PROTECTING LOCAL SCENIC RESOURCES

Community-Based Performance Standards

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Introduction

Maine's **landscape** is undergoing changes that will redefine its scenic character. Coastlines are being developed, farms are becoming house lots and villages are vanishing as their downtowns struggle to survive the wave of urbanization, big box stores and suburban development.

Scenic views and landscapes that have defined communities for decades are being threatened and lost. Some of these views and landscapes are well-known to tourists and visitors while others are hidden away, known only to the "locals," maybe even only to the landowners or immediate neighbors.

Not all threats to scenic resources result from new private developments. Municipal projects such as road maintenance, ditch widening, clearing of roadside trees, new storage yards and similar activities can significantly impact scenic views and resources. These concerns can be addressed if all activities are required to comply with performance standards, which are designed to protect local scenic resources.

Formerly rural road with extensive clearing and re-grading.

Chapter I of this report presents the performance standards in bold and includes narratives and photos to provide a better understanding of their purposes and significance. Chapter II presents the performance standards as they might appear in a local ordinance. It also includes suggested definitions. Please note that these performance standards are designed to be administered in the same manner as other performance standards in the local site plan review ordinance, such as those related to erosion control, stormwater management, noise, etc. That is, they are to be considered in the context of the overall project review and approval process, not as a separate action. Terms in bold are defined in the glossary at the end of this document.

Because the performance standards are integrated into the local site plan review ordinance, the Code Enforcement Officer (CEO) and the Planning Board each have an important role to play, as provided for in these performance standards. However, the process begins with a community inventory of its scenic resources.

Typical Site Plan Review Performance Standards

- Utilization of the site
- Traffic access and parking
- Pedestrian access
- Stormwater management
- Solid waste
- Erosion control
- Sewage disposal
- Utilities
- Natural features
- Groundwater protection
- Water quality
- Shoreland
- Solid waste, historical and archaeological features
- Floodplain management
- ***Protection of designated scenic views and scenic resources***

Chapter I. Annotated Performance Standards

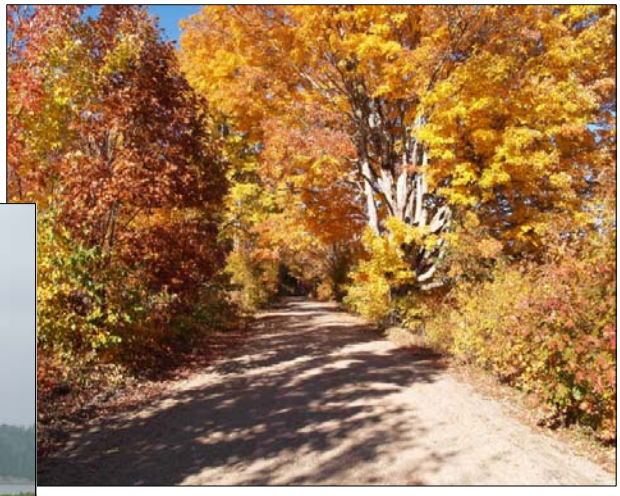
Section 1: Inventory of Scenic Resources

The inventory of scenic resources is often completed as a work product of a comprehensive plan, but it also can be completed by the Planning Board, Conservation Commission or other local committee charged with the task by the town's legislative body. The more precise the descriptions of the scenic resources, including clearly defined locations, the more likely they will be upheld by Maine courts. (For example, see The Lincoln Home v. The Inhabitants of the Town of Newcastle, 2004 WL 423024 (Me. Super 2004).)

For some communities, relatively few locations may be included in the inventory of scenic resources. While some local citizens may feel strongly about particular views or **viewsheds**, the inventory must be adopted by the municipal legislative body. Therefore, while there may be many attractive views and viewsheds, only those whose significance is generally accepted within the community will be afforded protection under these provisions.

The State Planning Office publication, *Comprehensive Planning: A Manual for Maine Communities*, by Evan Richert, AICP, and Sylvia Most offers guidance on the inventory and analysis of scenic resources (www.maine.gov/spo/landuse/docs/compplanning/2005manual_mediumres.pdf).

Each scenic resource should be rated as to the level of its scenic significance. The above cited publication offers one approach while Appendix B presents a rating system developed by the U.S. Department of Interior, Bureau of Land Management (Manual 8410). Also see Tables 1 and 2 in these performance standards for how the level of scenic significance is used in determining the severity of impact of a proposed activity on a designated scenic resource or view and how it affects the level of **mitigation** effort that may be required if the impact is allowed.



A rural country lane such as this mid-coast town road can also be a scenic resource in a community.

Many scenic views are natural resources-based.

Suggested Performance Standard: Introduction

It is the intent of these performance standards to protect designated scenic views and views from designated scenic resources from unnecessary visual degradation created or caused by proposed activities, such as new structures, expansions of existing structures, new uses of land or changes to **existing uses** of land. In addition to any other applicable standards or requirements of this ordinance, any activity that will potentially be located within a designated scenic view or the viewshed of a designated scenic resource shall comply with the following provisions. No municipal approval, including a building permit, may be granted unless it is determined that a proposed activity will not have an **unreasonable adverse impact** on any designated scenic views or views from designated scenic resources.

Suggested amendments to "applicability" section of ordinance

Add: "Any activity potentially visible from a designated view or in the viewshed of a designated scenic resource." (Note: specify any exempt uses here, such as one or two-family homes.)

Section 2: Code Enforcement Officer

There are many activities that could adversely affect scenic resources or the viewsheds of scenic resources that do not require Planning Board approval. These might include new homes on ridgelines, raised septic systems or accessory buildings in farm fields, and clearings of forested areas along scenic roads to accommodate exempt development.

In addition, some activities might appear at first to threaten views but after initial review, it can be easily determined they pose no such concerns. Therefore, it is important that the process of determining impact to scenic resources begin, and potentially end, with the Code Enforcement Officer (CEO).

Siting an out-building within a wooded buffer instead of adjacent to it could reduce visibility.

Siting a building below tree line reduces visibility.

An existing wooded buffer along the river reduces visibility of a building near the shore.

If the CEO determines that the activity may be potentially visible within a designated scenic view or the viewshed of a designated scenic resource or if there is insufficient information to make a determination, the activity should be referred to the Planning Board for review.

Absence of vegetative buffers makes this building fully visible within the view towards, as well as within the viewshed from, a scenic resource (water body).

It may not be possible to determine a development's potential visual impact (seasonal or year-round) without detailed information.

Suggested Performance Standard 1: Initial Review

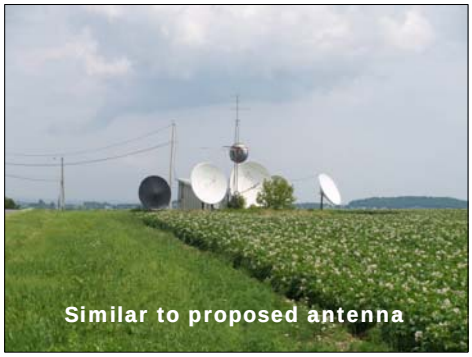
The Code Enforcement Officer (CEO) shall make the initial determination of whether a proposed activity may potentially be visible within a designated scenic view or viewshed of a designated scenic resource. If the CEO determines that, due to location, terrain, vegetation and other physical features, the proposed activity will not be visible within a designated scenic view or the viewshed of a designated scenic resource, no further review under this performance standard is required. The CEO's determination shall be in writing and shall include the basis for the determination. It is the responsibility of the applicant to provide sufficient information for the CEO to make the necessary determination. If such information is not available to the CEO, additional review under section 3 will be required. (Note: the existing provisions for appeals of decisions by the CEO should be amended to allow for appeals of CEO determinations as described above.)

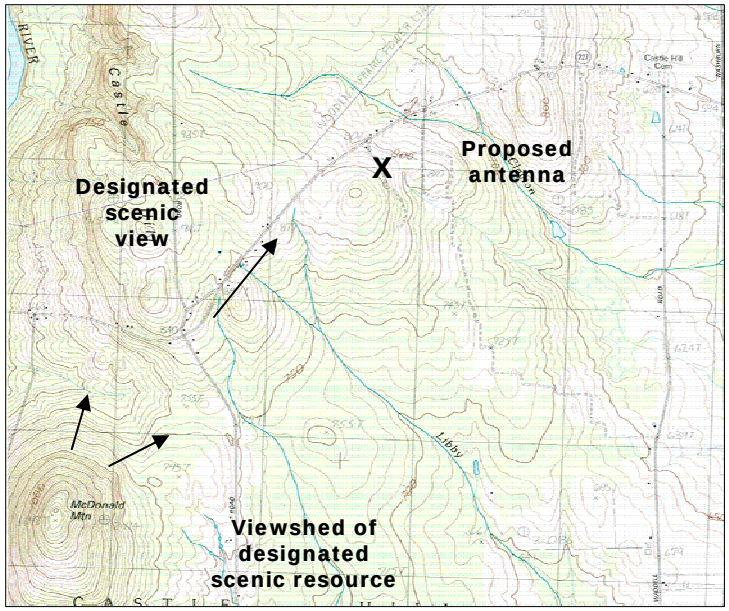
Suggested Performance Standard 2: Referral to Planning Board

If the CEO finds that the proposed activity may be visible within a designated scenic view or the viewshed of a designated scenic resource, or the CEO finds there is insufficient information to make such a determination, the proposed activity shall be referred to the Planning Board for further consideration.

Section 3: Basic Information Submitted to the Planning Board

When a proposed activity is referred by the CEO to the Planning Board, a more formal review process begins. The applicant must demonstrate that the activity will not unreasonably interfere with designated scenic views or viewsheds of designated scenic resources. The applicant must submit additional, although still basic, information on the location and scale of the proposed activity in relation to protected views and viewsheds. At this level of review, the submittals can be based on readily available maps and aerial photos such as the most recent 7.5 minute USGS map and aerial photography from the Maine Office of GIS (http://apollo.ogis.state.me.us/).





