

Highwood Generating Station Landscape Plan March 2007



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CASCADE COUNTY LANDSCAPE REQUIREMENTS

Street Frontage

Section 7.10.1 of the Cascade County Zoning Ordinance requires that the area along a public street right-of-way be landscaped with one or a combination of two or more of the following four options.

- Option 1: 15' minimum buffer yard width
1 tree per 80 linear feet of frontage
- Option 2: 10' minimum buffer yard width
2 trees per 80 linear feet of frontage
- Option 3: Landscaped berm with 2' minimum average height
1' rise:4' run maximum slope
No minimum or maximum berm width
1 tree per 80 linear feet of frontage
- Option 4: 5' minimum buffer yard
1 tree per 40 linear feet of frontage
30" high wall or 3' hedge adjacent to any parking area

Perimeter Landscaping

Around the perimeter of the site, exclusive of any public street right-of-ways, required landscaping depends on adjacent land use. The land adjacent to the Highwood Generating Station (HGS) is zoned for agricultural use. According to the zoning ordinance, the Buffer Yard B Classification would apply; this classification requires a 5' minimum buffer yard with 1 tree planted per 40 linear feet.

The County landscape plan (see Appendix) depicts the landscape plan that would comply with the above requirements. The only difference is that the trees are planted more heavily along the southern boundary and along Salem Road, than along the eastern boundary of the site. This change was made at the discretion of the Landscape Architect with the approval of the County Planning Department. The reasoning for this change was to provide more screening from vantage points along Salem Road. The HGS would be mainly viewed from drivers on Salem Road.

Plant Material

The Cascade County zoning ordinance includes trees around the perimeter of the site and along public street right-of-ways. Aside from the required trees, the ordinance requires that non-paved surfaces be planted in any combination of herbaceous or shrub material.

ALTERNATIVE LANDSCAPE PLAN

The overall discussion on the HGS has focused on a three part approach: avoidance, minimization, and mitigation. Avoidance refers to site selection; the decision was made that the Salem Road site is the preferred site. Minimization focuses on reducing the visual impact of the HGS, as this was cited as the main effect on the Lewis and Clark National Historic Landmark. The third part, mitigation, will be accomplished by landscaping to reduce the visual impact of the facility.

Two alternative plans are presented in the Appendix; the first does not use any trees, and the second uses some Rocky Mountain Juniper trees. Local Lewis & Clark trail advocacy and historic preservation groups agree that maintaining the native plains landscape is preferable to planting deciduous trees as required by the County zoning ordinance. Therefore few deciduous trees are shown in one alternative plan (see Appendix), since there are no deciduous trees in the existing landscape. The second alternative plan shows no trees, only shrubs, grasses, boulders, and berming. Both alternative plans include small deciduous trees that are more appropriate for the plains environment and both alternative plans incorporate native rock, shrubs, and grasses as a substitute for trees required by the County ordinance.

Street Frontage

Both alternative plans call for berming along the Salem Road right-of-way and along the main entry drive. Trees are located only at the entry and at the northwest corner of the site, to provide site identity. Shrubs would be planted more densely at the entry and northwest corner, and then progressively taper off to perennials and grasses approximately one third of the way down Salem Road at both ends. In both plans, most of the landscaping would be herbaceous material (grasses and wildflowers), and shrubbery.

Perimeter Landscaping

Landscaping would be concentrated along Salem Road to maximize screening where it will be most effective. Most of the views of the facility will be from neighbors along the western boundary of the site and drivers along Salem Road. No landscaping is provided along the eastern boundary of the site, as there are no neighbors along this perimeter.

Plant Material

All of the plant material proposed for landscaping the HGS is native to Montana as referenced by Montana Plant Life, Jan Hjalmarsson, P.O. Box 1144, Emigrant, MT, montana.plant-life.org and Wind River Seed, Inc., 3075 Lane 51 1/2, Manderson, WY, www.windriverseed.com.

In addition to nativity, many plants on the list were either collected by Lewis and Clark in Montana or collected elsewhere but grow in Montana, referenced by the University of Maryland website, www.life.umd.edu. Several of the plants listed are species from the same genus that were collected by Lewis and Clark. In these cases, a different species was selected based on adaptability to current site conditions and availability for order. Similar characteristics will ensure the same aesthetic effect.

