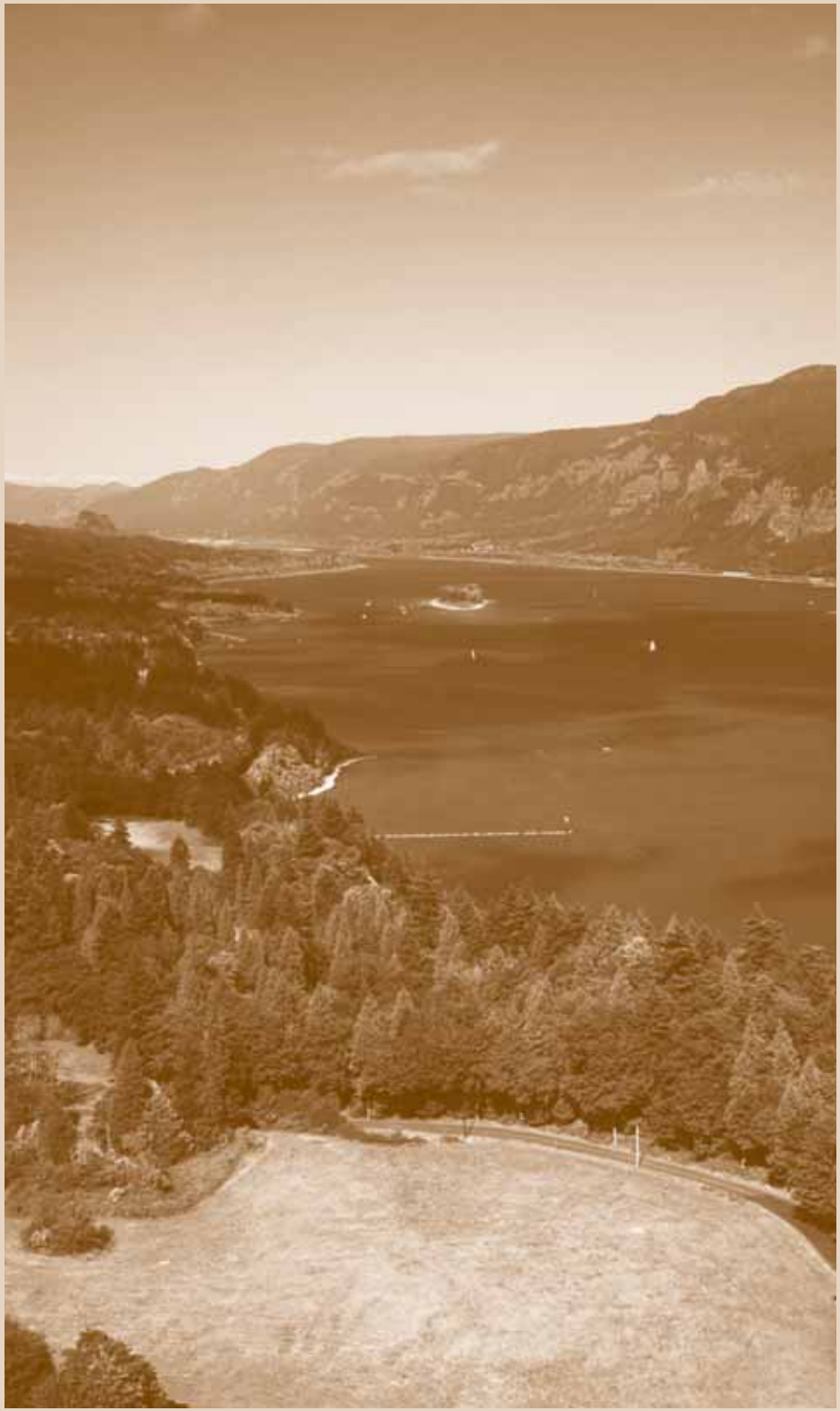


Building in the Scenic Area

SCENIC RESOURCES IMPLEMENTATION HANDBOOK

Table of Contents

Introduction & Background

Welcome to the Building in the Scenic Area Handbook. As a landowner in the Columbia River Gorge National Scenic Area, you have an important role in preserving the beauty of the Gorge's landscape.

The Columbia River Gorge is world-renowned for its magnificent scenery. It is a region of diverse landscapes that include lush rain forests, towering cliffs and waterfalls, picturesque farmlands, and sweeping grasslands. A driving force behind the Columbia River Gorge National Scenic Area Act, passed by Congress in 1986, is the value of ensuring development complements Gorge scenery. One purpose of the National Scenic Area Act is to "protect and provide for the enhancement of the scenic…resources of the Columbia River Gorge." The Management Plan for the Columbia River Gorge National Scenic Area contains regulations to ensure new developments blend with the Gorge's scenery.

If your land can be seen from a designated Key Viewing Area, there are many things you can do through careful design to help maintain the scenic quality the landscape.

What do scenic protection requirements do?

Scenic regulations protect the beauty of the landscape. They may affect the design and location of development. Scenic regulations apply to:

- Structure location and orientation.
- Structure size, color, height, shape, and exterior materials.
- Plantings to help screen or shade new development.
- Grading necessary to accommodate structures and circulation on the site.

How will my project be reviewed for scenic protection requirements?

The more visible a project is, the more effort it will take to blend the development with its natural surroundings. Therefore, the review agency will ask you for site-specific information. This information will be used to determine how your proposed project will look after it is constructed. Depending on the outcome of this assessment, the review agency may require you to modify your design or take other actions to help blend the development with the surrounding landscape.

On rare occasions a proposed project cannot meet scenic standards. When this happens, the review agency will look at all options (location, design, color, material selection, and landscaping) to make sure the development will blend in as much as possible.

You and all future owners will be responsible for maintaining compliance with all of the conditions listed in your development approval.

If I follow all of the suggestions in this Handbook, will my development be approved?

You will have a great start. Following the recommendations in this Handbook does not eliminate the need for land use permits or guarantee your application will be automatically approved. Other regulations apply to development in the Scenic Area. Only the review agency can determine whether a proposal complies with all applicable regulations.

List of Key Viewing Areas

Historic Columbia River Highway
Crown Point
Highway I-84, including rest stops
Multnomah Falls
Washington State Route 14
Beacon Rock
Panorama Point Park
Cape Horn
Dog Mountain Trail
Cook-Underwood Road
Rowena Plateau and Nature Conservancy Viewpoint
Portland Women's Forum
Bridal Veil State Park
Larch Mountain
Rooster Rock State Park
Bonneville Dam Visitor Centers
Columbia River
Washington State Route 141
Washington State Route 142
Oregon Highway 35
Sandy River
Pacific Crest Trail

Special Management Area Only:

County Road 1230
Wyeth Bench Road
Larch Mountain Road
Sherrard Point on Larch Mountain

Which agency will review my development project? What is the review agency's role?

If your project is in Clark, Hood River, Multnomah, Skamania, or Wasco counties, you will work with your county's planning staff. If your land is in Klickitat County, Gorge Commission planners will review your project. Each review agency has its own application packet. Review agencies also can provide sample site plans and application materials specific to your needs. Contact information for all of the review agencies is listed on page 34.

The review agency is a resource for you during your development project. By involving your review agency early in your development plans and by making informed design choices, you can make a difference in preserving the Scenic Area's unique scenery. County or Gorge Commission staff can help you understand scenic protection requirements and identify topics not covered in this Handbook including:

- The zoning of your property and uses allowed in that zone.
- How to ensure new buildings are compatible with the size of surrounding development.
- Any natural or cultural resources on your property that must be preserved.
- Potential impacts to recreational resources.
- Potential impacts to agriculture and forest land.
- How to ensure your development meets fire safety standards.
- Expedited review of some small projects.

How can this Handbook help me?

This Handbook contains information on regulations affecting the visibility of development and guides you through the scenic review portion of the development application process in the Gorge. This Handbook is provided to help you:

- Learn about regulations for developing land that can be seen from Key Viewing Areas.
- Understand the reasons for these scenic regulations.
- Make informed choices when selecting building sites, structural designs, landscaping, colors, and exterior building materials.
- Prepare an application for scenic review of a development proposal.

Important Terms

Key Viewing Areas are important roads, trails, recreational sites, and other places offering the public scenic views of the Gorge. Twenty-six Key Viewing Areas have been designated within the Scenic Area and include portions of public roads, parks, trails, and other public vantage points (see list on page 4).

Topographically Visible sites can be seen from Key Viewing Areas if all vegetation were removed **(FIGURE 1)**. Screening vegetation is considered when the review agency decides what steps must be taken to ensure a development proposal will meet scenic standards.

Development is a broad term that includes the creation of new parcels, the construction of buildings and structures, and ground-disturbing activities such as mining, dredging, filling, grading, paving, and excavation.

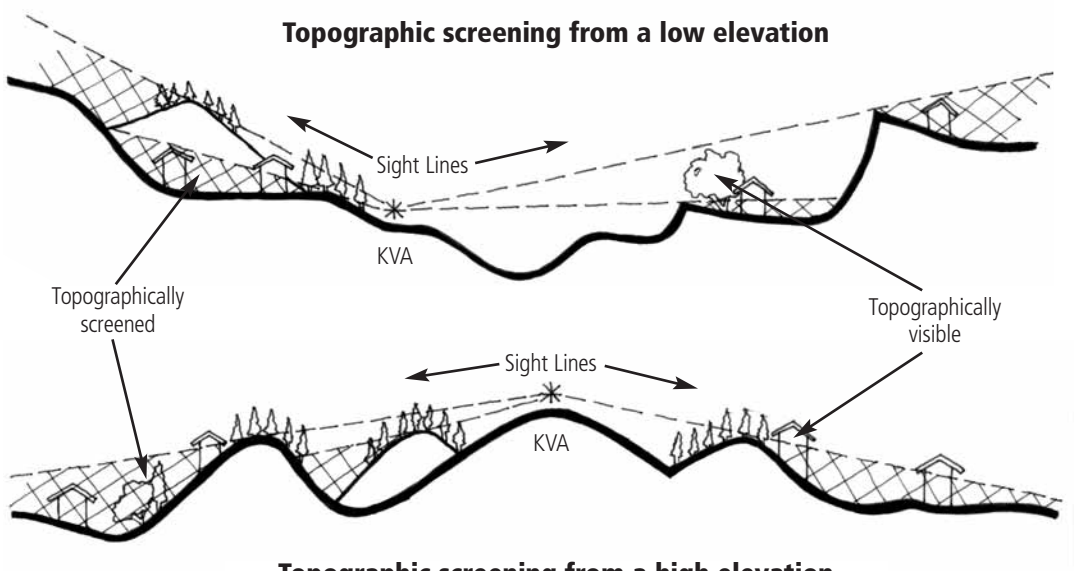
Landscape Settings are areas in the Gorge with distinct characteristics. These characteristics contribute to the beauty and diversity of the Scenic Area. Landscape settings are determined by:

- **Landform** – such as cliffs, hillsides, and rock outcroppings.
- **Vegetation types and patterns** – such as grassland, forests, or pastures.
- **Existing land use and development patterns** – including types, amount, spacing, and other aspects of existing development within the landscape.

Some landscape settings have specific requirements for plant species, building design, and building location. The review agency will help determine which landscape setting requirements apply to your project.

