

Getting Work Done in the Urban Forest: Community Staff, Volunteers, and Contractors

By Ward Peterson and Richard Hauer

The urban forest develops in a variety of ways. The created environment, a result of adding various trees and/or other plants, may become a part of an existing forest (Figure 1). Regardless of what forces shape the urban forest, it takes a specialized, trained, and diverse workforce to care for urban forests. The workforce needs to be recruited, developed, coordinated, and cared for if it is going to help the trees exist in urban conditions. This article focuses on the use of *contracting* in municipal tree care.

Identifying Workforce Needs to Manage the Urban Forest

And in recognizing the needs of the urban forest and the varied workforce required to care for those needs, how should we recruit and manage our workforce? Likely, no one arrangement will work for all regions. In some locations, a cohort of municipal employees can work well toward implementing urban forest management plans. Other sources of workers should be considered—along

with community employees—for maximum effectiveness. Volunteers and contractors have special skills and advantages that will benefit tree programs.

The question then becomes, “What jobs or tasks are best done by which people?” That is, by which part of the workforce? This will need to be determined on a community-by-community and project-by-project basis. It will depend on the capabilities of the community’s staff, availability of volunteers, quality of contractors, and the work that needs to be done.

The type of work needed to manage a healthy urban forest varies by community, trees, location, and condition, among other factors. Most of the time invested in tree activities (62%) is used for the big three—tree pruning, removal, and planting (see “Municipal Forestry Budgets and Employee Compensation,” by Hauer and Peterson, in *Arborist News*, October 2016). And most of the work (95%) is being completed by in-house (54%) or contracted field arborists (41%). Five percent of municipal tree care is conducted by volunteers (see “Financing the Urban Forest: From Volunteers to Sources of Revenue,” Johnson et al., in *Arborist News*, August 2016).



Figure 1. Growing the urban forest one tree at a time.

Some of the groups affecting the urban forest (and who comprise your team):

- in-house staff
 - contractors
 - volunteers
 - operations management
 - administration
 - purchasing department
 - community as a whole
-

Why Use Contractors?

Contractors often focus on field operations (pruning, removal, and planting). In the United States, communities have been spending an average USD \$1.46 per capita

on contracting (Table 1.) This ranges from \$6700 in the smallest places to nearly \$24 million in communities with over one million people. Advantages of contracting include:

- flexibility
- reduced supervision and management by in-house staff
- capacity Building
 - permanent staff can concentrate on administration and awareness
 - the number of people and amount of equipment available is large
- specialized workforce and equipment available on an as-needed basis
 - large equipment such as bucket trucks and log loaders
 - expertise
 - fast response to large projects or storms

Contracting tree care activities is common, with 88% of responding communities indicating they contract out their tree work. (Figure 2). Historically, the percent of a municipal tree care budget spent on contracting fluctuated between 21% and 23%. Today, the amount has nearly doubled to 39%. Time will tell as to whether this level of contracting is the new norm.

The percentage of communities using contracting for specific activities varies by population and the activity type (Figure 3). Tree removal, by far, is the most common activity selected for contracting by communities. Nearly 90% contracted some portion of their work for tree removal. This is not surprising considering tree removal is a technically challenging task. By comparison, few communities (21%)

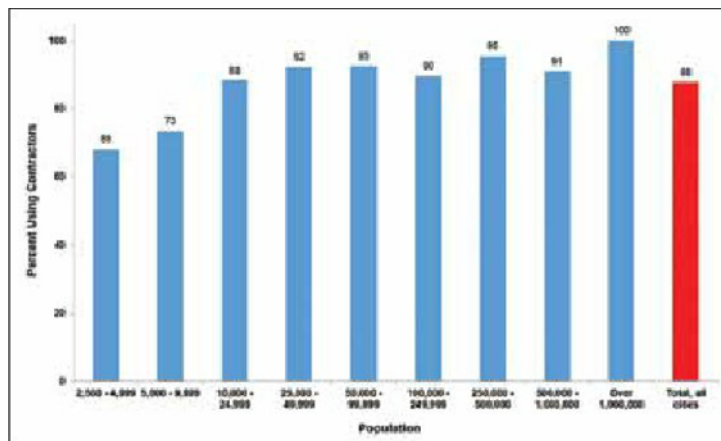


Figure 2. Does your community use paid contractors for any of your tree care activities? (n = 659).

contract the important but less technically challenging task of watering. Tree planting (58% of responding communities) and tree pruning (68%) were also commonly contracted. The commonality increased as population increased.