Plant Schedule

TYPE	SCIENTIFIC NAME	COMMON NAME
TREES		
	Prunus americana	American Plum***
	Prunus virginiana	Chokecherry**
SHRUBS		
	Artemisia tridentata	Big Sagebrush***
	Ericameria nauseosa	Rubber Rabbitbrush**
	Juniperus communis	Common Juniper*
	Krascheninnikovia lanata	Winterfat**
	Ribes cereum	Wax Currant***
	Rhus trilobata	Skunkbush Sumac**
	Shepherdia canadensis	Canada Buffaloberry***
	Yucca glauca	Small Soapweed
WILDFLOWERS		
	Achillia millefolium	Common Yarrow**
	Artemisia frigida	Prairie Sagewort**
	Artemisia ludoviciana	White Sage**
	Aster ascendens	Long-leaved Aster***
	Gaillardia aristata	Blanketflower*
	Liatris punctata	Dotted Blazingstar***
	Linum lewisii	Western Blue Flax*
	Lupinus sericeus	Silky Lupine*
	Oenothera cespitosa	Evening Primrose*
	Penstemon eriantherus	Fuzzy-tongued Penstemon***
	Phlox hoodii	Moss Phlox***
	Ratibida columnifera	Prairie Coneflower
	Dalea purpurea	Purple Prairie-clover*
	Solidago missouriensis	Goldenrod***
GRASSES		
	Bouteloua gracilis	Blue Grama
	Elymus cinereus	Giant Wildrye***
	Festuca scabrella	Rough Fescue
	Koeleria macrantha	Prairie Junegrass**
	Oryzopsis hymenoides	Indian Ricegrass
	Poa pratensis alpina	Kentucky Bluegrass***
	Pascopyrum smithii	Western Wheatgrass
	Pseudoroegneria spicata	Bluebunch Wheatgrass**

*Collected by Lewis and Clark in Montana

**Collected by Lewis and Clark elsewhere, but occur in Montana.

***A different species of the same genus was collected by Lewis and Clark in Montana.

NATIONAL REGISTER BULLETIN 30

The recommendation was made at the final consultant meeting that an examination of the historical integrity and value of the property be done to assess whether further mitigation steps should be taken. The Lewis and Clark corridor that runs through the proposed HGS site has already been documented as a National Historic Landmark. However, the rest of the HGS site has not been identified as a rural historic landscape. In the opinion of the Landscape Architect, the HGS site does not appear to be appropriate for classification as a rural historic landscape.

The process of identifying and evaluating rural historic landscapes is laid out in the National Register Bulletin 30 entitled “Guidelines for Evaluating and Documenting Rural Historic Landscapes”, which can be found at <http://www.cr.nps.gov/nr/publications/bulletins/nrb30/index.htm>. The Landscape Architect has considered the National Register Bulletin 30 with regard to the alternative landscape plan. Review of the National Register Bulletin 30 was intended to inform the alternative landscape plan and no further study of the property is planned.

The rural historic landscape documentation process involves the following three steps:

- identification
- evaluation
- documentation

And the National Register Process defines the actions required to complete these three steps.

National Register Process

Identification

- Develop historic context
- Conduct historic research
- Survey the landscape

Evaluation

- Define significance
 1. Apply the National Register criteria
 2. Select areas of significance
 3. Define period of significance
- Assess integrity
 1. Apply qualities of integrity
 2. Identify changes and threats to integrity
 3. Classify contributing and noncontributing resources
 4. Weigh overall integrity

- Select defensible boundaries
 1. Define the historic property
 2. Decide what to include
 3. Select appropriate edges

Registration

Complete National Register form(s)
Follow registration procedures in 36 CFR Part 60

Classification

The Bulletin outlines an eleven part classification system to aid in completing the three steps. This system includes:

1. Land Uses and Activities
2. Patterns of Spatial Organization
3. Response to the Natural Environment
4. Cultural Traditions
5. Circulation Networks
6. Boundary Demarcations
7. Vegetation Related to Land Use
8. Buildings, Structures, and Objects
9. Clusters
10. Archeological Sites
11. Small-scale Elements

Completing a study of the rural historic landscape would involve examining all of the distinct components of the landscape, how they are inter-related and organized, and drawing conclusions based on these findings as to the suitability of the landscape for historic landscape registration.

The period of significance would most likely be the time of the Lewis and Clark portage, since that is the first known association with significant historical events, as far as the Landscape Architect is aware, and is the primary reason for the National Historic Landmark status. According to the Bulletin, the HGS site could only be deemed historically significant through establishing a link between the property and the Lewis and Clark portage site. The Landscape Architect does not see an apparent physical connection, and therefore believes that the HGS site does not warrant further research related to Bulletin 30.

