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Growth Perspectives in Tree Campus Higher Education and Tree City USA

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Growth Perspectives in Tree Campus Higher Education and Tree City USA

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College of Business, University of Nebraska-Lincoln

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Executive Summary

With an aggressive goal of 25% growth in both the Tree City USA and Tree Campus Higher Education programs, the Arbor Day Foundation (“ADF”, “Arbor Day”) needs a correspondingly bold plan to follow. Our group’s set of recommendations keep in step with ADF’s goals of inspiring people to Plant, Nurture, and Celebrate trees. Adopting ADF’s guiding principles informed and refined our recommendations. Our suggestions to ADF are to expand and refine marketing objectives, make use of communication platforms, streamline the survey and application procedure, and restructure the Tree City participation incentive programs. The subsections of this report provide greater detail for each key recommendation.

To grow these programs, Arbor Day must improve their communication with external parties. Clearly, ADF has a large amount of data related to these programs and their benefits, yet it is not well-consolidated for visitors to the website. Further, Arbor Day should be trying to reach out to people outside of their network. Marketing directly to citizens about the benefits of these programs at an individual level can inspire upward pressure on city or campus officials to participate. It can also incite more activity once the city’s designation is complete. To develop this outreach, we suggest a team of two marketing specialists for the first three months, scaling back to one after operational efficiency is achieved.

An internal communication platform for Tree City members is a great way to provide value by connecting people who actively care for a city’s trees. As a shared knowledge hub for all the Tree Cities across the nation, this could become arborists’ primary source for resolving issues within their cities and allow them to collaborate with others facing similar problems.

The reapplication survey should shift from largely explanatory questions to quantitative measures of cities’ efforts. Asking more direct questions would make the survey shorter to complete while providing data for ADF that is more useful than what is currently being brought in. This would be the basis for another value-add to the Tree City and Tree Campus titles: a competitive tier system. At the end of each year, ADF can analyze each city’s performance on these new metrics and name a Best Tree City/ Campus in each state, a recognition we think cities would vie for. More robust data would also allow ADF better resources to distribute information to city or campus leaders, who can then involve their constituents, further driving participation.

The timeline and investment for this set of recommendations is relatively low. The goal for survey readjustments should be the end of this year to start gathering better data from reapplications. Since it would be all new information, it may take up to a year to determine appropriate standards for the ranking system. Still, it is certainly possible to finish developing that feature for next year. Developing marketing materials for new audiences is also more effective the sooner it is ready. To give an approximate time frame, we suggest that it will take three months to assemble a team, devise and test the media, and push it to the public.

Analysis

Marketing Initiatives

Having lush green spaces in a city and being a Tree City USA has significant and immediate benefits for the community and individual citizens. The success of Tree City USA is dependent on communities understanding these benefits and ADF's communication to any and all potential stakeholders. There are three key aspects to consider: *what* the benefits of becoming a Tree City USA, *who* to communicate them to, and *how* to communicate them.

From our conversations, the current primary demographics leading the charge in becoming Tree Cities are the city's arborists (or similarly tree-inclined positions). These individuals have had success in becoming Tree Cities, and in establishing communication networks with other arborists, but it would be a missed opportunity not to consider targeting different segments as well. Three key segments we identified were individual citizens of a city, city-level elected officials (e.g., mayors or council members), and campus leaders. It is essential to identify these segments early, as certain benefits of becoming a Tree City USA or Tree Campus may be more beneficial to one segment than another.

Some of the immediate environmental benefits include reduced urban temperatures, reduced greenhouse gas emissions, and reduced stormwater runoff. Additionally, green infrastructure creates many added societal benefits like increased home values, increased sense of resiliency and community and even has links to reductions in crimes such as narcotics manufacturing and burglaries by 21% and 6%, respectively (Kondo et al., 2015).¹ Facts like these are already communicated on the Arbor Day website but are not consolidated in one place, making access needlessly difficult. More succinctly communicating these benefits to individual citizens through out-of-home, social media, and direct mail advertising would expand the user base beyond arborists and foresters. The general population does care about trees, but if they knew of the economic, monetary, and health advantages of tree populations, that care would become tangible. That is, ADF can generate interest among populations whose interest in trees may not necessarily be obvious.

