

CONTRACTING FOR CITY TREE MAINTENANCE NEEDS

by Robert L. Tate

Abstract. Approximately one quarter of cities and counties in the United States contract for tree maintenance. This percentage is increasing. On the average, tree contracting saves about one-third when compared to in-house costs with no loss of quality. The reasons contracting is cost efficient are outlined. Problems with contracting can be avoided if several guidelines are followed. Unit, time and material, and lump sum practices are evaluated. Contracting will increase in the future because contractors are generally more efficient, cities will be faced with continuing budget problems, and there will be more opportunities for contractors, which will increase competition.

Governmental agencies (city, county, state, etc.) spend less money than the electrical utility industry on contract tree maintenance. A 1979 study indicated that about one quarter of the cities responding contract some tree work. Tree removal was the most often contracted. The amount spent on contracting annually by a city averaged over \$30 thousand. Using rough calculations and adding data collected by other researchers, over \$100 million is spent annually on trimming and removal by city and county tree service departments. On a per capita basis, cities with populations that range from 250,000 to 500,000 spend the most on contracting. Usually cities let maintenance contracts on an annual basis by lump sum award.

In contrast, the United States investor-owned electrical utility industry spends approximately \$1 billion per year for tree maintenance by outside contractors. About 90 percent of the total budget for maintenance is contracted out. The work done falls under several areas: trimming and removal for line clearance (the primary activity), mechanical and chemical brush removal, and other vegetation management needs. The great majority of the work is bid by time and material.

Governmental tree maintenance contracting by region seems to be evenly distributed. However, the most active interest in starting and increasing contracting is in those areas where unions are the weakest: the West and South; but the city of New York, which is one of the most organized union towns in the country, will contract over \$3 million in tree maintenance this year (fiscal 1985), which is about the same as the city of Los Angeles plans

on doing.

Contracting cities is on the increase. In a recent study in Southern California, cities saved from 20 percent to 90 percent with no loss of quality when they contracted, compared to doing the work with their own crews. On the average tree maintenance contracting saved about one-third.

Why contracting is cost efficient. Non-productive time is always a serious concern in any job function, especially when crews are being paid by salary. Non-productive time is much less of a problem with outside contracting because contract employees don't have to be kept on the payroll when their work is completed. Moreover, properly qualified contractors offer trained personnel and specialized equipment that keep the job costs low. In addition, contracting guarantees trained personnel and good equipment on the job because the contract specifications can be written to provide exactly what is needed for each case.

Training employees is expensive. Training in-house personnel only to see them leave for more lucrative jobs after they have been trained is not a necessarily pleasing nor cost efficient experience, and it happens all too often. Also, the initial period in which training takes place is not a highly productive one and may not be as safe, from a work-related injury standpoint, to the individual employee being trained.

It has been estimated that in 1985 the average cost of setting up a three person crew in the United States with an aerial lift, chipper, and truck is over \$75,000. When salaries and fringe benefits are included, the cost of this crew can run between \$125,000 and \$150,000 the first year. It often takes a year (or more) to get that crew on the street after budget funds have been approved because of the lag time in getting equipment and personnel. In contrast, contract crews can be on the job within 10 days after the contract is awarded with no training period involved. Moreover, good equipment will be provided if required by the contract specifications. If it breaks down and the contractor does not have spares,

the contractor is not paid. The crew of the contractor does not have to be shifted to a less productive municipal function, as would have to be done with in-house crews on salary and subject to a union contract. It is virtually impossible to have short-term layoffs of in-house personnel.

One of the advantages of contracting is that it takes the competitive market into consideration. The forces of supply and demand determine what the price will be. Therefore, the city should get the best price if it goes about contracting in the *correct* way.

Last, contract funds may be easier to get on a fairly permanent basis since they can be cut more readily. This sounds like a contradiction, but in the minds of budget managers, long-term committed funds for permanent in-house funds for permanent in-house personnel takes much of the discretion out of the decision-making process. It's difficult to allocate city personnel to another department. Contracting allows for rapid shifts in the strength of the work force to take advantage of rapidly changing political winds, as well as real needs.