► Figure 1

Cross Sections Showing Topographic Visibility

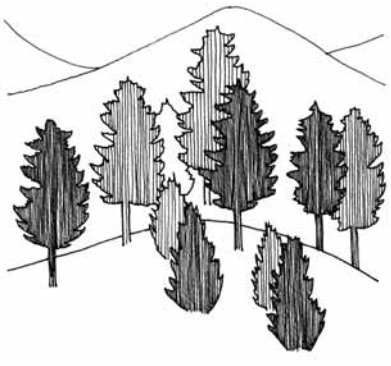


Urban Area, **Special Management Area**, and **General Management Area** are three categories of land in the National Scenic Area:

- **Urban areas** are cities and towns. If a property is located in an Urban Area, a National Scenic Area development review is not required. Local regulations, zoning, and building codes still apply.
- **Special Management Area** lands include some of the most sensitive lands in the National Scenic Area. Approximately one third of the Scenic Area is designated Special Management Area.
- **General Management Area** land makes up the remainder of the Scenic Area.

► Figure 2
Full Range of Scenic Standards

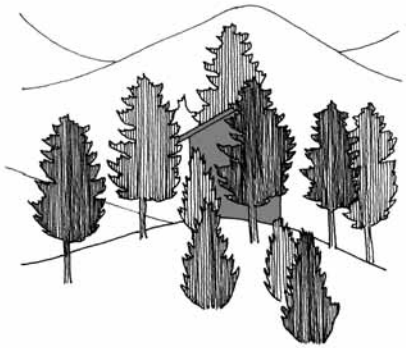
Apply in the Scenic Area



Preservation

No development can be seen.

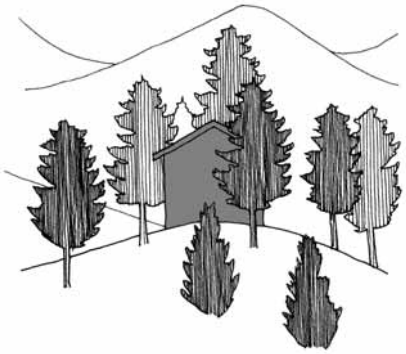
Not required in the National Scenic Area.



Not Visually Evident

Development is not noticeable and is easily overlooked.

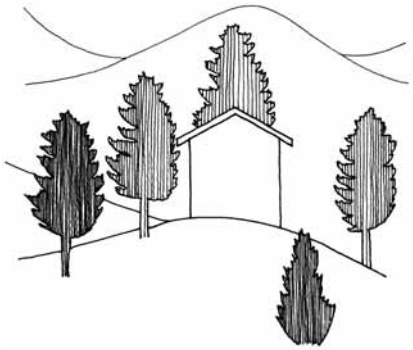
Required only on a few projects in the Special Management Area and new quarries in the General Management Area.



Visually Subordinate

Development is visible but not what you see first or remember best about the landscape.

Applied in the General Management Area and to most private land in the Special Management Area.



Visually Dominant

Development is what you see most.

Not allowed outside urban areas in the National Scenic Area.

Scenic Standards are ways of describing how well a development blends with the landscape. Most development in the National Scenic Area must be visually subordinate to the landscape. This includes all lands in the General Management Area and some lands in the Special Management Area. Some projects in the Special Management Area must meet a higher standard called "not visually evident." **FIGURE 2** illustrates the range of visibility standards for development. "Visually dominant" is not allowed and "preservation" is not required.

One of the first things you should check with your review agency is the scenic standard that applies to your project.

In the Special Management Area, forest practices must meet scenic standards similar to other development proposals. The Forest Service Scenic Area office staff can work with you on forest practices in the Special Management Area.

Unless otherwise noted, the regulations discussed in this Handbook are not required for development that is not topographically visible from Key Viewing Areas. ■

Building Site Selection

The location of your development on the property is the most important factor for achieving visual subordinance. Even if you use dark colors and low-reflective materials, your development must be screened by topography and existing trees and shrubs if possible. Choosing an appropriate building location also saves time and money. For example, by selecting a site with plenty of existing land forms and vegetation to screen and shade your development, you will avoid the need to plant new trees, and you will minimize grading. This section of the Handbook will help you:

- ▷ Use existing land forms and vegetation to screen and shade your development site.
- ▷ Design a structure to fit your property.
- ▷ Understand site plan requirements.

What are the key considerations when selecting a site for development?

Many factors must be considered during site selection, including:

- ► **Key Viewing Areas** – visibility and distance from Key Viewing Areas are major factors in site selection.
- ► **Existing topography and vegetation** – for use as screening and shading.
- ► **Landscape settings** – some settings have specific requirements as discussed on page 11.
- ► **Site-Specific Regulations** – for example, new buildings cannot be built on land slopes steeper than 30% in the General Management Area.
- ► **Cultural resources** – such as archaeological artifacts, historic buildings, or other cultural features identified in a cultural resource survey must be avoided when selecting a development site.
- ► **Natural resources** – such as streams, wetlands, rare plants, and sensitive wildlife habitat must be avoided when selecting a building site. Most natural resources have a buffer zone that also must be avoided in most cases.
- ► **Grading** – including moving of soil or rock to accommodate proposed structures, temporary staging areas for construction, driveways or turn-arounds, septic drainfields, terraces, and other new land forms. Decisions about where to locate development need to consider and minimize the amount of ground disturbance (grading) required.

What do I need to know about skylines?

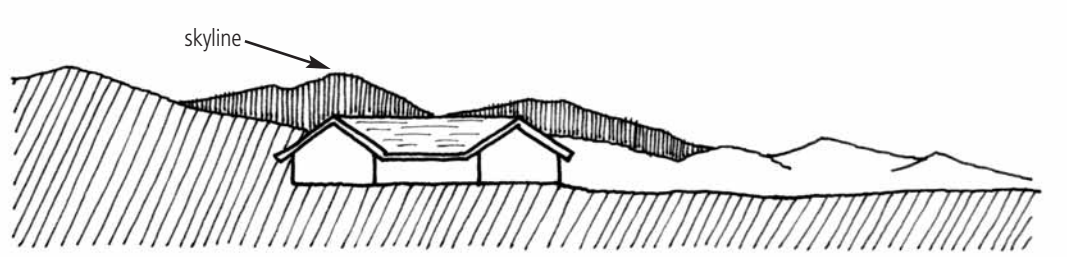
New buildings in the Scenic Area must remain below the skyline. Locating development alongside, below, or behind a ridge or bluff will help maintain the natural form of the ridge in the landscape as illustrated in **FIGURES 3 & 4**.

How can I use existing topography?

Identify any Key Viewing Areas from which your property can be seen. Look for rocky outcrops, knolls, hills, or ridges that could help screen your proposed development from those Key Viewing Areas. Existing land forms provide more permanent screening than

► Figure 3

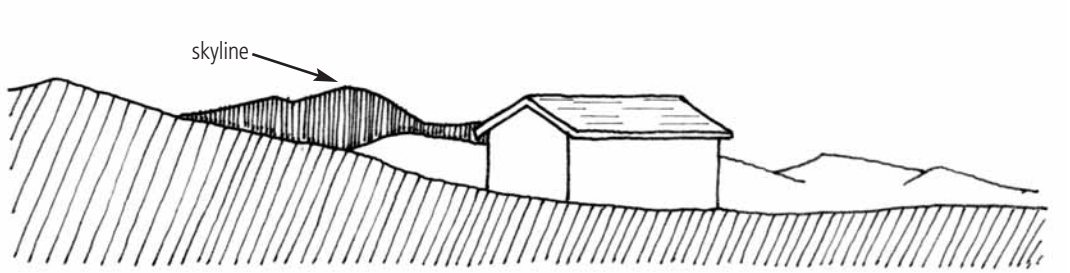
Proposal Remains Below the Skyline



The site selection and design of this structure keep the roofline below the skyline, allowing it to blend in with the backdrop created by the hillside behind it.

► Figure 4

Proposal Breaks the Skyline



The structure stands out much more clearly against the skyline because the roofline breaks the skyline rather than blending into the hill side behind it. This site is prohibited by the Management Plan.

existing vegetation or other buildings. Development does not have to be entirely hidden to benefit from screening by existing land forms.

How can I make good use of existing vegetation?

Select a site where you can use existing trees and shrubs between the development site and Key Viewing Areas. Existing vegetation provides cheaper and more reliable screening than new vegetation. New trees and shrubs take time and money to establish and grow. On the west side, it is costly to plant large trees. On the east side, it is nearly impossible to get large trees to survive and grow well without a substantial investment in irrigation. New vegetation and creating new mounds or berms to hide development are not alternatives to careful site selection and using existing trees and shrubs for screening.

What about distance from Key Viewing Areas?

When choosing between alternative site locations, the site furthest away from a Key Viewing Area is usually the easiest location to blend development with the landscape. The further a structure is from a Key Viewing Area, the smaller it will appear relative to the rest of the landscape. The details and texture of the landscape are also less clear from a distance, allowing the eye to overlook interruptions in the natural landscape pattern more easily.

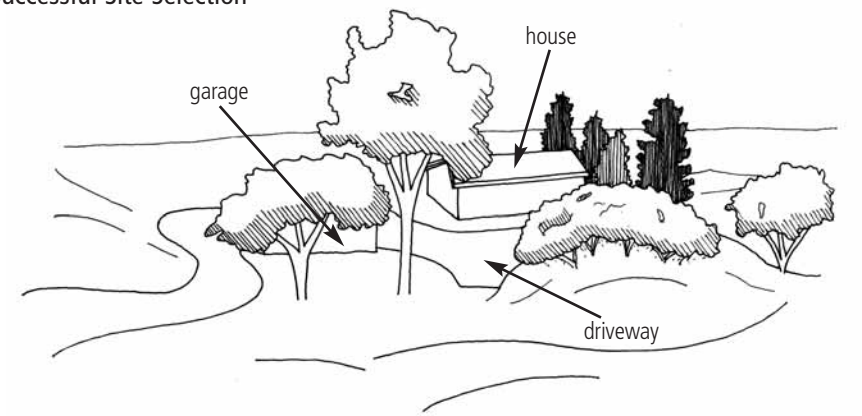
What should I know about structure design and size?

The design and size of structures should fit well with the site and landscape. Here are some good strategies to consider as part of your site selection and design process:

- Consider turning a structure to face a Key Viewing Area at an angle. A structure that parallels or faces a Key Viewing Area directly is more noticeable than a structure set at an angle.
- Structures also can be set into a hillside rather than perched over a slope. Designing a building to

► Figure 5

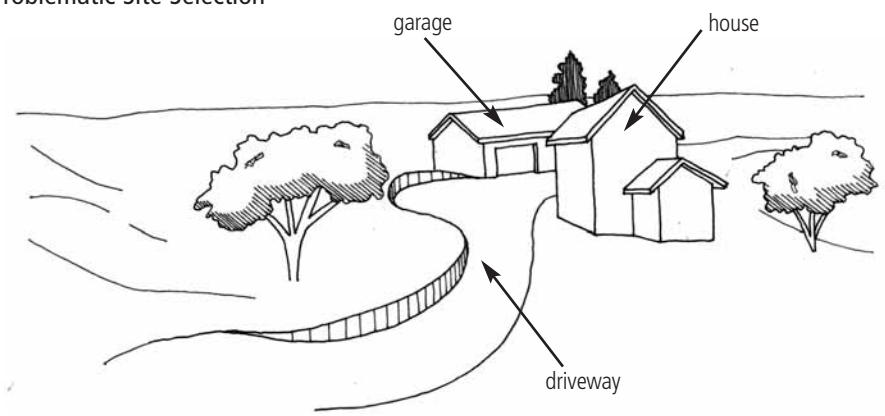
Successful Site Selection



- ► House is sited behind a knoll.
- ► Existing vegetation is retained.
- ► Roof line of the home is below the average tree canopy height.
- ► House is partially screened using existing topography and vegetation.
- ► Garage is almost fully screened using existing vegetation.
- ► Access drive and turn-around are also screened by existing vegetation and are located so that cut and fill slopes are not clearly visible.