The Cost of Contracting

Cost is an important factor to consider in contracting tree care activities. In some cases, for some projects, the task is limited in scope, and thus contracting is the best option. For example, a tree planting or tree pruning project might require 500 hours of time, but the in-house skill set is lacking, or the available staff time does not exist. Developing a scope of work, requesting bids, and

Table 1. How much is the total annual cost for all contracted tree care activities and management activities for the last fiscal year?

Classification	N	Annual contract budget (\$USD)			Contract \$USD per capita		
		Mean	Median	SEM	Mean	Median	SEM
Total (all cities)	410	313,750	60,000	111,980	3.09	1.46	0.23
<i>Population Group</i>							
2,500–4,999	25	13,032	6,720	3,510	3.40	1.63	0.82
5,000–9,999	27	21,214	9,375	4,664	2.73	1.11	0.54
10,000–24,999	33	35,410	16,000	7,237	2.42	0.89	0.53
25,000–49,999	111	132,485	60,000	19,345	3.81	1.59	0.54
50,000–99,999	130	221,263	80,000	33,533	3.19	1.27	0.48
100,000–249,999	59	343,389	250,000	48,607	2.43	1.49	0.38
250,000–500,000	18	582,603	391,360	141,730	1.75	0.96	0.41
500,000–1,000,000	5	907,551	900,000	282,792	1.37	1.10	0.47
Over 1,000,000	2	23,908,000	23,908,000	21,622,000	3.53	3.53	2.04
<i>Geographic Region</i>							
Midwest	165	195,606	47,500	28,041	3.45	1.47	0.43
Northeast	60	923,216	50,293	757,476	2.61	1.94	0.39
South	78	182,928	72,563	30,279	2.87	1.14	0.45
West	107	249,544	75,000	40,324	2.95	1.32	0.45

