

Best Practices for Yard-Tree Distribution Programs

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Residential lands often represent the largest potential areas for expanding urban tree canopy cover (O’Neil-Dunne 2009; O’Neil-Dunne 2011; O’Neil-Dunne 2012). Thus, adding trees to private residential properties is critical to accomplishing urban greening goals, such as ambitious tree canopy cover targets. While municipal arborists and non-profit urban forestry organizations have traditionally focused on tree planting in public lands along streets and in parks, some organizations are branching out to private residential properties to meet their greening objectives.

Residential yard tree distribution programs (“tree giveaways,” when the trees are free) represent distinct

institutional strategies for urban foresters, and new research sheds light on how these programs operate. We studied the missions, strategies, and challenges of five such programs in the northeastern United States through surveys and interviews with program staff (Nguyen et al. 2017). These programs were led by the New York Restoration Project (New York, New York), Baltimore City Department of Recreation and Parks (Baltimore, Maryland), Philadelphia Parks and Recreation (Philadelphia, Pennsylvania), Groundwork Providence (Providence, Rhode Island), and the Worcester Tree Initiative (Worcester, Massachusetts). We provide a summary of our findings and suggest best practices that may enhance the social and ecological outcomes of yard-tree programs.

Program Missions and Evolving Definitions of Success

The programs we studied were created in response to municipal tree planting goals, either a canopy-cover goal or a number of trees to plant. High-resolution urban tree canopy analyses were influential in the origins of these programs. Those analyses showed that a substantial portion of both existing and possible canopy is on residential lands (City of Providence 2008; O’Neil-Dunne 2009; O’Neil-Dunne 2011; O’Neil-Dunne 2012; Hostetler et al. 2013). Program mission statements were rooted in municipal tree-planting and canopy goals, sometimes also mentioning social goals, such as increasing environmental awareness.

We asked staff about their personal definitions of program success. Relatively large numbers of trees distributed and good record-keeping were often noted. Some program staff also mentioned tree survival and performance as markers of success, but lacked capacity to monitor trees. Four programs (all except Providence) adjusted their interpretations of success over time, away from ecological objectives (e.g., increasing canopy cover) and toward social objectives (e.g., attracting residents to urban greening).

Accordingly, most programs shifted their species palette away from large canopy trees and toward small ornamental and fruiting trees, which were seen as more popular among residents. Among the five most common



A partner handing out trees at a giveaway event for TreePhilly. Educating residents about proper tree care when they come to pick up their plant is an invaluable opportunity staff and practitioners must not waste.

species for all programs, half had very showy flowers. Only the Providence program had entirely large shade trees (and importantly, this program is no longer operational, as later explained). Offering ornamental and fruiting trees was viewed as critical to recruiting residents. This suggests trade-offs in program goals: while large shade trees could provide more canopy and environmental benefits, small ornamental trees seem to generate more public interest and potentially increase appreciation for urban forests.

The shift in species palettes could be seen as adaptive management toward meeting residents' preferences, but could also be viewed as compromising the most direct route to achieving canopy goals. Notably, other research has found that many residents value tree aesthetics above other ecosystem services (Avolio et al. 2015; Locke et al. 2015; Conway 2016).

Program Operations

Most programs distributed trees for free through giveaway events, with only the Providence program delivering trees directly to residents who had paid a subsidized fee. The free tree giveaway events occurred at venues such as parks, farmer's markets, and recreation centers. Partnerships with local community organizations were critical for resident outreach and managing event logistics. Some programs enabled community partners to run events semi-autonomously. Staff thought this strategy was important for connecting with residents in low-income, low-canopy neighborhoods, as local partners could engage with their communities more effectively. While these giveaway programs did not charge for the trees, residents did incur other costs, such as travel, time required to pre-register, and/or attend a planting demonstration.

After residents received trees, most programs had follow-up assessments. This included email surveys and "drive-by surveys" of tree survival. However, while some programs have rough mortality rates from these efforts, they should be interpreted with caution because they were convenience samples and had high non-response rates, and could therefore be prone to bias. Monitoring is especially difficult for these programs because private property access may not be granted.

Networks and Funding

All programs were affiliated with the Urban Ecology Collaborative (UEC), a network of urban and community forestry professionals in the northeastern U.S. The UEC was viewed as a means for information-sharing among like-minded professionals. Monthly UEC calls allowed program staff to discuss what was working (and not working). Additionally, the program in Philadelphia visited New York to learn about the giveaway program there, and Worcester later learned from both Philadelphia and New York, with staff adopting practices learned through these exchanges.

Financial stability of yard-tree programs required new funding models. This is because programs run by municipalities do not have jurisdiction to work on private lands,



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Tree planting and care demonstration by partners at a giveaway event for TreePhilly.

necessitating non-public funding sources. Organizations relied upon a mix of support by way of corporate sponsorships, government grants, utility companies, foundations, and private giving. The Providence program was unique in that it received revenue from charging residents a subsidized fee for tree planting and delivery, and had only one other source of funding, a local foundation. That program ended in 2013 largely due to the end of foundation support. All of the other programs operated as free giveaways, which was seen as important for securing corporate sponsorships and government grants, and for enabling low-income residents to participate.