► Figure 6

Problematic Site Selection



- ► House is sited on the knoll.
- ► Existing trees were removed for house, garage, and driveway.
- ► Roof line extends above surrounding tree canopy height.
- ► Both house and garage are fully visible.
- ► Access drive and turn-around are prominently visible, exposing most cut and fill slopes.

follow the topography of the site often helps limit the amount and visibility of grading.

- ► Avoiding large, flat surfaces can help a structure follow natural grades. For example, a long structure can be stair-stepped to follow natural grades or a roof line can be varied to break up continuous straight lines as shown in **FIGURE 12** cross section.

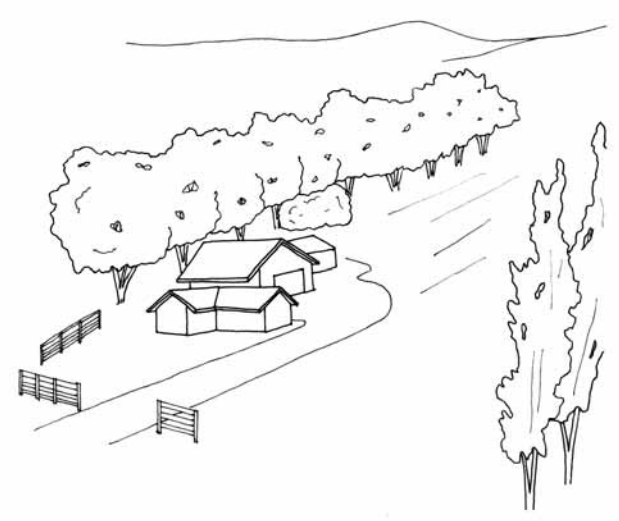
The amount of a structure visible from a Key Viewing Area may be reduced by moving some floor area behind the structure's visible side, placing some of the structure underground (e.g., daylight basement), or by reducing the size of the structure.

Low structures with flat or low angle roofs and a horizontal appearance tend to work better on sites where there is no existing vegetation. Taller, narrower structures with a vertical appearance may work better in wooded areas with steep slopes and tall, coniferous trees as in **FIGURE 8**.

What is a site plan?

A site plan is required as part of your application. Your site plan should help the review agency understand how your development will look on the property. Once your site plan is approved, you and all future land

► Figure 7
Clustered Structures at Edge of Meadow



These structures are clustered and retain an agricultural appearance.

► Figure 8
Vertical Appearance

Vertical building as encouraged in Special Management Area Coniferous Forest to blend with tall trees.

► Figure 9
Horizontal Appearance

Horizontal building as encouraged in Special Management Area Oak-Pine Woodland to blend with shorter, broader vegetation.

owners must comply with the approved site plan and all other conditions in the permit.

Alternative sites may need to be evaluated and compared to the proposed development site. You should include the other sites you considered as an attachment to your site plan.

What information needs to be included in my site plan?

A complete site plan includes:

- A scale, relating the size of the site plan map to the size of the actual development site (e.g., 1 inch = 50 feet).
- A north arrow.
- Property boundaries, dimensions, and area.
- Significant terrain and landforms on and near the property.
- Locations and species of trees and other vegetation on the property.
- Locations and species of any vegetation to be removed or planted.
- Bodies of water, wetlands, and streams.

- Locations and dimensions of existing and proposed structures including driveways and parking areas.
- Locations of existing and proposed services, including wells or other water supplies, sewage disposal systems, power and telephone poles and lines, and outdoor lighting.
- Locations and depths of all proposed grading and ditching – this information also can be shown on the grading plan.

Each review agency has its own application materials and may have additional site plan requirements. Consult with your review agency to make sure you are informed of any special site plan requirements that apply to your development application.

What are some siting considerations unique to specific landscape settings?

Some landscape settings require special design and site selection considerations. These may include:

- keeping structures below the forest canopy height or the tops of surrounding trees **(FIGURE 5)**;
- clustering development at the edge of meadows to retain the overall agricultural appearance of the site **(FIGURE 7)**;
- designing tall, narrow structures to blend with the vertical appearance of a forest **(FIGURE 8)**;
- designing low, horizontal structures to blend with oak woodlands or other low or broad vegetation **(FIGURE 9)**; or
- specific planting requirements.

Your review agency can help you identify specific requirements of your landscape setting. ■

List of Landscape Settings

Pastoral

Coniferous Woodland

Oak-Pine Woodland

Grassland

Rural Residential

Rural Residential/Pastoral

Rural Residential/Coniferous Woodland

Rural Residential/Oak-Pine Woodland

Residential

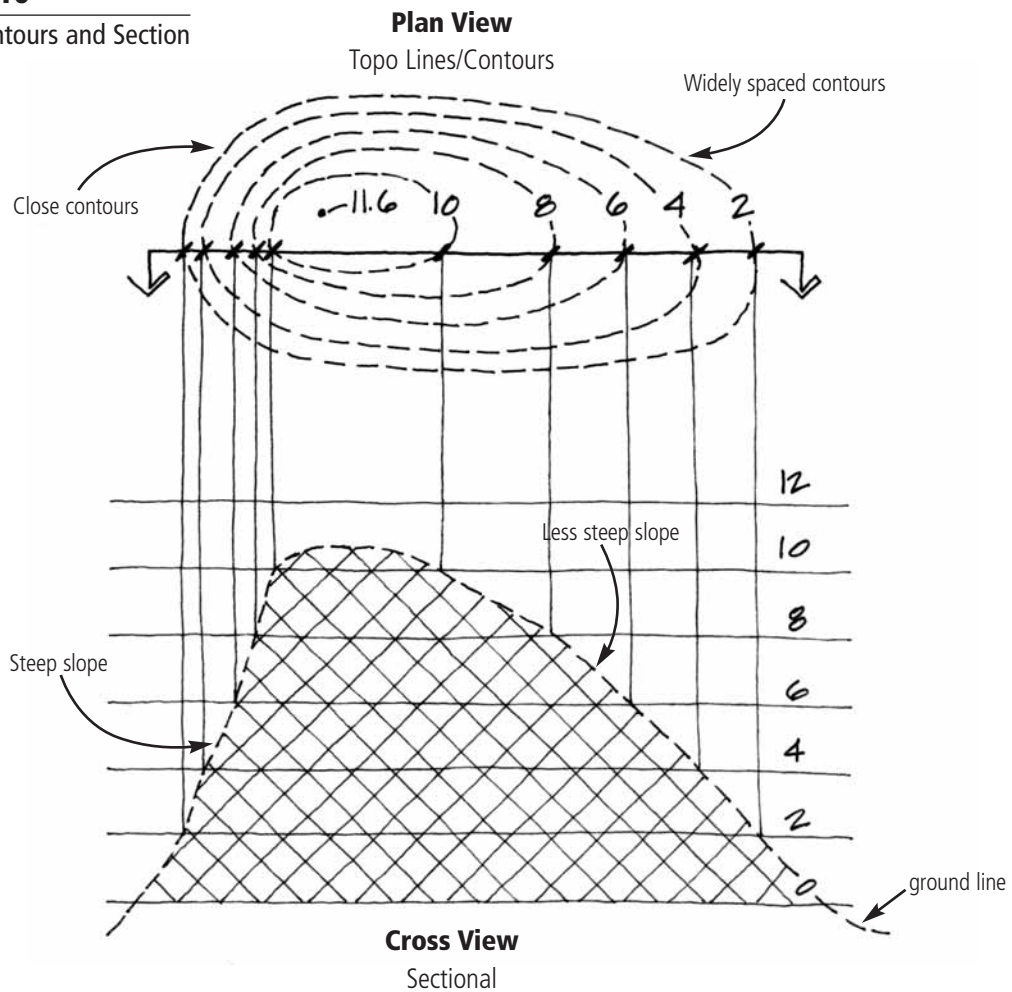
Village

River Bottomlands

Gorge Walls, Canyons, Wildlands

Grading & Grading Plan Preparation

► **Figure 10**
Example Contours and Section



Contour lines represent each step in elevation of the ground at a specific contour interval (e.g. each one, two or five foot increase in elevation might be marked). Steep slopes result in close contour lines while widely spaced contour lines result from the plotting of gentle grade changes.

Grading is the movement of earth, including the addition (fill) and removal (cut) of soil or rock to prepare a site for development. The review agency must approve all grading proposed for structures, driveways, outdoor spaces, roads, turn-arounds, and other aspects of development. In this section, the Handbook describes:

- ▷ When grading plans are required.
- ▷ How to prepare a grading plan.
- ▷ Tips for successful grading plans.

Grades and slopes show how steep the ground is. An existing slope means the steepness of the ground prior to grading. Existing grades, shown on a grading plan, represent the shape and direction of existing slopes. A proposed or final slope (such as the slope of a planned driveway) indicates how steep the ground ultimately will be. Final grading, shown on a grading plan, shows the shape and direction of slopes altered by development.

A grading plan may be required as part of a permit application. The review agency uses grading plans to confirm grading will be used sparingly and that it will blend well with surrounding land forms. Grading plans also are relied on to demonstrate that cut and fill are balanced within a site, to document where fill material is coming from, or to describe where excess material will be taken if the amounts of cut and fill are not equal.

When does the Management Plan require a grading plan?

A grading plan **(FIGURE 12)** is required for development involving more than 100 cubic yards of material when the development site has slopes greater than 10%. In the General Management Area, a grading plan also is required for all development involving more than 200 cubic yards on sites visible from Key Viewing Areas, regardless of slope. As a frame of reference, it takes about 10 cubic yards of earth to fill a standard dump truck.

New grading to create berms or mounds for screening purposes is only acceptable when existing topography and vegetation cannot provide sufficient screening. New land forms, terraces, berms, swales, ditches, or mounds must blend naturally with the surroundings. Minor ground disturbance outside of natural resource buffers, such as new home gardens, does not require review.

What grading information needs to accompany my application?

