

# Participatory Process for Managing Roadside Vegetation

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**New York State has adopted a manual containing a checklist that provides a replicable means by which local community groups can nominate roads for scenic designation by the state. The authors propose a similar approach to managing roadside vegetation. The comprehensive, yet simple, format consists of guidelines and a series of forms organized in workbook style. This format helps record the information necessary for evaluating management alternatives and improves communication between scenic conservationists and roadway crews.**

The Scenic Byways' 88 Conference in Washington, D.C., showed that many states are involved in grass roots activity to protect and manage scenic roads. These roads are the byways that William Least Heat Moon termed "Blue Highways," stretching over 3 million miles in the form of two-lane roads in the United States. How do we protect and manage such linear landscapes? This is the theme of this paper.

In previous Transportation Research Records we reported on current projects to manage vegetation along the Blue Ridge Parkway (1) and the use of citizen involvement to visually improve commercial strip highways (2). In this paper we discuss two participatory processes that relate to scenic roads. The paper briefly summarizes a manual that provides straightforward guidance in identifying scenic roads in New York State and focuses on a process for managing roadside vegetation—one of the most important landscape elements.

## CURRENT SCENIC ROADS PROGRAMS NATIONWIDE

Almost every state in the United States has taken some type of action to recognize its scenic roads. Twenty-three states have established programs to designate them and three more are considering such programs. Fifteen of the states without formal programs have an official list of historic or scenic roads. Several of the remaining states have no program or list because it is generally believed that since so many of their roads are scenic, it would be difficult to choose among them (3).

How scenic roads are managed influences how successful they are as public amenities. The governmental level at which the scenic road is managed depends on the provisions of the state program. Some states manage all scenic roads; others keep the jurisdiction unchanged after the road has been designated as scenic. Some programs provide maps and other promotional information; some identify the routes with special signs. Scenic beauty has been preserved by the acquisition

of easements, the removal of billboards, and the removal or screening of junkyards. Recreational opportunities have been enhanced along many roads with facilities such as scenic overlooks, rest stops, and trails (3).

## NEW YORK'S SCENIC ROADS PROGRAM

Article 49 of the New York State Environmental Conservation Laws permits the preservation of scenic resources including those along roads. Interest in establishing a scenic road program grew in the 1960s, but ebbed in 1970 with the abolishment of the Natural Beauty Commission. Communities in the Hudson River Valley continued their efforts, nominating roads by using existing methods for evaluating roadside scenery. Their activities are largely responsible for the current state program initiated three years ago. Virtually all of New York State's designated scenic roads are near the Hudson. The program's dependence on local initiation, coupled with a nomination method that required a moderate understanding of the principles of aesthetic perception, may have kept other communities from participating in the program.

In 1987 the Department of Environmental Conservation (DEC) in cooperation with the State University of New York remedied the situation by developing a simple nomination method contained in *A Manual for Designating Scenic Roads* (4). The intent was to eliminate the need for expertise in aesthetics, allowing volunteers to play a large role in nominating roads. The manual includes a checklist (Figure 1), a step-by-step procedure for nominating roads, and the criteria that the state uses for designation. It also contains an illustrated glossary and suggested letters and maps to clarify scenic terms and provide help in organizing information. This approach provides a replicable format to which statewide designation criteria can be applied, yet it allows local initiation and implementation of the process.

The decision to allow local, as opposed to centralized, initiation of the selection of scenic roads has several benefits. Assuming that this system eliminates the need for establishing "circuit-riding" teams of evaluators, the opportunity for communities to nominate scenic roads on their own initiative—rather than waiting on a list—suggests that many roads could be nominated throughout the state within a short time. The total mileage of scenic roads is not an issue; rather the issue is that communities be actively involved in the nomination process and in charge of management of their respective scenic roads. In exchange for conformity and cooperation in nominating and managing scenic roads, communities receive the recognition of an official State Scenic Roads Program.



