

ROADSIDE MAINTENANCE

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At the first session of this meeting Mr. Jorgensen mentioned the deep concern with which the steadily increasing maintenance costs are viewed by those responsible for the administration of the highway program. Each day this concern deepens. We are faced with the necessity of expending enormous sums to construct and bring up to date our national military highway system. In addition, there is a vast number of highways not included in the strategic network, but nevertheless most vital to our public welfare, which must be kept in service. Comparatively few of these roads are of modern construction. In all probability, no funds will remain for the reconstruction of the extensive mileage of obsolete highways in this category. And only substantially reduced amounts of money will be available to maintain them.

Obviously this situation places an increased burden on the maintenance engineer. If he is to be successful in this extremely difficult task, he must have the advice and full cooperation of every member of the highway family. Certainly it presents to the landscape engineer an opportunity to be of invaluable service.

The Landscape Engineer and Roadside Maintenance

With only limited privilege to share in initial highway planning, the landscape engineer has demonstrated conclusively that substantial savings in maintenance expenditures result from the application of sound landscape principles to the design for the original grading. The elimination of slope erosion on the present-day highway is a product of his share in the initial design. His influence is apparent in the well-graded roadsides on which power mowing equipment can operate with ease and dispatch. These are but two of a number of examples which could be cited to substantiate the advantages of allowing the landscape engineer to get in on the preliminary stages of planning and design. At this time his services in this initial work are needed more than ever before and to a much greater extent.

It might be well to examine a number of the major roadside maintenance activities to evaluate their present efficiency and make recommendations for whatever research may appear necessary to improve their techniques.

Erosion control has won for the landscape engineer recognition and respect of highway engineers. The greater share of this work has been done on new construction. However, maintenance forces have undertaken a considerable amount on the older highways to correct slope failures--a source of constant expenditure by the maintenance engineer. It is logical to expect that this practice will be employed from now on to a much greater extent.

Need to Continue Research in Roadside Methods

The present erosion control methods are the result of twenty or more years of effort on the part of the landscape engineer. During this time he has endeavored to improve the techniques through research and practical applications. Admittedly, his efforts have been successful--however, not to the degree that further research should be discontinued. Actually there's a long way to go, and it would be sheer folly to drop research in this field. Rather, at this time, the landscape engineer should double his efforts to devise even more efficient and economical procedures.

The modern highway with its flat slopes and gently graded roadsides has resulted in considerable use of turf as a ground cover. The landscape engineer has gone far toward perfecting turf establishment methods. Through careful selection of seed mixtures, proper fertilizers and soil amendments, excellent turf has resulted. In addition, notable progress has been made in the development of equipment for turfing operations. Continued research in these items is of paramount importance.

Apparently seeding rates have not been given too careful study. From the results of the few tests that have been made, it appears that most rates currently used are excessive. Certainly thorough research in this field should produce greater economy.

Savings in Turf Maintenance Possible

Aside from the advantages of added safety, recreational use, and appearance which have accrued from this increased use of turf, the control of erosion is, of course, its most important function. Although no authentic figures are at hand to substantiate the amount of savings in the cost of maintenance, it is safe to say that if no erosion control were practiced, the expense of cleaning up the material which would erode from the slopes and roadsides into the drainage ditches and onto the roadway would be far in excess of the cost now incurred in maintaining the additional acreage of grass.

Naturally this greater acreage of turf on our highways has necessitated more extensive mowing and other turf maintenance. Considerable progress has been made in the development of mowing equipment. The modern tractor-drawn, multiple-unit mowers are capable of traversing the smoothly graded grass areas with surprising speed. Specially constructed sprayers can fertilize these same areas even more speedily than they can be mowed. But there is still a great deal to be accomplished. The landscape engineer should continue to direct his efforts toward even greater economies in these important activities.

Substantial savings can be made in maintenance by reducing the amount of permanent turf acreage. At the time the road is built, in general, raw areas resulting from the construction operations are established in grass for immediate erosion control. In most sections of the country grass has been favored as a ground cover because it can be established readily and at a comparatively low cost.

It has become a general practice to keep these areas permanently in turf. It is a common sight to see miles of roadsides comprised of wide flat areas, high back slopes and embankments all carefully maintained in turf regardless of the surrounding country through which the highway passes. It would seem that in many rural areas, particularly adjoining woodlands and pastures, mowing operations could be discontinued on the major portions of the right-of-way. True, it is essential to mow back for a reasonable distance from the roadway. Sight lines must be kept unimpeded, the hazard of fire reduced to a minimum, and the drainage ditches kept free of growth and other obstructions. For the most part this can be accomplished speedily with power equipment. If the remainder of the right-of-way is left unmowed, very quickly volunteer native vegetation will take over. Aside from occasional selective thinning to remove the undesirable weed growth and improve the composition of that which is left, no further maintenance should be required. Besides costing less to maintain, such roadsides assume a natural beauty which cannot be surpassed.

Caution Needed in Chemical Weed Control

Considerable progress has been made during the past few years in the development of herbicides and plant inhibitors. Naturally, the landscape engineer is particularly interested in them. However, he should be warned against haste in their too extensive use. Much research is needed before they are perfected. Eventually they should prove to be valuable aids in the maintenance of the roadsides.

Care in Planting to Lessen Interference With Mowing

Roadside plantings, aside from the aesthetic effect they produce, usually have a functional value. In the median strips on divided highways they may effectively blot out the headlight glare of opposing traffic. They are often placed so as to denote the approach to intersections. They may be located to screen unsightly objects from the highway or deaden the sound of heavy traffic in residential areas. Where these plantings are installed in grass, naturally the cost of turf maintenance is increased. There is certainly room for further research in the arrangement and location of these plantings to develop standards which will combine their functional use with good landscape design and at the same time interfere less with mowing operations.

Design Turnouts for Easy Maintenance

Earlier in this paper, mention was made of the increased recreational use of the roadsides which has resulted from the design of the modern highway. Turnouts, picnic areas, and bridle trails have been installed extensively on many of the highways. Admittedly, these have added to the cost of maintenance. However, the pleasure and conveniences they afford the public far outweigh this increase. Even so, the landscape engineer should endeavor to improve the designs of these facilities with the thought in mind of lowering the expense of their upkeep as well as that of their installation.

Research Needed in Shade-Tree Maintenance

The shade trees which line so many of the highways deserve a full measure of attention so that they may continue to furnish welcome shade to the motorists and attractiveness to the roadsides. Far too little research in the proper care of these trees has been carried on. It is time that serious thought be given to establish reasonable, satisfactory maintenance standards which will insure their continued health and beauty at minimum expense.

Sound Field Tests Needed

The landscape engineer may well be proud of his contributions to economical roadside maintenance. He should realize, however, that much remains to be accomplished. Sound practical experimentation and not necessarily elaborate research will prove invaluable--particularly so if he will share his findings with his associates through the medium of our Committees.