Some pitfalls. Tree service contractors differ. Often anybody who can put up a magnetic sign with "Tree Service" on his truck thinks he can do any tree job. Government work can often be in a valley of doom to the unsuspecting. The urban tree manager must make certain that trained, competent contractors are bidding on the work and are fully aware of the real cost of doing business in the city. One of the common concerns expressed is that good contractors are not bidding work. A quality job can be obtained at a competitive price if these simple rules are followed.

1. Don't fall into the trap of having outdated, inappropriate, and poorly written specifications. If the specifications don't fulfill your needs or good work does not result from them, change them or get help to do so.
2. Understand that the purpose of letting outside contracts is to get the job done that can be afforded at a fair and competitive price. If one gets too creative, reputable contractors may not bid the work.
3. Don't get lured into the trap of blindly taking the lowest bid. The lowest bid doesn't always mean the lowest cost. Often urban tree managers are not satisfied with a contractor

from previous jobs, but continue to award him additional jobs because he is the low bidder but continue to complain about contractors and contracting in general. If the purchasing department's rules and regulations cause the grief in this respect, make the concern known by showing the department the problems of always accepting the lowest bid. Be able to document these problems.

4. Have good supervision available to administer the contract. This is of paramount importance to both parties. After all, the contractor in most cases wants to do a good job. Above all, he doesn't want surprises. If city personnel are not available, specify supervision (to be furnished by the contractor) to be bid in the contract specifications.

5. Employee/union problems may surface when contracting is being done for the first time. Contract jobs have been terminated due to union misunderstandings and lack of proper notification. Lawsuits and union work stoppages have also resulted.

6. Allow for the flexibility in the contract. Keep a hand on the faucet. Flexibility can be attained primarily in the way the bid is let and the way the specifications are developed. Avoid casting in stone. Be willing to discuss concerns the contractor has and try to meet him halfway.

Bidding practices. There are basically three types of bids for tree work.

Unit. In unit work a price is submitted per tree, for the work to be done. Often the diameters of the trees are placed into ranges for pricing, i.e., sixty trees 6-12 inches in diameter, thirty-five trees 13-18 inches in diameter, etc. For tree removal work, house addresses are usually given. Trimming may be on an individual basis by house address or on a block by block scheme when an entire street is trimmed. In most cases, units are not the best way to contract the job because of the differing type of work that needs to be done on each tree, the spacing between trees, the size and species difference, and the problem in getting the work that the city wants done for the price the contractor can charge and make a reasonable profit. All too often, awarding bits and pieces to several contractors is done, requiring lots of jumping around and leapfrogging by the contractors.

This plays an important part in pricing and in getting reliable contractors to bid the work.

Time and material. Time and material is a method in which contractors bid the work competitively on a crew-equipment cost basis by the hour, not by the job. Contractors know exactly what their costs are. The great majority of utility line trimming and removal is done by this method. Unfortunately, in my opinion, not enough cities bid jobs on time and material. I strongly believe that this is the best way to get a quality job for a truly competitive price, because contractors know what they will make on a job. I have spent considerable time analyzing unit, time, and material, and lump sum work and comparing the respective bid prices with results. Convincing cities to change from unit work to time and material is difficult—but many of them are.

A city has greater control over time and material work than it does over lump sum or unit bids. When a city is starting to contract for the first time and is unsure of what it really wants done and what a fair price for the work should be, time and material lets a city properly evaluate the contract and the contractor. Also, crews under time and material “belong” to the city and can be directed to any job the city wants done on its trees. Moreover, a city can specify exactly the crew makeup and the equipment it needs for its particular situation. I know of no city that has time and material crews that is not satisfied with them. I conversely know many cities that are unsatisfied with unit and lump sum work.

The chief problem cities seem to have with time and material is the mistaken opinion the crews won't produce as well as unit crews. This is incorrect. Cities can and do set production standards just as the utility industry does, and contractors obviously want to do an efficient job and go to great lengths to supervise their people so cities are happy with the work, a reasonable profit is made and additional work is obtained from the city in the future.