Examples of basic information submitted to the Planning Board.

If, based on the initial submission to the Planning Board, the Board determines that the proposed activity is visible within a designated scenic view or the viewshed of a designated scenic view or resource and may adversely affect the scenic view or resource, the Board may require a **visual impact assessment**, prepared by a professional trained in visual impact procedures. A visual impact assessment often includes **line-of-sight profiles**, which take into account topography between the proposed activity and the designated view or viewshed, intervening physical features and vegetation, and potential for buffering.

An elevated view may have greater potential for visual impact.

It has to go somewhere! A location adjacent to a highway and other structures may be preferable.

Suggested Performance Standard 3A

An applicant is required to demonstrate to the satisfaction of the Planning Board that the proposed activity will not unreasonably interfere with designated scenic views and viewsheds of designated scenic resources. Unless the Planning Board determines it is inapplicable, the following basic evidence must be provided to ensure that visual concerns, if any, have been fully addressed in each application.

- Location of the activity in relation to designated scenic views or designated scenic resources using the most current 7.5 minute USGS map and/or available aerial photos.
- Location and scale of the activity within the viewshed of a designated scenic view or designated scenic resource.
- Description of the existing visual quality and landscape characteristics of the scenic views, designated scenic resources, or the viewsheds of such views or resources and photos taken from **viewpoints**.
- Narrative detailing the proposed activity, its anticipated impact on designated scenic views or designated scenic resources and any existing or proposed features that may reduce such impact.
- Description of any modifications to the proposed activity that may mitigate potential impacts to the designated scenic views or designated scenic resources; such modifications may include, but are not limited to, changes in size, scale, color, materials, location and height and the addition of visual buffers or barriers.

Suggested Performance Standard 3B

If the Planning Board finds that, based on the information submitted under Section 3A, the proposed activity will not create an unreasonable adverse impact on or will not be visible within a designated scenic view or the viewshed of a designated scenic resource, no further review under this performance standard is required. If the Planning Board cannot make such a determination, a visual impact assessment as described below may be required.

Section 4: Visual Impact Assessment

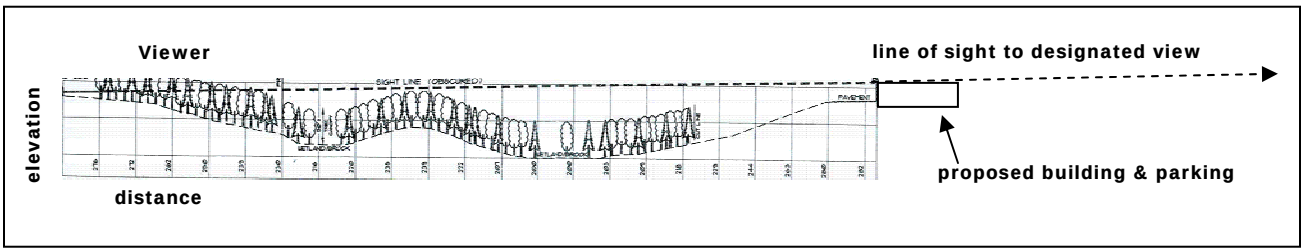
Suggested Performance Standard 4A

The Planning Board may require a visual impact assessment if a proposed activity appears to be prominently visible within, and has the potential to have an unreasonable adverse impact on a designated scenic view or the viewshed of a designated scenic resource. An applicant's visual impact assessment should visualize the proposed activity and evaluate potential adverse impacts of that activity on a designated scenic view or the view from a designated scenic resource and determine effective mitigation strategies, if appropriate. If required, a visual impact assessment must be prepared by a design professional trained in visual assessment procedures, or as otherwise directed by the Planning Board.

Examples of submittal visualizing pre- and post-project views to a designated scenic resource.

Suggested Performance Standard 4B

In all visual impact assessments, designated scenic views and designated scenic resources within the viewshed of the proposed activity must be identified and the existing surrounding landscape must be described. The assessment must be completed following standard professional practices to illustrate the proposed change to the visual environment and the effectiveness of any proposed mitigation measures. Standard professional practice for visual impact assessments includes analyzing the radius of the impact area based on the relative size and scope of the proposed activity given the specific location. Areas of the designated scenic view or designated scenic resource from which the activity will be visible, including representative and worst-case viewpoints, must be identified. Line-of-sight profiles constitute the simplest acceptable method of illustrating the potential visual impact of the proposed activity from viewpoints within the context of its viewshed. A line-of-sight profile represents the path, real or imagined, that the eye follows from a specific point to another point when viewing the landscape. See Appendix A for guidance on line-of-sight profiles. For activities with more sensitive conditions, photo simulations and computer-generated graphics may be required.



Line of site profile

Views without and with a simulated wind turbine sited on a ridge.

Suggested Performance Standard 4C

A visual impact assessment must also include narratives to describe the significance of any potential impacts, the level of use and viewer expectations, measures taken to avoid and minimize visual impacts, and steps that have been incorporated into the activity design that may mitigate any potential adverse visual impacts to designated scenic views and viewsheds of designated scenic resources.

The Planning Board will consider *landscape compatibility, scale contrast* and *spatial dominance* as it evaluates the impact of a proposed activity on designated views or views from designated scenic resources. For a fuller discussion of these elements as well as the sub elements of color, form, line and texture, see Appendix C, which presents relevant sections of BLM Manual 8431: Visual Resource Contrast Rating.

Fully visible building with contrasting color.

Building below the horizon with contrasting color.

Building below the horizon with compatible color.

Insufficient setback and ineffective vegetative buffer.

Substantial setback and effective vegetative buffer.

Building fully exposed to view.

Building buffered from view by vegetation.

Same site at a different angle showing building in relation to buffer.

Landscape compatibility is the degree of difference between the proposed activity and the existing view based on the sub elements of color, form, line and texture. Photo 1 illustrates a structure whose color is compatible with a natural setting (and thereby less visible), while photo 2 presents a structure whose color contrasts significantly with its surroundings. Note that in this instance, the issue is not incompatibility of building form or design. Both are rural buildings in a rural environment.

Photo 1

Photo 2

Scale contrast focuses on the size and scope of the proposed activity in relation to its surroundings, as illustrated by in photo 3 in which the structure appears to dwarf it surroundings. *Spatial dominance* reflects the degree to which a proposed activity dominates landform, water or sky backdrops or the landscape as a whole. Photo 4 shows an activity that dominates at least one aspect of the landscape.

Photo 3

Photo 4

While designated scenic resources and views are often thought of in terms of mountain and water views, agricultural and rural landscapes and country lanes, they may also apply to historic or traditional small town village centers and residential areas. The introduction of new or renovated buildings with incompatible styles, colors, scales, signage, materials or building features can significantly affect the appearance of neighborhoods and nearby buildings. While communities often enact historic district ordinances to regulate developments in designated historic districts, visual impact performance standards can also be an effective tool if the village area has been identified as a designated scenic resource.

Typical gas station canopy and sign are in contrast to historic buildings in a traditional New England village.

Recent construction that is incompatible in style, color, shape and mass with nearby historic building.

Source: Bunker & Savage Architect

Recent construction in keeping with traditional facades in village center.

Section 5: Evaluating Visual Impact

Suggested Performance Standard 5A

The Planning Board shall consider the following visual elements in determining the impact of a proposed activity on a designated scenic view or on views from a designated scenic resource.

1. Landscape compatibility, which is a function of the sub-elements of color, form, line and texture. Compatibility is determined by whether the proposed activity differs significantly from its existing surroundings and the context from which they are viewed such that it becomes an unreasonable adverse impact on the visual quality of a designated scenic view or views from a designated scenic resource.
2. Scale contrast, which is determined by the size and scope of the proposed activity given its specific location within the viewshed of a designated scenic view or designated scenic resource.
3. Spatial dominance, which is the degree to which an activity dominates the whole landscape composition or dominates landform, water, or sky backdrop as viewed from a designated scenic view or a designated scenic resource.

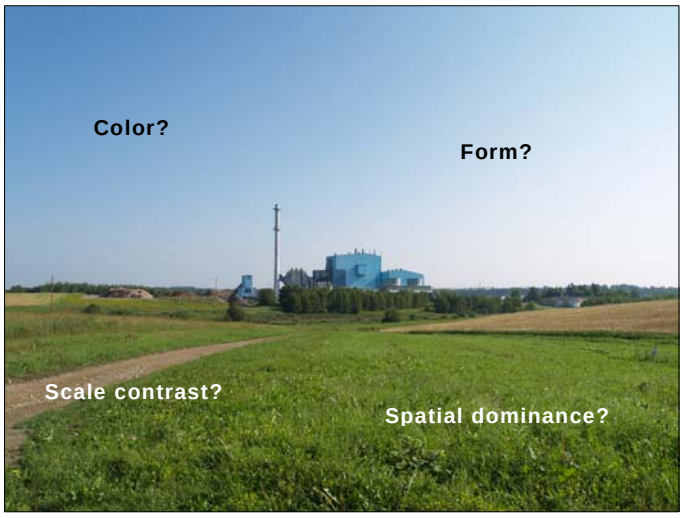
Suggested Performance Standard 5B

In making a determination within the context of this performance standard, the Planning Board will consider:

- the type, area, and intransience of an activity related to a designated scenic view or viewshed of a designated scenic resource that will be affected by the activity;
- the significance of the designated scenic view or designated scenic resource;
- the number of viewers exposed to the activity;
- the degree to which the use or viewer expectations of the designated scenic view or designated scenic resource will be altered, including alteration beyond the physical boundaries of the activity.

An application may be denied if the activity will have an unreasonable adverse impact on the visual quality of a designated scenic view or viewshed of a designated scenic resource even if the activity has no **practicable** alternative and the applicant has minimized the proposed alteration and its impacts as much as possible through mitigation.

