

PROGRESS REPORT ON GRADING AND PLANTING PLANS

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IN 1948 the Landscape Bureau of the New York State Department of Public Works prepared a guide for the planning and management of roadside vegetation. The objective of the Project Committee on Grading and Planting Plans has been to expand this guide so that it will apply to conditions throughout the United States. Members of the committee are contributing the portions of the report which relate most closely to their respective experience and knowledge.

The subject matter of this report, or guiding manual, has been grouped under eight subdivisions. The first two are the preface and introduction which cover generalities, such as the objectives when using woody and herbaceous vegetation both existing and introduced. Stanley W. Abbott of the National Park Service has contributed principally to this portion.

The third subdivision deals with criteria required for all planting design problems. Here occur the discussions with regard to such topics as vegetation in relation to the different climatic zones in the country and different classes of highways, areas for plantings on the highway right-of-way, grading as the foundation for planting effects, soils in relation to plant growth, and conservation requirements. Contributions have been made by several committeemen including George Gordon, Landscape Architect, Bureau of Public Roads.

These first three subdivisions are general and fundamental while the fourth progresses to a series of topics for consideration which are applicable to highway roadsides in all situations. Having checked the general principles and assembled the basic design data, subdivision four then starts the series of considerations for solving a given problem. Included here are descriptions of the qualities of plants as materials in design and their effects in the landscape for specific purposes, such as for traffic guidance, their significance with relation to economics and the general principles with regard to their maintenance together with suggested administrative and legal controls. Several committeemen have contributed to this section. These include Donald Wyman, Horticulturist of the Arnold Arboretum, Dallas D. Dupre, Jr., formerly with the Ohio Department of Highways, and David R. Levin of the Bureau of Public Roads.

The fifth subdivision continued the list of considerations but these are applicable in special situations or uses, such as vegetation in rural and urban areas; vegetation for the control of erosion; vegetation in relation to parts of the highway cross-section such as its relation to the pavement; its relation on tangents, at curves, at intersections and in median zones; its relation to views and screening; to public utilities; to snow and ice; to structures and to special wayside developments. Contributions for this portion have been made by Mark Astrup of the Oregon Highway Commission, Grover Nelson of the New York State Department of Public Works, and E. A. Finney of the Highway Research Laboratory, Michigan.

The sixth subdivision deals with planning procedure. The seventh subdivision with photographs, typical plans, charts, and other illustrations and the eighth and last will comprise a bibliography.

The report is essentially a check list of considerations for reference use when either planning or managing vegetation along all kinds of highways, both old and new and in all kinds of situations. It is intended to serve in the creation of the most

ideal and complete developments, and applicable portions of the considerations, each aiming toward the ideal, are intended to serve where only a limited amount of work is possible.

The text has been building up over a period of a year and a half and although some portions are reasonably complete others have not been assembled or the contributed material has not yet been converted to a uniform style of text. Much of the entire subject matter is a resume of previous writings or a compilation of generally accepted principles. Certain parts require continued research. One portion, however, namely the legal and administrative control of vegetation, is based on a recent survey of laws and practices in the nation and this part, although not wholly completed, is abstracted for its current interest.

Legal and administrative control of roadside vegetation within the right-of-way and in areas outside the right-of-way may aid (1) in promoting the safety of the traveling public; (2) in preventing erosion and controlling snowdrifting; and (3) establishing a pleasant environment by providing and maintaining shade, by screening, and by opening vistas for the benefit of the traveler and the property owners along the highway.

Legal Authority^{1/}

It would appear desirable that states should revise their existing laws or provide new laws wherever necessary to entrust the highway department with complete responsibility for the establishment and maintenance of all vegetation in the right-of-way of highways over which it exercises jurisdiction.^{2/}

A. Such laws should provide for the addition of whatever new vegetation is desirable.

1. Planting by the state highway department in the right-of-way of state highways should be authorized in accordance with a planned program of roadside improvement^{3/}. Expenditure of funds for this purpose might be included where desirable. The Louisiana law is quoted as an example of this type:

The state road department...may include as a part of (its) program of highway construction, repair, maintenance or upkeep, the conservation of the natural roadside growths and scenery, and the beautification of highways, roads or streets by the restoration, planting, replanting, seeding and reseeding of grasses, plants, shrubs, root stocks or trees, and the maintenance of same along the roadsides of all highways ... (Florida, Stats. Ann. (1944, Title 24, Ch. 342, Sec. 342.01.))

^{1/} - Excerpts from state laws are quoted only for purposes of illustration and are not intended as model provisions necessarily.

^{2/} - No statutory provisions relating to the control of vegetation by the state highway department could be found in 17 jurisdictions: Alabama, Arizona, Arkansas, Colorado, Georgia, Mississippi, Montana, Nevada, New Mexico, North Dakota, South Carolina, South Dakota, Tennessee, Texas, Wyoming, District of Columbia, and Hawaii.