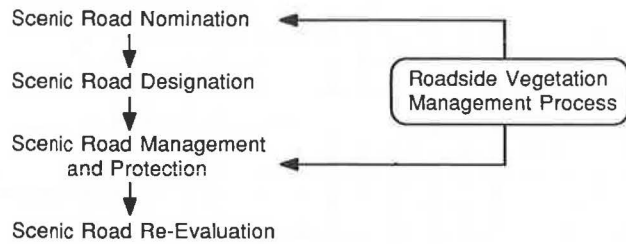


FIGURE 2 Interrelationship between scenic road designation and vegetation management processes.

**MANAGING VEGETATION ALONG THE SCENIC ROADS**

Like the selection process, the management of scenic roads in New York State is a local responsibility. Furthermore, the DEC reevaluates scenic roads every four years to determine whether or not they still meet the selection criteria. These two factors encourage the preparation of a management plan for each scenic road section to preserve and enhance its scenic resources. The designation manual lists components for such plans, placing emphasis on responses to roadside development pressures. On a more immediate level, however, management should address maintenance to keep the roadway itself attractive and the scenery visible. A vegetation management plan would fulfill these requirements. On some roads, vegetation management planning might begin before their nomination file is submitted to DEC (Figure 2). For example, the Scenic Roads Evaluation Form in Figure 1 provides a code for indicating components screened by vegetation. Guidelines would be useful for determining how much vegetation must be removed to effectively open the view and whether removing that vegetation would reduce the scenic quality of the roadside vegetation.

A review of the literature reveals that, although it is generally recognized that road maintenance requires a professional approach and adequate budget (5), historically neither requirement has been consistently fulfilled (6,7). Almost 100 years ago, New York used volunteer labor to maintain roads (8), but the details of penalties for refusing to work imply a lack of popular enthusiasm.

Where highway departments lack professional or technical staff (as in small communities) a companion to the designation manual—one that deals specifically with vegetation management—would be particularly helpful. If both manuals were similar in approach and method of use, some of the information collected during the scenic road designation process could be used in developing the vegetation management plan. Then the planning process could become a continuation of the designation process.

The management of roadside vegetation that might obscure or enhance scenery lends itself to public participation. The work can be time-consuming yet sporadic; in addition, good weather conditions may not correspond to the work schedules of the highway staff. Under these kinds of circumstances volunteers may best be able to provide the kind of flexibility that this work requires. The potential for confusion among highway workers at the state, county, or local level and a changing cadre of volunteers, however, would require a management process that recognizes the need for a highway supervisor to take the lead at the appropriate jurisdictional level. In the proposed process (9), a citizens' committee uses a workbook to perform the survey of the roadside, help develop the management objectives, communicate the recommendations and guidelines of the committee to the supervisor, and evaluate the finished work (Figure 3). Supervisors would maintain their authority over and status in relation to the work force.

The volunteers need to identify the issues and arrive at a comprehensive list of objectives for the roadside. What do