These criteria tend to be, by their nature, qualitative, yet if the Planning Board is to use them in a regulatory framework, they should be translated into a more quantitative format. That is, the Planning Board needs a mechanism to methodically and consistently apply the criteria to real world situations. This may be accomplished by assigning scores for each criterion based on how closely a proposed activity matches a descriptive indicator.



Suggested Performance Standard 5C

The Planning Board shall evaluate the visual impact of the proposed activity using the visual elements described in section 5. The indicators of each element or sub-element shall be scored as described in Table 1. The severity of the visual impact is reflected by the Impact Severity Rating (total score) from the table.

The Impact Severity Rating from Table 1 provides a strong and verifiable indication of the degree of adverse impact a proposed activity may have on a designated view or viewshed of a designated scenic resource. The next step is to translate the impact severity rating into an equivalent level of effort required to mitigate the impact. The level of effort may range from "no mitigation required" or "minor adjustments" to "project redesign" or even "project denial". With the exception of project denial, it is not the responsibility of the Planning Board to mandate specific mitigation actions. It is up to the applicant to understand the concerns raised during the Planning Board's analysis and to propose suitable mitigation, which may include relocation of proposed activities, changes in size, scale and visual characteristics, the addition of buffers, visual screens and/or physical barriers or other actions. Table 2, Potential Visual Impact matrix, should be completed for all affected viewpoints.

Table 1* Assessing Visual Impacts				
Visual Element	**Sub-Element**	**Indicators**	**Scoring (points)**	**Visual Impact (based on Impact Severity Rating)**
Landscape Compatibility (rate each indicator)	Color	Significantly different color, hue, value chroma *(0-3 points with 0 = no impact and 3 = severe impact)*		*27-36 points - Severe Visual Impact*
	Form	Incompatible dimensional shape with landscape surroundings *(0-3 points with 0 = no impact and 3 = severe impact)*		
	Line	Incompatible edges, bands, or silhouette lines *(0-3 points with 0 = no impact and 3 = severe impact)*		
	Texture	Incompatible textural grain, density, regularity or pattern *(0-3 points with 0 = no impact and 3 = severe impact)*		*18-26 points - Strong Visual Impact*
Scale Contrast (select only one indicator)		Major scale introduction/intrusion *(12 points)*		
		One of several major scales or major objects in confined setting *(8 points)*		*9-17 points - Moderate Visual Impact*
		Significant object or scale *(4 points)*		
		Small object or scale *(0 points)*		
Spatial Dominance		Object/activity dominates or is prominent in the whole landscape composition OR is prominently situated within the landscape OR dominates landform, water, or sky backdrop *(0-12 points with 0 = no impact and 12 = severe impact)*		*0-8 points - Negligible Visual Impact*
		Impact Severity Rating (total points)		

Suggested Performance Standard 5D

Using the applicable Scenic Significance designation for the affected designated scenic view or resource from the community's inventory of scenic resources and the Impact Severity Rating from Table 1, the Planning Board shall use Table 2 to determine the level of effort required to mitigate the visual impact of the proposed activity from all affected viewpoints.

* Table was modified from "Guidance for Assessing Impacts to Existing Scenic and Aesthetic Uses under the Natural Resources Protection Act" and was used by permission of the Department of Environmental Protection.

Table 2*
Potential Visual Impact Matrix

Scenic Significance (from the community's inventory of scenic resources)	Impact Severity Rating (from Table 1)				Level of Mitigation Effort Required
	Severe 36-28	Strong 26-18	Moderate 17-9	Weak/None 8-0	
High	A	B	C	E	A: Unacceptable – High level of visual contrast in line, form, color or texture between existing high quality landscape and development proposal; view of water or other significant visual resource obstructed. May be grounds for project denial. B: Acceptable with Major Mitigation – High degree of contrast on landscape of medium significance; moderate degree of contrast on highly significant landscape. Project re-design necessary. C: Acceptable with Mitigation – Some modification to project siting or design necessary to achieve better landscape "fit". D: Acceptable with Minor Mitigation – Relatively minor adjustments to plan or siting necessary to achieve a higher level of project compatibility. E: Low/No Impact – No perceptible change to the visual landscape. No mitigation required.
Medium	B	C	D	E	
Low	C	D	D	E	
Unrated	E	E	E	E	

Building in field without buffering.

Building in field with effective vegetative buffering.

* Table was modified from "Guidance for Assessing Impacts to Existing Scenic and Aesthetic Uses under the Natural Resources Protection Act" and was used by permission of the Department of Environmental Protection.

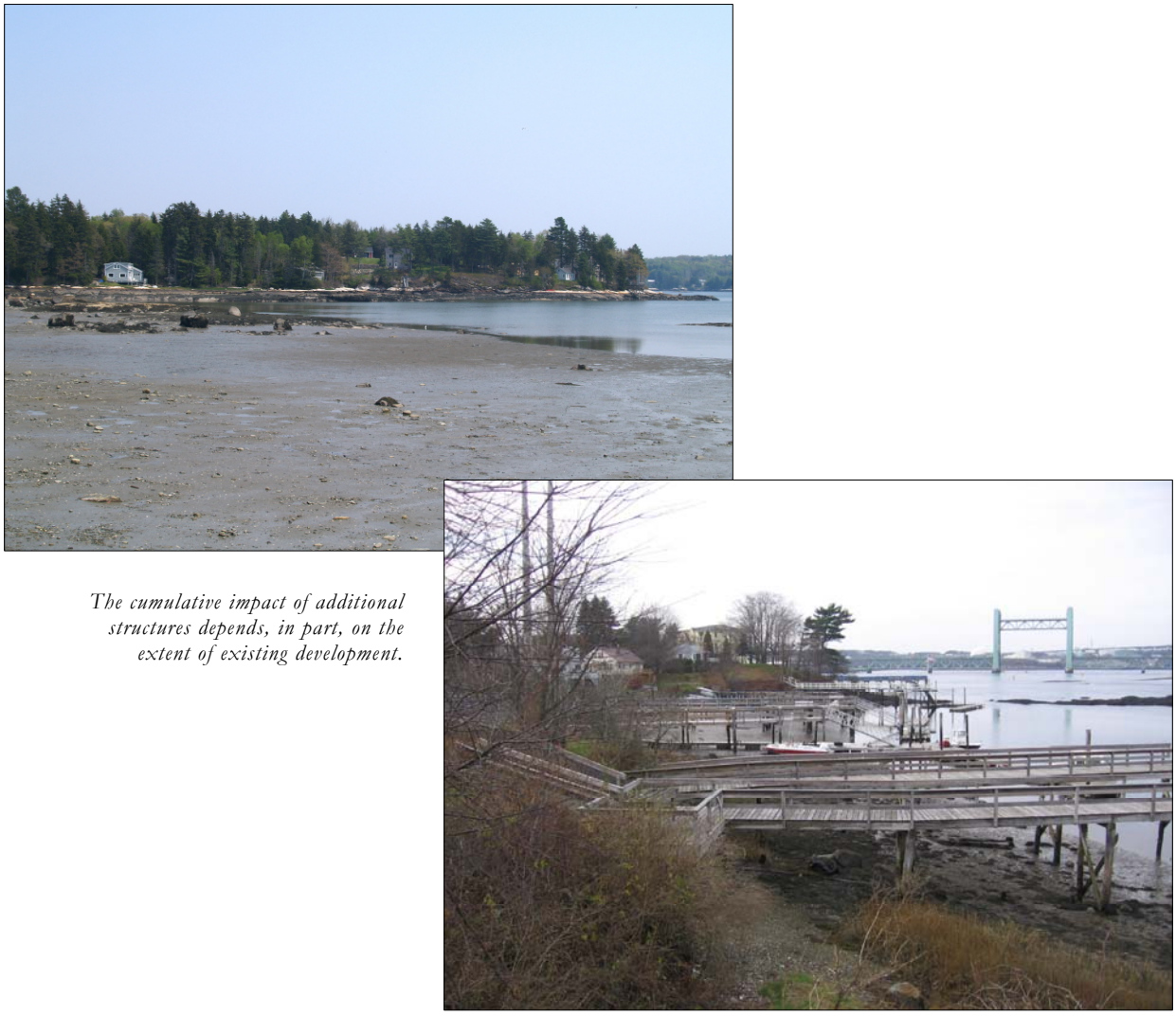
Utility corridor perpendicular to view from road.

Utility corridor at angle to view from road.

Offset driveway and vegetation reduces view of development site from road.

Development site fully exposed to view from road.

Tables 1 and 2 focus on the potential impact associated with a single project. In some situations, however, developments may already exist within a designated scenic view or the viewshed of a designated scenic resource. It is important, therefore, to consider the cumulative impact created by both existing and proposed developments, which is the focus of the tables in Section 6.



The cumulative impact of additional structures depends, in part, on the extent of existing development.

Section 6: Cumulative Visual Impact

Suggested Performance Standard 6A

The Planning Board shall evaluate the cumulative visual impact of the proposed activity using the visual elements described in Section 5. The indicators of each element of sub-element shall be scored as described in Table 3, below. The severity of the cumulative visual impact is reflected by the Cumulative Impact Severity Rating (total score) from the table.