SUMMARY

Although the Cascade County landscape requirements focus on the use of trees for screening and buffering of adjacent land uses, all of the groups involved with the Highwood Generating Station project have expressed a desire to maintain a native plains landscape. Therefore, the alternative landscape plans and plant list focus on the use of grasses, shrubs, native rock, and berming to allow the site to blend in with the surrounding landscape as much as possible. The alternative plan without trees would most closely mimic the surrounding landscape and is the preferred alternative.

The recommendation was made at the final consultant meeting that the Landscape Architect review the National Register Bulletin 30 with regard to the landscape plan. The Landscape Architect therefore consulted the Bulletin in analyzing the two proposed alternative landscape plans and compared the County requirements with the intent of the Bulletin.

The following chart presents a comparison between the Cascade County landscape requirements and National Register Bulletin steps for historic rural landscape registration. As shown, the County landscape requirements specify what plant material and buffer widths are required for mitigation of the proposed development. After careful consideration of the county regulations and the National Register Bulletin the consultants present the alternate landscape plan without trees as the preferred plan for the Highwood Generating Station.

Comparison Chart

CASCADE CO. LANDSCAPE REQUIREMENTS	NATIONAL REGISTER BULLETIN 30
STREET FRONTAGE	IDENTIFICATION
Minimum buffer width and trees depending on selected option (1-4).	Develop historic context Conduct historic research Survey the landscape
PERIMETER LANDSCAPING	EVALUATION
Buffer yard B classification based on adjacent agricultural land use.	Define significance Apply the National Register criteria Select areas of significance Define period of significance Assess integrity Apply qualities of integrity Identify changes and threats to integrity Classify contributing and noncontributing resources Weigh overall integrity Select defensible boundaries Define the historic property Decide what to include Select appropriate edges
	REGISTRATION
	Complete National Register form Follow registration procedures in 36 CRF Part 60

Appendix

Plant Schedule

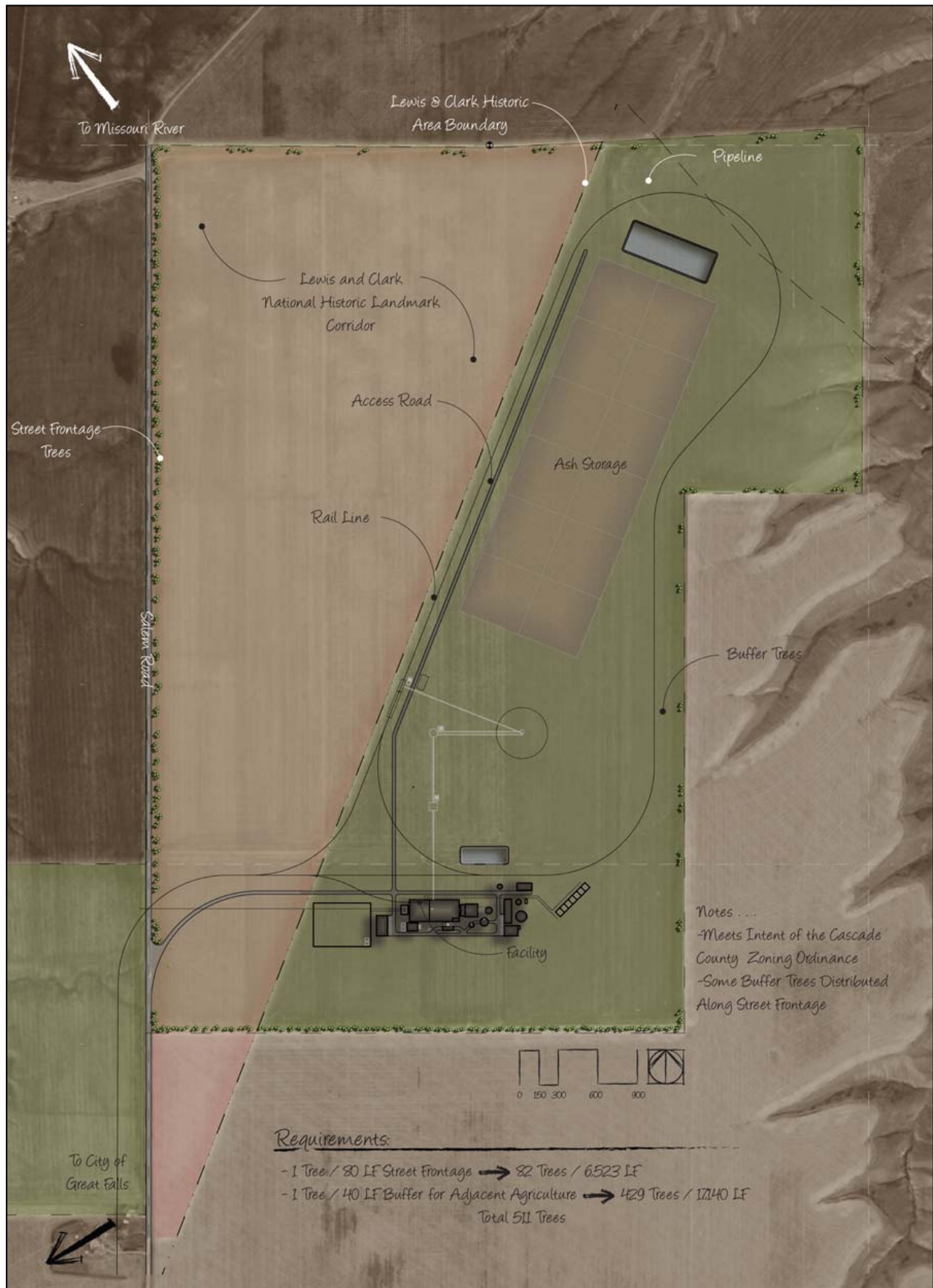
TYPE	SCIENTIFIC NAME	COMMON NAME
TREES		
	Prunus americana Prunus virginiana	American Plum*** Chokecherry**
SHRUBS		
	Artemisia tridentata Ericameria nauseosa Juniperus communis Krascheninnikovia lanata Ribes cereum Rhus trilobata Shepherdia canadensis Yucca glauca	Big Sagebrush*** Rubber Rabbitbrush** Common Juniper* Winterfat** Wax Currant*** Skunkbush Sumac** Canada Buffaloberry*** Small Soapweed
WILDFLOWERS		
	Achillia millefolium Artemisia frigida Artemisia ludoviciana Aster ascendens Gaillardia aristata Liatris punctata Linum lewisii Lupinus sericeus Oenothera cespitosa Penstemon eriantherus Phlox hoodii Ratibida columnifera Dalea purpurea Solidago missouriensis	Common Yarrow** Prairie Sagewort** White Sage** Long-leaved Aster*** Blanketflower* Dotted Blazingstar*** Western Blue Flax* Silky Lupine* Evening Primrose* Fuzzy-tongued Penstemon*** Moss Phlox*** Prairie Coneflower Purple Prairie-clover* Goldenrod***
GRASSES		
	Bouteloua gracilis Elymus cinereus Festuca scabrella Koeleria macrantha Oryzopsis hymenoides Poa pratensis alpina Pascopyrum smithii Pseudoroegneria spicata	Blue Grama Giant Wildrye*** Rough Fescue Prairie Junegrass** Indian Ricegrass Kentucky Bluegrass*** Western Wheatgrass Bluebunch Wheatgrass**

