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Urban Forestry Best Management Practices for Public Works Managers Staffing





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Staffing

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Introduction

Within our communities, trees are one of the most valuable public assets. They are unique from other assets that public works departments manage in that they are living, growing organisms and can have potentially very long service lives. The care and management of this valuable resource requires specialized, professional expertise and a unique set of work skills.

In this best management practices guide, information will be provided to describe the staffing recommended for operating an efficient and effective urban forestry planting and maintenance program within a public works department.



What is an Arborist?

Before describing aspects of staffing, such as the types and numbers of positions, qualifications, and pros and cons of in-house and contractual services, it is important to know how urban forestry staffing is different from other positions in a public works department.

The management of individual, landscape trees is called “arboriculture,” and staff who participate in the management of these trees are called “arborists.” Arborists are men and women who make a career of caring for the urban forest. Their work is physically demanding, often dangerous, and intellectually challenging. As science and experience reveal new information about tree biology, physiology, maintenance and planting, arborists’ need for education never stops.

Just because someone is experienced with the use of a chainsaw or a shovel does not make him or her automatically qualified to prune or plant trees. Specific education and training, and a comprehensive understanding of trees, site conditions, and long-term management issues is required to properly take care of and plant public trees.

Like the arborist, the “urban forest manager” is a professional experienced in all aspects of arboriculture in the public arena. The urban forest manager is dedicated to the administration of the tree management program to achieve the goals of a safe public forest that maximizes tree benefits for the community in the long term. This broad managerial view and responsibilities enable the professional urban forester to help public works staff, elected officials, and citizens make wise decisions and get the most for their investment in trees.

Staffing Complement

Generally, an urban forestry program has both supervision and operational employees who are supported by administrative and other management employees within the public works department.

As reported in a 1994 report titled “Municipal Tree Management in the United States,” on average, municipalities have six (6) daily employees in their municipal tree management programs. This is an average from cities of all sizes. Table 1 shows the average number of urban forestry program employees by city population.

Table 1.
Average Daily Number of Employees by Population

| | |
|----------------------|----|
| Entire survey | 6 |
| Over 1,000,000 | 21 |
| 500,000 to 1,000,000 | 22 |
| 250,000 to 499,999 | 23 |
| 100,000 to 249,999 | 9 |
| 50,000 to 99,999 | 6 |
| 25,000 to 49,999 | 4 |
| 10,000 to 24,999 | 2 |
| 5,000 to 9,999 | 1 |
| 2,500 to 4,999 | 1 |

Source: ISA Research Trust and USDA Forest Service

The supervisory position can be termed as the city forester, urban forester, tree warden, community forester, or city arborist; these titles are often used interchangeably to describe positions with similar management responsibilities. They plan and direct the maintenance and planting field work, and are charged with all duties related to the functions, growth, and sustainability of the urban forest management program. In a more developed and established program, the city forester may have an assistant supervisor.

The operational positions are typically a forestry supervisor and/or crew leader, trimmer, and groundworker. Public works agencies may not use these exact titles depending on the existing personnel job titles and descriptions accepted and already in use by the agency.

The following briefly describes the qualifications, duties, and typical pay scale of each supervisory and operational position.

Groundworker:

Qualifications

- High school diploma or GED.
- Ability to perform manual labor.
- Possess a valid driver's license.

Duties

- Assists with job site setup.
- Feeds brush into the chipper or stacks brush for pick-up.
- Flags traffic.
- Other tasks as assigned.

Pay scale - \$21,000 – 32,000/year

Trimmer:

Qualifications

- High school diploma or GED.
- Minimum one year experience on a tree crew. Good working knowledge of proper tree care practices.
- Ability to operate a chainsaw, use hand tools, perform rope and saddle work.
- Possess a valid CDL.
- International Society of Arboriculture (ISA) Tree Worker Certification is a plus.