Cumulative Impact –four docks

Table 3‡ Assessing Cumulative Visual Impacts			
Primary Factors	**Indicators**	**Scoring**	**Cumulative Visual Impact based on Total Cumulative Impact Severity**
Degree of Impact	Significance of the impact relative to the resource *(0-3 points with 0 = none and 3 = high)*		*21-28 points - Severe Cumulative Visual Impact*
Frequency of Similar Impacts	Current condition of resource (pristine, acceptable, impacted, degraded) *(0-3 points with 0 = none and 3 = high)*		
	Number of similar existing or proposed activities in the vicinity of project *(0-3 points with 0 = none and 3 = high)*		*13-20 points - Strong Cumulative Visual Impact*
Duration of Activity	Temporary vs. permanent *(0-2 points with 0 = none and 2 =permanent)*		
Proximity to Developed Areas	Compatible with growth area, comprehensive plan or growth management plan *(0-3 points with 0 = compatible with comp plan, 1 = compatible w/o comp plan, 2 = incompatible w/o comp plan, and 3 = incompatible with comp plan)*		*7-12 points - Moderate Cumulative Visual Impact*
Traditional Uses	Degree of compatibility with traditional use of area in vicinity of project *(0-3 points with 0 = none and 3 = high)*		*0-6 points - Weak or negligible Cumulative Visual Impact*
Public Health & Safety	Provides some public service, such as fire protection, emergency access, travel safety *(0-2 points with 0 = substantial and 2 = none/minimal)*		
Cumulative Impact Severity Rating (total score)			

The cumulative impact severity rating from Table 3 is used in Table 4 to determine the level of effort required to mitigate the cumulative impact of proposed and existing activities on a designated scenic view or the viewshed of a designated scenic resource. It is the applicant's responsibility to propose appropriate mitigation techniques to address such impacts.

‡ Table was modified from "Guidance for Assessing Cumulative Impacts to Protected Natural Resources under the Natural Resources Protection Act" and was used by permission of the Department of Environmental Protection.

Suggested Performance Standard 6B

Using the applicable Scenic Significance Designation for the affected designated scenic view or resource from the community's inventory of scenic resources and the Cumulative Impact Severity Rating from Table 3, the Planning Board shall use Table 4 to determine the level of effort required to mitigate the cumulative visual impact of the proposed activity.

Table 4‡
Potential Cumulative Visual Impact Matrix

Scenic Significance (from the community's inventory of scenic resources)	Cumulative Impact Severity Rating (from Table 3)				Level of Mitigation Effort Required
	Severe 28-20	Strong 19-13	Moderate 12-7	Weak/None 6-0	A: Unacceptable – High degree of contribution to cumulative impacts on a significant visual resource. May be grounds for project denial. B: Major Impact – High degree of contribution cumulative impacts on a visual resource of medium significance; moderate degree of cumulative impact on a visual resource of high significance. Project re-design necessary. C: Moderate Impact – Some modification to project siting or design, or mitigation necessary to reduce contribution to cumulative impacts. D: Minimal Impact – Relatively minor adjustments to plan or siting, or mitigation may be necessary to reduce contribution to cumulative impacts. E: Low/No Impact – No perceptible addition to cumulative impacts. No mitigation required.
High	A	B	C	E	
Medium	B	C	D	E	
Low	C	D	D	E	
Unrated	E	E	E	E	

‡ Table was modified from "Guidance for Assessing Cumulative Impacts to Protected Natural Resources under the Natural Resources Protection Act" and was used by permission of the Department of Environmental Protection.

Suggested Performance Standard 6C

If the Planning Board finds that the applicant's mitigation techniques satisfactorily address the adverse impacts created by a proposed activity on a designated scenic view or the viewshed of a designated scenic resource, they must be included in written findings of fact and approval and/or as conditions of site plan approval. Any such conditions must be clearly shown on the approved plan and such plan shall be signed by the Planning Board and recorded in the county registry of deeds. If the Planning Board cannot make this finding, the project shall not be approved even though all other applicable requirements of the ordinance are satisfied.

Chapter II. Model Visual Impact Performance Standards

Note: This performance standard is intended to be inserted into the "Performance Standards" section of a site plan review or equivalent local ordinance while the definitions are intended to be inserted into the "definition" section of the ordinance. The "designated scenic views" and "designated scenic resources" referred to in the performance standard must be officially designated by ordinance. Also, "Any activity potentially visible from a designated view or in the viewshed of a designated scenic resource" should be added to the applicability section of the ordinance.

Protection of Scenic Resources

It is the intent of these performance standards to protect designated scenic views and views from designated scenic resources from unnecessary visual degradation created by proposed activities, such as new structures, expansions of existing structures, new uses of land or changes to existing uses of land. In addition to any other applicable standards or requirements of this ordinance, any activity that will potentially be located with a designated scenic view or the viewshed of a designated scenic resource shall comply with the following provisions. No municipal approval, including a building permit, may be granted unless it is determined that a proposed activity will not unreasonably interfere with designated scenic views or views from designated scenic resources.

1. Initial Review

The Code Enforcement Officer (CEO) shall make the initial determination of whether a proposed activity may potentially be visible within a designated scenic view or the viewshed of a designated scenic resource. If the CEO determines that, due to location, terrain, vegetation and other physical features, the proposed activity will not be visible within a designated scenic view or the viewshed of a designated scenic resource, no further review under this performance standard is required. The CEO's determination shall be in writing and shall include the basis for the determination. It is the responsibility of the applicant to provide sufficient information for the CEO to make the necessary determination. If such information is not available to the CEO, additional review under section 3 will be required.

2. Referral to Planning Board

If the CEO finds that the proposed activity may be visible within a designated scenic view or the viewshed of a designated scenic resource, or the CEO finds there is insufficient information to make such a determination, the proposed activity shall be referred to the Planning Board for further consideration.

3. Basic Information Submittal to Planning Board

A) An applicant is required to demonstrate to the satisfaction of the Planning Board that the proposed activity will not unreasonably interfere with designated scenic views and viewsheds of designated scenic resources. Unless the Planning Board determines it is inapplicable, the following basic evidence must be provided to ensure that visual concerns, if any, have been fully addressed in each application.

1. Location of the activity in relation to designated scenic views or designated scenic resources using the most recent 7.5 minute USGS map and/or available aerial photos.
2. Location and scale of the activity within the viewshed of a designated scenic view or designated scenic resource.
3. Description of the existing visual quality and landscape characteristics of the scenic views, designated scenic resources, or the viewsheds of such views or resources and photos taken from viewpoints.
4. Narrative detailing the proposed activity, its anticipated impact on designated scenic views or designated scenic resources and any existing or proposed features that may reduce such impact.
5. Description of any modifications to the proposed activity that may mitigate potential impacts to the designated scenic views or designated scenic resources; such modifications may include, but are not limited to, changes in size, scale, color, materials, location and height and the addition of visual buffers or barriers.

B) If the Planning Board finds that, based on the information submitted under section 3.A, the proposed activity will not unreasonably affect or will not be visible within a designated scenic view or the viewshed of a designated scenic resource, no further review under this section is required. If the Planning Board cannot make such a determination, a visual impact assessment as described in section 4 may be required.

4. Visual Impact Assessment

A) The Planning Board may require a visual impact assessment if a proposed activity appears to be prominently visible within, and has the potential to have an unreasonable adverse impact on, a designated scenic view or the viewshed of a designated scenic resource. An applicant's visual impact assessment should visualize the proposed activity and evaluate potential adverse impacts of that activity on a designated scenic view or the view from a designated scenic resource and to determine effective mitigation strategies, if appropriate. If required, a visual impact assessment must be prepared by a design professional trained in visual assessment procedures, or as otherwise directed by the Planning Board.

B) In all visual impact assessments, designated scenic views and designated scenic resources within the viewshed of the proposed activity must be identified and the existing surrounding landscape must be described. The assessment must be completed following standard professional practices to illustrate the proposed change to the visual environment and the effectiveness of any proposed mitigation measures. The radius of the impact area to be analyzed must be based on the relative size and scope of the proposed activity given the specific location. Areas of the designated scenic view or designated scenic resource from which the activity will be visible, including representative and worst-case viewpoints, must be identified. Line-of-sight profiles constitute the simplest acceptable method of illustrating the potential visual impact of the proposed activity from viewpoints within the context of its viewshed. A line-of-sight profile represents the path, real or imagined, that the eye follows from a specific point to another point when viewing the landscape. See Appendix A for guidance on line-of-sight profiles. For activities with more sensitive conditions, photo simulations and computer-generated graphics may be required.

C) A visual impact assessment must also include narratives to describe the significance of any potential impacts, the level of use and viewer expectations, measures taken to avoid and minimize visual impacts, and steps that have been incorporated into the activity design that may mitigate any potential adverse visual impacts to designated scenic views and viewsheds of designated scenic resources.

5. Evaluating Visual Impact

A) The Planning Board shall consider the following visual elements in determining the impact of a proposed activity on a designated scenic view or on views from a designated scenic resource.

1. Landscape compatibility, which is a function of the sub-elements of color, form, line, and texture. Compatibility is determined by whether the proposed activity differs significantly from its existing surroundings and the context from which they are viewed such that it becomes an unreasonable adverse impact on the visual quality of a designated scenic view or views from a designated scenic resource.
2. Scale contrast, which is determined by the size and scope of the proposed activity given its specific location within the viewshed of a designated scenic view or designated scenic resource; and
3. Spatial dominance, which is the degree to which an activity dominates the whole landscape composition or dominates landform, water, or sky backdrop as viewed from a designated scenic view or a designated scenic resource.

B) In making a determination within the context of this performance standard, the Planning Board will consider the type, area, and intransience of an activity related to a designated scenic view or viewshed of a designated scenic resource that will be affected by the activity, the significance of the designated scenic view or designated scenic resource, the number of viewers exposed to the activity and the degree to which the use or viewer expectations of the designated scenic view or designated scenic resource will be altered, including alteration beyond the physical boundaries of the activity. An application may be denied if the activity will have an unreasonable adverse impact on the visual quality of a designated scenic view or viewshed of a designated scenic resource even if the activity has no practicable alternative and the applicant has minimized the proposed alteration and its impacts as much as possible through mitigation.

C) The Planning Board shall evaluate the visual impact of the proposed activity using the visual elements described in Section 5. The indicators of each element or sub-element shall be scored as described in Table 1, below. The severity of the visual impact is reflected by the Impact Severity Rating (total score) from the table.

D) Using the applicable Scenic Significance Designation for the affected designated scenic view or resource from the community's inventory of scenic resources and the Impact Severity Rating from Table 1, the Planning Board shall use Table 2 to determine the level of effort required to mitigate the visual impact of the proposed activity from all affected viewpoints.