*Collected by Lewis and Clark in Montana

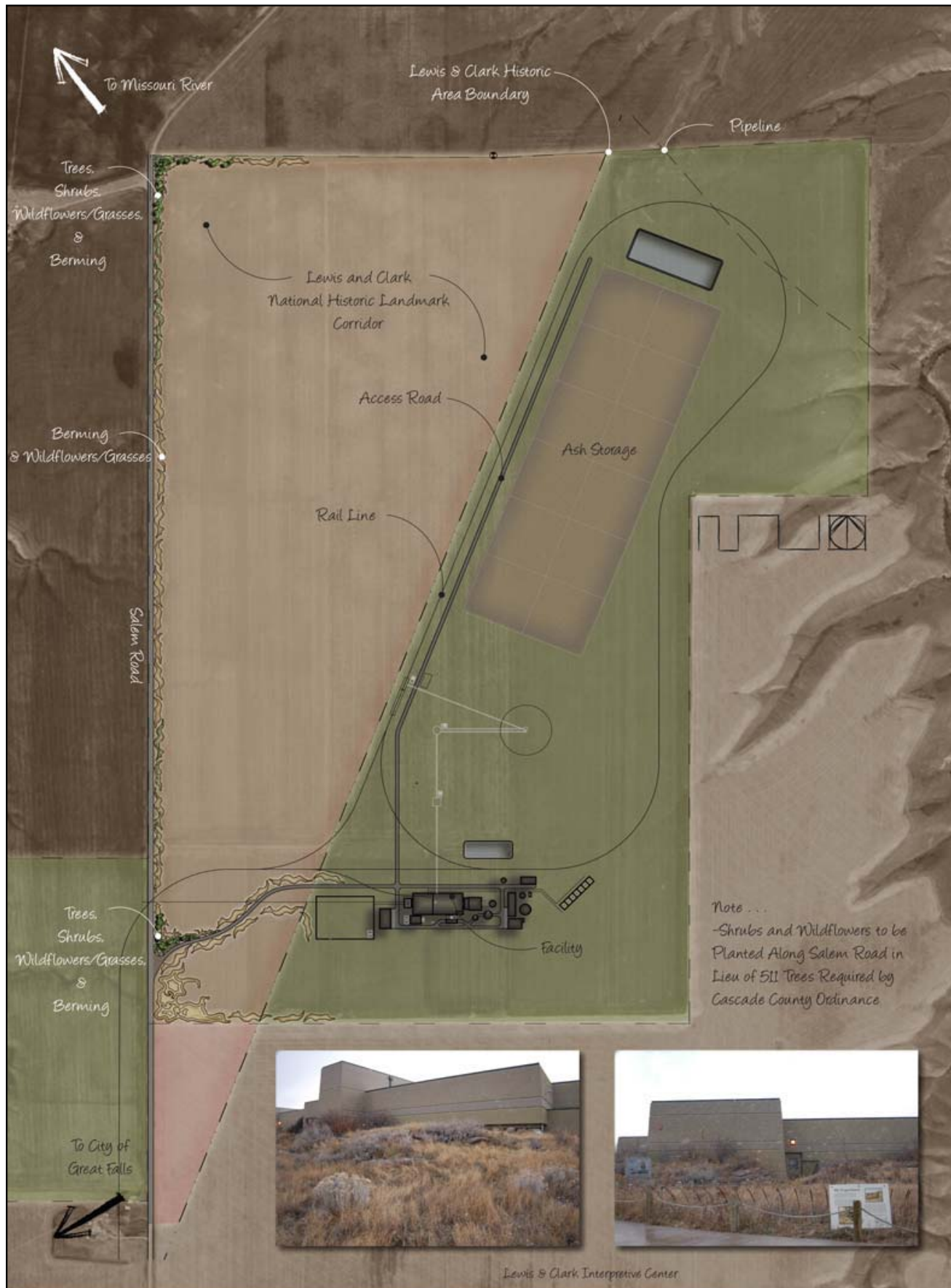
**Collected by Lewis and Clark elsewhere, but