Duties

- Performs duties of the crew leader in his/her absence.
- Drives and operates bucket truck, chipper.
- Performs pruning and removal work.
- Helps set up safe work zones.
- Maintains equipment.
- Completes reports, paperwork.
- Communicates with supervisors.

Pay scale - \$23,500 – 36,100/year

Tree Crew Leader

Qualifications

- High school diploma or GED.
- Minimum one - two years experience as a trimmer or a tree crew leader.
- Good working knowledge of proper tree care practices.
- Possess a valid CDL.
- ISA Certified Arborist status is a plus.

Duties

- Coordinates daily work activities of the crew.
- Ensures work is carried out safely, efficiently.
- Applies various safety standards, organizational policies, and applicable laws.
- Completes paperwork.
- Communicates with higher levels of management.
- Performs public relations with the general public.

Pay scale - \$28,500 – 43,700/year

Forestry Supervisor

Qualifications

- High school diploma or GED, or some higher education.
- Five years minimum experience in arboriculture including supervisory experience.
- Possess a valid CDL.
- ISA Certified Arborist.

Duties

- Directs and counsels assigned staff and contract crews.
- Investigates and prioritizes service requests.
- Enters and retrieves data on computer.
- Responds to after-hours emergency calls as needed, and mobilizes crews and equipment.
- Trains individuals/crews as necessary.
- Completes forms, prepares reports.
- Coordinates with other organizations.
- Communicates with chain of command.

Pay scale - \$30,000 - \$46,000/year

Urban Forester

Qualifications

- Bachelor's degree in forestry, horticulture, landscape horticulture or a related field.
- 3-5 years of direct experience in the field.
- Possess a valid driver's license.
- State certified pesticide applicator.
- ISA Certified Arborist with Municipal Specialist designation.

Duties

- Prepares and maintains the street tree maintenance plan.
- Prepares an annual tree planting plan.
- Enforces the tree ordinance.
- Plans and conducts public education programs.
- Prepares contracts for tree services.
- Coordinates with other agencies.
- Purchases equipment and supplies.
- Directs work of assigned staff.
- Establishes, maintains records and files.
- Responds to citizen requests about private trees.

Pay scale - \$40,000 - \$65,000/year

"In-house" or Contractual Pros and Cons

Most public works agencies have the option of performing urban forestry tasks using in-house staffing and equipment, or using contractors who specialize in various arboricultural and horticultural disciplines and services. Often, a combination of using both in-house personnel and contractors is chosen to ensure that the urban forest management services provided are performed at the lowest possible cost, as efficiently as possible, and with the greatest level of expertise. Additionally, for special projects, or tasks that are not daily responsibilities, public works agencies will often use consultants on an as-needed basis.

There are potential advantages and disadvantages to using in-house staff and contractors for urban forest management. Both the leadership of the program (the urban forest manager, city forester, city arborist) and the workers in the program (tree planting, maintenance, stump removal, insect and disease control), can be in-house or contracted. The advantages and disadvantages for both levels are generally summarized as these:

In-House Management - Forester/Arborist

Advantages

- Deep ties within the community.
- Has or will build "institutional knowledge."
- Is available at a moment's notice to perform a wider variety of tasks.
- Is directly accountable to the citizens and the public works director.

Disadvantages

- May only be experienced in limited aspects of arboriculture and urban forest management.
- Investment must be made in equipment for this position, such as a vehicle, computer, and diagnostic tools.
- May need to invest time and funding for obtaining and maintaining certifications, licenses, and other training.
- Not easily removed from the position if performance is substandard.

Contracted Management - Urban Forestry Consultant

Advantages

- Usually is very experienced and knowledgeable on a wide array of topics.
- Can provide a high level of knowledge in a specific area, such as hazard tree identification, tree valuation, ordinances and technical specifications, tree preservation.
- Can be released from service more easily.
- Usually is fully and pre-equipped with a vehicle and computer.
- All certifications, licensing, and continuing education are already in place and separately provided.