As Millennials and Generation Z are more aware and concerned about issues relating to the environment (Hassim, 2021),² the ecological angle is more appealing to them. The social benefits would likely be attractive to an older audience of homeowners and families. While these individuals may have less power to effect change than a city's arborist or forester, this does not mean that garnering their support is unnecessary. It is quite the opposite: with enough interested people, they may begin reaching out to local officials or finding ways to get involved on their own. ADF already knows the benefits of trees; the problem is that the benefits are not communicated concisely.

¹ See Kondo et al. for details supporting our claims about green infrastructure.

² And [they expect](#) corporations and organizations to take the lead. ADF has an opportunity to play into this market.

Once citizens become more invested, so will local elected officials including city planners, mayors, and council members. One of the primary focuses of elected officials is securing reelection (Bressman et al., 2013). Tree City USA should be marketed as an easily achieved environmental accomplishment -- one that the city may already qualify for. Environmentalism is becoming an increasing issue of concern at the local level, with at least 64% of Americans being at least cautious of the effects of climate change (Knapp, 2011).³ Additionally, 81% of Americans believe that action needs to be taken to protect public health from climate change, and 76% believe that actions need to be taken to protect forests. Many groups are working to educate voters on these issues, such as the League of Conservation Voters and the Environmental Voter Project. According to the Environmental Voter Project, a large turnout of first-time environmental voters played a significant role in the swing states of Arizona, Nevada, Georgia and Pennsylvania in the 2020 election, as well as the 2021 Georgia Senate runoffs.⁴ These facts show that the climate crisis and the environment are growing issues on the ballot -- and in voters' minds. Joining Tree City is an action that is both easy to take and mutually beneficial to elected officials and the Arbor Day Foundation.

The expansion of Tree Campus will aid in growing Tree City USA. College campuses have collections of passionate students eager to get involved in their communities. Modernizing marketing strategies and appealing to these students could improve the interest in Tree Campus and Tree City USA. Most campuses have multiple environmentalist student organizations that are well-connected to their peers between campuses, such as Sustain and AcClimate at UNL.⁵ Developing direct relationships with these campus groups could create a domino effect of interest in Tree Campuses. Students will begin to get involved with volunteering, taking leadership roles, and pursuing passion projects. Many students have volunteering requirements for clubs, honors societies, or Greek chapters, so leaving this group untapped causes ADF to miss potentially interested and available volunteers.

Communication Platform

Aside from marketing suggestions, leveraging ADF's existing network of cities and campuses could add significant value to becoming a Tree City USA or Tree Campus. Connecting people with both a passion for trees and the ability to enact changes (such as city arborists or members of a Tree City's Tree Board) has immense potential to drive growth. For example, when a city joins Tree City USA, it could be given access to a forum of all other Tree Cities. This incentivizes continued active involvement in the program by providing cities with a tool to communicate new ideas for tree growth with other cities. Like any platform of this type, the

³ The percentage is high and growing. See the ICLEI's [suggestions](#) for elected officials relating to climate change.

⁴ Swing states strongly exhibited this trend. The EVP is an entity interested in environmentalism in voting, and defends its claims in [this document](#).

⁵ UNL publishes a [full list](#) of student organizations, as does [Creighton](#).

benefit grows with the user base, as having more people translates to more ideas, thoughts, and plans being shared. Naturally, any member who joins the network would have a great deal of knowledge on how to care for their trees, so it could be a valuable resource when cities have tree problems they cannot figure out on their own. If multiple cities face the same problem, connecting their arborists to collaborate can lead to quick and effective solutions.

There is potential to do this at a very low cost by utilizing existing applications like Discord, Microsoft Teams, or Slack. These are only some possible options, varying in price, data limits, and usability (see Appendix A). We strongly advise against building a platform in-house from the ground up, as its development (and especially maintenance) would be highly time- and cost-intensive. Through our conversations with Arbor Day representatives, we know they already have close contact with arborists in their participating cities, and even with some out of their network. Including a notice about the platform in these communications is the easiest way for Arbor Day to quickly develop a user base, which grows as more cities join.

Survey and Application Reconstruction

We recommend that all applications and surveys be transitioned to a digital format, utilizing the existing user/program participant portals. Currently, applicants are given a choice between an online portal and a paper application. However, transitioning to an entirely digital application system -- and phasing out paper applications -- will allow any data collected from the application or additional surveys to be easily compiled and analyzed, saving time and freeing up resources. Arbor Day Foundation employees will no longer have to enter responses manually from a written form.