occur in Montana.

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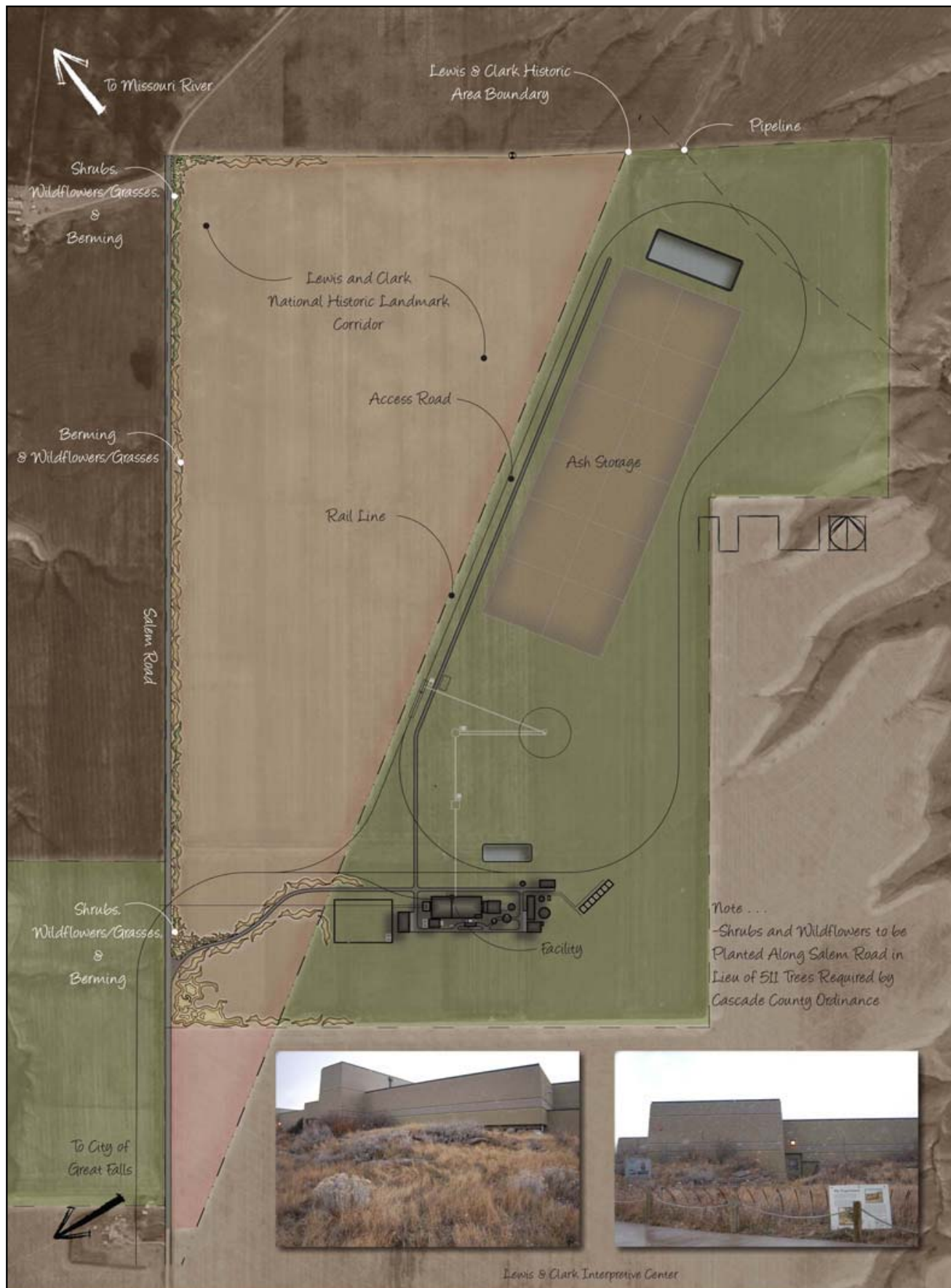
County Plan



