inventories completed their inventories within the past ten years. This coincides with the IDNR implementing the TREES COUNT! Program throughout the IDNR UCF program. The TREES COUNT! Program provides contractual services to Tree City communities to complete tree inventories and management plans. All respondents who conducted tree inventories collected data on tree location and number of street trees but Tree City communities were more likely to also gather data on genus/species, trunk diameter, tree condition, and the number of ash and elm trees. They were also more likely to include species distribution, a list of recommended trees for removal, trees to monitor and available planting spaces in their inventories. Very few communities had conducted an i-Tree analysis with their inventory, but communities in the northern part of the state were more likely to have utilized this newer urban forest management tool (www.itreetools.org). While Illinois communities are moving toward the use and integration of GIS based inventories, many communities have not yet applied this technology. Some are still conducting windshield surveys which only provide half of the observation and data needed for a thorough tree monitoring system.

Several Tree City communities had historic data concerning their tree populations. This historical data indicated the most frequently occurring species planted in Illinois urban forests. Communities were asked to list the top five species and provide the percent of the local urban forest each species

Appendix B (continued). Tables of Responses Broken Down by Community Size

comprised. The top reported species in order of occurrence were: maple, ash, oak, elm, locust and linden. In communities where maples were the highest percentage species, on average maples accounted for an average of 21% of the population. Where maple was the community's second most frequent species, they were reported on average as 15% of the population. Similarly for ash species, when listed as the most common species, ash comprised an average of 21% of the forest. Where ash was the second most frequent species an average of 17% of the population was ash. Oak was also commonly listed as the most frequently occurring tree species in several communities. On average, when listed as the most common species, oaks accounted for 18% of a population, and when listed as second most common, they accounted for 14%. While elm was reported as being the most or second most frequently occurring tree in only four communities, only one of those communities reported a number of trees and percentage.

When asked about the average number of trees planted and removed during five year periods from 1990 to present, communities consistently reported more tree plantings than removals. In each 5-year time period from 1990 to 2006 over 400 trees were planted annually on an average with just over 300 trees being removed in each period on average. While tree planting seems to have decreased in the last five years, the trend for planting more trees than removed has continued.

Urban Forestry Management Plan

Overall 33% of respondents had an urban forestry management plan. Tree City communities were more likely to have a plan as were communities from Northeastern Illinois. The majority (87%) of the management plans have been approved since 1990 when the USDA FS provided financial assistance to states to help municipalities establish local tree programs. While earlier in the survey respondents strongly agreed that a management plan should be based on a tree inventory, less than 50% of the respondents actually had a management plan based on a tree inventory.

Tree diversity has been a resounding message to Tree City communities since Dutch elm disease, and in particular it has been central to the grant management decision making at the IDNR since 1991. Currently the emerald ash borer is threatening ash trees in Illinois, reinforcing the need for species diversity in urban and community forests. Yet almost 40% of communities, with and without Tree City status, allow the construction companies, contractors, or builders make the decision of what trees to plant (potentially therefore planting monocultures of the cheapest trees). Fortunately, 70% of the Tree City communities also have municipal forestry staff making tree selection and planting decisions.

Cooperation with Utility Service Providers

Due to the increase in calls from citizens and municipalities alike, a section was added to this survey to look at utility tree trimming. Several attitudinal questions were asked first. Respondents agreed that utility trimming helps provide safe and reliable electric service to citizens. Most respondents felt that utilities sometimes to usually prune trees properly, but many were neutral or disagreed that utility trimming enhances the health and condition of the urban forest. Eighty percent of the large

communities (>10,000 people) reported having a cooperative agreement with their utility company. Most common components of a cooperative agreement were: 1) requirement of public notice; 2) rules for trimming under wires; 3) rules for cutting down trees under wires, and 4) reimbursement to the city for tree replacement.

Funding of Public Tree Programs

Several attitudinal questions were asked about funding and budgets. Respondents generally felt that their community supported tree care but were less likely to feel that their local forestry program received funding comparable to other departments. Tree City communities felt their urban forestry program was better supported than non-Tree City communities when compared to other municipal responsibilities. Over half of respondents (61%) felt it was achievable to start or improve a tree program in their community. When asked if both professional and volunteer staff are needed to manage an urban forest, 67% agreed with the statement, with responses being similar across Tree City and non-Tree City respondents. Many respondents (71%) agreed that the benefits of street trees outweigh the cost of maintenance while fewer (52%) agreed those benefits help convince officials to sustain the tree related expenditures. Nearly all (80%) respondents agreed with the statement that due to the economy, funding for a tree program is less available. This is not surprising considering the economic state of the current economy. Regardless, cities reported average expenditures of \$356,609 for Tree City communities and \$101,400 for non-Tree City communities on urban forestry activities during 2009. Tree City communities spend on average 173% more for purchasing trees, 262% more on tree pruning and removal than do non-Tree City communities. (Averages do not include the budget for the City of Chicago.) Most urban forestry funds come from general revenue funds regardless of TCU status.