If the Arbor Day Foundation wishes to grow the Tree City USA and Tree Campus programs at a rate of 25% as stated in their goals, it is crucial to determine why current Tree City/Campus participants continue to apply and where they see value. Additionally, to increase growth and maintain high recertification rates, finding new areas in which current participants could gain more value from these programs could help greatly. To gather valuable insights from Tree City USA or Tree Campus members, we suggest adding a section of survey questions to the online application, located just below the usual application questions.

There is a tradeoff between how many questions a survey asks and people's willingness to participate. With this in mind, the first ten survey questions of our suggested survey are mandatory, with 8 of the 10 giving the five response options of "strongly agree", "agree", "neutral", "disagree", and "strongly disagree" in a Likert scale style. This type of question is optimal due to the straightforward nature of these questions, and it allows for easier and more

accurate analysis (Wakita et al., 2012).⁶ These survey questions, including “I would like to learn more about how other Tree City USA members maintain and grow their trees and green spaces” and “The citizens of my community see and understand the benefits of being a Tree City USA member” specifically seek to determine areas of high value as well as areas for improvement (see Appendix B). The last two mandatory questions ask whether the local government has an arborist and whether the arborist is a government employee or contractor, with the simple response options of “yes”, “no”, and “unsure”. The final two survey questions are optional, open-ended questions asking participants to “Share why you continue to recertify as a Tree City USA member or what being a member of Tree City USA means to you or your community” and asks “What more can the Arbor Day Foundation do to help support you and other Tree City USA members?”. The purpose of these final two questions is to allow those participants with the inclination to provide significant feedback the ability to do so. As people tend to skip optional steps, we foresee a comparatively low response rate for these optional questions. In general, the survey functions to connect the program participants with the Arbor Day Foundation and allow them to give feedback that the Arbor Day Foundation can easily analyze and understand. The example survey does not have to be the survey utilized beyond the first year it is included, as most of the questions gauge basic feelings used to adjust practices.

Additionally, we suggest adding a statement before the survey questions such as “To help the Arbor Day Foundation best support you as a Tree City USA member, we would love to get your feedback through this quick survey!” to build goodwill and show that the survey questions are intended to add value to the participants. To help with data protection, an option at the end could ask if the survey taker wants their data released to outside parties to help connect them to potential resources or assistance.

Changing the nature of the data being brought in will allow ADF to better determine where to add value to their programs, where to increase marketing efforts, and where to increase general assistance. The survey results will be analyzed by a new full-time analyst employee, as detailed in the financial considerations section. The desired results can be seen more in the “Results and Recommendations” section under “Recommendation Implementation.”

Areas where we foresee participants wanting to see improvements could be in adding a communication platform, as previously mentioned, to discuss tree-based issues and general collaboration efforts. Additionally, participants might desire more value in ADF’s marketing materials for cities and participants to use in spreading awareness in their communities. We also believe that the survey, in addition to the data gathered on the traditional application can help

⁶ People tend to prefer scales on which rankings can be quickly made. There is a trade-off involved in adding or removing options on a Likert scale: a larger scale permits more accuracy, but is psychologically more cumbersome to behold. See [Wakita et al.](#) for more.

ADF determine which areas could use additional resources whether that be additional donor funds, knowledge of trees and tree health, or marketing materials for communities to distribute.

Between the survey and the general application, the specific trends can be identified through the applications and surveys will be which regions are more resource-abundant, which regions are in need of more resources, what value the Tree City and Tree Campus programs add, and what value program members wish it could add. If participants consent to their data being shared, it could be shared with groups such as donors looking to invest in areas lacking resources and with people such as landscapers or arborists with services they can provide to communities. Other than general data trends, we believe that data should not be shared unless program participants consent, and in the case that they consent, data should be shared to make connections between program participants who want resources or assistance (arborists, landscapers, etc.).

Restructuring Tree City Incentives

Part of what we set out to do was to find ways to use the survey questionnaire and application to provide value for Tree City and Tree Campus participants. We believe that a realistic and effective way of doing so is to create more incentives and recognition-based programs. This will not only push Tree Cities and Tree Campuses to improve, furthering Arbor Day's mission, but it will also enable community leaders to better publicize their accomplishments as environmentally-friendly cities.

