

REPORT OF PROJECT COMMITTEE - GRADING AND PLANTING PLANS

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PLANNING AND MANAGING ROADSIDE VEGETATION

Over a period of several years, information has been assembled and certain principles have been advanced regarding the design of planting in its relation to the landscapes adjacent to highways. These data exist variously as papers, magazine articles, and committee reports. The objective of this committee is to prepare a brief but comprehensive manual covering the principles of planning and managing roadside vegetation, so that it may serve as a guide for all who are engaged in roadside work.

The application of landscape principles to highways and to roadsides is customarily thought of in its relation to new highway developments. The greatest volume of work on highways in all parts of the country, however, is believed to be in conjunction with highways which already exist. Small proportions have to do with new highways. A considerable amount of the new work involves only the repair and improvement of parts of existing highways. Only a relatively small mileage of new work comprises new construction on new locations. It is in this latter classification only where the ideal roadside development features can normally be incorporated to their fullest extent.

The manual to be prepared by this committee is designed to summarize the guiding principles in planning and managing all kinds of vegetation on roadsides so that it may have reference value in the office and in the field throughout the range of highway conditions from old to new. The principles are general. They may not always be used to their fullest degree but they are intended to be guiding policies as far as they are practicable.

For example, assume a situation on an existing highway where an increasing quantity of accidents has occurred. No new pavement is being built. No new property is being acquired. The situation is critical and requires improvement nevertheless. Considerations normally will focus first on the change in the volume of traffic and the kind of traffic in relation to grades and the qualities of the pavement. Next, the considerations would relate to shoulder widths and their stability and the drainage provisions. Beyond these come the roadside items - obstructions to sight distance, the proximity of physical objects to the pavement, distracting off-scape features, monotonous driving conditions, and so on through the various roadside elements and possibly to the reasons for the accidents. What is ordinarily thought of as roadside maintenance thus becomes design for roadside reconstruction. Vegetation plays a large part in such work.

The design of vegetation is a part of the basic training for landscape architects, and a check list of landscape principles for roadside work should be of

general usefulness. The work itself involves a comprehensive appreciation of the qualities of the regional landscape and a working knowledge of the plant materials which are indigenous to each region. It involves knowledge and experience in determining the amount of local vegetation which can be reasonably preserved as a part of the completed landscape compositions. It requires knowledge and judgment to justify adding any new plant growth in any given situation. It requires trained personnel to design the landscape effects through the use of vegetation so that they will be appropriately related to the ground forms in all parts of the highway structure and which ground forms are the dominant and fundamental landscape qualities of the highway. It requires ability and experience to mould these landscape considerations into the engineering fabric of highway programs so that their inherent values of safety, economy, and justifiable good appearances are properly integrated and kept up to date in relation to the constantly changing conditions on the highways themselves.

Several years ago this subject of planning and managing vegetation on road-sides was prepared in the form of a manual for use in the State of New York. This has been quoted in part in the recent edition of "Highway Design and Construction" by Bruce and Clarkeson. The subject matter of this text is approximately as follows:

1. An introduction to cover the philosophies in the use of vegetation as a medium of landscape compositions in highway programs.
2. Statements of the guiding principles in the use of plants in their general relationship to highways and to parts of the highway, such as their relationship to pavements, malls, slopes, etc. Also the relationship of plants to the economy of highway programs and the measures for controlling and managing vegetation, both legally and administratively.
3. Statements of guiding principles in the use of vegetation in special situations such as aiding in the control of erosion, aiding in the flow of traffic, minimizing headlight glare and the drifting of snow, together with a summary of the principles of effectively relating vegetation to public utilities on the highway right-of-way and the significance of vegetation in its relation to the value of adjacent properties.
4. An explanation of the customary procedures for making planting plans, estimates, and specifications.

Throughout the whole and relating to almost every topic individually are certain basic considerations, such as the appropriateness of these landscape features in relation to different types of highways. Highways vary in character and traffic volumes from parkways and expressways to secondary rural routes. Each type may be located in a range of topography, soils, and climatic zones. Each situation varies also in its detailed setting from intensive urban surroundings to wholly undeveloped lands. Coupled with these and applicable throughout are considerations relating to safety cost of maintenance, and appearance of the landscapes as they affect the service and the pleasure of the traveling public.

The first step in committee procedure has been to list all conceivable topics involved in the relationship between vegetation and roadsides. This outline of topics was an outgrowth of the New York State Manual.

Separate topics were then assigned to about a dozen recognized authorities as members of this subcommittee. The thought has been that the preliminary manual could be better written by men experienced in each particular field and at the same time the principles could be expanded in their application to conditions throughout the United States. Preliminary reports from these committeemen comprise the work of this committee for 1950. The subject matter itself obviously is diversified and in too preliminary a stage to be summarized advantageously at this time, except in the general terms as presented herewith.

Stanley W. Abbott, Supervising Landscape Architect for the National Park Service, has contributed the introduction, Dr. Donald Wyman, Horticulturist of the Arnold Arboretum, has contributed the design data on plants; Prof. Charles R. Sutton of Ohio State University has the assignment on driver psychology in relation to landscape effects; Mark Astrup, Landscape Engineer of the Oregon Highway Commission, has contributed on the use of vegetation for erosion control; Dr. E. A. Finney, of the Highway Research Laboratory, Michigan, has contributed on snowdrift control; Henry Nye, New York City, has the assignment of the use of plants in urban areas; Dr. Laurie D. Cox, President of New England College, the subject of vegetation in wayside areas; Dallas D. Dupre, Jr., formerly with the Ohio Highway Department has contributed on maintenance considerations; Dr. David R. Levin, Bureau of Public Roads, has contributed on the legal aspects of roadside vegetation; George Gordon, Bureau of Public Roads, has contributed on vegetation in relation to traffic, headlight glare, and adjacent land values; and Oliver A. Deakin, Parkway Engineer, New Jersey, has the subject of planting design in relation to public utilities and planting design procedures.

The next work of the committee will be in three parts; first, the elaboration of certain topics which may appear as deficient as a result of this meeting; second, further investigation and possible research on those topics not yet developed to a stage where available information has reached its greatest guiding value. Topics illustrating this classification include planting for headlight-glare control, and the evaluation of landscape developments in relation to the value of adjacent property. A subject in this connection was brought out in the informal business meeting yesterday -- namely, that those portions of the text which may have significance in particular locations and are not applicable in all parts of the country may advantageously be referred to the coordinators for the benefit of their knowledge of local conditions. And third, the integration and editing of all contributions into a single treatise which will be indexed, cross referenced, and adequately illustrated so that it may serve students, landscape architects in highway departments, engineers of highway design, engineers of highway maintenance, and all others who may have need of reference material on the principles of applying landscape design criteria on the subject of vegetation to roadsides, both existing and proposed.