Table 1*
Assessing Visual Impacts

Visual Element	Sub-Element	Indicators	Scoring (points)	Visual Impact (based on Impact Severity Rating)
Landscape Compatibility (rate each indicator)	Color	Significantly different color, hue, value chroma *(0-3 points with 0 = no impact and 3 = severe impact)*		*27-36 points - Severe Visual Impact* *18-26 points - Strong Visual Impact* *9-17 points - Moderate Visual Impact* *0-8 points - Negligible Visual Impact*
	Form	Incompatible dimensional shape with landscape surroundings *(0-3 points with 0 = no impact and 3 = severe impact)*		
	Line	Incompatible edges, bands, or silhouette lines *(0-3 points with 0 = no impact and 3 = severe impact)*		
	Texture	Incompatible textural grain, density, regularity or pattern *(0-3 points with 0 = no impact and 3 = severe impact)*		
Scale Contrast (select only one indicator)		Major scale introduction/intrusion *(12 points)*		
		One of several major scales or major objects in confined setting *(8 points)*		
		Significant object or scale *(4 points)*		
		Small object or scale *(0 points)*		
Spatial Dominance		Object/activity dominates or is prominent in the whole landscape composition OR is prominently situated within the landscape OR dominates landform, water, or sky backdrop *(0-12 points with 0 = no impact and 12 = severe impact)*		
		Impact Severity Rating (total points)		

Table 2*
Potential Visual Impact Matrix

Scenic Significance (from the community's inventory of scenic resources)	Impact Severity Rating (from Table 1)				Level of Mitigation Effort Required
	Severe 36-28	Strong 26-18	Moderate 17-9	Weak/None 8-0	
High	A	B	C	E	A: Unacceptable – High level of visual contrast in line, form, color or texture between existing high quality landscape and development proposal; view of water or other significant visual resource obstructed. May be grounds for project denial. B: Acceptable with Major Mitigation – High degree of contrast on landscape of medium significance; moderate degree of contrast on highly significant landscape. Project re-design necessary. C: Acceptable with Mitigation – Some modification to project siting or design necessary to achieve better landscape "fit". D: Acceptable with Minor Mitigation – Relatively minor adjustments to plan or siting necessary to achieve a higher level of project compatibility. E: Low/No Impact – No perceptible change to the visual landscape. No mitigation required.
Medium	B	C	D	E	
Low	C	D	D	E	
Unrated	E	E	E	E	

* Table was modified from "Guidance for Assessing Impacts to Existing Scenic and Aesthetic Uses under the Natural Resources Protection Act" and was used by permission of the Department of Environmental Protection.

6. Cumulative Visual Impact

A) The Planning Board shall evaluate the cumulative visual impact of the proposed activity using the visual elements described in Section 5. The indicators of each element or sub-element shall be scored as described in Table 3, below. The severity of the cumulative visual impact is reflected by the Cumulative Impact Severity Rating (total score) from the table.

B) Using the applicable Scenic Significance Designation for the affected designated scenic view or resource from the community's inventory of scenic resources and the Cumulative Impact Severity Rating from Table 3, the Planning Board shall use Table 4 to determine the level of effort required to mitigate the cumulative visual.

C) If the Planning Board finds that the applicant's mitigation techniques satisfactorily address the adverse impacts created by a proposed activity on a designated scenic view or the viewshed of a designated scenic resource, they must be included in written findings of fact and approval and/or as conditions of site plan approval. Any such conditions must be clearly shown on the approved plan and such plan shall be signed by the Planning Board and recorded in the county registry of deeds. If the Planning Board cannot make this finding, the project shall not be approved even though all other applicable requirements of the ordinance are satisfied.

Table 3‡ **Assessing Cumulative Visual Impacts**			
Primary Factors	**Indicators**	**Scoring**	**Cumulative Visual Impact based on Total Cumulative Impact Severity**
Degree of Impact	Significance of the impact relative to the resource *(0-3 points with 0 = none and 3 = high)*		*21-28 points - Severe Cumulative Visual Impact*
Frequency of Similar Impacts	Current condition of resource (pristine, acceptable, impacted, degraded) *(0-3 points with 0 = none and 3 = high)*		
	Number of similar existing or proposed activities in the vicinity of project *(0-3 points with 0 = none and 3 = high)*		*13-20 points - Strong Cumulative Visual Impact*
Duration of Activity	Temporary vs. permanent *(0-2 points with 0 = none and 2 =permanent)*		
Proximity to Developed Areas	Compatible with growth area, comprehensive plan or growth management plan *(0-3 points with 0 = compatible with comp plan, 1 = compatible w/o comp plan, 2 = incompatible w/o comp plan, and 3 = incompatible with comp plan)*		*7-12 points - Moderate Cumulative Visual Impact*
Traditional Uses	Degree of compatibility with traditional use of area in vicinity of project *(0-3 points with 0 = none and 3 = high)*		*0-6 points - Weak or negligible Cumulative Visual Impact*
Public Health & Safety	Provides some public service, such as fire protection, emergency access, travel safety *(0-2 points with 0 = substantial and 2 = none/minimal)*		
Cumulative Impact Severity Rating (total score)			

‡ Table was modified from "Guidance for Assessing Cumulative Impacts to Protected Natural Resources under the Natural Resources Protection Act" and was used by permission of the Department of Environmental Protection.

Table 4‡ Potential Cumulative Visual Impact Matrix					
Scenic Significance (from the community's inventory of scenic resources)	**Cumulative Impact Severity Rating (from Table 3)**				**Level of Mitigation Effort Required**
	Severe 28-20	**Strong 19-13**	**Moderate 12-7**	**Weak/None 6-0**	A: Unacceptable – High degree of contribution to cumulative impacts on a significant visual resource. May be grounds for project denial. B: Major Impact – High degree of contribution cumulative impacts on a visual resource of medium significance; moderate degree of cumulative impact on a visual resource of high significance. Project re-design necessary. C: Moderate Impact – Some modification to project siting or design, or mitigation necessary to reduce contribution to cumulative impacts. D: Minimal Impact – Relatively minor adjustments to plan or siting, or mitigation may be necessary to reduce contribution to cumulative impacts. E: Low/No Impact – No perceptible addition to cumulative impacts. No mitigation required.
High	A	B	C	E	
Medium	B	C	D	E	
Low	C	D	D	E	
Unrated	E	E	E	E	

7. Definitions

(Note: If definitions are incorporated into the definition section of the existing ordinance, delete the following introductory sentence and ensure that new definitions are compatible with how the defined terms are used in the existing ordinance.)

As used in Section ___, Visual Impact Performance Standard, the following terms have the following meanings. For other terms used in Section ___, see Section ___, Definitions.

Designated scenic resources – A physical area composed of land, water, biotic and/or cultural elements which has inherent scenic qualities and/or aesthetic values and is designated for protection by the legislative body.

Designated scenic view – A wide angle or panoramic field of sight of natural and/or manmade structures and activities that is designated for protection by the legislative body. A scenic view may be from a stationary viewpoint or be seen as one travels along a roadway, waterway, or path. A view may be to a far away object, such as a mountain, or a nearby object.

‡ Table was modified from "Guidance for Assessing Cumulative Impacts to Protected Natural Resources under the Natural Resources Protection Act" and was used by permission of the Department of Environmental Protection.

Existing uses – The current appearance and use of the landscape, considering previous human alterations.

Landscape – An area characterized by its geology, landform, biota, and human influences throughout that area.

Line of sight profile – A graphic representation of the depressions and elevations one would encounter walking along a straight path between two selected locations. A straight line depicting the path of light received by the eye of an imaginary viewer standing on the path and looking towards a predetermined spot along that path constitutes a line-of-sight.

Mitigation – Any action taken or not taken to avoid, minimize, rectify, reduce, or eliminate actual or potential adverse visual impact.

Practicable – Available and feasible considering cost, existing technology, and logistics based on the overall purpose of the activity.

Unreasonable adverse impact – The proposed project would produce an end result which is: a) excessively out-of-character with the designated scenic resources affected, including existing buildings, structures and features within the designated scenic resources, and b) would significantly diminish the scenic value of the designated scenic resource.

Viewpoint – A place or position from which a designated scenic resource is observed.

Viewshed – The geographic area as viewed from a scenic resource, which includes the proposed activity. The viewshed may include the total visible activity area from a single observer position or the total visible activity area from multiple observers' positions.

Visual impact assessment – A systematic analysis of the possible impacts on the environment resulting from a proposed development and the investigation of the means available to mitigate the effects of such proposals prior to implementation.

Glossary

Designated scenic resources – A physical area composed of land, water, biotic and/or cultural elements which has inherent scenic qualities and/or aesthetic values and is designated for protection by the legislative body.

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APPENDIX A

Line-of-Sight Profiles

Source:
New York State Department of Environmental Conservation – *Assessing and Mitigating Visual Impacts*

SCREENS

USE THE DIAGRAM BELOW TO ANSWER THESE SAMPLE QUESTIONS

Q: At what height should a screen be constructed to completely conceal a 23 foot object from an observer standing 80 feet from the object?
Constraint: Screen must be located 10 feet inside property line.

A: About 17 feet.

Q: What is the maximum height of an object to be concealed behind a 10 foot screen that is located 80 feet from an observer?
Constraint: The observer is standing about 18½ feet behind the screen.