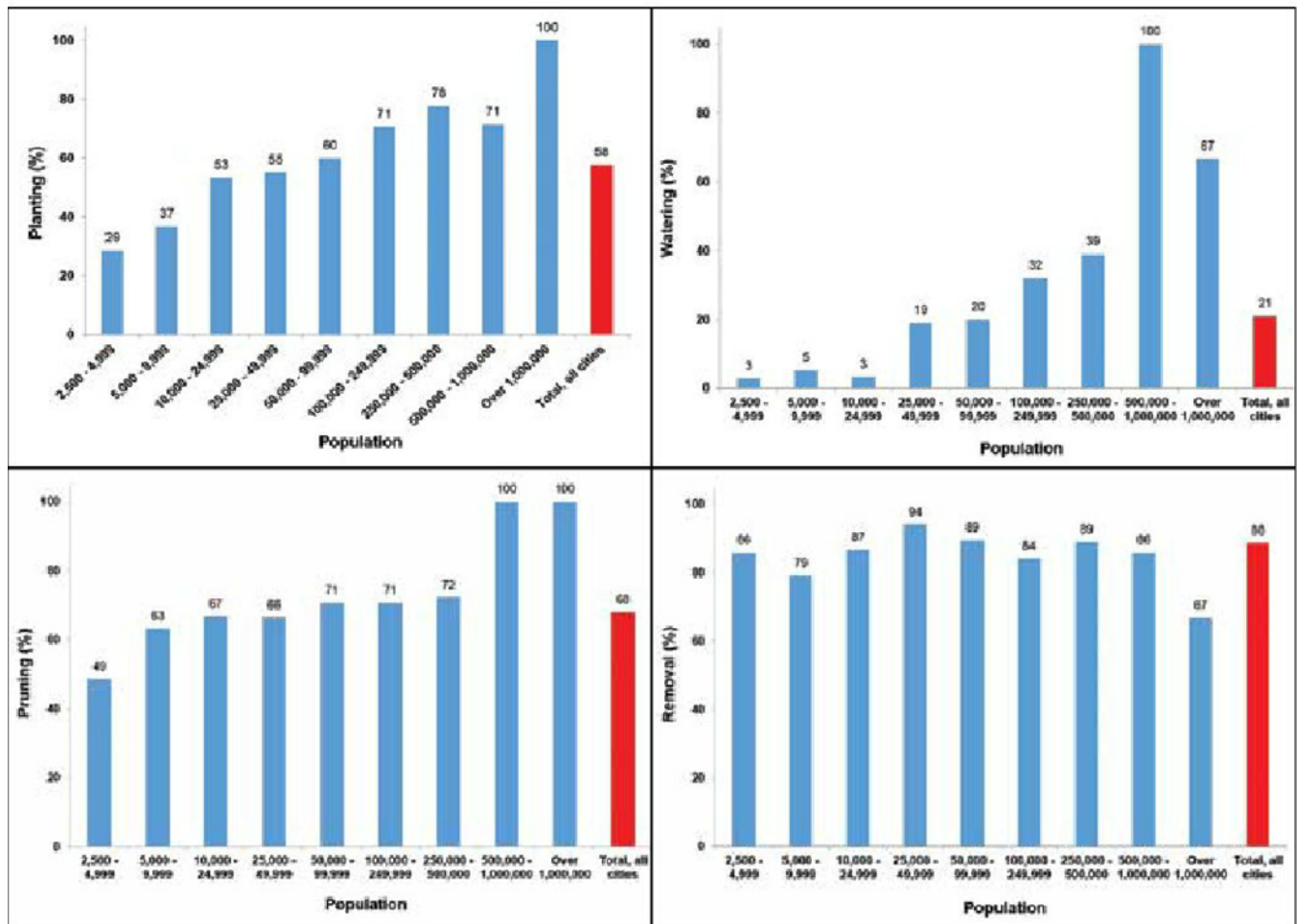


Figure 3. Which tree activity work do contractors perform for planting, watering, pruning, and removal services? (n = 443).

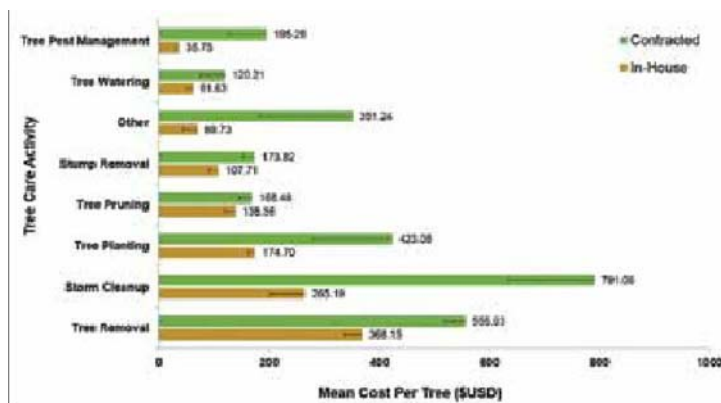


Figure 4. Respondents were asked to indicate the in-house and contractor budget (costs) and number of trees associated with each of the tree activities listed, for their municipality for the last fiscal year (n = 92 to 209).

accepting a bid might make better sense than hiring full-time staff for a project that is part-time.

The costs of contracted services and in-house reported costs were compared. All in-house costs per activity were lower than reported contracting costs (Figure 4). This

finding has been consistent among each preceding study, dating back to 1974. It may be that in-house operations are the least costly option, or it may be that the contracted projects involved larger trees (although tree size was not accounted for in the current analysis). Also, in-house accounting may be different than contracting accounting. Sometimes, capital expenses (equipment) are not included in municipal maintenance budgets [municipalities should document all costs (e.g., staff time, materials, and equipment depreciation)].