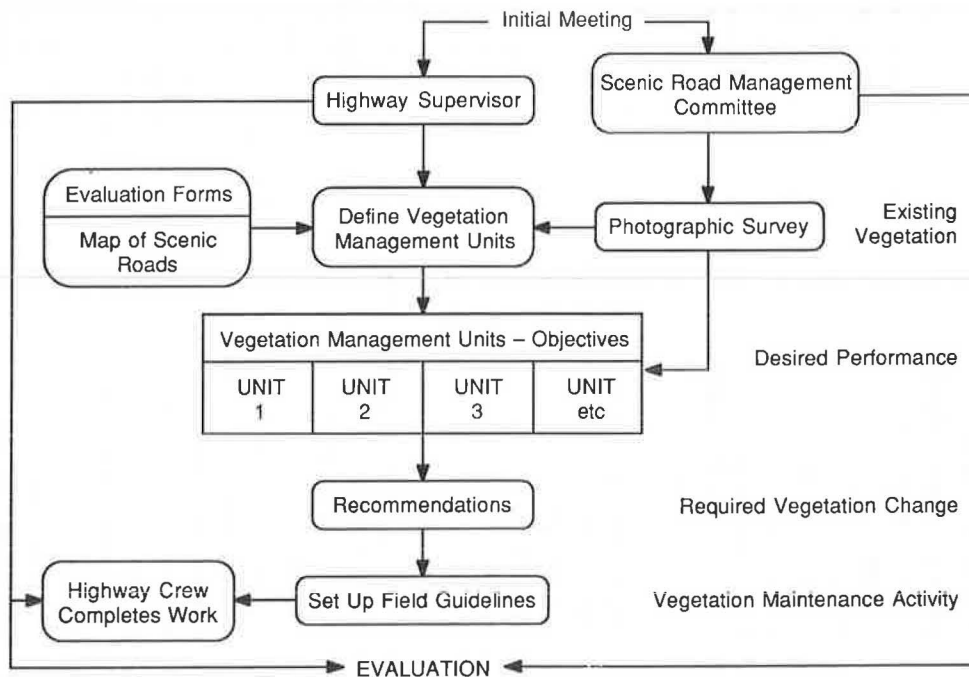


FIGURE 3 Vegetation management process.