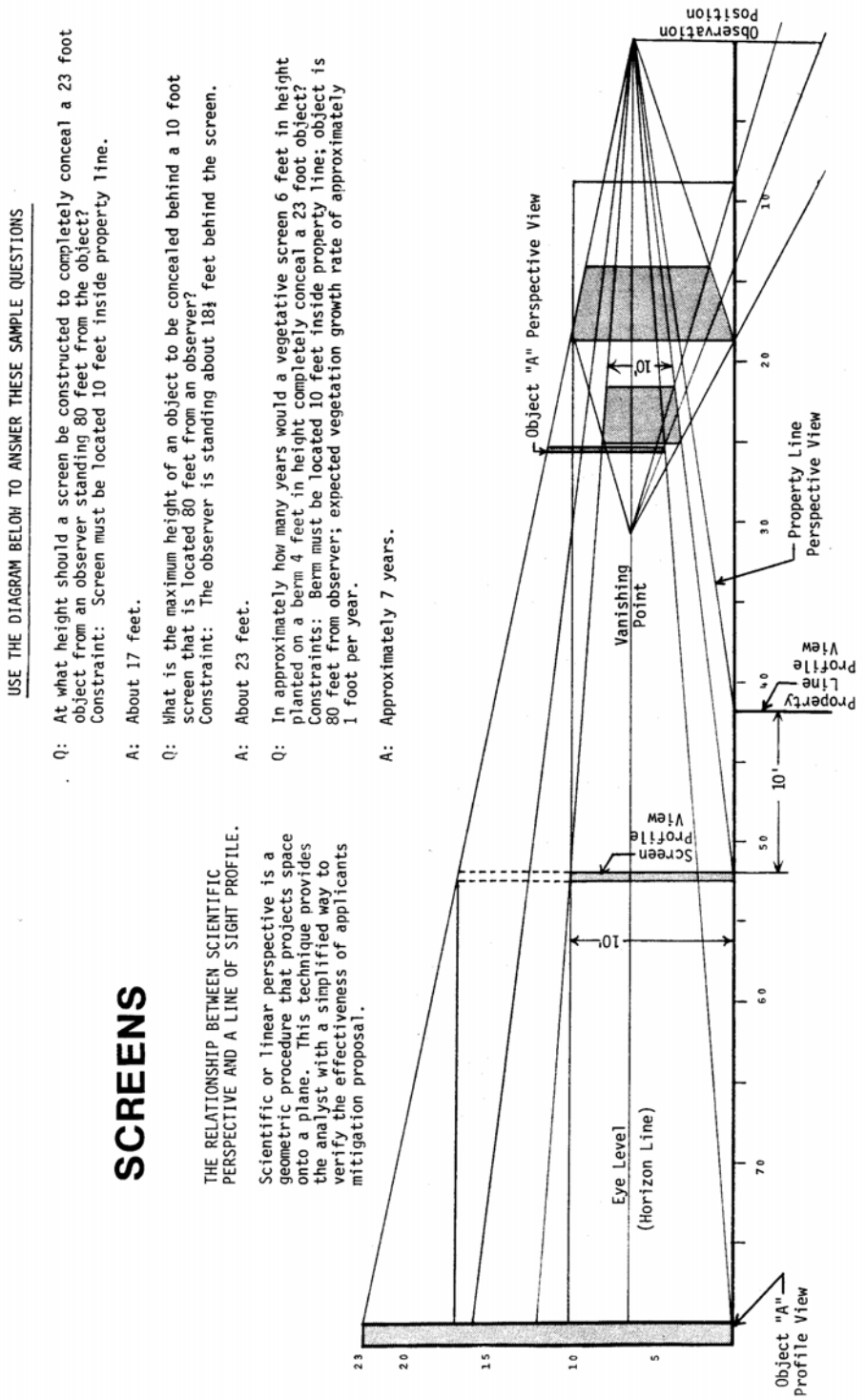
A: About 23 feet.

Q: In approximately how many years would a vegetative screen 6 feet in height planted on a berm 4 feet in height completely conceal a 23 foot object?
Constraints: Berm must be located 10 feet inside property line; object is 80 feet from observer; expected vegetation growth rate of approximately 1 foot per year.

A: Approximately 7 years.

THE RELATIONSHIP BETWEEN SCIENTIFIC PERSPECTIVE AND A LINE OF SIGHT PROFILE.

Scientific or linear perspective is a geometric procedure that projects space onto a plane. This technique provides the analyst with a simplified way to verify the effectiveness of applicants mitigation proposal.

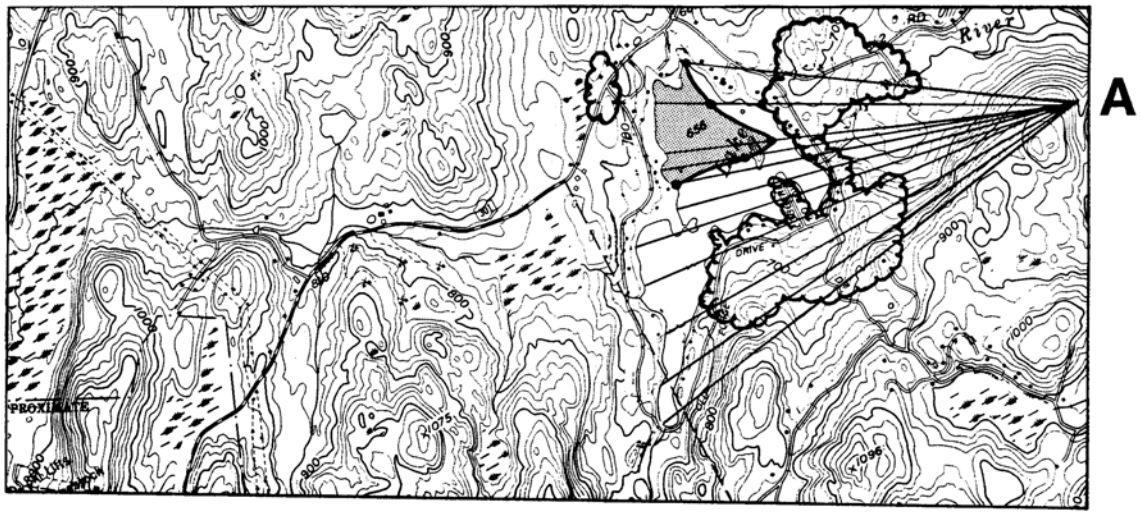


VIEWSHEDS

For illustrative purposes only, a "partial" viewshed has been constructed below. A partial viewshed is distinguished from a full viewshed in that it only shows a selected area from which an object may be seen. A full viewshed shows all such areas.

The shaded area in the northwest corner of the lake is the only area within the lake that a hypothetical object 100 feet in height and situated at A (where the profile radii converge) may be seen.

The defined viewing area has been constructed by connecting each point along each profile where a viewer just begins to see the hypothetical object. To add realism to the viewshed, 40' vegetation has been factored into the lines of sight. The vegetation alters the viewing angle and hence the initial viewpoint indicated by the large black dots at the intersection of the shaded area with each profile radii.



LEGEND

VIEWSHED
(Area within lake from which a hypothetical 100 foot object located at "A" may be seen)

N

SCALE 1" = 2,000'

PROFILES

To construct a profile, first position the graph paper parallel and contiguous to the horizontal alignment of the desired profile (indicated by line A-B). Proceed by extending vertical lines (indicated by dashed lines) to the correct height according to any selected convenient vertical scale (in this case 1" = 100'). This must be done from each spot where the horizontal alignment crosses a contour line. It is the elevation of the intersected contour that determines the height of each vertical line. Then, simply connect the top of each vertical line to form the profile (indicated by line C-D). The profile C-D depicts the depressions and elevations one would encounter walking a straight path from Point A to B on the plan map. To add realism add vegetation at the proper locations at the proper height (in this case 40').

Sample Questions and Answers

According to the profile:

