

AN ATTRACTIVE ALTERNATIVE TO TREE TRIMMING FOR LINE CLEARANCE¹

by Walter R. Rossman and Charles J. Harrington

Abstract. Penelec planted 3,000 compatible tree species under power lines in the city of Erie and nearby Millcreek Township in 1960. The trees were located along streets under Penelec's power lines at locations where there were no existing trees. During the 25 years that have passed since 1960, there was no need for line clearance tree trimming on any of the trees planted. A survey done in 1984 shows that 1,160 trees (39%) have survived after 25 years in good condition. Several species show exceptionally good survival rates including the flowering crab, Washington hawthorn, and the Chinese cork. Penelec based its new tree replacement program on the results of this early tree planting.

I propose to you that tree *planting* is a viable alternative to tree *trimming*. Before you come to any conclusions about the validity of that statement, let me take a few minutes to tell you about an experiment that was conducted by Penelec which I think will prove my point.

In early 1959, the management of our Company decided to embark on an experimental tree-planting program in the Greater Erie area. I'd like to be able to tell you that the experiment was conducted to evaluate the merits of tree planting as a viable alternative to tree trimming, but it really wasn't like that at all. It started out to be a public relations maneuver to enhance our community image. It did that all right—and a whole lot more.

The first phase of our project was not unlike most projects. We conducted an extensive survey—a survey to identify street-side areas where selected tree plantings would be best suited. Our survey, conducted by two in-house foresters, namely John Middleton and Bob Lichtenwalter, determined about 3000 locations in the Greater Erie Area where the planting of a small tree would be mutually advantageous for us and the property owners.

Contact was also made with the City of Erie Shade Tree Commission, the Erie County Agricultural Extension Association and the Head of the Parks Department, Councilman Bus Down-

ing, without whose help this program would not have been as successful as it was.

With the basic planting location in mind, the next phase of our project was to contact each of the property owners on whose property the trees would be planted. Three employees were selected to perform the customer contact process and, at the same time, develop a specific tree planting layout. Before they began their assignment, they received comprehensive instructions from John Middleton regarding the spacing, location, and other details of tree planting. All of the affected property owners were then contacted during the fall and winter months of 1959 and early 1960.

In selecting the species of trees to be used for our experimental plantings, special emphasis was placed on aesthetic value and growth rate. We wanted trees that looked good and grew slowly. We initially selected a total of ten species of flowering and shade trees which met that description. Our choices included flowering dogwood, Japanese flowering cherry (Kwanzan), Aldenhan crabapple, Lavalley hawthorn, ruby red horsechestnut, upright hawthorn, Japanese flowering cherry (Amanogawa), Chinese cork tree, Washington hawthorn, and littleleaf linden.

We quickly eliminated the littleleaf linden from our list of desirable trees when we discovered that, in all likelihood, it would grow too tall for our purpose. Later, as our contractor encountered difficulty obtaining the desired trees in the quantities required, we made substitutions to complete the project. The species of trees used as substitutions included Hopa crabapple, blue ash, and evodia.

When we had developed our tree planting layout, contacted the affected customers, and selected the species of trees to be planted, we were ready to prepare the specifications to be in-

1. Presented at the annual conference of the International Society of Arboriculture in Milwaukee in August of 1985.

cluded in our invitations to bid. The invitations subsequently were sent to five landscaping contractors. Four of the five contractors submitted bids, ranging from a low of \$35,400 to a high of \$61,575. The job was awarded to the low bidder—Belle Valley Nursery.

As the successful bidder, Belle Valley Nursery agreed to: 1) supply and install the trees in accord with our specifications, 2) guarantee replacement of all trees which do not survive in a healthy condition for one year, 3) plant all trees between April 1 and May 31, 1960, 4) place a layer of mulch around each planted tree, 5) properly guy each newly planted tree, and 6) provide workmen's compensation, property damage, and public liability insurance in satisfactory terms and amounts.