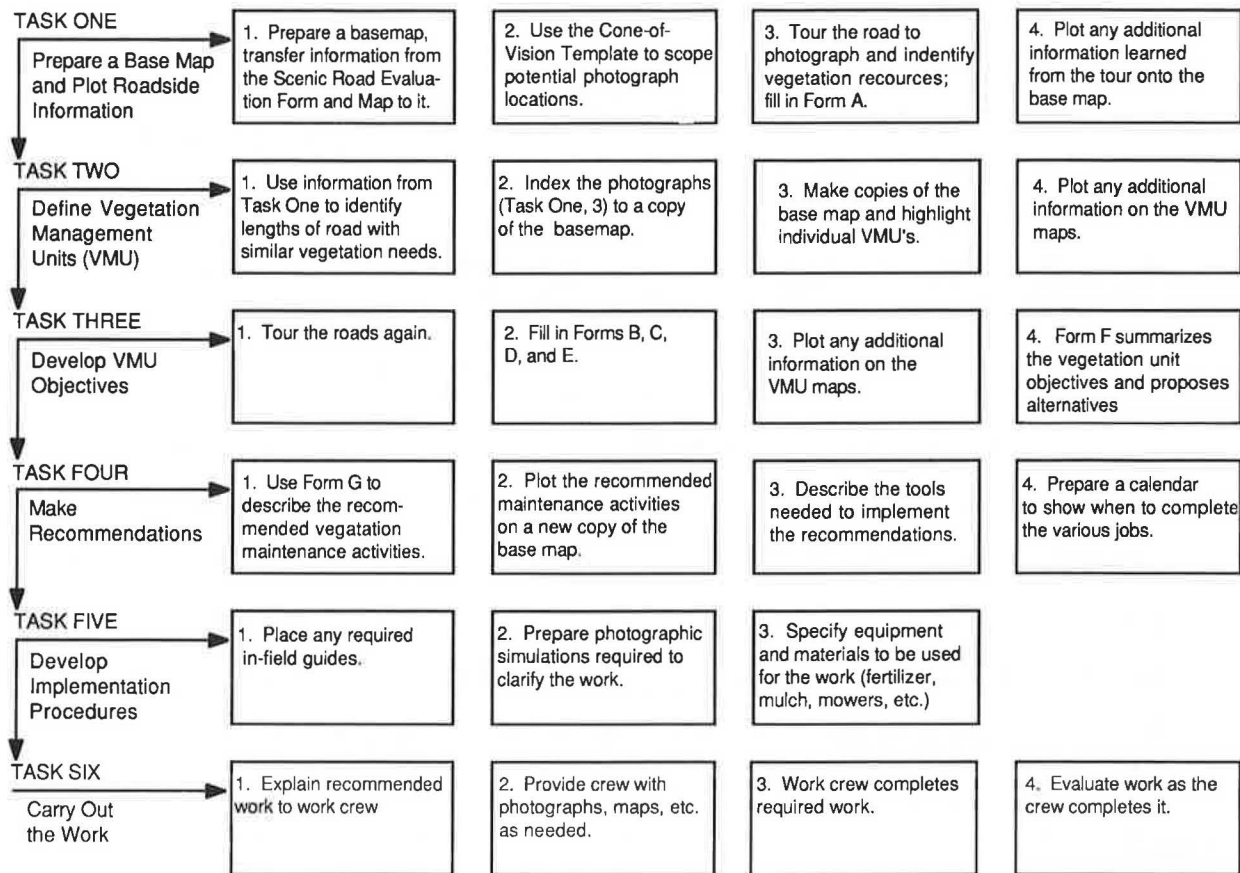


FIGURE 4 Organization of tasks in the vegetation management process.

they do and how do they do it? The two-part workbook (9) developed at the State University of New York, Syracuse, contains a series of forms and a set of guidelines that address potential roadside issues. The forms are completed as part of six tasks that make up the vegetation management system. Instructions for completing each task and filling out and using the information on each form are written in a step-by-step format. Any step that might be unfamiliar has a page reference to an explanation in the guidelines section of the workbook where details and careful work are emphasized. The guidelines also clarify most of the common maintenance tasks and explain their effects on scenery.

The main consideration in the development of the workbook was that resulting management plans should not conflict with the process and criteria in the *Manual for Designating Scenic Roads*. Beyond that, the workbook has six general goals.

1. The workbook should provide both an overview and complete details of the entire management process. In small communities there may be nobody among the participants with an adequate understanding of all the visual, environmental, and safety functions of the roadside. A diagram of all the activities involved in the management process and their relationship to each other helps to identify critical activities and can easily be modified into a flowchart and timetable to

ease the transition from the planning to the action phase (Figure 4). The individual steps in the process describe how to fill out the forms, what information is useful, and where to obtain it. The chart also lists the equipment required and refers to sections of the guidelines that explain in detail how to complete complicated procedures.

2. The workbook should help participants in the process determine the visual and environmental issues and the potential conflicts of the roadside. The parties actively involved in managing or living near a length of road may have conflicting or vague objectives. A series of questionnaire forms helps to identify those conflicts (Figure 5). Some questions relate to the illustrated guidelines or to activities and questions completed on previous forms; others require making observations while driving or doing research on public documents. The guidelines help to evaluate and resolve conflicts in the collected information thus facilitating decisions on visual, environmental, or vegetation objectives for each section of road.

3. The workbook should emphasize the difference between the visual experience of drivers and those of stationary or slow-moving observers. Since driving is dynamic, the process requires the collection of some information on the road at traveling speeds. Several forms contain questions that relate road conformation to views and speed, reinforcing the need to consider safety. For desk work, tools such as a cone-of-vision template help interpret mapped information from the traveler's point of view (Figure 6).

**FORM B — VISUAL ISSUES**

VMU # \_\_\_\_\_ Form # \_\_\_\_\_

**Issues**

1. Describe the beginning and ending landmarks that define the length of the road where the view is visible, or where it would be visible if vegetation were removed.  
\_\_\_\_\_  
\_\_\_\_\_
  
2. Locate the viewing distance (p. 14): Foreground \_\_\_\_\_ Mid-ground \_\_\_\_\_ Background \_\_\_\_\_
3. Viewer position (p. 14): Normal \_\_\_\_\_ Viewer Superior \_\_\_\_\_ Viewer Inferior \_\_\_\_\_
4. Must the driver turn his head more than 10° to see the view (field check TASK ONE, Step 2) \_\_\_\_\_
5. Is the view at the beginning of a curve? \_\_\_\_\_ in the middle of a sharp curve? \_\_\_\_\_
6. Is the view visible elsewhere on the road? \_\_\_\_\_ VMU# \_\_\_\_\_ Form B# \_\_\_\_\_
7. How does the vegetation itself contribute to the view? (Eg., focal point, frames or blocks view)  
Positive \_\_\_\_\_  
Negative \_\_\_\_\_
  