Disadvantages

- Contract agreement may limit flexibility in job assignments.
- If used regularly, and for an extended period of time, can be more expensive in the long term.
- Administrative time must be provided for contract writing, monitoring, and invoice processing.

In-house Crews and Work Production

Advantages

- More flexible for other work assignments.
- Quality can be perfected to meet community standards through training and over time.
- Can respond more quickly to emergencies.
- Workforce is more stable.
- Staff can be more knowledgeable about the community, and can be motivated by pride and residency.
- More control over training and specializations.
- No administrative time is needed to write and oversee contracts.

Disadvantages

- Large investment in equipment and maintenance, for example, a lift truck and chipper can cost \$140,000 per crew.
- Workers are paid regardless of work production quantity, efficiency, and quality.
- Difficult to release from employment.
- Public works department is responsible for damage caused by crew actions.
- Public works department is responsible for on-the-job injuries and workman's compensation.

Contractual Crews and Work Production

Advantages

- Funds are paid only for work performed and when completed to specifications and the satisfaction of the public works department.
- Labor is available for peak demands and special projects; there is cancellation and no cost when work is not needed or when the weather is poor.
- Contractor provides all required equipment, tools, and supplies; repair, maintenance, and downtime of equipment are not the responsibility of the public works department.
- All insurance and workman's compensation is the responsibility of the contractor.
- Contractor provides employee supervision, training, and certifications.
- Liability for damage to public and private property is the responsibility of the contractor.

Disadvantages

- Contractors are bound by the specifications of the contract; their work assignments are not as flexible.
- May not be as quick to respond to emergencies as in-house crews.
- Administrative time is required for contract writing, monitoring, and invoice processing.

By knowing your in-house and contractual crew costs, production rates, and work load, you can compare costs required to complete a set of work orders, and to determine the best method of accomplishing the work.

Using data from job analysis and local costs, Chattanooga, Tennessee, Public Works Department gives the following example of a pruning program cost analysis.

Example - Pruning Maintenance Project

| Tree Size Class | 0-6" | 7-12" | 13-24" | 25-36" | 36"+ |
|-----------------------|----------|----------|----------|----------|---------|
| Total Trees | 927 | 381 | 247 | 23 | 8 |
| Man Hours to Prune | 1.0 | 1.4 | 3.5 | 6.3 | 7 |
| Total Time | 927 | 533 | 865 | 145 | 56 |
| In-House Costs (1) | \$53,395 | \$30,700 | \$49,825 | \$8,350 | \$3,225 |
| Contractual Costs (2) | \$76,400 | \$43,930 | \$71,290 | \$11,950 | \$4,615 |

(1) Based on local cost estimates of 75' Bucket Truck (10 years, fuel, maintenance, etc.) @ \$11.00/hr; Chipper \$6.62/hour Crew* (does not include fringes) \$40.00/hour = Total cost per hour \$57.60

(2) Based on local cost estimates of - \$82.42/hour for a three man crew equipped with 75' bucket truck, and chipper.

These cost figures and production rates are not to be applied nationally, and are only presented here as an example for educational purposes.

Staff Training and Development

Staff training and development are major and constant responsibilities of public works departments for all programs. Whether it is stormwater, roadway, sewer, or urban forest management, all employees should be trained on current industry standards and safe work practices.

Reasons for training range from new-hire training about your urban forestry program operations, to introducing new technical concepts and practical techniques to the field staff, to bringing in a new computer software system for the urban forest manager.

Whatever the reason or need for conducting a training session, the public works manager should develop a comprehensive, ongoing, and consistent training program. This quality training program is essential in keeping staff safe, efficient in their work, and motivated about learning new concepts.