The first program we recommend creating is a tier system. This program would be for Tree Cities and Tree Campuses ranging in biodiversity and demographics. It will allow them to work for something new and show pride in their work in their community by enabling them to qualify as a Bronze Tree City, Silver Tree City, or Gold Tree City. These traditional (and easily understood) labels could also be exchanged for tree-related names like "Overstory" or "Canopy" level partnerships. This type of naming convention would suit the Arbor Day network better, although it is less immediately understood. Instituting a tier system would push Tree City members to try to improve their tree planting and care efforts and strive for more beyond the bare minimum necessary to become a Tree City or Campus. These tiers would not be based on size, but rather on tree growth per capita. Stated benefits of being a Tree City USA member are honoring your community, improving community pride, and building stronger ties to your neighborhood and community. These benefits would have the opportunity to grow even stronger under a tier-based recognition system.

We also recommend that new awards be introduced for the Tree City and Tree Campus programs. These would be called "Top Tree City in *Nebraska*" and "Top Tree Campus in *Nebraska*." Awarding special recognition simply to the city and campus in each state based upon data gathered in the survey and additional interviews encourages healthy competition between communities in each state. These programs allow for community pride and can be communicated

in various ways, similar to the “Best of Omaha” stickers filling windows of awarded restaurants and businesses (see Appendix C). Empowering these leaders to publicly display this kind of sought-after accomplishment would increase Arbor Day’s visibility to citizens and students.

Results and Recommendations

Recommendation Implementation

While it is difficult to say exactly how much value these efforts will add, they have clear potential, identified below. In terms of growth aspirations for Tree City USA and Tree Campus, the tier system and extra awards are methods to improve the value offered by these programs, making cities and campuses more likely to participate and renew applications each year. The incentive to reach the next level, or the pride of being Top Tree City, can drive cities to increase efforts and innovate new and exciting ways to promote tree presence as cities compete for titles. We also think that bringing together tree-oriented people from the various Tree Cities in an online forum will improve communication to participants and provide greater opportunity for new ideas to flourish and spread between cities.

	Outreach	Cost	Value Added	Growth	Timeline
Consumer Outreach	↑	—	↗	↗	Indefinite
Communication Platforms	↗	↘	↑	—	~1-2 months
Survey Reconstruction	↗	↑	↑	↘	~3 months
Tiered System	—	↘	↑	↑	~1 year
Awards and Accolades	—	↘	↑	↑	~1 year

Table 1: Project Matrix summarizing the costs and benefits of each recommendation.

If retention has been an issue for either of these programs, transitioning to online applications is an easy way to make the process faster and simpler for people who find paper applications off putting, as an online application is more easily justified compared to the process of filling out a paper form and submitting it. Online applications also have the joint benefit of ease of use for Arbor Day itself, with data compilation becoming incredibly quick and natural. Similarly, transitioning to quantitative questions makes applications easier to fill out and provides more usable data to ADF, creating opportunities to stay ahead of trends, see what areas Tree City USA and Tree Campus could expand support for, and possibly even devise new outreach entirely. Essentially, qualitative surveys in applications would make analysis much easier for Arbor Day and provide much more value to them.

Challenges and Risks

These ideas are not inherently risky. At the very least, we see little possibility for these ideas to reduce participation. They are low-risk ways to aim toward ADF's desired growth (in the range of 25%). The primary challenge we foresee would occur if participants do not consent to the external use of their application data. For cities as public entities, this is unlikely but still possible. However, in the case they do not, it will be difficult for ADF to use specifics from the data aside from the aggregate case. But even in this scenario, we believe that there will still be insights gleaned from more workable information collected.

Challenges may arise based on the interconnectedness of our recommendations. While our suggestions can be implemented in any order, there may be some difficulty in planning and allocating time and resources to implement each suggestion. While we believe each of our recommendations are strong independent of the others, we also believe that they are strongest together. As a result, we could foresee the risk of loss of potential benefits if our suggestions are implemented without consideration of their relationship with one another.