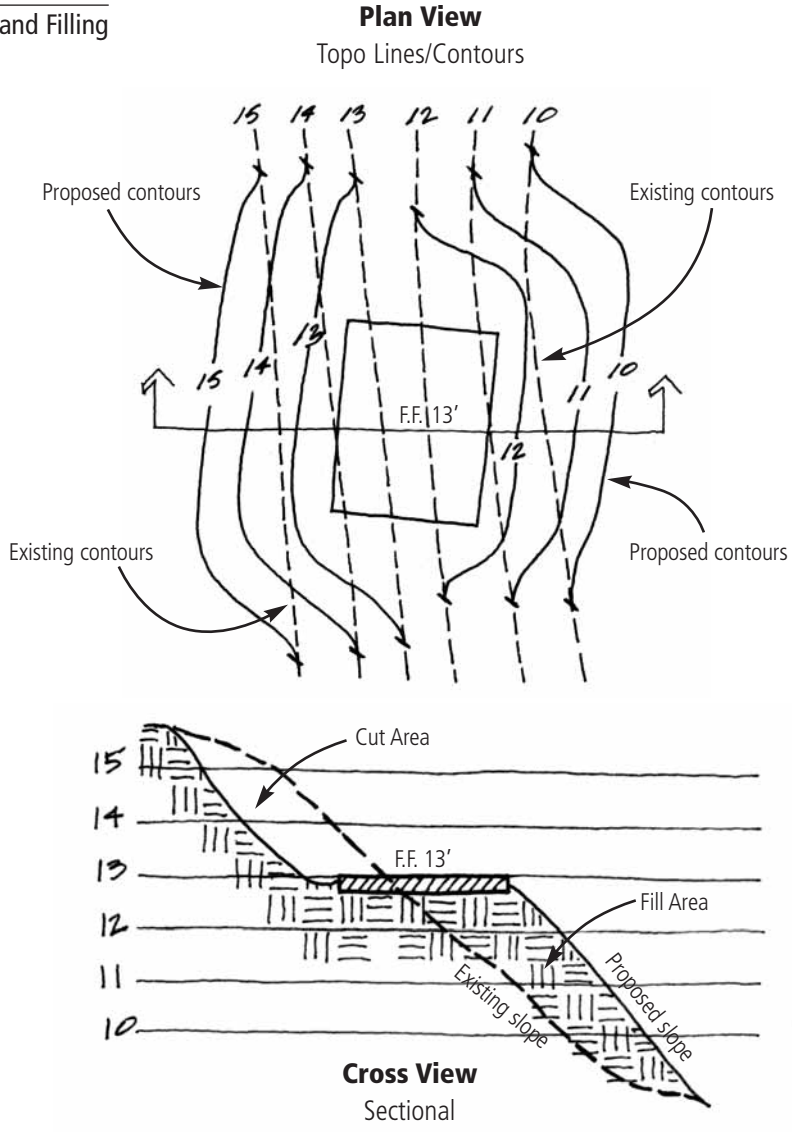
When a grading plan is required it must be prepared on a base map drawn to scale and include:

- Existing slopes and points at which new grading activities will meet existing grades.
- Important landforms and the general direction and slope of grades for surrounding areas.
- Sufficient topography to clearly show the resulting land form.
- Proposed cut and fill areas.
- Any proposed structures to retain cut or fill slopes, such as retaining walls.

(continued on page 15)

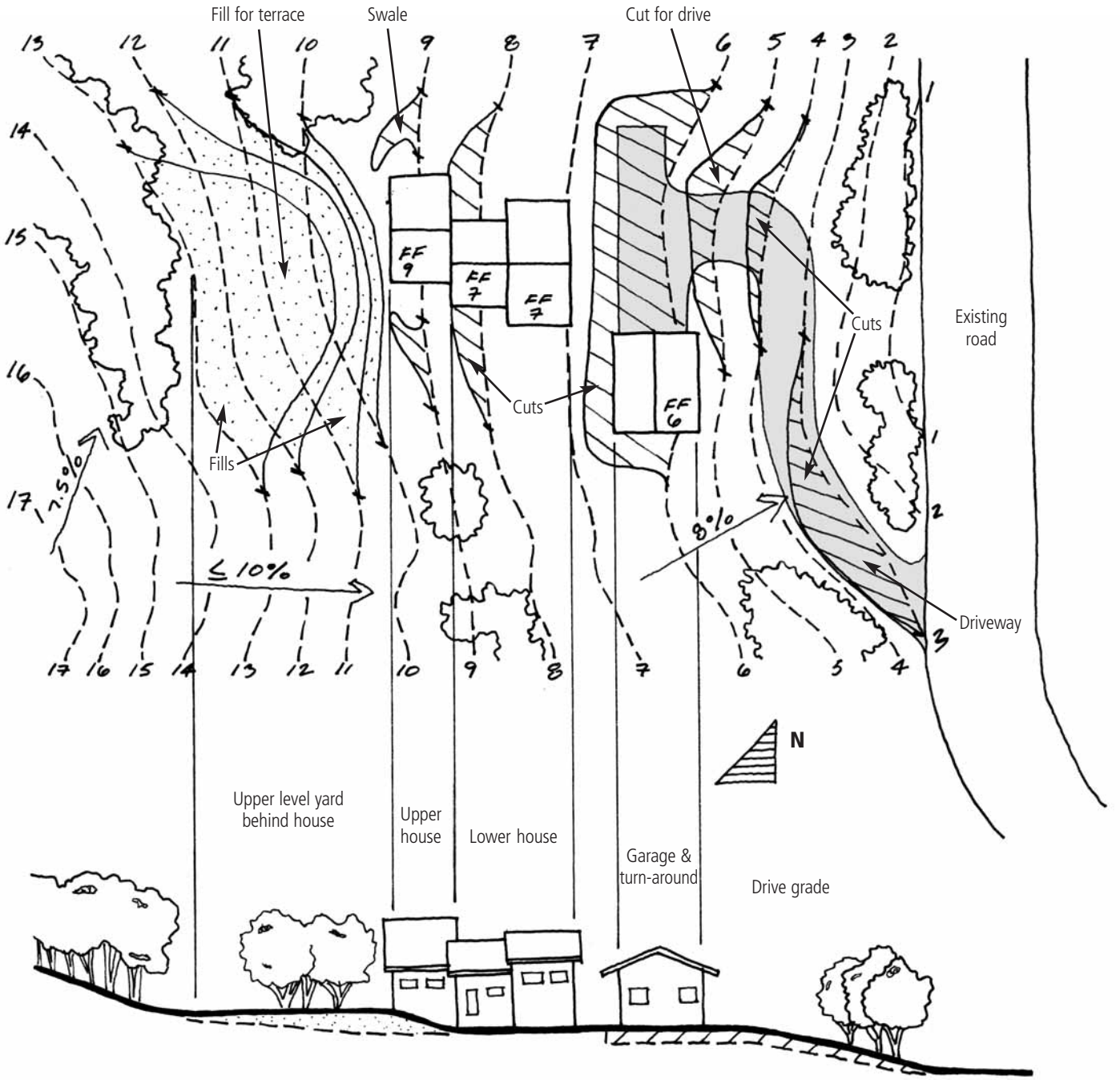
► Figure 11

Grading by Cutting and Filling



Areas of addition or fill include areas where the proposed elevations (represented by the numbers on the proposed contour lines) are higher than the existing elevations (numbers on the existing contour lines). Conversely, areas of removal or cut include areas where proposed elevations are lower than the elevation of the existing contour lines. Note: This figure exaggerates vertical slopes for illustration purposes.

► Figure 12
Sample Grading Plan



Areas of addition or fill include areas where the proposed elevations (represented by the numbers on the proposed contour lines) are higher than the elevations (numbers on the existing contour lines). Conversely, areas of removal or cut include areas where proposed elevations are lower than the elevation of the existing contour lines.

One foot of vertical elevation gain (rise) over 10 feet of horizontal distance (run) is a 10% slope. Two feet of rise over the same 10 feet of run will result in a 20% slope. Emergency vehicles prefer maximum slopes of 8 to 10% and 12% is the maximum grade allowed without special fire district approval.

- Evidence that proposed cut and fill are balanced, or that materials will be removed from or imported to permissible locations.

Some jurisdictions may also require a grading plan to demonstrate drainage, erosion control, and structural stability. Check with the review agency to determine whether additional grading requirements apply to your specific site and development plans.

How is a grading plan prepared?

Design professionals such as landscape architects, architects, engineers, and some contractors can prepare a grading plan for you. In some cases you may be able to prepare your own grading plan. An individual preparing a grading plan must have a good understanding of contour lines and what they represent.

Contour lines represent the relative elevation of the ground. All portions of a site at one elevation are connected by a contour line representing that elevation. The difference in elevation between contour lines is called the contour interval. The Management Plan requires a maximum contour interval of 5 feet for most grading plans. Some sites may require more detailed contours.

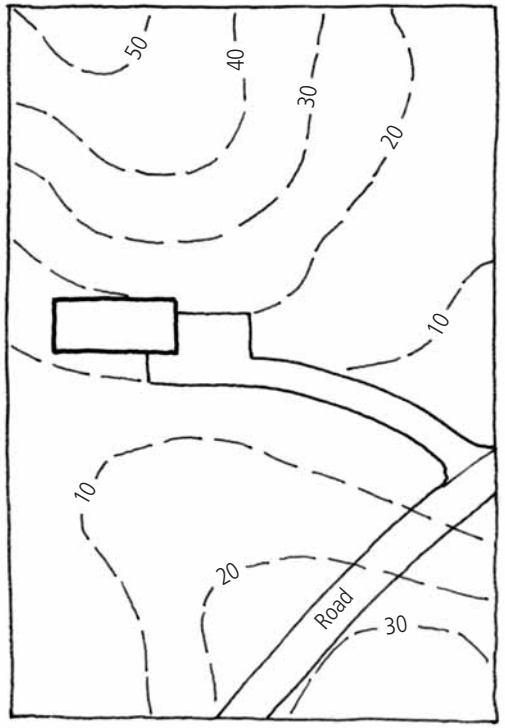
Once a scale base map is drawn including contour lines, a grading plan is usually developed through the following steps:

Step 1 – Fixed elevations are identified, including existing streets, utilities, vegetation, and land forms that will be retained. These fixed elevations represent places where any cut or fill must match existing grade.

Step 2 – Proposed structures are placed and identified on the map, including finished floor elevations (the height of the floor level for a proposed structure) for the main structure and any accessory structures. Access and circulation routes also are identified, making sure they meet mandatory slope limits.

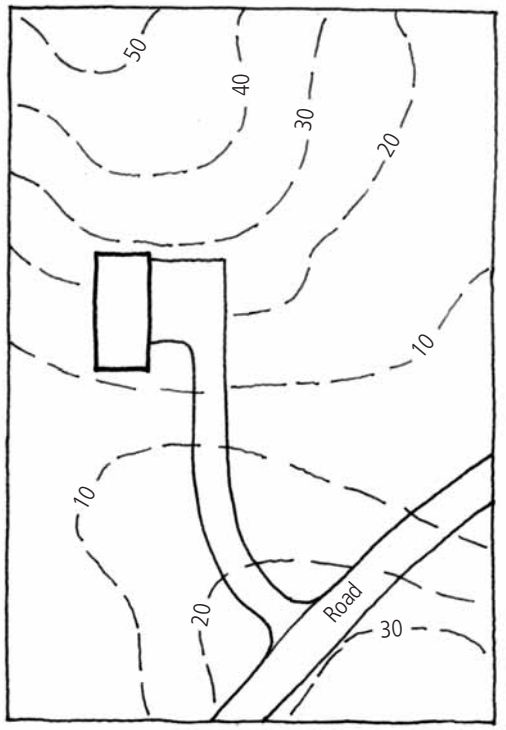
Step 3 – The best way to blend newly graded and contoured areas into existing slopes is identified and shown with proposed contours on the grading plan. Quantities of cut and fill material also are shown. If

► Figure 13
Minimal grading



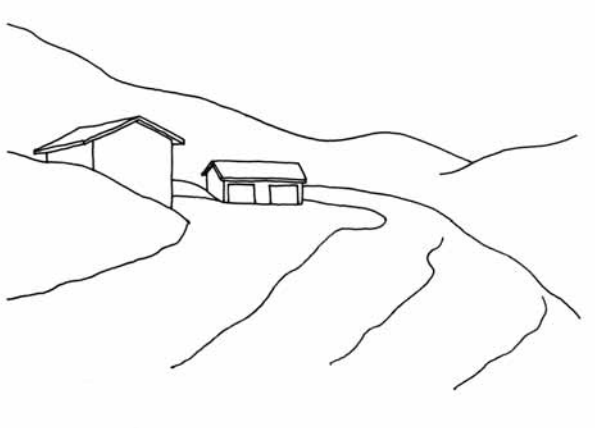
The structure and access drive are aligned with the slope to avoid excessive grading.