8. Describe any seasonal differences in vegetation that significantly affect scenic quality:  
Positive \_\_\_\_\_  
Negative \_\_\_\_\_
  
9. Adjacent land use(s) (Residential, Park, Commercial, etc.): \_\_\_\_\_
10. Adjacent land cover(s) (Lake, Fields, Orchards, Wooded, etc.): \_\_\_\_\_

**Objectives**

Based on the answers to the above questions, briefly describe how vegetation management could modify or enhance the scenery in this unit.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FIGURE 5 Sample forms.

**FORM F — VEGETATION UNIT OBJECTIVES**

VMU # \_\_\_\_\_

General questions

1. Briefly describe the vegetation management unit. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Who maintains the right-of-way vegetation now? (County, local, private, etc.) \_\_\_\_\_
3. Briefly describe current maintenance practices \_\_ \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Are changes to vegetation likely to be controversial? \_\_\_\_ Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. List any comments or questions from adjacent landowners regarding maintenance practices  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. List any comments or questions that motorists have concerning the view or road conditions  
\_\_\_\_\_  
\_\_\_\_\_

Summary and Recommendations

1. From the "objectives" on **Forms B, C, and D**, describe any conflicts that exist among the visual, environmental, or vegetation objectives.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Recommended alternatives and specifications :  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Are changes in current practices necessary? \_\_\_\_\_