Implementation Plan with details of resources, timeline, investments

As these recommendations do not rely on each other to be implemented sequentially, Arbor Day can develop them concurrently. Consumer outreach is variable and dependent on the type, length, and scope of advertisements. Theoretically, a marketing campaign can begin quickly via online targeted ads. For a more in-depth consumer analysis, we expect it will take three months to develop and test a campaign so that it can be implemented by the fourth quarter. The depth and breadth of a marketing campaign is variable and up to ADF. If the organization decides to keep all marketing in-house at a small scale, we believe it can accomplish meaningful results with \$10,000 per year. However, ADF may choose to hire an advertising agency and expand the campaign. There is truly no ceiling in price for a campaign of this type, but we identified \$100,000 as a soft ceiling due to current program expenditures.

In the scope of creating a communication platform, we believe building and maintaining an organic platform would require two full-time developers, costing up to \$150,000 a year.⁷ Obviously, a time and cost outlay this large is something Arbor Day would like to avoid, which is why we recommend using third-party software. What these platforms lack in direct control they more than make up for in speed of deployment, ease of use, and cost efficiency. Many platforms exist for this purpose, and they have various costs ranging from zero on free-to-use platforms like Discord, up to \$12.50 per user each month for Microsoft Teams. For the sake of balancing convenience and price, going with one of these options will enable this recommendation to begin to be implemented within a few months.

⁷ In NE, the actual cost may be lower due to regional labor cost differences. This figure is drawn from the Bureau of Labor Statistics, which posts typical wages by occupation on their [website](#).

In regards to the survey update to the online application, the updates can easily be added to the next application cycle, submitted at the end of 2021. Program participants should be alerted as soon as possible (in the next 3 months) that all applications must be submitted online. The survey questions listed in the appendix can be implemented by the current application manager at the Arbor Day Foundation, and the results can be analyzed by the new analyst employee, hired by the end of 2021. This new analyst will also lead the decision-making for award and tier allocations, and we expect this analyst position to cost \$45,000 to \$70,000.

The addition of the tier system and naming a top tree city and top tree campus of the year will likely be the most resource-demanding of our recommendations. First of all, in terms of timing, the first tier allocations and awards given will not be until the end of 2022, as it will be necessary to inform and educate participating cities and campuses of these opportunities at the onset of the new year. Therefore, before 2022 starts, all specific details of these new incentive programs need to be finalized.

For the implementation of the tier system, our primary suggestion is to make use of the new metrics proposed earlier as the basis for the awards. The exact thresholds are arbitrary, as are the specific metrics used, but, for the sake of argument, suppose ADF wishes to set the threshold for achieving the status of Gold Tree City as having per-capita tree growth in the 90th percentile. The new quantitative data allow for this sort of comparison. ADF should also consider computing a composite index, weighting an average of each city's metrics by their importance. One example might be weighting per-capita tree expenditures at 40% of the total score, year-over-year canopy growth at 40%, and planting activity in underserved areas at 20%. This allows cities ranging in biodiversity and resources to compete more meaningfully on a more level playing field, while measuring a more holistic outcome relating to the philosophy underpinning ADF: getting more people to love trees.

For the "Top Tree City" award in each state, our recommendation is to choose up to three finalists in each state based on metrics gathered from the survey such as "trees planted in the past year per capita/per student" or "amount of money invested in tree nurturing in the past year per capita/per student" (the best metrics for this must be determined once it is established what information Arbor Day can actually gather). Once finalists are chosen, we then recommend that a roughly 30-minute interview be conducted by an Arbor Day representative to learn more about the campus or city's work in regard to trees. These interviews will account for qualitative aspects such as the varying biodiversity, resources, and demographic makeup of a city or campus. These interviews would be conducted throughout the first quarter of each year, and a winner of each award in each state would hypothetically be announced on April 1st after comparing interview scores and notes for each state.