Bid and contract specifications are critical to success in quality and cost-effective contracting. Nationally, 72% of respondents said they use industry standards or credentials as part of the evaluation and contracting process (see “Building and Growing Professionals for Trees: Arboricultural Standards and Practice,” Hauer and Peterson, in *Arborist News*, February 2016).

The quality of the work performed is set by the quality of the specifications and standards; this is an area that deserves special attention by the municipal staff. The culture of using standards to perform and evaluate tree work has become the norm. Maintaining quality specifications

and standards is critical to getting the most out of contracted tree work. The following steps are recommended for contract tree work:

- the contractor needs to have the same goals and measures, this will help develop a team of quality workers
- making it easy for contractors to understand what you want and what they need to do by going over the standards and specifications prior to starting work.
- timing of projects—the more flexibility the better
 - if contractors can work offseason when they don't have other obligations, they can offer a more competitive price
 - equipment and personnel will be more readily available
- improve vetting a bid
 - detailed bid specifications (use industry standards)
 - clear request-for-proposals
 - contractor requirements (professional credentials)



Figure 5. Growing the urban forest involves contractors, in-house staff, and volunteers. Contractors make specialized equipment and expertise more available for urban forestry programs.

- consider different contracting methods
 - time and material
 - lump sum
 - unit based
 - guaranteed not to exceed



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Conclusion

We are learning more about how to effectively work with all the components of and contributors caring for the urban forest. This six-part series of Municipal Tree Management in the United States has lessons for all parts of the world. Systematic management, volunteer involvement, contracted resources, and standards and credentials have all increased and improved, and the findings published in previous features in this article series provide a baseline to compare your operations.

Unique situations may differ from the average conditions. Your team might exceed in one area while underperforming in another, relative to the national averages. But there is always a reason why. If, for example, spending less per capita is a cause for concern, then your office may need to take a moment to investigate. It could be that you are not spending money on emerald ash borer

management, which explains why there's less money being spent than in communities responding to this pest.

The more we work together, the more we will accomplish (Figure 5). The findings from this project provide some approaches to consider in your journey of growing the urban forest.

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Editor's Note: This is the sixth and final article in a year-long series in Arborist News, focusing on trends and best practices in municipal arboriculture and urban forest management. This article series was based on the findings from the research project, Municipal Tree Care and Management in the United States.

Flatheaded Borers, Longhorned Borers

Several flatheaded borer and longhorned borer species may attack woody landscape plants. Usually, they only attack fresh pruning wounds or trees or limbs that have been injured or stressed.

- Adult flatheaded borers are flattened beetles that are gray, brown, or metallic-colored.
- Adult longhorned borers are elongated, fairly large beetles with very long antennae.
- Larvae are cream-colored grubs. They lack leg-like appendages in the middle of the body, distinguishing them from wood-boring moth larvae. Flatheaded borer larvae often have an enlarged, flattened segment behind the head.
- Stains or oozing liquid commonly occur on infested wood.

What Do I Do?

- Plant tree species appropriate for your location and follow recommended cultural practices to keep them healthy and vigorous.
- Provide adequate water, but do not over-irrigate. Keep tree plantings separated from irrigated turf.
- Avoid injuries to trunks and roots, and protect tree trunks and branches from sunburn, which weakens limbs and makes them susceptible to beetle attack.
- Prune out and destroy infested branches. Do all other pruning in the wintertime, when the adult beetles are inactive. Promptly remove heavily infested trees.
- If infestations are small, you can kill the larvae by probing their tunnels with a stiff wire.
- Solarize recently cut firewood by stacking it in a sunny location and covering it with heavy, clear plastic, tightly sealed for several weeks, during the warmest part of the year. Remove any recently cut wood that you do not solarize.