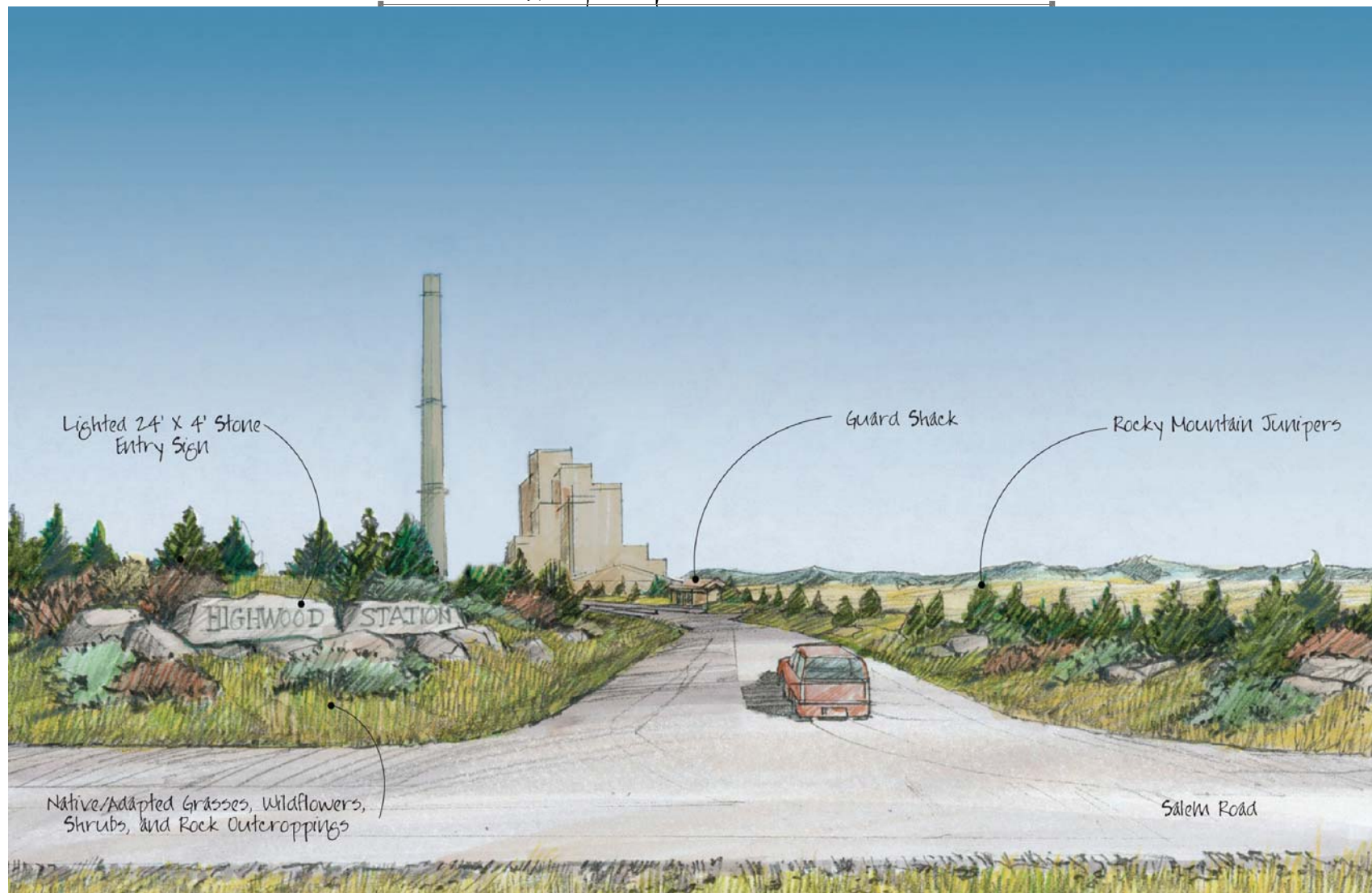
Alternative Plan With Trees



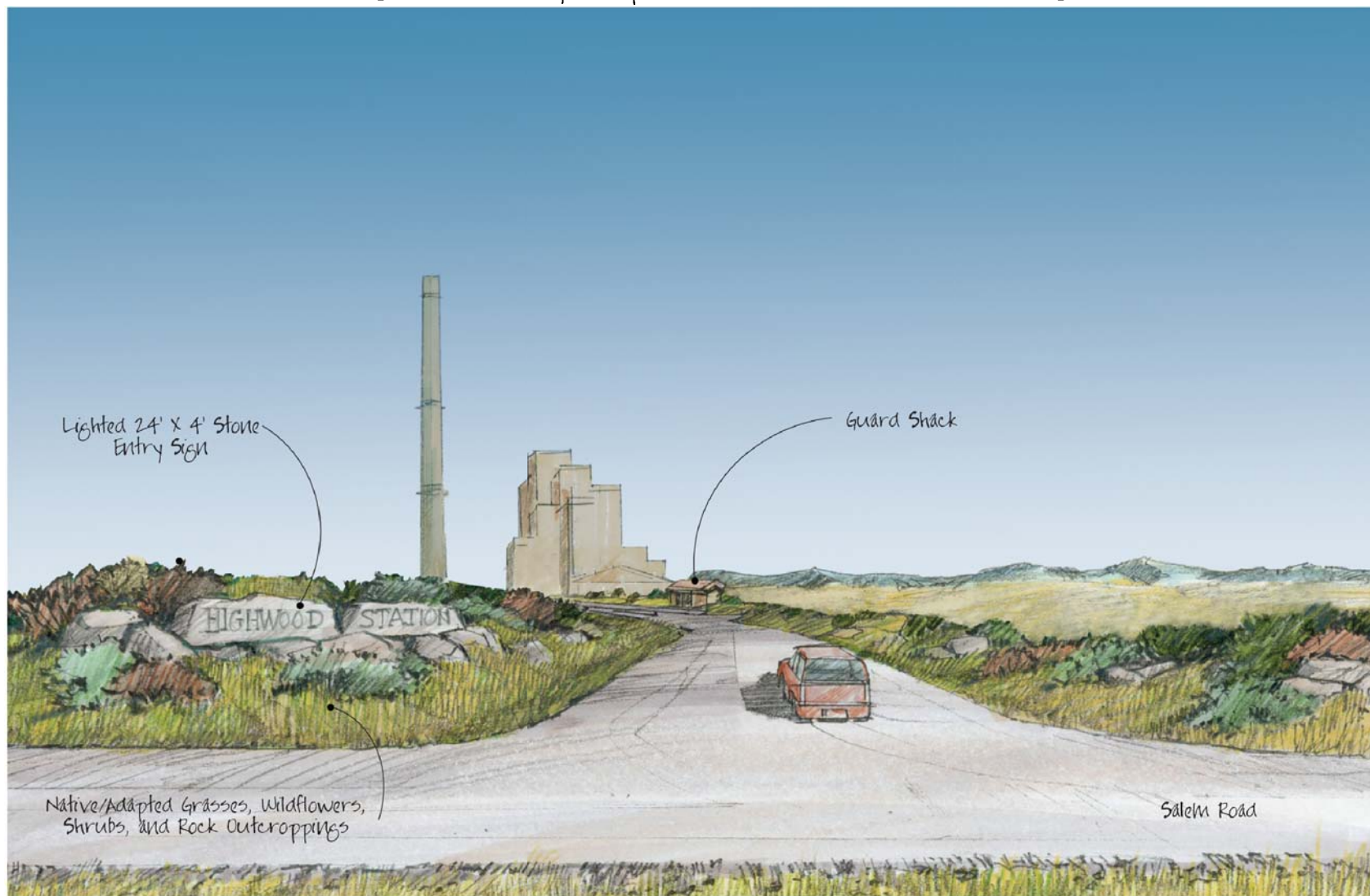
Alternative Plan Without Trees