► Figure 14
More extensive grading

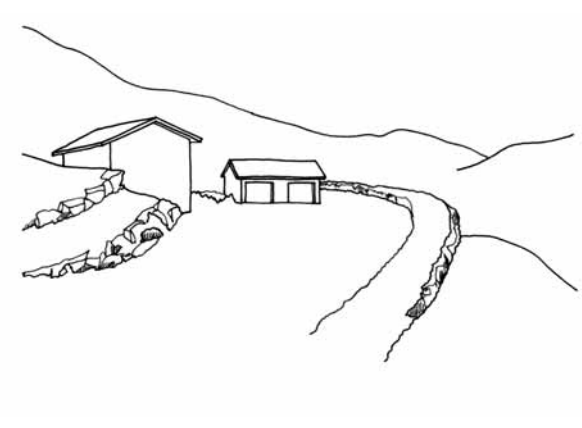


The structure and access drive are perpendicular to the contour lines, requiring more grading and more visible cuts and fills.

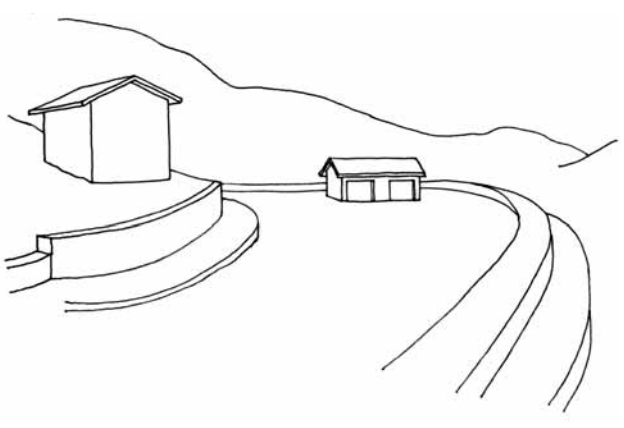
► Figure 15
Gradual Blending of Site Grading Necessary for Development



► Figure 16
Naturalistic Retaining Walls and Minimized Terraces



► Figure 17
Extensive Geometric Terraces and Unnecessary Retaining Walls



imported fill is necessary, the source of new material is identified. The location where excess grading material will be deposited also is identified.

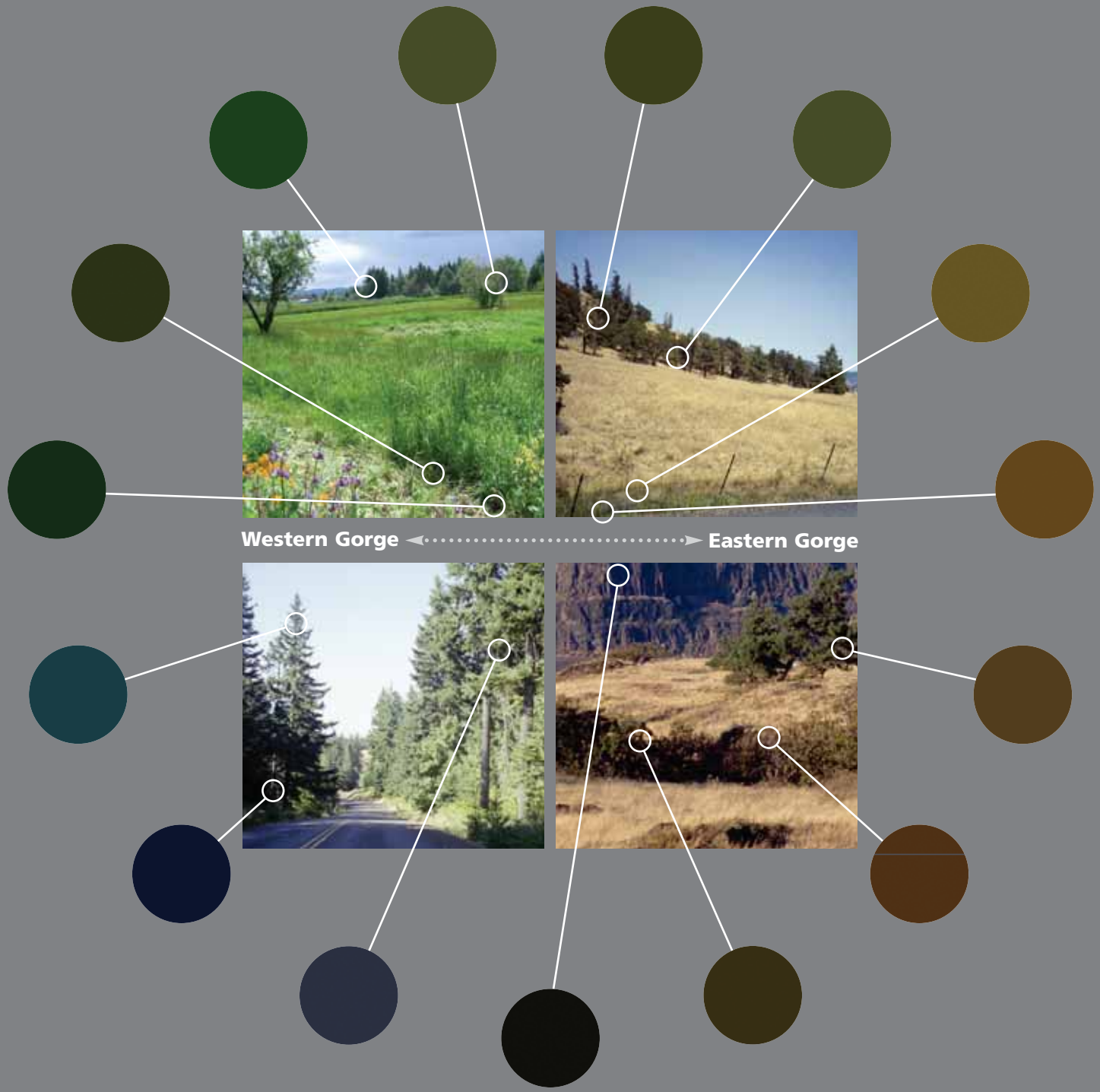
FIGURE 12 shows a sample grading plan.

What are some grading do's and don'ts?

Grading to accommodate structures, access, and circulation should be minimized through careful site selection and structure design. Make sure access roads follow existing contours and use existing grades as much as possible. Select a dwelling site with enough level ground to support planned structures, as well as circulation within the site. **FIGURES 13 & 14** show this distinction.

Gradual blending between new and existing land forms is far less visually evident in the landscape than abrupt geometric slopes or terraces. If retaining walls are necessary for safety or desirable to minimize overall grading, the shape of the wall and material used on the exterior face of the retaining wall should blend with the surroundings. **FIGURES 15, 16, & 17** show this distinction.

To protect existing vegetation, keep all grading activity beyond the canopy of the trees as much as possible. You can avoid damaging tree roots by keeping heavy construction equipment away from the base of existing trees. Flagging areas to be retained can help your contractor protect important landscape features. ■



Finding colors in the landscape

Color choice has a big impact on how well a structure blends with the surrounding landscape. Colors that blend with shadows and other dark tones in the landscape help development recede rather than stand out. In most cases, the Management Plan requires dark earth tone colors found in the surrounding landscape on the exteriors of structures visible from Key Viewing Areas. Bright colors, light colors, and colors not found in the landscape increase a structure's visibility. All colors tend to look brighter and lighter when applied to exterior surfaces. The larger an area is, the brighter and lighter it appears.

Recommended Colors

This chart includes a recommended palette of colors. It does not include every dark earth tone color present in the Scenic Area. The chart represents a sample of colors and a range of shades. You may be able to use colors that don't have an exact match on the recommended chart. Colors found in the Scenic Area vary from site to site depending on variables such as the direction the site faces and the type of vegetation present. Look to the proposed development site for color possibilities.

The Special Management Area allows structures on sites not visible from Key Viewing Areas to be earth tones found at the specific building site or surrounding landscape. This chart includes some earth tone colors that are not dark, which may be found in the landscape and may be acceptable for these Special Management Area sites.

Dark Earth Tone Colors

You should choose a color that is present in the landscape at or near your building site. These are dark earth tone colors found in many areas of the Scenic Area.

NOT ALL COLORS ON THIS CHART MAY BE APPROVED AT ALL SITES. PLEASE CONSULT YOUR REVIEW AGENCY.

Earth Tone Colors

These colors are earth tones. They are not dark colors and are not recommended for sites visible from Key Viewing Areas.


GOLDS
BROWNS
REDS
6
7
8
9
10
11
12
13
14
15
16
Dark Earth Tones
Earth Tones

The more visible a structure is from a Key Viewing Area, the more important color selection becomes. If a proposed structure can be sited so that it is well screened and shaded by existing topography and vegetation, a broader range of colors may be approved.

While color selection is important, other factors contribute to how well a structure can be seen. Distance from Key Viewing Areas, screening by topography and vegetation, exterior textures, and surface variation must be considered together with color to help a structure blend with its surroundings.

Most manufactured home dealers offer standard and custom color options that are similar to the dark earth tones recommended in this Handbook. Available color options change frequently.

You must submit color samples for all exterior building materials. Exterior building components are shown in Figure 18 in the materials and reflectivity section. The review agency may ask you to apply a sample of the color to the exterior material so that it can better assess the color/material combination.

Some additions and pre-existing structures may not be required to be painted dark earth tone colors.

A lighter dwelling will stand out against its background.

The same dwelling painted a dark earth tone with a dark roof will blend into its background.

Even smaller structures stand out noticeably when light colored

Applying dark earth tone colors to accessory structures and unscreened utility facilities helps them to blend with surroundings.

Exterior Material Selection & Reflectivity

Exterior building materials play a big part in how well a development blends in with its surroundings. The Management Plan requires structures topographically visible from Key Viewing Areas use non-reflective materials or materials that only reflect low levels of light. This section of the Handbook will familiarize you with exterior building material requirements and help you make informed choices regarding:

- ▷ Siding materials.
- ▷ Roofing materials.
- ▷ Glass and windows.

Why worry about shiny materials and reflective surfaces?

Structures made from shiny materials can be seen from miles away. It is difficult to make a shiny structure blend with its natural surroundings. In this Handbook, reflectivity refers to how much visible light is reflected. Reflectivity is often measured in terms of ultraviolet or total solar energy reflection; the Management Plan does not regulate ultraviolet and total solar energy reflection.

The texture of a surface affects the amount of visible light it reflects. Materials with a smooth finish stand out in the natural landscape; more heavily textured materials tend to be less reflective. Proposals requesting the use of smooth or lightly textured materials can be challenging, especially when the materials comprise large areas of a structure. If you propose smooth or lightly-textured materials, you may be required to alter your design. Exterior materials should be varied in color and texture to blend with varied colors and textures in the landscape.

Some landscape settings require the use of non-reflective rather than low-reflective materials. If the proposed project is in one of these landscape settings, the review agency will work with you to identify building material options that meet this requirement.