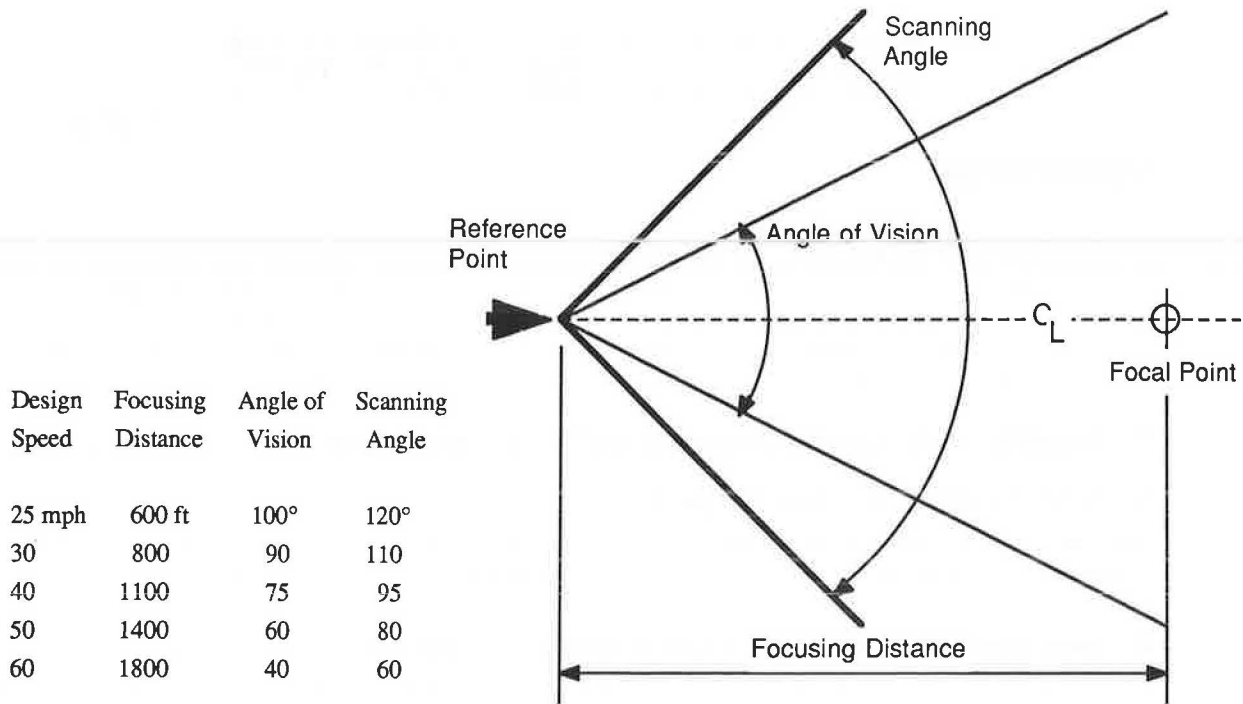


FIGURE 6 Diagram and table for constructing a cone-of-vision template.

4. The workbook should give maintenance crews and volunteers descriptions and illustrations of maintenance and data collection methods. Some of the guidelines are modifications of ones provided by the state highway department; the guidelines encourage maintenance of scenic roads similar to that of other roads. Many of the grass-cutting and brush-trimming guidelines and all those relating to design, visibility, and safety have been specifically written for use on scenic roads. Where necessary, small sketches illustrate difficult concepts (Figure 7). Specific data collection methods such as photography are described in detail. The workbook provides a sample form for recording the camera location of photographs and explains a simple storage and retrieval system for them.

5. The workbook should encourage communication and collaboration among all parties involved in roadside management. Although roads will most likely be nominated by a town or county, they can be nominated at any level of government. The process requires that the highway supervisor from the governing area in which the nomination is initiated coordinate the management process. The supervisor meets with community volunteers and heads the lead agency that reviews proposed roadside maintenance activities of highway departments at various government levels. Because they consolidate data from other sources, the forms help the supervisor to understand problems or coordinate maintenance activities.

6. The workbook should provide highway supervisors with a descriptive and visual plan for roadside maintenance. A base map provides a visual record of activities that are completed along the roadside. The guidelines describe the preparation of a base map, and the workbook recommends infor-

mation to be added to it from various forms (Figure 8). The book provides a permanent record of important scenic components that are the basis for management decisions, and it can be annotated to identify areas that require changes.

## DISCUSSION OF THE WORKBOOK

The proposed workbook is not a compilation of research on proven methods of roadside management. It is, however, a response to an expressed need for the cooperation of the crews who maintain roadside vegetation to do their work to enhance scenic quality. The workbook offers a system of support to both supervisors and workers, especially if they lack formal training related to vegetation or aesthetics. The book has the potential to be the subject of research that inquires into various aspects of its usefulness: Is the workbook easy to use? What has been the impact of the workbook on visual quality of the road, safety, and the function of the roadside as wildlife habitat?

Finally, there are other possible uses for this workbook. Obviously, the book could be used for any roadside, whether or not it is scenic. With modifications, it could also be used to develop aesthetic, environmental, and vegetation improvement goals for urban or rural greenspaces and for land owned by condominium associations or shopping malls. The major function of the book is to provide local community groups with a starting point for organizing physical improvements of public areas regardless of the expertise of the members of these groups.