^{3/} - Sixteen states were found to have legislation authorizing the state highway department to carry on planting operations in the highway right-of-way: Connecticut, Delaware, Florida, Louisiana, Maine, Maryland, Michigan, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Utah, Virginia, Washington, and Wisconsin.

2. If planting by abutting owners and others in the right-of-way is considered desirable, the law should provide for effective control of such planting by the state highway department, generally by the use of a permit system, under regulations promulgated by and under the supervision of the highway department^{4/}. Typical is the following Maryland law:

No state highway shall be dug up for laying or placing pipes, sewers, poles or wires or railways, or for other purposes, and no trees shall be planted or removed or obstructions placed thereon without the written permit of the state roads commission, or its duly authorized agent, and then only in accordance with the regulations of said commission; and the work shall be done under the supervision of and to the satisfaction of said Commission. (Flacks Ann. Code of Maryland, 1939, Ch. 89B, Sec. 21.)

3. A more general law to control planting by others in the right-of-way might authorize the state highway department to make such rules and regulations as are considered in the best interests of the State. The New Hampshire law is quoted:

On all state-maintained highways, the planting, acquisition, maintenance and removal of all trees and shrubs shall be done under the supervision of the state highway commissioner who shall make such rules and regulations for the purpose as shall, in his judgment, seem for the best interests of the State. (Laws 1945, Ch.188, Sec. 15.)

4. Where the state takes only an easement for right-of-way purposes, and the prevailing legal mores of the state or community so require, it might be well to include provision for approval by the abutting owner of planting in the highway right-of-way by others than the state highway department^{5/}.

5. Provision for planting by the state highway department in areas adjacent to the highway right-of-way may be desirable wherever considered necessary to carry out a planned program of roadside improvement in order to achieve the stated objectives^{6/}.

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- ^{4/} - Twelve states have legislation authorizing the state highway department to control planting in the highway right-of-way: California, Illinois, Maine, Maryland, Massachusetts, New Hampshire, North Carolina, Ohio, Utah, Washington, West Virginia, and Hawaii.
- ^{5/} - Legislation in two states specifies that planting in the highway right-of-way shall be subject to consent of abutting owner: Illinois and Maine.
- ^{6/} - Six state highway departments have authority in varying degrees to carry on planting operations on land abutting the highway right-of-way: California, Connecticut, Massachusetts, Oregon, Utah, and Vermont.

The California law is illustrative:

The department may acquire, either in fee or in any lesser estate or interest, any real property which it considers necessary for state highway purposes. Real property for such purposes includes, but is not limited to, real property considered necessary for (the following purpose): ... the culture and support of trees which benefit any state highway by aiding in the maintenance and preservation of the roadbed, or which aid in the maintenance of the attractiveness of the scenic beauties of such highway. (Deerings California Code, (1945), Streets and Highways, Art. 2, Sec. 104.)

6. The responsibility of maintaining vegetation on abutting property should be definitely allocated (or lodged) somewhere, and if placed with the state highway department, a right of entry for such purposes should be authorized.

B. Laws should provide for protection and care of existing vegetation by the state highway department.

1. The state highway department should be authorized to trim, cut or remove, or cause the trimming, cutting or removal, of existing vegetation in the highway right-of-way when considered necessary^{7/}.

The New York law is illustrative of this type of legislation:

The Superintendent of Public Works may provide for removal of, or trimming of any trees within the boundaries of state highways necessary for convenience or preservation of the highway. (Baldwin's Consolidated Laws, 1938, Highway Law, Art. 2, Sec. 11 (7))

2. Trimming, cutting or removal of vegetation in the highway right-of-way should be prohibited, except under written consent of the state highway department, generally administered by the use of a permit system, under regulations promulgated by and under the supervision of the highway department^{8/}. The North Carolina law is of this type:

^{7/} - Thirteen states were found to have legislation permitting the state highway department to trim, cut or remove vegetation in the highway right-of-way: Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, New York, Ohio, Pennsylvania, Utah, Washington, and Wisconsin.

^{8/} - In 25 states, the state highway department is authorized to control trimming, cutting and removal of vegetation by others in the highway right-of-way: California, Connecticut, Florida, Idaho, Indiana, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Washington, West Virginia, and Wisconsin.

... no tree or shrub in or on any state road or state highway shall be planted, trimmed, or removed, and no obstruction placed thereon, without a written permit, as hereinbefore provided for, and then only in accordance with the regulations of the commission or its duly authorized officers or employees; and the work shall be done under the supervision and to the satisfaction of the commission or its officers or employees, and the expense of replacing the highway in as good condition as before shall be paid by the persons, firms or corporations to whom the permit is given, or by whom the work is done. (North Carolina General Stats. 1943, Ch. 136, Sec. 93.)