During the years covered by the surveys, several state and federal grant programs were available to assist community tree programs. Such grant funds could be especially useful for smaller communities, which often lack the resources to support an active tree program. Yet it appears that small communities in Illinois are less likely to apply for grants than were larger municipalities. In most small communities, especially those with populations less than 5000, the person filling out the survey was not aware of state and federal grant funding opportunities, despite the fact that the State has sent information on its grants program to all Illinois communities. Among communities that did apply for a grant, larger communities were more likely to have been awarded the grant. This is in spite of the State adopting procedures to assure that smaller communities would be funded. This may reflect a lack of expertise and experience in preparing proposals and in administering funded projects making small communities hesitant to apply for grants and less able to write effective proposals when they do apply.

Assistance

Over 75% of respondents had applied for funding through the USDA FS Urban and Community Forestry Grants while only 7% had applied for the landscape initiatives Redesign program or the National Urban and Community Forestry Advisory Council grants (also through the USDA FS). Communities had taken advantage of Illinois Transportation Enhancement Program, though at a lower percentage rate. Of the respondents that had applied 72% received a grant. If the Urban and Community Forestry grant was authorized in the future, respondents indicated they would want to apply for funding to purchase and plant trees, conduct tree inventories, develop management plans and focus on emerald ash borer mitigation.

Sustaining the Tree City USA as a Focal Point for Building Sustainable Livable Communities

According to the State of Illinois Forest Assessment, Tree City USA is a priority program for the state. This survey looked at differences and similarities between Tree City communities and non-Tree City communities forestry management programs. The longitudinal approach of questions that paralleled those by Green et al. (2002) helped reveal which program components have been successful through the years. Throughout this report Tree City communities often provided more favorable results with respects to attitude and application of urban and community forestry practices. Examples include:

1. Tree City communities held more positive attitudes about the benefits of trees to their communities than did non-Tree City communities.
2. Tree City communities were the only communities reporting historic data about their urban forest.
3. Tree City communities had staff with higher levels of education than non-Tree City communities. Tree City communities are more likely to have a cost-share tree planting program on public land and a few had a tree planting cost-share program on private land as well.
4. More Tree City communities than non-TCU communities included tree care and planting standards in their tree care ordinances.
5. More Tree City communities were in agreement that a tree ordinance should require tree planting and care requirements.
6. Seventy-five percent of Tree City respondents compared to 9% of non-Tree City respondents reported having at least a basic a tree inventory.
Tree City communities were more likely to have a management plan.

Educational outreach

Great progress has been made in the urban and community forestry profession in the past twenty years. The number of municipalities that have staff dedicated to tree care has increased by 22 percentage points. The number of municipalities with urban forester/city arborist positions and forestry departments has increased by 30 percentage points. Municipalities with staff dedicated to urban and community forestry management typically have more formal education and training especially when those hires have the title of Urban Forestry Administrator. Northeastern and central Illinois seemed to have greater growth in this area than southern Illinois, possibly reflecting the fact that more small

Appendix B (continued). Tables of Responses Broken Down by Community Size

communities are located in central and southern Illinois and those communities tend to have local officials and tree boards/commissions with oversight of their local community forestry operations rather than an urban forestry administrator. These groups were found to have less education on tree care. It is apparent that smaller communities and especially non-Tree City communities are still struggling to get educational and technical information to manage their local forest resources. Tree City communities are networked through the Tree City USA e-mail system and the Illinois Arborist Association networks and therefore get more information about educational opportunities available. However, based on the findings of this project, more resources and technical assistance are needed by communities without these connections.

Since volunteers are used for tree-related activities more often in the central and southern part of the state the audience focus and type of outreach and educational training needs to be tailored to the specific needs of the region. There is still a need for state and federal funds to be used for educational outreach especially in the smaller central and southern Illinois communities.

Statewide, about half of the communities with populations over 25,000 people use volunteers in their community forestry programs. Illinois community forestry volunteers are usually assigned the Arbor Day celebration and tree planting efforts. They have also less frequently been assigned public education and tree maintenance responsibilities. Previously, lack of education for volunteers had been documented. Given this, a great opportunity exists to partner with green organizations and professional associations to provide more educational training. The Tree City USA Conference could be used as a vehicle to provide training.

Funding for tree planting initiatives

During the last decade, internal authorization for the Urban and Community Forestry Grant program has occurred infrequently, yet this is the program authorized by the State for providing tree planting funds to municipalities. The only variable that decreased in this survey compared to Green's surveys was the percent of large communities with tree planting cost-share programs. Illinois Tree City communities alone spend over \$15 million on tree planting annually. The potential impact of the economy due to the loss of municipal tree planting programs could be in the millions of dollars. Additionally, the loss of canopy cover potential and carbon sequestration increases with each year that tree planting does not occur. The Urban and Community Forestry Grant program also provides funds for tree inventories and management plans which are essential tools for local forest managers to use when making tree diversity decisions. Other programs such as the SBA Tree Planting Initiative are also a funding option for municipal tree care programs that should be re-authorized.