Lump sum. In lump sum a price for the work to be done is submitted for the total job. In many cases even though the bid is called a unit bid, the lowest total price often gets the job. In both unit and lump sum bidding, understanding the specifications for the work is critical. It takes careful observation on the contractor's part to see

what the tree supervisor expects to accomplish with the specifications. This will probably require a visit with the tree supervisor looking at previous work and determining what he/she considers a satisfactory job. A representative sample of the work is examined. Looking at work is a cost that has to be considered when the price is calculated. Unfortunately, many cities really don't understand the specifications they use and want something else. This means that the contractor must be very careful in bidding. If reputable contractors bid jobs according to what the specifications call for and other contractors are bidding (and getting away with doing) something less, next time the work may be bid according to the competitor's work (or what he got away with). This ultimately means that quality could suffer and short cuts to cut costs are going to occur at the expense of quality when the competition is tight.

What does the future hold? There will be more reliance on outside contracting in the next few years. The talk of “privatization” of government services is increasing. In my experience, nine out of ten cities that begin contracting for tree maintenance services stay with it. There will be many start-up problems and there are obviously going to be difficulties caused by an inflexible bureaucracy in some cities.

Budget officers are getting sharper pencils. Every local government expenditure is becoming more difficult to justify, especially now that the federal government is constricting the money pipeline from Washington. More contractors are coming into the city tree maintenance field. This means good competition and better prices over the long run.

Don't look for cities to contract 100 percent of the work. Most large cities should have a small portion of their work done by in-house crews. For example, certain request jobs and highly skilled labor intensive work probably should be done by highly trained city employees. Cities will contract production work (area wide trimming, large tree removal), backlog catchup, and new maintenance programs to a great extent in the future. Existing crews probably will be phased out by attrition and contract crews will be started in their places.

Many find it hard to believe that contract crews can do the job as well as their own people. I would

not disagree completely, but I would ask city officials to consider these facts, who generally can get more work out of their employees because they:

- give less vacations, holidays, and sick time
- tolerate less absenteeism
- still have the ability to hire and fire
- make supervisors responsible for the job, and pay them well to get it done
- pay bottom dollar for labor intensive jobs, *but* use better equipment on capital intensive jobs and pay to get the most skilled workers; for example, according to one recent study, contract asphalt company crews earn one-third more than city asphalt crews.

In the final analysis, there is no guarantee that a private contractor will provide the work honestly

or efficiently. You can have problems in dealing with contractors just as you have with your own people. Some contractors motivated by profit faithfully perform a public service and others make a lowball bid just to get a contract and then plead difficulties and try to jack up the price. The overwhelming weight of evidence indicates that if you weed out unqualified bidders, be leery of the low bids, write good specifications, enforce them, and monitor performance, you will get a service that is better than what you are getting with your own people at a better price.

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Abstract

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When a tree trunk is wounded, two things happen. First, if the wound is not too large and the tree is growing vigorously, the wood will heal over with callus tissue. Second, the wood within the trunk directly above and below the wound will become discolored in a more-or-less cone shape. The extent of this discoloration is very important because decay proceeds only in discolored wood. This article describes results of my recent work, which has led to a new explanation of some of the conditions that limit discolored columns in functioning (sap-containing) wood vessels. If the explanation, which is stated below, continues to hold true after more experimentation, we should be better able to shape our tree-care practices to reduce losses from decay. I have proposed a new explanation why discolored wood columns are likely to be shorter when wound healing is good than when healing is poor. This explanation, called the hydrostatic explanation, is based on the sap pressure within the tree at the time of wounding and probably for an undetermined amount of time afterward. If sap pressure is negative when wounds are made, many types of microorganisms in the air and from the bark may be drawn or grow into cavitating vessels. Decay organisms may or may not be present. On the other hand, if wounds are made in spring when sap pressure is positive, cut vessels continue to function close to the wound, thus limiting the amount of wood in which decay organisms can grow.