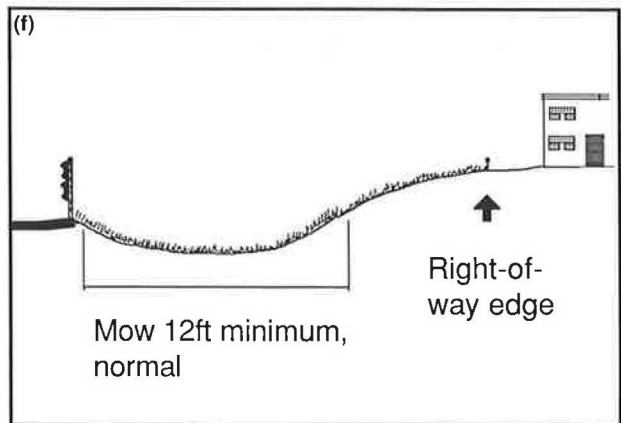
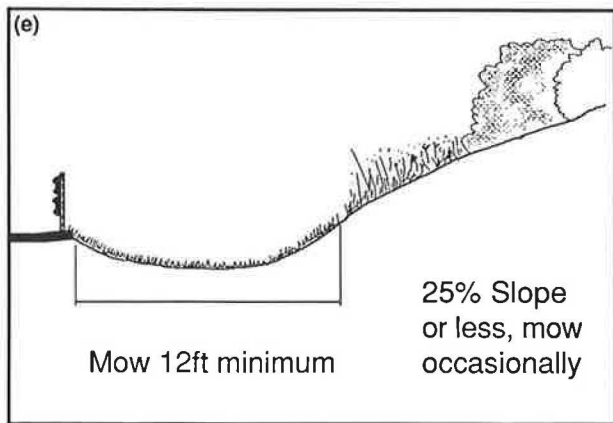
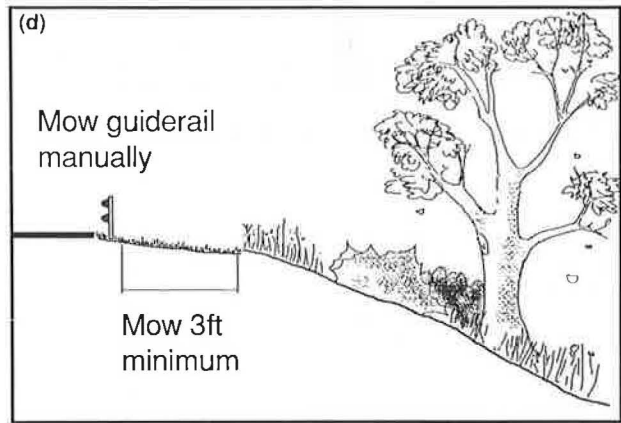
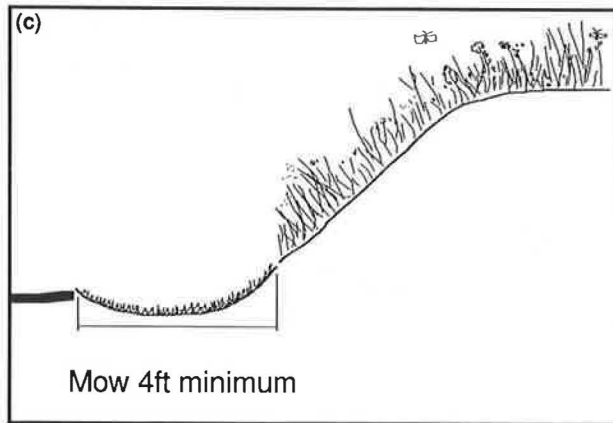
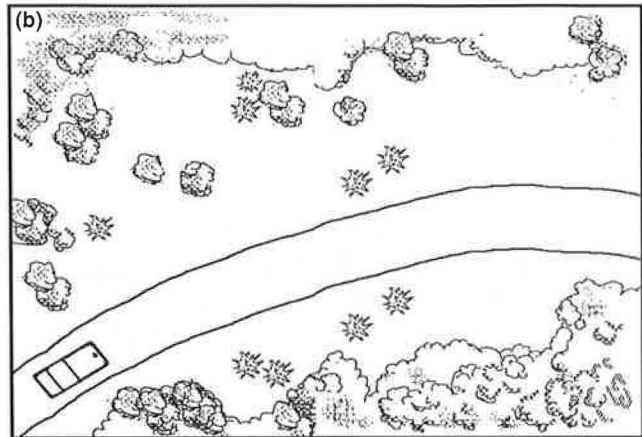
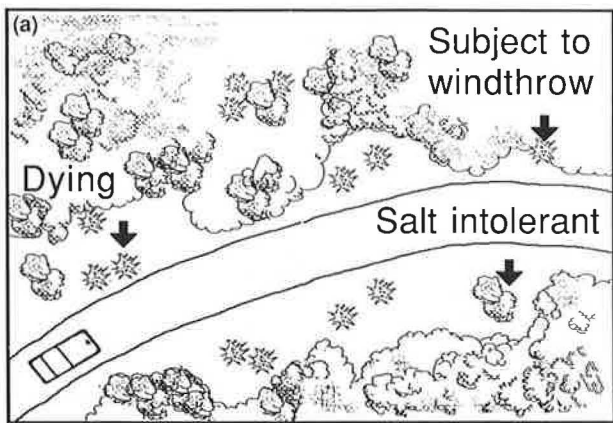