For urban forestry program staff, training is diverse given the nature of the resource and the working conditions. Typically, all forestry employees should be aware of and receive some training in:

- Tree identification and basic tree physiology
- ANSI A300 pruning, maintenance, and protection standards
- ANSI Z133.1 safety requirements
- ANSI Z60.1 standards for nursery stock
- Job site setup, flagging, and safety
- First Aid, CPR
- OSHA compliance
- Electrical Hazards Awareness Program
- ISA Certified Tree Worker and Certified Arborist Training

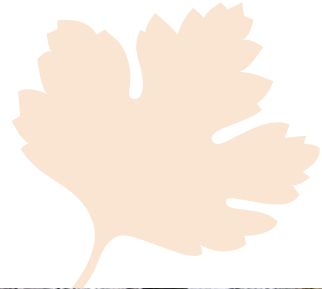
Advanced Training is available for:

- Tree hazard identification
- Tree valuation
- Aerial rescue
- Insect and disease diagnosis and management
- ISA Municipal Specialist designation

These topics and other urban forestry related training programs, coursework, workshops, and conferences are available from a variety of sources:

- International Society of Arboriculture
- Tree Care Industry of America
- Society of Municipal Arborists
- American Public Works Association Red Cross/public health departments
- City or county personnel and human resource departments
- Consulting firms
- Local county cooperative extension offices
- Universities and technical colleges

Training does more than just educate workers. Training supports professional development and job advancement, and positively influences attitudes and morale. If you want to keep your staff motivated about learning new concepts and performing their work responsibilities in the best and safest ways possible, then the quality and variety of the training provided is key.



For More Information

Your State Urban Forestry Coordinator

www.arboday.org/programs/urbanforesters.cfm

International Society of Arboriculture

www.isa-arbor.com/home.aspx

Society of Municipal Arborists

www.urban-forestry.com/

Tree Care Industry of America

www.treecareindustry.org/public/main_safetyed.htm

American Public Works Association

www.apwa.net/Education/

ANSI Standards

www.ansi.org/education_trainings/overview.aspx?menuid=9

Davey Resource Group

www.davey.com

ACRT, Inc.

www.acrtinc.com/ACRT_training.html

National Arbor Day Foundation

Tree City USA Bulletins

www.arboday.org/programs/treecitybulletinsbrowse.cfm

Thank You



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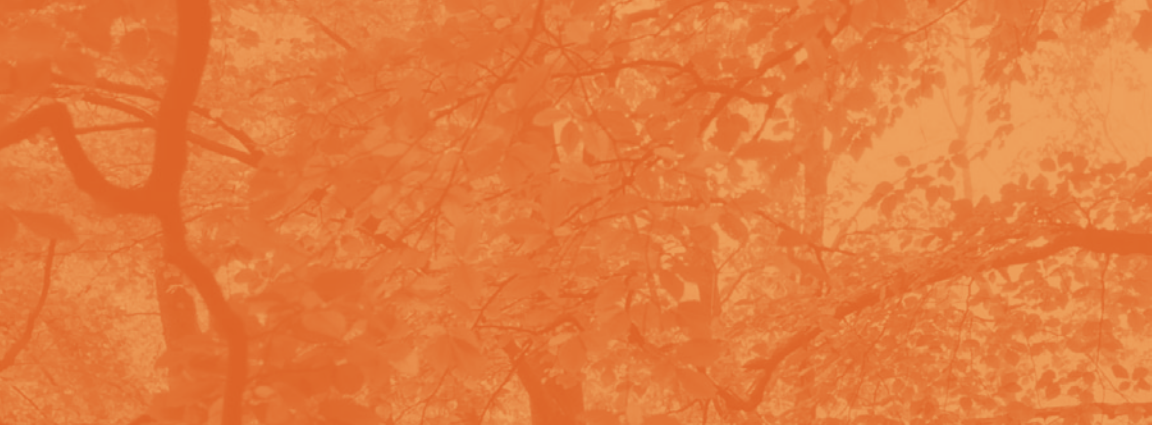
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