Q. Can an observer at location "Z" see the east shore of the lake?

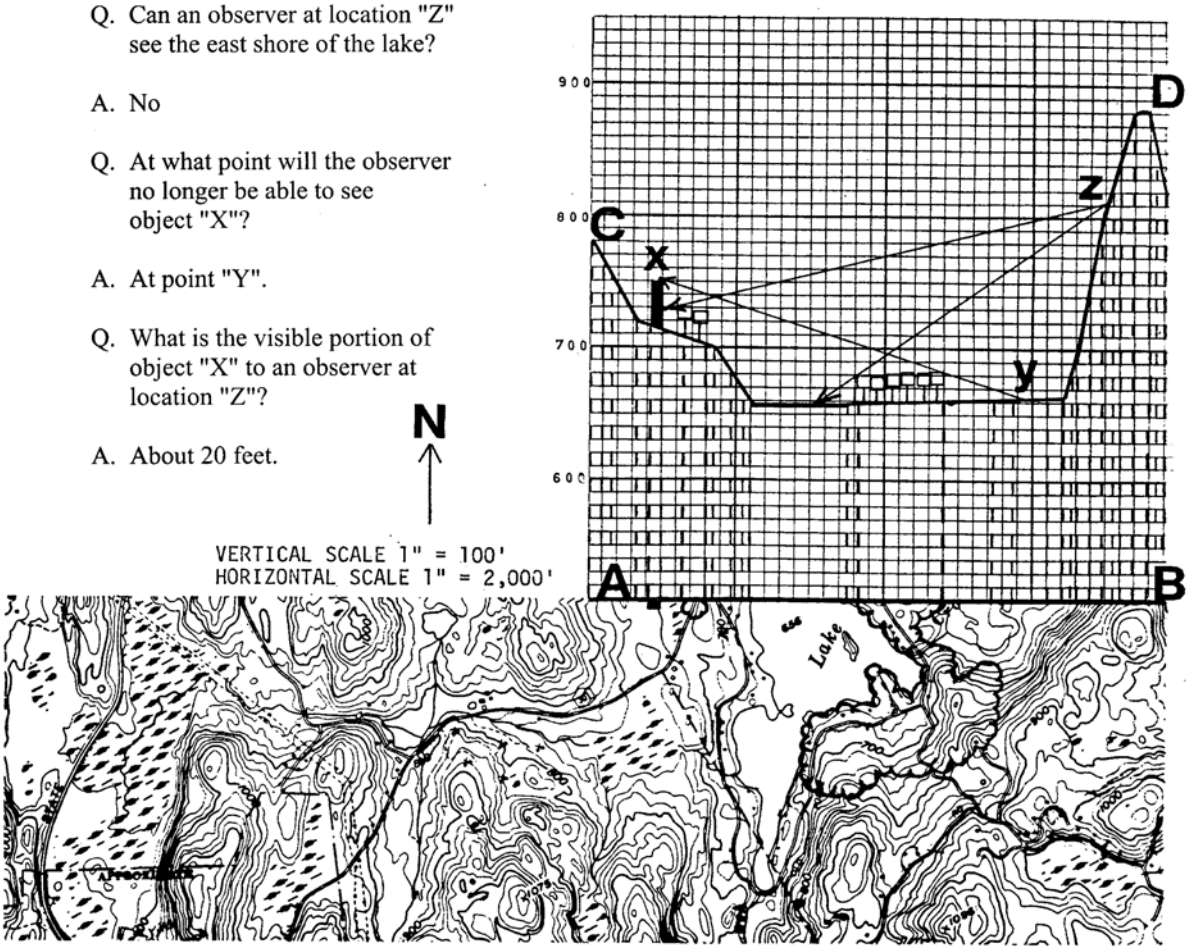
A. No

Q. At what point will the observer no longer be able to see object "X"?

A. At point "Y".

Q. What is the visible portion of object "X" to an observer at location "Z"?

A. About 20 feet.



APPENDIX B

Explanation of Scenic Quality Rating Criteria and Scenic Quality Inventory and Evaluation Chart

from

U.S. Department of the Interior
Bureau of Land Management
Manual 8410
Visual Resource Inventory

1. Scenic Quality - Explanation of Rating Criteria

Landform
Topography becomes more interesting as it gets steeper or more massive, or more severely or universally sculpted. Outstanding landforms may be monumental, as the Grand Canyon, the Sawtooth Mountain Range in Idaho, the Wrangell Mountain Range in Alaska, or they may be exceedingly artistic and subtle as certain badlands, pinnacles, arches, and other extraordinary formations.
Vegetation
Give primary consideration to the variety of patterns, forms, and textures created by plant life. Consider short-lived displays when they are known to be recurring or spectacular. Consider also smaller scale vegetational features which add striking and intriguing detail elements to the landscape (e.g., gnarled or windbeaten trees, and joshua trees).
Water
That ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score.
Color
Consider the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.) as they appear during seasons or periods of high use. Key factors to use when rating "color" are variety, contrast, and harmony.
Adjacent Scenery
Degree to which scenery outside the scenery unit being rated enhances the overall impression of the scenery within the rating unit. The distance which adjacent scenery will influence scenery within the rating unit will normally range from 0-5 miles, depending upon the characteristics of the topography, the vegetative cover, and other such factors. This factor is generally applied to units which would normally rate very low in score, but he influence of the adjacent unit would enhance the visual quality and raise the score.
Scarcity
This factor provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within one physiographic region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery - the scarcity factor can be used to recognize this type of area and give it the added emphasis it needs.
Cultural Modifications
Cultural modifications in the landform/water, vegetation, and addition of structures should be considered and may detract from the scenery in the form of a negative intrusion or complement or improve the scenic quality of a unit. Rate accordingly.

2. Scenic Quality Inventory and Evaluation Chart

Key Factors	Rating Criteria & Score		
Landform	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers. **5**	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional. **3**	Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features. **1**
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns. **5**	Some variety of vegetation, but only one or two major types. **3**	Little or no variety or contrast in vegetation. **1**
Water	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape. **5**	Flowing, or still, but not dominant in the landscape. **3**	Absent, or present, but not noticeable. **0**
Color	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water or snow fields. **5**	Some intensity or variety in colors and contrast of the soil, rock and vege-tation, but not a dominant scenic element. **3**	Subtle color variations, contrast, or interest; generally mute tones. **1**
Influence of Adjacent Scenery	Adjacent scenery greatly enhances visual quality. **5**	Adjacent scenery moderately enhances overall visual quality. **3**	Adjacent scenery has little or no influence on overall visual quality. **0**
Scarcity	One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. ***5+**	Distinctive, though somewhat similar to others within the region. **3**	Interesting within its setting, but fairly common within the region. **1**
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony. **2**	Modifications add little or no visual variety to the area, and introduce no discordant elements. **0**	Modifications add variety but are very discordant and promote strong disharmony. **-4**

**A rating of greater than 5 can be given but must e supported by written justification.*

Instructions

Purpose: To rate the visual quality of the scenic resource on all BLM managed lands.

How to Identify Scenic Value: All Bureau lands have scenic value.

How to Determine Minimum Suitability: all BLM lands are rated for scenic values. Also rate adjacent or intermingling non-BLM lands within the planning unit.

When to Evaluate Scenic Quality: Rate for scenery under the most critical conditions (i.e., highest user period or season of use, sidelight, proper atmospheric conditions, etc.).

How to Delineate Rating Areas: Consider the following factors when delineating rating areas.

- 1 - Like physiographic characteristics (i.e., land form, vegetation, etc.)
- 2 - Similar visual patterns, texture, color, variety, etc.
- 3 - Areas which have a similar impact from cultural modifications (i.e., roads, historical and other structures, mining operations, or other surface disturbances).

Scenic Quality
A = 19 or more
B = 12-18
C = 11 or less

Note: Values for each rating criteria are maximum and minimum scores only. It is also possible to assign scores within these ranges.

APPENDIX C

Descriptions of Line, Form, Color, Texture, Scale and Space

from

U.S. Department of the Interior
Bureau of Land Management
Manual 8431
Visual Resource Contrast Rating

Line

Line is the path, real or imagined, that the eye follows when perceiving abrupt differences in form, color, or texture or when objects are aligned in a one-dimensional sequence. Usually evident as the edge of shapes or masses in the landscape.

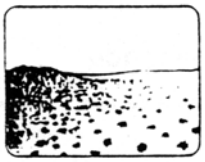
Edge line is the boundary along which two contrasting areas are related and joined together – the outline of a two-dimensional shape on the land surface. Edge lines include:

Butt edge – the simple, sharp edge between two contrasting areas.

Digitate edge – the complex indented edge between two interlocking and contrasting areas.

Transitional edge – the presence of one or more bands, connecting two contrasting areas, forming a transition stage between the two.

Diffuse edge – the soft edge formed by a gradation between two contrasting areas.



Band line is the contrasting linear form with two roughly parallel edges dividing an area in two.

Silhouette line is the outline of a mass seen against a backdrop. The skyline is the silhouette line of the land against the sky.

Line sub-elements:

Boldness – the visual strength of a line. Smooth, long and sweeping lines are stronger than lines formed by the overlapping of numerous forms, e.g., treetops; edges between strongly contrasting colors, e.g., skylines are bolder than those between similar colors.

Complexity – the degree of simplicity or intricacy of a line, determined by the variety of directions it follows: skylines in ruffed terrain are more complex than on flat plains.

Orientation – the overall relationship of the line to the (horizontal) axis or the landscape or to compass bearings.

Dominance – bold vertical lines which interrupt the skyline and tend to dominate weak horizontal lines.

Variable effects:

Distance – the strength of a line can decrease with distance due to atmospheric haze.

Atmospheric conditions – clouds, fog, haze, and snow can obliterate skylines.

Lighting – frontlighting flattens form and reduces line strength. Often only the skyline remains evident (e.g., mountain ranges). Sidelighting accentuates the silhouette-lines of separate forms. Backlighting blends together forms of equal distance into one outline. In mountain ranges, the ridgelines delineate overlapping flat silhouettes.

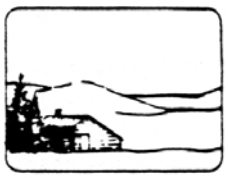
Vocabulary:

Bold/weak	Concave/convex
Complex/simple	Angular/subangular
Regular/irregular	Converging/diverging
Soft/hard	Jagged/rugged/smooth
Straight/curving	Parallel/perpendicular
Broken/continuous	Undulating/flowing
Diagonal/horizontal/vertical	Geometric/circular/semicircular

Form

Form is the mass or shape of an object or objects which appear unified.

2-Dimension Shape is the presence of an area or areas which contrast in color and/or texture from adjacent areas creating a 2-dimensional shape in the landscape.



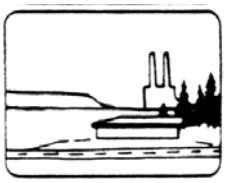
3-Dimensional Mass is the volume of a landform, natural object, or manmade structure in the landscape.

Form sub-elements:

Geometry – the extent to which a form approaches a standard geometrical figure of two or three dimensions, e.g., square, circle, triangle, cube, sphere, cone, etc.

Complexity – the degree of simplicity or intricacy of a form. Simpler forms tend to be regular, and complex forms tend to be irregular.

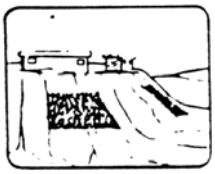
Orientation – the relationship of the form to the horizontal axis of the landscape (e.g., vertical, horizontal, diagonal, nondirectional), or to the points of the compass (e.g., north-south, ENE WSW).



Dominance – forms that are bold solid or vertical tend to be dominant in the landscape.

Variable effects:

Viewing Angle – the visual proportions of forms change with the direction and angle of viewing, due to perspective effects. Two-dimensional forms become foreshortened with lower observer positions and oblique viewing angles. Three-dimensional forms appear to diminish towards the horizon, especially with oblique viewing angles.



Lighting – frontlighting and backlighting tend to flatten three-dimensional forms. Backlighting may emphasize two-dimensional silhouettes. Sidelighting enhances three-dimensional effect.

Movement – the eye is attracted to movement in the landscape, e.g., such changing forms as waterfalls, stream from cooling towers, or smoke plumes.