3. Where regulations of public utility operations is the sole object of such regulations, the law might prohibit the cutting, trimming or removal of vegetation in the highway right-of-way to accommodate public utility installations in the right-of-way, as does the Louisiana law quoted below:

The felling, topping or pruning of trees or shrubs to accommodate, operate or maintain any installation on the right-of-way without the prior written approval of the director or his representative is prohibited. The director may use his discretion in the granting of this approval. (Revised Stats. 1950, Title 48, Sec. 268.)

4. The state highway department should be empowered to provide for the eradication of noxious weeds or growths of any kind within the right-of-way of state highways^{9/}. The Rhode Island law may be cited as an example of this type of legislation:

The Division of Roads and Bridges may remove trees or other plants within the limits of public highways under its jurisdiction which are injurious plants or are obnoxious as hosts of insects or fungus pests. (General Laws Rhode Island 1938, Ch. 225, Sec. 5.)

5. Where the State takes only an easement for right-of-way purposes, and the prevailing legal mores of the state or community so require, it might be well to make the cutting, trimming or removal of vegetation planted in the highway right-of-way by others than the abutting owner, subject to his approval.

6. Cutting, trimming and removal of vegetation in the area adjacent to the right-of-way of state highways by the state highway department should be authorized where necessary for safety and perhaps other purposes, subject to the consent of the abutting owner^{10/}. The Massachusetts law quoted below is of this type:

^{9/} - The statutes of six states provide for control of noxious vegetation in the right-of-way by the state highway department: Iowa, Kansas, New York, Oregon, Rhode Island, and Virginia.

^{10/} - Some control of vegetation on land adjacent to the right-of-way of state highways is authorized in four states: Massachusetts, Pennsylvania, Utah, and Virginia.

The department, if it can obtain consent of the owner, shall remove the trees, limbs of trees, shrubbing or any structure or other obstacle from lands bordering on state highways, which in its opinion obstruct the view of persons traveling upon the highway or make traveling thereon dangerous. (Ann. Laws of Massachusetts, (Recompiled 1945), Ch. 81, Sec. 14.)

7. It would be desirable, where feasible, to authorize the state highway department to acquire easements adjacent to the right-of-way of state highways for the purpose of controlling vegetation thereon.

Administrative Control

C. Where state highway departments are empowered to regulate and supervise the work of others with respect to vegetation it would be desirable to utilize permits.

1. Permits should include all planting activities.
 - a. Location and kinds should be specified.
 - b. Dates of starting and completion should be set forth.
 - c. Plans should be approved in advance of work.
 - d. Work should be done to the satisfaction of the department.
 - e. Maintenance shall be anticipated, preferably by the department and a fee may be required.
 - f. Traffic shall be maintained.
 - g. The permit may be revocable.
 - h. The abutting property owner may be granted his consent for the work.

2. Regulations or specifications may be issued to prevent undesirable planting operations.
 - a. Regulations may specify desirable and undesirable kinds of plants.
 - b. A minimum set-back from pavement or shoulders may be specified.
 - c. Planting prohibitions may apply to highway or railroad grade crossings or intersections.
 - d. Sight-distance restrictions may be specified at curves.
 - e. Restrictions may apply at structures or near drainageways.
 - f. Restrictions may apply to utility installations.

3. Permits should apply to cuttings and removals by others including utility companies.
 - a. Permits should apply to individual trees or lengths of highway.
 - b. Blanket permits are generally undesirable. The location and kind of trees may be separately specified.
 - c. Inspection and supervision may be anticipated in the permit.
 - d. If inspection is required, notice of starting work should be required.
 - e. If inspection of work is required, anticipated completion of work may be required.

- f. A landscape division should be integrated in an inspection system.
- g. A bond or deposit may be required.
- h. A fee for inspection may be required.
- i. Traffic should be maintained.
- j. Compensation should be made for injury or damage.
- k. The permit may be revocable.
- l. The abutting property owner may be permitted his approval for the work.

4. Regulations or specifications may be issued to benefit protection of vegetation.

- a. Directions for approved and disapproved trimming may be included.
- b. Directions for approved and disapproved pruning may be included.
- c. Accepted methods of cutting may be included:
 - 1. Climbing irons should be prohibited.
 - 2. Wounds should be treated.
 - 3. Limbs should be cut flush.
 - 4. Topping should be prohibited.
 - 5. Unreasonable undertrimming should be avoided.
 - 6. Large holes in tree crowns should be avoided.
- d. Stumps may require to be removed
- e. Cut wood and debris should be removed.
- f. Maximim clearance for utility lines should be specified.
- g. Provisions may include removal of undesirable vegetation.
- h. Unreasonable pruning may require relocation of utilities or the transplanting of trees.