The actual planting of the trees began in mid-March, 1960, and would have been completed by the end of May, as specified, had it not been for some undesirable trees rejected by the contractor and the company as unfit for planting, and scheduled shipments of other trees which did not materialize. Of the 3,000 trees scheduled to be set by the end of May, 1960, 2,668 were planted. It was mutually agreed to plant the balance of the trees during the fall planting season.

All of the trees were planted on the side of the street where Penelec's conductors were located. Most of the trees were planted under primary circuits and, in some instances, 34.5 kV conductors. Most of the trees were planted in the earth strip between the sidewalk and the curb. Approximately 10% were set back on the land of the property owner.

The owner of Belle Valley Nursery, Frank Anderson, personally supervised much of the tree planting work. His efficient and careful approach to the installation of the trees greatly enhanced the good public relations we had already gained with our program. Although the project entailed working on the property of hundreds of our customers, we did not receive a single complaint of discontent about any part of the operation.

Apparently, there's something about newly planted trees that attracts vandalism and stirs the destructive imagination. Fortunately, it wears off quickly, but in the meantime, you can count on a 1 to 2 percent loss.

About 10 to 15 percent of the trees failed to survive after the one-year replacement guarantee or fell victim to "creative replanting."

In our particular case, a detailed field survey of our trees conducted five years after planting indicated that 32 percent of the trees had met an untimely demise. That means that 68 percent survived. Table 1 is a detailed summary of our field survey conducted in September, 1965.

Throughout the experimental project, customers took time to tell us how appreciative they were. Some of the more common remarks included:

This is a wonderful idea; I think Penelec is doing a fine thing by planting these trees.

You should do more of this.

Penelec is doing a lot to beautify the city.

It will improve our property and dress up the whole street.

We feel it will make others aware of the usefulness of decorative trees for street-side planting. Keep up the good work.

One woman summed up the overall feeling of the general public when she said: "Somebody at Penelec must have had divine inspiration. Your tree planting plan benefited everyone."

Some of our customers accepted their benefit with a degree of suspicion, like the man who told us: "Penelec must have something in mind when they plant trees for free." Actually, he was right; we did have something in mind, *Tree Trimming!* And, that's our benefit from the program—we haven't had to trim a single one of those trees since they were planted 25 years ago!

Local Interest Stories

Some of our customers have been very proud of the trees that were planted, and one in particular called me in 1984 when Dick Rossman and I were doing the survey for this paper. His name is Terwilliger. He insisted we come out and look at his trees. He had two Lavalley hawthorn trees that were as nice as you could believe, and he was bursting with pride as he showed them to us.

A few people have called who no longer appreciated the tree in front of their home. One woman had just installed new white carpets in her home; the grandchildren came over and stepped on the fruit of the female Chinese cork tree and

spotted those new white carpets with the worst black dye you can imagine. So we learned not to plant that particular tree in our program.

Once or twice a year we still get calls from our customers concerning the condition of the trees that the callers say we planted a "few years ago"; when I explain that these trees were planted 15, 20, or 25 years ago, most are very surprised that the trees have been in that long.

We have also learned that these trees must have at least a 6 foot trunk. This helps prevent low growing branches from interfering with people walking on sidewalks or obstructing the view of people backing out of garages or driveways onto the street.

It would appear that the knowledge and experience gained from this tree planting project should give us the basis to develop a useful program to benefit our line clearance program. In 1980 I felt very strongly that a tree planting program to replace or supplement our line clearance activities at Penelec held a lot of promise. We could eliminate some of our most difficult and costly line clearance problems with the added benefit of beautifying some of our communities. Who could object? An economist, that's who!! When I presented the project to Penelec management, I made several converts until I reached my

boss who made an objective cost comparison of trimming vs. removal and replanting. He demonstrated that over the 25-year life of the planted trees we would save money by continuing to retrim trees on a periodic basis. So the project was put to rest.