Equity in Tree Distribution

To determine whether program participation was equitable within cities, we analyzed where residents received trees in New York, Baltimore, and Philadelphia (the only cities that had sufficient data for this analysis). We found relatively higher participation in affluent and highly-educated areas of New York and Baltimore. Tree distribution in Philadelphia was more evenly distributed, which may reflect the citywide goal of increasing canopy cover in every neighborhood, and their outreach and recruitment strategy, which focused on low-income, low-canopy areas and emphasized local partner organizations. Such strategies appeared to boost turnout in underserved neighborhoods.

Best Practices

Based on this summary of our study, and conversations among program staff who participated in the research, we suggest the following practices to enhance program success:

Institutional strategies

1. *Clearly articulate program goals but be prepared to shift goals and adapt.* Programs should be clear about their social and ecological goals, which could relate to increasing canopy cover, changing residents' attitudes about trees, and/or environmental justice. There are trade-offs among goals, so it is important to articulate which goals take priority. Recognizing the relative



- importance of multiple goals and the potential trade-offs between them may help distinguish between adaptive management versus convenience and compromise.
2. *Set metrics of success that are connected to goals.* Programs should set appropriate metrics to reach their goals. Metrics could include the number of trees distributed, planted, and/or surviving; the total area of canopy gained from surviving trees; the number of residents reached; the program's impact on resident attitudes towards trees; the equity of tree distribution; or some combination thereof. Programs should determine their capacity to evaluate these metrics.
 3. *Maintain close ties with partners.* Forming and maintaining effective partnerships is critical. Good relationships with nurseries are important to ensure high-quality stock. Strong public-private partnerships are critical to ensuring programmatic stability and longevity.
 4. *Diversify and maintain funding sources.* Reliance on a single funding source is risky for program sustainability. Meeting funders' expectations with regard to trees planted, people trained in tree planting and care, or events held is key to growing funder relationships.
 5. *Carefully consider free versus fee-based programs.* Free trees may be more attractive to both funders and the general public. Fee-based programs can force participants to literally invest in their new trees, arguably increasing the chance that trees are planted and cared for. However, fees may be logistically difficult to manage and preclude participation from low-income residents, so alternative forms of participant investment (e.g., time in training activities as opposed to money) may strike an appropriate balance.
 6. *Maintain good records.* Record keeping of trees distributed and planted is critical to ongoing

reporting, as well as facilitating tree monitoring when staffing capacity allows. Practitioner-driven monitoring of recently planted trees has been carried out by various other organizations (Roman et al. 2013), but as previously mentioned, tracking trees is especially challenging concerning trees on private property.

7. *Share strategies with, and actively seek advice from, other programs.* Yard-tree distribution programs are a distinct part of urban forestry, and much can be learned from sharing strategies across cities and regions. Share program successes and failures. Seek advice from established programs.

Connecting with communities

1. *Offer pre-registration.* Pre-registration for tree species—allowing residents to select what trees they want ahead of time from a pre-determined list—helps residents choose the right tree for the right place, and also facilitates the program's data management. Pre-registration should be offered both online and through other means (e.g., via phone or paper forms) to increase accessibility.
2. *Educate residents about proper tree care.* Many tree recipients may not know to plant their tree immediately, or be aware of the appropriate watering methods. For programs that operate through giveaway events, require in-person training on the day of the event and provide printed tree-care guides.
3. *Offer consumer-friendly practices.* For example, keep printed educational materials clear and concise, using plain language, and accommodate residents for whom English is not their primary language. Additionally, be aware of residents' constraints regarding tree stock size.
4. *Use effective outreach strategies to connect to residents.* Outreach is an essential component for yard-tree programs. While some outreach strategies may be broadly effective across an entire city, approaches should also be tailored to the different communities within the city, particularly if the program aims for equitable participation. Incorporate community partners in outreach and resident recruitment.
5. *Follow up with recipients.* For giveaway events, it can be helpful to send timely reminders to those who pre-registered so that they do not miss the event. Tree recipients should also be reminded after the event (e.g., via email or postcard) to plant and water their trees immediately. Online follow-up surveys can yield insight into which outreach strategies are working well and provide self-reported tree survival data.

Tree stock considerations

1. *Keep tree stock relatively small.* Keeping the tree stock small lessens the physical strain on program staff and makes transportation and planting for recipients

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Residents receiving trees at a giveaway event for TreePhilly. Sometimes, keeping the tree stock small lessens the physical strain, when it comes to transporting the plant, thereby making pick-up and planting easier for recipients.

easier. If residents will be bringing their tree home via subway, whips (slim, typically unbranched trees) may be appropriate.

2. *Limit the number of trees per recipient.* Half of the giveaway programs limited the number of trees given out to each property to maximize the number of participants, offer more equitable access to trees, and ensure that the trees taken were, in fact, planted—out of concern that residents may take more trees than they could realistically plant.

Conclusions

Residential yard-tree programs are a distinct area of urban forest management. Cities seeking to increase residential tree cover should consider learning how these programs best function. It remains to be seen whether these yard-tree programs are meeting either their environmental objectives (e.g., increasing residential tree canopy cover) or social objectives (e.g., changing residents' attitudes and perceptions about trees). As cities launch or continue yard-tree programs, it will be critical to articulate clear program goals and evaluate progress toward meeting those goals.



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A resident receiving trees at a giveaway event for TreePhilly. By clearly articulating the goals of the giveaway program, both staff and residents participation will be prepared to meet or adapt to the event's stated goals.

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TreePhilly staff, from Philadelphia Parks & Recreation, with partners at a give-away event.

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