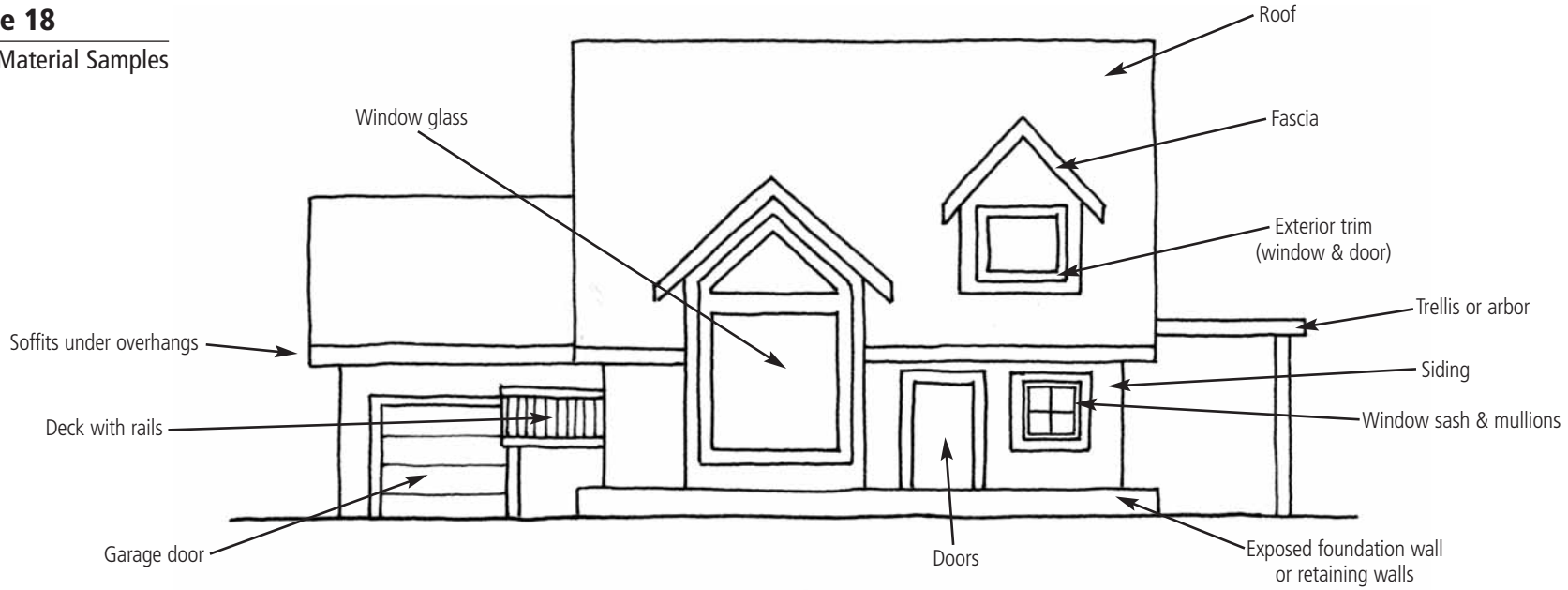
What needs to accompany an application?

To help the review agency evaluate reflectivity, your application must include:

- ► A list of proposed exterior materials. (A review agency may request samples.)
- ► Scaled elevation drawings showing where on the structure the proposed materials will be used **(FIGURE 18)**.
- ► The amount of unscreened glass visible from Key Viewing Areas.
- ► Proposed methods which will be used to decrease the visibility and reflectivity of glass surfaces **(FIGURE 23)**.
- ► Location, height, and style of exterior lighting.

In addition, it is helpful, but not required, to provide drawings showing the structure and the amount of screening and shading provided by existing vegetation **(FIGURE 20)**.

► Figure 18
Required Material Samples



What materials are recommended?

FIGURE 19 shows recommended materials, acceptable materials, and highly reflective materials not recommended for use. A glossary of the building materials in bold is provided on page 24.

What about exterior paint?

The type of paint you use can also contribute to reflectivity. When a structure is located near a Key Viewing Area and materials listed in **FIGURE 19** are painted, use of paint with an eggshell or flat finish is presumed.

What about outbuildings and storage structures?

Some very small structures do not need a permit. For most accessory structures metal siding and roofing may not be allowed. Some prefabricated outbuildings and storage structures are only available in plywood or standing seam aluminum. Plywood with flat exterior paint may be recommended as a less visible alternative.

What about exterior lighting?

Exterior lights must be located and directed downward, hooded, and shielded so their light is not highly visible from Key Viewing Areas. Your review agency can provide more information about lighting requirements.

► Figure 19

Exterior Materials

	RECOMMENDED – heavily textured, low reflectivity, best for exposed foreground locations.	**POTENTIALLY ACCEPTABLE** – moderately textured, best in well-screened or shaded areas outside the foreground of Key Viewing Areas.	**HIGHLY REFLECTIVE** – smooth and shiny materials, do not comply with regulations in most circumstances; approved only with special limitations and design considerations.
SIDING	► Rock masonry, rock **veneer**, cultured stone ► Logs ► Wood **shingle**, **shake**, or **clapboard** ► Concrete board or composite **clapboard** (shaped like clapboard) ► **Board plank siding** (mill cut, board and batten, V-groove, channel, shiplap, etc.) ► Brick, brick **veneer**	► Rough textured **stucco**, concrete, or plywood ► Textured concrete or composite panels (square or rectangular panels textured to imitate **stucco**) ► Vinyl **shingle**, **shake**, or **clapboard** ► Pre-weathered metal	► Aluminum **shingle**, **shake**, or **clapboard** ► Aluminum standing seam ► Galvanized or enamel painted steel
ROOF	► **Architectural composite shingle** ► Slate or tile roofs (including concrete tile) ► Imitation slate or tile composites (including rubber tiles from recycled tires) ► Dark metal treated with dark asphalt or other permanent flexible coating	► **Three tab** ► Concrete **shingles** ► Metal w/ granular finish (looks like composite shingle) ► Pre-weathered or rusted metal roofing ► Metal **shake**, **shingle**, or tile simulations (w/ crushed stone top coat) ► Fiberglass coated metal roofing	► Smooth metal (sheet or standing seam) ► Smooth metal tile simulations (no top coating) ► Mill coated metal
WINDOWS	► Tinted **thermal pane** glass, e.g. grey or bronze over low e (glass less than 11% exterior **visible light reflectivity rating**)	► Clear **thermal pane** glass, e.g. clear over low e (11%-15% exterior **visible light reflectivity rating**)	► Mirrored or reflective glass should not be proposed, e.g. solar cool grey or solar cool bronze (glass greater than 15% exterior **visible light reflectivity rating**)

Note: Recommendation of generic building materials is based solely on reflectivity. You should consult with your contractor or building supply professional for performance information of specific materials.

Note: Terms in bold are defined on page 24.

What are "cool colors" for roofing?

Some people are concerned about the energy efficiency of dark colors. Tightening energy codes and warm climates in other parts of the country have driven the research and development of cool colors. These colors reflect the non-visible, infrared radiation which causes structures to heat up, without reflecting a lot of visible light. Most of the roofing materials discussed in this Handbook are available in cool colors. If you have concerns about the heat generated by dark roofing materials, using cool colors is a good option.

What about Metal Roofing?

Metal roofing can be desirable due to its long life, fire safety, and low maintenance. Unfortunately, metal roofs also reflect visible light and are difficult to shade completely throughout the day, making them a challenge in the Scenic Area. Potentially acceptable metal roofing options include:

- **Granular finishes available from the factory** – metal with a granular finish comes in a textures and colors similar to fiberglass asphalt shingles.
- **Stone top-coated metal shingle systems** – these are typically tile or slate look-alikes made in panels or individual metal shingles.
- **Pre-weathered or oxidized metals** – depending on the finish, a weathered metal can have low reflectivity.
- **Asphalt coating** – this resilient coating is one of the only treatments available that can be applied to a metal roof either before or after installation. The finished coating has a rubberized texture.
- **Fiberglass coating** – metal roofing can be primed and sprayed with a heavily textured fiberglass coating. Dark colors are available.

Glossary of Building Materials (FOR FIGURE 19)

Architectural Composite Shingle – overlapping roofing shingles with a granular surface that is textured due to overlap between shingles and granular color variations.

Board Plank Siding (V-groove, channel, board and batten) – this siding has special milled cuts in the boards which allows the boards to fit together and protect board edges from weather. Board and batten siding has narrow wood battens where planks come together creating a vertical texture.

Clapboard – horizontal rectangular planks applied in rows with upper rows overlapping lower rows. Clapboard is most commonly made of wood. Concrete or composition board, vinyl, and aluminum siding also come in clapboard styles.

Shakes or Shingles – squares or rectangles of wood that are applied in rows overlapping each other. Shingles are usually uniform is size and shape. Shakes are typically more roughly cut and vary in size and shape. Many vinyl and aluminum siding products also come in shake and shingle styles.

Stucco – similar to plaster on an interior wall, stucco is composed of sand, water, and cement. Stucco is applied in several layers. A color is usually mixed into stucco. The final layer of stucco is applied to create a rough or smooth finished texture.

Thermal Pane – two panes of glass, sealed together with an even amount of space between them for better insulation.

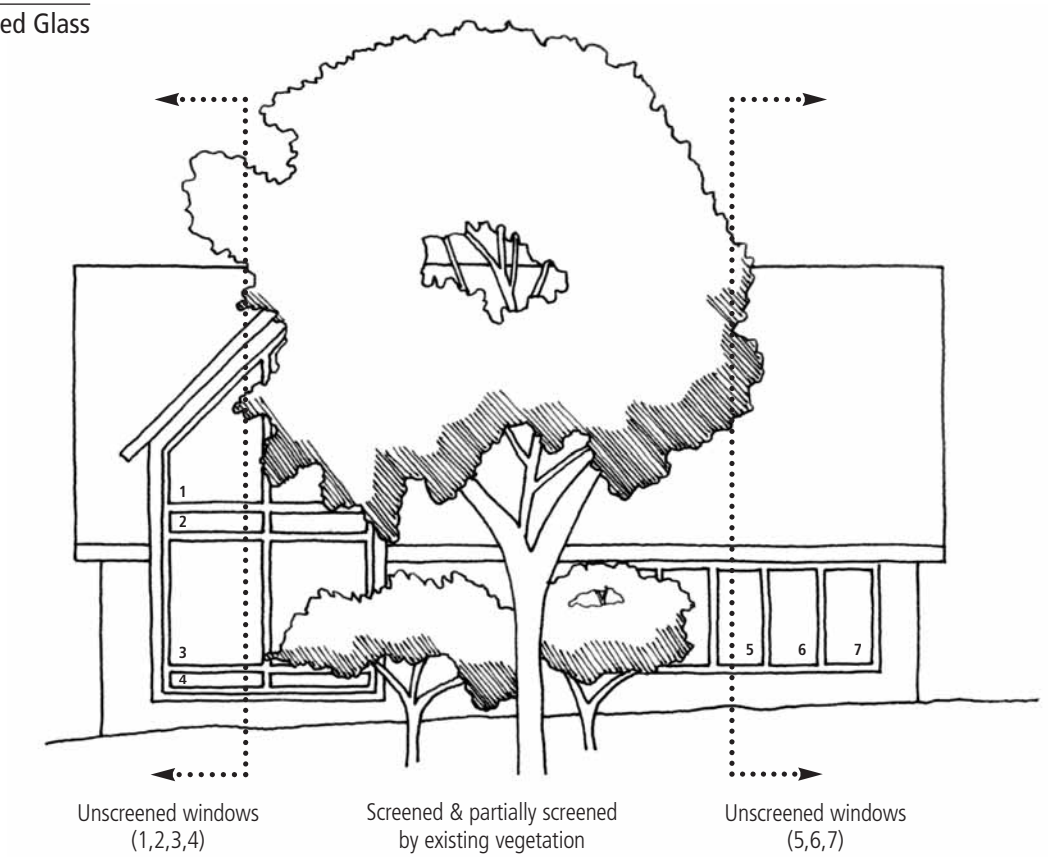
Three Tab – horizontal flat roofing shingles with a granular surface. The texture on a three tab roof comes primarily from color variations in the granular surface.

Veneer – typically made to look like brick or stone, veneers are applied one layer deep, and are usually attached to the exterior surface from the ground up.