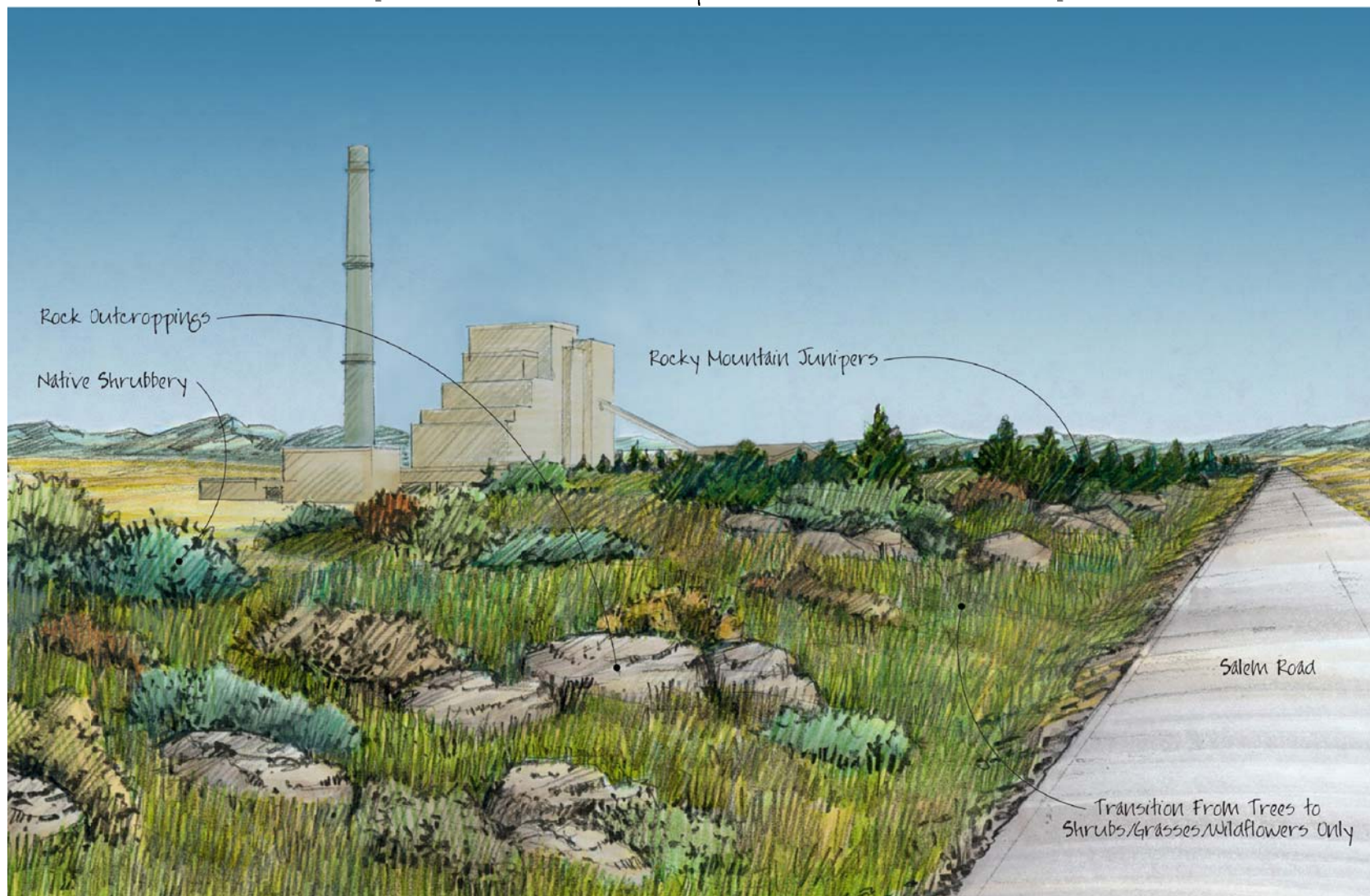
Entry Perspective With Trees



Entry Perspective Without Trees



Salem Road Perspective With Trees



Salem Road Perspective Without Trees



View From Salem Road with Trees



View from Salem without Trees







View from Interpretive Area