Foresters don't give up easily though, particularly this stubborn Forester. Each year Chuck Harrington and I would see these beautiful trees and I would revive my determination that there had to be some way to benefit from this valuable demonstration. Finally in 1984 Chuck and I decided to make a detailed survey of the surviving trees. Perhaps something could be learned that we had not observed previously. After about three weeks of intensive tree counting, measuring, evaluation, and line measuring, we felt we had learned some interesting conclusions (Table 2). Certain tree species achieved a much higher survival rate than others.

In surveying these "successful" tree species in the field, it appeared that certain species would live successfully 50 years rather than 25 years as we had previously estimated. Perhaps there was justification for recalculating the economics for tree planting vs. tree trimming. So I reviewed my 1980 proposal, re-worked it, and expanded upon the benefits to Penelec and our customers and

Table 1. Survey of experimental tree planting program. September 24, 1965.

	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Missing</i>	<i>Broken</i>	<i>Dead</i>	<i>Total</i>
Amanagowa cherry	142	10	5	25	4	4	190
Kwanzan cherry	298	10	8	63	10	7	396
Upright hawthorn	223	9	5	18	7	3	265
Lavalle hawthorn	355	4	2	53	8	5	437
Washington hawthorn	255	12	5	35	7	10	294
Ruby red horsechestnut	66	39	45	152	18	12	332
Chinese cork	144	40	12	43	13	5	258
Aldenhon crab	233	24	15	34	5	1	312
Dogwood	182	22	17	66	9	10	306
Blue ash	135	2	2	14	2	3	158
Hopa crab	37	0	0	10	0	1	48
Evodia	4	0	0	0	0	0	4
TOTALS	2044	172	116	523	84	61	3000

Table 2. Erie small tree planting. Planted 1960—Results 1984.

<i>Species</i>	<i>Number Planted</i>	<i>Number Surviving</i>	<i>Percent</i>
Amanagowa cherry	190	10	5
Kwanzan cherry	396	115	29
Upright hawthorn	265	40	15
Lavalle hawthorn	437	123	28
Washington hawthorn	294	192	65
Chinese cork	258	139	54
Aldenhan crab (including Hopa crab)	360	302	84
Dogwood	306	96	31
Ruby red horsechestnut	332	84	25
Blue ash	162	69	43
TOTAL	3000	1160	39

communities. On October 30, 1984, I made a second proposal to Penelec management accompanied by additional cost data learned from the survey. The proposal was for a demonstration project in each of Penelec's eight Operating Divisions. Each project was to include a minimum of 100 trees to be replaced. The 1960 project's 3,000 trees were planted where there were no

existing trees. The 1984 proposal was to remove existing trees and replace them with compatible tree species under our power lines.

This time our proposal met with greater success. The economics appeared better but not spectacular. Our investment could be recovered in 25 years, the next 25 years would be profit. At the same time I reviewed the proposal with Jim Tice, Penelec's Manager of Research & Development Projects Budget. Jim felt this was a viable R&D project and submitted it for GPU approval. We learned of its approval within a few weeks and we have been running with the program ever since. Division Foresters have been requested to locate demonstration projects in each Division. Penelec's Communications Department was enlisted to develop a media program to support the field work. With management's support, R&D financing and communication skills bearing on the program we feel that we will succeed.

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ABSTRACT

KOEHLER, CARLTON S. 1985. **Safe ways to control backyard pests.** *Am. Forests* 91(6): 13-16.

There are safe ways to keep pest populations down while at the same time keeping damage at tolerable levels. A decision-making process known as Integrated Pest Management (IPM) considers many different control tactics designed to exploit weak points in a pest's life cycle. To begin practicing IPM, the average homeowner must be well-informed about management options, the pest's habits, and signs and effects of pest damage. The intent of IPM is not to eradicate all pests, but to control pests more cost-effectively. IPM's tactics often combine biological, mechanical, cultural, and chemical methods. All signs indicate that IPM is here to stay because of growing personal and public resistance to the widespread spraying of shade trees and other uses of chemical pesticides in urban environments. A few commercial arboricultural firms are offering IPM service to clients. They estimate that pesticide usage can be reduced 50 to 90 percent without any sacrifice in the appearance of plants.