Visible Light Reflectivity Rating – this is the standard used by the glass industry to measure and rate the visible light reflected by different types of glass. Ratings are expressed as percentages and indicate the amount of visible light reflected by different glass materials.

► Figure 20

Unscreened Glass



What is Unscreened Glass?

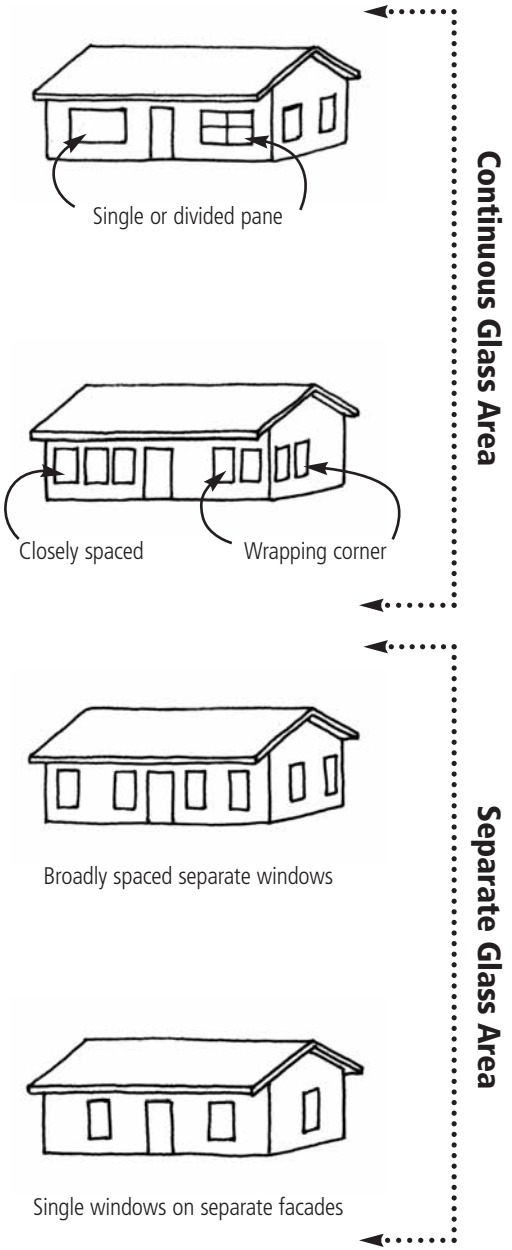
Unscreened glass is any window that is not noticeably screened from Key Viewing Areas by topography, plants, or other structures. Since glass is smooth, it is more reflective and uniform in appearance than other exterior building materials. Partially or fully screened glass has little or no visual impact compared to unscreened glass **(FIGURE 20)**.

What is Continuous Glass?

The term continuous glass includes individual and divided pane windows, closely spaced windows, and windows that wrap a corner. Broadly spaced windows, separated single windows on varied facades, and individual windows located on clearly distinct areas of the same facade have less combined visual impact than continuous areas of glass **(FIGURE 21)**.

► Figure 21

Continuous Glass



How big is 50 feet of glass?

For example, three 3'x 5' double hung windows side by side equal 45 square feet. A 4.5'x 5' center casement window with a 2.75'x 5' double hung window on either side is 50 square feet.

Casement Window – single stationary window either single pane or divided by mullions, narrow strips dividing the pane into many smaller panes.

Double Hung Window – a window with a pane above and below where the lower pane slides up over the upper to allow the window to open.

How much Unscreened Glass is too much?

When a structure has a scenic view of a Key Viewing Area, it can be challenging to design windows that don't increase the structure's visibility *from* that same Key Viewing Area. The review agencies understand it is unreasonable to expect there will be no windows on facades facing Key Viewing Areas. The review agencies carefully evaluate how much glass or window area will be visible from Key Viewing Areas. **FIGURE 22** includes examples of dwellings with fewer windows, more windows, and too much glass.

What is the size limit for a single window?

The Management Plan does not limit the total amount of glass on buildings. Review agencies recommend, however, that an unscreened window or continuous glass area should not exceed 50 square feet. The 50 square foot allowance provides for a moderately-sized window configuration and allows emergency egress. The total amount of unscreened glass appropriate for a structure will be a site-specific consideration by the review agency. Your review agency may determine that less than 50 square feet of continuous glass will be permitted. If steps are taken to reduce the visual impacts of glass, a review agency may allow more than 50 square feet of continuous glass.

How can I reduce the visual impact of glass?

Using the methods discussed in **FIGURE 23**, you may be able to use more glass on a structure. These methods are:

- Use topography and vegetation to screen your structure and glass.
- Use deep eaves to shade your walls and glass.
- Reduce the amount of glass that faces Key Viewing Areas.
- Mix glass in with heavily textured materials.
- Site your structure carefully.
- Use low-reflective glass.
- Give special attention to south-facing windows. ■

► Figure 22

Window examples

Houses with Fewer Windows	Houses with More Windows; Well Screened	Houses with More Windows; Less Screened
Examples use less glass with less screening and shading to comply with regulations.	Examples use more glass with more screening and shading and good site selection to comply with regulations.	Examples use too much unscreened and unshaded glass for visible locations. This approach is not recommended.









Note: All photos are taken only to illustrate the concept of window sizing. Most photos either are outside the Scenic Area or taken from a viewpoint not listed as a Key Viewing Area. Some have been altered. None of the photos shown in the far right column are taken from a Key Viewing Area.

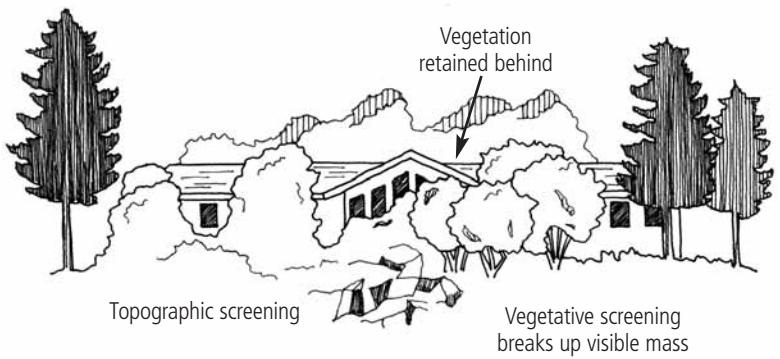
► Figure 23

Methods to Minimize Impacts of Reflectivity

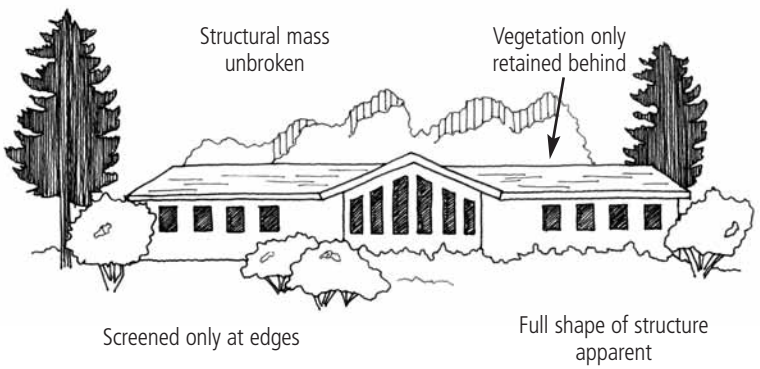
Use topography and vegetation to screen development

The better screened a structure is, the more glass can be allowed. Most sites have existing trees and shrubs. Use existing vegetation and topography for screening whenever possible. If all existing screening is deciduous, some additional year-around screening (evergreen shrubs and conifers) may be required.

THIS



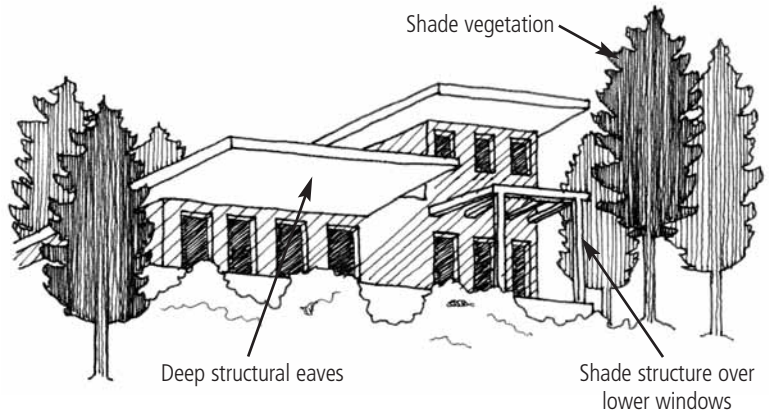
NOT THIS



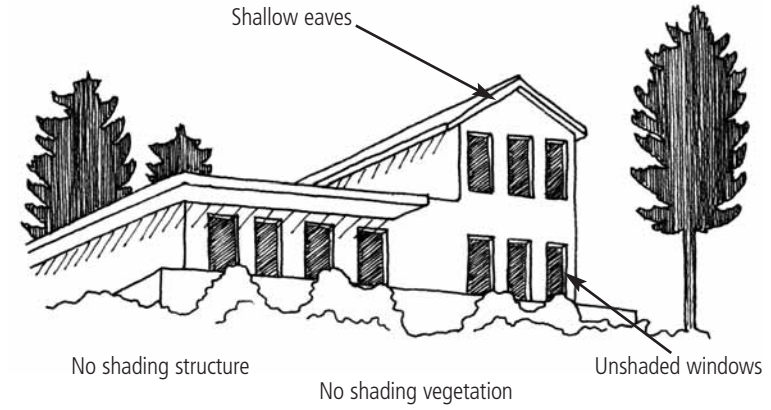
Design your building to shade the walls and windows

Well-shaded glass can appear black in the landscape. Shading elements on a structure are critical if larger areas of visible glass are desired. Structural shading elements include: deep eaves, permanent awnings or louvered shading structures, decks, porches, and other features that extend out above windows. The need to shade a structure from low angle sun with vegetation also should be considered.

THIS



NOT THIS



Note: Sketches illustrate specific points about the use of windows in building design, not all sketches illustrate structures that are visually subordinate.

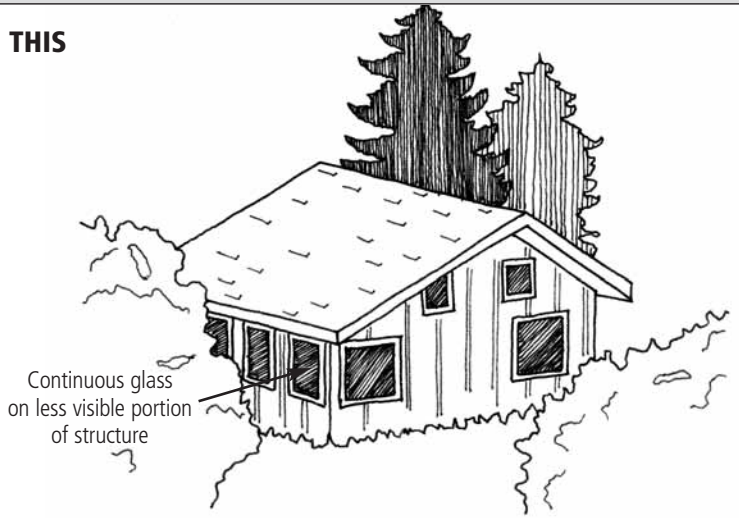
► Figure 23 (continued)

Methods to Minimize Impacts of Reflectivity

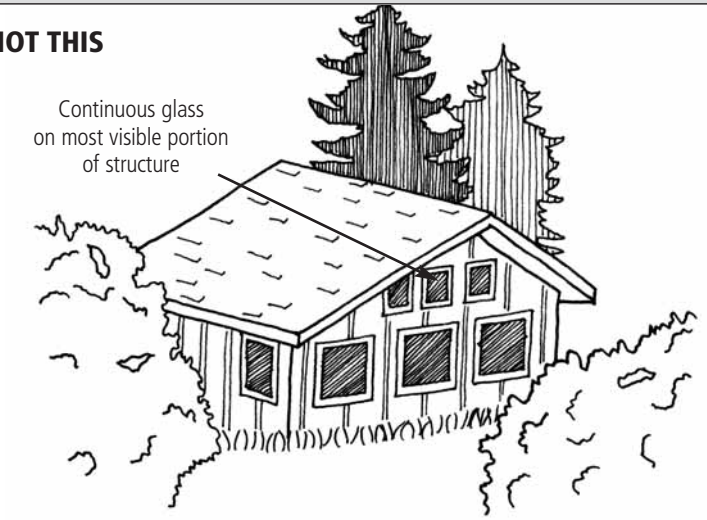
Reduce the windows on the most visible parts of a house

Glass is smoother than other building materials. Mixing the use of glass with more heavily textured materials and locating it in less visible portions of a structure can help minimize reflectivity.