FIGURE 7 Sample guideline illustrations. (a) Choosing trees to remove for a feathered edge, (b) feathered edge, (c) mowing on steep cuts, (d) mowing on steep fills, (e) mowing in rural areas, and (f) mowing in urban zones.



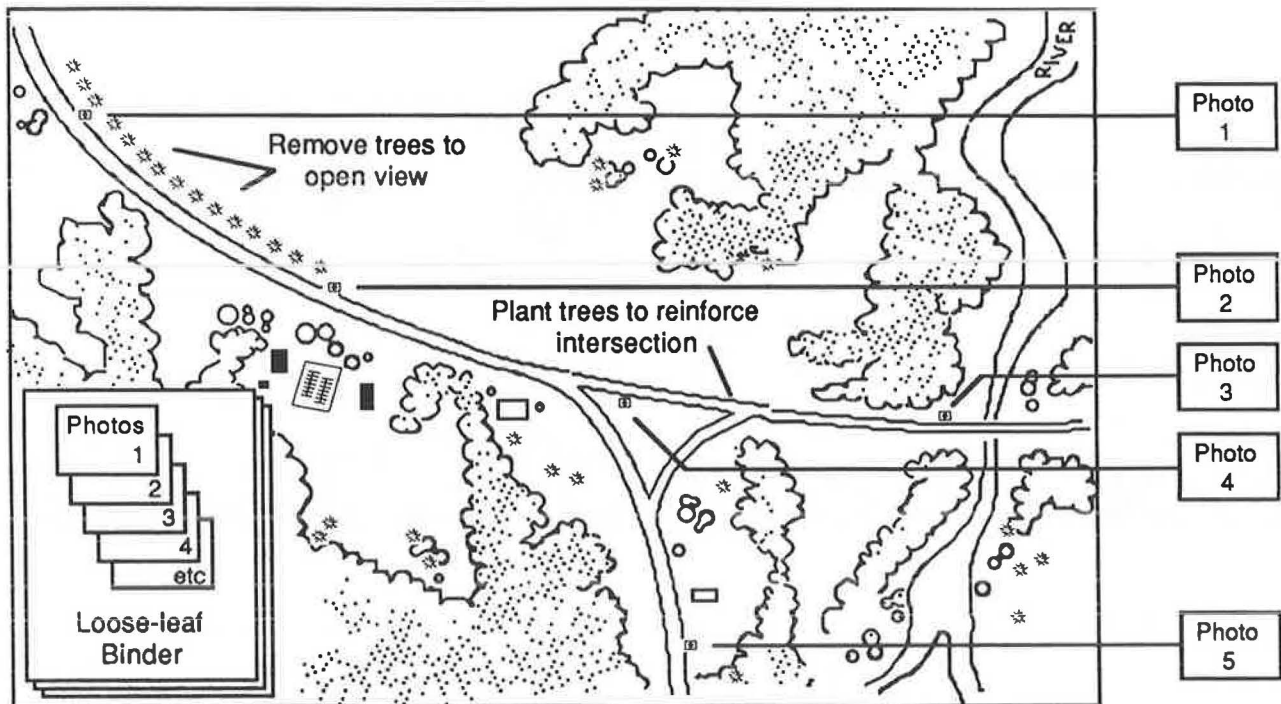


FIGURE 8 Base map with keyed photographs.

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