PEST PROFILE

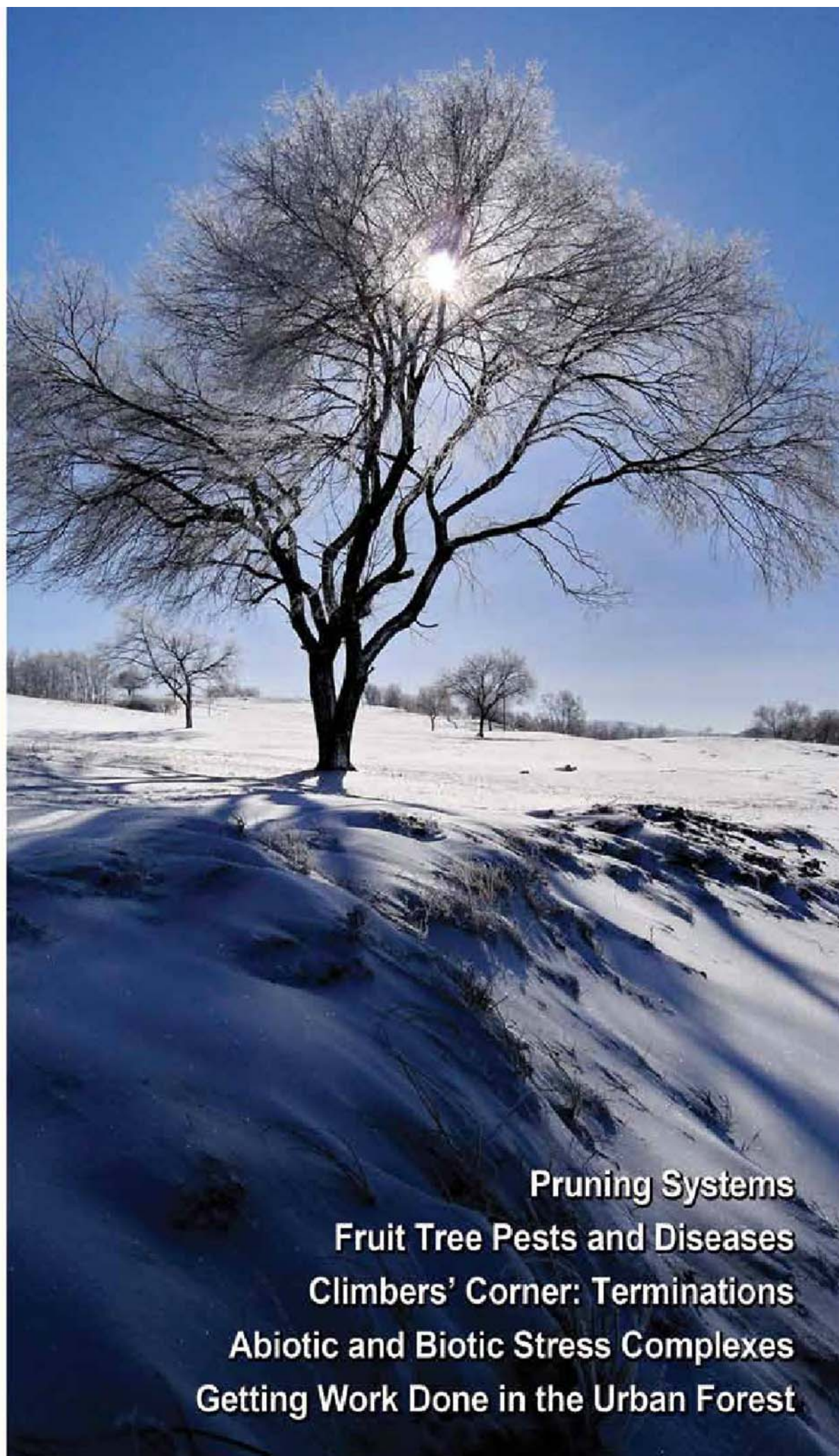


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