THIS



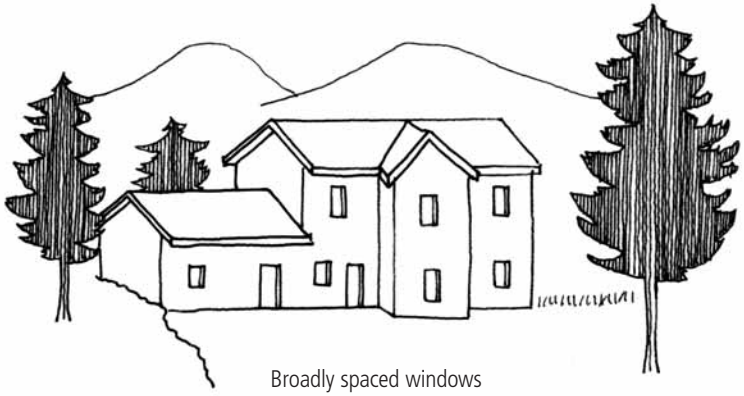
NOT THIS



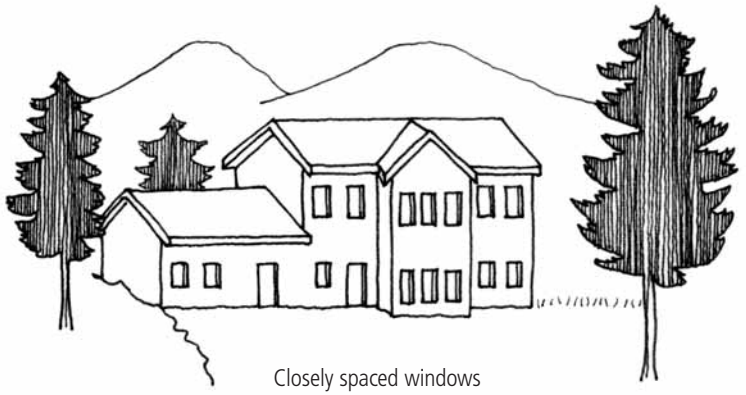
Space windows or glass panes visible from Key Viewing Areas

Separating or spacing glass panes helps avoid a concentration of glass in a single area. Spacing windows more broadly breaks up the smooth texture of the glass with the rougher textures of siding and trim.

THIS



NOT THIS



Note: Sketches illustrate specific points about the use of windows in building design, not all sketches illustrate structures that are visually subordinate.

► Figure 23 (continued)

Methods to Minimize Impacts of Reflectivity

Site farther from Key Viewing Areas	If possible, locating a structure further away from a Key Viewing Area may provide better views and allow more windows. Glass is less of a concern when it is well shaded and located more than 1/2 mile from Key Viewing Areas.		
	Foreground = 0-1/2 mile	**Middle-ground** = >1/2-3 miles	**Background** = > 3 miles
Select the right glass	Different kinds of glass reflect different amounts of light. Exterior light reflectivity is rated by glass manufacturers.		
	Especially sensitive – highly visible properties near Key Viewing Areas and offering little or no existing vegetative or topographic screening may require use of tinted or specialty glass with a visible light reflectivity rating less than 11%.	**Less sensitive** – sites located further away from Key Viewing Areas, partially screened by existing topography and existing vegetation, and shaded from sunlight throughout the day may be able to use standard insulated clear glass with an 11%-15% visible light reflectivity rating.	
Pay attention to the direction of the sun	The review agency will consider changes in the angle of the sun throughout a typical day and at different times of the year. Southern exposures present special challenges and may require extra efforts to minimize reflected light.		
	Southern exposures – will require permanent shading structures such as a trellis, overhead deck, deep eaves, or lattice work to ensure mid-day sun does not reflect off windows.	**All other exposures** – will have some reflectivity issues at different times of day and year. Shade plantings between the building and direction of the sun are helpful in addition to permanent shading structures.	

Planting Vegetation for Screening

Planting new screening vegetation is a tool of last resort in the Management Plan. Whenever possible, screening and shading should be achieved using existing vegetation and topography as part of the overall development design.

New vegetation may be required to improve the screening and shading of development. New plantings must be designed and planted to provide sufficient screening within five years of the beginning of construction. In this section, you will find:

- ▷ How to prepare a planting plan for new trees and shrubs.
- ▷ Recommended types of plants.
- ▷ Maintenance suggestions.

What planting information needs to accompany my permit application?

A planting plan is a required part of your application. The planting plan must identify vegetation to be retained, vegetation to be removed or replaced, and new plantings to be added. Detailed information should include:

- ► Type, size, and locations of existing trees and vegetation being relied on for screening and shading the proposed development.
- ► The type, size, and locations of new or replacement screening vegetation.
- ► The type, size, and location of any existing screening and shading vegetation to be removed.
- ► A general description and location of any additional landscape features on your property which will contribute to shading and screening.

Why is a planting plan important?

A planting plan helps you make informed decisions when selecting a site and designing a well-screened structure. It also provides information needed by the review agency to evaluate what screening and shading vegetation will be retained or added. The planting plan serves as a record of what was approved for current and future owners.

What kinds of plants should I use?

New screening vegetation should include trees and shrubs that will thrive in the Scenic Area's habitat and blend with their surroundings. Native plants are often recommended because they live in the existing environment, are easier to grow and keep healthy, and require less maintenance.

Different plants will succeed on the east side and west side of the Scenic Area. The Recommended Plant List available from your review agency addresses these differences, provides recommended sizes and spacing for different plant species, and summarizes planting requirements for each landscape setting.

What else can I do to ensure my plants thrive?

You and all future land owners are required by the Management Plan to keep and take care of vegetation on your property used for screening and shading. This regulation applies both to existing vegetation and to new plantings.

Other important factors to consider as you develop your planting plan include:

- **Orientation** – south-facing sites are hotter and drier than north-facing sites and may require selection of more drought-tolerant species.
- **Wind** – many exposed sites in the Gorge are windy; new plantings should be planted and staked to withstand wind until they are successfully established.
- **Soil depth and type** – It is important to consider on-site soil conditions. Steep sites and ridges require careful planting location selection to ensure sufficient pockets of soil are available. Some rocky areas may not allow screening trees to grow to the required height and breadth within five years of the beginning of construction.
- **Rainfall, soil moisture, and drainage** – moisture levels can vary within a site. Plants suited to available moisture levels should be selected. Continuous irrigation may be necessary to help less drought-tolerant species survive on a dry site. Drought-tolerant species may not do well on a wet site.
- **Need for year-round screening** – The Management Plan requires a proportion of evergreen plantings to help ensure year-round screening. Evergreen plants should be planted where year-round screening is most critical. ■

Additional Information

Additional information about the Columbia River Gorge National Scenic Area, including a copy of the federal law (Scenic Area Act) establishing the Scenic Area, can be found in the Management Plan.

Handbook Prepared By:

DeVaney Consulting, Inc.,
White Salmon, WA

Bryan Potter Design,
Portland, OR

Steaming Kettle Consulting, LLC,
Portland, OR

Special thanks for the work of:

Columbia River Gorge Commission
USDA Forest Service
Clark County
Hood River County
Klickitat County
Multnomah County
Skamania County
Wasco County

♻ Printed on recycled paper

Review Agencies and Contact Information

Clark County:
Clark County Community Development
Street address: 1300 Franklin Street, Vancouver, WA 98660
Mailing address: P.O. Box 9810, Vancouver, WA 98666-9810
(360) 397-2375, Fax: (360) 397-2011
www.co.clark.wa.us

Hood River County:
Hood River County Planning Department
601 State Street, Hood River, OR 97031
(541) 387-6840, Fax: (541) 387-6873
www.co.hood-river.or.us

Klickitat County:
Columbia River Gorge Commission
Street address: #1 Town & Country Square
Mailing address: P.O. Box 730, White Salmon, WA 98672
(509) 493-3323, Fax: (509) 493-2229
www.gorgecommission.org

Multnomah County:
Multnomah County Land Use & Transportation Program
1600 SE 190th Ave., Suite 116, Portland, OR 97233
(503) 988-3043, Fax: (503) 988-3389
www.co.multnomah.or.us

Skamania County:
Skamania County Planning & Community Development
P.O. Box 790, Stevenson, WA 98648
(509) 427-3900, Fax: (509) 427-8288
www.skamaniacounty.org

Wasco County:
Wasco County Planning and Development
2705 East 2nd Street, The Dalles OR 97058
(541) 506-2560, Fax: (541) 506-2561
www.co.wasco.or.us

Federal lands and projects and SMA forest practices:
USDA Forest Service, National Scenic Area Office, Columbia River Gorge National Scenic Area
902 Wasco Avenue, Suite 200, Hood River, OR 97031
(541) 308-1700, TTY (541) 386-8758, Fax: (541) 386-1916
www.fs.fed.us/r6/columbia/forest

Acknowledgements

Appreciation is expressed to the numerous technical experts and others who offered valuable input during the development and review of this Handbook.

Confederated Tribes and Bands of the Yakama Nation
Confederated Tribes of the Umatilla Indian Reservation
Confederated Tribes of the Warm Springs Reservation
Nez Perce Tribe
Milestone Nursery, Lyle, WA
Shamrock Landscaping, Hood River, OR
Quatrefoil, Inc. Landscape Architecture, Portland, OR
Bennett Burns, Landscape Architect, Portland, OR
Jurgen A. Hess, Landscape Architect / Conservation Planner, Hood River, OR
Bramare, Inc. Landscape Architecture, Portland, OR
Oregon Native Plant Society
Gorge Glass and Contracting, Inc., The Dalles, OR
Carl Perron Architect, Hood River, OR
Tum-A- Lum Lumber Company, Hood River, OR
Home Depot, The Dalles, OR
Gorge Landholders United, Hood River, OR
Mid Columbia Association of Realtors, Hood River, OR
Stabler Building Consultants, Inc., Carson, WA
Ideal Homes, The Dalles, OR
Columbia Gorge Affordable Homes, The Dalles, OR
Columbia Homes, The Dalles, OR
Individuals who participated in focus group meetings or attended the public workshop

Columbia River Gorge Commission
#1 Town & Country Square
P.O. Box 730
White Salmon, WA 98672
(509) 493-3323

USDA Forest Service
National Scenic Area Office
902 Wasco Avenue, Suite 200
Hood River, OR 97031
(541) 308-1700

December
2005