Vocabulary:

Bold/definite/indistinct
Prominent
Flat/rolling/rugged
Rounded/angular
Rough/smooth
Jagged/domed/flattened
Steep/moderate/gentle
Solid/transparent
Simple/complex
Amorphous/geometric
Regular/irregular
Narrow/wide
Long/short/tall
High/low

Diverse/numerous/few
Large/small
Convex/concave
Circular/oval
Square/rectangular/rhomboid
Triangular/trapezoid
Linear/parallel/curving
Conical/cylindrical/cubic
Pyramidal/spherical
Contrasting/compatible
Vertical/horizontal/diagonal
Nondirectional
Symmetrical/asymmetrical
Strip/block/patch

Color

Color is the property of reflecting light of a particular intensity and wavelength (or mixture of wavelengths) to which the eye is sensitive. It is the major visual property of surfaces.

Sub-elements:

Hue – the aspect of color which we know by particular names, e.g., red, blue, orange, and which forms the visible spectrum. A given hue or color tint is caused by a particular wavelength.

Value – the degree of lightness or darkness, caused by the intensity of light being reflected, ranging from black to white.

Chroma – the degree of color saturation or brilliance, determined by the mixture of light rays. It is the degree of grayness in a color, ranging from pure (high chroma) to dull (low chroma).

Dominance – with other things equal, light, warm, bright colors in a scene will "advance" and tend to dominate dark, cool, dull colors which "retreat." Dark next to light tends to attrack the eye and becomes a visual focal point.

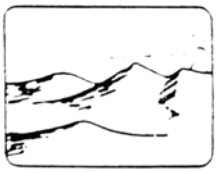
Variable effects:

Distance – atmospheric perspective, due to scattering of light by dust particles, makes colors become paler, lower in chroma, and bluer as viewing distance increases. High value colors tend to remain most recognizable over great distances.

Atmospheric Conditions – haze, fog, dust, rain, etc., may cause atmospheric perspective to become extreme, even over short viewing distances. Compared with sunshine, clouds reduce value and chroma.

Lighting Direction – objects which are frontlighted (i.e., illuminated from the front, behind the observer) appear paler and brighter than those which are backlit (i.e., illuminated from behind).

Time of Day – illuminated surfaces tend to become paler during midday sun and to become darker and redder early and late.



Vocabulary:

- Hues – red, yellow, brown, olive gray, reddish brown, etc. (se Munsell color books for precise terms)
- Primary colors – red, blue, yellow
- Secondary colors – green, orange, violet
- Tertiary colors – mixtures of secondary colors

- Value – dark to light
- Chroma – brilliant, pure, saturated, dull, grayish
- Color temperature – warm to cold, temperature is caused by hue (red, yellow, brown, and orange are considered warm and sunny, blues and greens are cool and shady)
- Vivid color – usually primary or secondary colors, with high chroma
- Subtle color – colors or mixtures which are delicate, usually tertiary or low chroma colors
- Luminous color – emitting its own light
- Glare – reflection of high intensity light (very high value)
- Pastel color – delicate "soft" color of high value but low chroma
- Monotone – the sameness or uniformity color
- Color harmony – the assortment of combinations of colors which readily and pleasantly blend with each other

Texture

Texture is the aggregation of small forms or color mixtures into a continuous surface pattern; the aggregated parts are enough that they do not appear as discrete objects in the composition of the scene.

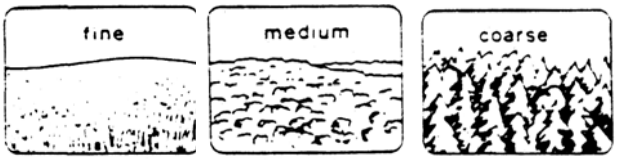
Texture types:

Color Mixture (motting) – intrinsic surface color contrasts of very small scale in relation to the perceived may be due to hue, chroma, or value, alone or in conjunction.

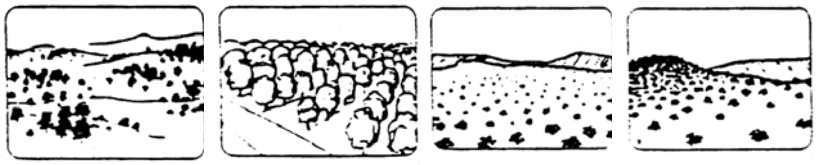
Light and Shade – the color contrast particularly in value, created by differences in lighting on a varied surface or repeated forms. It consists of the repetition of a lit side, shaded side, and the shadow cast.

Sub-elements:

Grain – the relative dimensions of the surface variations, ranging from large (coarse texture, e.g., coniferous forest) to small (fine texture, e.g., grassland).



Density – the spacing of surface variations creating the texture.



Regularity – the degree of uniform recurrence and symmetrical arrangement of the surface variation. Based on density distribution (uniform vs. variable) and spatial arrangement (ordered vs. random).

Internal Contrast – the degree of contrast in colors or values creating the texture.

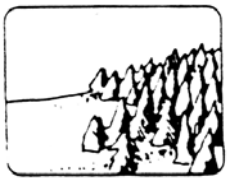
Dominance – coarse and contrasty textures tend to dominate fine-grained textures of low internal contrast.

Variable effects:

Distance – internal contrast and the apparent grain of the texture is lessened with distance – coarse textures of coniferous forest may remain visible at up to 8-10 miles, while fine textures of grassland may disappear within ¼ mile of the observer.

Atmospheric Conditions – haze, cloud, dust, etc., reduce the distance at which textures disappear and lose internal contrast.

Illumination – light and shade textures are most obvious in sidelighting and when light intensity is strong, casting distinct dark shadows. Strong sidelighting increases distance-range within which textures remain visible.



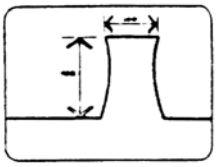
Suggested vocabulary:

Coarse/medium/fine	Glossy/matte
Smooth/rough	Striated
Uniform/patchy/gradational	Scattered
Directional/nondirectional	Dotted
Discontinuous/continuous	Clumped
Random/ordered	Striped
Contrasty/subtle	Stippled
Dense/sparse	Granular

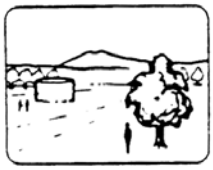
Scale

Scale is the proportionate size relationship between an object and the surroundings in which it is placed.

Absolute scale is the absolute size of an object obtained by relating the size of the object to a definitely designated standard (i.e., measurements).



Relative scale is the relative size of objects, the apparent size relationship between landscape components and their surroundings.



Sub-elements:

Proportion of landscape setting (scale dominance) – the scale of an object relative to the visible expanse of the landscape which forms its setting.

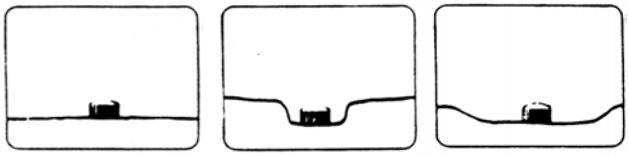
Scale contrast – the scale of an object relative to other distance objects or areas in the landscape.

Proportion of field-of-view – the scale of an object relative to the total field-of-view accepted by the human eye or camera.

Variable effects:

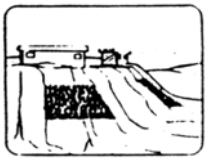
Distance – the apparent size of an object decreases with distance from the observer.

Spatial Enclosure – the size of the enclosing space inversely affects an object's relative scale – small spaces make objects appear larger.



Viewing Angle – the apparent scale of an object in the landscape is affected by the observer's angle of view in two ways:

(1) perspective foreshortening reduces the apparent size of surfaces of areas or objects, when seen obliquely or at low viewing angles.
(2) by increasing an object's elevation in relation to the observer's position, the object's relative scale tends to increase.



Atmospheric Conditions – increased haziness may increase the apparent scale of the landscape's space by obscuring its boundaries.

Space

Space is the proportionate size relationship between an object and the surroundings in which it is placed.

Sub-elements:

Landscape Composition – the arrangement of objects and voids in the landscape can be categorized by their spatial composition (note - some compositions, especially those which are distinctly focal, enclosed, or feature-oriented, are more vulnerable to modifications than others, depending upon how strongly the spatial configuration draws the eye to certain locations).

- Panoramic - a broad horizontal composition, with no apparent limits to the view. Includes plains, expanses of water, and distant mountain ranges. Sky and foreground elements may occupy much of the scene.

- Enclosed - the space is bounded by an enclosing facade of cliffs, slopes, or forest edge, creating "wall" and "floor" elements.

- Feature - a composition dominated by a distance object or cluster of objects such as a waterfall, prominent landform, or tree.

- Focal - converging lines in the landscape or progressions of aligned objects lead the eye to a focal area in the scene.

- Canopied - the scene within or at the edge of a forest, where branches and foliage above eyelevel create a canopy or "ceiling."

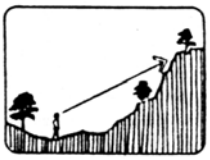
Spatial Position – the elevation and location of objects in the landscape relative to topography affect their prominence: high and exposed positions are more prominent than low obscured positions.

Backdrop – the backdrop against which an object is seen affects its visual contrast. Modifications seen against the sky or water are usually more prominent than against a land backdrop.

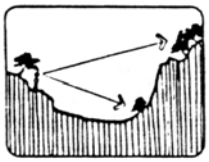
Variable effects:

Observer Position – the position of the observer relative to the landscape may be described as (note - a change in position can affect the observer's perceptions of degree of enclosure on an object's degree of spatial dominance. Inferior positions may increase both apparent degree of enclosure and spatial dominance):

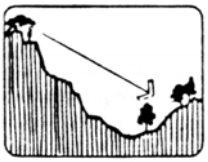
- Inferior



- Normal



- Superior



Distance – the observer's proximity to elements will affect perception of their spatial importance. Longer viewing distances tend to reduce the impression of spacial enclosure and dominance.