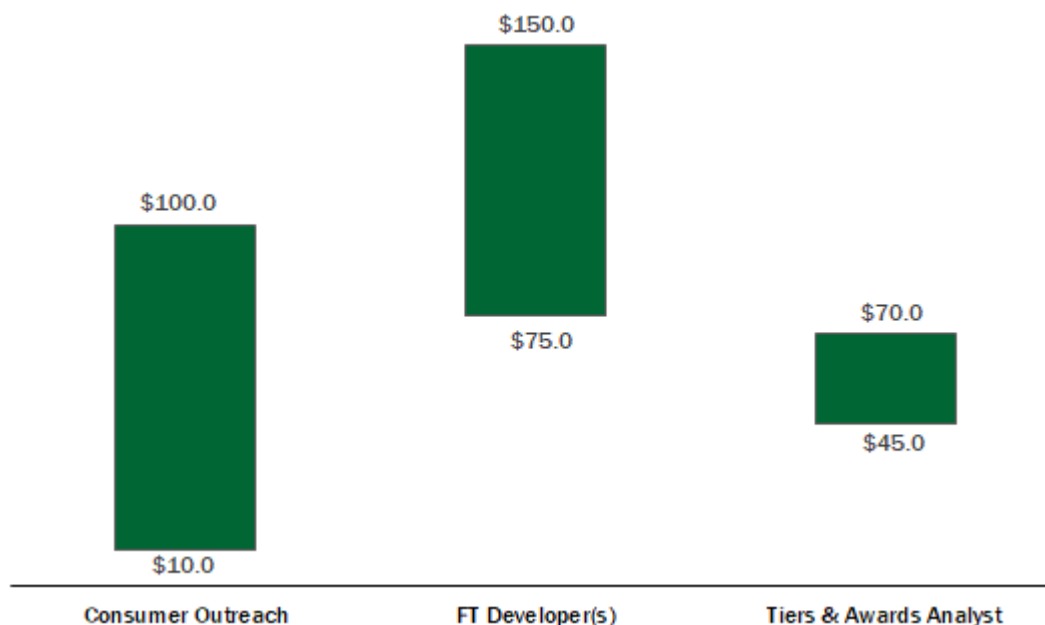


Figure 1: Financial Considerations Based on Our Recommendations (annually, in thousands)

Expected value and benefits

Based on our recommendations, we cannot accurately predict expected gain or monetary benefit with confidence. The nature of any customer acquisition campaign will front-load acquisition costs per customer, city, or campus as Arbor Day learns which forms of advertising are most efficient. As ADF implements A/B testing, especially on social media ads, the firm can understand what targeted ads work. Out-of-home is the most prolonged form of advertising at four-week runways, still providing the ability to pivot or test as needed.

Without providing a concrete estimate, we believe that the 25% growth goal set forth by The Arbor Day Foundation represents a reachable target if implemented as per our recommendations. Precisely, in the Tree Campus Higher Education program, we predict growth higher than 25% due to the large addressable market. As of 2019, Tree Campus Higher Education involves 402 institutions, while there are over 5,000 within the United States. Also, U.S. Colleges and Universities concentrate on the eastern half of the country, a notable weak spot for the program. With the number of non-participating institutions close together and competitive benchmarks we've recommended, a significant uptick in program participation is predicted. Not stated throughout our report, the international market also represents areas of solid growth, albeit much later in the future for these two programs.

The main objective of our report and recommendations looks to grow both the Tree City and Tree Campus Higher education programs. Through this, brand and consumer awareness will





grow as well. Although the Arbor Day Foundation has a national reach, it does not have national recognition. Many of our out-of-state group members were raised in Tree Cities and unaware of their designation until this project. By increasing awareness surrounding the organization, ADF widens its economic moat and expands brand value, further adding to growth. As represented in our presentation and throughout this report, the recommendations create a flywheel effect, or more ecologically known, a positive feedback loop. Creating customer awareness through our offers drives growth in programs involving community members who celebrate trees, creating more brand value and awareness.

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Appendix

Appendix A: Breakdown of Communication Platform Strengths and Weaknesses

	Ease of Use	Adaptability	Adoption	Scalability	Price
In House	—	↘	↗	—	\$150k+
	↑	↗	↑	↘	N/A
	↗	↗	—	↑	Varied
	↘	↑	↓	↑	N/A
	↗	↗	—	↑	Varied

Appendix B: [Survey Application Reconstruction](#) or <https://tinyurl.com/43be63wf> (Full Survey)

The citizens of my community see and understand the benefits of being a Tree City USA member. *

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

I wish I had more easily accessible information to pass along to the citizens of my community about the benefits of being a Tree City USA. *

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

Appendix C: Example Awards Given to Cities by State and Colleges

